GEOLOGICAL REPORT

To Accompany

the AIRBORNE GEOPHYSICAL SURVEY REPORT

on the AU, ET AND HER BLOCKS

Mayo Mining District, Yukon Territory

NTS Map Sheets 105 O 11, 105 O 06

AU: Latitude 63° 39' 23.6"N, Longitude 131° 04' 06.5" W

ET: Latitude 63° 39' N Longitude 131° 22' W

HER: Latitude 63° 30'N, Longitude 131° 20' W

UTM Coordinates (Zone 9, NAD83)

AU: 397600E, 7060400N

ET: 383300E, 7061100N

HER: 384000E, 7043400N

for

International Alliance Resources Inc.

by

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and

Dwayne Kress

Date: January 27, 2012

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1. INTRODUCTION

The AU, ET and HER claim blocks are located approximately 380 kilometers NE of Whitehorse, Yukon Territory, on the NTS map sheets 105 O 6 and 105 O 11. Based on the historical reports the claims have a potential to contain significant gold mineralization within the intrusive contact zones. Since the intrusions and their contact zones are characterized by increased magnetism, the Operator, Northern Dancer Uranium Corp., designed an airborne magnetic and radiometric survey program to define these zones in detail and contracted Precision GeoSurveys Inc. (PGI) to conduct the surveys. PGI carried out the work on August 28 and on September 18, 2011 and reported the results in "Airborne Geophysical Survey Report, ET, AU and HER Blocks", which is attached at the back of this Geological Report.

1.1. Location, Topography and Access

The AU claim block consists of 12 claim units located about 12 kilometers northeast of Emerald Lake. About 90 percent of the claim area is above tree line and two small ice fields (<0.5 km^2) occur near the east border of the claim block. The ET claim block consisting of 16 claim units is located about 13 kilometers northwest of Emerald Lake. About 70 percent of the claim area is above tree line. The HER claims are located about seven kilometers southwest of Emerald Lake and about 95 percent of the claim area is above tree line. All claim areas are characterized by rugged, very steep, mountainous topography.

Access to the claims is hampered by remoteness and extremely rugged terrain. Canol Road, which passes through the MacMillan Pass about 90 to 100 km to the southeast is the nearest road and an old tote trail passes within 10 to 20 kilometers of the claim blocks. Fixed-wing float planes can land on the Emerald Lake and the access from there is by helicopter or by foot. The contract helicopters are available from Ross River or Mayo. The access on foot is possible via the broad, glacially scoured valley floors.

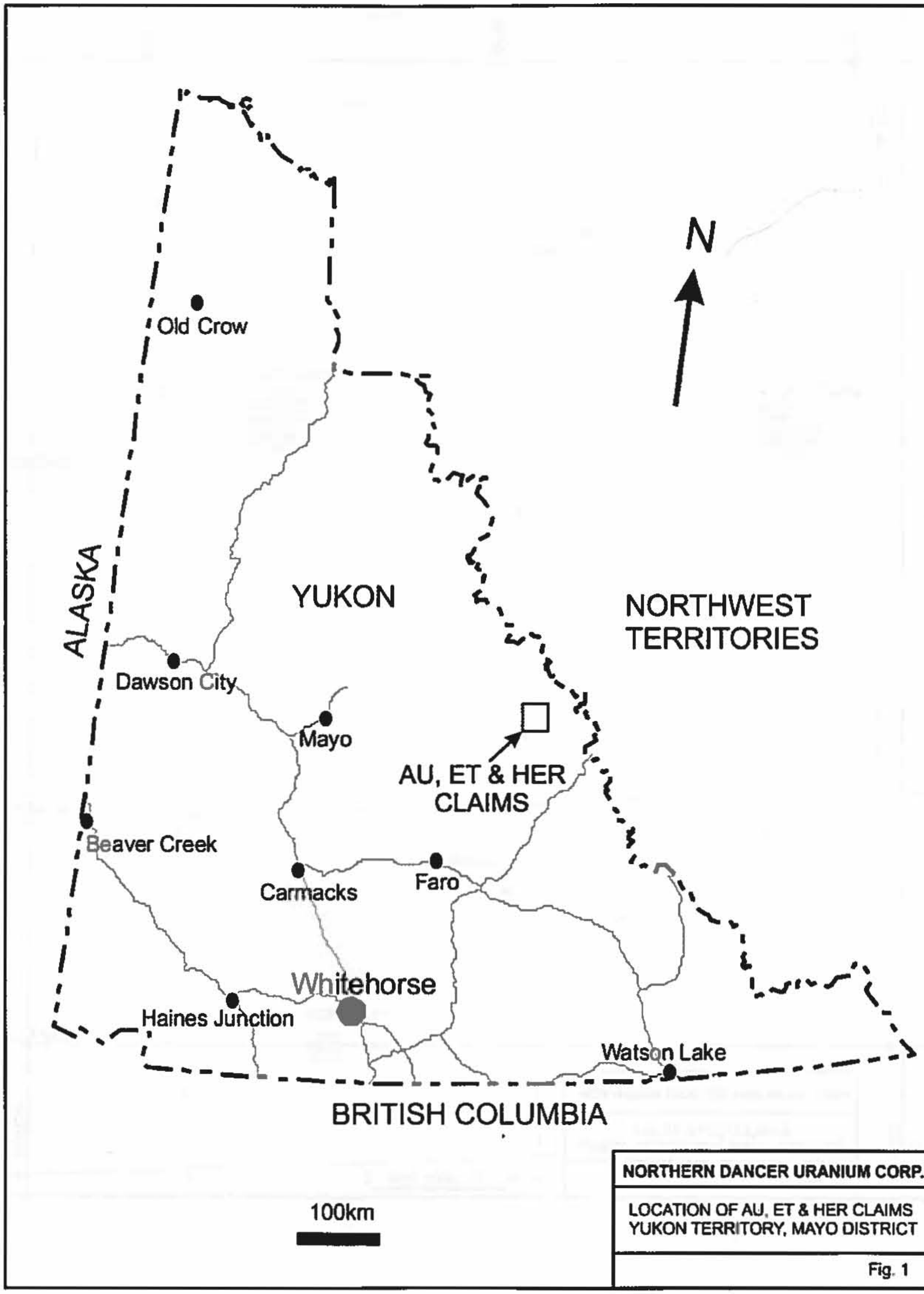
1.2.The Claims

There are 12 AU claim units covering approximately 192 ha, 16 ET claim units covering about 256 ha and 4 HER claim units covering about 64 ha. The claim information is listed in Table 1 below and the claim locations are shown on the maps in Figs. 1 to 5.

Table 1: Claim Status

Claim Name	Claim Number	Good to	Owner (100%)*
AU16	YB44084	April 28, 2012	Alliance Pacific Gold Corp.
AU18	YB44086	April 28, 2012	Alliance Pacific Gold Corp.
AU20	YB44088	April 28, 2012	Alliance Pacific Gold Corp.
AU22	YB44090	April 28, 2012	Alliance Pacific Gold Corp.
AU29 – AU36	YB44097 – YB44104	April 28, 2012	Alliance Pacific Gold Corp.
ET1 – ET16	YB44189 – YB44204	April 28, 2012	Alliance Pacific Gold Corp.
HER1 – HER4	YB44181 – YB44184	April 28, 2012	Alliance Pacific Gold Corp.

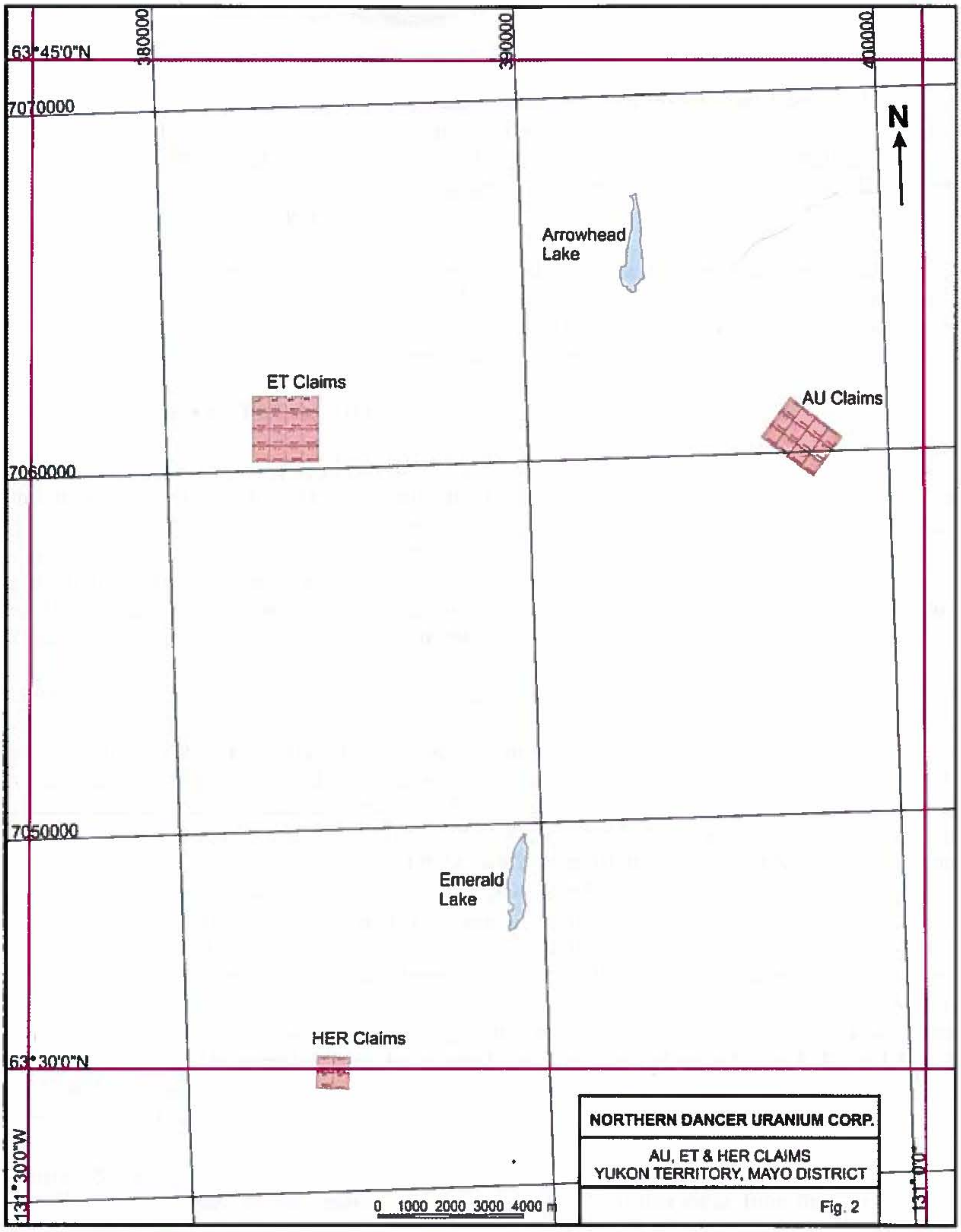
*Name changed to International Alliance Resources Inc.



NORTHERN DANCER URANIUM CORP.

LOCATION OF AU, ET & HER CLAIMS
YUKON TERRITORY, MAYO DISTRICT

Fig. 1


63°45'0"N
380000
390000
400000
7070000
N
Arrowhead
Lake
ET Claims
AU Claims
7060000
7050000
Emerald
Lake
HER Claims
63°30'0"N
131°30'0"W
131°0'0"
0 1000 2000 3000 4000 m
NORTHERN DANCER URANIUM CORP.
AU, ET & HER CLAIMS
YUKON TERRITORY, MAYO DISTRICT
Fig. 2

1.3. Terms of Reference and Disclaimer

This Geological Report was compiled to accompany the attached "Airborne Geophysical Survey Report, ET, AU and HER Blocks" and is based on the relevant information from the historical reports, primarily the reports by Gasparrini (1982), Lueck (1995), Irwin (1995), Jiang and Broughton (1998) and on the Yukon Government's Internet applications at http://www.yukonminingrecorder.ca/, http://maps.gov.yk.ca/, etc. All other sources of information are cited in the Reference chapter.

The writers of this Geological Report did not visit the properties, therefore the reliability of historical results and information could not be independently checked. However, the writers believe that the historical information referred to in this Geological Report can be trusted and can serve as an introduction to the attached Geophysical Report.

2. PREVIOUS EXPLORATION

The Emerald Lake area was explored for the base metals, silver and tungsten since the 1960s. The majority of historical work was conducted by Atlas Exploration (Atlas) and Agip Canada Ltd., (Agip) from 1969 to 1982 and included regional stream sediment and soil sampling, prospecting and trenching. AGIP initially conducted a reconnaissance silt sampling in 1980, when high Au, Cu, Mo and W concentrations were detected over an area of 100 sq. km, centered on the Emerald Lake pluton. Geological Survey of Canada also detected anomalous concentrations of metals in the stream sediments.

Agip followed up in 1981 and 1982 by a helicopter-based exploration including mapping, trenching, chip sampling and a mineralogical study in the Emerald Lake area (Gasparrini, 1982). Several outcrops enriched in gold and other metals were found in the Glacier zone, near the contact between the pluton and the sedimentary country rock. Chip samples and the float on western wall above Fish glacier yielded 17.4- 24.8 g/t Au. A continuous vertical chip sample from the eastern side of the central ridge in the Glacier Zone yielded an average of 1.6 g/t Au over 85 m and 4.6 g/t Au over 15 m with 0.22 % Mo over 10 m. The true thickness of this zone was estimated to be 55 m and was open above, below and to the north. Several other chip and grab samples from the glacier wall and from trenches returned gold values ranging from 1.2 to 253 g/t Au, silver values of 157.8 g/t Ag, lead and bismuth up to 1.86% Bi. These samples were collected over a distance of 1.3 km, along the strike of the contact between the pluton and sediments. The flat-lying quartz + feldspar ± sulfide veins at the nearby Glacier zone, referred to as the Mt. Soleil zone, returned 242.5 g/t Ag over 1 m, 3.1 g/t Au over 2 m, 2.98 % W03 and 6.9% Cu over 1 m. The samples from the nearby Horn zone yielded up to 575 ppb Au and 4.6 g/t Au over 2 m, the Luc zone 13.38 g/t Au over 1.5 m. Silt samples from the headwaters of Grin Creek contained up to 700 ppb Au.

Irwin (1995) conducted a chip and channel sampling and silt and soil geochemistry program on the MY claims situated in the Emerald Lake area, a few kilometers away from the AU, ET and HER claims. The work focused on four zones of mineralization named the Mt. Soleil, the Fish Glacier, the Meadow and the Tom zones, all located at the southern margin of the Emerald Lake Pluton. The pluton is similar in age and chemistry to plutons of the "Tombstone Suite", which host large tonnage, porphyry gold deposits, such as Fort Knox, Brewery Creek and Dublin Gulch. Classified as large, low grade, disseminated or stockwork gold deposits, these deposits are hosted by intrusive, altered and veined sedimentary rocks adjacent to the intrusions (Irwin, 1995). The Emerald Lake Pluton is strongly mineralized in places with several stages of hydrothermal activity evident, including spectacular miarolitic cavities containing Au, Mo and W- bearing minerals, the east-west striking, north-dipping veins containing gold, molybdenum, scheelite. bismuthinite and telluride minerals and the north-south striking, steeply-dipping fractures that locally contain disseminated sulfides. Gold mineralization occurs in a "band" or "shell" within a kilometer of the margin of the Emerald Lake pluton. Chip sampling lines on the Central Ridge indicated gold concentrations of 1.51 g/t over approximately 90 meters, including 1.87 g/ton over 70 meters (Irwin, l.c.).

In 1990, the Government released data from a systematic, regional, stream sediment program (RGS) over the Yukon portion of the NTS sheet (GSC Open File 2364). This prompted Alliance Pacific Gold Corp. in 1995 to conduct a silt, soil and rock sampling program as a follow-up on the numerous gold-arsenic anomalies centred on the TPS intrusions. The program successfully located gold-sulphide anomalies associated with sheeted quartz veins in several of the intrusions, most notably at Arrowhead, Emerald Lake, Ann Mark and Plata North. In 1996 Alliance Pacific tested the anomalies with a 16 hole diamond drill program and the best results from the Arrowhead and Ann Mark returned 1.84 g/t Au over 96 meters, and 1.01 g/t Au over 21 meters, respectively.

Previous work on the AU claims included regional soil and stream sediment surveys by Atlas and Agip between 1968 and 1982. Various base metal anomalies associated with the local intrusive body were identified. Regional silt sampling by the government identified a gold anomaly coincident with a magnetic high located south of the intrusion. In 1995 and 1996, Alliance Pacific conducted surface rock sampling and geological mapping.

The AU claims contain a small granodiorite intrusion about 1.3 kilometers across. The country rocks are green argillite, sandstone and dark grey chert of Cambrian to Ordovician age, dark green to buff argillite of Silurian age and black shale of Devonian age. A strong contact metamorphic aureole around the intrusion is marked by rusty weathering in the outcrops and in talus.

In 1997 Cyprus Canada Inc. (Cyprus) explored the AU claims. The work consisted of a two day helicopter reconnaissance sampling to test an RGS gold anomaly. In total, 20 rock samples were taken from argillite, quartzite, chert, tuff, quartz veins and Fe-carbonate with 3 to 15 % disseminated sulphides, mainly pyrite. The assays ranged from <5 to 32 ppb gold, <0.2 to 1.3 ppm silver, up to 136 ppm copper, up to 77 ppm lead and as much as 323 ppm zinc. Local magnetic high was interpreted to be caused by the pyrrhotite-rich hornfels, and the RGS gold anomaly (20 ppb Au) was explained to be a product of weathering of sulphide-rich quartz veinlets, which assayed up to 32 ppb gold. Due to limited time, only the southern portion of the AU claims was examined and further sampling was recommended as a low priority (Jiang and Broughton, 1998).

In 1997 Cyprus also explored the ET claims, which contain a small Tombstone Suite, granodiorite intrusion about 500 meters in diameter. It is emplaced within the argillite, siltstone, quartzite, lapilli tuff and lithic tuff units of Early Cambrian age. A small contact metamorphic aureole coincident with a strong, magnetic high occurs around the intrusion. Fine grained clastic sediments near the intrusive plug have been metamorphosed to a dark, fine grained magnetite bearing hornfels. The eastern contact has been displaced by a younger, north-south striking fault. Small quartz veinlets (mostly tension veins), generally less than a centimeter wide and locally mineralized with pyrite-pyrrhotite-molybdenite are scattered through the intrusive. Associated with these veins are thin alteration envelopes rich in K-feldspar.

Cyprus collected 17 rock samples from the ET claims, including chert, argillite, sandstone, siltstone, limestone and felsic intrusive with up to 5 % disseminated sulphides, mainly pyrite. The assays returned from 7 to 557 ppb gold, <0.2 to 28.6 ppm silver, up to 419 ppm copper, from 6 to 7240 ppm lead and from 35 to 3890 ppm zinc. Gold and silcer were found to correlate with the base metals, arsenic and bismuth (Jiang and Broughton, 1998).

Previous work on the HER claims included regional geological mapping by GSC (Open File 205, 1974), and stream sediment sampling by Union Carbide Exploration Corp. (1981). Agip conducted surface rock and stream sediment sampling in the early 1980s. The GSC released the RGS results in 1990, which included anomalous gold values in the local stream sediments. Lueck (1995) conducted a 10 days helicopter supported geological mapping, prospecting, and rock chip and soil sampling, but only a part of the intrusion was prospected and many anomalous areas have not been well sampled. Gold values ranging from 6 to 55 ppb Au and the arsenic values ranging from 87 to 683 ppm As were reported.

Further investigation on the HER claim block was conducted in 1997 by Cyprus, which targeted mainly the stream sediment anomalies determined by the RGS and the gold anomalies unexplained by known intrusive hosted mineralization, such as the magnetic highs within the sedimentary environments. Cyprus' secondary objective was to examine the areas of known mineralization within the intrusions. Most work was done over the southern contact zone and hornfels aureole, where a total of 9 rock and 3 silt samples were collected. The rock samples included chert, granite, porphyry, argillite, siltstone with up to 3 % disseminated pyrite (Jiang and Broughton, 1998).

The rock samples assayed from <5 to 223 ppb gold, <0.2 to 1.4 ppm silver, up to 175 ppm copper, up to 24 ppm lead and up to 247 ppm zinc. A weak correlation between gold and zinc was noted. The silt samples returned from 45 to 390 ppb gold, 0.5 to 1.2 ppm silver, 88 to 146 ppm copper, 21 to 43 ppm lead and up to 450 ppm zinc (Jiang and Broughton, 1998). Although sampling and prospecting were not exhaustive, no zone of significant alteration or mineralization was identified and no further work was recommended.

The HER claims cover a small Tombstone Suite biotite granodiorite plug about 500 meters in diameter intruding the sedimentary formations of Cambrian to Silurian age. A contact metamorphic aureole with a strong coincident magnetic high occurs in the argillite, quartzite, pebble conglomerate, black shale, chert and minor dolostone rocks surrounding the HER intrusion.

3. REGIONAL GEOLOGY

The AU, ET and HER claim blocks lie within the eastern portion of the Selwyn Basin, a major litho-stratigraphic unit made up of Late Proterozoic to Triassic marine sediments and clastic sediments derived from the cratonic margin. The Tombstone Suite granitoids of the Late Cretaceous age intrude the sedimentary formations (Lang et al., 1997).

The felsic to intermediate intrusives were emplaced during a period of regional folding and faulting associated with the east-west crustal shortening. The intrusions belong to two groups, the Tombstone Plutonic Suite (TPS) and the Tungsten Plutonic suite (WPS). Together, these suites form the northernmost magmatic belt termed the Tombstone-Tungsten Magmatic Belt (TTMB). This narrow belt extends for up to 500 kilometers from just east of the Yukon-Northwest Territories border to the Tintina Fault near Dawson City, Yukon, with an extension of the belt located 450 kilometers to the northwest in the Fairbanks district, Alaska, due to dextral displacement along the Tintina Fault. Radiometric dating indicates that the entire belt was emplaced between 89 Ma and 95 Ma, with the maximum at 91 ±1.5 Ma (Lang et al., 1997).

The WPS forms the eastern end of the belt, whereas the TPS forms the remainder of the belt to the west. Both suites were emplaced into Proterozoic to Paleozoic rocks of platformal and miogeoclinal facies (Ogilvie-Mackenzie Platform) or of basinal facies (Selwyn Basin). In the central and western Yukon, TPS plutons cut thrust faults which were active between late Jurassic and mid-Cretaceous times. No coeval volcanic rocks are recognized with either the TPS or the WPS.

The TPS comprises the bulk of the TTMB and is discussed in some detail since these intrusions are associated with the gold deposits. Most TPS intrusions are subalkaline, metaluminous biotite-hornblende-pyroxene granodiorite, quartz monzonite, monzogranite and syenite, with minor granite, and rare gabbro and clinopyroxenite.

Abundant associated dikes include lamprophyres, pegmatites, aplites, and dikes similar in composition to the main intrusive phases. Intrusions range from plugs to small batholiths, with larger intrusions commonly gradationally zoned from relatively mafic marginal phases to more differentiated interior phases. It is not clear if there is a consistent progression in intrusive composition over time.

The medium to coarse-grained intrusions are typically porphyritic and megaphenocrysts of K-feldspar several centimeters in length are common. Magnetite is almost completely absent, traces of ilmenite are common, and titanite is typically either absent or quite abundant.

Miarolitic cavities are common in TPS intrusions and generally are typically less than a few centimeters in size, but within the Emerald Lake pluton they are up to two meters in diameter. The infill of miarolites is commonly zoned and comprises quartz, tourmaline, alkalic feldspar, biotite and locally sulphide or sulphosalt minerals.

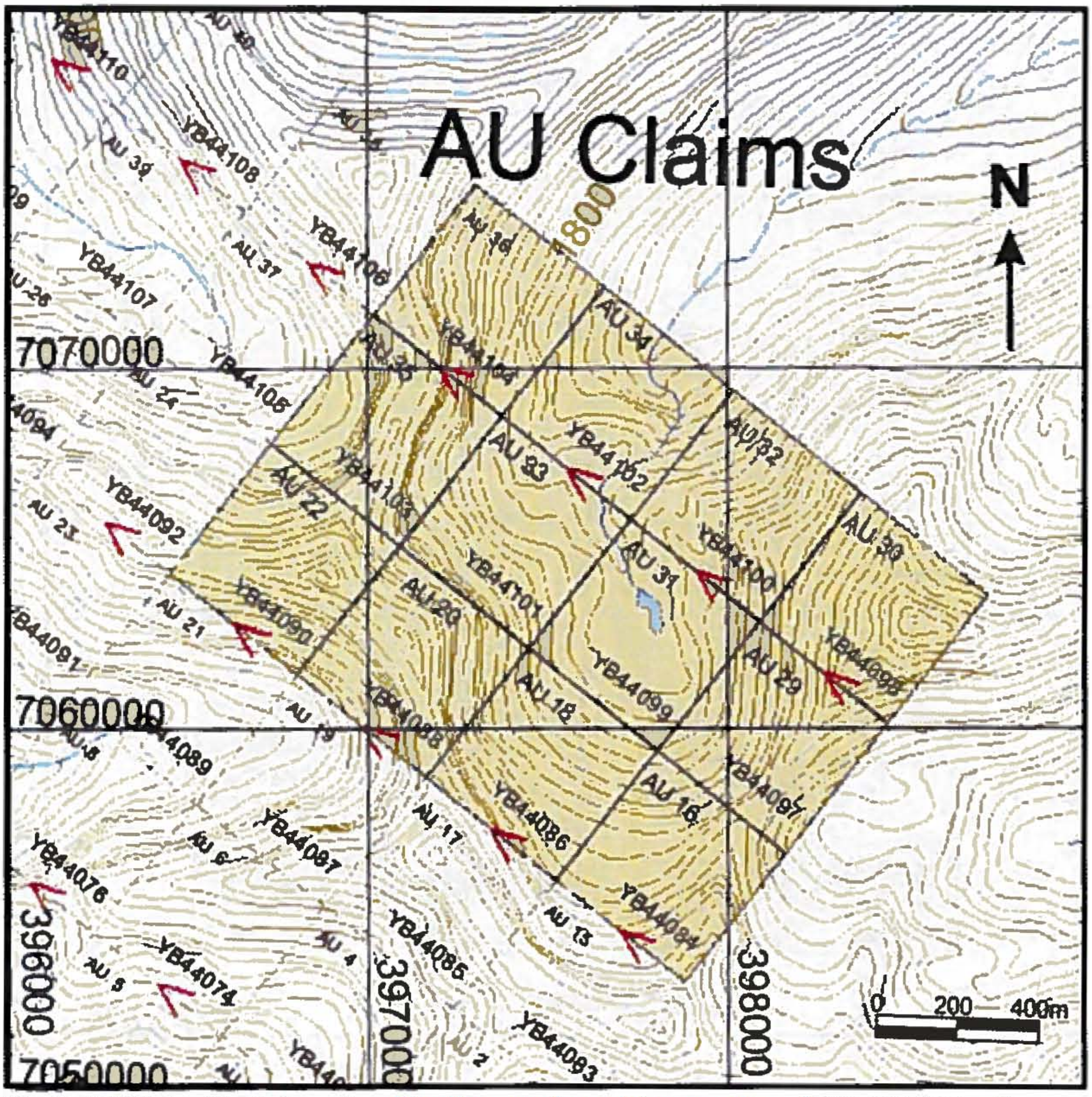


Fig. 3: AU Claim Block (based on http://www.yukonminingrecorder.ca/PDFs/105O11.pdf)

Two mineralogically and compositionally distinct subsets of the TPS have been recognized, the alkaline, occurring in the westernmost end of the belt in the Yukon and the peraluminous, which are volumetrically very minor. The former comprise monzonite, syenite and tinguaite and the latter are made up of tourmaline-bearing granite and are believed to be the late-stage differentiates of the metaluminous magmas.

An important feature of almost all TPS intrusions is the development of extensive contact metamorphic aureoles. These alumino-silicate-bearing, hornfelsic zones are up to several kilometers in width, and are commonly much larger than the associated intrusions. Abundant pyrrhotite generates prominent magnetic highs (Lang 1997 in: Jiang and Broughton, 1998).

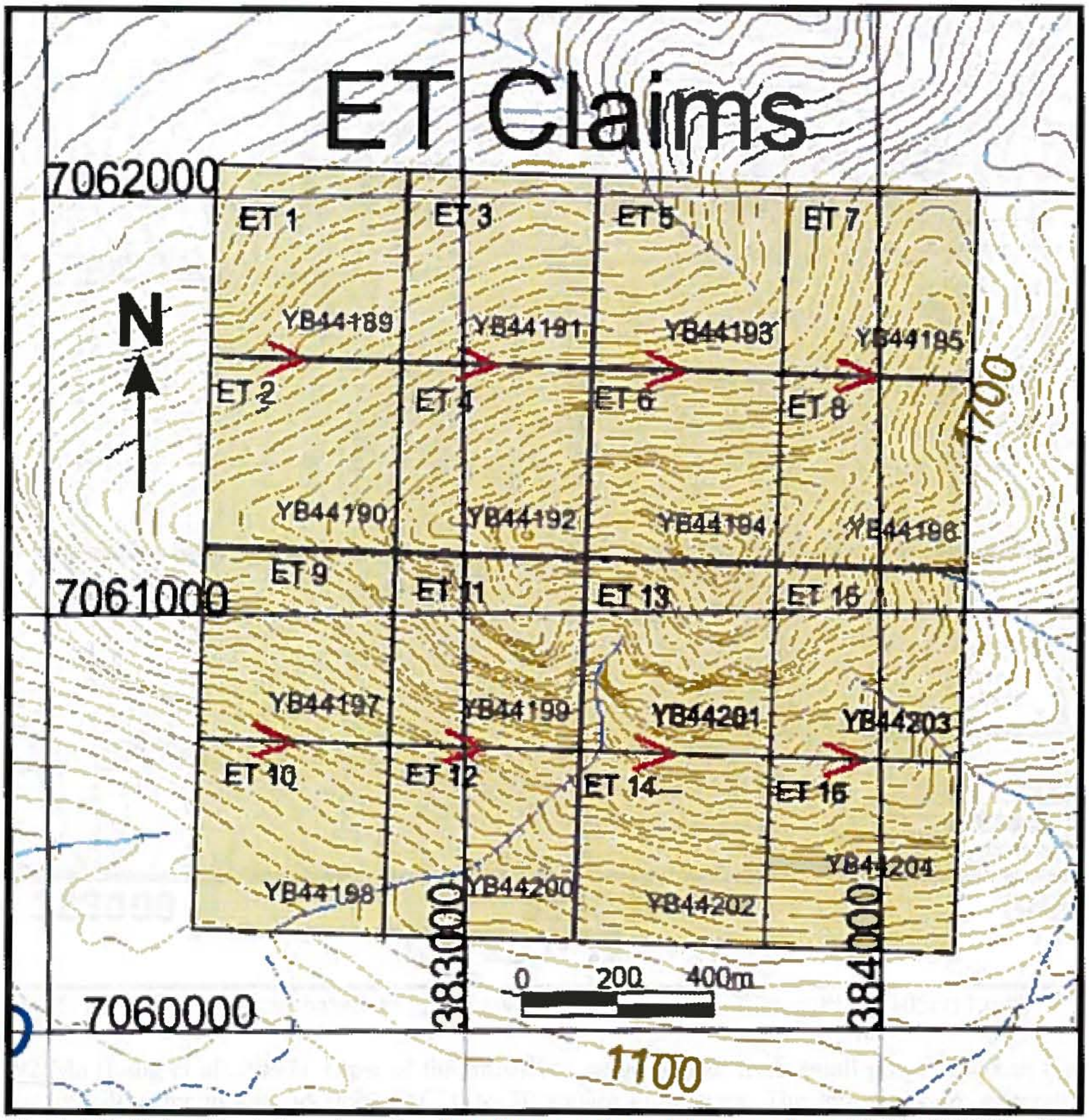


Fig. 4: ET Claim Block (map based on http://www.yukonminingrecorder.ca/PDFs/105O11.pdf)

Magmatism related to ore genesis, metallogenetic and exploration concepts within the Tintina Belt are discussed in detail in the papers by Goldfarb et al., (2000), Hart et al. (2000) and Mortensen et al., (2000).

4. LOCAL GEOLOGY

The Selwyn Basin sedimentary units include quartzite, slate and phyllite of the Late Proterozoic Rapitan Group, black chert of the Ordovician Road River Formation, and graphitic shale, argillite of the Devonian Earn Group (GSC Open Files 1006, 11 18). The sedimentary sequence is intruded by granodiorite to quartz monzonite stocks and plugs of the Tombstone suite, dated at

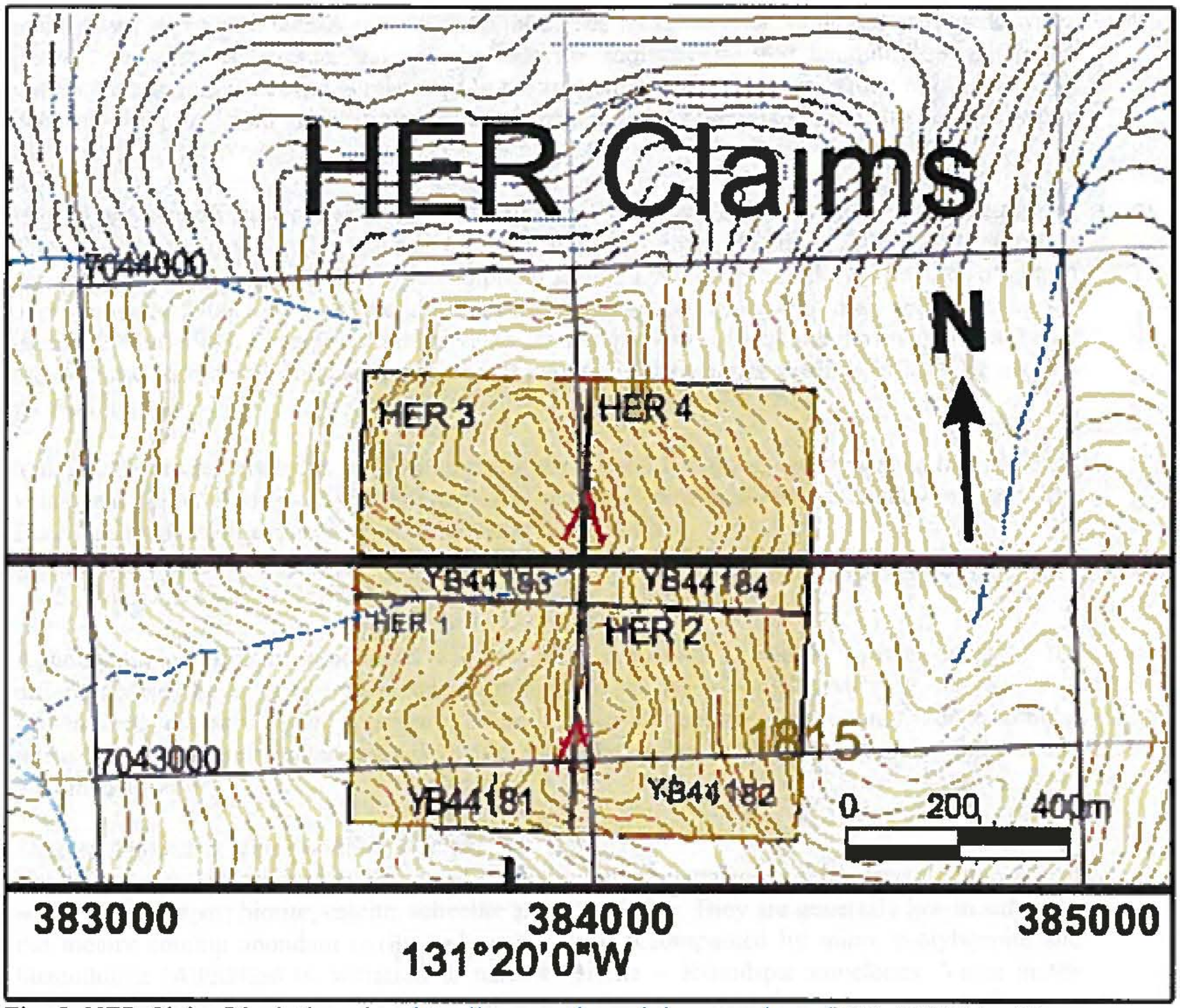


Fig. 5: HER Claim Block (based on http://www.yukonminingrecorder.ca/PDFs/105O11.pdf)

-92 Ma (Lang et al., 1997). Most of the intrusives range in size from small plugs less than one square kilometer in area to stocks of 20 to 30 square kilometers. The intrusions are generally medium grained and equigranular, although porphyritic and megacrystic varieties are known. The intrusions generally contain 10 to 20 per cent quartz, a similar percentage biotite, and up to 70 per cent plagioclase feldspar. Magnetite is absent, however minor amounts of pyrrhotite contribute to a weak magnetic signature.

By far, the dominant magnetic signature is associated with pyrrhotite-biotite hornfels zones that extend more than a kilometre from the intrusive contacts. The intrusions are generally quite massive and un-weathered. Gold mineralization within the intrusions is typically related to narrow quartz veins and veinlets, which are usually steeply dipping and sheeted. The vast majority of the veins are less than five centimeters wide, and strike for several meters to tens of meters. There appears to be a gradation from poorly or non-mineralized veins with minor biotite haloes and trace pyrrhotite, to modestly mineralized veins with biotite - sulphide haloes, to well mineralized veins with locallv massive sulphides. The most common sulphides are arsenopyrite, pyrite, pyrrhotite, sphalerite, galena, chalcopyrite, molybdenite and bismuthinite. Alteration within the mineralized zones is restricted to the immediate vein selvages, and is rarely pervasive between veins. A small zone of auriferous skarn and vein mineralization occurs locally within the hornfels of the Ann Mark intrusion (Weas claims).

High grade narrow silver-lead veins occur north of the Plata camp, on the Plata-Inca claims. These veins are hosted within a series of faults and shear zones, the most important of which is an east-west striking, south 45 degrees dipping thrust. Dawson Eldorado Mines Ltd. produced approximately 2900 tonnes of ore grading 4800 g/t Ag from more than nine veins, during the period 1983 to 1987. Several auriferous veins are also present at Plata, the most significant being the P4 zone with a drill-indicated resource of about 159,000 tonnes grading 402 g/t Ag and 3.8 g/t Au (Angeren, 1997).

Yukon Gold drilled six holes in 1996 targeting the P3 and P4 zones, and suggested that the Plata veins held potential for over 450,000 tonnes of ore. The veins could be genetically related to the Plata North intrusion exposed seven kilometers to the north.

5. MINERALIZATION

Although, mineralization associated with the TPS intrusions is widely variable in style, the different styles have an overall metal assemblage of Au-Bi-W-As (Sb, Mo. Hg, Ag, Zn, Cu). Mineralized districts usually contain several types of deposits commonly zoned around intrusions. Jiang and Broughton (1998) describe the styles of mineralization in Alaska and Yukon as follows:

Sheeted Au-Quartz Veins within intrusions.
Narrow, planar, generally parallel to regional structures quartz veins with variable amounts of sericite, K-feldspar, biotite, calcite, scheelite and tourmaline. They are generally low in sulphide, but locally contain abundant pyrite and arsenopyrite accompanied by minor molybdenite and bismuthinite. Alteration is restricted to narrow sericite – K-feldspar envelopes. Veins in the surrounding metasedimentary rocks are weakly to un-mineralized but often contain abundant tourmaline. Although sheeted veins are developed through extensive portions of the intrusions, mineralization is typically spatially restricted to a portion of the intrusions. Typical examples are the Fort Knox and Dublin Gulch gold deposits.

Au-Bearing Disseminations and Quartz Stringers Within Intrusions.
The mineralization occurs in small dikes, sills and plugs outside the hornfels zones surrounding the intrusions. Veining is not sheeted. The best example is Brewery Creek.

Metasediment-Hosted, Disseminated, Stringer and Breccia Mineralization Outside Intrusions and External to Hornfels Zones. Examples include the Pacific, Blue and North Slope zones at Brewery Creek, and the Discovery zone at Ida.

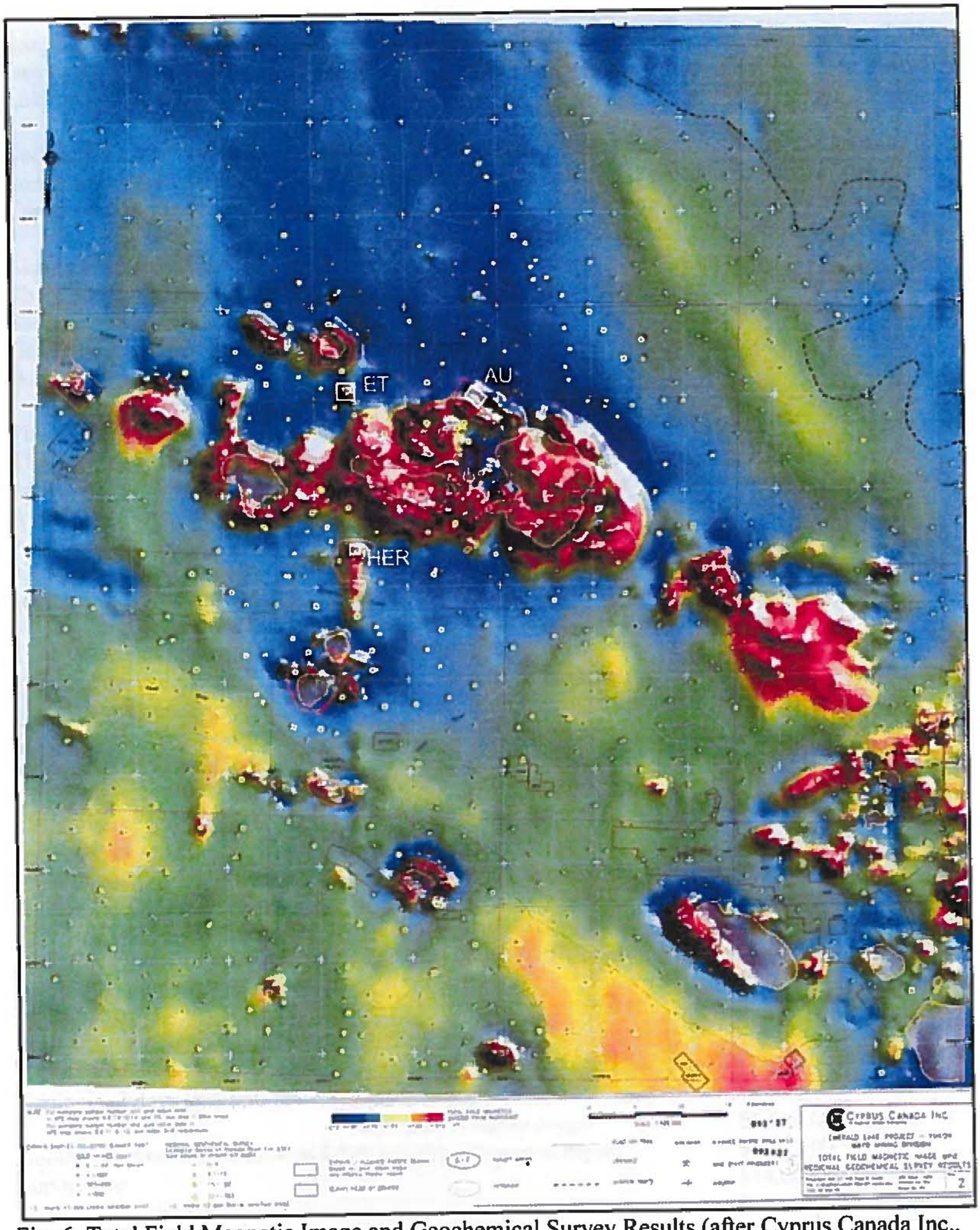


Fig. 6: Total Field Magnetic Image and Geochemical Survey Results (after Cyprus Canada Inc., 1998)

Large, Auriferous Quartz-Sulphide Veins Outside Intrusions but Within Hornfels Zones. Examples include the Olive and Catto Creek zones at Dublin Gulch, and Mike North at Mike Lake.

Sediment-Hosted, Stratabound Sulphide Replacements. These are both within and outside the hornfels (e.g., Wayne near Keno Hill, Heidi at Lake Creek). This style is broadly similar to Carlin style mineralization (Poulsen et al., 1996).

Skarn at Intrusive Contacts.
There are numerous W-Sn-Mo occurrences reported and a scattering of Cu-Au skarn ccurrences.
Sn Anomalies Outside Intrusions. Sn-bearing breccias and skarns (e.g., Tin Dome at Dublin Gulch) are within the hornfels but are slightly more peripheral to intrusive contacts than W skarns.

Pb-Zn-Ag ± Au Veins.
These are found mostly outside the metamorphic aureole and are the style most peripheral to intrusions. In many systems, these zones remain to be conclusively linked to the TPS intrusions. A direct connection between some examples of this style (e.g., Keno Hill) remains tenuous.
A critical feature of intrusion-hosted mineralization in TPS systems is the formation of Au and sulphide mineralization in several different stages ranging from near solidus to low-temperature conditions. At the Emerald Lake mineralization precipitated in:

- Large miarolites infilled with quartz-K-feldspar-apatite-tourmaline-biotite;
- Early hornblende-biotite pegmatoidal dike/veins;
- High-temperature quartz-hornblende-feldspar-titanite veins; and
- Lower temperature, sheeted vein deposits.

6. GEOPHYSICAL SURVEY

The airborne geophysical survey on the ET, AU, and HER blocks was flown by Precision GeoSurveys Inc. for Northern Dancer Uranium Corp. on August 28, 2011 and September 18, 2011. A total of 79 line kilometers of magnetic and radiometric data were flown for this survey; this total includes tie lines and survey lines. The survey area of ET block is approximately 2 km by 2 km. The survey lines were flown at 100 meter spacings at a 090°/270° heading; the tie lines were flown at 1 km spacings at a heading of 000°/180°. The results of the survey are attached as Appendix at the back of this Geological Report.

7. 2011 EXPLORATION EXPENSES

Geologist 7 days @ $ 950 per day (Geological Report, Program design and Phase 2 Program design)	$6,650.00
Geological Assistant 5 days @ $ 325 per day (Geological Report)	$1,625.00
Survey Fee	$14,000.00
Fuel and Positioning	$10,000.00
Compilation of data and report (Geophysicist Report)	$7,000.00
Mob/demob	$11,000.00
Sub-total	$50,275.00

Management Fee (*15% contract procurement and stand-by delays*)	$7,541.25
Sub-total	$57,816.25
HST 12% (81525 1426)	$6,937.95
Grand total	**$64,754.20**

8. CONCLUSIONS

Total field magnetic image and the magnetic anomalies associated with granitoide intrusions in the broader area of AU, ET and HER claims is shown in Fig. 6. Various shades of red indicate the intrusions and their aureoles, which potentially contain significant gold ± silver and/or the base metals mineralization. The mineralization occurs in disseminated sulphides including arsenopyrite, pyrite, pyrrhotite, sphalerite, galena, chalcopyrite, molybdenite and bismuthinite. The magnetic anomalies were interpreted to be caused mainly by pyrrhotite.

Rationale of the geophysical survey reported here in the "Airborne Geophysical Survey Report, ET, AU and HER Blocks" was to define magnetic and radiometric anomalies within the claim blocks in greater detail and to use the results for orientation of the future exploration work. In the following paragraphs we interpret the new geophysical survey data.

There is a topographic depression in the AU claim block stretching from the middle of the block northward. This topographic depression quite well coincides with the magnetic low that is surrounded by a ring of vertical gradient and total magnetic intensity highs. This ring appears to indicate the contact-metamorphic aureole located on the slopes surrounding topographic low. Total count anomalies situated in the northwestern and southeastern portions of the claim block combine potassium, uranium and thorium values, each contributing significantly to it. Potassium highs in the northwestern and southeastern portions of the claim block may indicate relative abundance of the K-feldspar and while mica in the contact aureole rocks. The future exploration should focus on the ring of vertical gradient and total magnetic intensity highs, which may indicate the extent of contact-metamorphic aureole and possibly sulphidic mineralization with gold.

Digital terrain model of the ET claim block shows a topographic high stretching from the centre of the block toward its northeast corner. The vertical gradient and total magnetic intensity highs form a ring of uneven intensity with the maxima situated west, southeast and north of the central topographic high. This ring appears to indicate the extent of contact-metamorphic aureole around the granitoide intrusion. The potassium forms a non-contiguous anomaly on the northwestern, northeastern and southern slopes of the topographic high, with the maximum in the northwestern part. Uranium forms a north-south elongated maximum on the northeastern slopes of the topographic high. Thorium highs coincide in part with the uranium highs. The magnetic anomalies appear to indicate the contact aureole around the intrusion characterized by relatively abundant pyrrhotite. Since pyrrhotite associates with other sulphides, these anomalies should be tested by further exploration.

The terrain model map of the HER claim block shows a topographic high stretching from south to north across the central portion of the block and turning northwest in the northern part. Based on the regional magnetic survey (Fig. 6) the granitoide intrusion cropping out on the HER claims is part of a much larger, about 5 kilometers long body stretching north – south. The vertical gradient and total magnetic intensity maps show the highs forming a semicircle in the northwestern corner of the claim block, which may indicate relative abundance of pyrrhotite in the contact aureole situated in the northwestern portion of the claim block only. The southern part of the topographic high has no positive magnetic anomaly. Total count anomalies in part coincide with the mag anomalies, while another part of them extends farther southeast. Potassium forms a distinct anomaly stretching east – west in the centre of the block and uranium forms two north – south stretching anomalies on the eastern slopes of the central topographic elevation. A less distinct uranium anomaly coincides with the magnetic high in the northwestern part of the claim block. The future exploration should focus on the magnetic anomalies in the northwestern portion of the claim block and on the uranium anomaly in the central-northern portion of the block.

9. REFERENCES

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10. STATEMENT OF QUALIFICATIONS

I, Bohumil (Boris) Molak, Ph.D., P.Geo., do hereby certify that:

1. I am a self-employed Geoscientist residing at 108 - 5140 Sanders Street, Burnaby, BC., V6H 1T2, Canada.

2. I am a member of the Association of Professional Engineers and Geoscientists of British Columbia (License No. 28600) in good standing.

3. I graduated from the Comenius University of Czechoslovakia with a Bachelor of Science (Mgr.) in Economic Geology in 1970. From the same university I obtained the degree Master of Science in Economic Geology (RNDr.) in 1980 and the degree Doctor of Philosophy (CSc.) in 1990. I have practiced my profession continuously since 1970, working for the Governemnt Geological Surveys and as a self-employed geo-scientific consultant.

4. My geological practice includes the exploration and research on the precious, base, ferrous and other metals in Slovakia, Zambia, Cuba, Guinea, Canada, Chile, Argentina and Bulgaria.

5. This report is based solely on the historical information, assessment reports and on the Internet applications of the Yukon Ministry of Energy, Mines and Resources. The visit to the properties have not been done and therefore an independent check-up of the historical results could not be conducted.

6. I am responsible for the Geological Report only and the sources of all information contained in it are quoted in the References Chapter.

7. As of the date of this Certificate I am not aware of any material fact or material change with respect to the subject matter of this report that is not reflected in this report, the omission of which would make the report misleading.

8. I am independent of International Alliance Resources Inc.

B. Molak

PROFESSIONAL
PROVINCE OF
Dr. B. B. MOLAK
#28600
BRITISH COLUMBIA
GEOSCIENTIST

At Vancouver, this 27th day of January, 2012

10.1. Statement of Qualifications

I, Dwayne Kress hereby certify that:

I am a mineral exploration consultant residing in Squamish, BC.

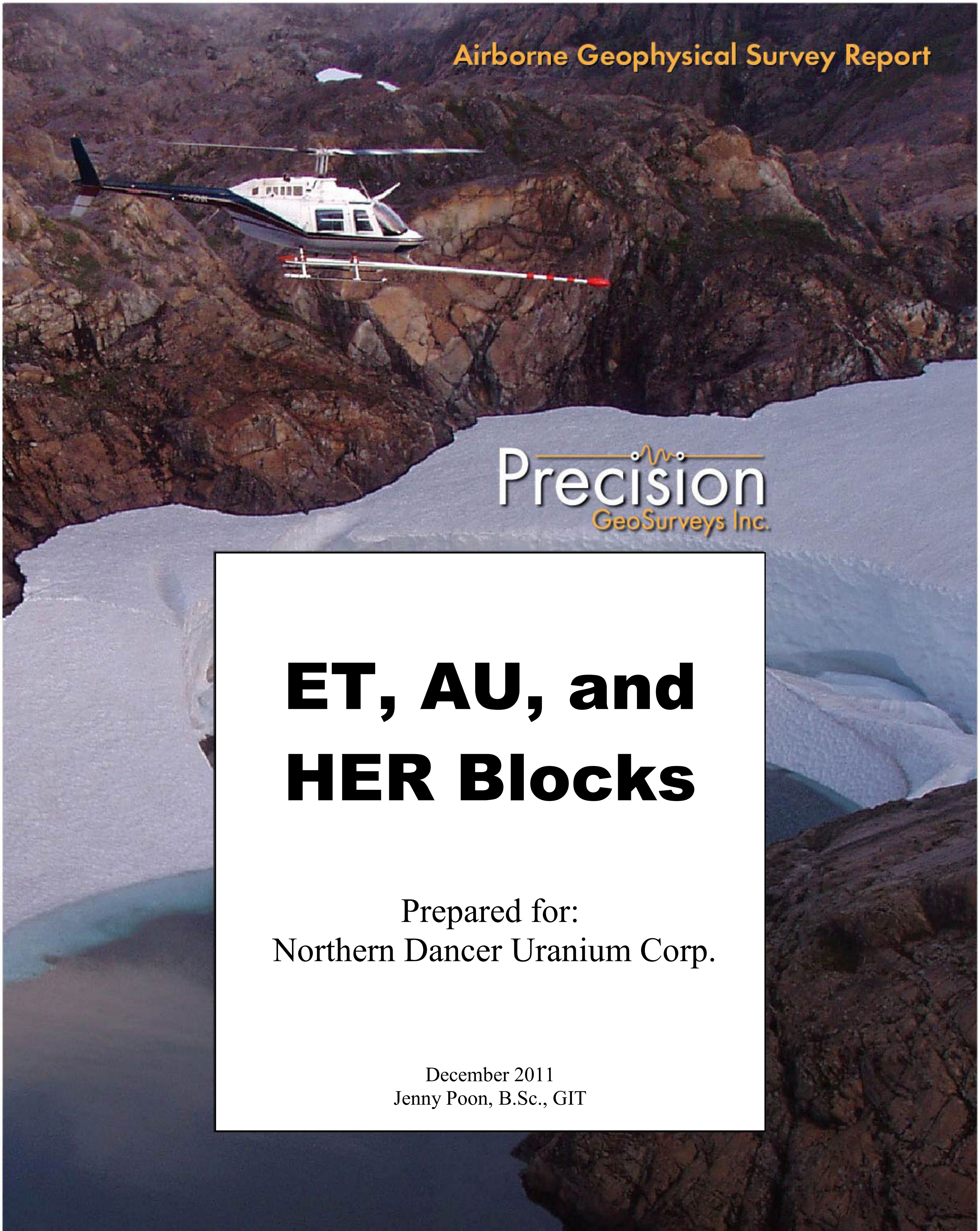
My mineral exploration contract services includes exploration (soil sampling, mechanized trenching, airborne surveys), prospecting for precious, base metals, uranium etc.

I am responsible for Exploration Expenses chapter in this report.

At Vancouver, this 27th day of January, 2012

APPENDIX

Airborne Geohysical Survey Report on the AU, ET and HER Blocks



Airborne Geophysical Survey Report

Precision GeoSurveys Inc.

ET, AU, and HER Blocks

Prepared for:
Northern Dancer Uranium Corp.

December 2011
Jenny Poon, B.Sc., GIT

www.precisiongeosurveys.com • 520–355 Burrard Street • Vancouver, B.C. • Canada V6C 2G8 • T: 604.484.9402

Table of Contents

Introduction:

This report outlines the survey operations and data processing actions taken during the airborne geophysical survey flown at ET, AU, and HER blocks (Figure 1). The airborne geophysical survey was flown by Precision GeoSurveys Inc. for Northern Dancer Uranium Corp. The geophysical survey, carried out on August 28, 2011 and September 18, 2011 saw the acquisition of high resolution magnetic and radiometric data.

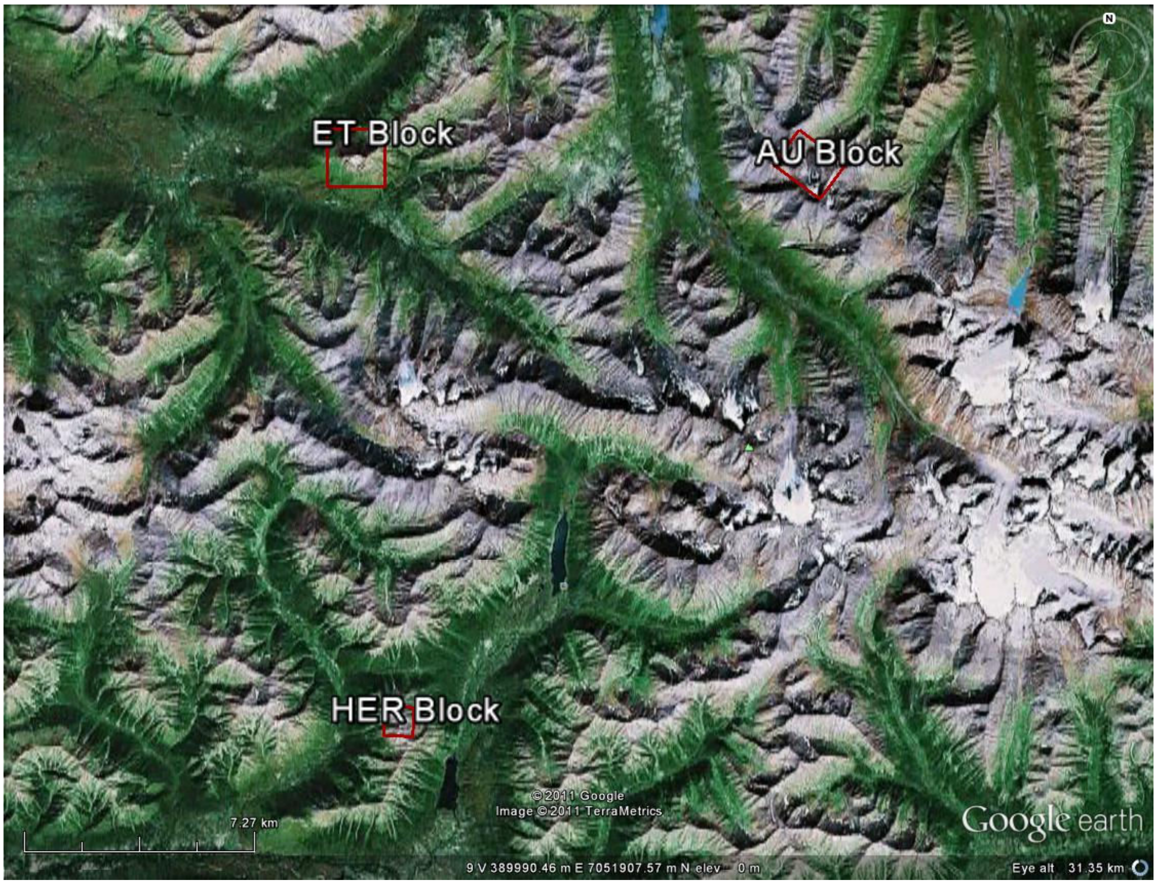


Figure 1: ET, AU, and HER blocks.

The AU, ET, and HER blocks are located approximately 190 kilometers north east of Ross River, YT and 60 kilometers west of the Northwest Territories border (Figure 2). A total of 79 line kilometers of magnetic and radiometric data were flown for this survey; this total includes tie lines and survey lines.

Figure 2: ET, AU, and HER blocks area location relative to Ross River, YT.

The survey area of ET block is approximately 2 km by 2 km (Figures 3 & 4). The survey lines were flown at 100 meter spacings at a 090^{o}/270^{o} heading; the tie lines were flown at 1 km spacings at a heading of 000^{o}/180^{o} (Figure 5).

Figure 3: Plan View - ET block with survey and tie lines marked in yellow and the boundary in red.

Figure 4: Terrain View - ET block with survey and tie lines marked in yellow and the boundary in red.

Precision GeoSurveys Inc.

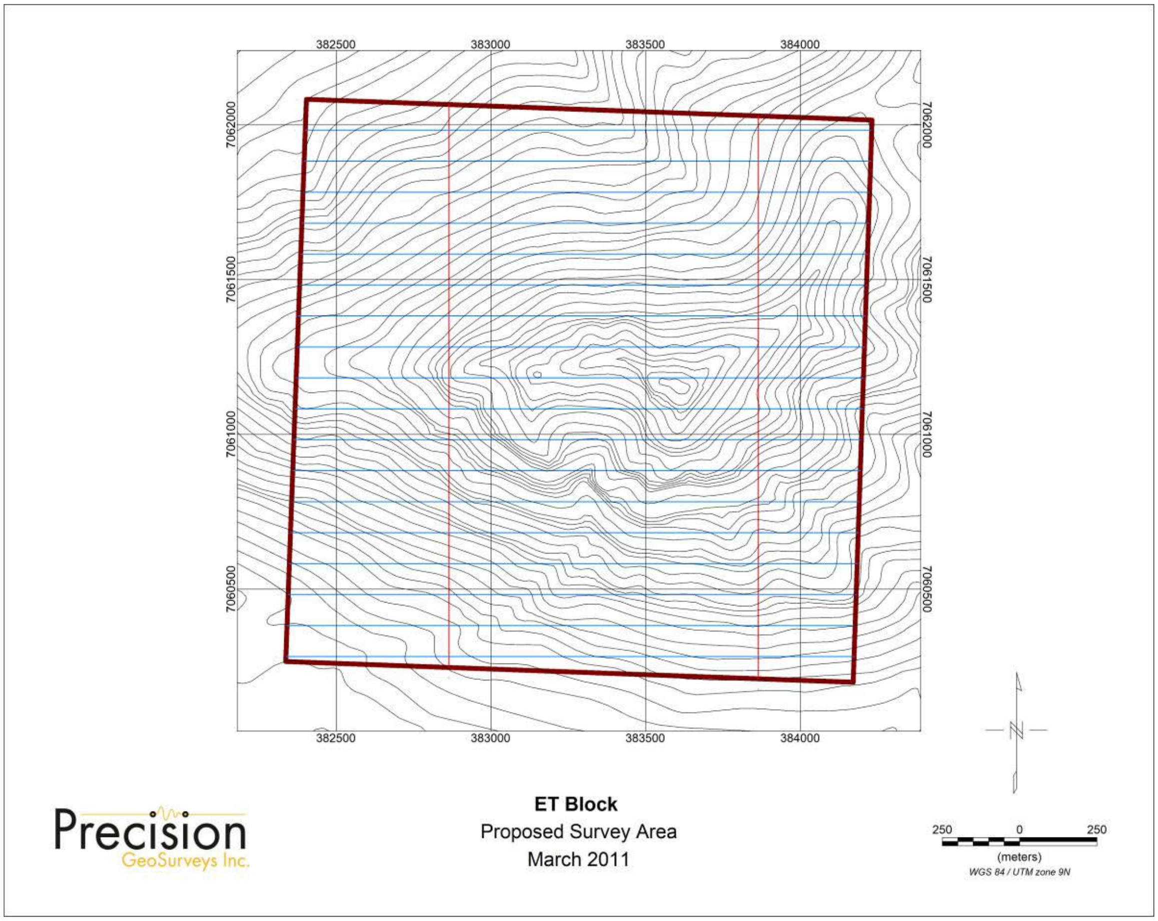


Figure 5: Proposed survey basemap of ET block showing survey and tie lines and the boundary in red.

For the AU block, its survey area is approximately 1.3 km by 2 km (Figures 6 & 7). The survey lines were flown at 100 meter spacings at a 038°/218° heading; the tie lines were flown at 500 meter spacings at a heading of 128°/308° (Figure 8).

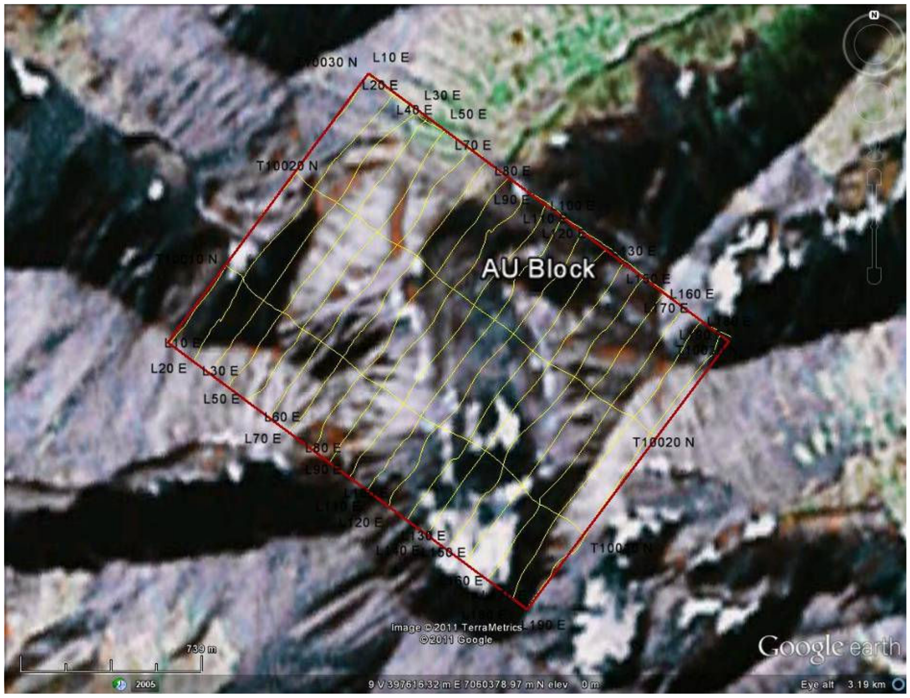


Figure 6: Plan View – AU block with survey and tie lines marked in yellow and the boundary in red.

Figure 7: Terrain View - AU block with survey and tie lines marked in yellow and the boundary in red.

Figure 8: Proposed survey basemap of AU block showing survey and tie lines and the boundary in red.

The survey area of the HER block is approximately 1 km by 1 km (Figures 9 & 10). The survey lines were flown at 100 meter spacings at a 090°/270° heading; the tie lines were flown at 500 meter spacings at a heading of 000°/180° (Figure 11).

Figure 9: Plan View – HER block with survey and tie lines marked in yellow and the boundary in red.

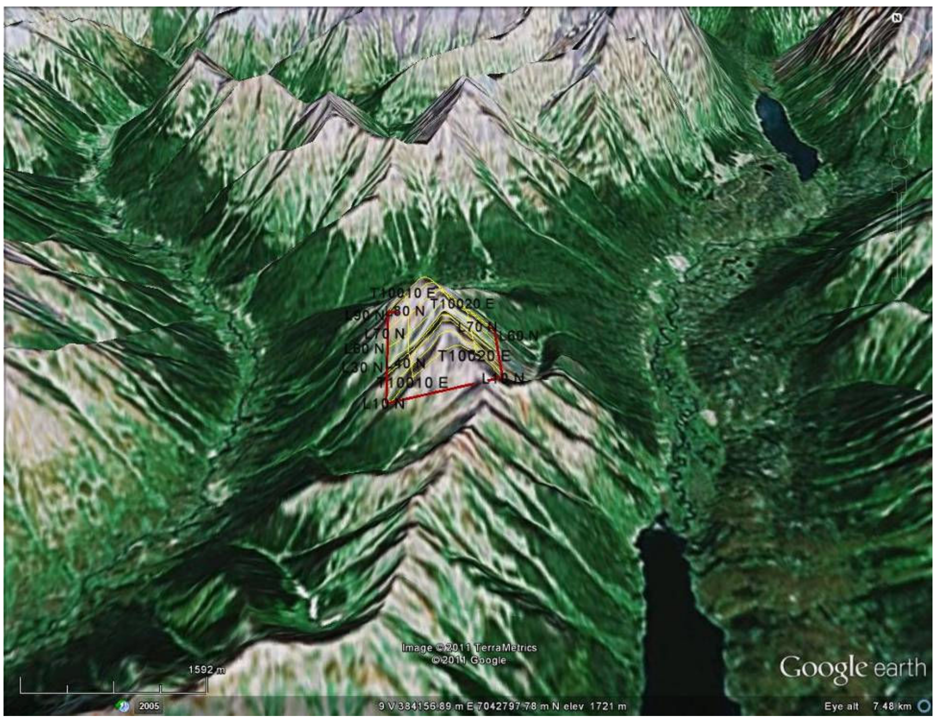


Figure 10: Terrain View - HER block with survey and tie lines marked in yellow and the boundary in red.

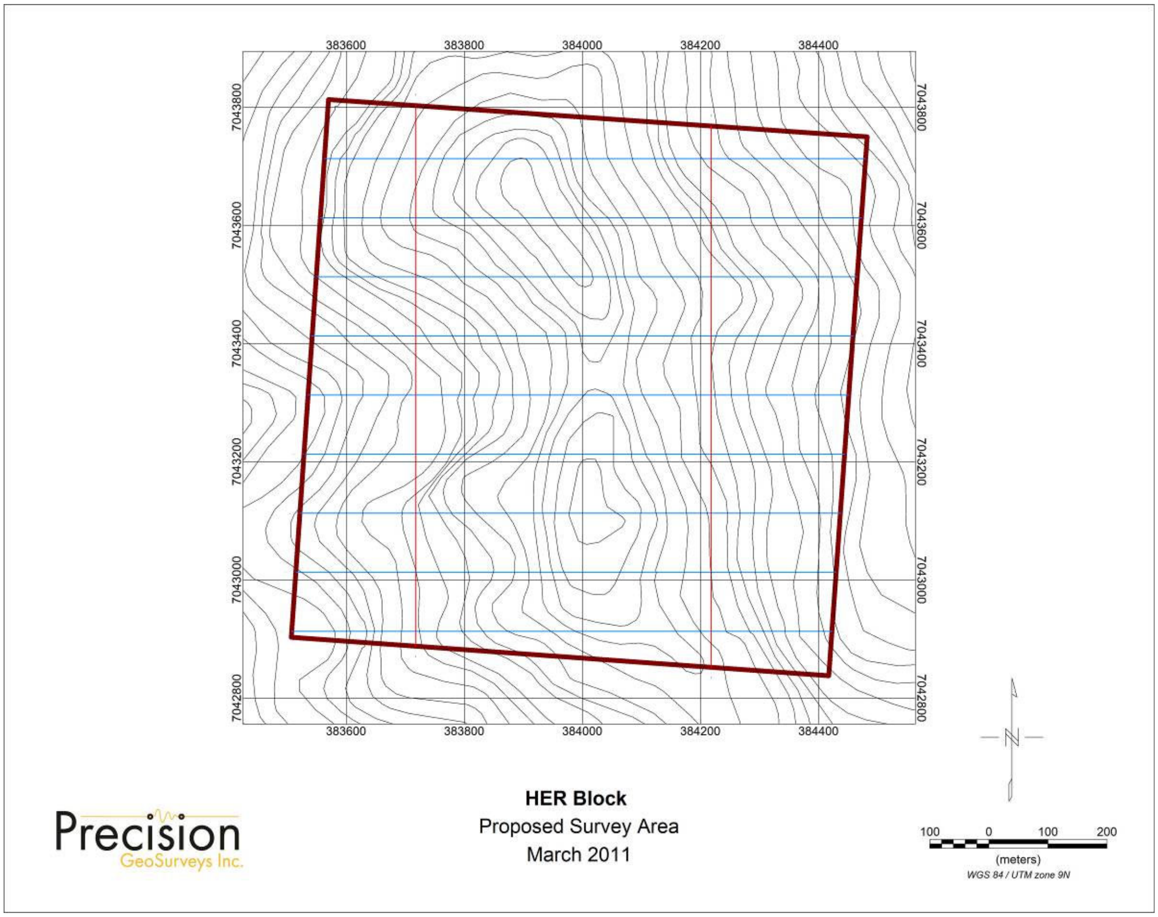


Figure 11: Proposed survey basemap of HER block showing survey and tie lines and the boundary in red.

Survey Specifications:

The geodetic system used for this survey is WGS 84 and the area is contained in zone 9N. The survey data acquisition specifications and coordinates for ET, AU, and HER blocks are specified as followed (Tables 1 to 4).

Survey Blocks	Survey Line Spacing m	Tie Line Spacing m	Survey Line km	Tie Line km	Total Line km	Survey Line Orientation	Nominal Survey Height m
AU	100	500	26	6	32	$038^o/218^o$	35
ET	100	1000	33	4	37	$090^o/270^o$	35
HER	100	500	8	2	10	$090^o/270^o$	35
Total					79		

Table 1: AU, ET, and HER blocks survey acquisition specifications.

Longitude	Latitude	Easting	Northing
131.0754204	63.66645862	397292	7061515
131.0457096	63.65665832	398727	7060376
131.0623334	63.64685038	397869	7059310
131.0919562	63.65661258	396438	7060445

Table 2: AU block survey polygon coordinates using WGS 84 in zone 9N.

Longitude	Latitude	Easting	Northing
131.3763966	63.66689238	382404	7062082
131.3394439	63.66689651	384232	7062015
131.3393332	63.65059247	384171	7060199
131.3763857	63.65058646	382337	7060266

Table 3: ET block survey polygon coordinates using WGS 84 in zone 9N.

Longitude	Latitude	Easting	Northing
131.3393639	63.50346088	383570	7043813
131.3210119	63.50319377	384482	7043750
131.3216524	63.49499446	384417	7042838
131.3399605	63.49528010	383507	7042903

Table 4: HER block survey polygon coordinates using WGS 84 in zone 9N.

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 magnetic and radiometric data were collected to serve in the exploration of AU, ET, and HER blocks which contains rocks that are prospective for gold mineralization.

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 AU, ET, and HER blocks using a Eurocopter AS350 helicopter (Figure 12). The survey lines were flown at a nominal line spacing of one hundred (100) meters and the tie lines were flown at five hundred (500) meters and 1 km spacing for both the spectrometer and magnetometer as they were acquired simultaneously. The average survey elevation was 39 meters vertically above ground for the AU block, 47 meters vertically above ground for the ET block, and 29 meters vertically above ground for the HER block. The experience of the pilots 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 12: Eurocopter AS350 equipped with mag stinger for magnetic data acquisition.

The base of operations for this survey was at Twin Creeks, North Canol Road, YT. The Precision crew consisted of four members:

Harmen Keyser and Ola Vaage - Pilots
Brenton Keyser - Operator
Shawn Walker - On-site geophysicist

The ET and AU survey blocks were started and completed on August 28, 2011 and the HER survey block was started and completed on September 18, 2011. The surveys did not encounter any delays.

4.0 Equipment:

For this survey, a magnetometer, spectrometer, base stations, laser altimeter, pilot guidance unit, and a data acquisition system were required to carry out the survey and collect quality, high resolution data. The survey magnetometer is carried in an approved "stinger" configuration to enhance flight safety and improve data quality in this mountainous terrain.

4.1 AGIS:

The Airborne Geophysical Information System, AGIS, (Figure 13), 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 13: AGIS installed in the Eurocopter AS350.

The AGIS was manufactured by Pico Envirotec; therefore the system uses standardized Pico software and external sensors 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 real time magnetic compensation and survey quality control procedures.

4.2 Spectrometer:

The IRIS, or Integrated Radiometric Information System is a fully integrated, gamma radiation detection system containing 16.8 litres of NaI (T1) downward looking crystals and 4.2 litres NaI (T1) upward looking crystals (Figure 14). The IRIS is equipped with upward-shielding high density RayShield® gamma-attenuating material to minimize cosmic and solar gamma noise. 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 radioelements (K, U, Th, etc.), temperature, cosmic radiation, 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.

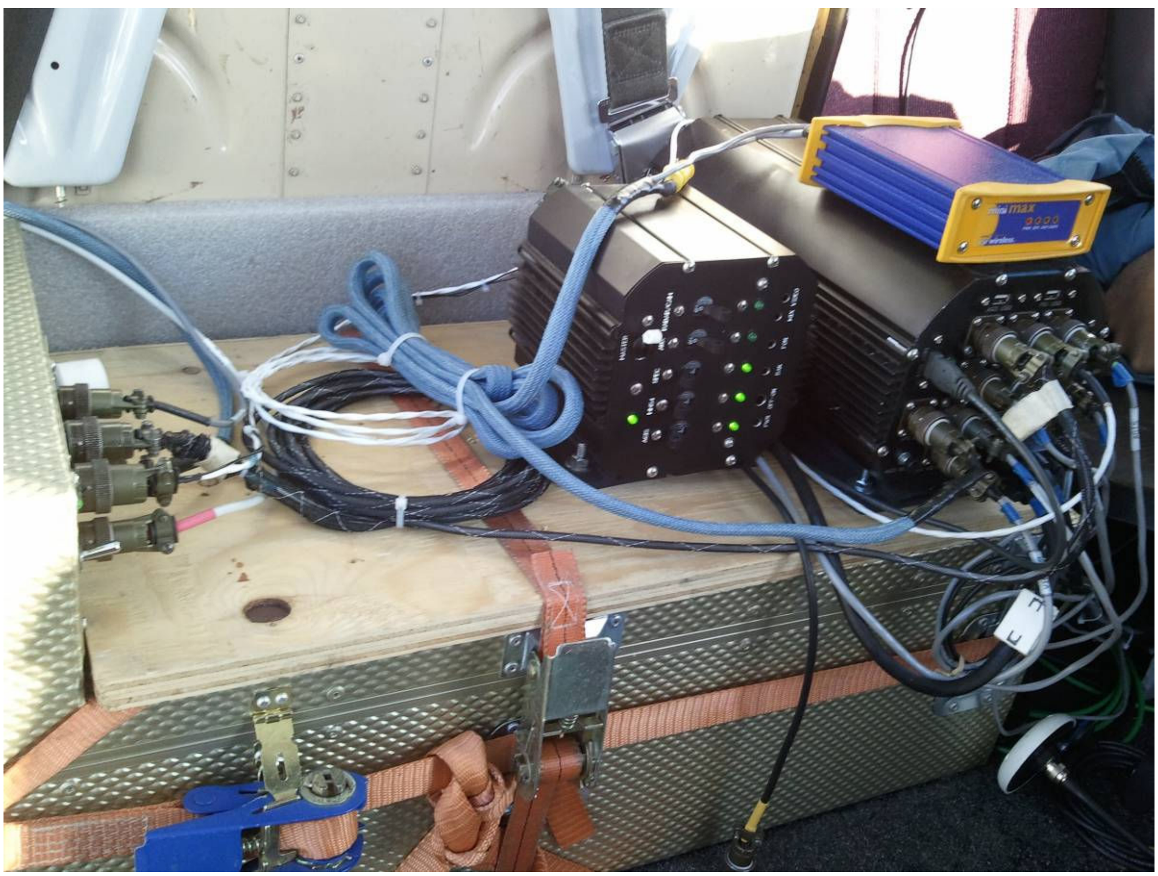


Figure 14: One of the IRIS strapped in the back seat of the Eurocopter AS350.

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 15). 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, aircraft position, 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 15: View of the mag stinger.

4.4 Base Stations:

For monitoring and recording of the Earth's diurnal magnetic field variation, Precision GeoSurveys uses two base stations: Scintrex proton precession Envi Pro magnetometer and GEM GSM-19T magnetometer. Both base stations are mounted as close to the survey blocks as possible to give accurate magnetic field data. The Envi Pro base station (Figure 16), 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 airborne CS-3 magnetometer.

Figure 16: Scintrex Envi Pro proton precession magnetometer.

The GEM GSM-19T magnetometer (Figure 17) also uses the proton precession technology sampling at a rate of 0.5 Hz. The GSM-19T has an accuracy of +/- 0.2 nT at 1 Hz.

Figure 17: GEM GSM-19T proton precession magnetometer.

4.5 Laser Altimeter:

The pilot is provided with terrain guidance and clearance with an Acuity AccuRange AR3000 laser altimeter (Figure 18). 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 off special reflectors. Within the sensor unit, reflected signal light is collected by the lens and focused onto a photodiode. Through serial communications and analog outputs, the distance data are transmitted and collected by the AGIS at 10 Hz.

Figure 18: Acuity AccuRange AR3000 laser altimeter.

4.6 Pilot Guidance Unit:

The PGU (Pilot Guidance Unit) is a graphical display type unit that provides continuous steering and elevation information to the pilot (Figure 19). It is mounted remotely from the data system on top of the instrument panel. The PGU assists the pilot to keep the helicopter on the flight path and at the desired ground clearance.

Figure 19: Pilot Guidance Unit.

The LCD monitor measures 7 inches, with a full VGA 800 x 600 pixel display. The CPU for the PGU is housed in the PC-104 console and uses Windows XP Embedded operating system control, with input from the GPS antenna, laser altimeter, and AGIS.

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 at an altitude where there is no ground effect in the magnetic data. In this case, two compensation flights were required; one for the AU block and another for the ET and HER blocks. The four orthogonal headings for the AU block were 090°/270° and 000°/180° and the four orthogonal headings for the ET and HER blocks were 038°/218° and 128°/308°.

In each heading, three specified roll, pitch, and yaw maneuvers are performed by the pilot; these maneuvers provide the data that are 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.

Followed by the compensation flight, a lag test is conducted. A lag correction of 1.0 seconds was applied to the total magnetic field data to compensate for the lag in the recording system as the magnetometer sensor flies 5.70 m ahead of the GPS antenna.

A magnetic base station is set up before every flight to ensure that diurnal activity is recorded during the survey flights. In this case, the base station was located in the bushes close to Twin Creeks. Base station readings were reviewed at regular intervals to ensure 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.

Filtering is applied to the laser altimeter data as to remove vegetation clutter and to show the actual ground clearance. To remove vegetation clutter a Rolling Statistic filter was applied to the laser altimeter data and a low pass filter was used to smooth out the laser altimeter profile to remove isolated noise. As a result, filtering the data will yield a more uniform surface in close conformance with the actual terrain.

Some filtering of the magnetic data is also required. A Non Linear filter was used for spike removal. The 1D Non-Linear Filter is ideal for removing very short wavelength, but high amplitude features from data. It is often thought of as a noise spike-rejection filter, but it can also be effective for removing short wavelength geological features, such as signals from surficial features. The 1D Non-Linear Filter is used to locate and remove data that are recognized as noise. The algorithm is 'non- linear' because it looks at each data point and decides if that datum is noise or a valid signal. If the point is noise, it is simply removed and replaced by an estimate based on surrounding data points. Parts of the data that are not considered noise are not modified. The combination of a Non-Linear filter for noise removal and a low pass trend enhancement filter resulted in level data as indicated in the results section of this report. The low pass filters simply smoothes out the magnetic profile to remove isolated noise.

5.2 Radiometric Processing:

Calibrating the spectrometer system in the helicopter is the first and vital step before the airborne radiometric data can be processed. Once calibration of the system has been complete, the radiometric data are processed by windowing the full spectrum to create channels for U, K, Th and total count. A 5-point Hanning filter was applied to the Cosmic window before going any further with processing the radiometric data.

Aircraft background and cosmic stripping corrections were applied to all three elements, upward uranium channels, and total count using the following formula:

$$C_{ac} = C_{lt} - (a_c + b_c * \mathrm{Cos}_f)$$

where: C_{ac} is the background and cosmic corrected channel
C_{lt} is the live time corrected channel
a_c is the aircraft background for this channel
b_c is the cosmic stripping coefficient for this channel
Cos_f is the filtered cosmic channel

The radon backgrounds are first removed followed by Compton stripping. Spectral overlap corrections are applied on to potassium, uranium, and thorium as part of the Compton stripping process. This is done by using the striping ratios that have been calculated for the spectrometer by prior calibration, this breaks the corrected elemental values down into the apparent radioelement concentrations. Lastly, attenuation corrections are applied to the data which involves nominal survey altitude corrections, in this case 34 metres is applied to total count, potassium, uranium, and thorium data.

With all corrections applied to the radiometric data, the final step is to convert the corrected potassium, uranium, and thorium to apparent radioelement concentrations using the following formula:

$$eE = C_{cor} / s$$

where: eE is the element concentration K(%) and equivalent element concentration of U(ppm) & Th(ppm)
s is the experimentally determined sensitivity

Ccor is the fully corrected channel

Finally, the natural air absorption dose rate is determined using the following formula:

$$E = 13.08 * K + 5.43 * eU + 2.69 * eTh$$

where: E is the absorption dose rate in nG/h
K is the concentration of potassium (%)
eU is the equivalent concentration of uranium (ppm)
eTh is the equivalent concentration of thorium (ppm)

To calculate for radiometric ratios it follows the guidelines in the IAEA report. Due to statistical uncertainties in the individual radioelement measurements, some care was taken in the calculation of the ratio in order to obtain statistically significant values. Following IAEA guidelines, the method of determining ratios of the eU/eTh, eU/K and eTh/K was as follows:

1. Any data points where the potassium concentration was less than 0.25 were neglected.
2. The element with the lowest corrected count rate was determined.
3. The element concentrations of adjacent points on either side of each data point were summed until they exceeded a certain threshold value. This threshold was set to be equivalent to 100 counts of the element with the lowest count rate. Additional minimum thresholds of 1.6% for Potassium, 20 ppm for thorium, and 30 ppm for uranium were set up to insure meaningful ratios.
4. The ratios were calculated using the accumulated sums.

With this method, the errors associated with the calculated ratios will be similar for all data points.

5.3 Final Data Format

Abbreviations used in the GDB files are listed in the following table:

Channel	Units	Description
X	m	UTM Easting - WGS84 Zone 9 North
Y	m	UTM Northing - WGS84 Zone 9 North
Galt_m	m	GPS height - WGS84 Zone 9 North
Lalt	m	Laser Altimeter readings
DTM	m	Digital Terrain Model
GPStime	Hours:min:secs	GPStime
basemag	nT	Base station diurnal data
mag	nT	Total Magnetic Intensity
Balt	m	Barometric Altitude
BaltSTP	m	Barometric Altitude (Pres and Temp Corrected)
Temp_DegC	Degrees C	Air Temperature
Press_kP	KiloPascal	Atmospheric Pressure
Press_mbars	millibar	Atmospheric Pressure
filCos	counts/sec	Spectrometer - Filtered Cosmic
filUpU	counts/sec	Spectrometer - Filtered Upward Uranium
conTC	nGy/Hr	Equivalent Dose Rate
conK	%	Equivalent Concentration - Potassium
conU	ppm	Equivalent Concentration - Uranium
conTH	ppm	Equivalent Concentration - Thorium
THKratioF		Spectrometer - eTh/%K ratio
UKratioF		Spectrometer - eU/%K ratio
UTHratioF		Spectrometer - eU/eTh ratio
Date	yyyy/mm/dd	Local Flight Date

Table 5: ET, AU, and HER blocks survey channel abbreviations.

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. A complete file provided in each format will contain both magnetic and radiometric data.

Precision GeoSurveys Inc.

Appendix A

Equipment Specifications

Scintrex Envi Pro Proton Magnetometer with Integrated GPS (Base Station)

Total Field Operating Range	23,000 to 100,000 nT (gamma)
Total Field Absolute Accuracy	±1 nT (gamma)
Sensitivity	0.1 nT (gamma) at 2 second sampling rate
Tuning/ Sampling	Fully solid state. Manual or automatic, keyboard selectable Cycling (Reading) Rates 0.5, 1, 2, or 3 seconds
Gradiometer Option	Includes a second sensor, 0.5m (20 inch) staff extender and processor module
Gradient Tolerance	> 7000 nT (gamma)/m
'Walking' Mode	Continuous reading, cycling as fast as 0.5 seconds
Supplied GPS Accuracy	+/- 1m (Autonomous), < 1m WAAS Connects to most external GPS receivers with NMEA & PPS output
Standard Memory	Total Field Measurements: 84,000 readings Gradiometer Measurements: 67,000 readings Base Station Measurements: 500,000 readings
Real-Time Clock	1 second resolution, ± 1 second stability over 24 hours or GPS time
Digital Data Output	RS-232C, USB Adapter
Power Supply	Rechargeable, 2.9 Ah, lead-acid dry cell battery 12 Volts External 12 Volt input for base station operations
Operating Temperature	40°C to +60°C (-40°F to +140°F)
Dimensions and Weight	Console: 250mm x 152mm x 55mm (10" x 6" x 2.25") 2.45 kg (5.4 lbs) with rechargeable battery Magnetic 70mm d x 175mm (2.75"d x 7") Sensor: 1 kg (2.2 lbs) Gradiometer 70mm d x 675mm (2.75"d x 26.5") Sensor: (with staff extender) 1.15 kg (2.5 lbs) Sensor Staff: 25mm d x 2m (1"d x 76") 0.8 kg (1.75 lbs)

GEM GSM-19T Proton Precession Magnetometer (Base Station)

Configuration Options	15
Cycle Time	999 to 0.5 sec
Environmental	-40 to +60 ° Celsius
Gradient Tolerance	7,000 nT/m
Magnetic Readings	299,593
Operating Range	10, 000 to 120,000 nT
Power	12 V @ 0.62 A
Sensitivity	0.1 nT @ 1 sec
Weight (Console/ Sensor)	3.2 Kg
Integrated GPS	Yes

Scintrex CS-3 Survey Magnetometer

Operating Principal	Self-oscillation split-beam Cesium Vapor (non-radioactive Cs-133)
Operating Rage	15,000 to 105,000 nT
Gradient Tolerance	40,000 nT/metre
Operating Zones	10° to 85° and 95° to 170°
Hemisphere Switching	a) Automatic b) Electronic control actuated by the control voltage levels (TTL/CMOS) c) Manual
Sensitivity	0.0006 nT √Hz rms.
Noise Envelope	Typically 0.002 nT P-P, 0.1 to 1 Hz bandwidth
Heading Error	+/- 0.25 nT (inside the optical axis to the field direction angle range 15° to 75° and 105° to 165°)
Absolute Accuracy	<2.5 nT throughout range
Output	a) continuous signal at the Larmor frequency which is proportional to the magnetic field (proportionality constant 3.49857 Hz/nT) sine wave signal amplitude modulated on the power supply voltage b) square wave signal at the I/O connector, TTL/CMOS compatible
Information Bandwidth	Only limited by the magnetometer processor used
Sensor Head	Diameter: 63 mm (2.5") Length: 160 mm (6.3") Weight: 1.15 kg (2.6 lb)
Sensor Electronics	Diameter: 63 mm (2.5") Length: 350 mm (13.8") Weight: 1.5 kg (3.3 lb)
Cable, Sensor to Sensor Electronics	3m (9' 8"), lengths up to 5m (16' 4") available
Operating Temperature	-40°C to +50°C
Humidity	Up to 100%, splash proof
Supply Power	24 to 35 Volts DC
Supply Current	Approx. 1.5A at start up, decreasing to 0.5A at 20°C
Power Up Time	Less than 15 minutes at -30°C

Pico Envirotec GRS-10 Gamma Spectrometer

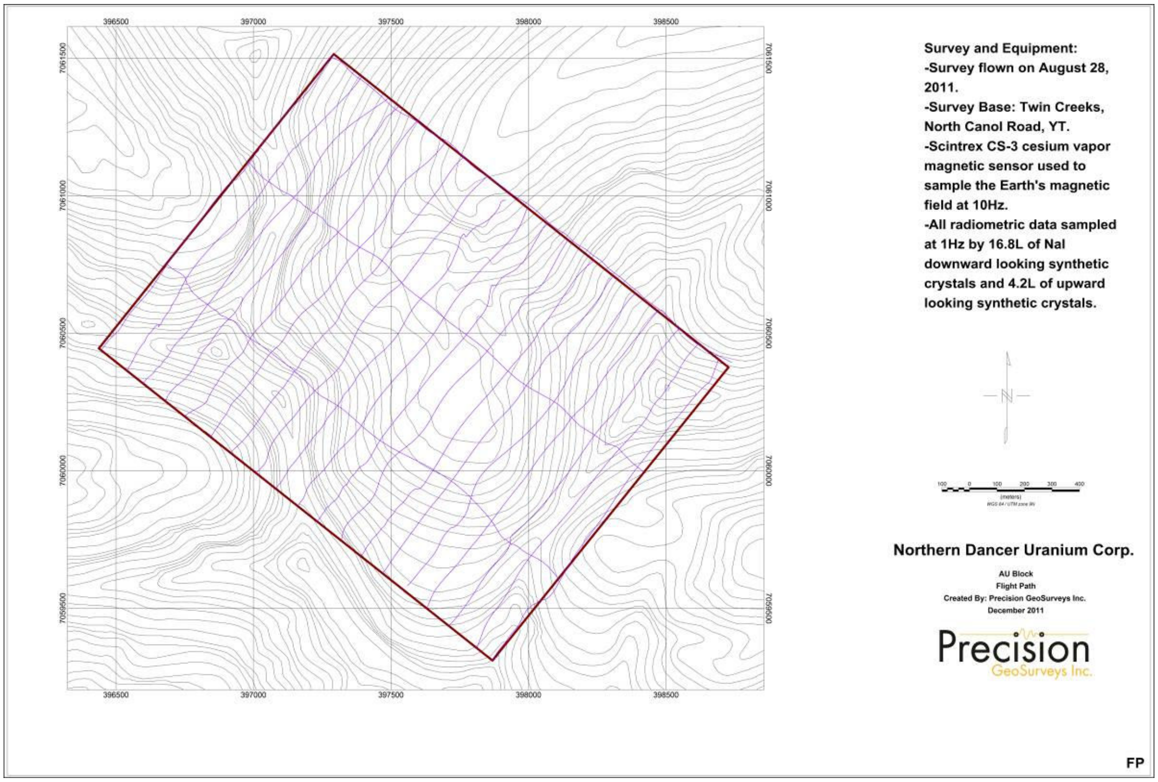
Crystal volume	16.8 liters downward plus 4.2 liters upward
Resolution	256/512 channels
Tuning	Automatic using peak determination algorithm
Detector	Digital Peak
Calibration	Fully automated detector
Real Time	Linearization and gain stabilization
Communication	RS232
Detectors	Expandable to 10 detectors and digital peak
Count Rate	Up to 60,000 cps per detector
Count Capacity per channel	65545
Energy detection range:	36 KeV to 3 MeV
Cosmic channel	Above 3 MeV
Upward Shielding	RayShield® non-radioactive shielding on downward looking crystals
Downward Shielding	6mm lead plate on upward looking crystals
Spectra	Collected spectra of 256/512 channels, internal spectrum resolution 1024
Software	**Calibration:**High voltage adjustment, linearity correction coefficients calculation, and communication test support **Real Time Data Collection:** Automatic Gain real time control on natural isotopes, and PC based test and calibration software suite
Sensor	Each box containing two (2) gamma detection NaI(Tl) crystals – each 4.2 liters. (256 cu in.) (approx. 100 x 100 x 650 mm) Total volume of approx 8.4 litres or 512 cu in with detector electronics
Spectra Stabilization	Real time automatic corrections on radio nuclei: Th, U, K. No implanted sources.

Pico Envirotec AGIS data recorder system
(for Navigation, Gamma spectrometer, VLF-EM and Magnetometer Data Acquisition)

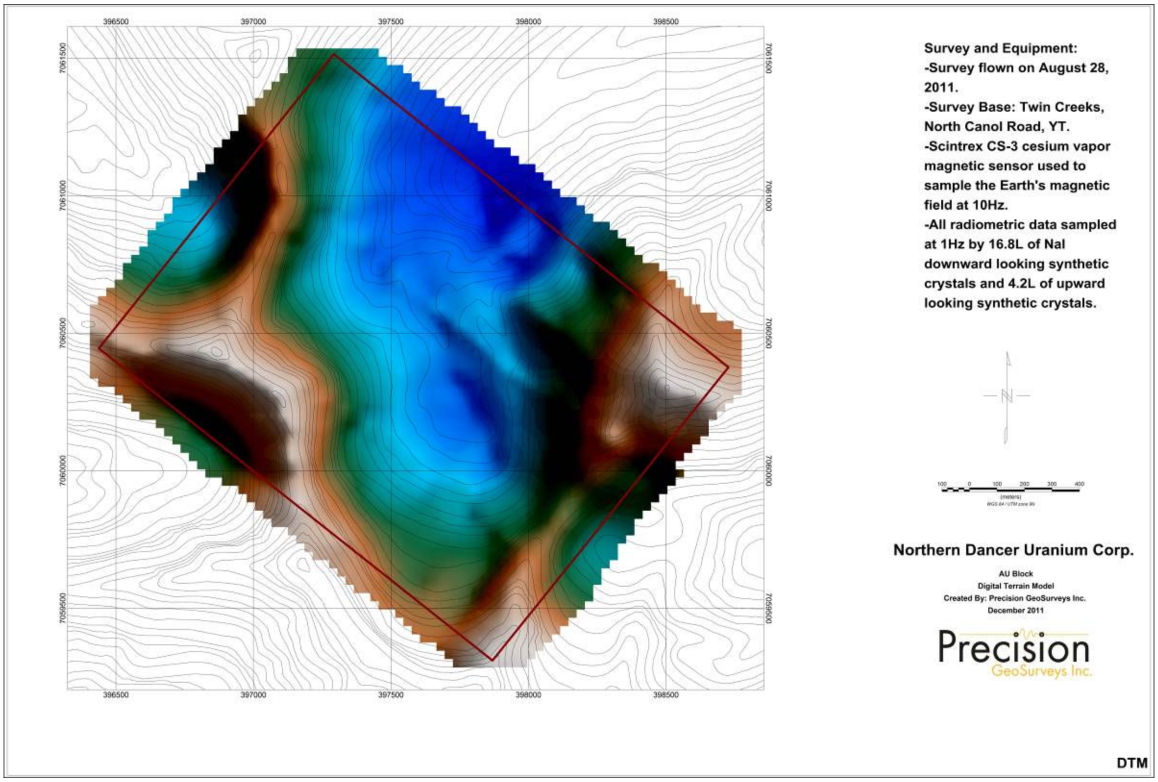
Functions	Airborne Geophysical Information System (AGIS) with integrated Global Positioning System Receiver (GPS) and all necessary navigation guidance software. Inputs for geophysical sensors - portable gamma ray spectrometer GRS-10, MMS4 Magnetometer, Totem 2A EM, A/D converter, temperature probe, humidity probe, barometric pressure probe, and laser altimeter. Output for the 2 line Pilot Indicator
Display	Touch screen with display of 800 x 600 pixels; customized keypad and operator keyboard. Multi-screen options for real-time viewing of all data inputs, fiducial points, flight line tracking, and GPS channels by operator.
GPS Navigation	Garmin 12-channel, WAAS-enabled
Data Sampling	Sensor dependent
Data Synchronization	Synchronized to GPS position
Data File	PEI Binary data format
Storage	80 GB
Supplied Software	**PEIView:** Allows fast data Quality Control (QC) **Data Format:** Geosoft GBN and ASCII output **PEIConv**: For survey preparation and survey plot after data acquisition
Software	**Calibration:** High voltage adjustment, linearity correction coefficients calculation, and communication test support **Real Time Data Collection:** Automatic Gain real time control on natural isotopes and PC based test and calibration software suite
Power Requirements	24 to 32 VDC
Temperature	Operating:-10 to +55 deg C; storage:-20 to +70 deg C

Appendix B

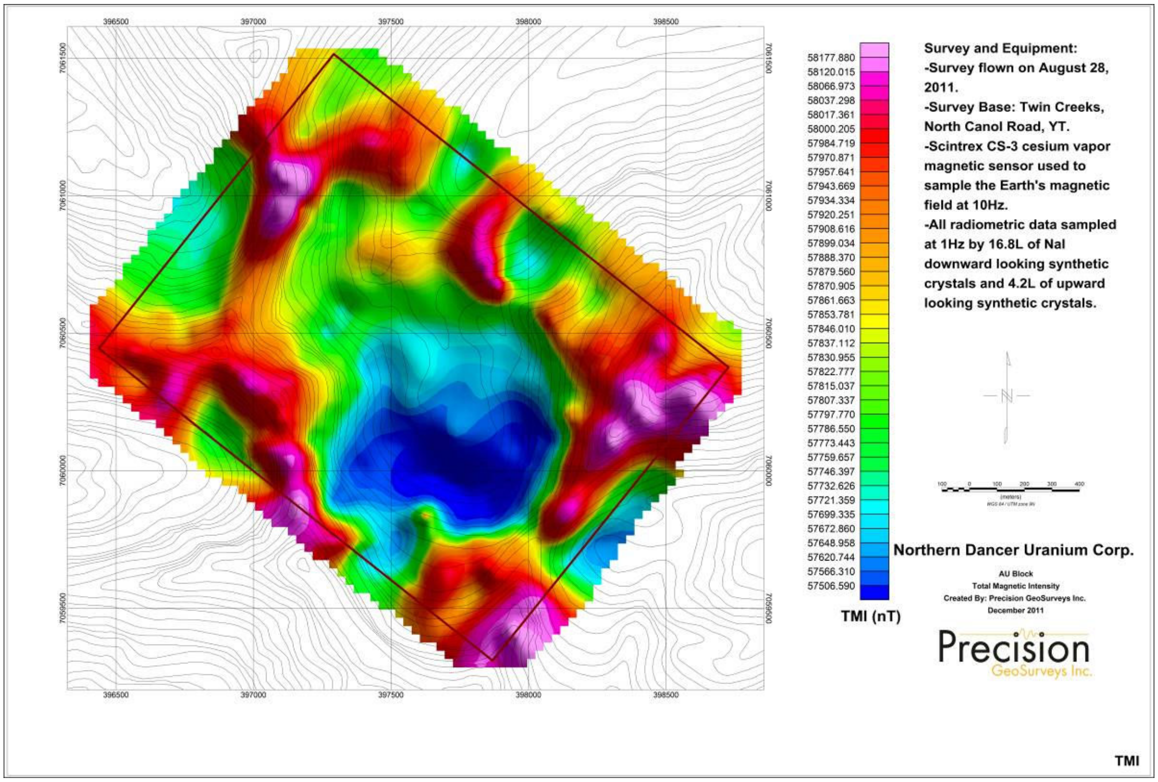
AU Maps



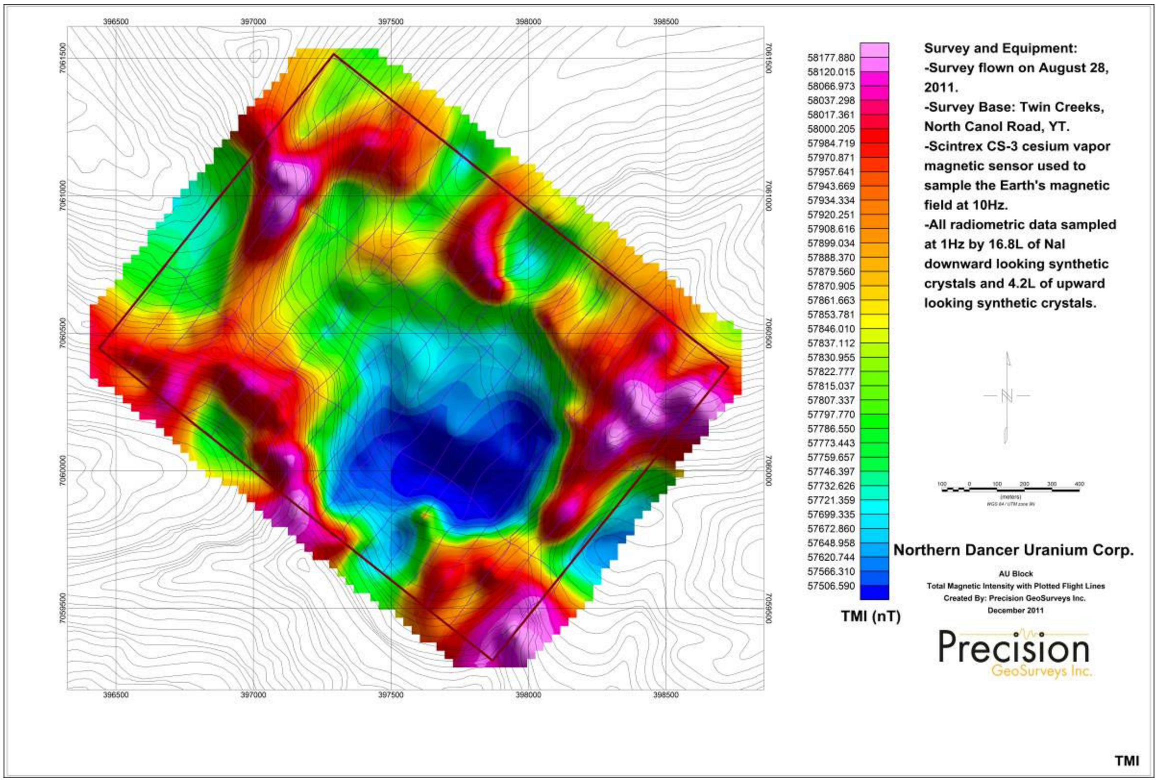
Map 1: Au block flight path.



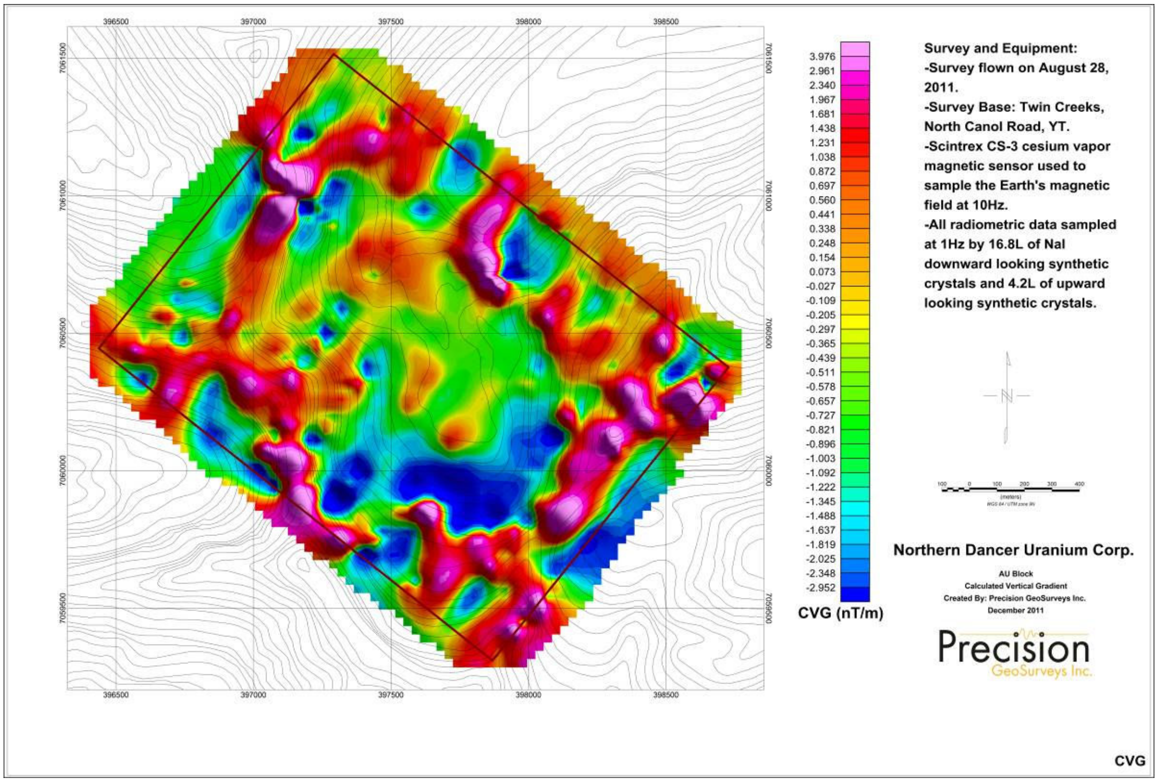
Map 2: AU block digital terrain model.



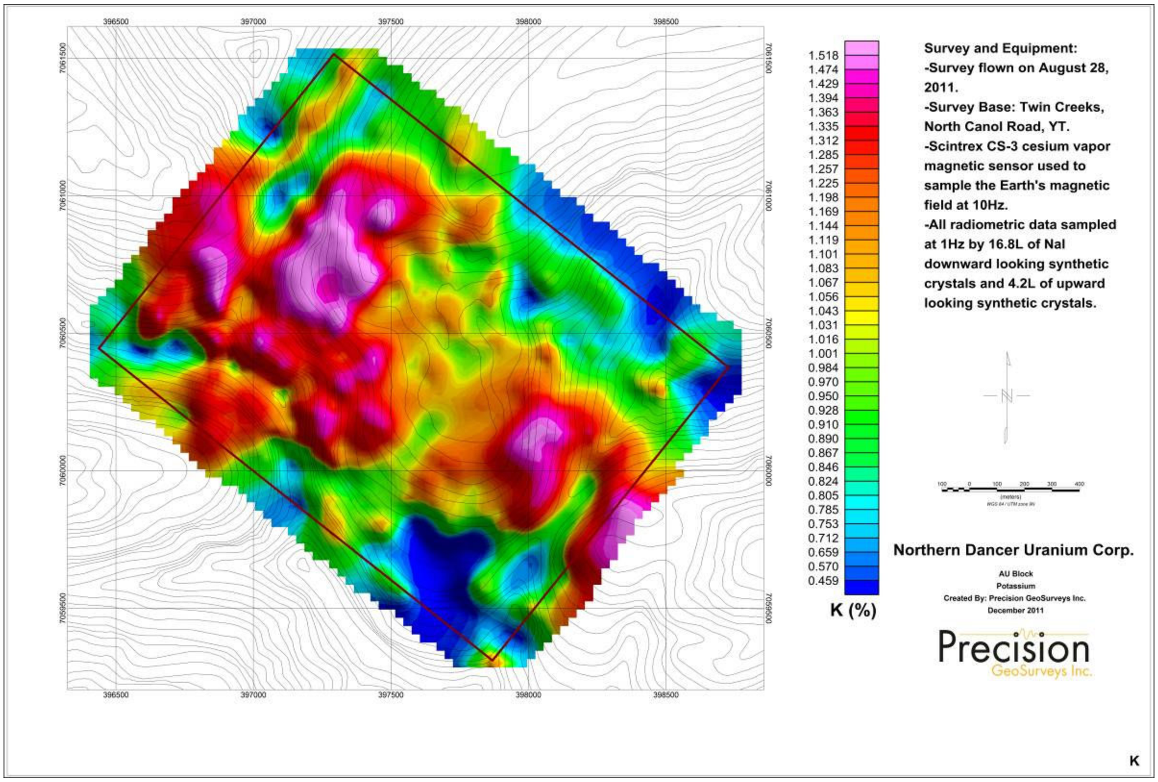
Map 3: AU block total magnetic intensity.



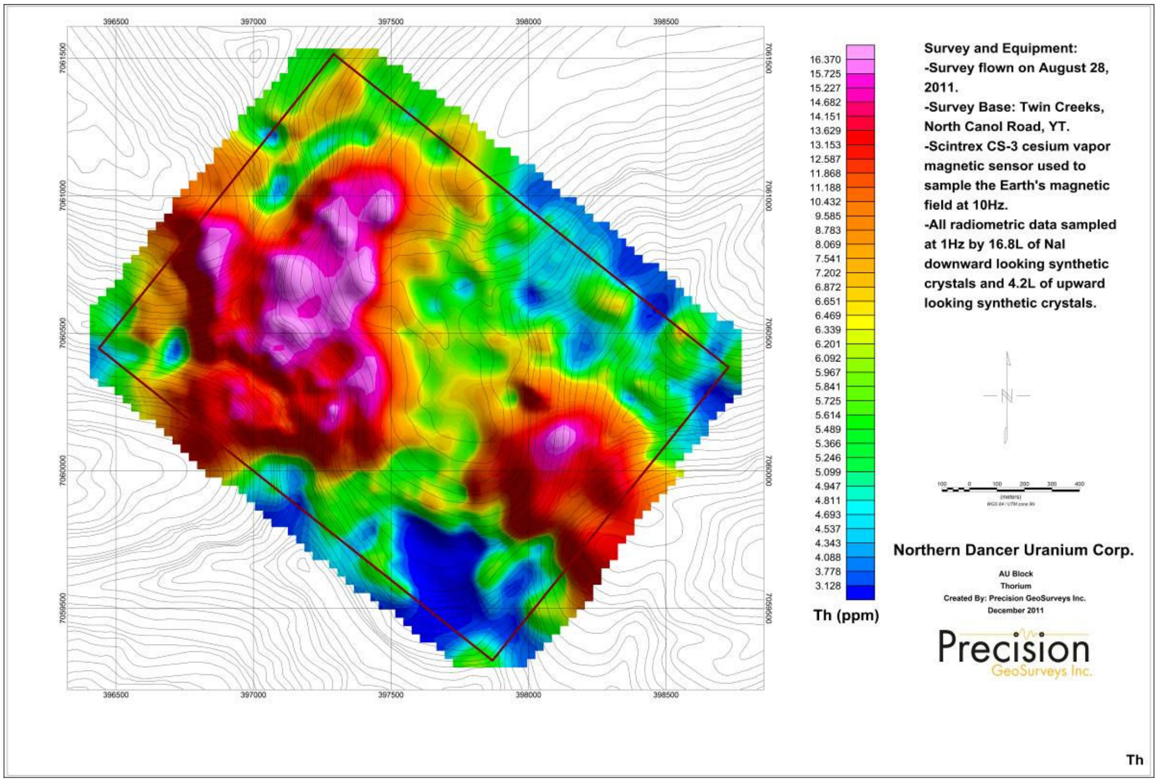
Map 4: AU block total magnetic intensity with plotted flight lines.



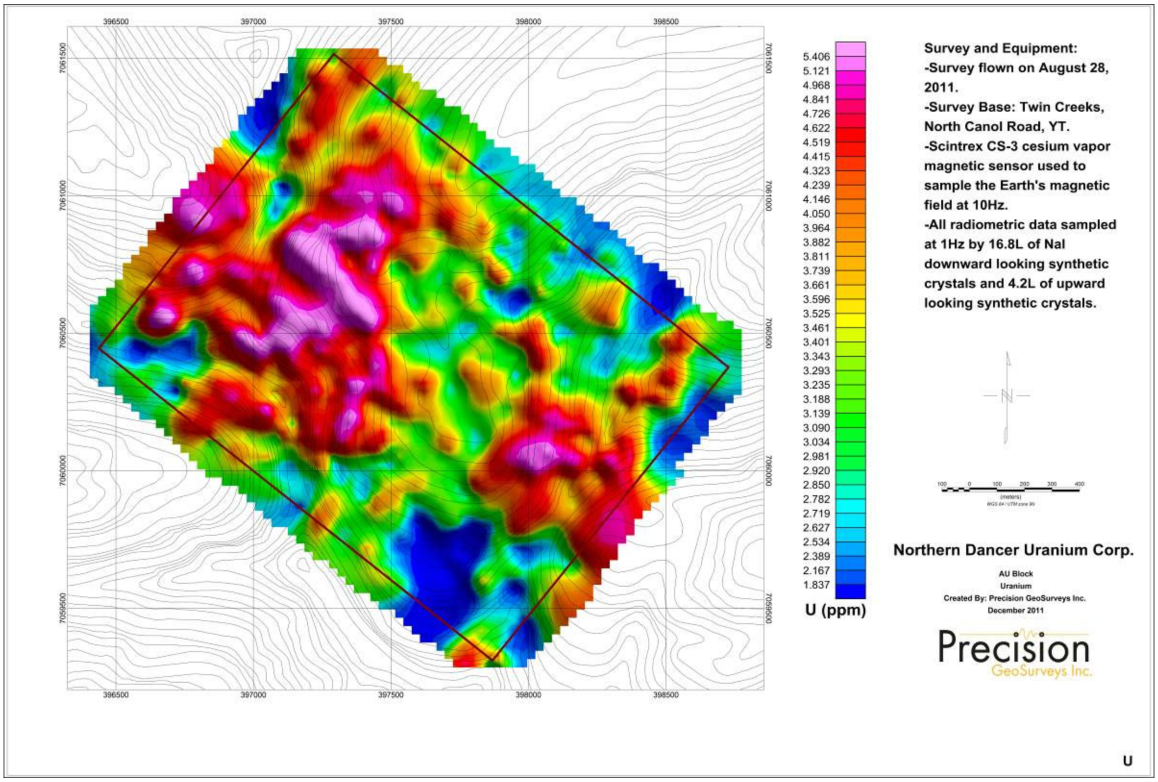
Map 5: AU block calculated vertical gradient.



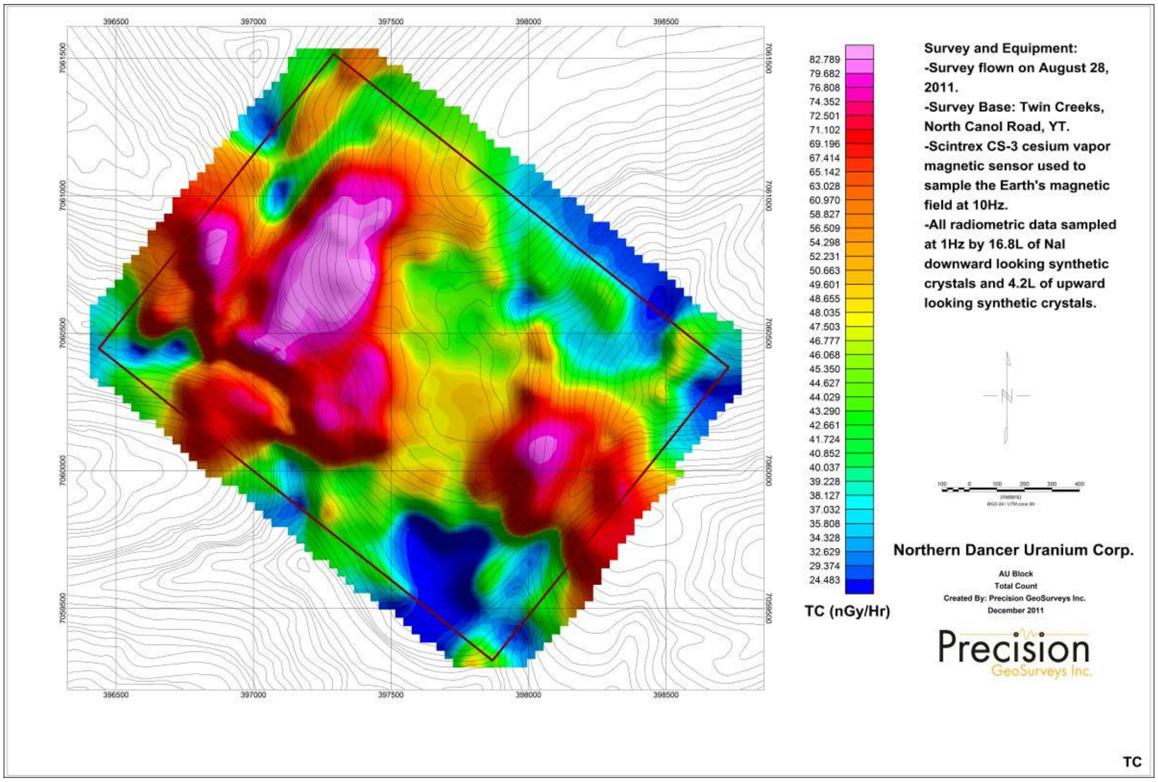
Map 6: AU block potassium.



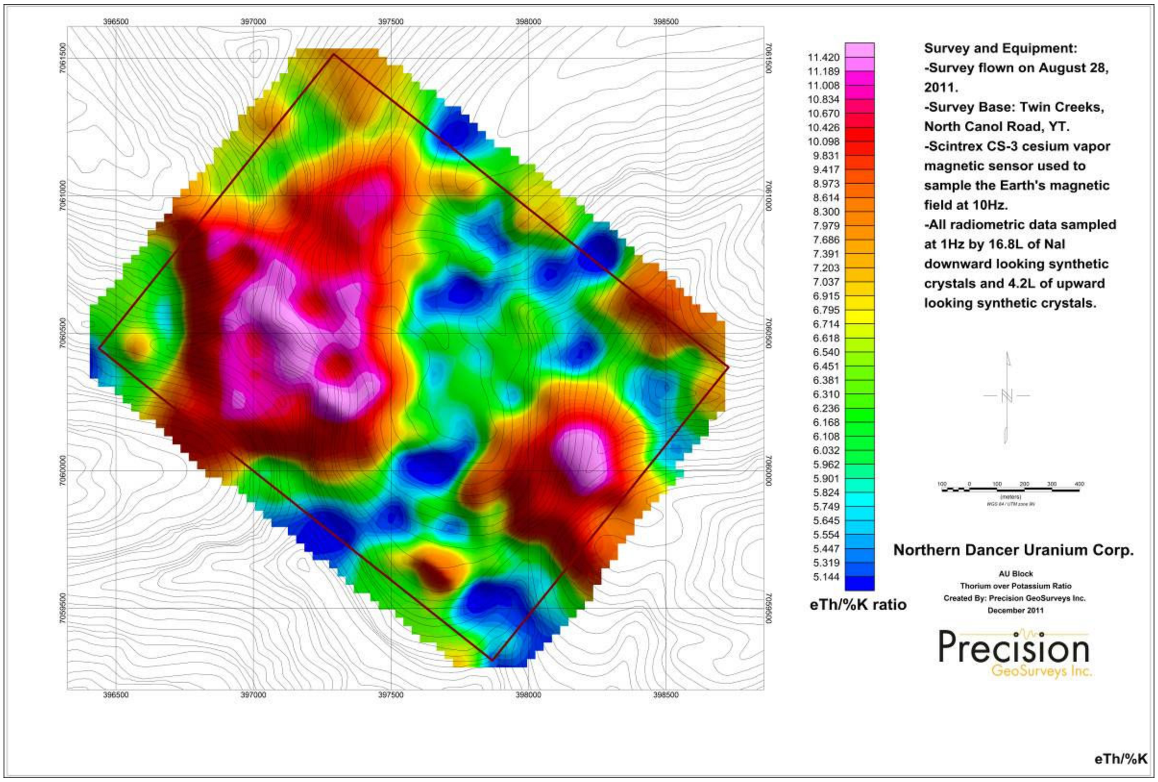
Map 7: AU block thorium.



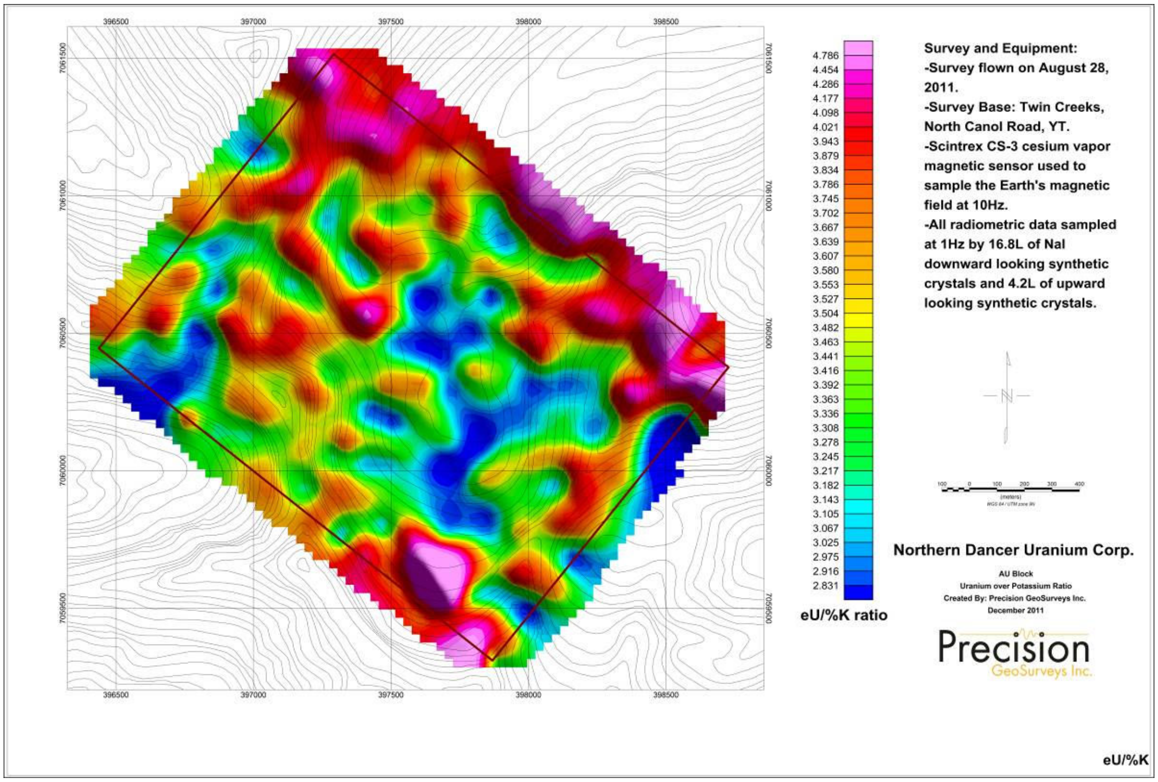
Map 8: AU block uranium.



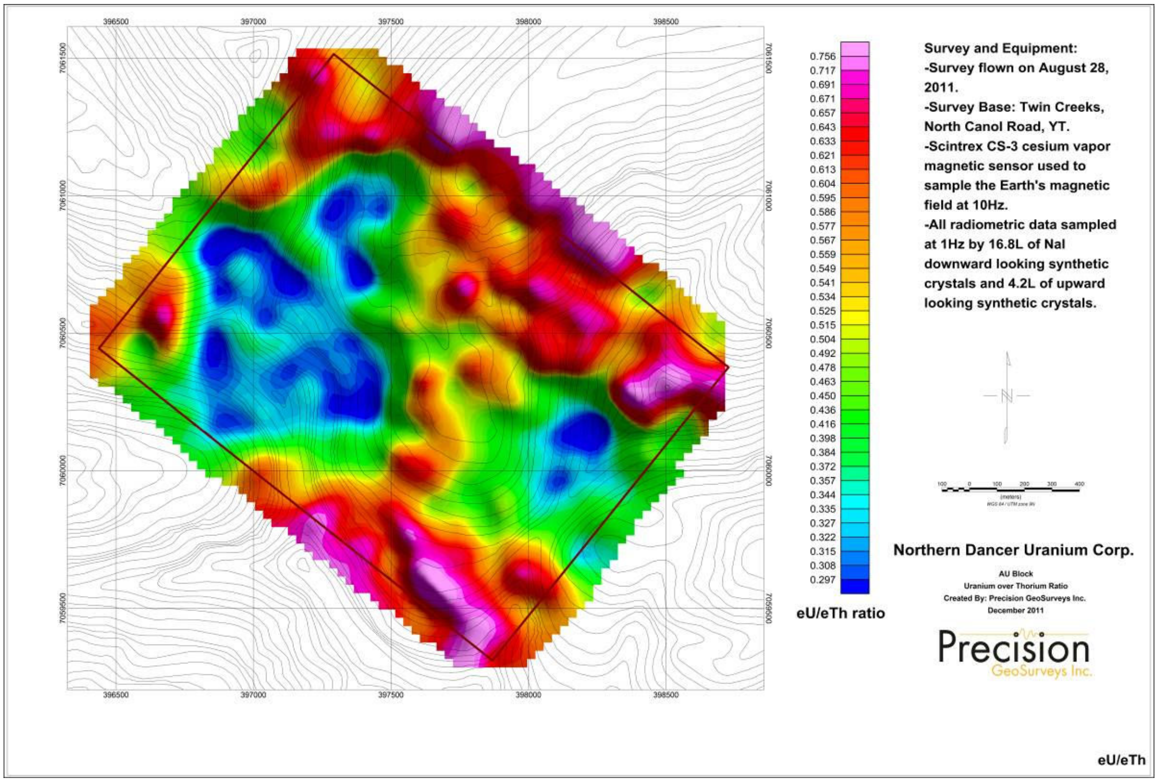
Map 9: AU block total count.



Map 10: AU block thorium over potassium ratio.



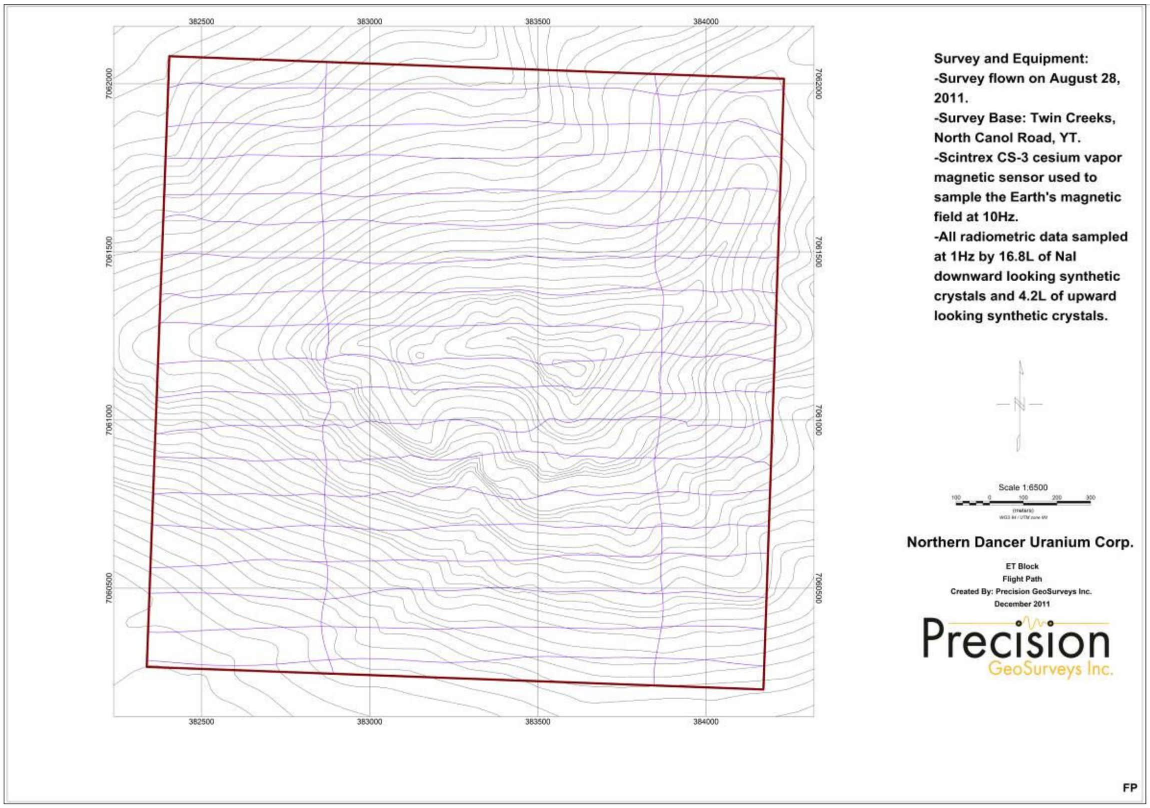
Map 11: AU block uranium over potassium ratio.



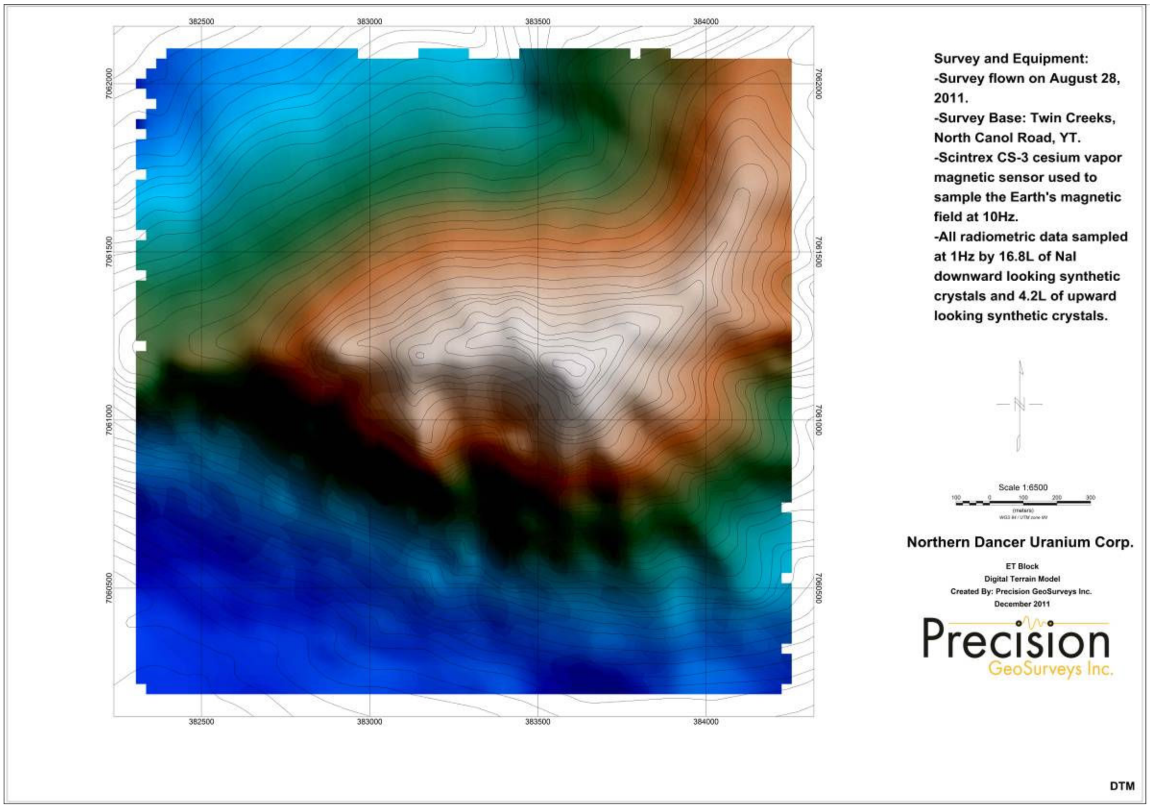
Map 12: AU block uranium over thorium ratio.

Appendix C

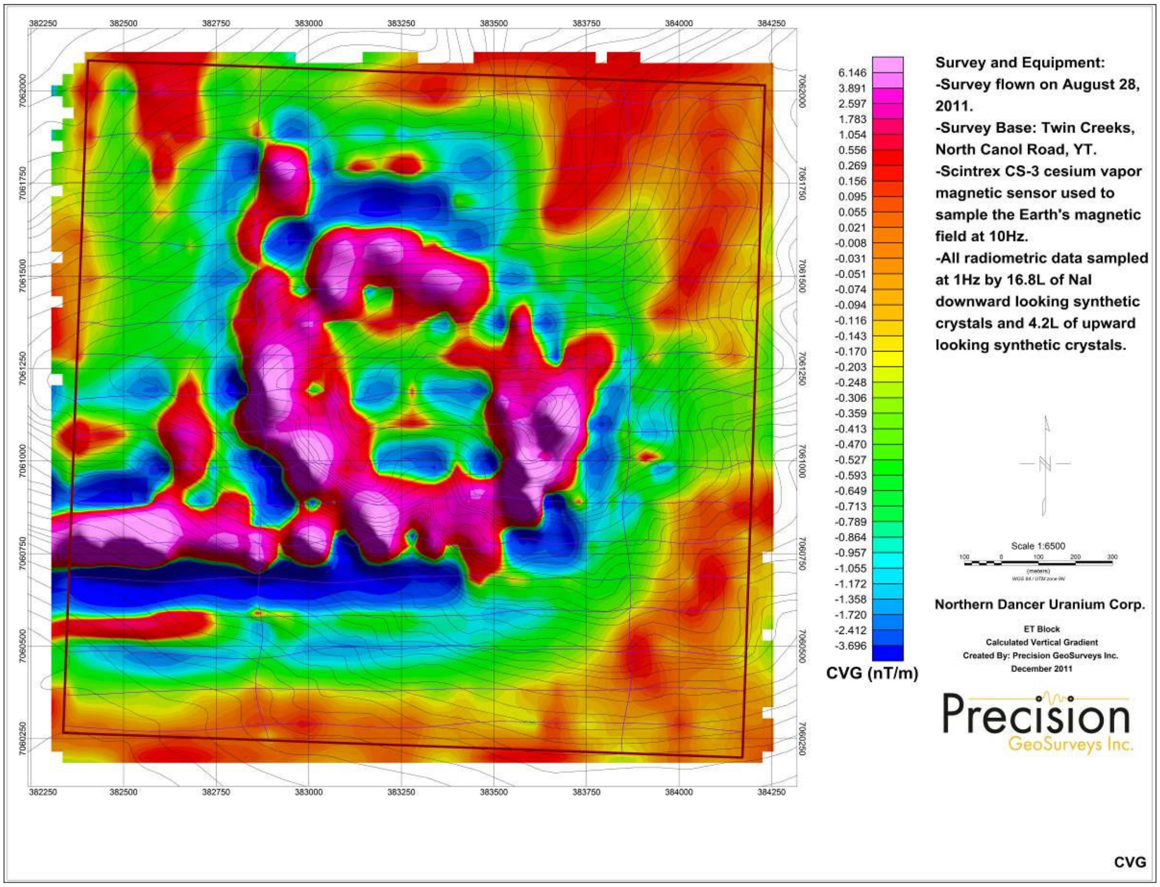
ET Maps



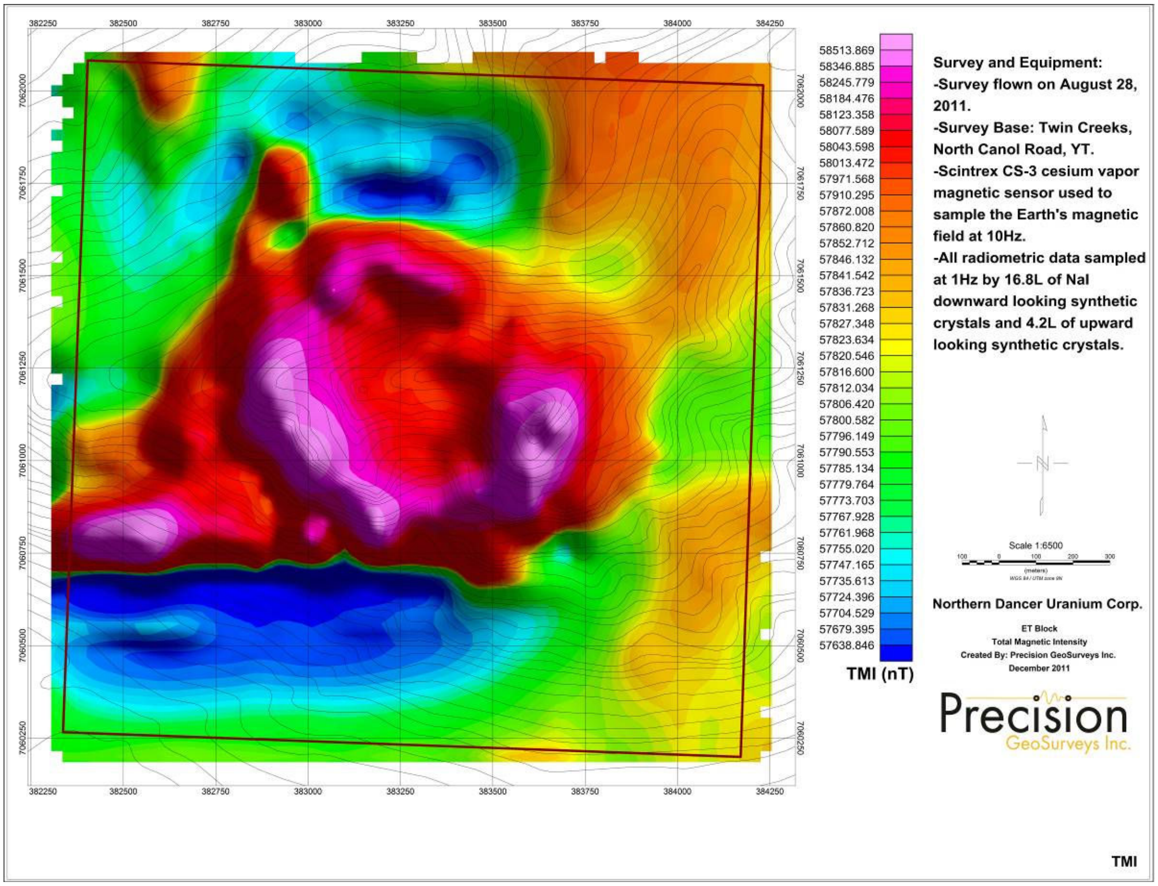
Map 1: ET block flight path.



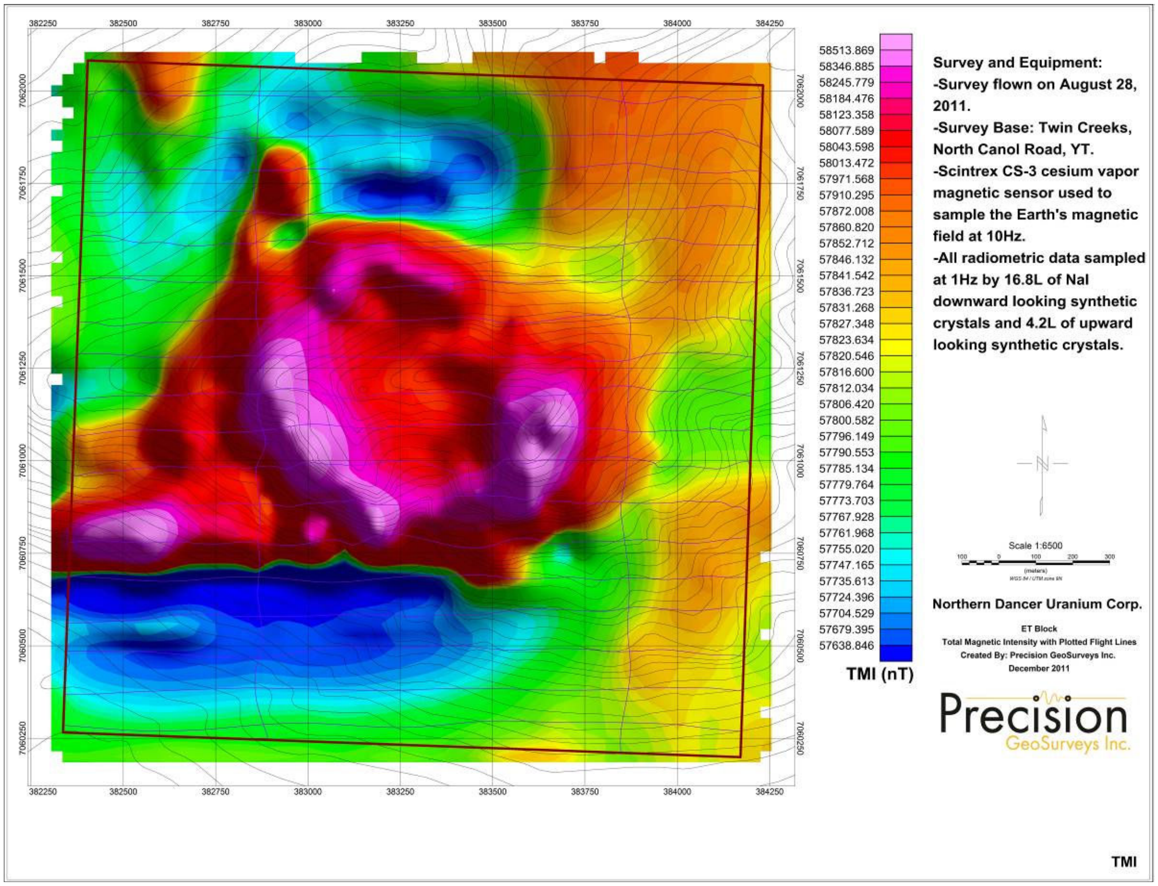
Map 2: ET block digital terrain model.



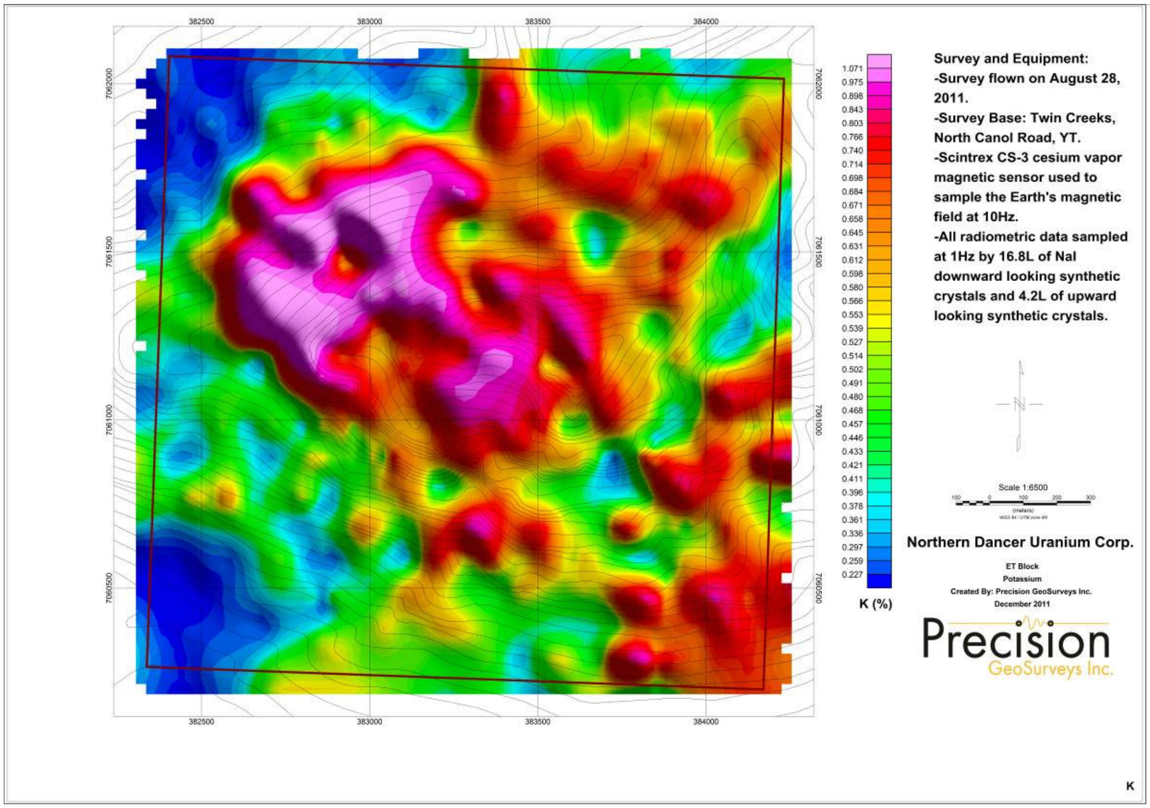
Map 3: ET block calculated vertical gradient.



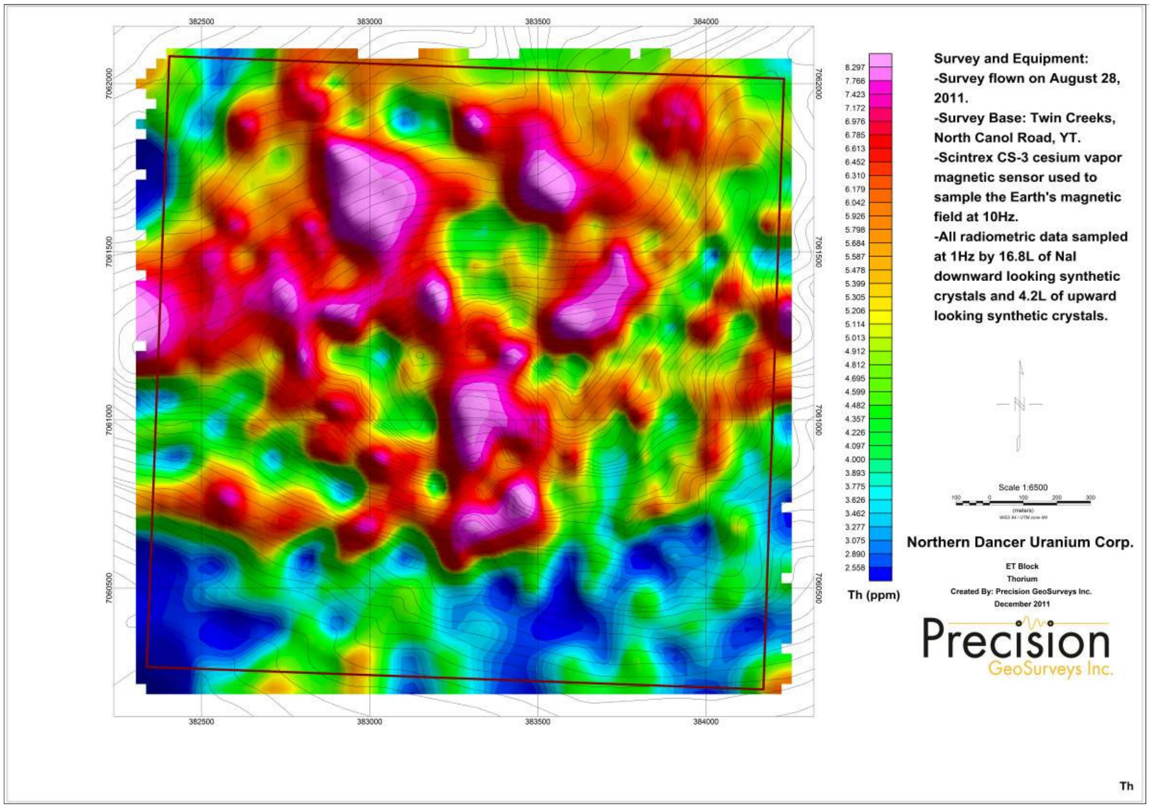
Map 4: ET block total magnetic intensity.



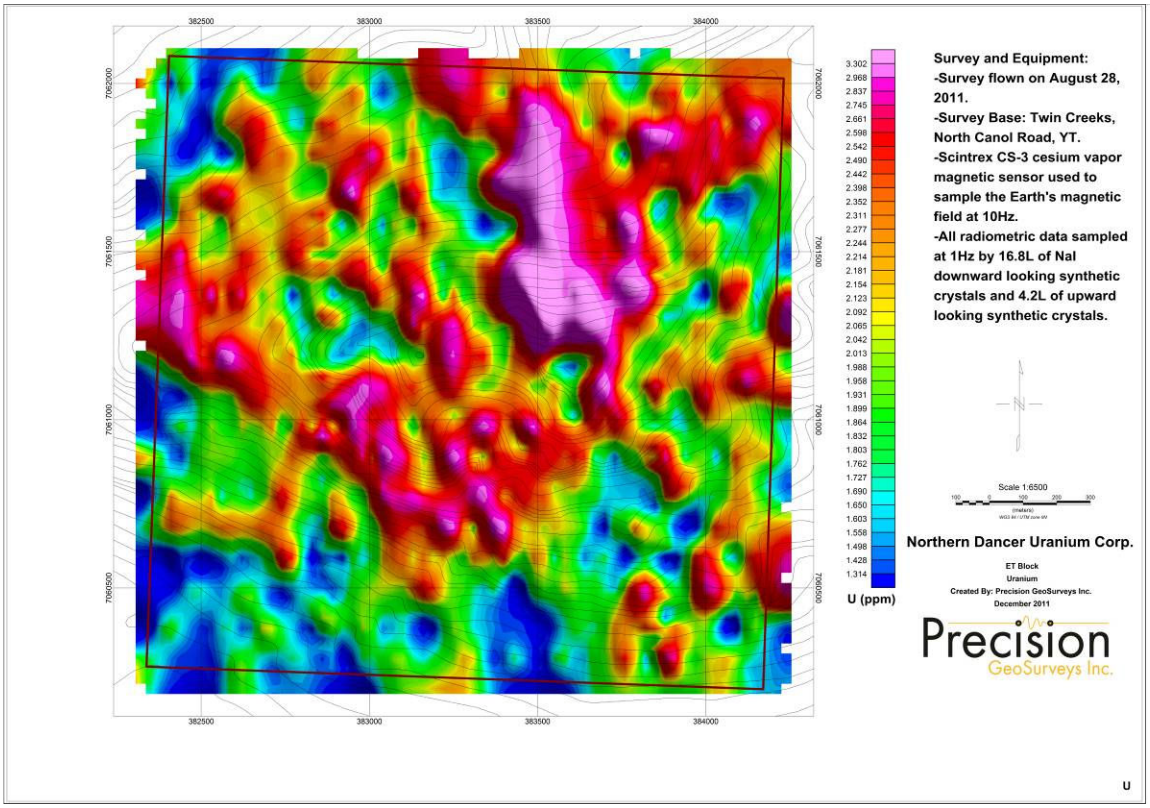
Map 5: ET block with total magnetic intensity with plotted flight lines.



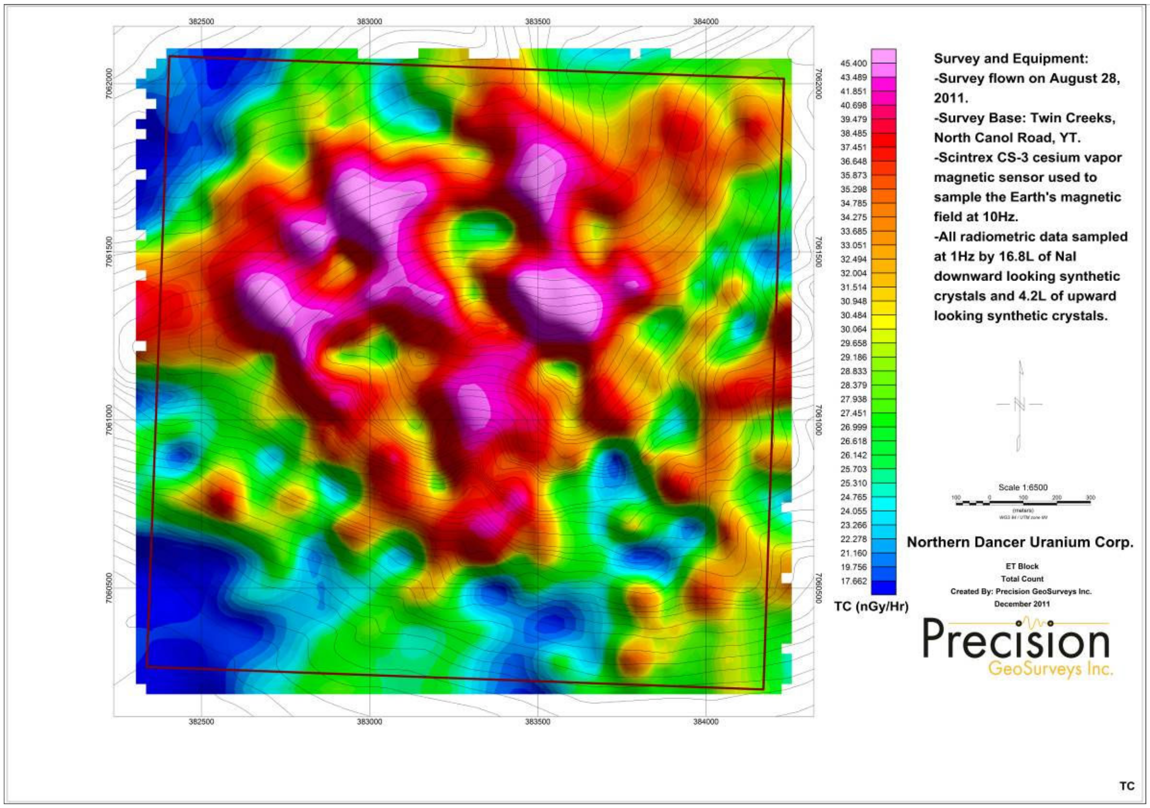
Map 6: ET block potassium.



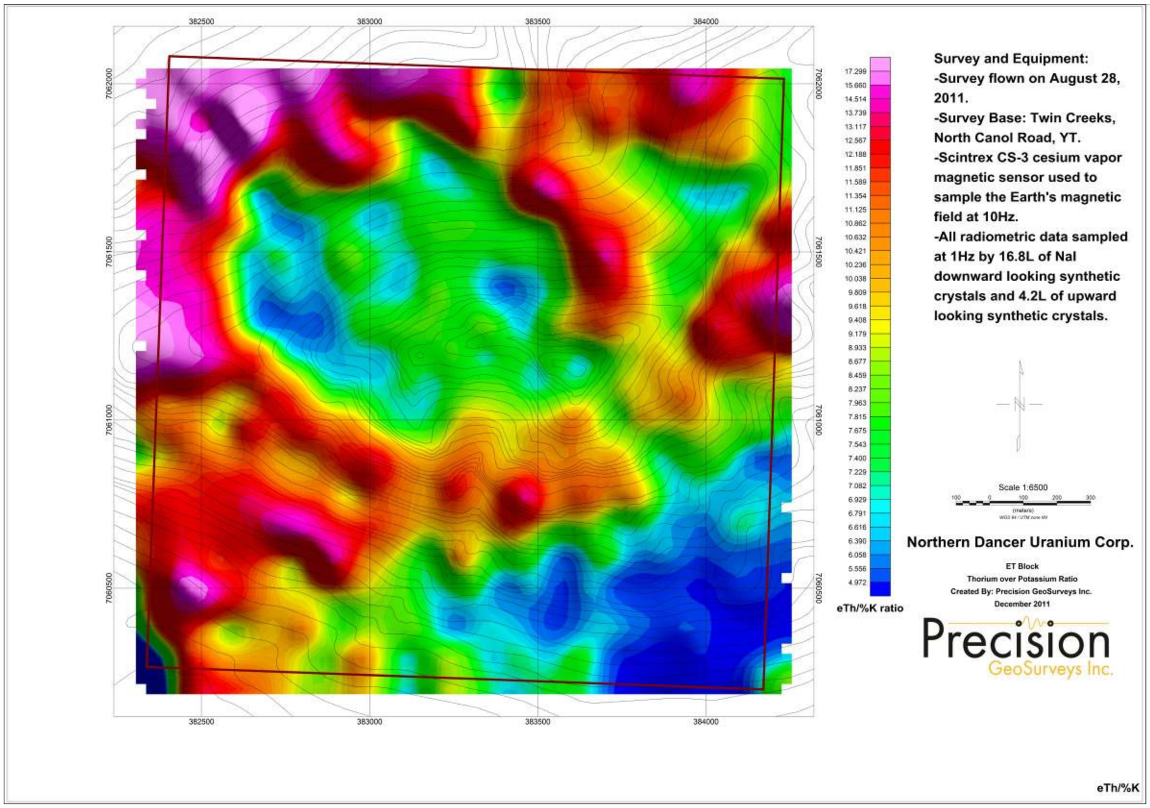
Map 7: ET block thorium.



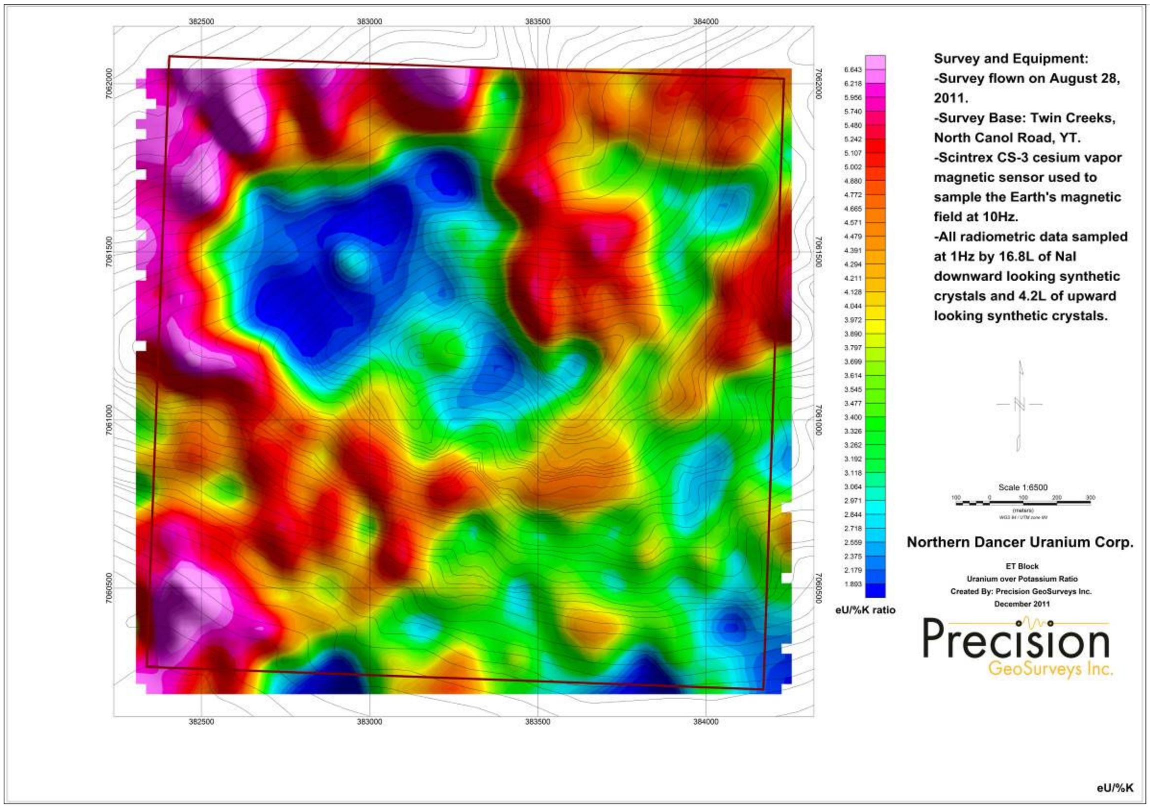
Map 8: ET block uranium.



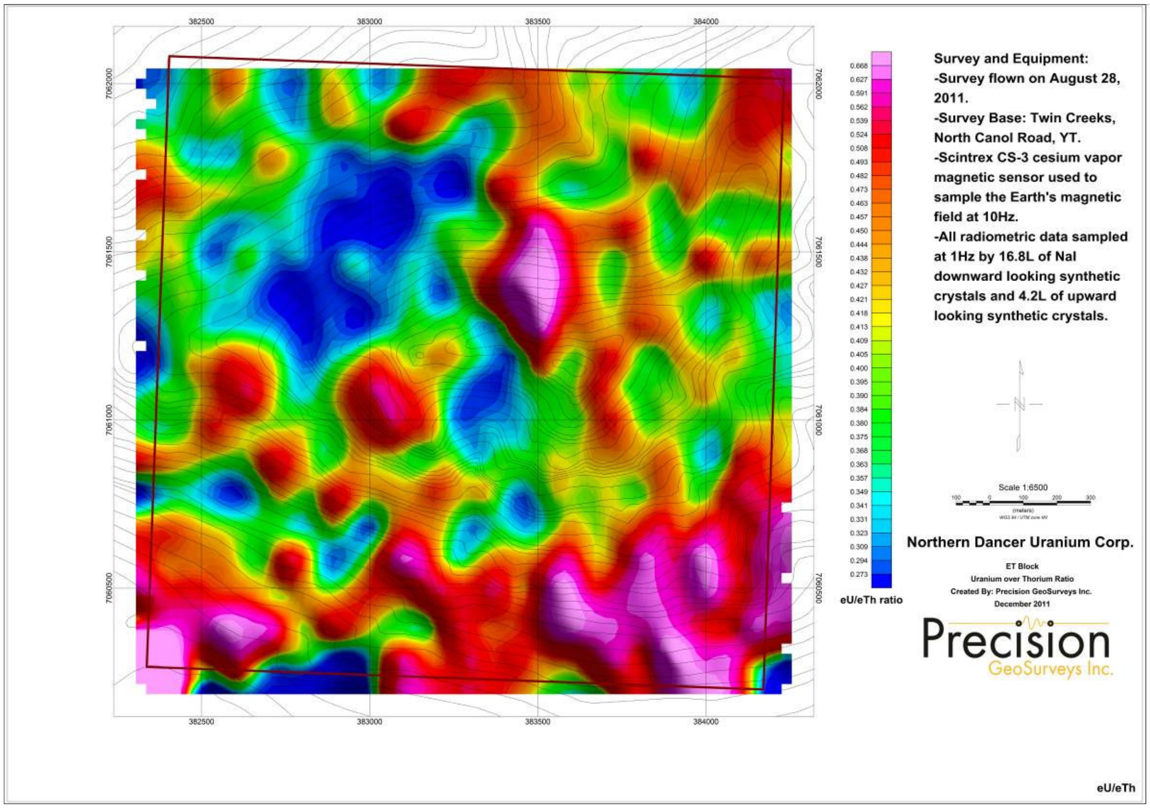
Map 9: ET block total count.



Map 10: ET block thorium over potassium ratio.

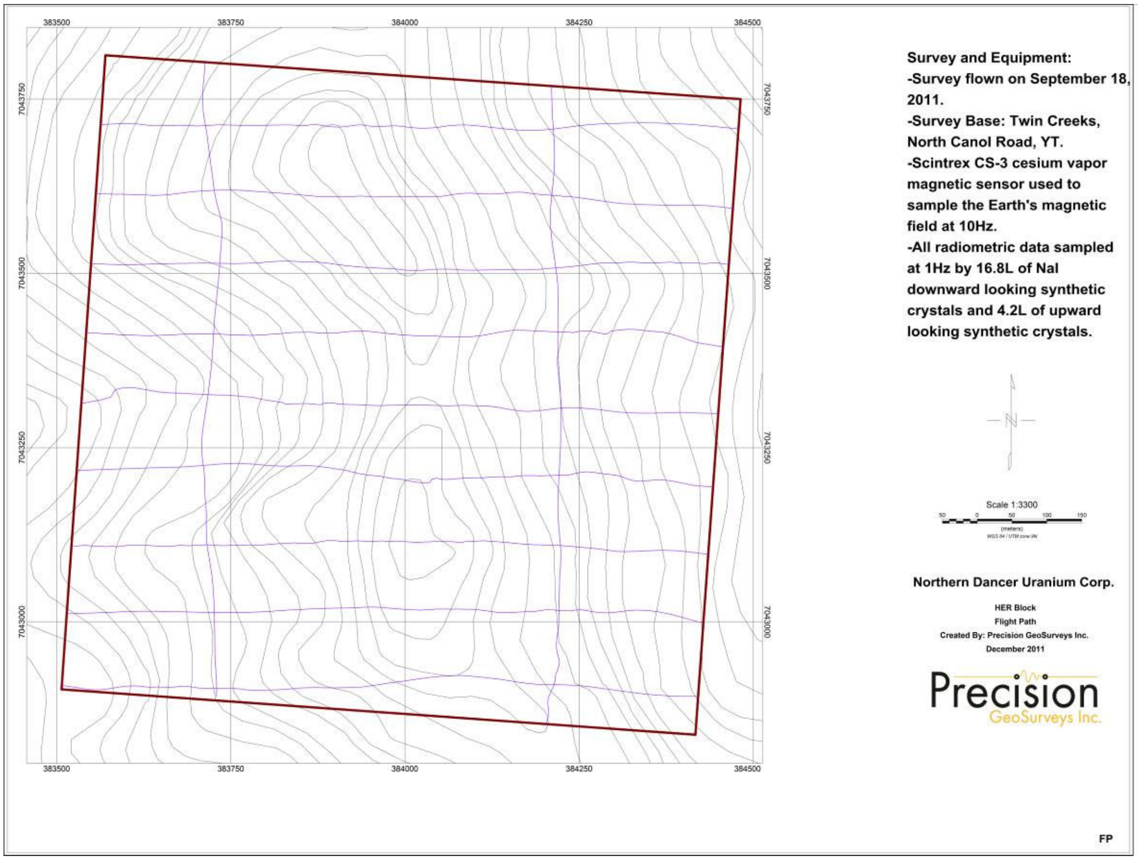


Map 11: ET block uranium over potassium ratio.

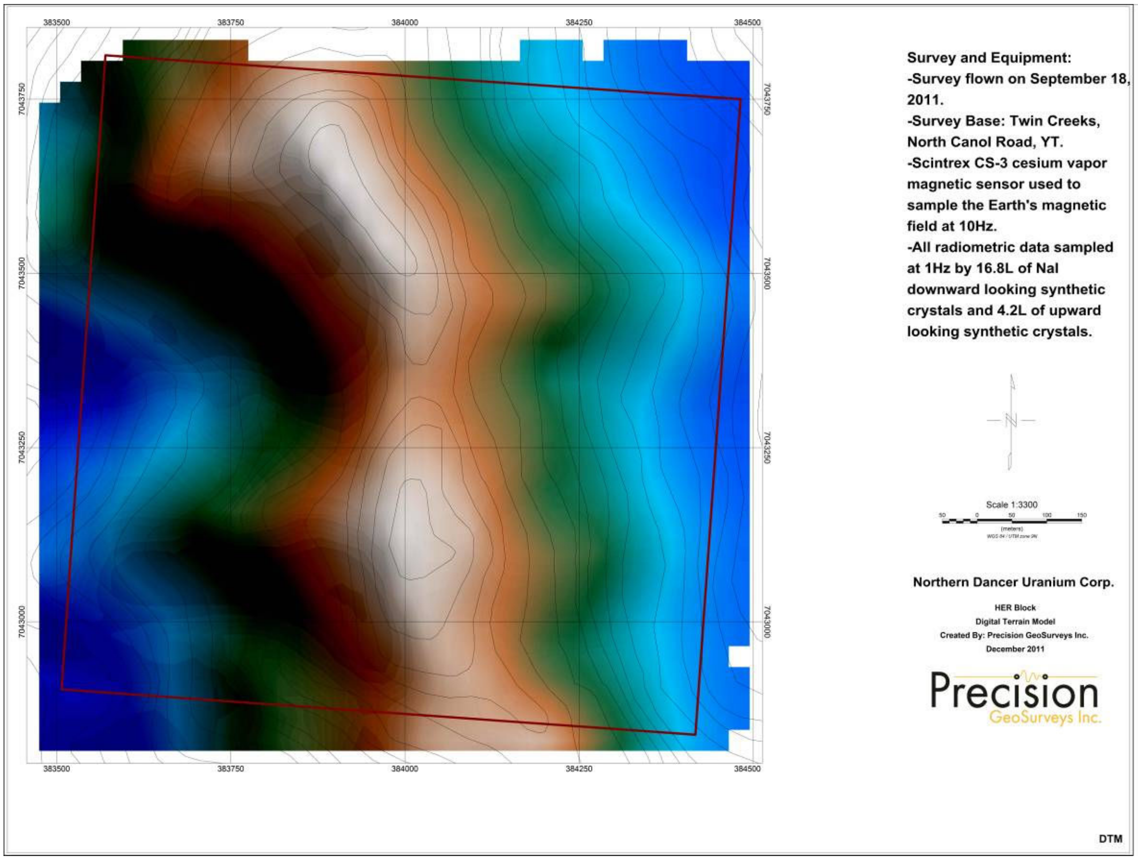


Map 12: ET block uranium over thorium ratio.

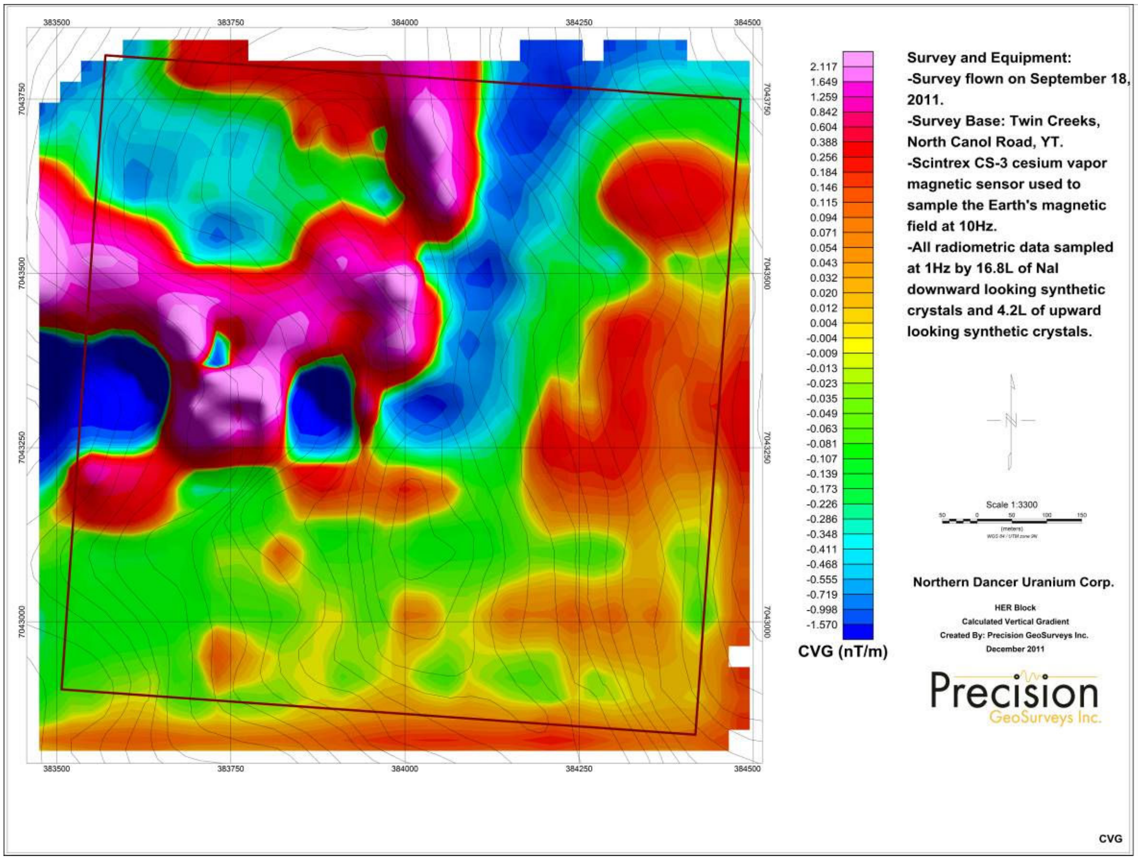
Appendix D
HER Maps



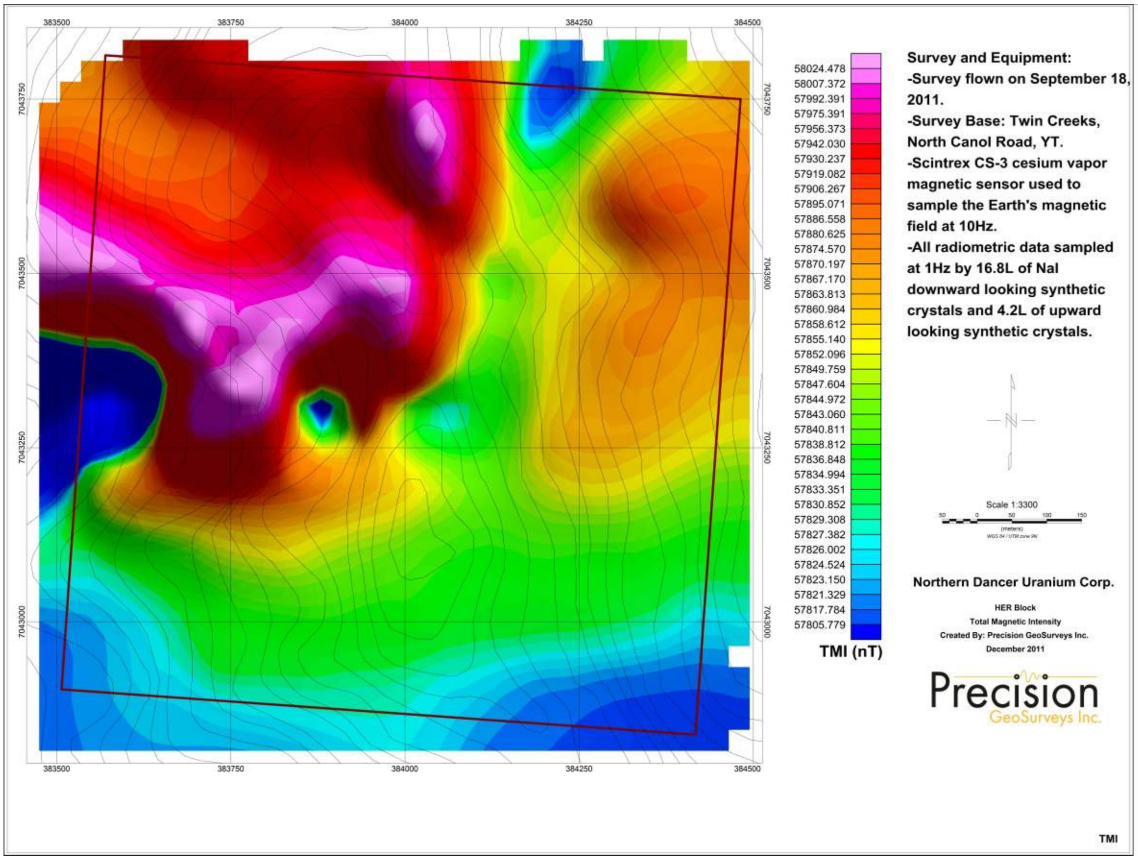
Map 1: HER block flight path.



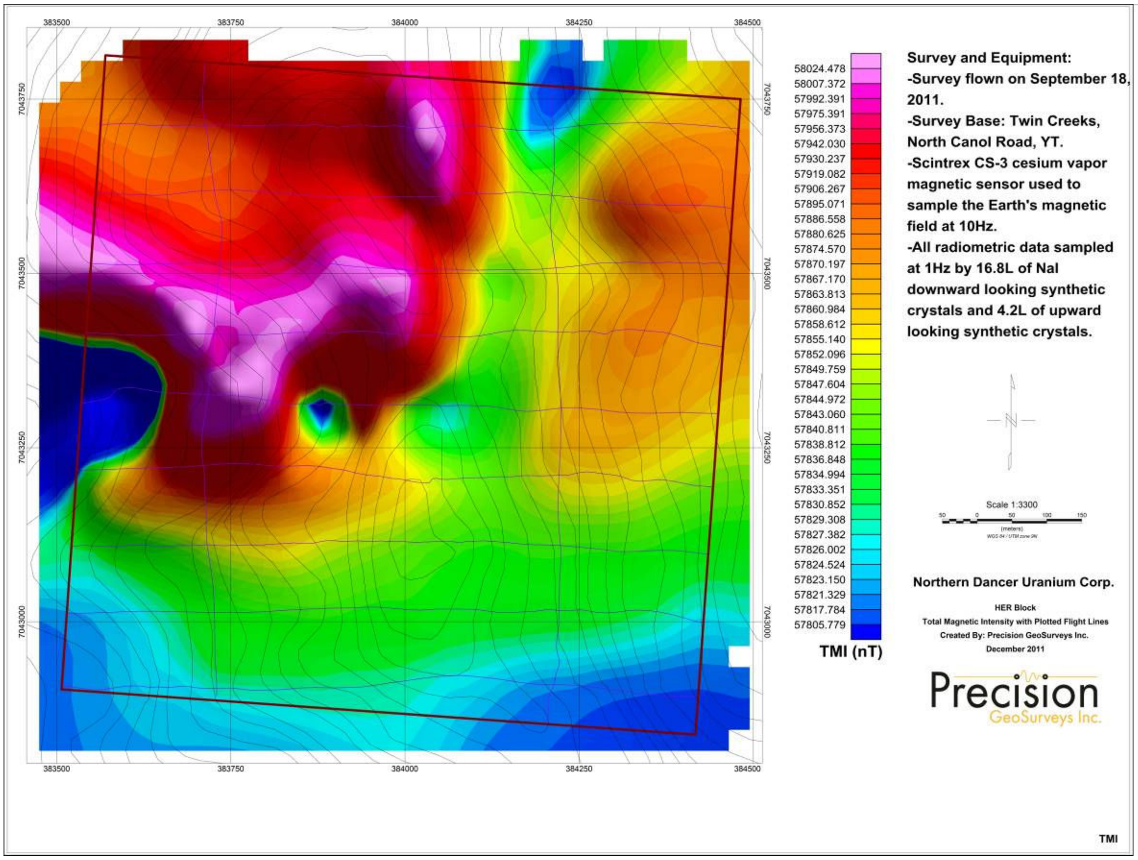
Map 2: HER block digital terrain model.



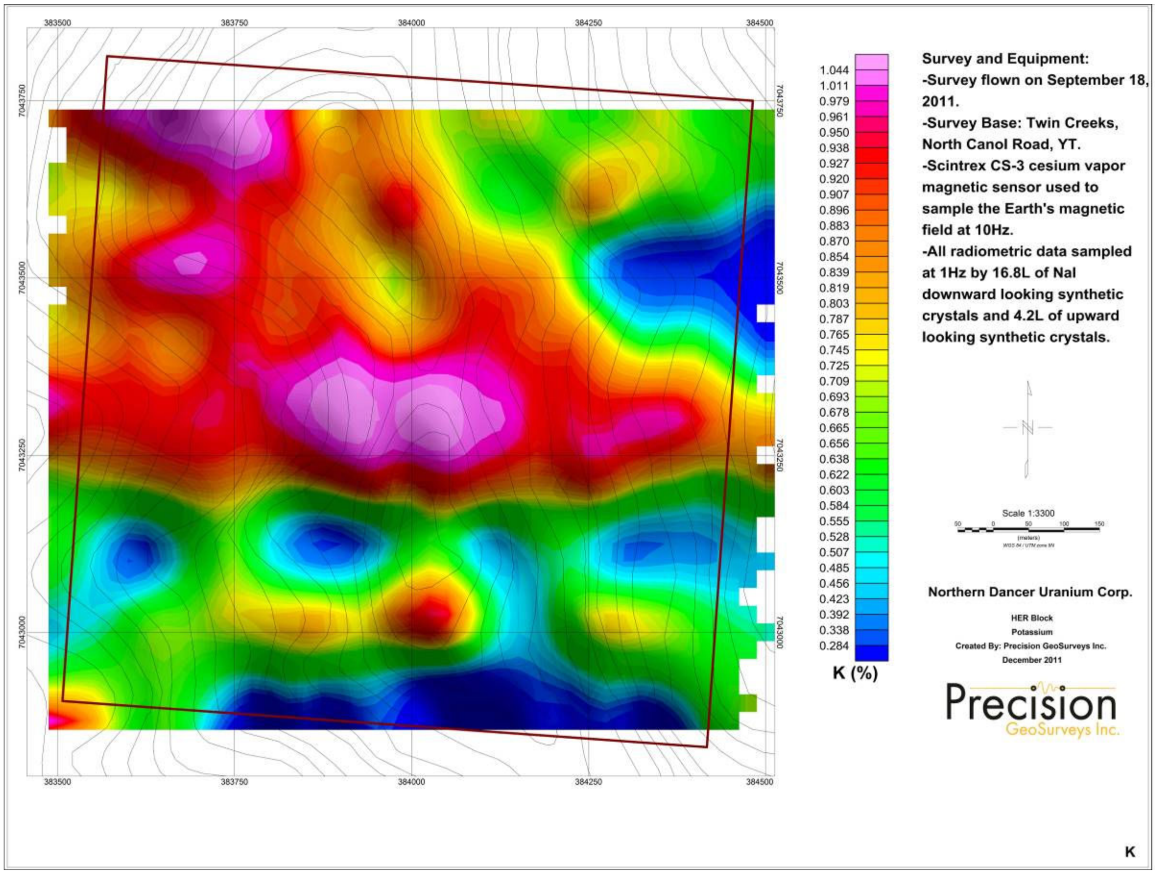
Map 3: HER block calculated vertical gradient.



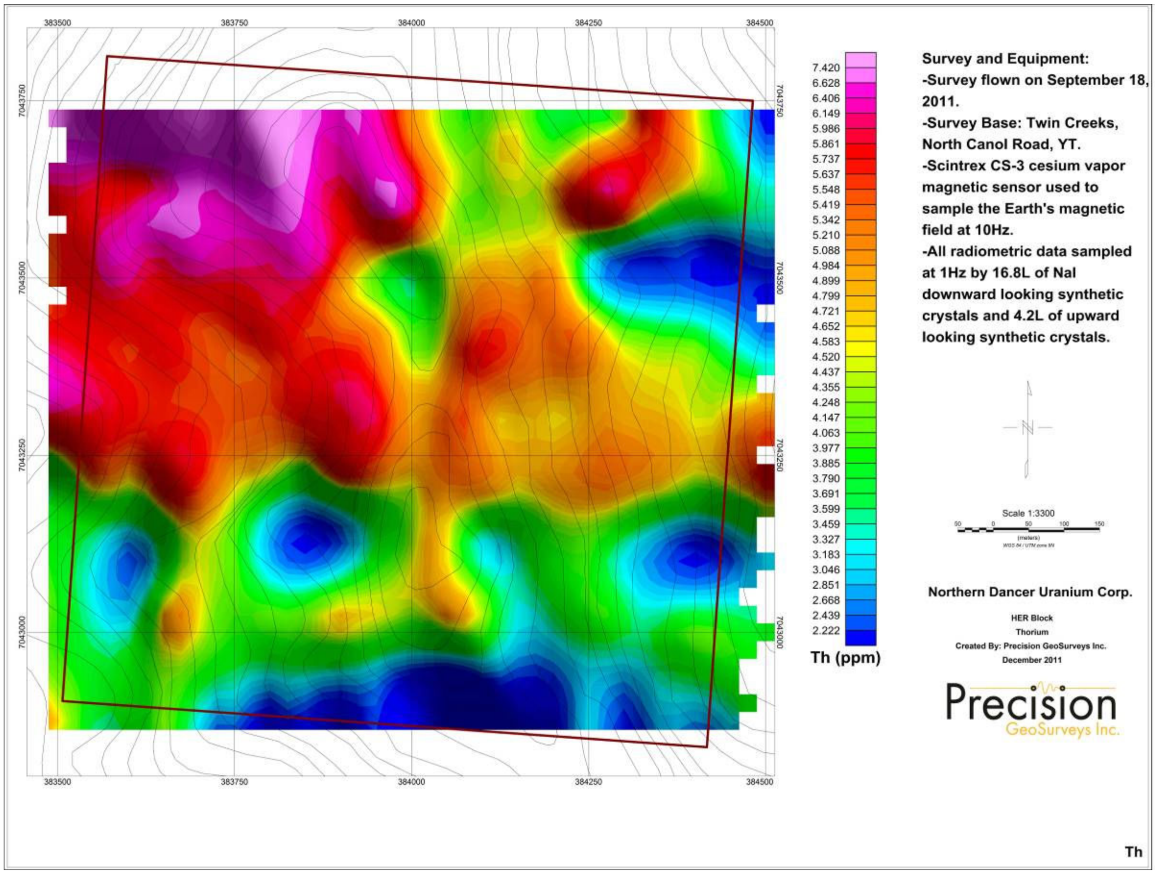
Map 4: HER block total magnetic intensity.



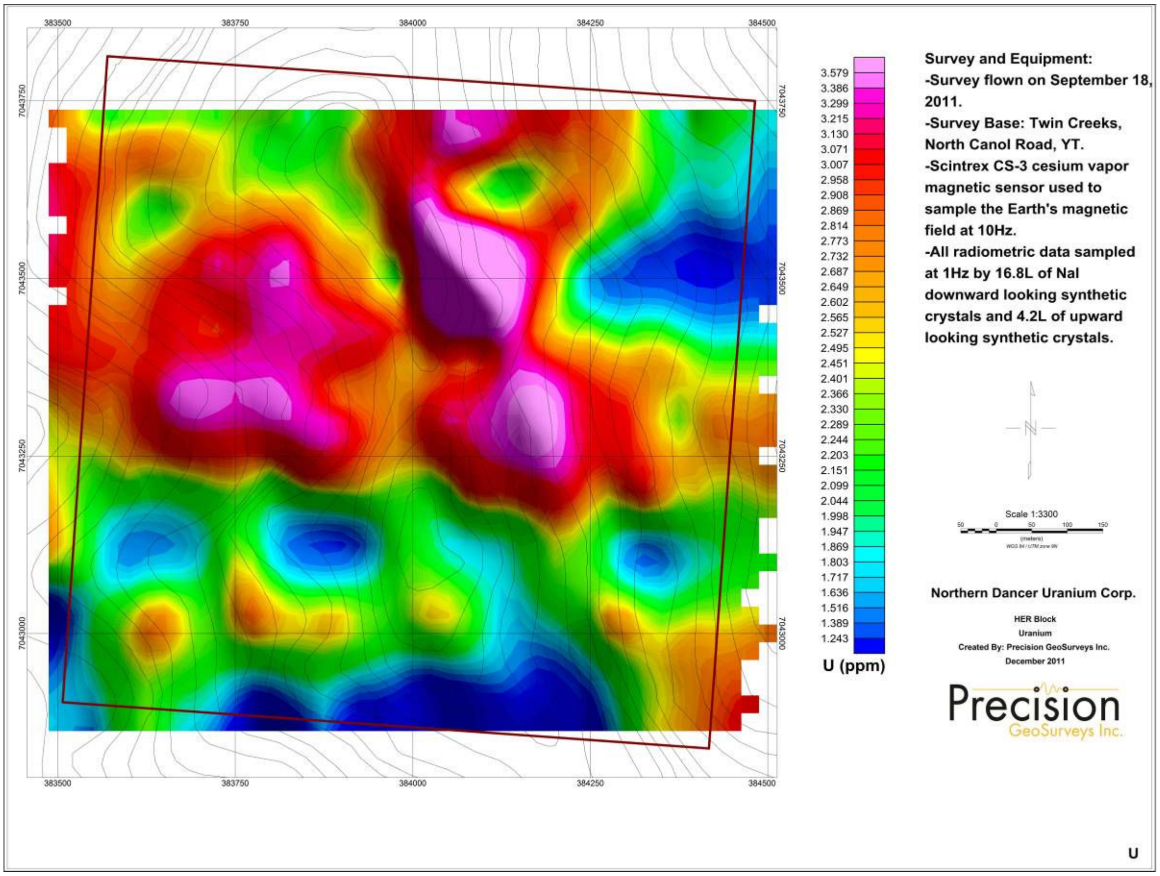
Map 5: HER block total magnetic intensity with plotted flight lines.



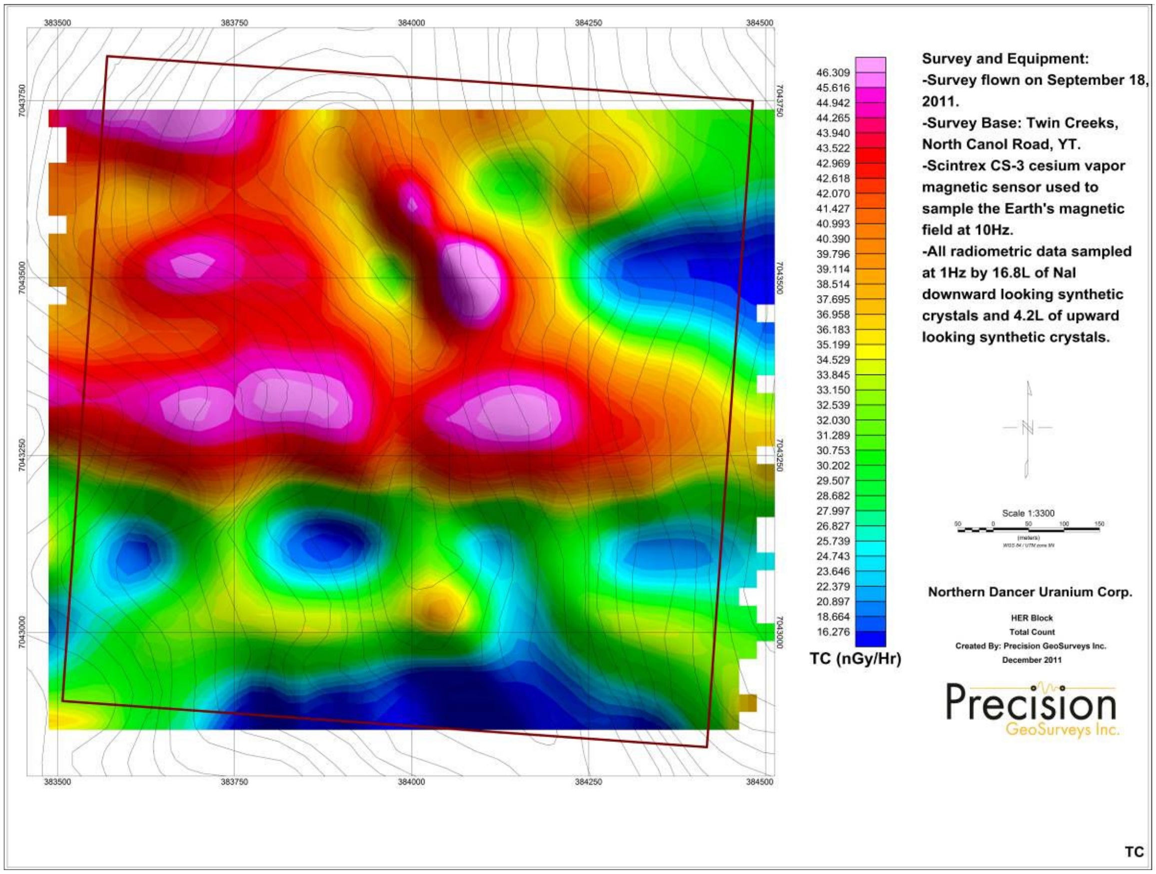
Map 6: HER block potassium.



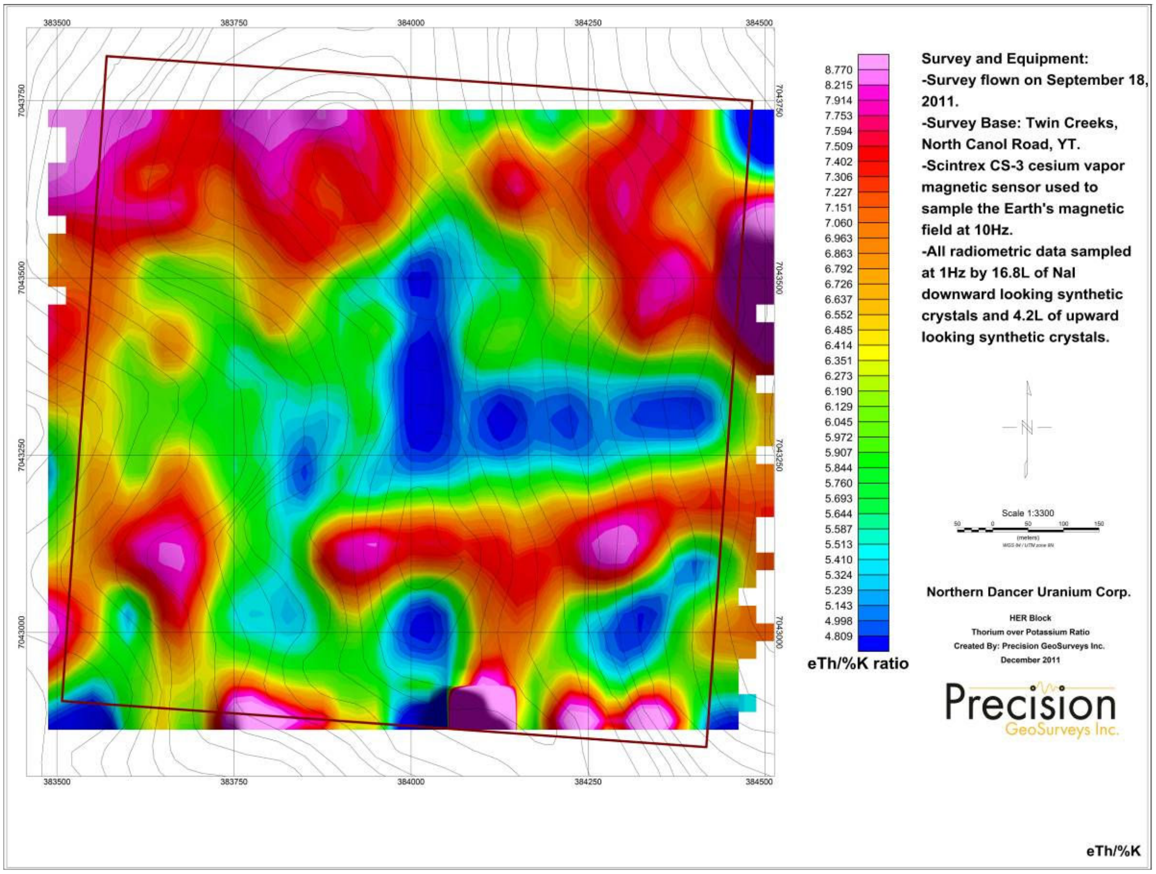
Map 7: HER block thorium.



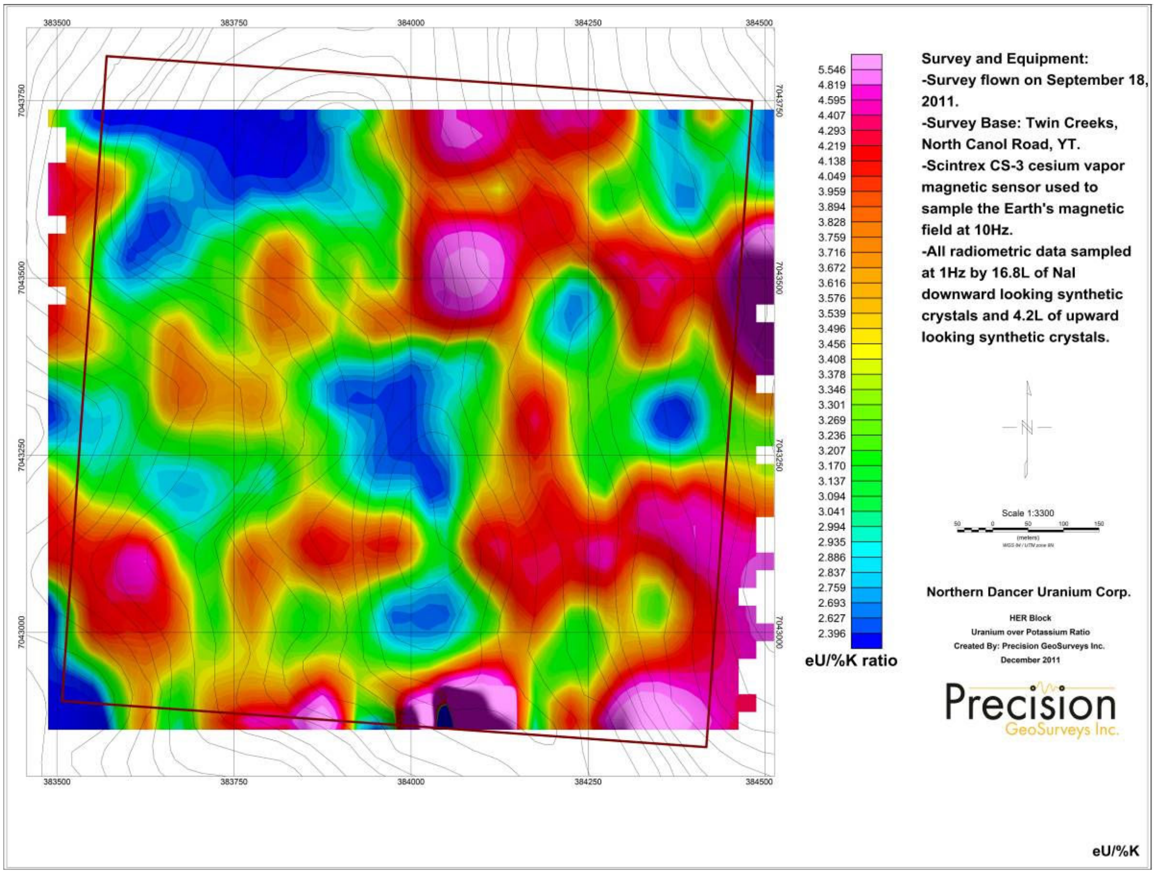
Map 8: HER block uranium.



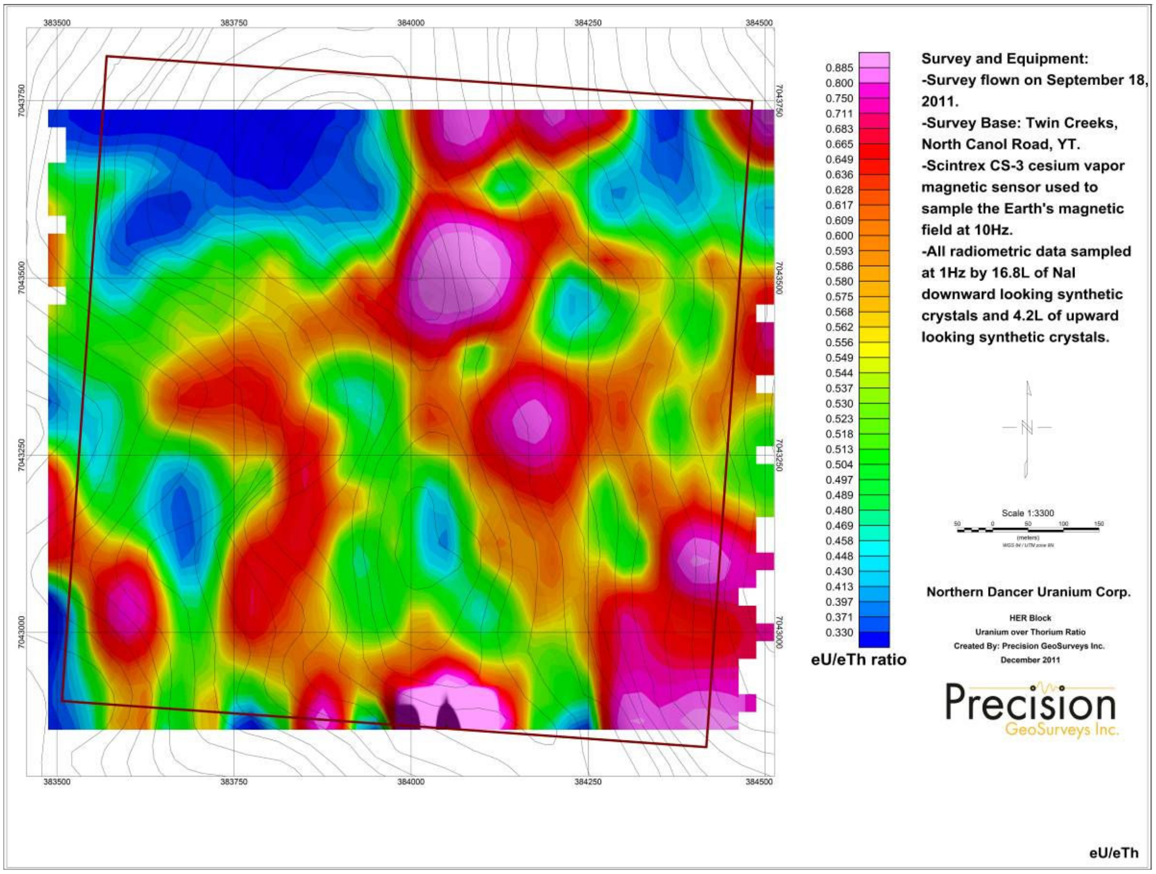
Map 9: HER block total count.



Map 10: HER block thorium over potassium ratio.



Map 11: HER block uranium over potassium ratio.



Map 12: HER block uranium over thorium ratio.