

**Assessment Report
On Geophysical Surveys and Interpretation Report, 2010
On the YK, River, and Armenius Properties,
Klondike Area, Yukon
By Precision Geophysical Surveys and
On Behalf of Anglo-Canadian Uranium Corp.**

**YK Property Grid (YK claims) HD03105
581500E 7022500N
NTS Map Sheet 115O-06
Grant No's YD 05912-05922 and YD 11743-11750**

**River Property Grid (River claims) R.L. 111
587000E 7020000N
NTS Map Sheet 115O-06
Grant No's YD05891-05910**

**Armenius Property Grid (AV claims) R.L. 111
606000E 7054500N
NTS Map Sheet 115O-10
Grant No's YD05777-05796**

UTM Zone 7N, WGS84 Datum

**Prepared by:
Kevin Brewer, P. Geo.
Project Geologist and Director
Anglo-Canadian Uranium Corp.
June 8, 2011**



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Introduction

Precision Geophysical Surveys Inc. was contracted in 2010 by Anglo-Canadian Uranium Corp to complete an airborne geophysical survey and prepare an interpretation report of the survey results. The interpretation was completed in February 2011 and included airborne magnetic and radiometric data collected between July and October 2010 on the Armenius, River and YK Grids.

This is a summary of the work completed for assessment report purposes.

Project Locations

YK Property Grid (YK claims)

Claims: 20

581500E 7022500N

NTS Map Sheet 115O-06

Grant No's YD 05912-05922 and YD 11743-11750

River Property Grid (River claims)

Claims: 20

587000E 7020000N

NTS Map Sheet 115O-06

Grant No's YD05891-05910

Armenius Property Grid (AV claims)

Claims: 20

606000E 7054500N

NTS Map Sheet 115O-10

Grant No's YD05777-05796

Interpretation Procedures

See Section 2.0 of report included in Appendix I

YK Property

Claims

The YK claims currently incorporate 20 claims (YK 1-12 - YD 05912-YD05922 and YK 13-20 YD 11743-11750) located immediately north of the Stewart River. This area is also located just east of the intersection of the Stewart and Yukon Rivers (See location map).

During the author's reconnaissance effort, a highly altered and heavily oxidized sequence of schistose sediments was observed to occur along the shoreline of the Stewart River immediately south of the property area. Based on this finding the author recommended that the property be extended to the northern shoreline of the Stewart River to incorporate this alteration zone. This will likely require the addition of eight (8) more claims to the property area.

Exploration History

Minfile 1150 009 notes that claims in the region of the YK property were staked frequently at the mining recording office at Stewart River, including Great Northern cl (4627) in Jan/01, 4.8 km up the Stewart River; Victoria cl (4636) in Jan/01; Alice cl (4805) in Mar/02, on the southeast side of Henderson Creek; Dauphin by J. Donkin, 2.4 km below Henderson Creek (trenched in 1902); and, Reliance cl (4852) in Mar/04 near the Great Northern.

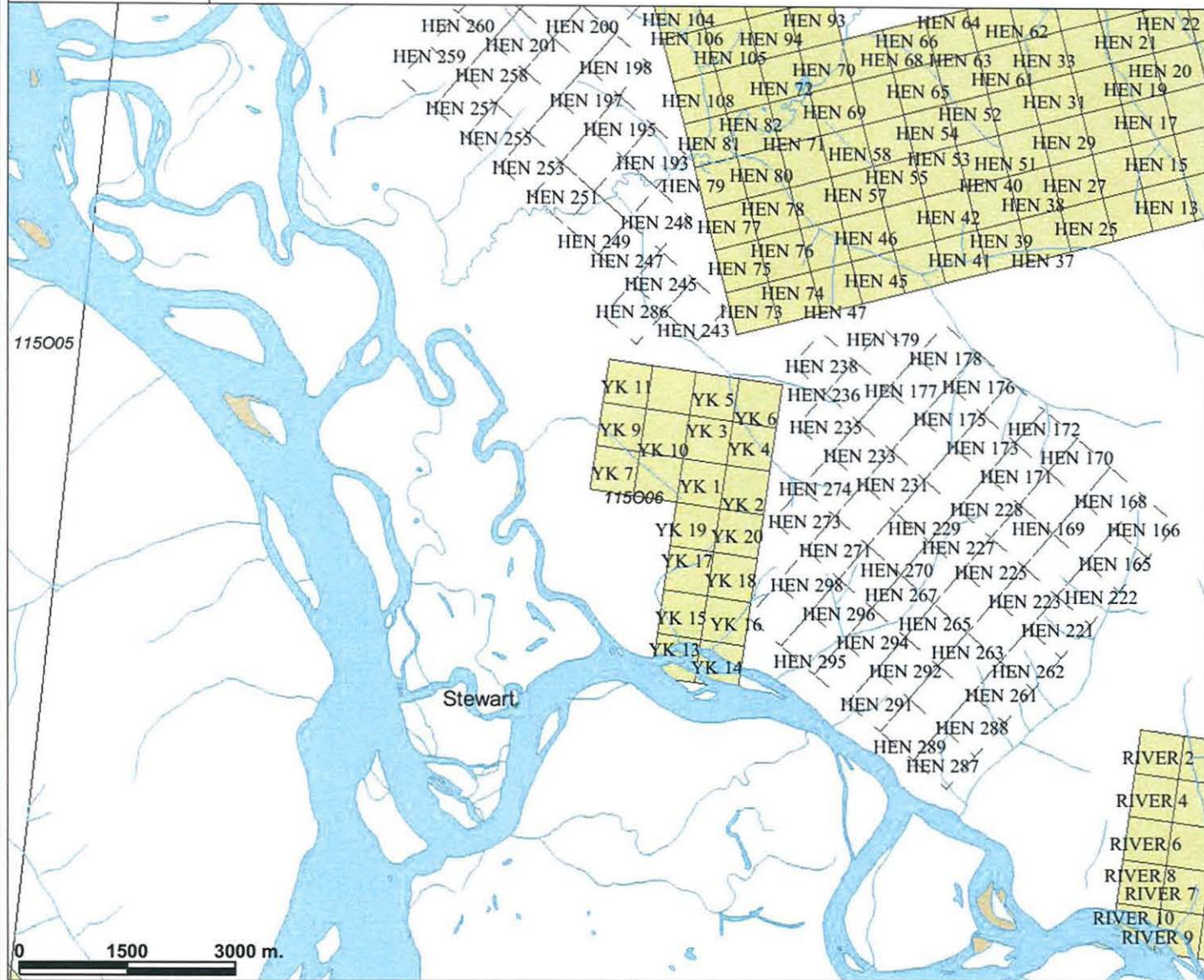
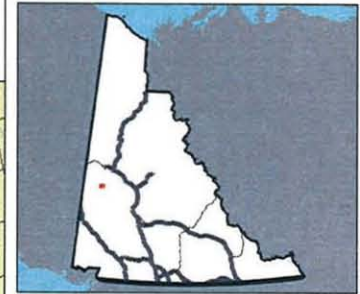
Geology

The area is underlain by Paleozoic (?) metasedimentary rocks and gneissic granite. Previous claims in the area were thought to have been staked on quartz veins considered prospective for gold.

At the north shoreline of the Stewart River in the southeastern portion of the property area, a 60 X 50 meter wide gossan (alteration zone) exists. Several heavily oxidized samples were collected during reconnaissance efforts in 2009 and later assayed using multi-element ICP techniques. Results were disappointing and the samples contained no anomalous values of gold mineralization or other potential elements of interest. This could have potentially been as a result of the heavily leached and oxidized nature of the samples. The leaching was noted to extend to at least three feet at depth in places. As the gossan is on a cliff face it is challenging to sample thoroughly. However the existence of this gossan is quite encouraging and both its areal extent and a determination of its potential mineralization need to be fully examined. This gossan was not noted on any previous mineral occurrence databases or geological maps.

YK Claims - Anglo-Canadian Uranium Corp., June 2011.

District	GrantNo.	RegType	ClaimName	ClaimNbr	ClaimOwner	NTS MapNo
Dawson	YD05921	Quartz	YK	11	Anglo-Canadian Uranium Corp - 100%.	115O06
Dawson	YD05916	Quartz	YK	6	Anglo-Canadian Uranium Corp - 100%.	115O06
Dawson	YD05922	Quartz	YK	12	Anglo-Canadian Uranium Corp - 100%.	115O06
Dawson	YD05918	Quartz	YK	8	Anglo-Canadian Uranium Corp - 100%.	115O06
Dawson	YD05915	Quartz	YK	5	Anglo-Canadian Uranium Corp - 100%.	115O06
Dawson	YD05920	Quartz	YK	10	Anglo-Canadian Uranium Corp - 100%.	115O06
Dawson	YD05914	Quartz	YK	4	Anglo-Canadian Uranium Corp - 100%.	115O06
Dawson	YD05911	Quartz	YK	1	Anglo-Canadian Uranium Corp - 100%.	115O06
Dawson	YD05919	Quartz	YK	9	Anglo-Canadian Uranium Corp - 100%.	115O06
Dawson	YD05913	Quartz	YK	3	Anglo-Canadian Uranium Corp - 100%.	115O06
Dawson	YD05912	Quartz	YK	2	Anglo-Canadian Uranium Corp - 100%.	115O06
Dawson	YD05917	Quartz	YK	7	Anglo-Canadian Uranium Corp - 100%.	115O06
Dawson	YD11743	Quartz	YK	13	Robert Clarke - 100%.	115O06
Dawson	YD11745	Quartz	YK	15	Robert Clarke - 100%.	115O06
Dawson	YD11747	Quartz	YK	17	Robert Clarke - 100%.	115O06
Dawson	YD11749	Quartz	YK	19	Robert Clarke - 100%.	115O06
Dawson	YD11750	Quartz	YK	20	Robert Clarke - 100%.	115O06
Dawson	YD11748	Quartz	YK	18	Robert Clarke - 100%.	115O06
Dawson	YD11744	Quartz	YK	14	Robert Clarke - 100%.	115O06
Dawson	YD11746	Quartz	YK	16	Robert Clarke - 100%.	115O06



Legend

- Yukon Border - Surveyed
- National Road Network - All Roads
 - Expressway / Highway
 - Arterial
 - Collector
 - Ramp
 - Resource / Recreation
 - Local / Street
 - Local / Strata
 - Local / Unknown
 - Alley or Service Lane
 - Service Lane
 - Winter
- Waterbodies (50k)
 - Dry river bed
 - Navigable canal
 - Sand
 - Water disturbance
 - Waterbody
 - Waterbody
- Places (All)
 - City
 - Municipality
 - Village
 - Community
 - Settlement
 - Native Settle
 - Hamlet
 - Historic Site
- Quartz Claims2
 - Active
 - Expired

This map is a user generated static output from an Internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.
Date Printed: 20-Apr-2010 3:54:08 PM

Mineral Potential

The mineral potential of the YK Property is potentially poor as it is thought to primarily comprise of intermediate to mafic orthogneiss which has been identified in other areas of the White Gold district to have been too high grade a deformation and with very little evidence of the White alteration type known to host gold mineralization.

However it is hoped that further work on the gossanous area or other portions of the property that are yet to even be visited can serve to identify areas meriting advanced exploration efforts.

In addition, the Henderson Creek placer area exists to the north of the property area. Henderson Creek historically was a prolific placer region that produced approximately 4,672 ounces of gold in operations between 1998-2002 with a fineness grade of 720-760.

Geophysical Survey – 2010

On the YK grid (see maps 10-13 in Interpretation Report, Appendix 1), a primary target was identified on the southern end of the grid. It has an approximate orientation of 70 degrees, a length of about 850m along strike and up to 200m wide. The target intersects a second magnetic high that has a strike of approximately 140 degrees. The target also appears to cut across a generally circular pattern of magnetic low in the immediate vicinity.

Eureka Gold (Armenius)

Introduction

Anglo-Canadian Uranium Corp. (URA) conducted a preliminary reconnaissance effort on the Armenius property in late summer 2009. URA would now like to complete a complete evaluation of the property in 2010 and are therefore applying through the Targeted Evaluation element of the Yukon Mine Industry Incentives Program for assistance to conduct this effort. The primary objective is to identify the potential of the property for a high sulfidation epithermal deposit and identify drill targets for advanced exploration efforts in late 2010 or 2011.

Claims

Anglo-Canadian Uranium Corp have staked 20 claims (AV 1-20, YD05777-05796) in this area that to the south overlap placer claims associated with the Eureka Creek operation.

Property Access

Access to this property area is by a series of gravel roads used seasonally by placer operations in the area. A 6 meter gravel road extends on the west and southern sides adjacent to the property area typically less than 500 meters to the claim area. In addition previous winter trails traverse the entire property area and link to the placer road network. This will provide excellent property access for exploration crews and possible drilling operations. Crew access to the property will therefore be provided through the combination of a 4*4 Pickup and ATV's.

Exploration History

This property was originally staked in 1902 by Herman Wohlgethian and T. Chisholm who trenched annually until 1905. The property was restaked by United Keno Hill Mines Ltd in 1987 who conducted exploration throughout the region. In 1994, the area was further explored by Pacific Mariner Exploration Ltd. and Wealth Resources Ltd. who sampled bedrock exposed by placer operations. The property was later restaked as Armenius in 1999 by the Eureka Joint Venture Group (Nordac Resources Ltd and Expatriate Resources Ltd) who carried out stream sediment, soil and rock sampling.

Geology

The occurrence is underlain by Devonian to Mississippian (and older) quartzite and quartz-muscovite schists assigned to the Nasina assemblage.

Original staking was prompted by reports of the existence of a quartz "ledge" 18 meters wide and 3-5 kilometers long. Wohlgethian (1902) was reported to have collected samples from a 12 meter shaft that contained friable and contained free gold.

Claims Listing - Armenius Property, Anglo-Canadian Uranium Corp. June 2011.

Dawson	YD05777	Quartz	AV	1 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05778	Quartz	AV	2 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05779	Quartz	AV	3 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05780	Quartz	AV	4 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05781	Quartz	AV	5 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05782	Quartz	AV	6 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05783	Quartz	AV	7 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05784	Quartz	AV	8 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05785	Quartz	AV	9 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05786	Quartz	AV	10 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05787	Quartz	AV	11 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05788	Quartz	AV	12 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05789	Quartz	AV	13 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05790	Quartz	AV	14 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05791	Quartz	AV	15 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05792	Quartz	AV	16 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05793	Quartz	AV	17 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05794	Quartz	AV	18 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05795	Quartz	AV	19 Anglo-Canadian Uranium Corp - 100%	115010
Dawson	YD05796	Quartz	AV	20 Anglo-Canadian Uranium Corp - 100%	115010

Placer mining operations in the area have exposed a large shear zone characterized by strongly altered chlorite schists and grey clay gouge with pervasive iron staining and quartz and epidote veining. A specimen of chlorite-quartz schist sampled from a pit floor in the placer operation assayed 75.38 g/t gold and 22.2 g/t silver. The bedrock has been profitably mined by a placer operator for more than a decade.

The source of the gold related to the placer operation has not been traced in previous exploration efforts.

Mineral Potential

The Armenius Property has potential for precious metal (gold and silver) mineralization. Mineralized altered schists have been profitably mined at Eureka Creek for more than a decade. The source of this mineralization is yet to be traced. Other encouraging reports of previous discoveries of friable and contained free gold within a large quartz vein that may have an extensive strike length and a mineable width were not verified in the brief 2009 property visit or during an air reconnaissance of the property area. Detailed prospecting of the property is required to verify the existence of this mineralized vein system and the potential for further mineralization in the altered schists.

In addition, Eureka Creek placer operations are located on the southern border of the property area, has been a productive placer region. Between 1998-2002, 12,257 ounces of gold were produced. Operations discontinued in 2003, but between 2004-2006 limited operations produced an additional 1,292 ounces of gold. Gold production since 2006 is unknown but placer mining is currently active in the 2009 season.

Geophysical Survey – 2010

On the Armenius grid (see maps 1-4 in Interpretation Report, Appendix 1), a primary target was identified on the western part of the grid. It has an approximate orientation of 80 degrees, a length of about 950m along strike and up to 200m wide. The target intersects a fault that has a strike of approximately 40 degrees and dips to the southeast. There are two potential secondary targets located on the northern and western corners of the grid. They are magnetic highs with similar orientations to the primary target. They are, however, smaller and do not show the same cross-cutting relationship.

Tenderfoot Creek (River property)

Exploration History

Yukon Minfile 1150 008 notes that quartz veins were thought to exist in the area and the areas was previously staked as Middleton (year unknown). No other exploration of the property area is known.

Geology

The River (or Tenderfoot Creek) Property includes Mid to Late Paleozoic foliated to unfoliated amphibolite facies metagabbro, metapyroxenite, serpentinite and talc-siderite schist.

Mineral Potential

The presence of carbonate-altered ultramafic rocks on this property may be comparable to hanging wall rocks identified at Underworld's White Gold Property. In addition the talc-carbonate alteration clearly suggests that the appropriate alteration exists for White style gold mineralization.

In addition, there is a weak As-Au geochemical anomaly in the southeastern portion of the property identified through regional geochemical surveys conducted by the Yukon Geological Survey.

In summary, based solely on the known regional geology of the area this is a highly prospective terrain for gold mineralization similar to the White Property.

Geophysical Survey – 2010

On the River grid (see maps 5-8 in Interpretation Report, Appendix 1), a primary target was identified east of the center part of the grid. It has an approximate orientation of 40 degrees, a length of about 500m along strike and up to 150m wide. The target intersects a fault that has a strike of approximately 175 degrees and dips to the west.

District	GrantNuml	RegType	ClaimName	ClaimNbr	Claim Own	NTS Map No.
Dawson	YD05891	Quartz	River	1	Anglo-Can	115006
Dawson	YD05892	Quartz	River	2	Anglo-Can	115006
Dawson	YD05893	Quartz	River	3	Anglo-Can	115006
Dawson	YD05894	Quartz	River	4	Anglo-Can	115006
Dawson	YD05895	Quartz	River	5	Anglo-Can	115006
Dawson	YD05896	Quartz	River	6	Anglo-Can	115006
Dawson	YD05897	Quartz	River	7	Anglo-Can	115006
Dawson	YD05898	Quartz	River	8	Anglo-Can	115006
Dawson	YD05899	Quartz	River	9	Anglo-Can	115006
Dawson	YD05900	Quartz	River	10	Anglo-Can	115006
Dawson	YD05901	Quartz	River	11	Anglo-Can	115006
Dawson	YD05902	Quartz	River	12	Anglo-Can	115006
Dawson	YD05903	Quartz	River	13	Anglo-Can	115006
Dawson	YD05904	Quartz	River	14	Anglo-Can	115006
Dawson	YD05905	Quartz	River	15	Anglo-Can	115006
Dawson	YD05906	Quartz	River	16	Anglo-Can	115006
Dawson	YD05907	Quartz	River	17	Anglo-Can	115006
Dawson	YD05908	Quartz	River	18	Anglo-Can	115006
Dawson	YD05909	Quartz	River	19	Anglo-Can	115006
Dawson	YD05910	Quartz	River	20	Anglo-Can	115006

River Property



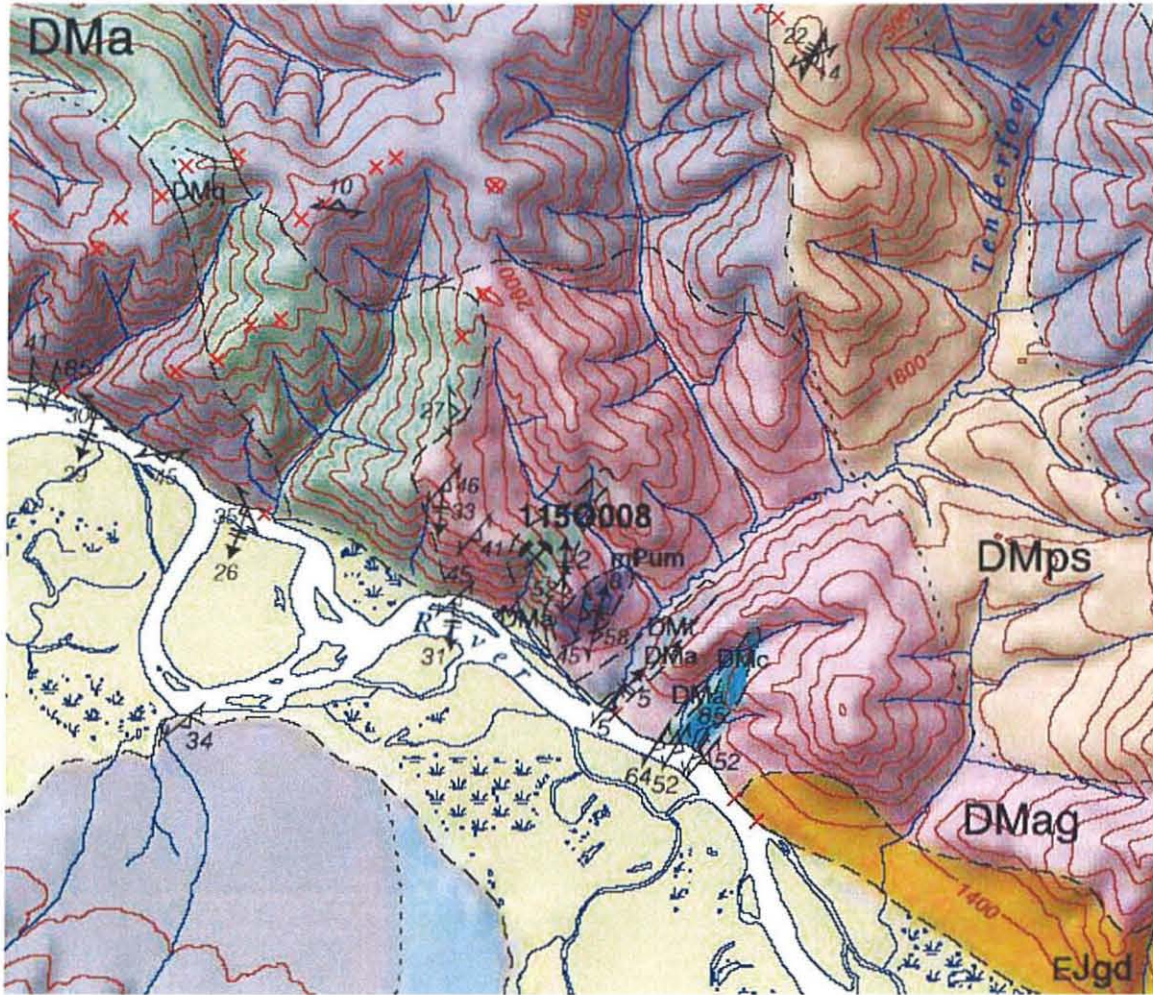
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- Yukon Border
- Border (1M)
- AR
- Intambural
- BC
- NT
- Quartz Claims
- Active
- Expired
- Roads - Select
- Historical Road
- Historical Road
- Unknown Road
- National Road
- Roads
- Expressway / Hg
- Armedst
- Colloids
- Ramp
- Roadway / River
- Local / Street
- Local / Street
- Local / Highway
- Ally / Service
- Service Lane
- Water
- Watermark (
- Dry river bed
- Navigable canal
- Sand
- Water disturbance
- Waterbody
- Land and Sea

This map is a user generated static output from an internet mapping site and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.

Notes: Geology and Mineral Occurrences





1150008 – Tenderfoot/River Property - Geology

MID(?) - TO LATE PALEOZOIC



ULTRAMAFIC-GABBRO: foliated to unfoliated amphibolite facies metagabbro, metapyroxenite, serpentinite and talc-siderite schist; mPums, dominantly serpentinite

Expenditure Summary

Airborne survey	\$26,848.50
Interpretation Report	\$2,352.00
Assessment report	<u>\$600.00</u>
Total for 114 line km	<u>\$29,800.50</u>
Expenditures by Property	
River Grid 32 line km	\$8,344.14
YK Grid 60 line km	\$15,496.26
Armenius Grid 22 line km	\$5,960.10

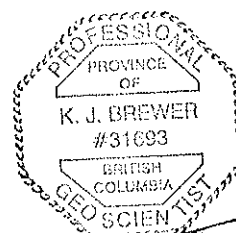
Recommendations

Soil sampling should be targeted over each of the primary target areas on the Armenius, River and YK grids.

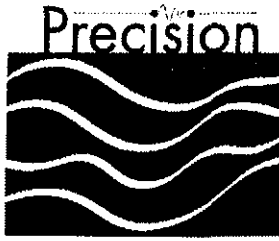
On Armenius soil sampling should also be conducted adjacent to the primary target along strike of the fault that the primary target intersects and also on the secondary targets. Consideration should be made to trench on western target (b) as radiometric data indicates shallow overburden in this area.

On the River grid sampling should also be conducted adjacent to the primary target along strike of the fault that the primary target intersects. Consideration should be made to complete an Induced Polarization survey across the primary target.

On the YK grid, the primary target does not appear to be cutting across a significant fault zone. However the results were interesting from the perspective that the magnetic highs of two orientations cut across a circular zone of magnetic lows. Soil sampling, trenching and mapping in this region is recommended.



[Handwritten Signature]
June 8, 2011.



Precision GeoSurveys Inc.

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Vancouver, BC Canada V6C 2G8
Tel: 604 484 9402
Fax: 604 669 5715
www.precisiongeosurveys.com

INVOICE

No. 1014
8 November, 2010

In Account With: **Anglo Canadian Uranium Inc.**
530-355 Burrard Street
Vancouver, BC
V6C 2G8

Re: Airborne geophysical survey at three Whitegold area properties, Yukon

Armenius block

- 52 line km @ \$75/km:	\$ 3,900.00
- Set-up and reporting fee:	<u>3,000.00</u>
	6,900.00

River block

- 31 line km flown with incorrect coordinates @ \$75/km:	2,325.00
- 61 line km with revised coordinates @ \$60/km:	3,660.00
- Set-up and reporting fee:	3,000.00
- Weather stand-by fees, 0.5 days @ \$2500/day:	<u>1,250.00</u>
	10,235.00

YK Block

- 31 line km flown with incorrect coordinates @ \$75/km:	2,325.00
- 31 km flown with revised coordinates @ \$60/km:	1,860.00
- Set-up and reporting fee:	3,000.00
- Weather stand-by fees, 0.5 days \$2500/day:	<u>1,250.00</u>
	8,435.00

Subtotal: \$ 25,570.00

GST @ 5% (840398010RT): 1,278.50

Total Invoice: **CDN \$ 26,848.50**

Less advance received: - 7,500.00

Balance Owing: \$ 19,348.50

Thank you for your business!



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 520-355 Burrard Street
 Vancouver, BC Canada V6C 2G8
 Tel: 604 484 9402
 Fax: 604 669 5715
 www.precisiongeosurveys.com

INVOICE

No. 1102
 February 8, 2011

In Account With: **Anglo Canadian Uranium Corp.**
 530-355 Burrard Street
 Vancouver, BC
 V6C 2G8

Re: Geophysical interpretation at River, YK, and Arminus Properties

30 hours @ \$70/hr:

\$ 2,100.00

Subtotal:

2,100.00

HST @ 12% (840398010RT):

252.00

Total Invoice:

CDN 2,352.00

YUKON
PAID
 #0032 2/15/11

Inv Aprvd	
Property	
Account	Amount
50410	2,100.00
GST HST	252.00
Total	2,352.00
Exch Rate	

POSTED Feb 11
 Thank you for your business!



Precision GeoSurveys Inc.

Airborne Geophysical Interpretation Report

Prepared for: Anglo-Canadian Uranium Corp.
February 01, 201



Precision GeoSurveys Inc.
520-355 Burrard Street, Vancouver, Canada V6C 2G8
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1.0 Introduction:

This report details the interpretation of geophysical data collected by Precision Geosurveys Inc. for Anglo-Canadian Uranium Corp. The interpretation includes airborne magnetic and radiometric data collected between July and October 2010, on the Armenius, River, and YK Grids.

The Armenius Grid is located at 606000E 7054500N, approximately 56.6 km south-east of Dawson, YT and is approximately 2 km by 2 km in size. The grid was flown with 100 m line spacing on the survey lines and 800 m line spacing on the tie lines for a total of 51.8 line km.

The River Grid is located at 587000E 7020000N, approximately 83.6 km south-east of Dawson, YT and is approximately 2.5 km by 4 km in size. The grid was flown with 100 m line spacing on the survey lines and 1 km line spacing on the tie lines for a total of 91.7 line km.

The YK Grid is located at 581500E 7022500N, approximately 80.3 km south-east of Dawson, YT and is approximately 2 km by 3 km in size. The grid was flown with 100 m line spacing on the survey lines and 800 m line spacing on the tie lines for a total of 56.2 line km.

All locations are expressed in UTM Zone 7N with respect to the WGS84 datum. The magnetic data on all three grids was collected using Scintrex cesium vapor CS-3 magnetometer at sample rate of 10 Hz. The radiometric data for all three grids was collected using an IRIS, or Integrated Radiometric Information System, spectrometer at a sample rate of 1 Hz.

2.0 Interpretation Procedures:

The data was interpreted using the following steps:

- a. Magnetic data, radiometric data and topography were gridded and plotted onto map in Geosoft.
- b. Preliminary targets are identified based on the Total Magnetic Field (TMF) and the vertical derivative data.
- c. Additional processing is performed on the TMF data. Upward continuation is performed as a low pass filter. The upward continuation data is then subtracted from the TMF data to create a high pass filter in order to detrend the data and to remove artifacts. Downward continuation is performed to create a filter that would allow targets below magnetically quiet overburden to be emphasized. This gives us a clearer picture of the structure and it can highlight changes or breaks along the structure.
- d. Primary structure and cross-cutting features are identified using the various grids produced by the different data processing steps.

- e. Magnetic targets are picked and then the radiometric data is overlain to compare and determine any correlation.
- f. Final maps are produced of the TMF as well as the various data processing steps showing the picked targets.

3.0 Target Response:

Isothermal gold deposits are often hosted in structurally controlled features. These features include faults and shear zones, which act as hydrothermal conduits, and units which cut across these conduits.

The magnetic data is first analyzed to determine primary structures such as faults. Linear structures such as faults and shear zones tend to show up on airborne magnetic surveys as long linear magnetic highs, paralleled by a corresponding magnetic low along the down-dip side of the structure.

The data is then reprocessed to determine secondary cross-cutting features such as intrusive structures which cross-cut the primary structure. The reprocessing steps used on the Armenius grid and the YK grid were upward continuation which acts as a low pass filter, the difference between the total magnetic field and the upward continuation which acts as a high pass filter. The purpose of the high pass filter is to detrend the data and to remove artifacts created by ground effects. The filter used on the River grid was a downward continuation which removes the signal suppressing effect of magnetically quiet overburden.

4.0 Targets:

There were a total of five targets identified on the 3 grids. The following is a description

4.1 Armenius Grid (Map 1 – 4)

The primary target on the Armenius grid is located on the western part of the grid. It has an approximate orientation of 80°, a length of about 950 m along strike and up to 200 m wide. The target intersects a fault that has a strike of approximately 40° and dips to the southeast.

There are two potential secondary targets located on the northern and western corners of the grid. They are magnetic highs with similar orientations to the primary target. They are, however, smaller and do not show the same cross-cutting relationship with the structure.

4.2 River Grid (Map 5 – 8)

The primary target on the River grid is to the east of the centre of the grid. It has an approximate orientation of 40°, a length of about 500 m along strike and up to 150 m wide. The target intersects a fault that has a strike of approximately 175° and dips to the west.

4.3 YK Grid – (Map 10 – 13)

The primary target on the YK grid is located on the southern end of the grid. It has an approximate orientation of 70°, a length of about 850 m along strike and up to 200 m wide. The target intersects a second magnetic high that has a strike of approximately 140°. The target also appears to cut across a generally circular pattern of magnetic low in the immediate vicinity.

5.0 Recommendations:

On the Armenius grid, the primary target should be focused on with soil sampling, trenching and mapping. Along with the primary target, soil sampling should be conducted adjacent to the primary target along strike of the fault that the primary target intersects.

Future geophysical work would include an induced polarization survey (IP) conducted across the strike of the primary target

The secondary targets on the Armenius grid should be targeted initially with soil sampling. The radiometric data indicates that the overburden around the western target (b) should be relatively shallow and would be a better candidate for secondary trenching after the primary target has been explored.

On the River grid, the primary target should again be focused on with soil sampling, trenching and mapping. Along with the primary target, soil sampling should be conducted adjacent to the primary target along strike of the fault that the primary target intersects. Future geophysical work would include an induced polarization survey (IP) conducted across the strike of the primary target.

The primary target on the YK Grid does not appear to be cutting across a significant fault zone. It is interesting in that it appears to be magnetic highs of two orientations cutting across a circular zone of magnetic lows. Soil sampling, trenching and mapping would provide valuable insight into the nature of the target.

Appendix A
References

Precision GeoSurveys Inc. (2010). Airborne Geophysical Survey Report Armenius.

Precision GeoSurveys Inc. (2010). Airborne Geophysical Survey Report River.

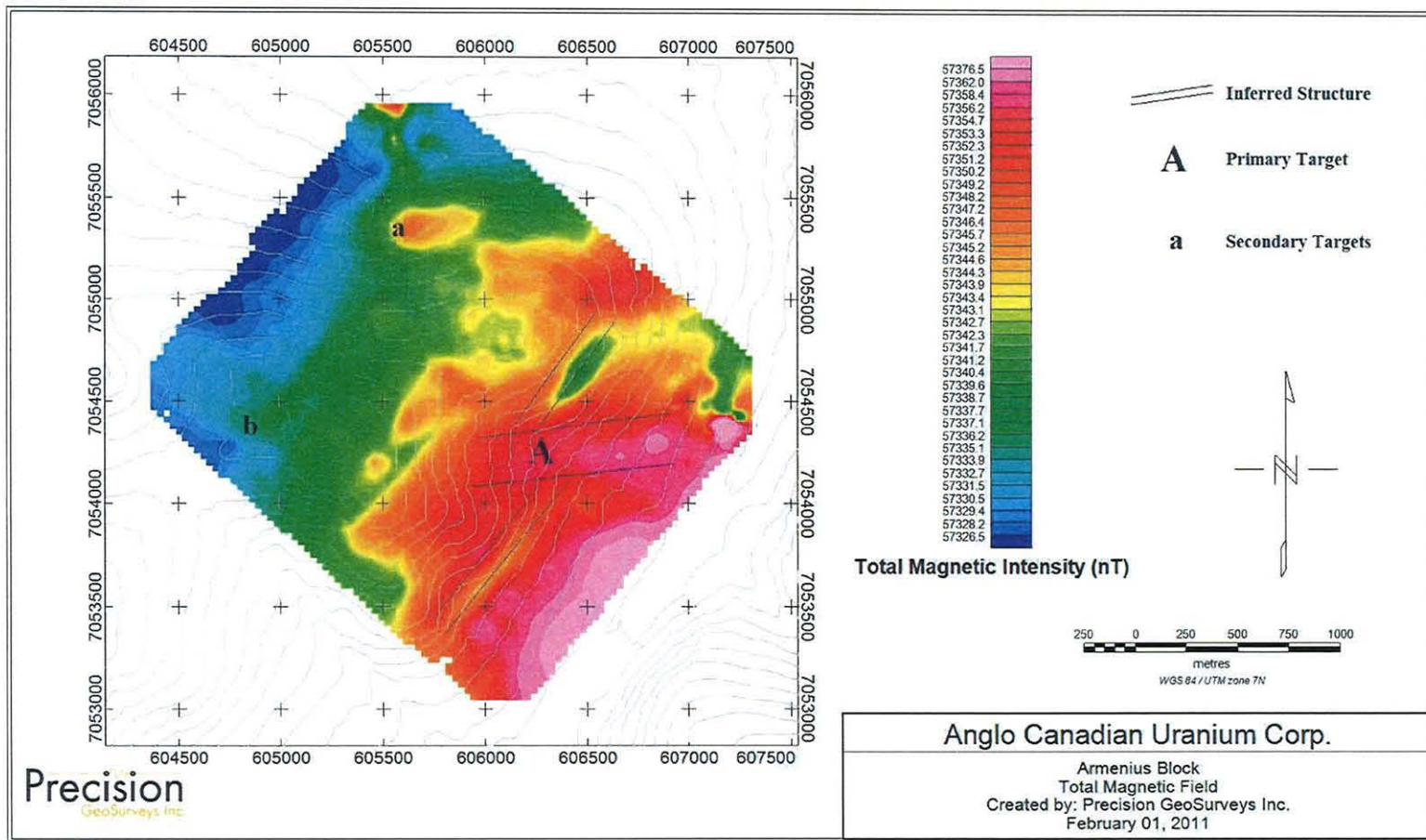
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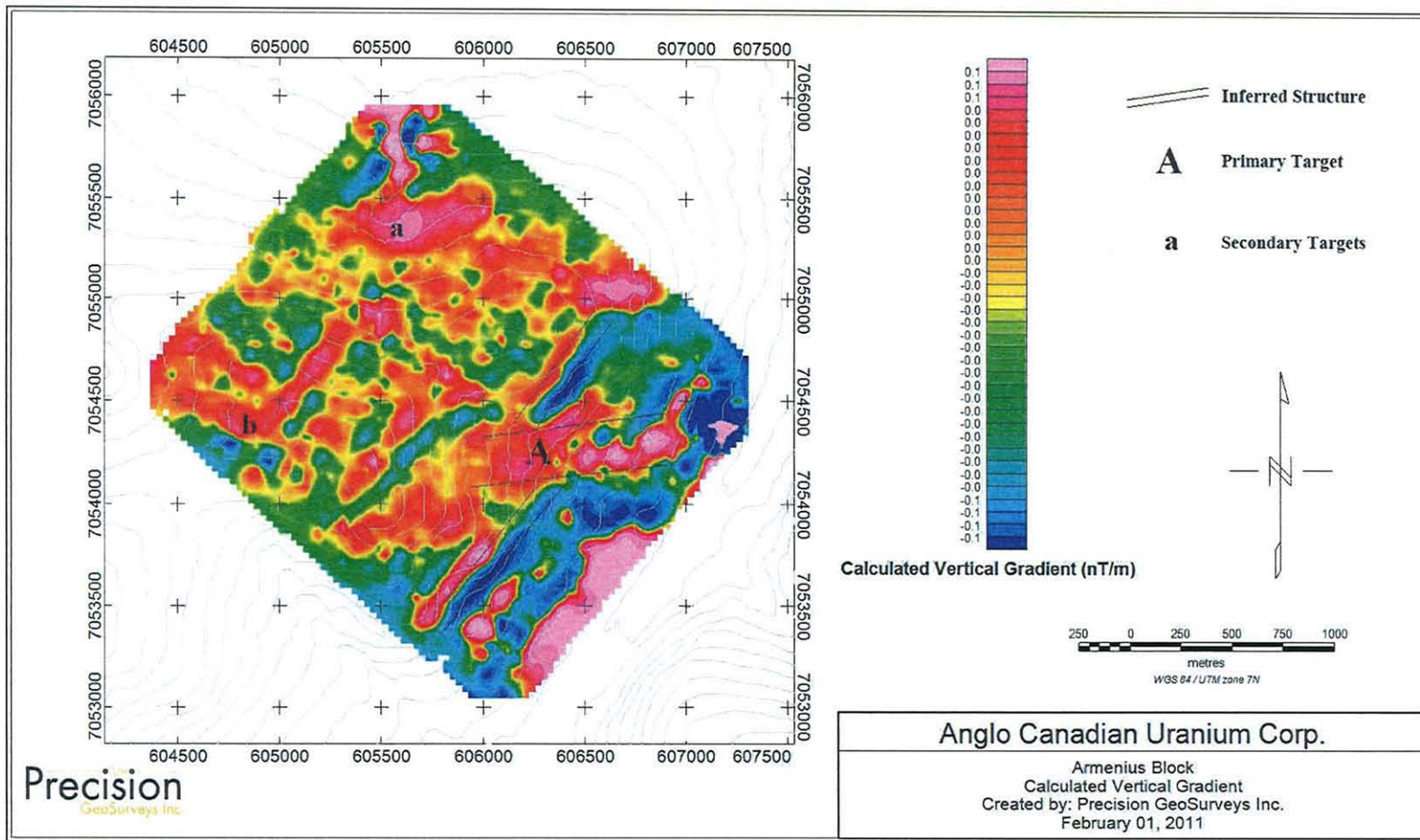
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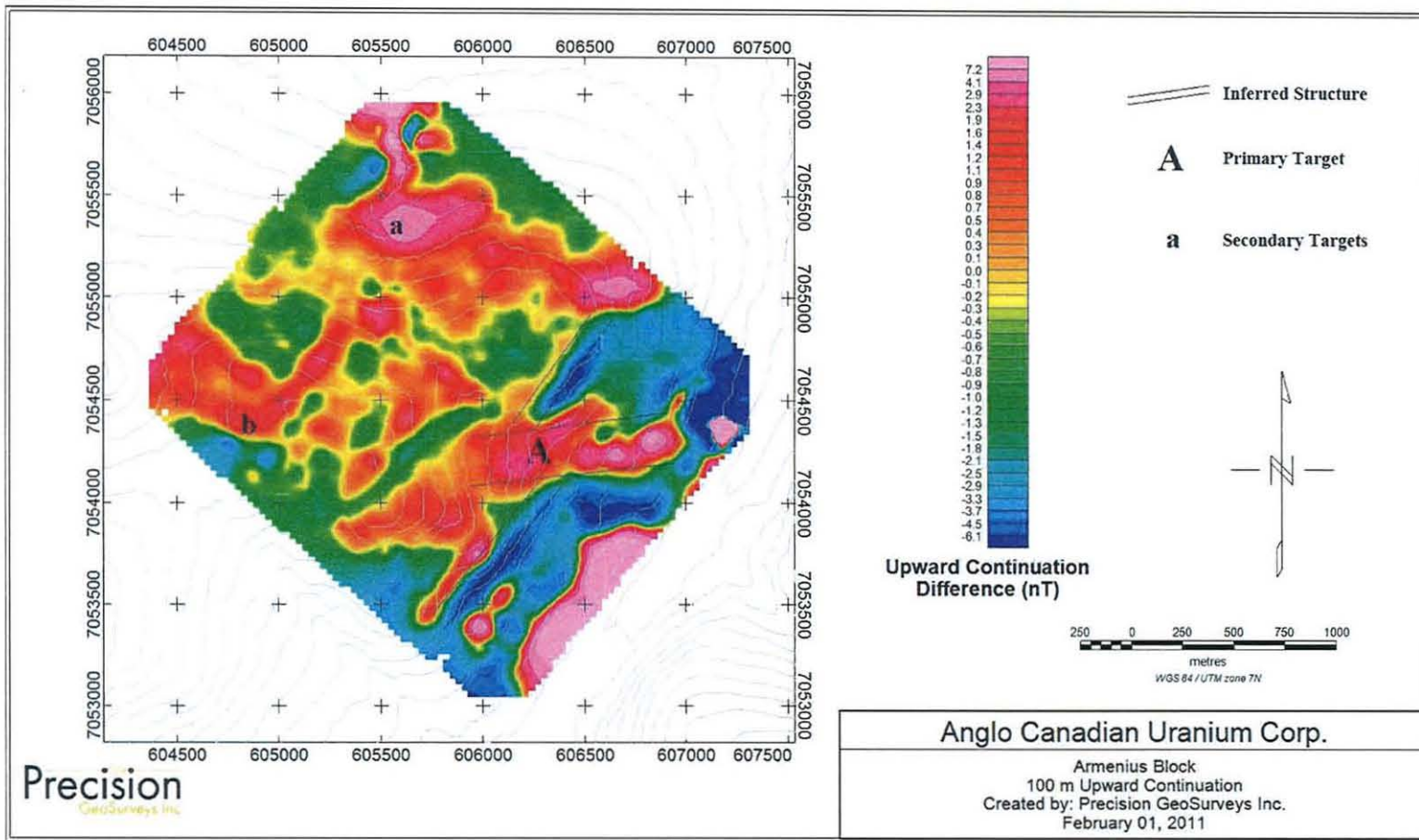
Appendix B
Maps



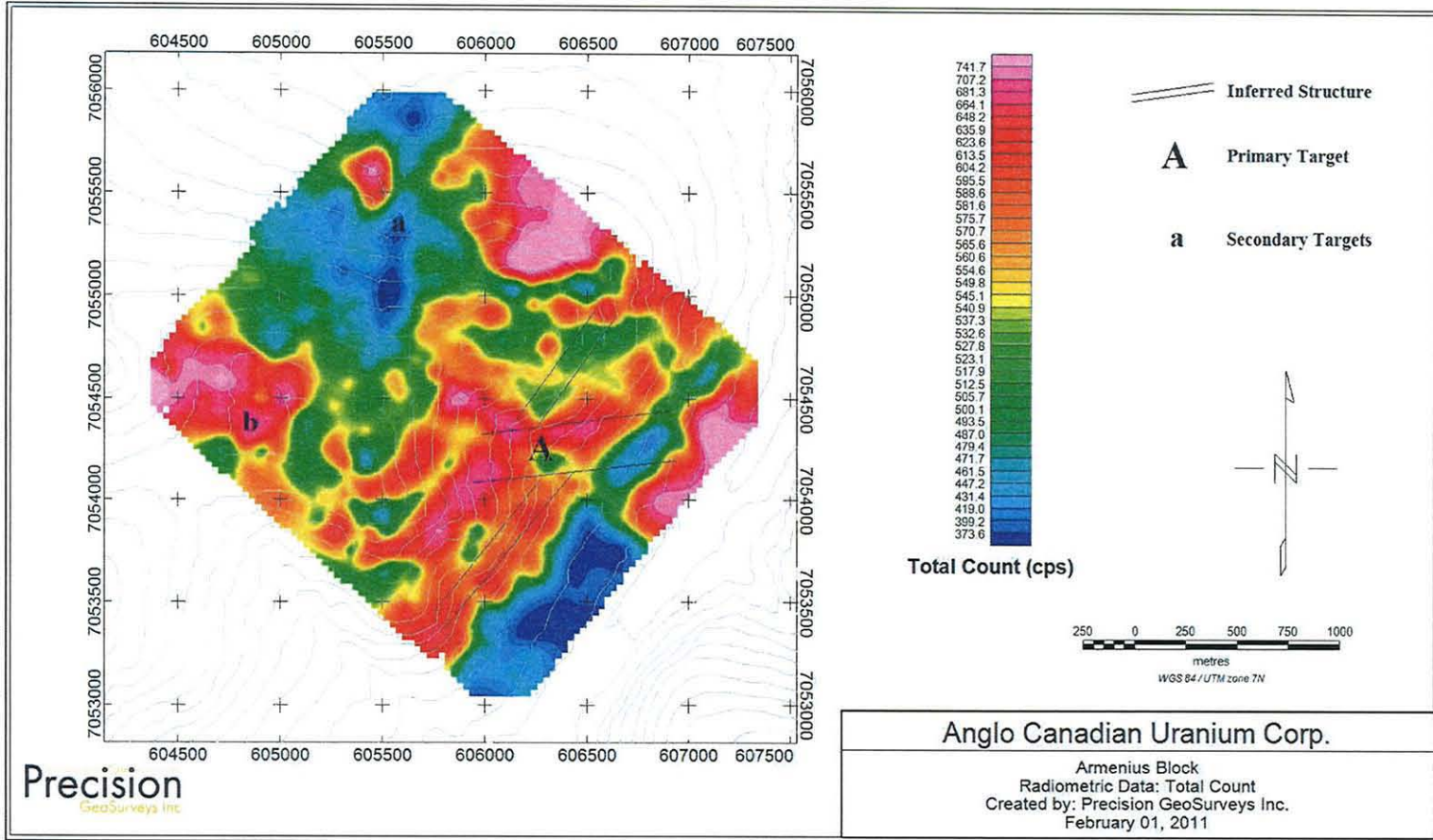
Map 1: Armenius block – Total Magnetic Field.



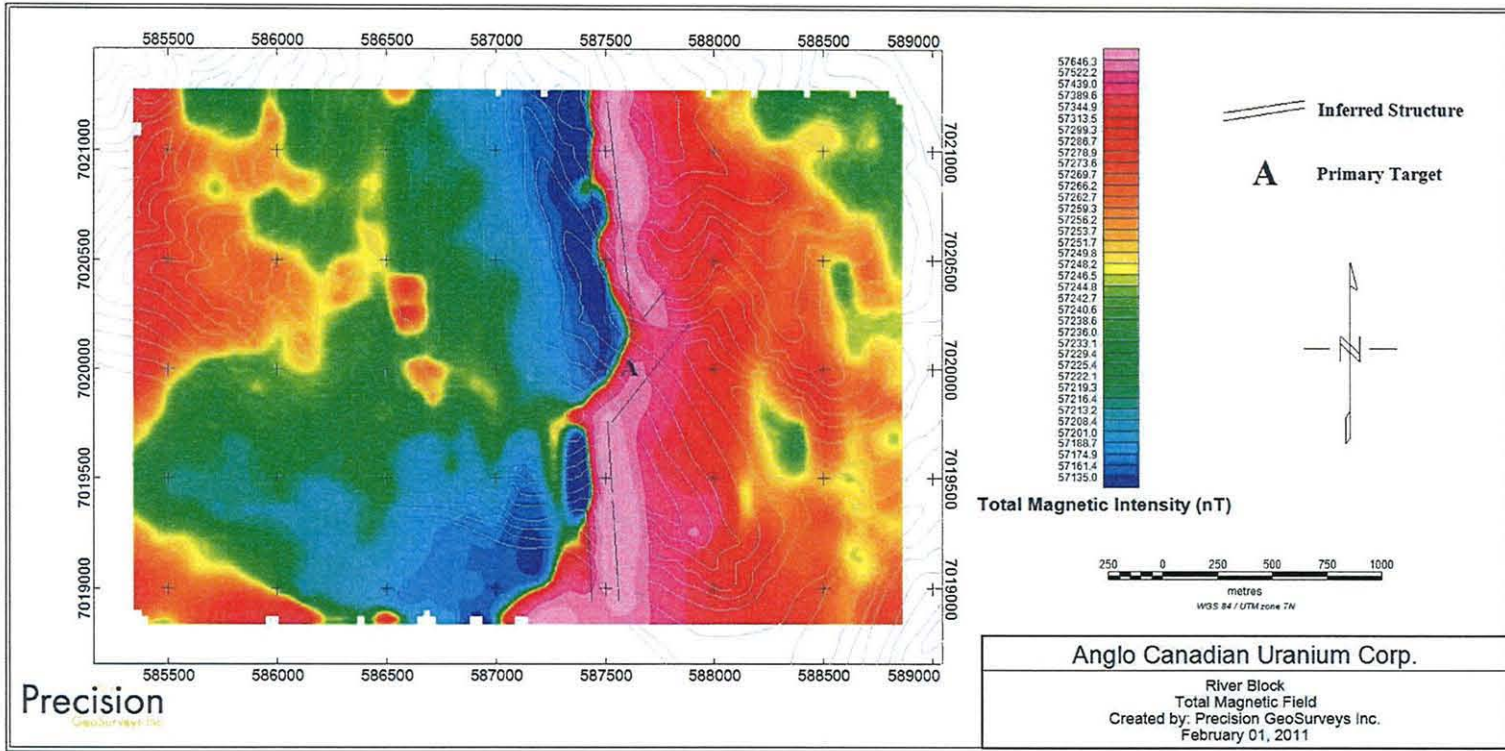
Map 2: Armenius block – Calculated Vertical Gradient.



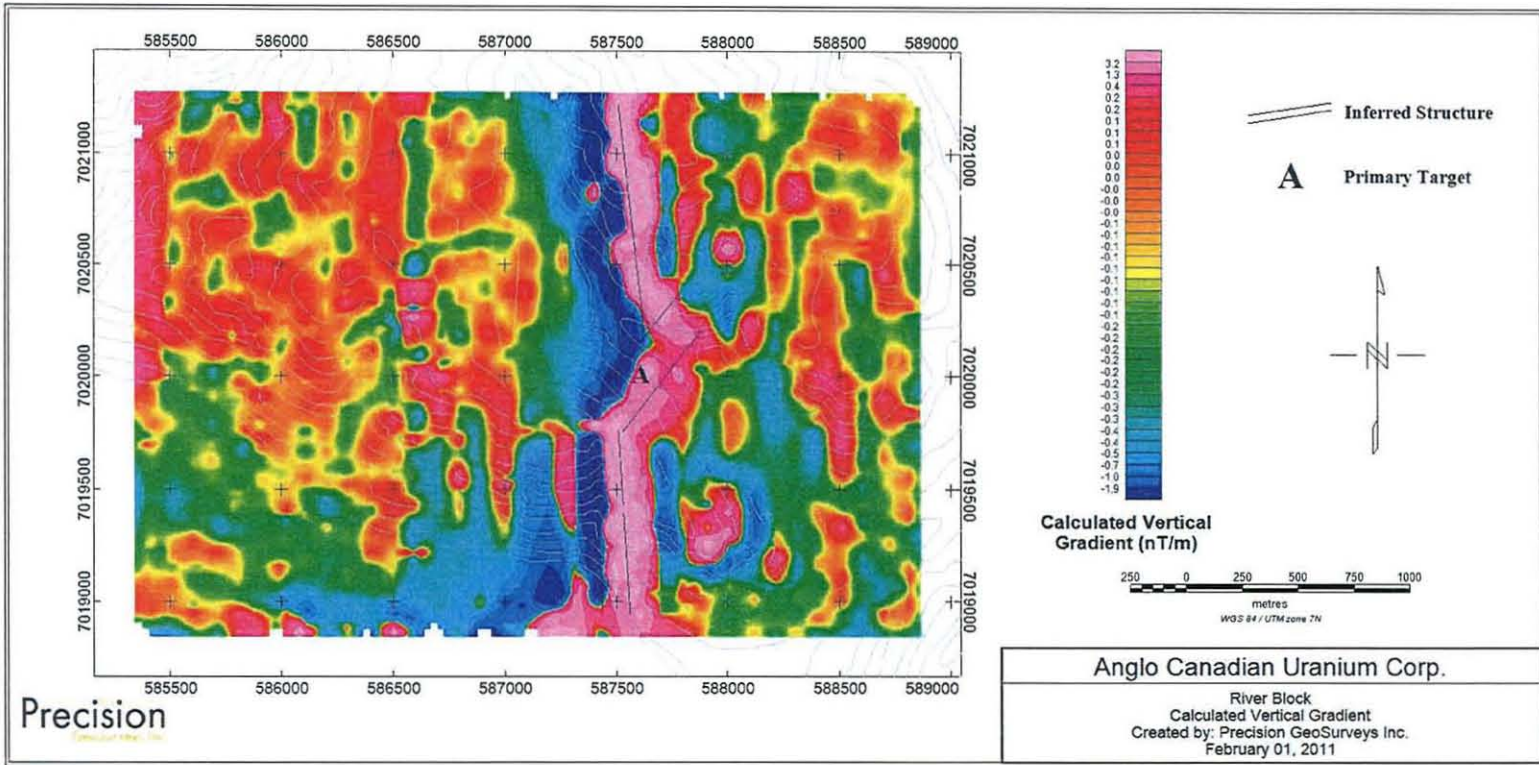
Map 3: Armenius block – 100 m Upward Continuation Difference.



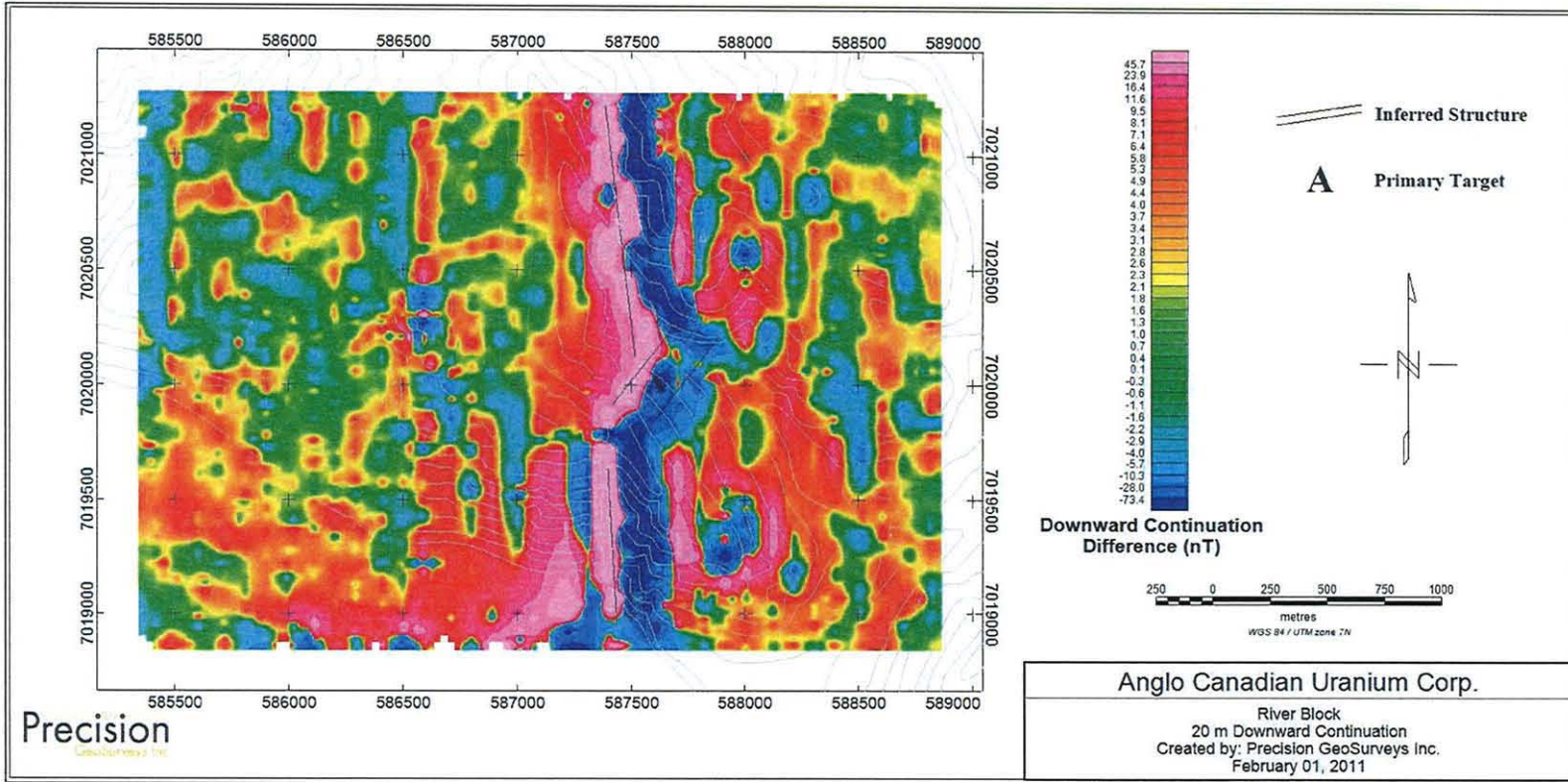
Map 4: Armenius block – Total Count.



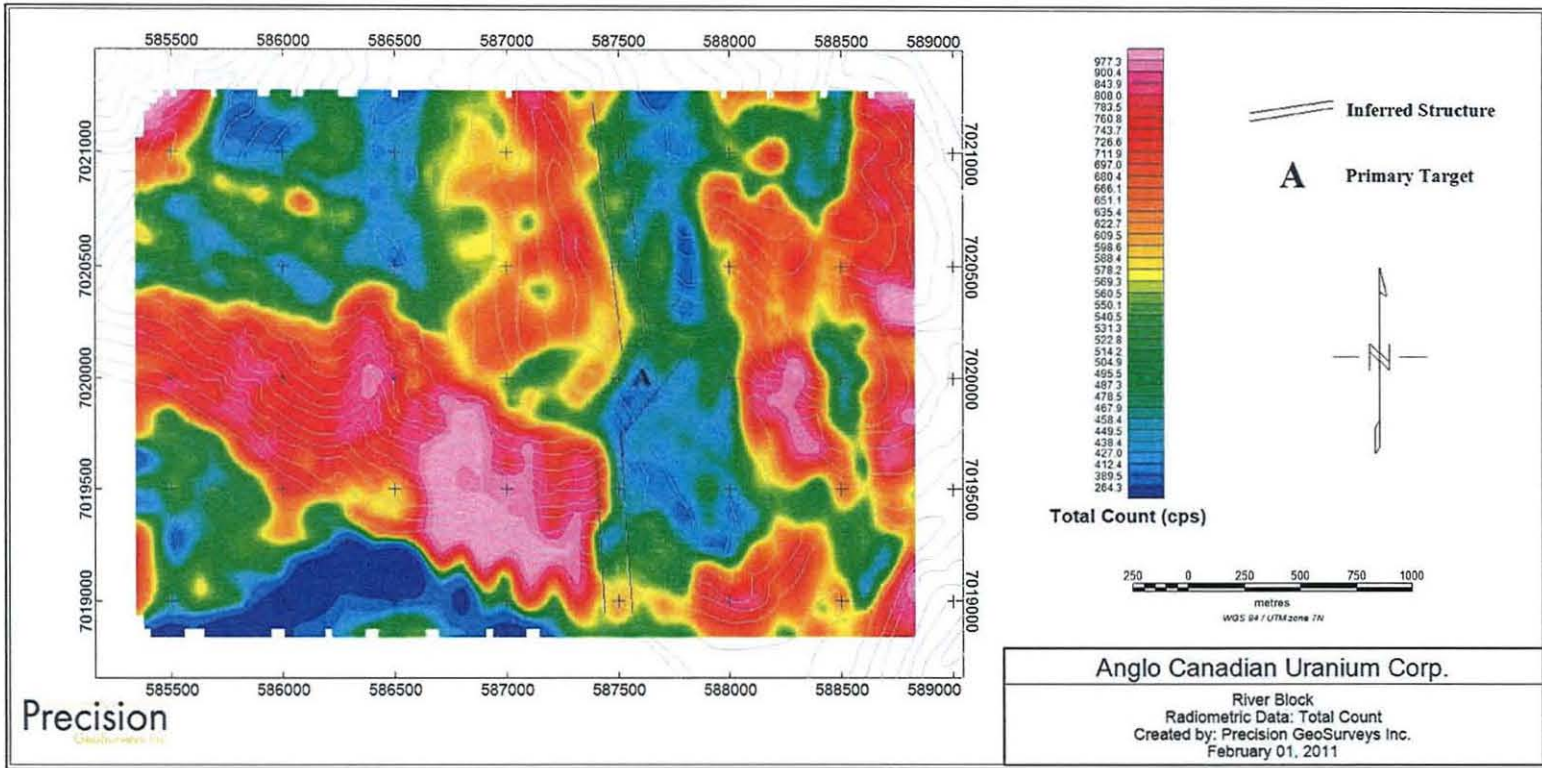
Map 5: River Block – Total Magnetic Field.



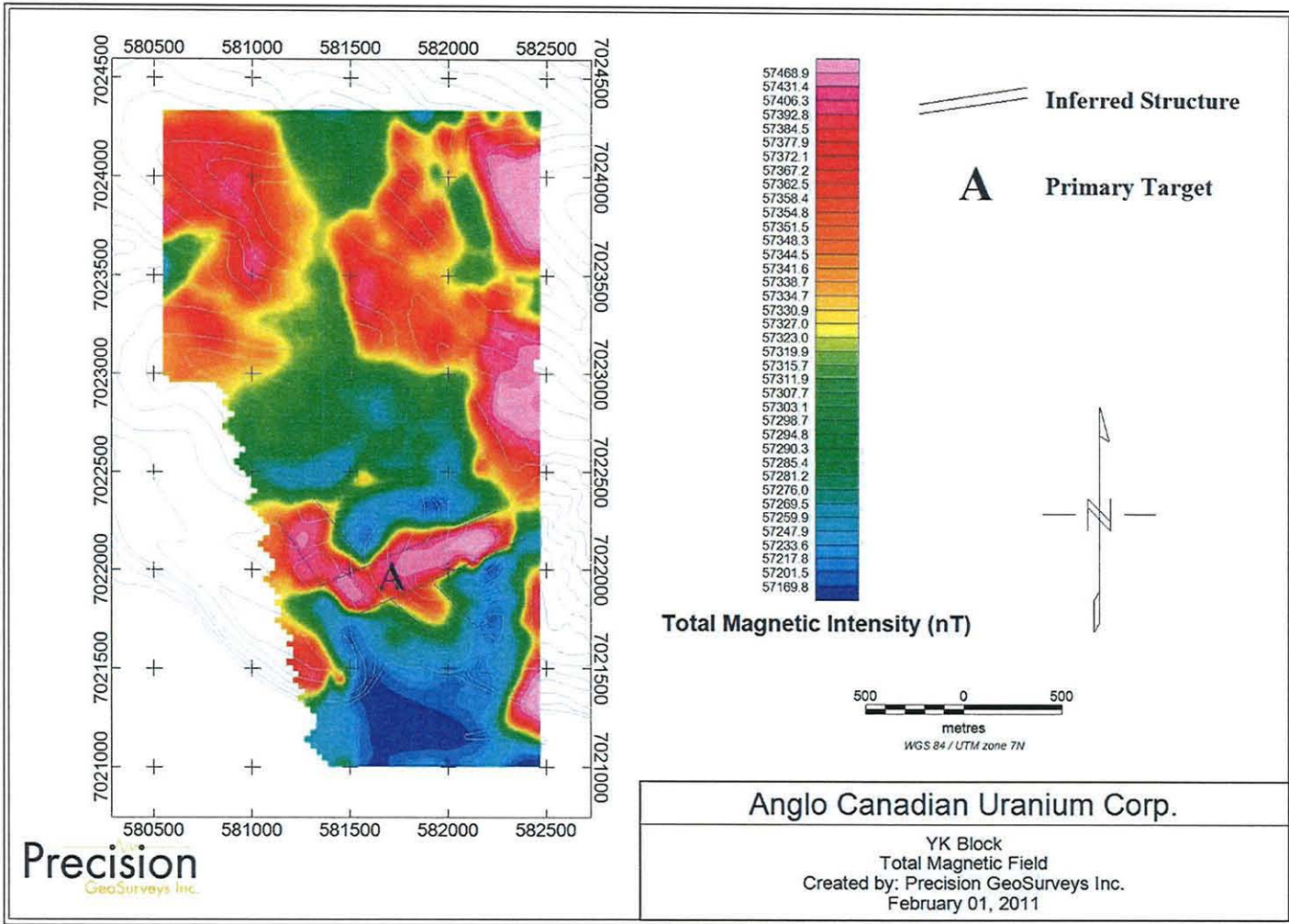
Map 6: River block – Calculated Vertical Gradient.



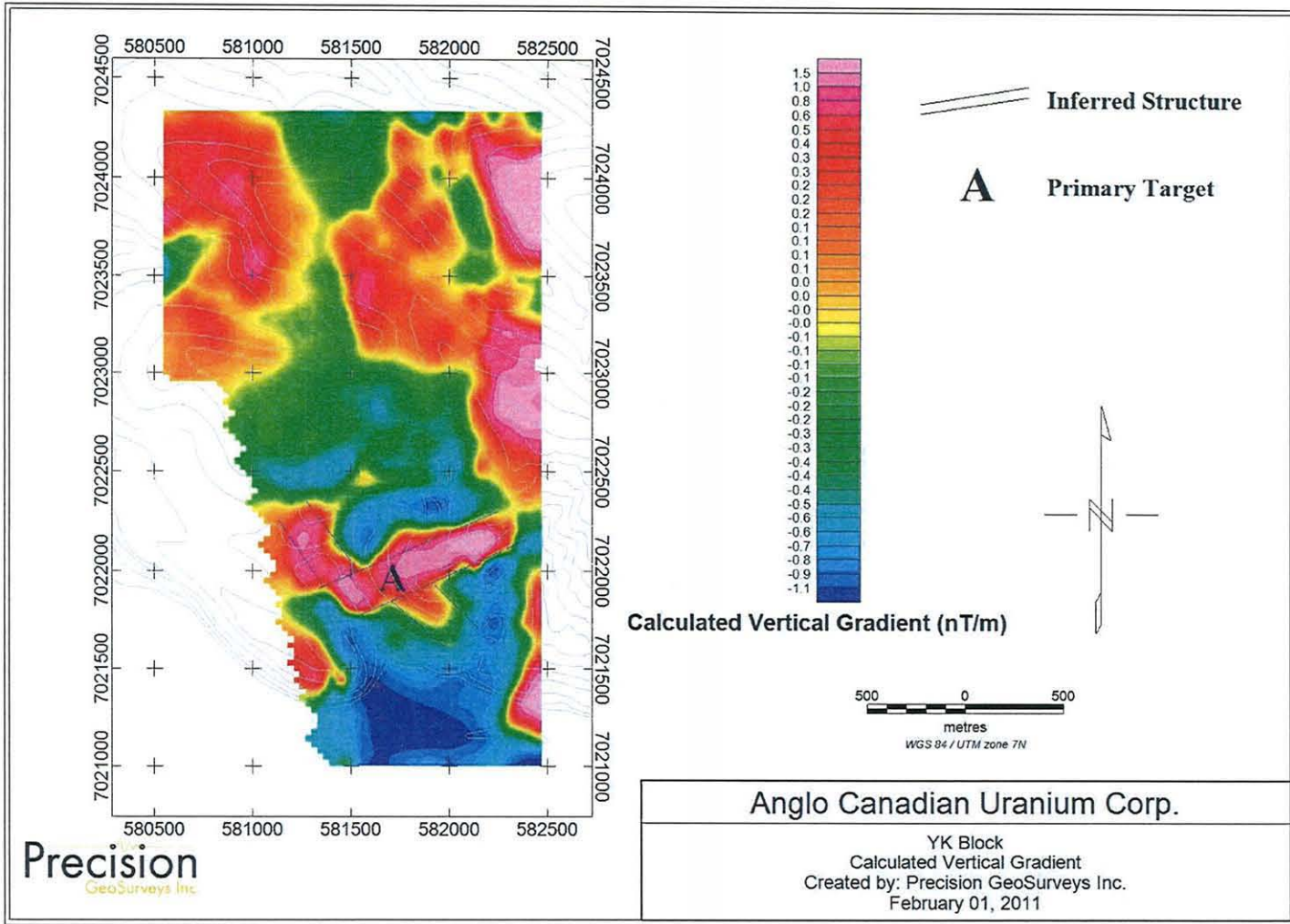
Map 7: River block - 20 m Downward Continuation Difference.



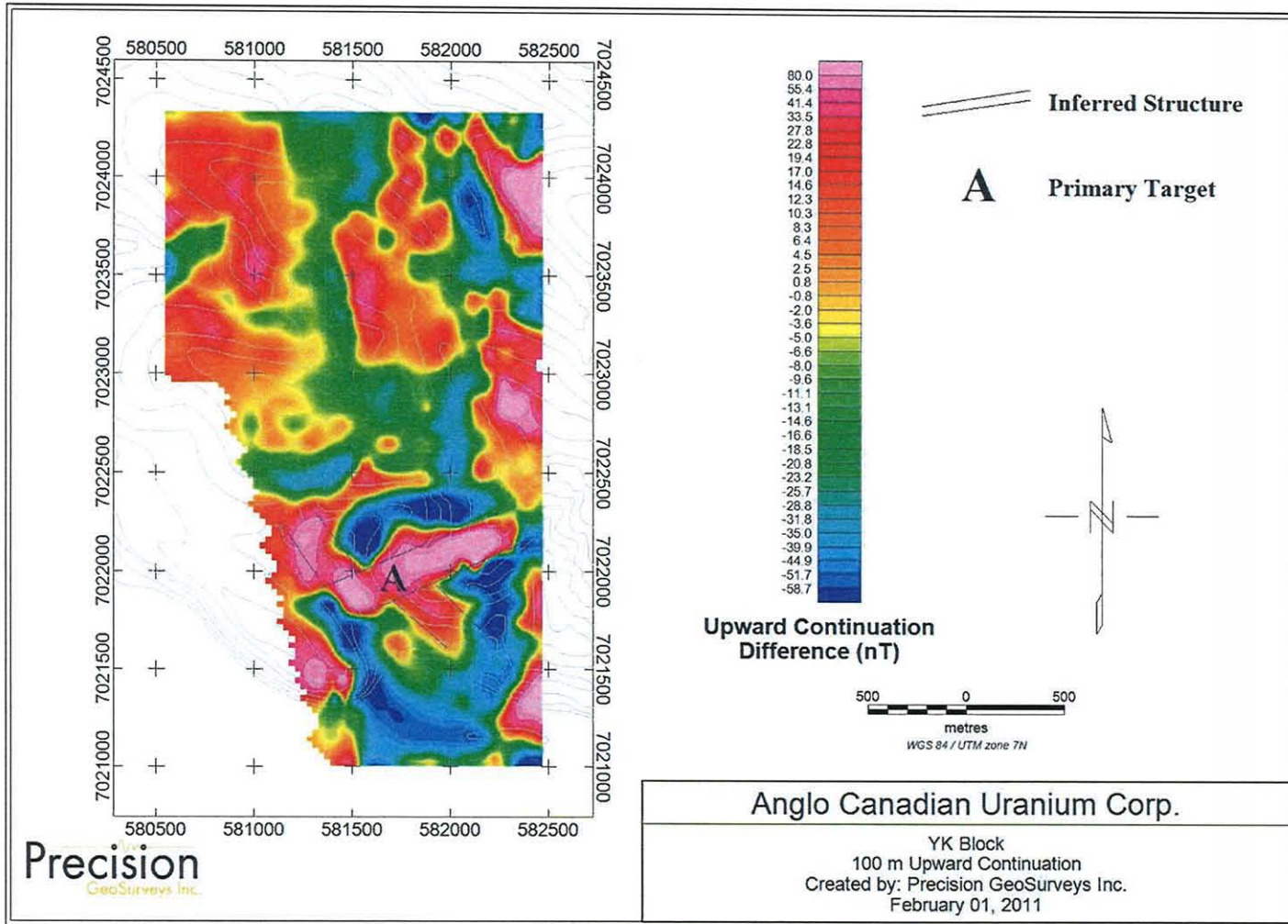
Map 8: River block - Total Count.



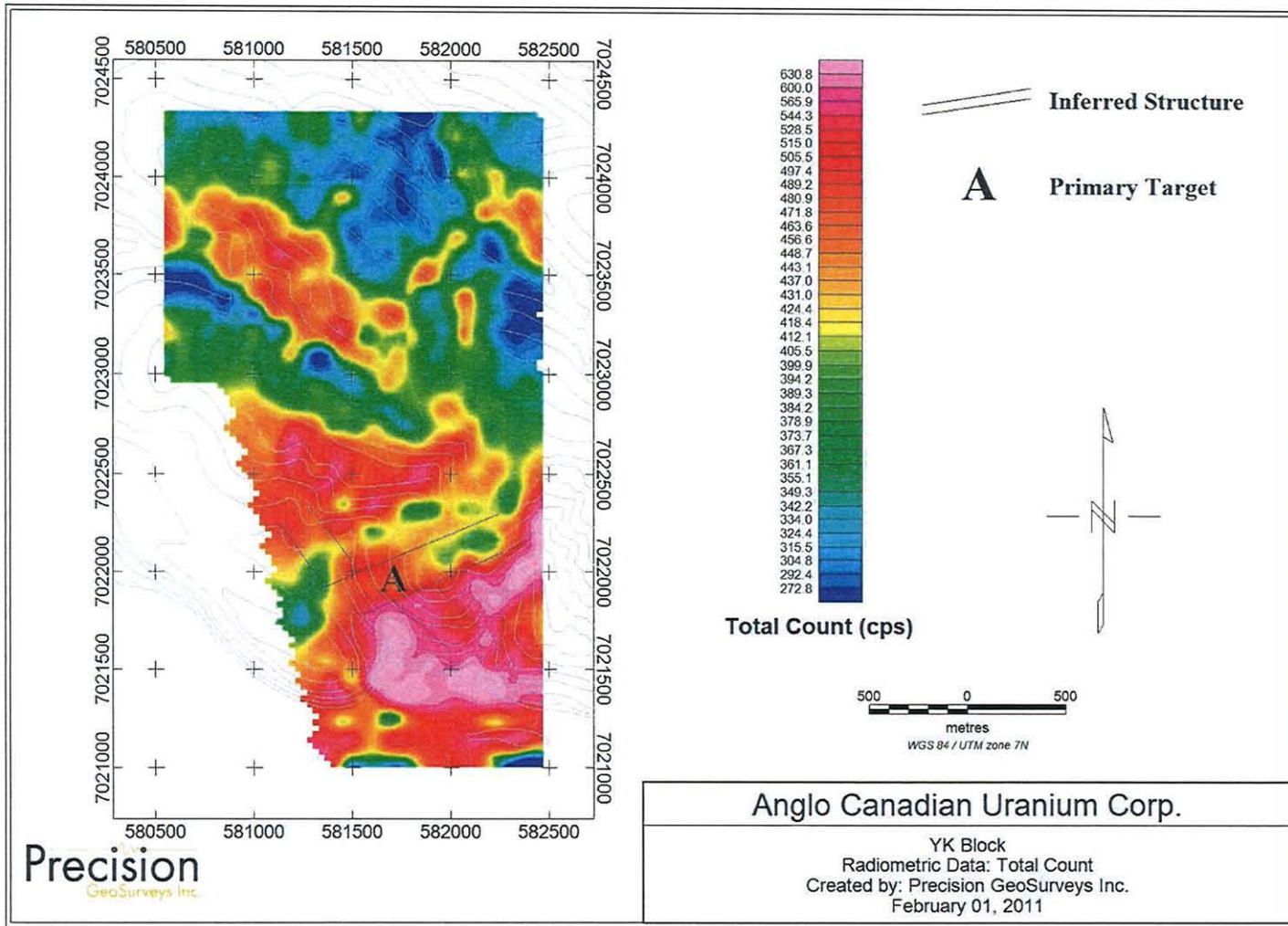
Map 9: YK block – Total Magnetic Field.



Map 10: YK block – Calculated Vertical Gradient.



Map 11: YK block – 100 m Upward Continuation Difference.



Map 12: YK block – Total Count.

Individual Property Geophysical Reports

Armenius

River

YK

Precision GeoSurveys Inc.

Airborne Geophysical Survey Report Armenius

Prepared for: Anglo-Canadian Uranium Corp.
October 13, 2010



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1.0 Introduction:

This report outlines the survey operations and data processing actions taken during the airborne geophysical survey flown at the Armenius Block. The airborne geophysical survey was flown by Precision GeoSurveys Inc. for Anglo-Canadian Uranium Corp. The geophysical survey, carried out on September 28, 2010 saw the acquisition of gamma ray spectrometer data and magnetic data.



Figure 1: Armenius Block area location relative to Dawson, YT.

The Armenius Block located south-east of Dawson, YT and north of Thistle Creek (Figure 1). It is located approximately 56.6 km south-east of Dawson, YT (Figure 2). The survey area itself is approximately 2 km by 2 km. A total of 51.8 line kilometers of radiometric and magnetic data were flown for this survey, this total includes tie lines and survey lines. The survey lines were flown at 100 meter spacings at a 40°/220° heading; the tie lines were flown at 800 meter spacings at a heading of 130°/310°.

2.2 Radiometric Data:

Radiometric surveys detect and map natural radioactive emanations, called gamma rays, from rocks and soils. All detectable gamma radiation from earth materials come from the natural decay products of three primary elements, uranium, thorium, and potassium. The purpose of radiometric surveys is to determine either the absolute or relative amounts of U, Th, and K in surface rocks and soils.

3.0 Survey Operations:

Precision GeoSurveys flew the Armenius Block using a Bell 206 BIII Jet Ranger (Figure 3). The survey lines were flown at a nominal line spacing of one hundred (100) meters and the tie lines were flown at eight hundred (800) meters spacing for both the spectrometer and magnetometer as they were acquired simultaneously. The average survey elevation was 27.1 meters vertically above ground. The experience of the pilot helped to ensure that the data quality objectives were met and that the safety of the flight crew was never compromised given the potential risks involved in airborne surveying.



Figure 3: Bell 206 Jet Ranger equipped with mag stinger for magnetic data acquisition.

The base of operations for this survey was the Gimlex Camp located approximately 36 km south-east of Dawson, YT. The Precision crew consisted of a total of three members:

Harmen Keyser – Pilot
Peter Barker – Operator
Jenny Poon – Geophysicist

The surveying was done on September 28, 2010. The survey was complete with no delays due to fog and raining weather conditions.

4.0 Equipment:

For this survey a magnetometer, spectrometer, base station, laser altimeter, and a data acquisition system were required to carry out the survey and collect quality, high resolution data.

4.1 AGIS:

The Airborne Geophysical Information System, AGIS, (Figure 4), is the main computer used in data recording, data synchronizing, displaying real-time QC data for the geophysical operator, and generation of navigation information for the pilot display system.



Figure 4: AGIS installed in the Bell 206.

The AGIS was manufactured by Pico Envirotec; therefore the system uses standardized Pico software and external sources are connected to the system via RS-232 serial communication cables. The AGIS data format is easily converted into Geosoft or ASCII file formats by a supplied conversion program called PEIView. Additional Pico software allows for post survey quality control procedures.

4.2 Spectrometer:

The IRIS, or Integrated Radiometric Information System is a fully integrated, gamma radiation detection system containing two downward facing NaI detecting crystals for a

total volume of 8.4 litres (figure 5). Real time data acquisition, navigation and communication tasks are integrated into a single unit that is installed in the rear of the aircraft as indicated below. Information such as total count, counts of various elements (K, U, Th, etc.), temperature, barometric pressure, atmospheric humidity and survey altitude can all be monitored on the AGIS screen for immediate QC. All the radiometric data are recorded at 1 Hz.



Figure 5: IRIS strapped into the cargo box of the helicopter.

4.3 Magnetometer:

The magnetometer used by Precision GeoSurveys is a Scintrex cesium vapor CS-3 magnetometer. The system was housed in a front mounted “stinger” (Figure 6). The CS-3 is a high sensitivity/low noise magnetometer with automatic hemisphere switching and a wide voltage range, the static noise rating for the unit is +/- 0.01 nT. On the AGIS screen the operator can view the raw magnetic response, the magnetic fourth difference and the survey altitude for immediate QC of the magnetic data. The magnetic data are recorded at 10 Hz. A magnetic compensator is also used to remove noise created by the movement of the helicopter as it pitches, rolls and yaws within the Earth’s geomagnetic field.



Figure 6: View of the mag stinger.

4.4 Base Station:

For monitoring and recording of the Earth’s diurnal magnetic field variation, Precision GeoSurveys uses a Scintrex proton precession Envi Pro magnetometer as its base station (Figure 7). This is mounted as close to the survey block as possible to give high, accurate magnetic field data. The Envi Pro base station, uses the well proven precession technology to sample at a rate of 0.5 Hz. A GPS is integrated with the system to record real GPS time that is used to correlate with the GPS time collected by the CS-3 magnetometer.



Figure 7: Scintrex Envi Pro proton precession magnetometer.

4.5 Laser Altimeter:

The pilot is provided with terrain guidance and clearance with an Acuity AccuRange Ar3000 laser altimeter (Figure 8). This is attached at the aft end of the magnetometer boom. The Ar3000 sensor is a time-of-flight sensor that measures distance by a rapidly-modulated and collimated laser beam that creates a dot on the target surface. The maximum range of the laser altimeter is 300 m off of natural surfaces with 90% reflectance and 3 km of special reflectors. Within the sensor unit, reflected signal light are collected by the lens and focused onto a photodiode. Through serial communications and analog outputs, the distance data is transmitted and collected by the AGIS at 10 Hz.



Figure 8: Acuity AccuRange AR3000 laser altimeter.

5.0 Data Processing:

After all the data are collected after a survey flight several procedures are undertaken to ensure that the data meet a high standard of quality. All data were processed using Pico Envirotec software and Geosoft Oasis Montaj geophysical processing software.

5.1 Magnetic Processing:

During aeromagnetic surveying noise is introduced to the magnetic data by the aircraft itself, movement in the aircraft (roll, pitch and yaw) and the permanent magnetization of the aircraft parts (engine and other ferric objects) are large contributing factors to this noise. To remove this noise a process called magnetic compensation is implemented. The magnetic compensation process starts with a test flight at the beginning of the survey where the aircraft flies in the four orthogonal headings required for the survey ($41^{\circ}/220^{\circ}$ and $124^{\circ}/309^{\circ}$ in the case of this survey) at an elevation where there is no ground effect in the magnetic data. In each heading roll, pitch and yaw maneuvers are performed by the pilot, these maneuvers provide the data that is required to calculate the necessary parameters for compensating the magnetic data. A computer program called PEIComp is used to create a model for each survey to remove the noise induced by aircraft movement; this model is applied to each survey flight so the data can be further processed.

A magnetic base station is set up before every flight to ensure that diurnal activity is recorded during the survey flights. Precision GeoSurveys uses a Geometrics 858 base station and sampled at 0.1Hz. Base station readings were reviewed at regular intervals to insure that no data were collected during periods with high diurnal activity (greater than 5 nT per minute). The base station was installed at a magnetically noise-free area, away from metallic items such as steel objects, vehicles, or power lines. The magnetic variations recorded from the stationary base station are removed from the magnetic data recorded in flight to ensure that the anomalies seen are real and not due to solar activity.

A lag correction was applied to the total magnetic field data to compensate for the lag in the recording system as the magnetometer sensor flies 6.45 m ahead of the GPS antenna. Following a lag correction of 1.7 seconds, a low-pass filter equivalent to 1 second was then applied to the lag corrected data.

5.2 Radiometric Processing:

Radiometric data are processed by windowing the full spectrum to create channels for U, K, Th and total count. A lag correction was also applied to the radiometric data as Pico compensator introduces a lag of 1.4 secs into the positional coordinates for the radiometric data. The data are then lightly filtered and corrected for survey altitude at standard temperature and pressure. Background radioactive contributions from the aircraft, cosmic radiation and atmospheric radon must also be removed. Finally the data are corrected by removing spectral overlap; this is done using the stripping ratios that have been calculated for the spectrometer by prior calibration, this breaks the corrected elemental values down into the apparent radioelement concentrations.

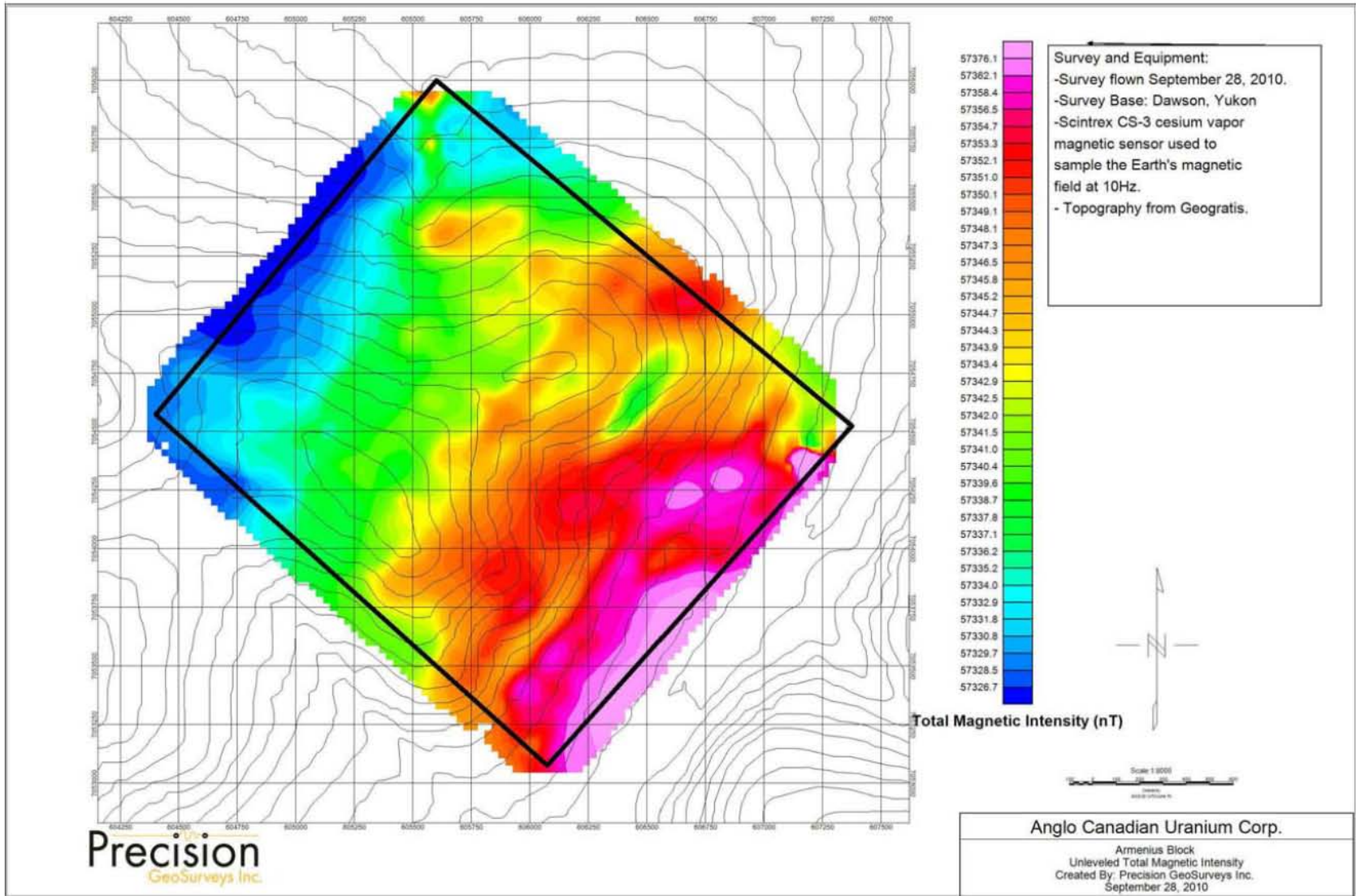
5.3 Final Data Format

Abbreviations used in the GDB files are as follows:

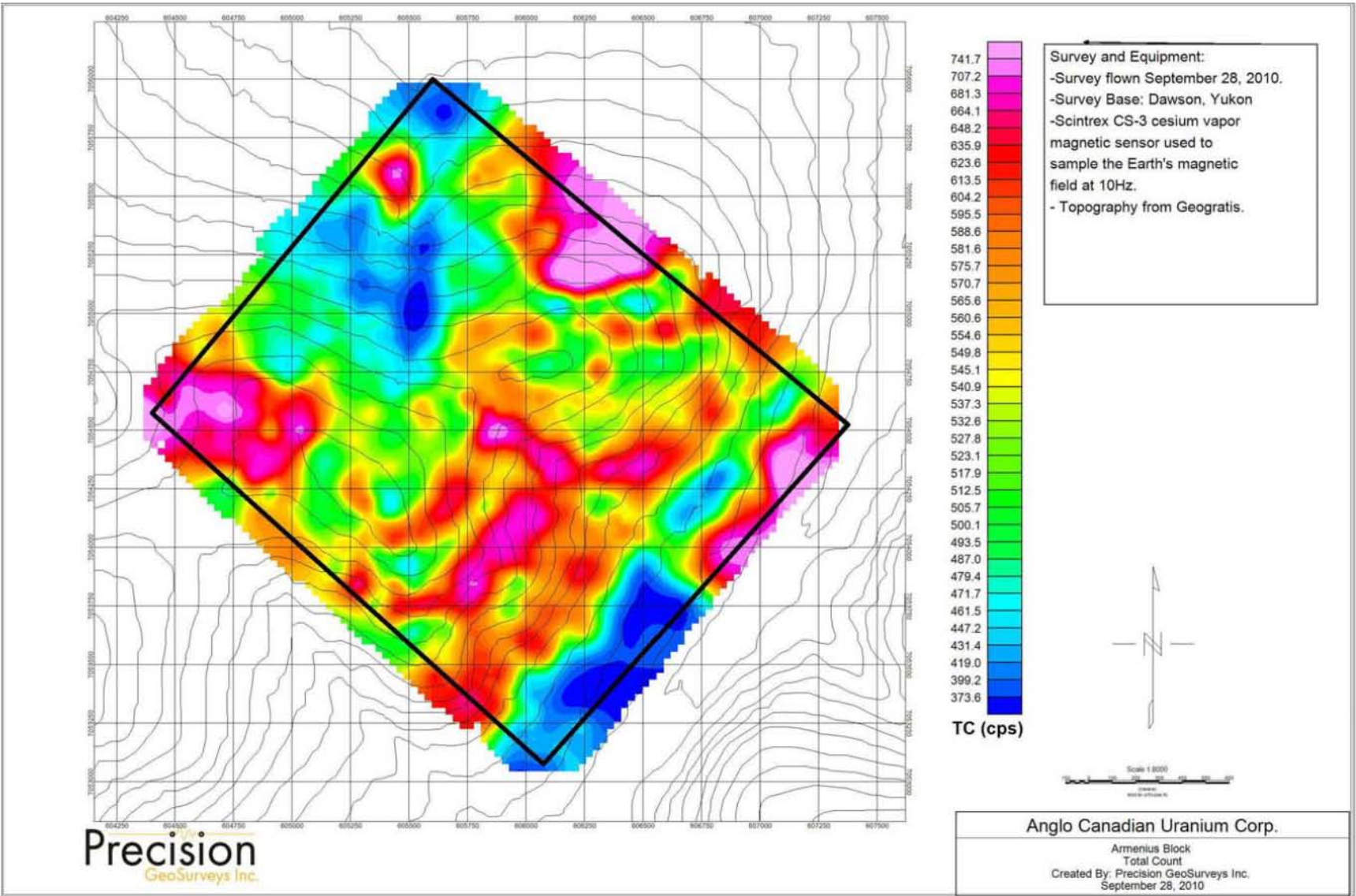
X – Easting in WGS84, UTM zone 7N
Y – Northing in WGS84, UTM zone 7N
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lalt – laser altimeter readings
dtm – digital terrain model
TC_cor – corrected total count
K_cor – corrected potassium
U_cor – corrected uranium
Th_cor – corrected thorium

The file format will be provided in two (2) formats, the first will be a .GDB file for use in Geosoft Oasis Montaj, the second format will be a .XYZ file, this is text file. Two separate files are provided for each format, one for the magnetics and one for the radiometrics.

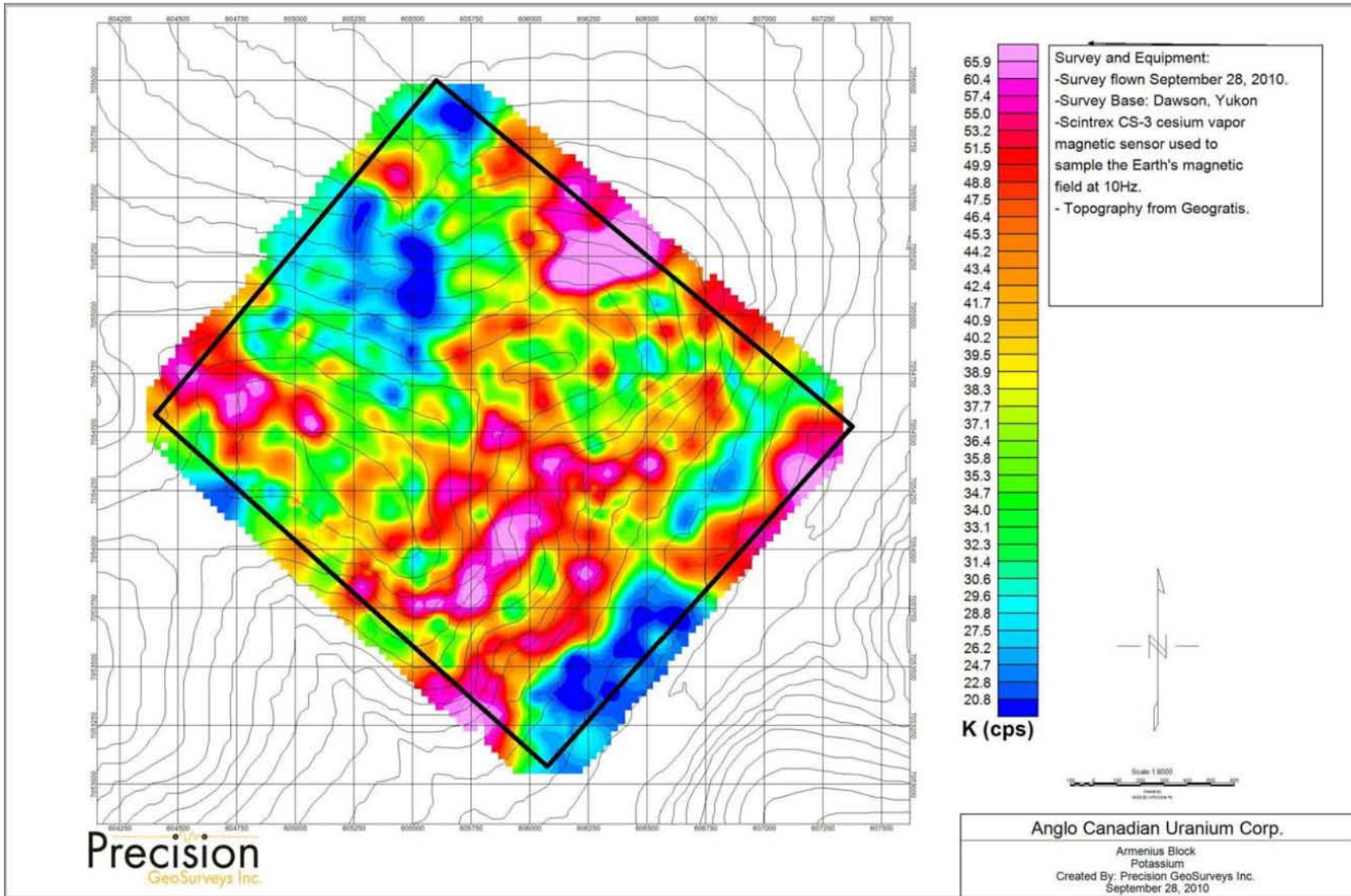
Appendix A
Maps



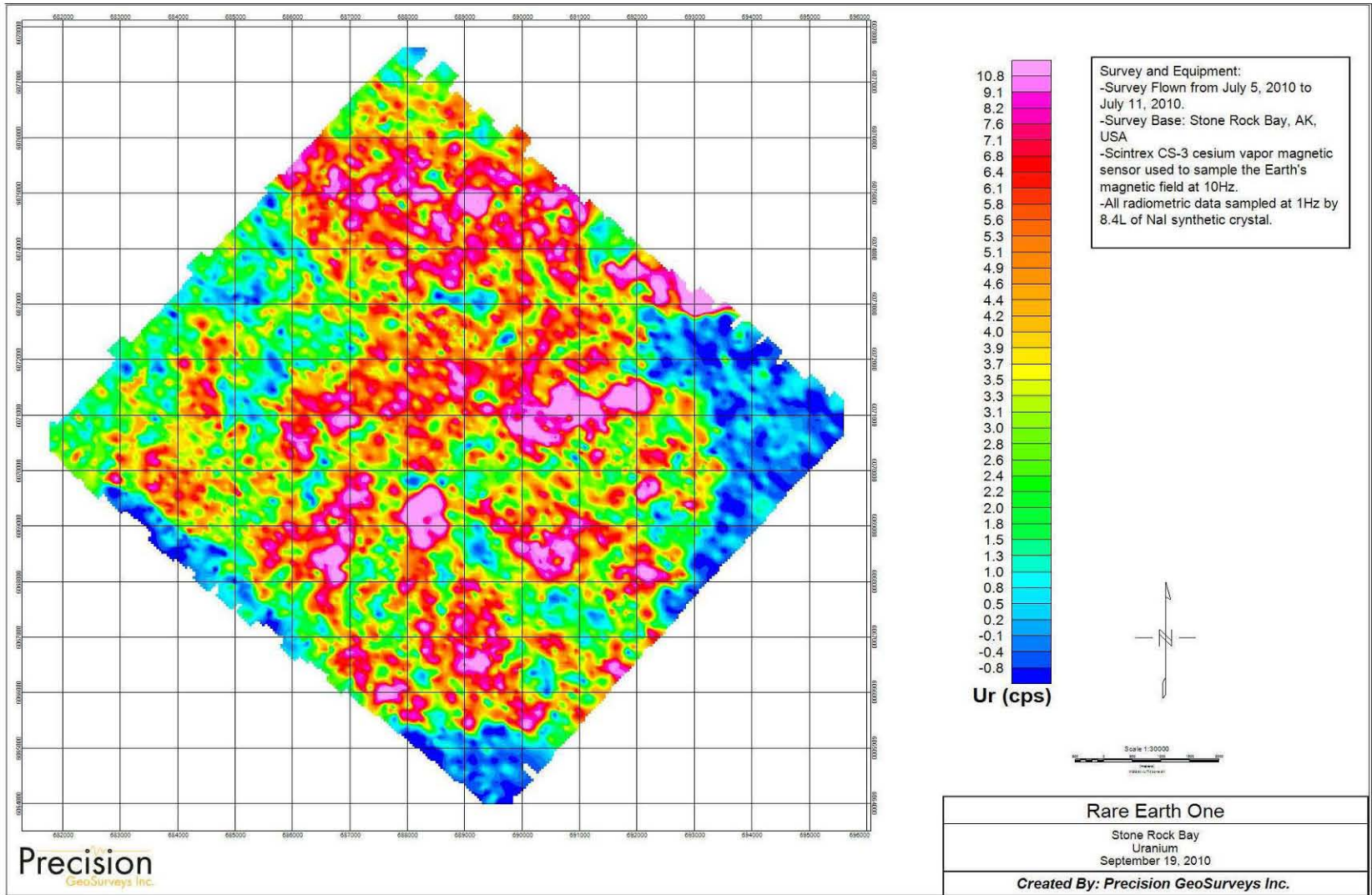
Map 1: Armenius block total magnetic intensity.



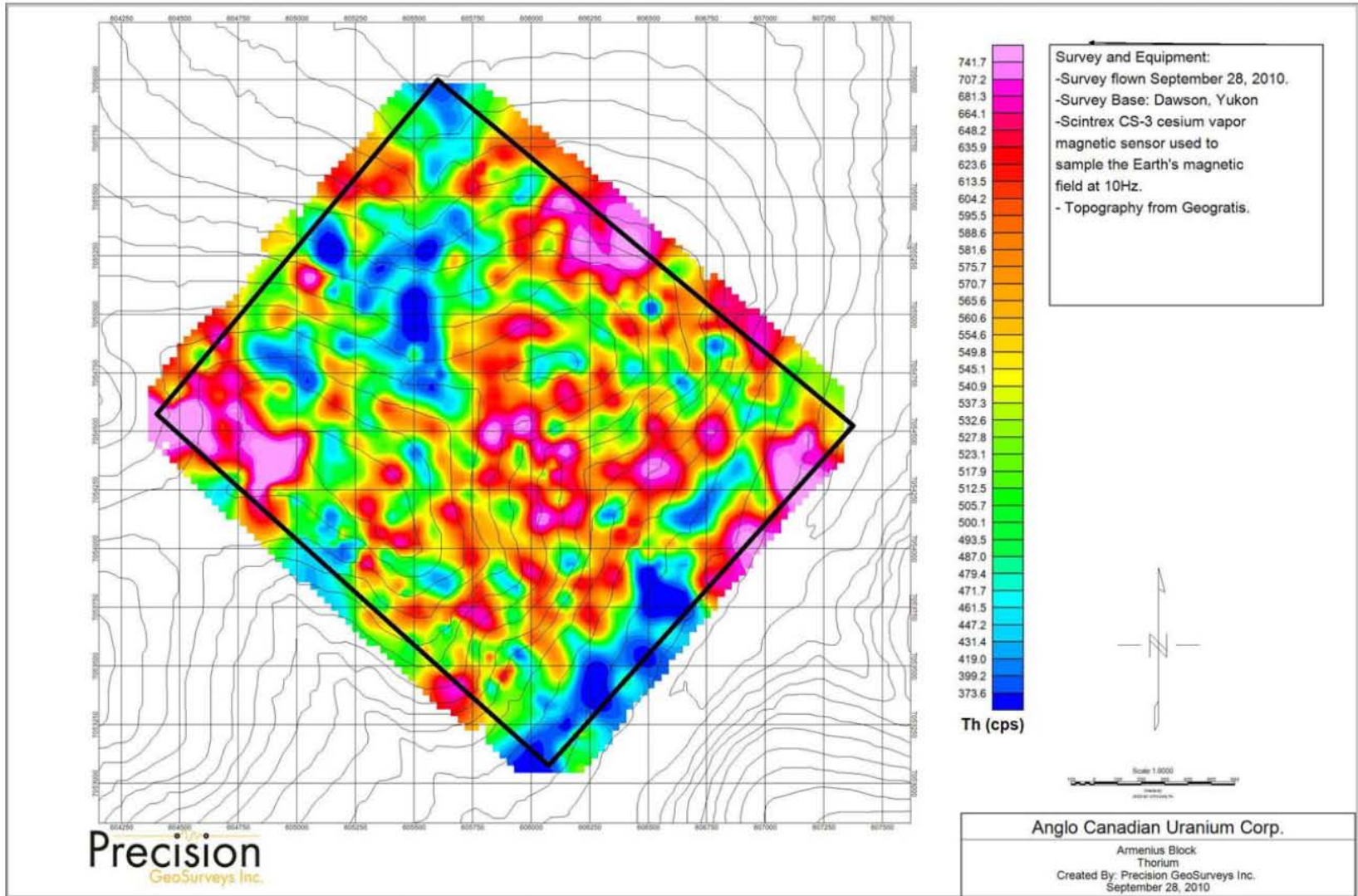
Map 2: Armenius block total count.



Map 3: Armenius block potassium.



Map 4: Armenius block uranium.



Map 5: Armenius block thorium.

Precision GeoSurveys Inc.

Airborne Geophysical Survey Report River

Prepared for: Anglo-Canadian Uranium Corp.
October 25, 2010



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1.0 Introduction:

This report outlines the survey operations and data processing actions taken during the airborne geophysical survey flown at the River Block. The airborne geophysical survey was flown by Precision GeoSurveys Inc. for Anglo-Canadian Uranium Corp. The geophysical survey, carried out on July 24, 2010 and on October 15, 2010 saw the acquisition of gamma ray spectrometer data and magnetic data.



Figure 1: River Block area location relative to the Yukon River and Thistle Creek.

The River Block is located east of the Yukon River and north of Thistle Creek (Figure 1). It is located approximately 83.6 km south-east of Dawson, YT (Figure 2). The survey area itself is approximately 2.5 km by 4 km. A total of 91.7 line kilometers of radiometric and magnetic data were flown for this survey, this total includes tie lines and survey lines. The survey lines were flown at 100 meter spacings at a 000°/180° heading; the tie lines were flown at 1 km spacings at a heading of 90°/270°.



Figure 2: Survey and tie lines outlined in yellow and the boundary in red.

2.0 Geophysical Data:

Geophysical data are collected in a variety of ways and are used to aid in the exploration and determination of geology, mineral deposits, oil and gas deposits, contaminated land sites and UXO detection.

For the purposes of this survey, airborne gamma ray spectrometer and magnetic data were collected to serve in the exploration of the River Block which contains rocks that host a suite of a large quartz deposit. Data collected on separate days from the River Block will be merged into one dataset.

2.1 Magnetic Data:

Magnetic surveying is probably the most common airborne survey type to be conducted for both mineral and hydrocarbon exploration. The type of survey specifications, instrumentation, and interpretation procedures, depend on the objectives of the survey. Typically magnetic surveys are performed for:

1. Geological Mapping to aid in mapping lithology, structure and alteration in both hard rock environments and for mapping basement lithology, structure and alteration in sedimentary basins or for regional tectonic studies.
2. Depth to Basement mapping for exploration in sedimentary basins or mineralization associated with the basement surface.

2.2 Radiometric Data:

Radiometric surveys detect and map natural radioactive emanations, called gamma rays, from rocks and soils. All detectable gamma radiation from earth materials come from the natural decay products of three primary elements, uranium, thorium, and potassium. The purpose of radiometric surveys is to determine either the absolute or relative amounts of U, Th, and K in surface rocks and soils.

3.0 Survey Operations:

Precision GeoSurveys flew the River Block using a Bell 206 BIII Jet Ranger (Figure 3). The survey lines were flown at a nominal line spacing of one hundred (100) meters and the tie lines were flown at 1 km spacing for both the spectrometer and magnetometer as they were acquired simultaneously. The average survey elevation was 39.1 meters vertically above ground. The experience of the pilot helped to ensure that the data quality objectives were met and that the safety of the flight crew was never compromised given the potential risks involved in airborne surveying.



Figure 3: Bell 206 Jet Ranger equipped with mag stinger for magnetic data acquisition.

The base of operations for this survey was the Gimlex Camp located approximately 36 km south-east of Dawson, YT. The Precision crew consisted of a total of three members:

Ola Vaage– Pilot

Peter Barker – Operator

Jenny Poon – On-site Geophysicist

The first day of survey took place on July 24, 2010 and the last day of surveying was October 15, 2010. The survey was complete with ground snow cover conditions and fogging conditions along the river.

4.0 Equipment:

For this survey a magnetometer, spectrometer, base station, laser altimeter, and a data acquisition system were required to carry out the survey and collect quality, high resolution data.

4.1 AGIS:

The Airborne Geophysical Information System, AGIS, (Figure 4), is the main computer used in data recording, data synchronizing, displaying real-time QC data for the geophysical operator, and generation of navigation information for the pilot display system.



Figure 4: AGIS installed in the Bell 206.

The AGIS was manufactured by Pico Envirotec; therefore the system uses standardized Pico software and external sources are connected to the system via RS-232 serial communication cables. The AGIS data format is easily converted into Geosoft or ASCII file formats by a supplied conversion program called PEIView. Additional Pico software allows for post survey quality control procedures.

4.2 Spectrometer:

The IRIS, or Integrated Radiometric Information System is a fully integrated, gamma radiation detection system containing two downward facing NaI detecting crystals for a total volume of 8.4 litres (figure 5). Real time data acquisition, navigation and communication tasks are integrated into a single unit that is installed in the rear of the aircraft as indicated below. Information such as total count, counts of various elements (K, U, Th, etc.), temperature, barometric pressure, atmospheric humidity and survey altitude can all be monitored on the AGIS screen for immediate QC. All the radiometric data are recorded at 1 Hz.



Figure 5: IRIS strapped into the cargo box of the helicopter.

4.3 Magnetometer:

The magnetometer used by Precision GeoSurveys is a Scintrex cesium vapor CS-3 magnetometer. The system was housed in a front mounted “stinger” (Figure 6). The CS-3 is a high sensitivity/low noise magnetometer with automatic hemisphere switching and a wide voltage range, the static noise rating for the unit is +/- 0.01 nT. On the AGIS screen the operator can view the raw magnetic response, the magnetic fourth difference and the survey altitude for immediate QC of the magnetic data. The magnetic data are recorded at 10 Hz. A magnetic compensator is also used to remove noise created by the movement of the helicopter as it pitches, rolls and yaws within the Earth’s geomagnetic field.



Figure 6: View of the mag stinger.

4.4 Base Station:

For monitoring and recording of the Earth's diurnal magnetic field variation, Precision GeoSurveys uses a Scintrex proton precession Envi Pro magnetometer as its base station (Figure 7). This is mounted as close to the survey block as possible to give high, accurate magnetic field data. The Envi Pro base station, uses the well proven precession technology to sample at a rate of 0.5 Hz. A GPS is integrated with the system to record real GPS time that is used to correlate with the GPS time collected by the CS-3 magnetometer.



Figure 7: Scintrex Envi Pro proton precession magnetometer.

4.5 Laser Altimeter:

The pilot is provided with terrain guidance and clearance with an Acuity AccuRange Ar3000 laser altimeter (Figure 8). This is attached at the aft end of the magnetometer boom. The Ar3000 sensor is a time-of-flight sensor that measures distance by a rapidly-modulated and collimated laser beam that creates a dot on the target surface. The maximum range of the laser altimeter is 300 m off of natural surfaces with 90% reflectance and 3 km of special reflectors. Within the sensor unit, reflected signal light

are collected by the lens and focused onto a photodiode. Through serial communications and analog outputs, the distance data is transmitted and collected by the AGIS at 10 Hz.



Figure 8: Acuity AccuRange AR3000 laser altimeter.

5.0 Data Processing:

After all the data are collected after a survey flight several procedures are undertaken to ensure that the data meet a high standard of quality. All data were processed using Pico Envirotec software and Geosoft Oasis Montaj geophysical processing software.

5.1 Magnetic Processing:

During aeromagnetic surveying noise is introduced to the magnetic data by the aircraft itself, movement in the aircraft (roll, pitch and yaw) and the permanent magnetization of the aircraft parts (engine and other ferric objects) are large contributing factors to this noise. To remove this noise a process called magnetic compensation is implemented. The magnetic compensation process starts with a test flight at the beginning of the survey where the aircraft flies in the four orthogonal headings required for the survey (000°/152° and 080°/217° in the case of this survey) at an elevation where there is no ground effect in the magnetic data. In each heading roll, pitch and yaw maneuvers are performed by the pilot, these maneuvers provide the data that is required to calculate the necessary parameters for compensating the magnetic data. A computer program called PEIComp is used to create a model for each survey to remove the noise induced by aircraft movement; this model is applied to each survey flight so the data can be further processed.

A magnetic base station is set up before every flight to ensure that diurnal activity is recorded during the survey flights. Precision GeoSurveys uses a Geometrics 858 base station and sampled at 0.1Hz. Base station readings were reviewed at regular intervals to insure that no data were collected during periods with high diurnal activity (greater than 5 nT per minute). The base station was installed at a magnetically noise-free area, away from metallic items such as steel objects, vehicles, or power lines. The magnetic

variations recorded from the stationary base station are removed from the magnetic data recorded in flight to ensure that the anomalies seen are real and not due to solar activity.

A lag correction of 1.7 secs was applied to the total magnetic field data to compensate for the lag in the recording system as the magnetometer sensor flies 6.45 m ahead of the GPS antenna.

5.2 Radiometric Processing:

Radiometric data are processed by windowing the full spectrum to create channels for U, K, Th and total count. A lag correction was also applied to the radiometric data as Pico compensator introduces a lag of 1.4 secs into the positional coordinates for the radiometric data. The data are then lightly filtered and corrected for survey altitude at standard temperature and pressure. Background radioactive contributions from the aircraft, cosmic radiation and atmospheric radon must also be removed. Finally the data are corrected by removing spectral overlap; this is done using the stripping ratios that have been calculated for the spectrometer by prior calibration, this breaks the corrected elemental values down into the apparent radioelement concentrations.

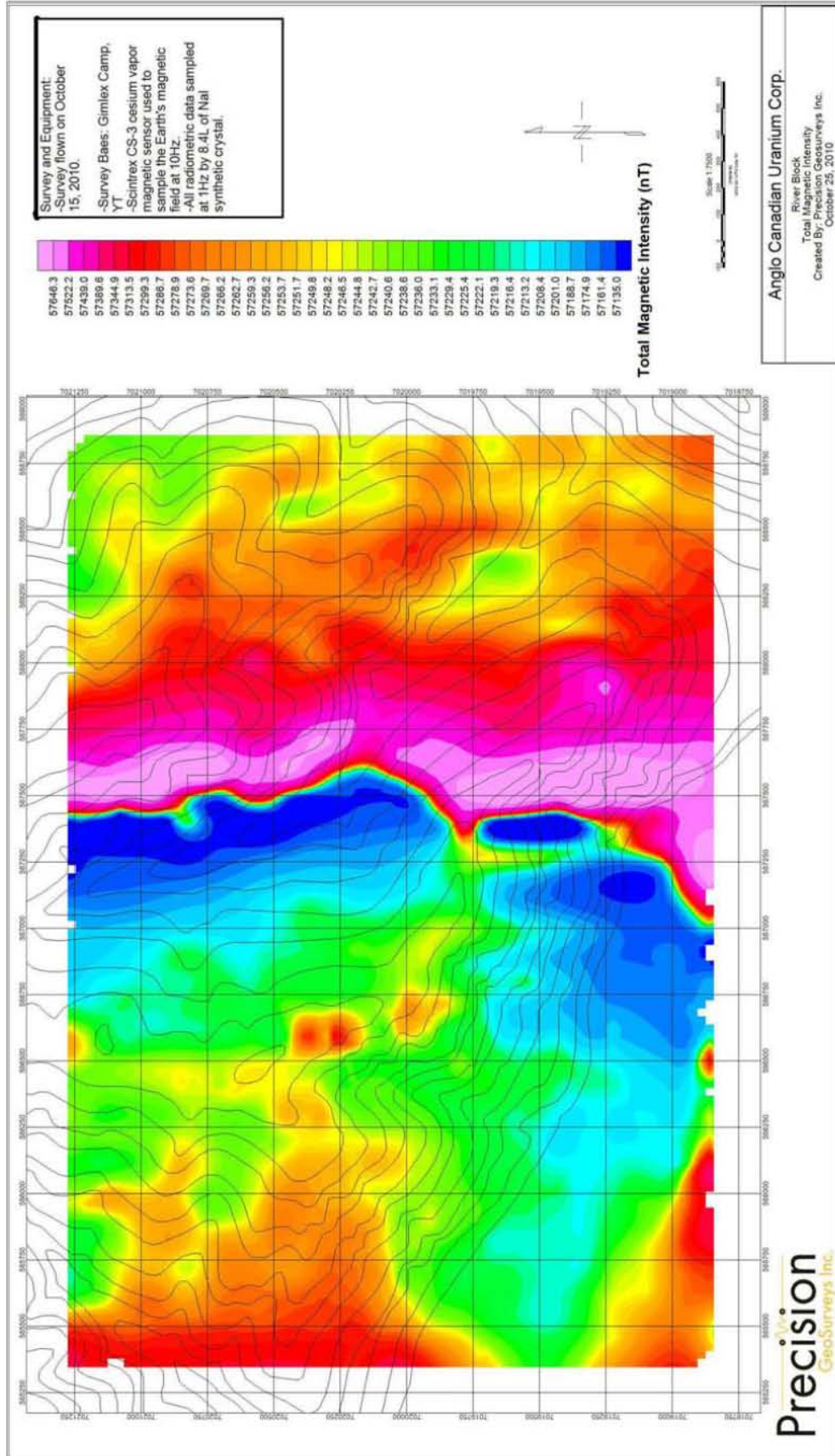
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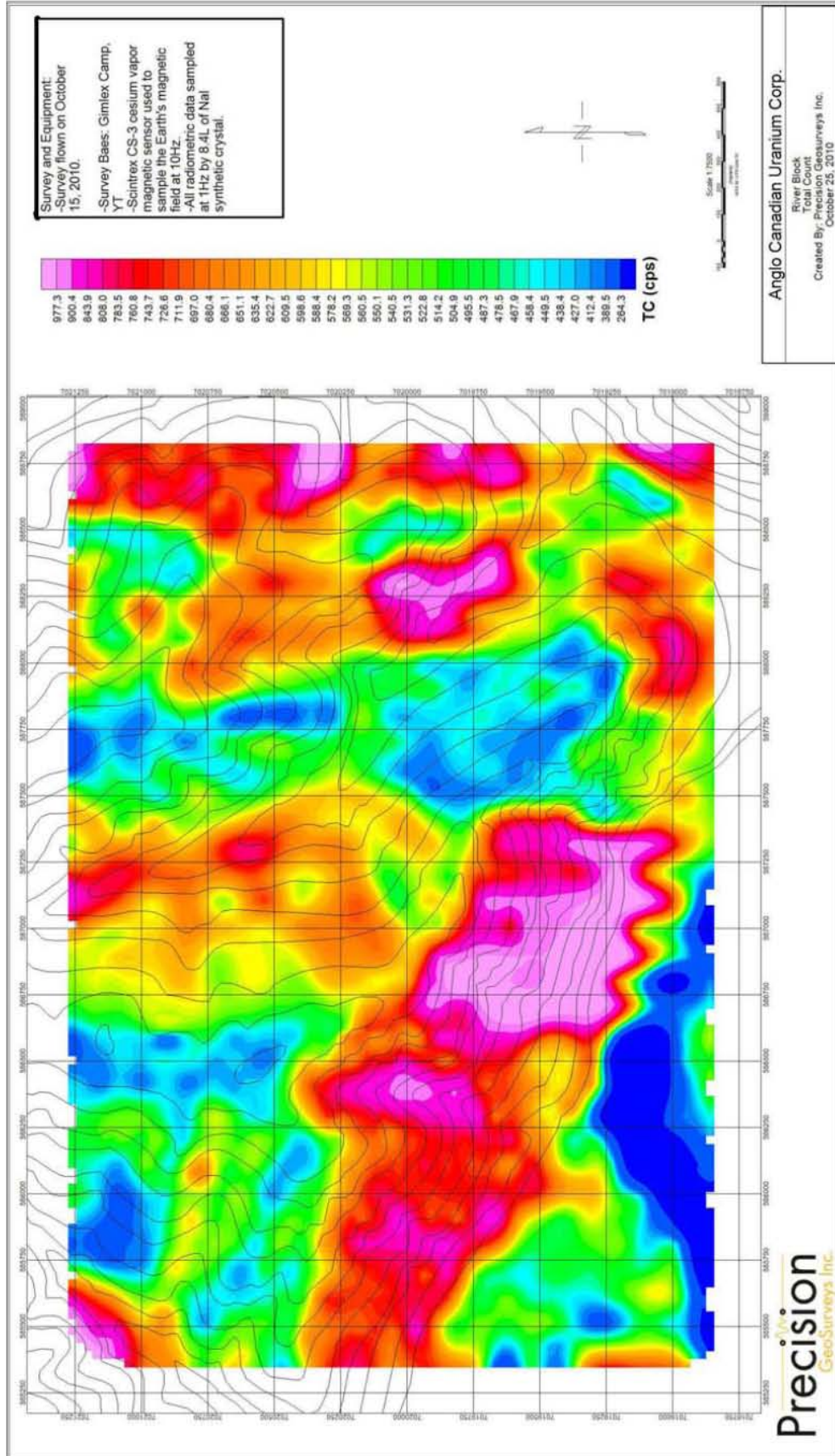
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TC_cor – corrected total count
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U_cor – corrected uranium
Th_cor – corrected thorium

The file format will be provided in two (2) formats, the first will be a .GDB file for use in Geosoft Oasis Montaj, the second format will be a .XYZ file, this is text file. Two separate files are provided for each format, one for the magnetics and one for the radiometrics.

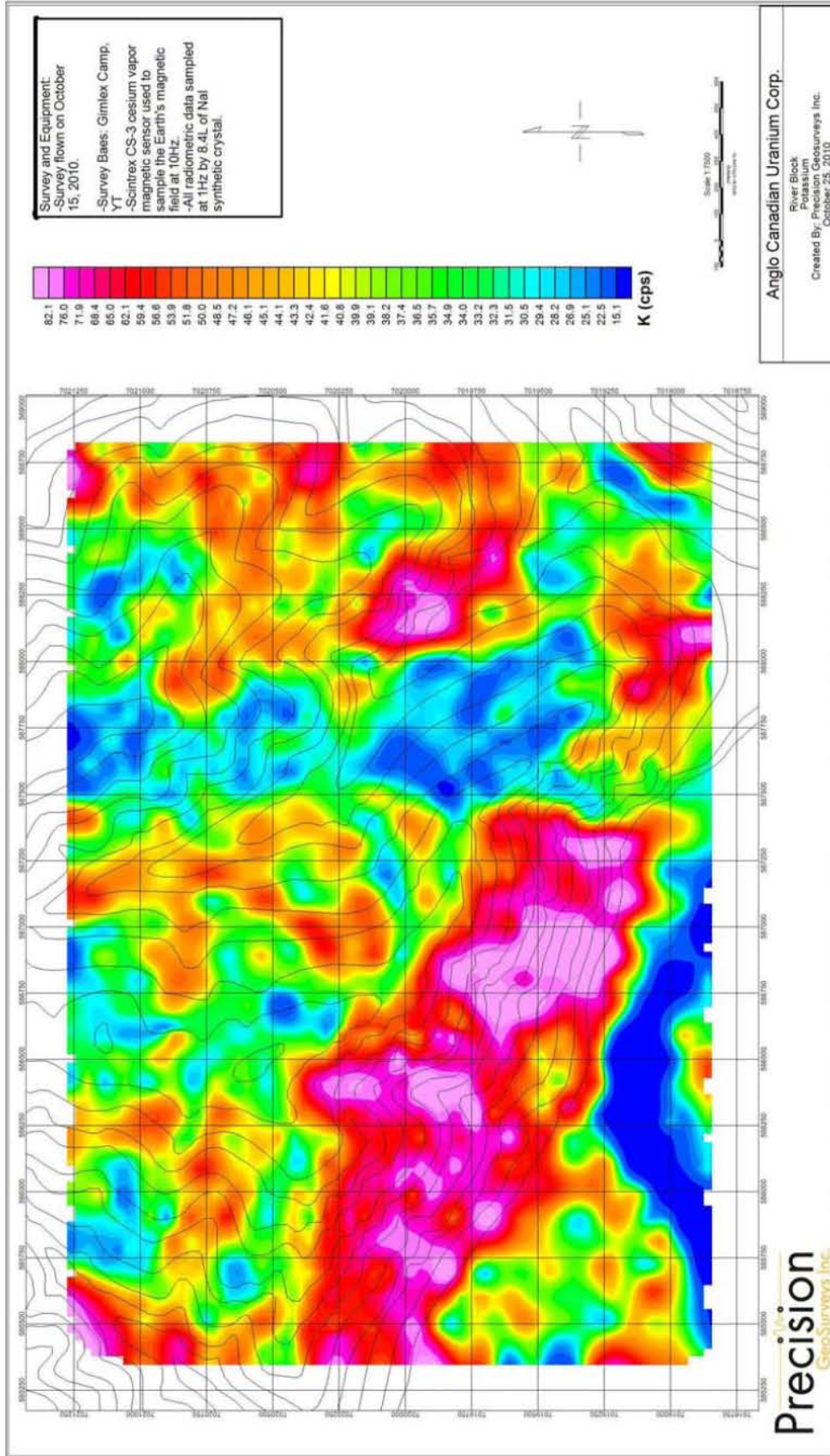
Appendix A
Maps



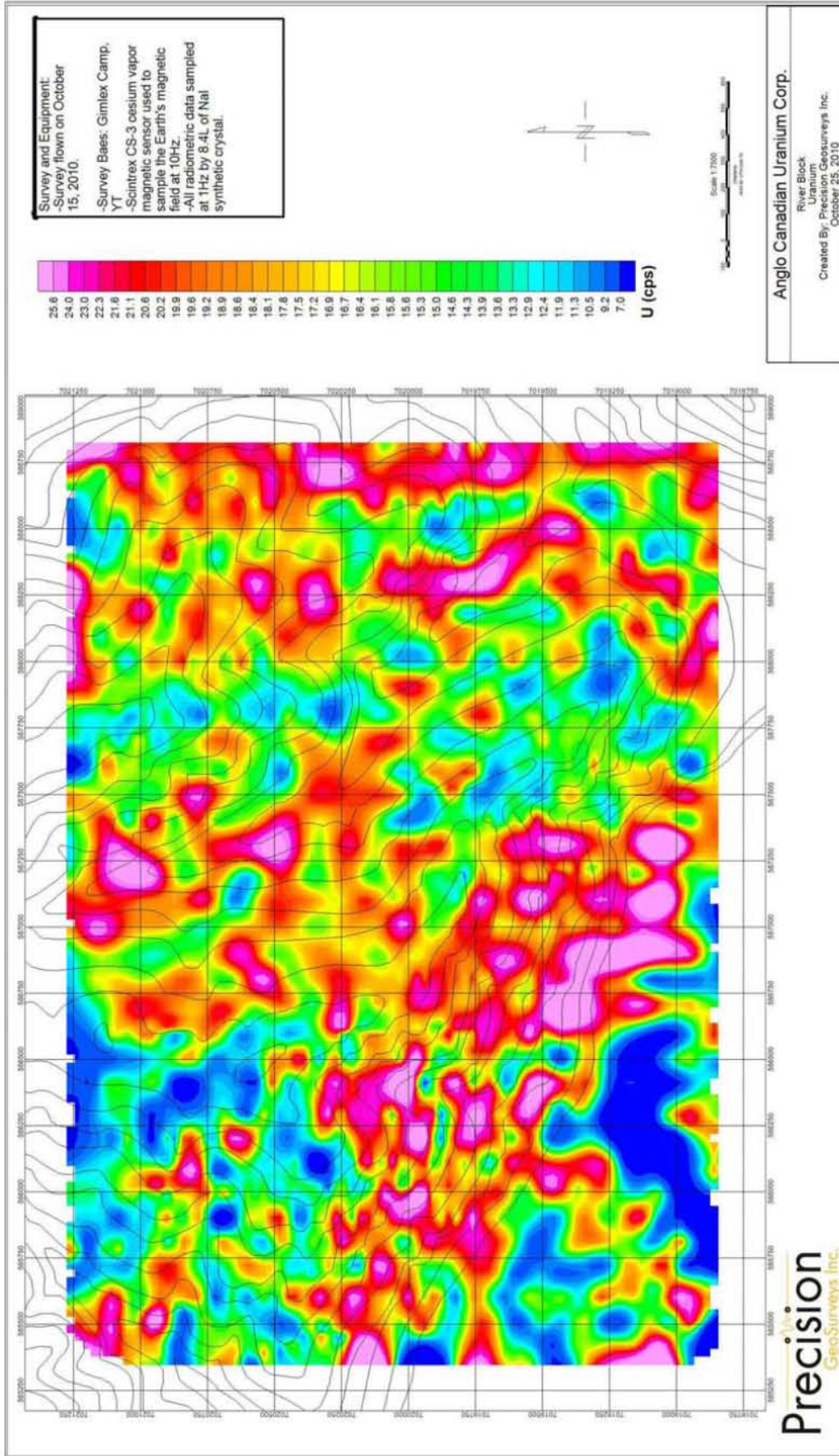
Map 1: River block total magnetic intensity.



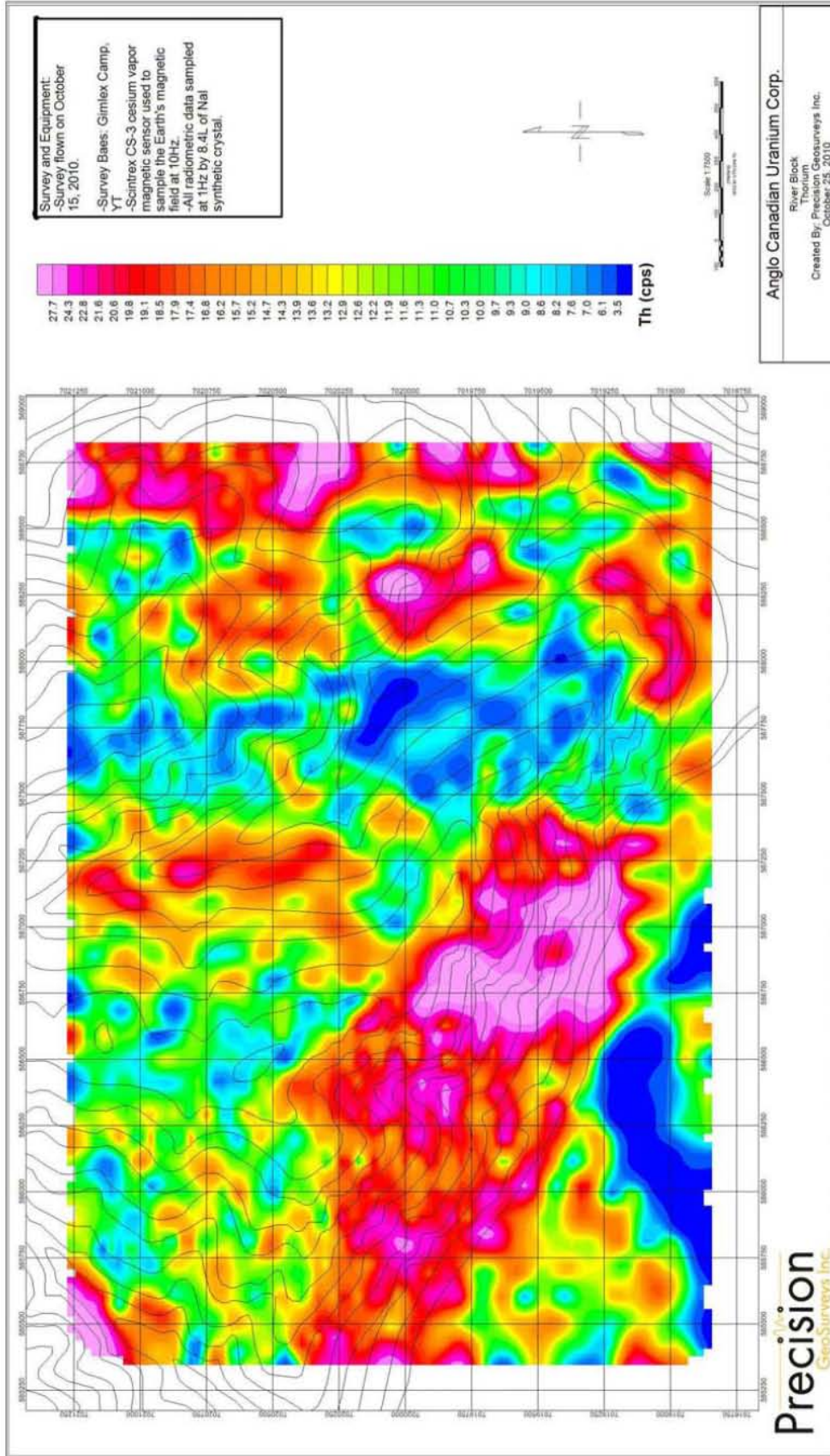
Map 2: River block total count.



Map 3: River block potassium.



Map 4: River block uranium.



Map 5: River block thorium.

Precision GeoSurveys Inc.

Airborne Geophysical Survey Report YK

Prepared for: Anglo-Canadian Uranium Corp.

October 28, 2010



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1.0 Introduction:

This report outlines the survey operations and data processing actions taken during the airborne geophysical survey flown at the YK Block. The airborne geophysical survey was flown by Precision GeoSurveys Inc. for Anglo-Canadian Uranium Corp. The geophysical survey, carried out on July 24, 2010 and on October 15, 2010 saw the acquisition of gamma ray spectrometer data and magnetic data.



Figure 1: YK Block area location relative to the Yukon river and Thistle Creek.

The YK Block is located east of the Yukon river and north of Thistle Creek (Figure 1). It is located approximately 80.3 km south of Dawson, YT (Figure 2). The survey area itself is approximately 2 km by 3 km. A total of 56.2 line kilometers of radiometric and magnetic data were flown for this survey, this total includes tie lines and survey lines. The survey lines were flown at 100 meter spacings at a 090°/270° heading; the tie lines were flown at 800 meter spacings at a heading of 000°/180°.



Figure 2: Survey and tie lines outlined in yellow and the boundary in red.

2.0 Geophysical Data:

Geophysical data are collected in a variety of ways and are used to aid in the exploration and determination of geology, mineral deposits, oil and gas deposits, contaminated land sites and UXO detection.

For the purposes of this survey, airborne gamma ray spectrometer and magnetic data were collected to serve in the exploration of the YK Block which contains rocks that host a suite of a large quartz deposit. Data collected on separate days from the YK Block will be merged into one dataset.

2.1 Magnetic Data:

Magnetic surveying is probably the most common airborne survey type to be conducted for both mineral and hydrocarbon exploration. The type of survey specifications, instrumentation, and interpretation procedures, depend on the objectives of the survey. Typically magnetic surveys are performed for:

1. Geological Mapping to aid in mapping lithology, structure and alteration in both hard rock environments and for mapping basement lithology, structure and alteration in sedimentary basins or for regional tectonic studies.
2. Depth to Basement mapping for exploration in sedimentary basins or mineralization associated with the basement surface.

2.2 Radiometric Data:

Radiometric surveys detect and map natural radioactive emanations, called gamma rays, from rocks and soils. All detectable gamma radiation from earth materials come from the natural decay products of three primary elements, uranium, thorium, and potassium. The purpose of radiometric surveys is to determine either the absolute or relative amounts of U, Th, and K in surface rocks and soils.

3.0 Survey Operations:

Precision GeoSurveys flew the YK Block using a Bell 206 BIII Jet Ranger (Figure 3). The survey lines were flown at a nominal line spacing of one hundred (100) meters and the tie lines were flown at (800) meters spacing for both the spectrometer and magnetometer as they were acquired simultaneously. The average survey elevation was 35.2 meters vertically above ground. The experience of the pilot helped to ensure that the data quality objectives were met and that the safety of the flight crew was never compromised given the potential risks involved in airborne surveying.



Figure 3: Bell 206 Jet Ranger equipped with mag stinger for magnetic data acquisition.

The base of operations for this survey was the Gimlex Camp located approximately 36 km south-east of Dawson, YT. The Precision crew consisted of a total of three members:

Ola Vaage – Pilot
Peter Barker – Operator
Jenny Poon – On-site Geophysicist

The first day of survey took place on July 24, 2010 and the last day of surveying was October 15, 2010. The survey was complete with ground snow cover conditions and fogging conditions along the YK.

4.0 Equipment:

For this survey a magnetometer, spectrometer, base station, laser altimeter, and a data acquisition system were required to carry out the survey and collect quality, high resolution data.

4.1 AGIS:

The Airborne Geophysical Information System, AGIS, (Figure 4), is the main computer used in data recording, data synchronizing, displaying real-time QC data for the geophysical operator, and generation of navigation information for the pilot display system.



Figure 4: AGIS installed in the Bell 206.

The AGIS was manufactured by Pico Envirotec; therefore the system uses standardized Pico software and external sources are connected to the system via RS-232 serial communication cables. The AGIS data format is easily converted into Geosoft or ASCII file formats by a supplied conversion program called PEIView. Additional Pico software allows for post survey quality control procedures.

4.2 Spectrometer:

The IRIS, or Integrated Radiometric Information System is a fully integrated, gamma radiation detection system containing two downward facing NaI detecting crystals for a total volume of 8.4 litres (figure 5). Real time data acquisition, navigation and communication tasks are integrated into a single unit that is installed in the rear of the aircraft as indicated below. Information such as total count, counts of various elements (K, U, Th, etc.), temperature, barometric pressure, atmospheric humidity and survey altitude can all be monitored on the AGIS screen for immediate QC. All the radiometric data are recorded at 1 Hz.



Figure 5: IRIS strapped into the cargo box of the helicopter.

4.3 Magnetometer:

The magnetometer used by Precision GeoSurveys is a Scintrex cesium vapor CS-3 magnetometer. The system was housed in a front mounted “stinger” (Figure 6). The CS-3 is a high sensitivity/low noise magnetometer with automatic hemisphere switching and a wide voltage range, the static noise rating for the unit is +/- 0.01 nT. On the AGIS screen the operator can view the raw magnetic response, the magnetic fourth difference and the survey altitude for immediate QC of the magnetic data. The magnetic data are recorded at 10 Hz. A magnetic compensator is also used to remove noise created by the movement of the helicopter as it pitches, rolls and yaws within the Earth’s geomagnetic field.



Figure 6: View of the mag stinger.

4.4 Base Station:

For monitoring and recording of the Earth's diurnal magnetic field variation, Precision GeoSurveys uses a Scintrex proton precession Envi Pro magnetometer as its base station (Figure 7). This is mounted as close to the survey block as possible to give high, accurate magnetic field data. The Envi Pro base station, uses the well proven precession technology to sample at a rate of 0.5 Hz. A GPS is integrated with the system to record real GPS time that is used to correlate with the GPS time collected by the CS-3 magnetometer.



Figure 7: Scintrex Envi Pro proton precession magnetometer.

4.5 Laser Altimeter:

The pilot is provided with terrain guidance and clearance with an Acuity AccuRange Ar3000 laser altimeter (Figure 8). This is attached at the aft end of the magnetometer boom. The Ar3000 sensor is a time-of-flight sensor that measures distance by a rapidly-modulated and collimated laser beam that creates a dot on the target surface. The maximum range of the laser altimeter is 300 m off of natural surfaces with 90% reflectance and 3 km of special reflectors. Within the sensor unit, reflected signal light

are collected by the lens and focused onto a photodiode. Through serial communications and analog outputs, the distance data is transmitted and collected by the AGIS at 10 Hz.



Figure 8: Acuity AccuRange AR3000 laser altimeter.

5.0 Data Processing:

After all the data are collected after a survey flight several procedures are undertaken to ensure that the data meet a high standard of quality. All data were processed using Pico Envirotec software and Geosoft Oasis Montaj geophysical processing software.

5.1 Magnetic Processing:

During aeromagnetic surveying noise is introduced to the magnetic data by the aircraft itself, movement in the aircraft (roll, pitch and yaw) and the permanent magnetization of the aircraft parts (engine and other ferric objects) are large contributing factors to this noise. To remove this noise a process called magnetic compensation is implemented. The magnetic compensation process starts with a test flight at the beginning of the survey where the aircraft flies in the four orthogonal headings required for the survey (000°/152° and 080°/217° in the case of this survey) at an elevation where there is no ground effect in the magnetic data. In each heading roll, pitch and yaw maneuvers are performed by the pilot, these maneuvers provide the data that is required to calculate the necessary parameters for compensating the magnetic data. A computer program called PEIComp is used to create a model for each survey to remove the noise induced by aircraft movement; this model is applied to each survey flight so the data can be further processed.

A magnetic base station is set up before every flight to ensure that diurnal activity is recorded during the survey flights. Precision GeoSurveys uses a Geometrics 858 base station and sampled at 0.1Hz. Base station readings were reviewed at regular intervals to insure that no data were collected during periods with high diurnal activity (greater than 5 nT per minute). The base station was installed at a magnetically noise-free area, away from metallic items such as steel objects, vehicles, or power lines. The magnetic

variations recorded from the stationary base station are removed from the magnetic data recorded in flight to ensure that the anomalies seen are real and not due to solar activity.

A lag correction of 1.7 secs was applied to the total magnetic field data to compensate for the lag in the recording system as the magnetometer sensor flies 6.45 m ahead of the GPS antenna.

5.2 Radiometric Processing:

Radiometric data are processed by windowing the full spectrum to create channels for U, K, Th and total count. A lag correction was also applied to the radiometric data as Pico compensator introduces a lag of 1.4 secs into the positional coordinates for the radiometric data. The data are then lightly filtered and corrected for survey altitude at standard temperature and pressure. Background radioactive contributions from the aircraft, cosmic radiation and atmospheric radon must also be removed. Finally the data are corrected by removing spectral overlap; this is done using the stripping ratios that have been calculated for the spectrometer by prior calibration, this breaks the corrected elemental values down into the apparent radioelement concentrations.

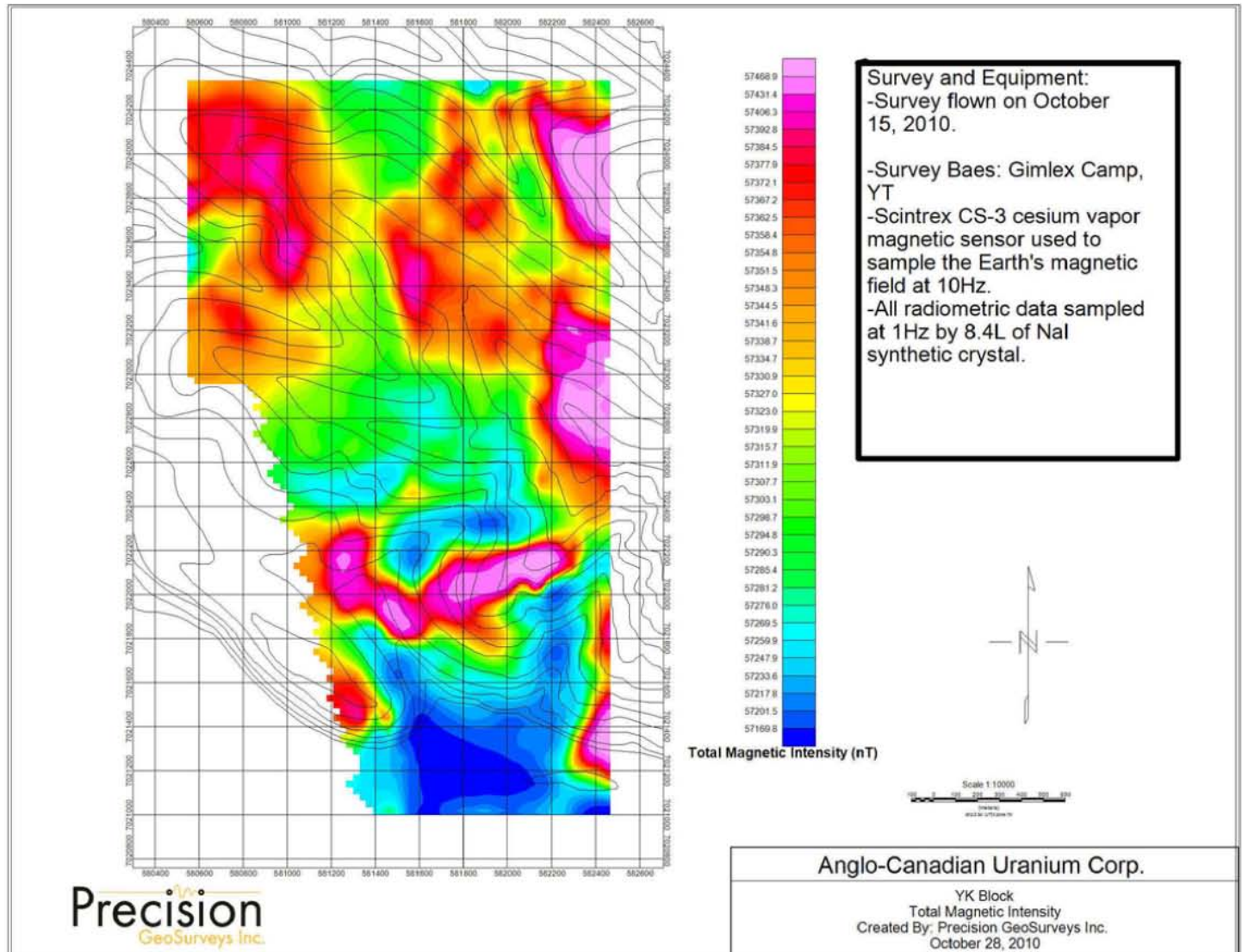
5.3 Final Data Format

Abbreviations used in the GDB files are as follows:

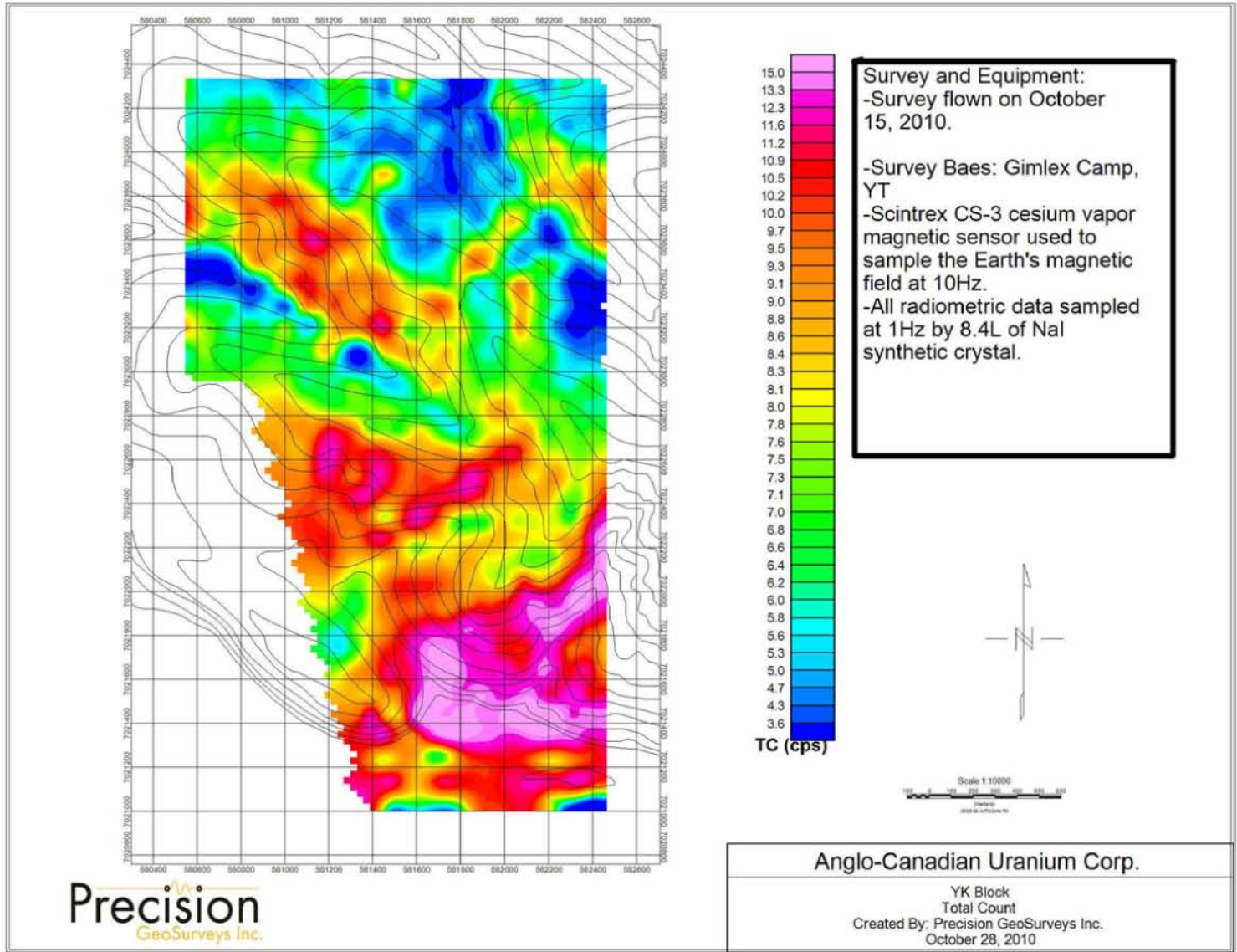
X – Easting in WGS84, UTM zone 7N
Y – Northing in WGS84, UTM zone 7N
GPStime – GPStime
basemag – diurnal data
mag – total magnetic field
galt – gps altimeter readings
lalt – laser altimeter readings
dtm – digital terrain model
TC_cor – corrected total count
K_cor – corrected potassium
U_cor – corrected uranium
Th_cor – corrected thorium

The file format will be provided in two (2) formats, the first will be a .GDB file for use in Geosoft Oasis Montaj, the second format will be a .XYZ file, this is text file. Two separate files are provided for each format, one for the magnetics and one for the radiometrics.

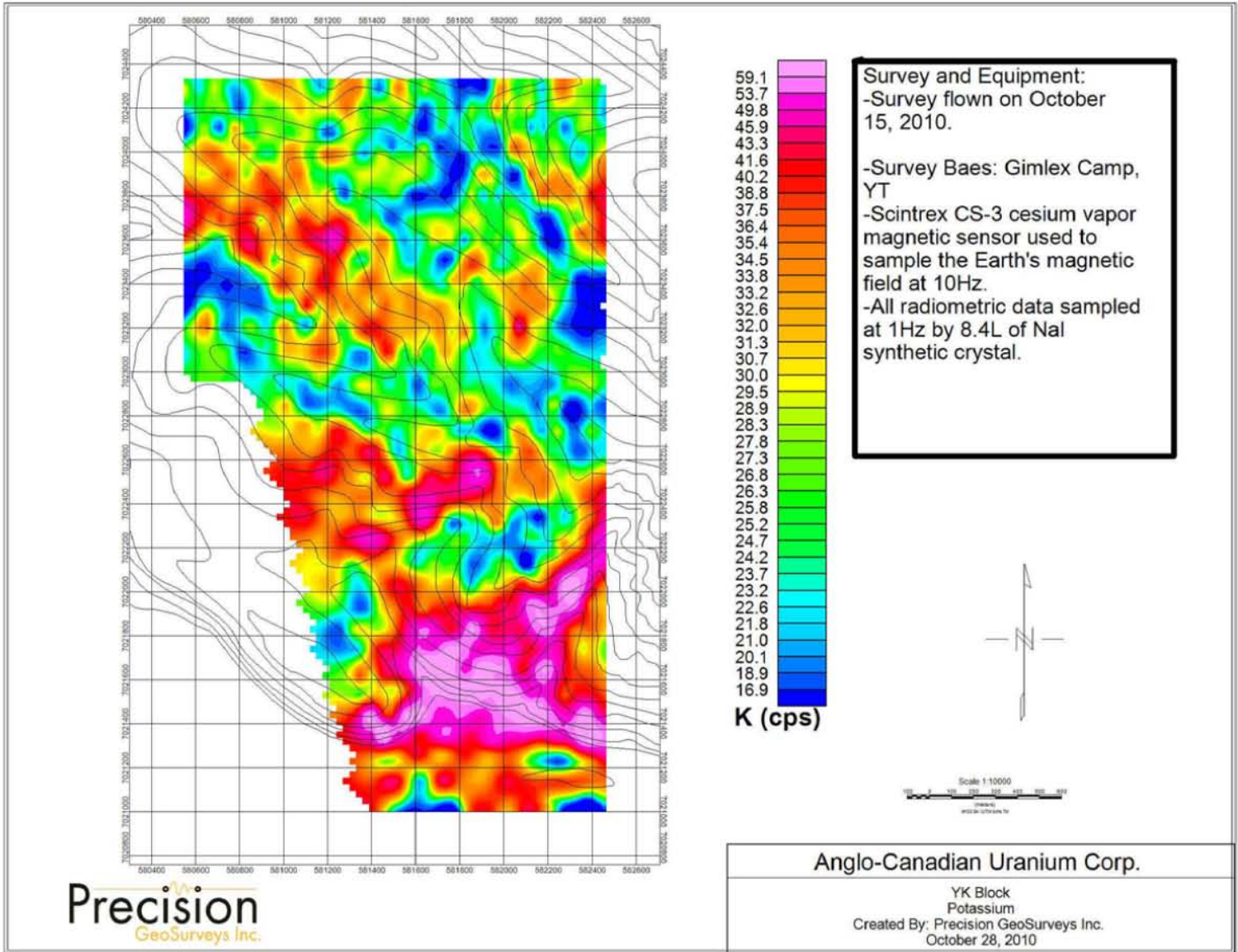
Appendix A
Maps



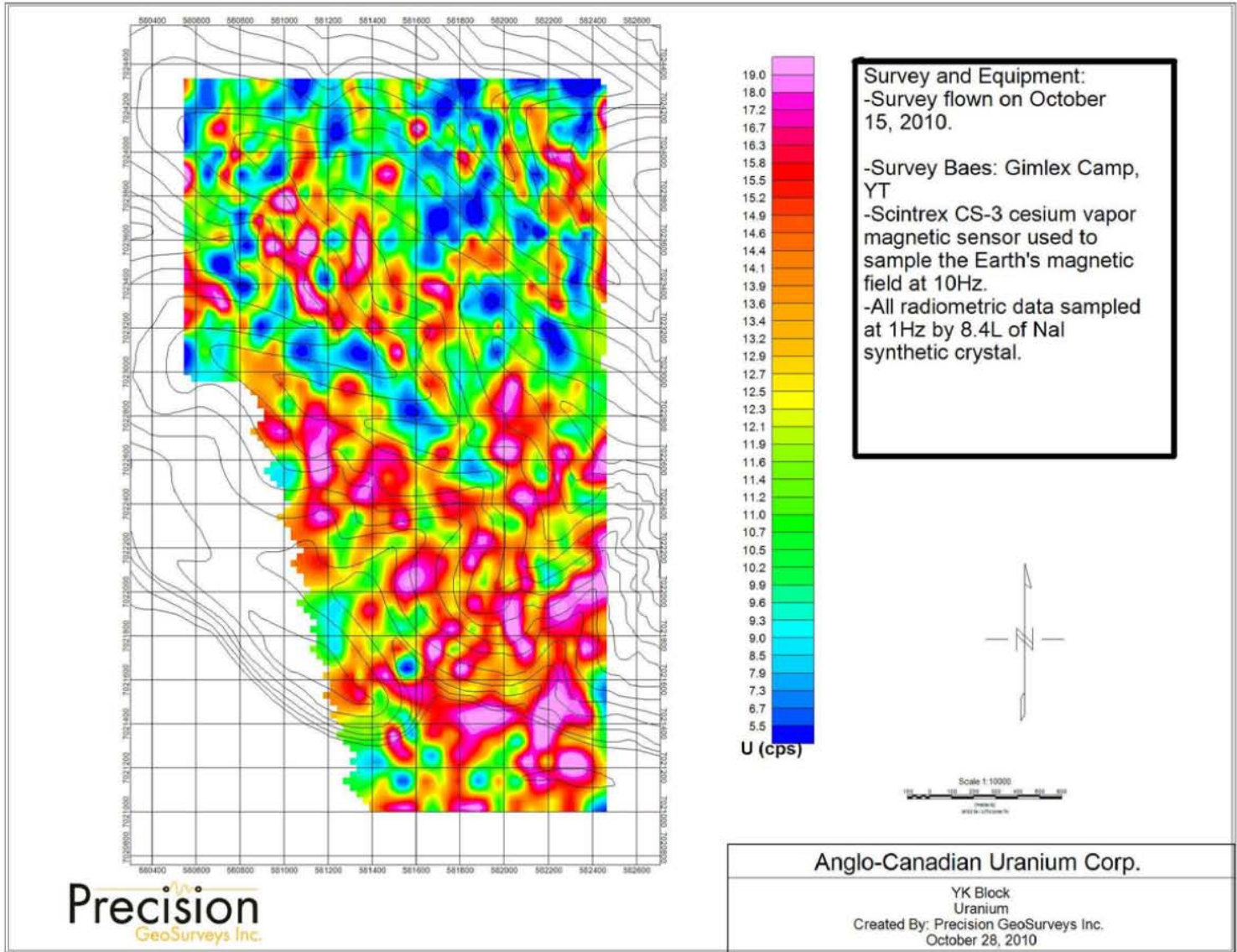
Map 1: YK block total magnetic intensity.



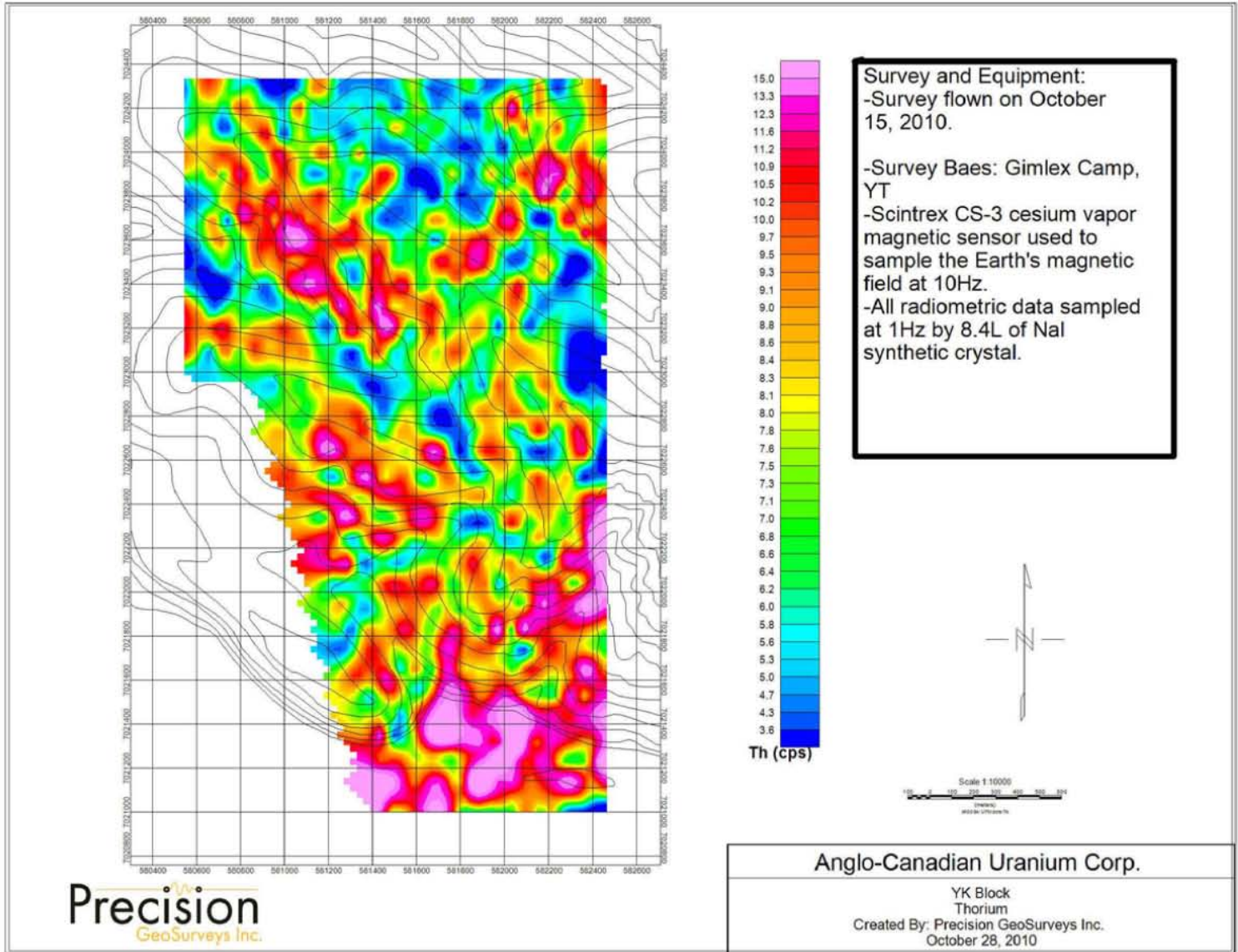
Map 2: YK block total count.



Map 3: YK block potassium.



Map 4: YK block uranium.



Map 5: YK block thorium.