

ASSESSMENT REPORT  
ON  
GEOPHYSICAL WORK  
ON THE FOLLOWING CLAIMS

#365905-8 INCL.  
#369536-7 INCL.  
#396298-301 INCL.  
#508985-6 INCL.

COLLECTIVELY THE  
"KONKIN SILVER" PROPERTY

STATEMENT OF EXPLORATION EVENT # 4074431

Located

29 KM EAST OF  
STEWART, BRITISH COLUMBIA  
SKEENA MINING DIVISION

55 degrees 56 minutes latitude  
129 degrees 29 minutes longitude

N.T.S. 103P093

PROJECT PERIOD Sept. 15, 2005 to Dec. 31, 2005

ON BEHALF OF  
THUTON RESOURCES CORP.  
VANCOUVER, B.C.

REPORT BY

D. Cremonese, P. Eng.  
207-675 W. Hastings St.  
Vancouver, B.C.

Date: June 12, 2006

GEOLOGICAL SURVEY BRANCH  
ASSESSMENT REPORT

28,431

**RECEIVED**  
JUN 13 2006  
Gold Commissioner's Office  
VANCOUVER, B.C.

Ministry of Energy & Mines  
Energy & Minerals Division  
Geological Survey Branch

**ASSESSMENT REPORT  
TITLE PAGE AND SUMMARY**

TITLE OF REPORT [type of survey(s)]	TOTAL COST
<i>GEOPHYSICAL</i>	<i>\$33,043</i>
AUTHOR(S) <i>D. CREMONESE, P. ENG.</i> SIGNATURE(S) <i>J. [Signature]</i>	
NOTICE OF WORK PERMIT NUMBER(S)/DATE(S) _____ YEAR OF WORK <i>2005</i>	
STATEMENT OF WORK - CASH PAYMENT EVENT NUMBER(S)/DATE(S) <i>407443/</i>	
PROPERTY NAME <i>KONKIN SILVER</i>	
CLAIM NAME(S) (on which work was done) <i>KNOINK 1-4 (365905-8); NIKNOCK 1-2 (369536-7); MIDAS 6-9 (396298-301); JOKER NE (508985); JOKER SE (508986)</i>	
COMMODITIES SOUGHT <i>Ag, Pb, Zn</i>	
MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN _____	
MINING DIVISION <i>SKEENA</i>	NTS <i>103 P 093</i>
LATITUDE <i>55° 56'</i>	LONGITUDE <i>129° 29'</i> " (at centre of work)
OWNER(S)	
1) <i>TEUTON RESOURCES CORP.</i>	2) _____
MAILING ADDRESS	
<i>207-675 W. HASTINGS ST. VANCOUVER, BC. V6B 1N2</i>	
OPERATOR(S) [who paid for the work]	
1) <i>AS ABOVE</i>	2) _____
MAILING ADDRESS	
PROPERTY GEOLOGY KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralization, size and attitude):	
<i>LOWER TO MIDDLE JURASSIC HAZELTON GROUP VOLCANIC AND VOLCANICLASTIC ROCKS UNDERLIE MUCH OF THE PROPERTY. LINEAR AND ARCuate <sup>AND</sup> ZONES WITHIN A LONG, BROAD, ZONE OF CARBONATE ALTERATION CARRY APPRECIABLE SILVER VALUES ALONG WITH MINOR VALUES IN LEAD AND ZINC</i>	
REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS <i>#27, 100, #26, 110 + #24, 398</i>	

TYPE OF WORK IN THIS REPORT	EXTENT OF WORK (IN METRIC UNITS)	ON WHICH CLAIMS	PROJECT COSTS APPORTIONED (incl. support)
<b>GEOLOGICAL (scale, area)</b>			
Ground, mapping _____			
Photo interpretation _____			
<b>GEOPHYSICAL (line-kilometres)</b>			
Ground			
Magnetic _____			
Electromagnetic _____			
Induced Polarization _____			
Radiometric _____			
Seismic _____			
Other _____			
Airborne _____	<i>268.4 LINE KMS</i>	<i>As Listed on Front Page</i>	<i>\$33,043</i>
<b>GEOCHEMICAL</b> (number of samples analysed for ...)			
Soil _____			
Silt _____			
Rock _____			
Other _____			
<b>DRILLING</b> (total metres; number of holes, size)			
Core _____			
Non-core _____			
<b>RELATED TECHNICAL</b>			
Sampling/assaying _____			
Petrographic _____			
Mineralographic _____			
Metallurgic _____			
<b>PROSPECTING (scale, area)</b> _____			
<b>PREPARATORY/PHYSICAL</b>			
Line/grid (kilometres) _____			
Topographic/Photogrammetric (scale, area) _____			
Legal surveys (scale, area) _____			
Road, local access (kilometres)/trail _____			
Trench (metres) _____			
Underground dev. (metres) _____			
Other _____			
<b>TOTAL COST</b>			<i>\$33,043</i>

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## 1. INTRODUCTION

### A. Property, Location, Access and Physiography

The Konkin Silver property is located about 29km east of Stewart, British Columbia. Present access is by helicopter from the base at Stewart (Prism Helicopters), or alternatively from a staging area near the Surprise Creek Bridge on Highway 37A, 17km north of the property.

The various claims which comprise the Konkin Silver property are located on the eastern edge of the extensive Cambria Icefield, along the upper headwaters area of South Willoughby Creek. Elevations vary from approximately 660 metres near the pond in S. Willoughby Creek valley at the eastern edge of the property to claim to about 1,700 metres atop local peaks. Lower slopes are covered by a mantle of balsam, spruce and fir; upper slopes feature typical alpine vegetation such as scrub, grass and heather.

Climate is relatively severe, particularly at higher elevations.

### B. Status of Property

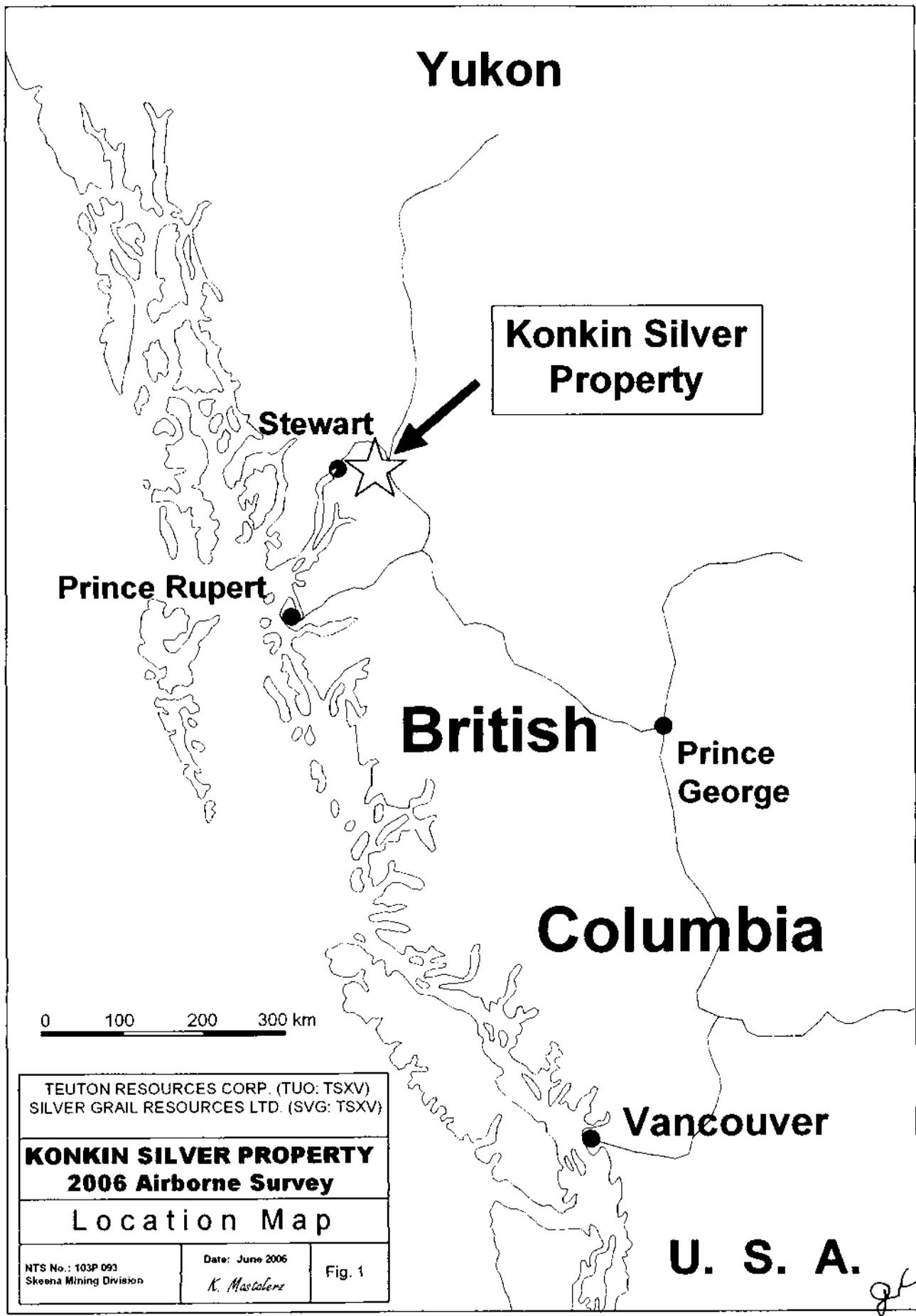
Relevant claim information is summarized below:

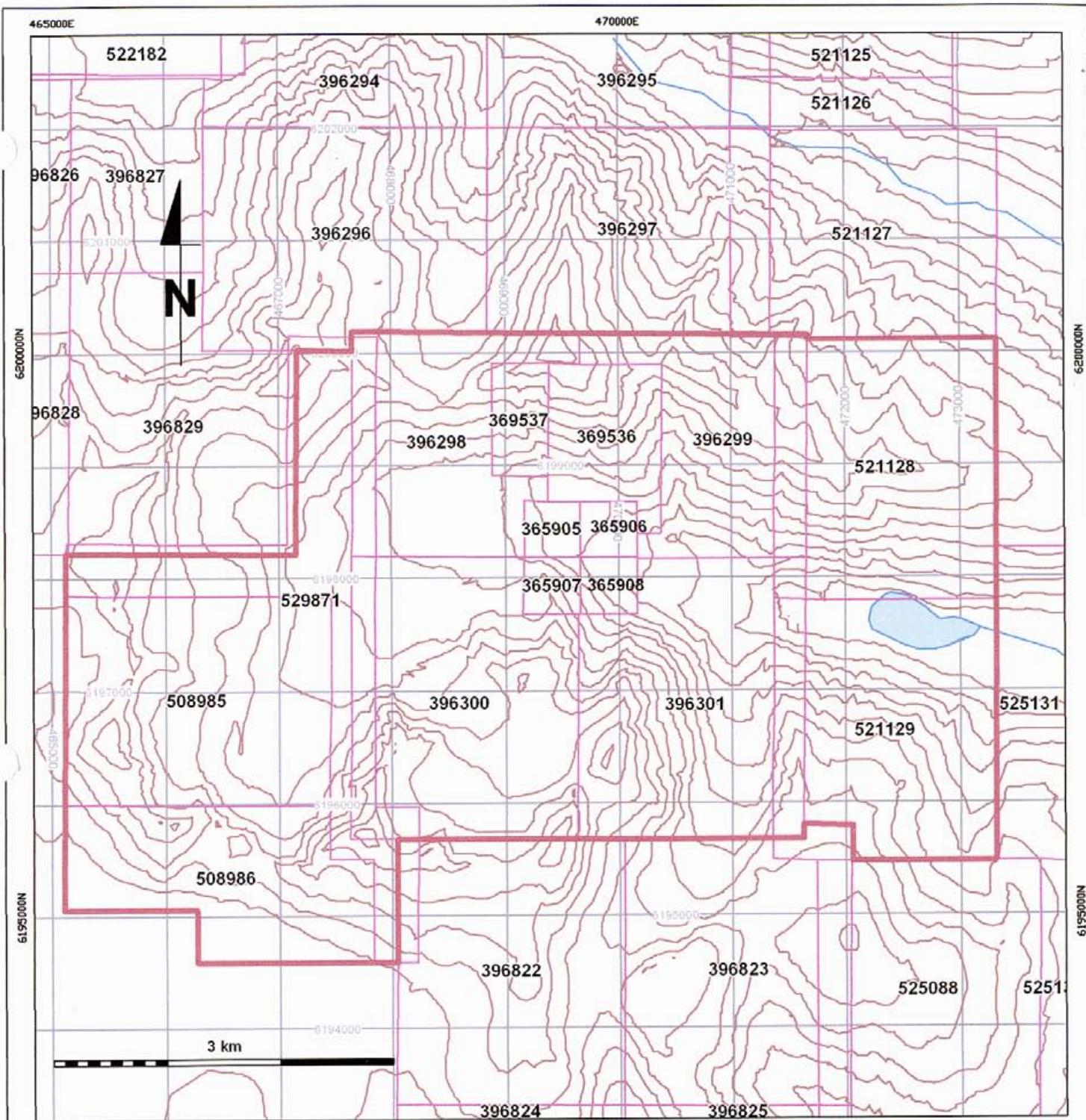
Name	Tenure No.	Area in Hectares
Knoink 1	365905	25.00
Knoink 2	365906	25.00
Knoink 3	365907	25.00
Knoink 4	365908	25.00
Niknock 1	369536	150.00
Niknock 2	369537	50.00
Midas 6	396298	400.00
Midas 7	396299	400.00
Midas 8	396300	500.00
Midas 9	396301	500.00
Joker NE	508985	435.26
Joker SE	508986	308.46

Claim locations are shown on Fig. 2a after government MTRM map 103P093. Fig. 2b shows the location of the 2005 Aeroquest airborne survey grid in relation to claim lines.

The claims are owned 50/50 by Teuton Resources Corp. and Silver Grail Resources Ltd. (formerly Minvita Enterprises Ltd.) of Vancouver, British Columbia.

### C. History





**LEGEND**



Konkin Silver Property



Creek, lake

*Claim boundaries as of February 2006*

TEUTON RESOURCES CORP. (TUO: TSXV)  
SILVER GRAIL RESOURCES LTD. (SVG: TSXV)

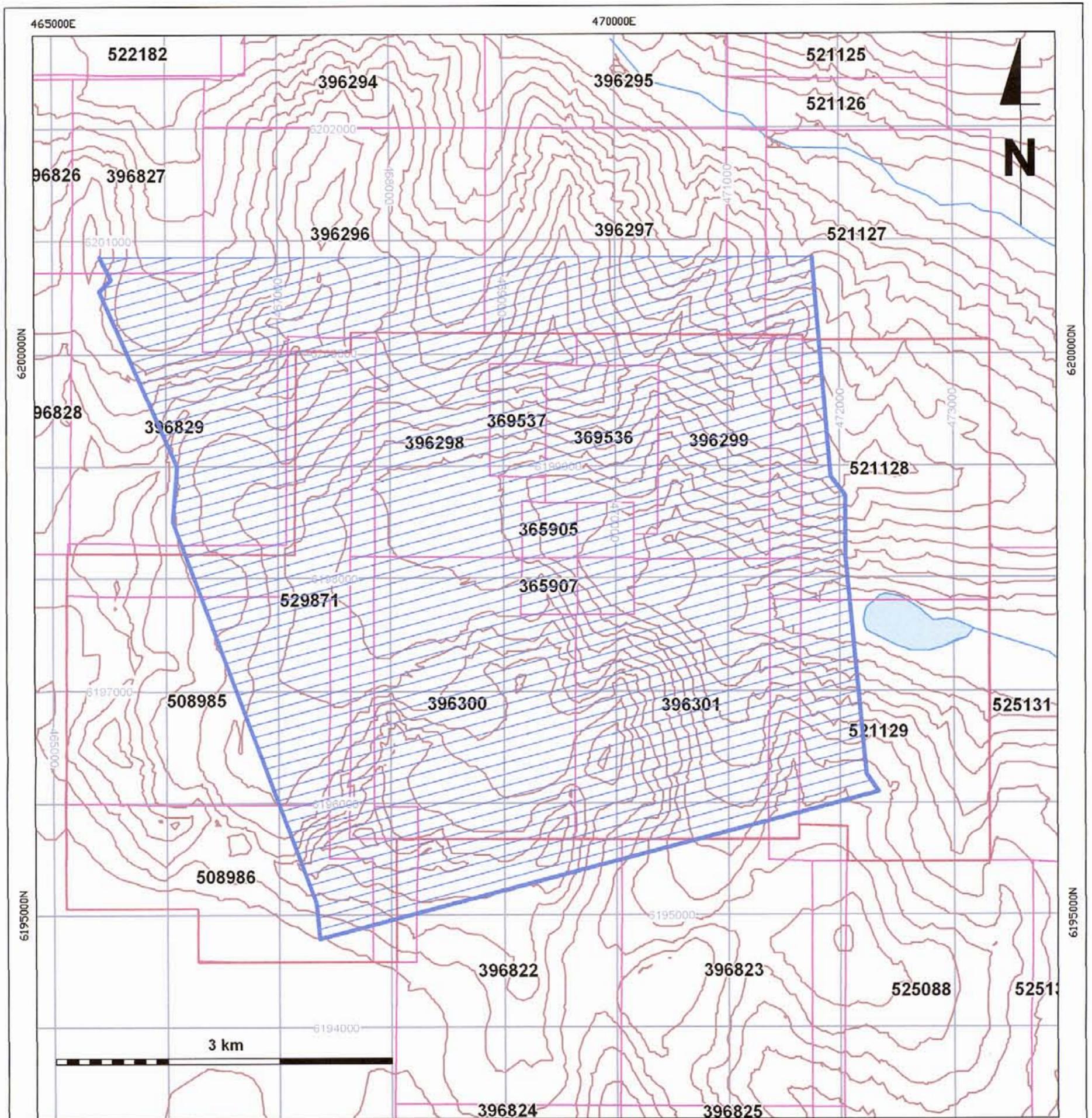
**KONKIN SILVER PROPERTY**  
**2005 Airborne Survey** *gc*

**Claim Location Map**

NTS No.: 103P 093  
Skeena Mining Division

Date: June 2006  
*K. Mastalerz*

Fig. 2a



**LEGEND**



Konkin Silver Property



2005 Aeroquest Airborne Survey Grid

*Claim boundaries as of February 2006*

TEUTON RESOURCES CORP. (TUO: TSXV)  
SILVER GRAIL RESOURCES LTD. (SVG: TSXV)

**KONKIN SILVER PROPERTY**

**Aeroquest Survey Grid  
Relative to Claim Boundaries**

NTS No.: 103P 093  
Skeena Mining Division

Date: June 2006

*K. Mastalerz*

Fig. 2b  
*D.C.*

Exploration for metals began in the Stewart region about 1898 after the discovery of mineralized float by a party of placer miners. Like many other mining districts, exploration proceeded in a boom-bust pattern with the boom periods following on the heels of an important discovery. The first active period culminated in 1910 when both Stewart and the neighbouring town of Hyder, Alaska boasted a population of around 10,000. Discovery of the extremely rich Premier gold-silver mine in 1918 led to another phase of intensified exploration which gradually tapered off during the Depression years.

Lacklustre precious metal prices precluded most gold and silver exploration from 1940 to 1979, although the discovery and subsequent development of the famous Granduc copper mine kept alive Stewart's reputation as an important mining district. When silver and gold prices skyrocketed in the early 1980's the area entered a modern boom period. Successive discoveries of important gold deposits such as the Snip and Eskay Creek mines kept exploration at high levels. This activity peaked in 1990. In 1991 exploration in the general Stewart and outlying areas (the so-called "Golden Triangle") fell sharply. The failure by scores of exploration companies to come up with a discovery to rival Eskay Creek quickly disenchanting investors. Funds for further work evaporated. This downturn also coincided with the election of a provincial government perceived to be hostile to mining interests, which cast a pall over exploration throughout all of British Columbia.

Although the Konkin Silver property falls within the ambit of what is generally considered the Stewart region, results of work carried out post-1994 suggest that the property geology is more closely related to that of the Kitsault Mining District some 14 km to the south. As in the Stewart region proper, exploration in the Kitsault River area began early in the century with an initial active phase from 1910 to 1920. The two most prominent mines in the area were the Dolly Varden and the Torbrit, primarily silver producers with some additional lead credits. The Torbrit operated during the 1920's and again in the 1950's, yielding some 19 million ounces of silver according to Grove (1971). In 1958, its last year of production, the Torbrit turned out 450 tons per day and maintained a 120 man camp. At the time it was Canada's third largest silver mine after United Keno and the Sullivan.

American Pacific Mining Company consolidated many of the Kitsault Valley holdings in the late 1980's and undertook several large drilling programs on the claims in subsequent years. Although this work did not establish significant new tonnages of silver mineralization it did help to elucidate the geology of the area. Examination of core from drill programs on the Torbrit, Dolly Varden and North Star properties suggested that their silver-bearing bodies were formed due to sulfide enrichments along a 3.5

km long, exhalative horizon (cf. Assessment Report #20900, on file with BCDEMPR).

In 1994, Teuton prospectors discovered a silver-rich showing near the centre of the area now covered by the Knoink claims. This arcuate zone, dubbed the "Konkin Silver" was chip and trench sampled and returned values up to 9.0m grading 34.94 oz/ton silver, 2.30% lead and 2.02% zinc. Other similar, but smaller zones were found nearby. In 1995, the Konkin showing was tested by a series of very shallow holes from a single set-up. One of these intersected 10 feet grading 5.02 oz/ton silver.

Between 1996 and 2004, inclusive, little work was carried out on the claims other than minor prospecting and sampling in order to satisfy assessment requirements. In 1998, Ross Sherlock, Ph.D., an acknowledged VMS expert, visited the property briefly and characterized the setting of the main Konkin Silver showing as a "white smoker". Four years later, in 2002, a new zone of silver mineralization was discovered several hundred meters south of the main Konkin Silver showing. Heavy overburden cover in the area precluded determination of the extent of the mineralization.

#### D. References

1. ALLDRICK, D.J. (1984); "Geological Setting of the Precious Metals Deposits in the Stewart Area", Paper 84-1, Geological Fieldwork 1983", B.C.M.E.M.P.R.
2. ALLDRICK, D.J. (1985); "Stratigraphy and Petrology of the Stewart Mining Camp (104B/1E)", p. 316, Paper 85-1, Geological Fieldwork 1984, B.C.M.E.M.P.R.
3. BLACK, J.M. (1951); "Upper Kitsault Valley Area", 1951 Annual Report Minister of Mines, B.C., p. 76.
4. CAMPBELL, A.F. (1959); "The Geology of Torbrit Silver Mine", Economic Geology, Vol. 54, 1959, pp. 1461-1495.
5. CREMONESE, DINO, P.ENG., (1995). Assessment Report on Geochemical Work on the Pepe 7, Red Dog and Leszek 1-4al, Claims; On file with BCMEMPR.
6. CREMONESE, DINO, P.ENG., (2003). Assessment Report on Geochemical Work on the Knoink Property; #27,100, on file with BCMEMPR.
7. GREIG, C.J., ET AL (1994); "Geology of the Cambria Icefield: regional setting for Red Mountain gold deposit, northwestern British Columbia", p. 45, Current Research 1994-A, Cordillera and Pacific Margin, Geological Survey of Canada.

8. GREIG, C.J. ET AL (1994); "Geology of the Cambria Icefield: Stewart, Bear River and parts of Meziadin Lake and Paw Lake map areas, northwestern British Columbia; Geological Survey of Canada, Open File 2931.
9. GROVE, E.W. (1971): Bulletin 58, Geology and Mineral Deposits of the Stewart Area. B.C.M.E.M.P.R.
10. GROVE, E.W. (1982): Unuk River, Salmon River, Anyox Map Areas. Ministry of Energy, Mines and Petroleum Resources, B.C.
11. GROVE, E.W. (1987): Geology and Mineral Deposits of the Unuk River-Salmon River-Anyox Area, Bulletin 63, BCMEMPR
12. KRUCKKOWSKI, E.R. (1996): Assessment Report on Geochemical, Geological and Diamond Drilling on the Pepe 7, Roman 1, Blue 2-3 Claims. #24,398, on file with BCMEMPR.
13. SHERLOCK, ROSS, PH.D. (1999): Assessment Report on Geological Investigation of the Konkin Silver Prospect Encompassing the Following Claims: 365905-8. #26,110, on file with BCMEMPR.

#### **E. Summary of Work Done.**

A helicopter borne geophysical survey was carried out by Aeroquest Limited of Milton, Ontario over the Konkin Silver property on behalf of Teuton Resources Corp. between Sept. 25 and October 10, 2005. The survey over the Konkin Silver property was part of a larger survey which included the Del Norte property (adjoining to the north of the Konkin Silver), collectively known as the Del Norte Project.

A total of 1299.5 line-kms was flown during the Del Norte Project. Of this amount, 268.4 line-kms are attributable to the southernmost portion of the Project, namely the Konkin Silver property. This assessment report deals only with the Konkin Silver portion of the Del Norte Project.

The geophysical crew was stationed out of Stewart, BC and, during the second phase of work, used a contract helicopter supplied by Hi-Wood Helicopters from Oakachoke, Alberta.

Full particulars of the survey are attached to this report as Appendix III, entitled "Report on a Helicopter-Borne AerotEM II Electromagnetic and Magnetic Survey; Aeroquest Job #05034, Del Norte Project" by Aeroquest Limited of Milton, Ontario.

## 2. TECHNICAL DATA AND INTERPRETATION

### A. Geology

The Stewart district is near the western margin of Stikinia, the largest and metallogenically most prolific terrane in the Canadian Cordillera. Stikinia generally comprises three stratigraphic groups, all of which are recognized in the Stewart region: (1) Middle and Upper Triassic mafic volcanics and clastic rocks and cherts of the Stuhini Group; (2) Lower and Middle Jurassic volcanic and clastic rocks of the Hazelton group; and (3) Upper Jurassic mudstones and sandstones of the Bowser Lake group. The stratigraphic sequence has been deformed into non-cylindrical northwesterly trending syncline-anticline pairs, the axial planes of which have been cut by easterly dipping thrusts (Greig et al, 1994).

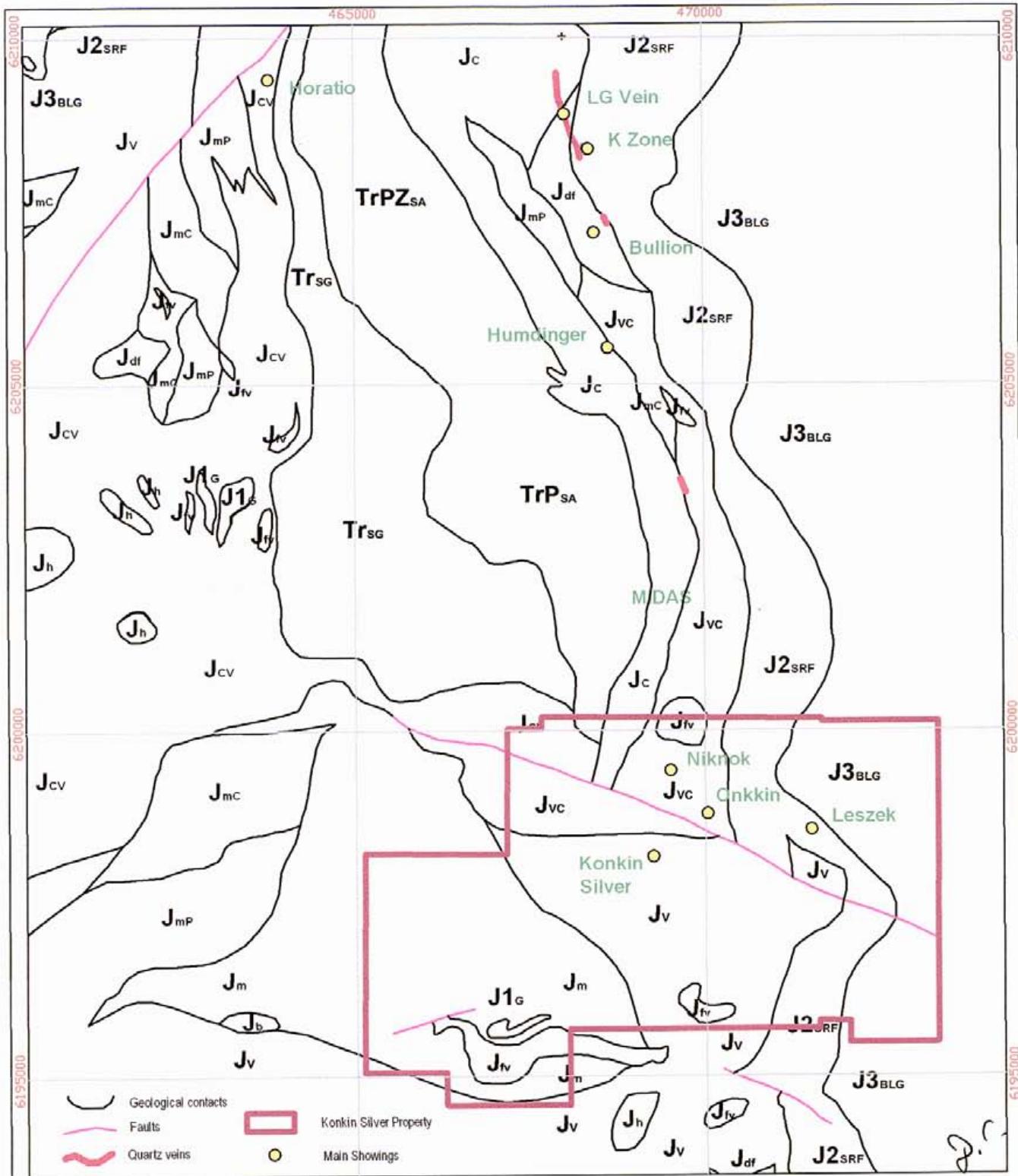
Intrusive phases in the region include Late Triassic calc-alkaline intrusives, coeval with Stuhini volcanic rocks, Early to Middle Jurassic intrusives that are variable in composition and roughly coeval with the Hazelton group volcanics. Also present are Eocene age intrusives, part of the Coast Plutonic suite.

More than 600 mineral deposits, at least 70 of which have shown some production, have been discovered within the boundaries of this region. Famous historical producers include the Premier, Granduc and Anyox mines. The Eskay Creek mine currently owned by Barrick Corp. is successfully in production and is one of North America's highest grade gold-silver mines.

Locally, at the centre of the Konkin Silver property on the Knoink 1-4 claims, a wide zone of carbonate altered rocks is exposed along a nunatak exposed by the retreat of glacial ice over the past fifteen years. The rocks appear to have been originally maroon volcanoclastics and flows. Lenses and pods of predominantly calcite, siderite and quartz occur frequently within the altered zone.

Within this zone, several silver-bearing structures have been discovered by prospecting from 1994-2002. The largest of these, the "Konkin Silver" zone, consists of carbonate, quartz, barite, galena, sphalerite and rare ruby silver and native silver in a bow-shaped structure spanning 35 metres. High silver values are most closely associated with galena which occurs as fine coatings on fractures, as coarse crystalline blebs and as disseminated grains. Maximum thickness of the feature appears to be in excess of 10 metres

At the formerly producing Torbrit silver mine to the south in the Kitsault River valley, similar silver mineralization also occurs in a bow-shaped structure, which, most notably, becomes wider and



- Legend:**
- J3BLG** Bowser Lake Group; sediments (undivided)
  - J2SRF** Salmon River Fm.; predominantly sediments
  - Jdf** Debris flow conglomerates
  - Jfv** Felsic volcanogenic rocks
  - Jvc** Volcaniclastic rocks (undivided)
  - Jc** Predominantly clastic rocks (undivided)
  - JmP** Maroon pyroclastic rocks
  - Jm** Maroon feldspathic pyroclastics and epiclastics
  - Jmc** Maroon epiclastic rocks
  - Jh** Hornblende-feldspar-phyric volcanic rocks
  - Jv** Undivided Volcanic rocks
  - Trsg** Older (Triassic?) volcaniclastic rocks
  - TrPSA** Feldspar-phyric basalts (Triassic or older)
- Older Hazelton Group (Belly Creek and Unuk River Fms.)**
- JmP** Maroon pyroclastic rocks
  - Jm** Maroon feldspathic pyroclastics and epiclastics
  - Jmc** Maroon epiclastic rocks
  - Jh** Hornblende-feldspar-phyric volcanic rocks
  - Jv** Undivided Volcanic rocks
  - Trsg** Older (Triassic?) volcaniclastic rocks
  - TrPSA** Feldspar-phyric basalts (Triassic or older)

TEUTON RESOURCES CORP. (TUO: TSXV)  
 SILVER GRAIL RESOURCES LTD. (SVG: TSXV)

**KONKIN SILVER PROPERTY**

NTS Nos.: 103P 093 Skeena Mining Division

**REGIONAL GEOLOGY MAP**

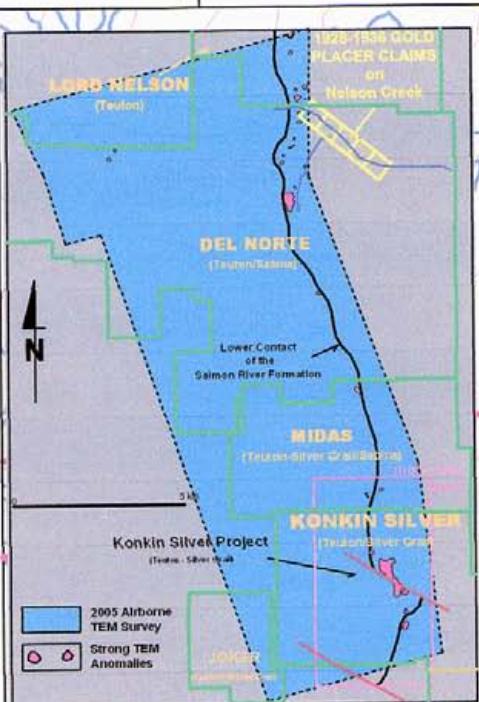
<i>K. MacLean</i>	Claims:	Date: June 2006	Fig. 3
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Source: Geology after C.J. Greig et al. 1994 (Open File Rep. 2931); modified

468,000 E

470,000 E

472,000 E



**MIDAS**  
(Teuton-Silver  
Grail/Sabina)

Hazelton Group  
Volcanics

Salmon River Formation

Bowser Basin Sediments

Niknok

Onkkin

Leszek  
(Exact  
Position  
Unknown)

Konkin Silver

King Konk

Yoggi

**KONKIN  
SILVER**  
(Teuton/Silver Grail)

Hazelton Group Volcanics

Salmon River Formation

**LEGEND:**

- Contours
  - Creek & Lake
  - Ice/Snow Field Edge
  - Geological Contacts
  - Faults
  - Leszek
  - Mineral Showing
  - Teuton/Silver Grail Claim Boundaries
- Airborne TEM Anomalies (Preliminary)**
- Very Strong
  - Strong
  - Moderately Strong
  - Moderate
- 1 KM

Teuton Resources Corp.  
Silver Grail Resources Ltd.

**KONKIN SILVER PROJECT**

(Stewart Region, Northwest British Columbia, NTS 103R-0927)

**2005 Airborne TEM Anomalies**

May, 2006  
K. MacIntyre

Fig. 4

6,200,000 N

6,198,000 N

6,196,000 N

longer (along strike) with increasing depth. The Torbrit was Canada's 3rd largest silver mine during the 1950's.

The Niknok and Onkkin showings were discovered in poorly exposed outcrop on the opposite valley slope from the Konkin Silver showing. The Niknok mineralization consists of coarse crystalline galena with lesser sphalerite within quartz-carbonate/minor barite stockworks. The zone is present in an area of abundant intrusive dykes and appears to have a relatively gentle dip into the hillside. At the mostly overburden-covered Onkkin showing, the surrounding soil has a distinctive dark brown-black colour suggesting the presence of manganese.

Two other silver-bearing zones were also discovered by prospecting, situated south of the Konkin Silver showing. These are the King Konk and Yoggi showings which have had only very minor work to date.

In 1994, east of the silver-bearing structures, a promising quartz breccia zone mineralized with tetrahedrite was discovered situated along a contact between volcanic and sedimentary rocks. A chip sample from this zone returned 0.202 oz/ton gold and 16.4 oz/ton silver over a 13.1 foot width. Due to the steepness of the location no further work was done. However, after the 2002-3 success of exploration programs on the K and LG vein structures located to the north on Teuton's Del Norte property, similarities both in mineralogy and setting between the K-LG and the Leszek occurrences prompted a re-examination of the latter showing. A prospecting team was sent in to map and extensively sample the Leszek in 2004, but was unable to find the zone due to precipitous terrain. It is now considered likely that the precise location of the zone was incorrectly mapped by the original sampler.

Regional geology is presented in Fig. 3. Konkin Silver property mineralized zones (as discussed above) are shown in Fig. 4 along with the EM anomalies from the 2005 Aeroquest survey.

## **B. Geophysics**

Geophysical data related to the 2005 helicopter-borne EM and Mag survey over the Konkin Silver property is presented herein in Appendix III: "Report on a Helicopter-Borne AerotTEM II Electromagnetic and Magnetic Survey; Aeroquest Job #05034, Del Norte Project", by Aeroquest Limited of Milton, Ontario.

Prior to the completion of the Aeroquest report, Aeroquest chief geophysicist Jonathan Rudd met with the author and Teuton geologist K. Mastalerz, Ph.D., in Teuton's Vancouver office to review data from previous work on the property so as to provide the proper context for interpretation of survey data.

AUTHOR'S NOTE: Aeroquest's report did not differentiate between the various properties comprising the Del Norte Project. The entire text of the Aeroquest report is reproduced herein as Appendix III, but only the data maps for the flight lines for the southernmost section, the Konkin Silver property, are included. These maps all bear the designation "Plate 3".

Only charges associated with the southernmost (Konkin Silver) block have been filed for assessment purposes.

### **C. Discussion**

The author concurs with the presentation of results by Aeroquest geophysicist Matt Pozza, M.Sc. as detailed in the Aeroquest report in Appendix III.

The Aeroquest data show a north-south trending string of strong EM anomalies along the eastern edge of the Konkin Silver property, roughly coincident with the contact of the Salmon River Formation and felsic volcanics of the Hazelton Group. Pozza states "The majority of the sources are steeply dipping to the east, and are likely sourced by conductive sedimentary units of more conductive zones or horizons within the sedimentary package".

The true source of these anomalous responses will have to await ground-truthing during the 2006 field season, expected to begin in early July. While the most probable interpretation is that the responses arise from graphite concentrations in a sub-unit within the Salmon River Formation sediments, it should be noted that the EM anomalies could also be related to nearby mineralization. This latter observation arises from the situation at the LG-K vein on the Del Norte property, some 8km to the north along strike of the same volcanic-sediment contact. Here the Aeroquest survey revealed an uncanny correlation between the 1+km long LG-K vein system and a parallel string of EM anomalies lying just to the east (in the wallrock sediments). Further south again, just north of the Konkin Silver property, another small cluster of EM anomalies is spatially associated with known Au-Ag bearing quartz mineralization ("3-Ounce" zone). The Leszek showing on the Konkin Silver property (cf. Fig. 4), the exact position of which is unknown, is very similar to the LG-K vein mineralization on the Del Norte. It would not be surprising to find that the true position of this showing is also adjacent to the EM anomalies as is the case further north at Del Norte.

### **D. Conclusions**

The 2005 Konkin Silver geophysical survey outlined a large number of anomalous EM responses, particularly along the eastern margin

of the area surveyed. It is likely that most of these are attributable to graphitic sediments, however there always remains the possibility that one or more of the anomalies may be due to conductive sulphides. Moreover, as discussed in the previous section, the anomalies may also be spatially related to vein mineralization as is the case at the Del Norte property further to the north.

In order to determine the source of the anomalous responses, the author recommends a follow-up program of ground-truthing the various conductors as delineated in the Aeroquest report. Favourable targets identified by such work should be mapped, trenched (if possible) comprehensively sampled, and diamond drilled, if warranted.

Respectfully submitted,



D. Cremonese, P.Eng.  
June 12, 2006

**APPENDIX I - WORK COST STATEMENT**

Aeroquest Limited Geophysical Survey: Feb. 17-26, 2006 268.4 line-km & \$107/line-km	\$ 28,719
Mobilization charge Prorated: 17.12% of \$20,000	\$ 3,424
Report and map preparation, compilation and research D.Cremonese, P.Eng., 1.5 days @ \$400/day	\$ 600
Draughting-	\$ 300
<b>TOTAL .....</b>	<b>\$ 33,043</b>

**Allocation:**

Amount filed per Event# 4074431 on Mar. 15, 2006	\$ 30,171
--	-----------

Please adjust PAC withdrawals accordingly, applying any balance remaining to the PAC Account of Teuton Resources Corp.

**APPENDIX II -CERTIFICATE OF AUTHOR**

I, Dino M. Cremonese, do hereby certify that:

1. I am a mineral property consultant with an office at Suite 207-675 W. Hastings, Vancouver, B.C.
2. I am a graduate of the University of British Columbia (B.A.Sc. in metallurgical engineering, 1972, and L.L.B., 1979).
3. I am a Professional Engineer registered with the Association of Professional Engineers of the Province of British Columbia as a resident member, #13876.
4. I have practiced my profession since 1979.
5. This report is based primarily upon the 2005 Aeroquest airborne survey over the Konkin Silver property. Additional information comes from site visits to the property between 1995-98 and an extensive review of literature concerning the property.
6. I am a principal of Teuton Resources Corp. and Silver Grail Resources Ltd., owner of the Konkin Silver property. This report is for assessment report only and does not purport to be an independent assessment of the merits of the property.

Dated at Vancouver, B.C. this 12th day of June, 2006.



D. Cremonese, P.Eng.

APPENDIX III

REPORT ON A HELICOPTER-BORNE AEROTEM II  
ELECTROMAGENETIC AND MAGNETIC SURVEY

by

Aeroquest Limited of Milton, Ontario.

January, 2006

# **Report on a Helicopter-Borne AeroTEM® II Electromagnetic and Magnetic Survey**

**Aeroquest Job # 05034  
Del Norte Project  
Stewart, British Columbia  
NTS 104A04.**

for

**Teuton Resources Corporation**  
207-675 West Hastings Street.  
VANCOUVER  
British Columbia  
CANADA, V6B 1N2

by

** *AEROQUEST LIMITED***

4-845 Main Street East  
Milton, Ontario, L9T 3Z3  
Tel: (905) 693-9129 Fax: (905) 693-9128  
[www.aeroquestsurveys.com](http://www.aeroquestsurveys.com)  
January, 2006

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### 1.2. Appendices

- Appendix 1: Survey Block Co-ordinates
- Appendix 2: Description of Database Fields
- Appendix 3: Technical Paper: "AeroTEM Design Considerations"
- Appendix 4: Instrumentation Specification Sheet

### 1.3. Maps (1:10,000)

The report includes a set of nine (9) geophysical maps plotted at a scale of 1:10,000. The survey area is covered by three (3) map plates. Three (3) geophysical data products are presented for each plate (listed below).

- Map 1: Coloured Total Magnetic Intensity (TMI) with line contours and EM anomalies
- Map 2: Coloured Tilt Derivative of the TMI with line contours and EM anomalies
- Map 3: AeroTEM Off-Time Profiles (Z5-Z15) and EM anomalies

## 2. INTRODUCTION

This report describes a helicopter-borne geophysical survey carried out on behalf of Teuton Resources Corp. on the Del Norte Project, British Columbia. The principal geophysical sensor is Aeroquest's exclusive AeroTEM II time domain helicopter electromagnetic system which is employed in conjunction with a high-sensitivity cesium vapour magnetometer. Ancillary equipment includes a real-time differential GPS navigation system, radar altimeter, digital video acquisition system, and a base station magnetometer. Full-waveform streaming EM data is recorded at 38,400 samples per second. The streaming data comprise the transmitted waveform, and the X component and Z component of the resultant field at the receivers. A secondary acquisition system (RMS) records the ancillary data.

The total line kilometre flown is totaled at 1299.5 km. The survey flying described in this report took place from September 25<sup>th</sup> to October 10<sup>th</sup>, 2005.

Bedrock EM anomalies were auto-picked from the Z-component on-time data and graded according to the 'off-time' conductance. These anomalies were then review by hand and classified for presentation on the maps. This report describes the survey logistics, the data processing, presentation, and provides a brief interpretation of the results.

## 3. SURVEY AREA

The Del Norte project (Figure 1) is located east of Stewart in the Cambria Range. The survey area contains 31 claim blocks located in mountainous terrain and alpine glaciers (Figure 2). Access to the property is available exclusively by helicopter. The helicopter was provided by Hi-Wood helicopters, Oakachoke, Alberta. The field crew was based in Stewart at the "Alpine Lodge Inn". The helicopter and geophysical equipment was staged out of the Billabong Highway construction yard, just west of Meziadin Junction. The Teuton Resources Mineral Dispositions for the area may be located on NTS map sheet 104A04.



Figure 1. Regional location map of the project area

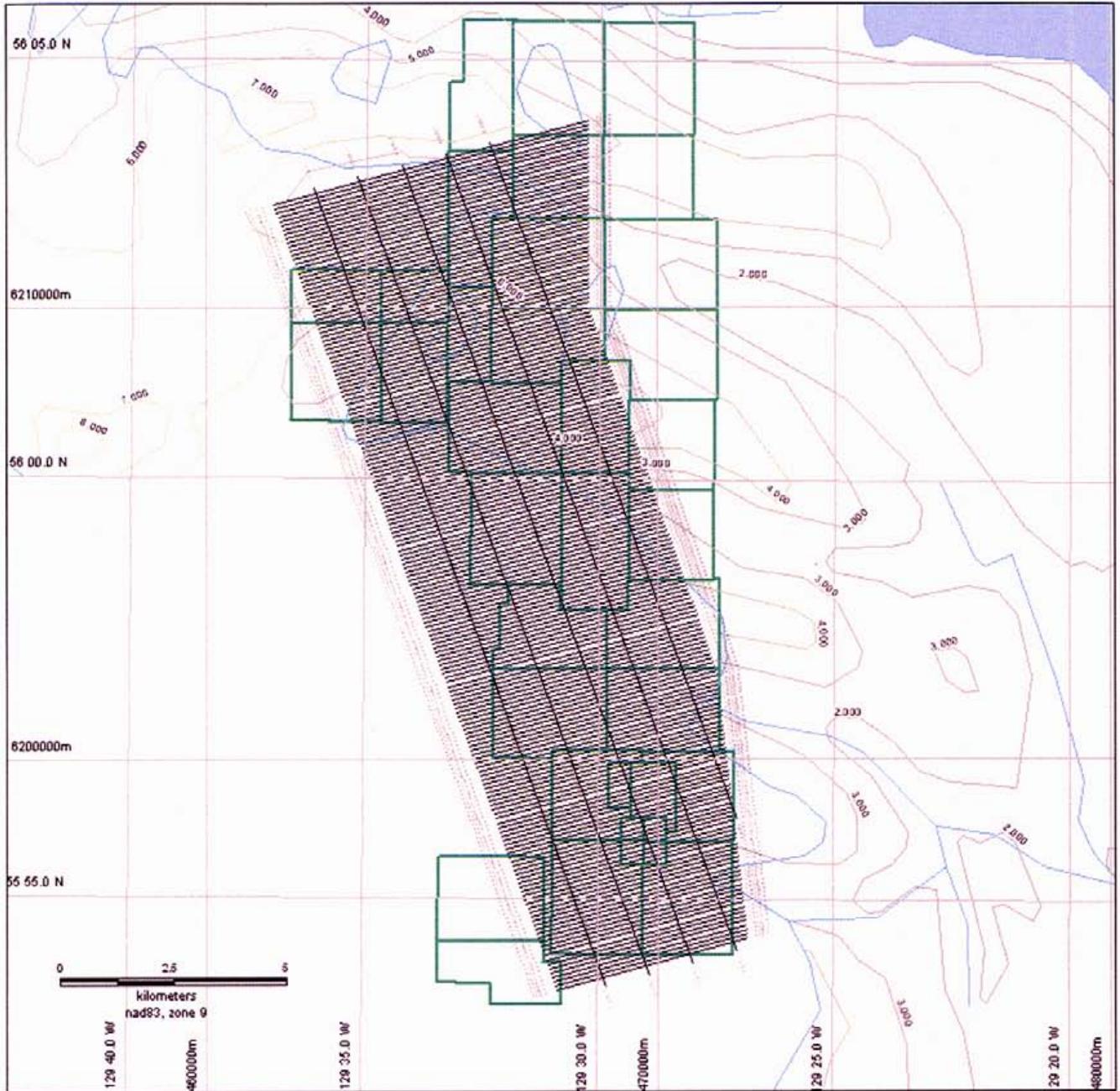


Figure 2. Planned Flight path map of the project area. Extensions were flown on the northwest corner of survey block (not shown).

#### 4. REGIONAL GEOLOGY and EXPLORATION (from Teuton Resources web site)

“The Del Norte property covers a 6 mile long belt hosting multiple mineralized showings. Three gold-bearing streams cut across the property, one of which supported a placer mining operation in the 1930’s.

Prospecting, mapping and drilling during the period 2002-2003 has concentrated on a 7,200 ft. long trend connecting the Kosciuszko Zone (“K” Zone), the LG Vein, and the LG Vein Extension. Similar mineralogy and stratigraphic location indicates that all of three of these are related structures, although talus and ice obscure continuity in places.

Gold and silver bearing quartz-sulfide mineralization has been found over a vertical range of 1,000 feet, from the upper reaches of the Kosciuszko Zone to the bottom of Hole DN03-7 within the LG Vein. Recent petrographic studies of LG Vein material indicate the mineralization is mesothermal (mesothermal structures have been known to extend to depths of 6,000 ft. or greater).”

#### 5. SURVEY SPECIFICATIONS AND PROCEDURES

##### 5.1. Flight Specifications

The survey specifications are summarised in the following table:

Block Name	Line Spacing (m)	Line direction	Survey Coverage (line-km)	Dates Flown
Del Norte	100	NE-SW (075)	1299.5	September 25 <sup>th</sup> to September

The survey coverage was calculated by adding up the along-line distance of the survey lines and control (tie) lines as presented in the final Geosoft database. The survey was flown with a line spacing of 100 m. The control (tie) lines were flown perpendicular to the survey lines with a spacing of 1 km.

The nominal EM bird terrain clearance is 30m (98 ft), but can be higher in more rugged terrain. The magnetometer sensor is mounted in a smaller bird connected to the tow rope 15 metres above the EM bird and 18.5 metres below the helicopter (Figure 4). Nominal survey speed over relatively flat terrain is 75 km/hr and is generally lower in rougher terrain. Scan rates for ancillary data acquisition is 0.1 second for the magnetometer and altimeter, and 0.2 second for the GPS determined position. The EM data is acquired as a data stream at a sampling rate of 38,400 samples per second and is processed to generate final data at 10 samples per second. The 10 samples per second translates to a geophysical reading about every 1.5 to 2.5 metres along the flight path.

##### 5.2. Navigation

Navigation is carried out using a GPS receiver, an AGNAV2 system for navigation control, and an RMS DGR-33 data acquisition system which records the GPS coordinates. The x-y-z position of the aircraft, as reported by the GPS, is recorded at 0.2 second intervals. The system has a published accuracy of under 3 metres. A recent static ground test of the Mid-Tech WAAS GPS yielded a standard deviation in x and y of under 0.6 metres and for z under 1.5 metres over a two-hour period.

### **5.3. System Drift**

Unlike frequency domain electromagnetic systems, the AeroTEM<sup>©</sup> II system has negligible drift due to thermal expansion. The operator is responsible for ensuring the instrument is properly warmed up prior to departure and that the instruments are operated properly throughout the flight. The operator maintains a detailed flight log during the survey noting the times of the flight and any unusual geophysical or topographic features. Each flight included at least two high elevation 'background' checks. During the high elevation checks, an internal 5 second wide calibration pulse in all EM channels was generated in order to ensure that the gain of the system remained constant and within specifications.

### **5.4. Field QA/QC Procedures**

On return of the pilot and operator to the base, usually after each flight, the ProtoDAS streaming EM data and the RMS data are carried on removable hard drives and FlashCards, respectively and transferred to the data processing work station. At the end of each day, the base station magnetometer data on FlashCard is retrieved from the base station unit.

Data verification and quality control includes a comparison of the acquired GPS data with the flight plan; verification and conversion of the RMS data to an ASCII format XYZ data file; verification of the base station magnetometer data and conversion to ASCII format XYZ data; and loading, processing and conversion of the streaming EM data from the removable hard drive. All data is then merged to an ASCII XYZ format file which is then imported to an Oasis database for further QA/QC and for the production of preliminary EM, magnetic contour, and flight path maps.

Survey lines which show excessive deviation from the intended flight path are re-flown. Any line or portion of a line on which the data quality did not meet the contract specification was noted and re-flown.

## 6. AIRCRAFT AND EQUIPMENT

### 6.1. Aircraft

A Eurocopter (Aerospatiale) AS350B2 "A-Star" helicopter - registration C-FPTG used as survey platform. The helicopter was owned and operated by Hi-Wood Helicopters, Oakachoke, Alberta.. Installation of the geophysical and ancillary equipment was carried out by AeroQuest Limited in Stewart and ferried to the survey area. The survey aircraft was flown at a nominal terrain clearance of 180 feet (55 m).



Figure 3. Survey Helicopter C-FPTG



Figure 4. The magnetometer bird (A) and AeroTEM II EM bird (B)

## 6.2. Magnetometer

The AeroQuest airborne survey system employs the Geometrics G-828 cesium vapour magnetometer sensor installed in a two metre towed bird airfoil attached to the main tow line, 15 metres below the helicopter. The sensitivity of the magnetometer is 0.001 nanoTesla at a 0.1 second sampling rate. The nominal ground clearance of the magnetometer bird is 48.5 metres (170 ft.). The magnetic data is recorded at 10Hz by the RMS DGR-33.

## 6.3. Electromagnetic System

The electromagnetic system is an AeroQuest AeroTEM II time domain towed-bird system. The current AeroTEM<sup>®</sup> transmitter dipole moment is 38.8 kNIA. The AeroTEM<sup>®</sup> bird is towed 33.5 m (110 ft) below the helicopter. More technical details of the system may be found in Appendix 4.

The wave-form is triangular with a symmetric transmitter on-time pulse of approximately 1.1 ms and a base frequency of 150 Hz. The current alternates polarity every on-time pulse. During every Tx on-off cycle (300 per second), 128 contiguous channels of raw x and z component (and a transmitter current monitor) of the received waveform are measured. Each channel width is 26.06 microseconds starting at the beginning of the transmitter pulse. This 128 channel data is referred to as the raw streaming data.

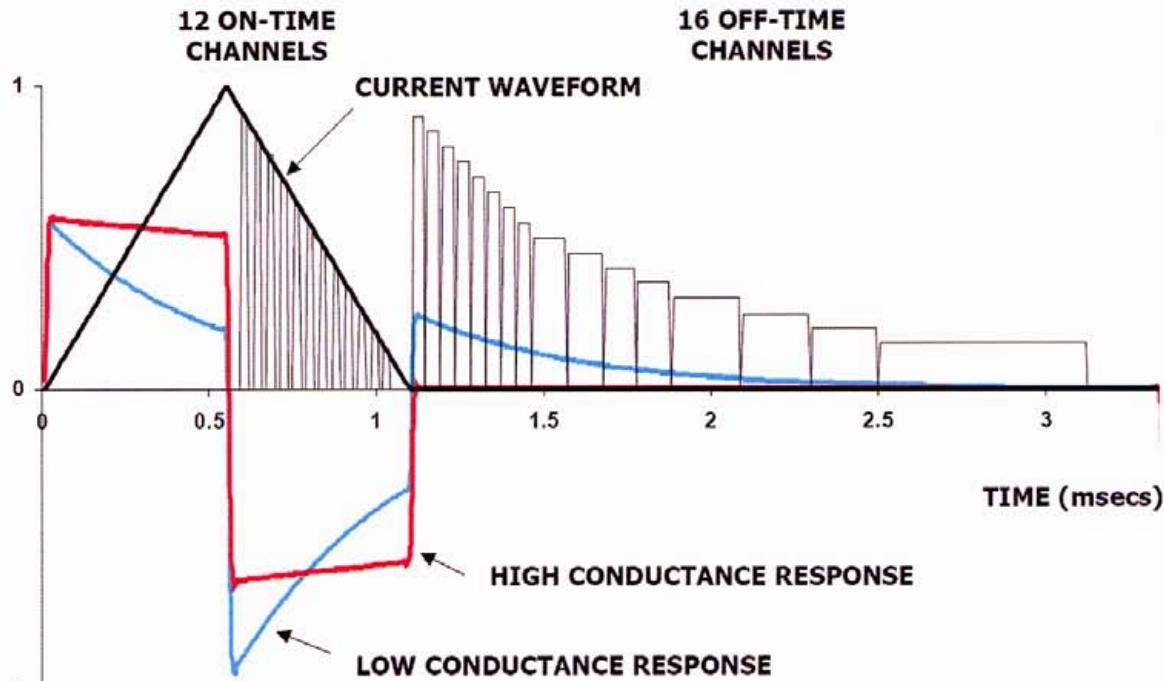


Figure 5. Schematic of Transmitter and Receiver waveforms

**6.4. PROTODAS Acquisition System**

The 128 channels of raw streaming data are recorded by the AERODAS acquisition system onto a removable hard drive. The streaming data are processed post-survey to yield 33 stacked and binned on-time and off-time channels at a 10 Hz sample rate. The timing of the final processed EM channels is described in the following table:

Channel	Width	Gate	Start(μs)	Stop(μs)	Mid(μs)	Width(μs)
1 ON	1	25	651.0	677.1	664.1	26.04
2 ON	1	26	677.1	703.1	690.1	26.04
3 ON	1	27	703.1	729.2	716.1	26.04
4 ON	1	28	729.2	755.2	742.2	26.04
5 ON	1	29	755.2	781.3	768.2	26.04
6 ON	1	30	781.3	807.3	794.3	26.04
7 ON	1	31	807.3	833.3	820.3	26.04
8 ON	1	32	833.3	859.4	846.4	26.04

9 ON	1	33	859.4	885.4	872.4	26.04
10 ON	1	34	885.4	911.5	898.4	26.04
11 ON	1	35	911.5	937.5	924.5	26.04
12 ON	1	36	937.5	963.5	950.5	26.04
13 ON	1	37	963.5	989.6	976.6	26.04
14 ON	1	38	989.6	1015.6	1002.6	26.04
15 ON	1	39	1015.6	1041.7	1028.6	26.04
16 ON	1	40	1041.7	1067.7	1054.7	26.04
0 OFF	1	44	1145.8	1171.9	1158.9	26.04
1 OFF	1	45	1171.9	1197.9	1184.9	26.04
2 OFF	1	46	1197.9	1224.0	1210.9	26.04
3 OFF	1	47	1224.0	1250.0	1237.0	26.04
4 OFF	1	48	1250.0	1276.0	1263.0	26.04
5 OFF	1	49	1276.0	1302.1	1289.1	26.04
6 OFF	1	50	1302.1	1328.1	1315.1	26.04
7 OFF	1	51	1328.1	1354.2	1341.1	26.04
8 OFF	1	52	1354.2	1380.2	1367.2	26.04
9 OFF	1	53	1380.2	1406.3	1393.2	26.04
10 OFF	1	54	1406.3	1432.3	1419.3	26.04
11 OFF	1	55	1432.3	1458.3	1445.3	26.04
12 OFF	1	56	1458.3	1484.4	1471.4	26.04
13 OFF	4	57	1484.4	1588.5	1536.5	104.17
14 OFF	8	61	1588.5	1796.9	1692.7	208.33
15 OFF	16	69	1796.9	2213.5	2005.2	416.67
16 OFF	32	85	2213.5	3046.9	2630.2	833.33

### 6.5. RMS DGR-33 Acquisition System

In addition to the magnetics, altimeter and position data, six channels of real time processed off-time EM data in the Z direction and one in the X direction are recorded by the RMS DGR-33 acquisition system at 10 samples per second and plotted real-time on the analogue chart recorder. These channels are derived by a binning, stacking and filtering procedure on the raw streaming data. The primary use of the RMS EM data (Z1 to Z6, X1) is to provide for real-time QA/QC on board the aircraft.

The channel window timing of the RMS DGR-33 6 channel system is described in the table below.

RMS Channel	Start time (microsec)	End time (microsec)	Width (microsec)	Streaming Channels	Noise tolerance
Z1, X1	1269.8	1322.8	52.9	48-50	20 ppb
Z2	1322.8	1455.0	132.2	50-54	20 ppb
Z3	1428.6	1587.3	158.7	54-59	15 ppb
Z4	1587.3	1746.0	158.7	60-65	15 ppb
Z5	1746.0	2063.5	317.5	66-77	10 ppb
Z6	2063.5	2698.4	634.9	78-101	10 ppb

## **6.6. Magnetometer Base Station**

The base magnetometer was a Geometrics G858 magnetometer with a built in GPS receiver and external GPS antenna. Data logging and UTC time synchronisation was carried out within the magnetometer, with the GPS providing the timing signal. The data logging was configured to measure at 1.0 second intervals. Digital recording resolution was 0.001 nT. The sensor was placed on a tripod in an area of low magnetic gradient and free of cultural noise sources. A continuously updated display of the base station values was available for viewing and regularly monitored to ensure acceptable data quality and diurnal variation.

## **6.7. Radar Altimeter**

A Terra TRA 3500/TRI-30 radar altimeter is used to record terrain clearance. The antenna was mounted on the outside of the helicopter beneath the cockpit. Therefore, the recorded data reflect the height of the helicopter above the ground. The Terra altimeter has an altitude accuracy of +/- 1.5 metres.

## **6.8. Video Tracking and Recording System**

A high resolution digital colour 8mm video camera is used to record the helicopter ground flight path along the survey lines. The video is digitally annotated with GPS position and time and can be used to verify ground positioning information and cultural causes of anomalous geophysical responses.

## **6.9. GPS Navigation System**

The navigation system consists of an Ag-Nav Incorporated AG-NAV2 GPS navigation system comprising a PC-based acquisition system, navigation software, a deviation indicator in front of the aircraft pilot to direct the flight, a full screen display with controls in front of the operator, a Mid-Tech RX400p WAAS-enabled GPS receiver mounted on the instrument rack and an antenna mounted on the magnetometer bird. WAAS (Wide Area Augmentation System) consists of approximately 25 ground reference stations positioned across the United States that monitor GPS satellite data. Two master stations, located on the east and west coasts, collect data from the reference stations and create a GPS correction message. This correction accounts for GPS satellite orbit and clock drift plus signal delays caused by the atmosphere and ionosphere. The corrected differential message is then broadcast through one of two geostationary satellites, or satellites with a fixed position over the equator. The corrected position has a published accuracy of under 3 metres. A recent static ground test of the Mid-Tech WAAS GPS yielded a standard deviation in x and y of under 0.6 metres and for z under 1.5 metres over a two-hour period.

Survey co-ordinates are set up prior to the survey and the information is fed into the airborne navigation system. The co-ordinate system employed in the survey design was WGS84 [World] using the UTM zone 10N projection. The real-time differentially corrected GPS positional data was recorded by the RMS DGR-33 in geodetic coordinates (latitude and longitude using WGS84) at 0.2 s intervals.

### 6.10. Digital Acquisition System

The AeroTEM<sup>©</sup> received waveform (Figure 5) sampled during on and off-time at 128 channels per decay, 300 times per second, was logged by the proprietary AERODAS data acquisition system. The channel sampling commences at the start of the Tx cycle and the width of each channel is 26.04 microseconds. The streaming data was recorded on a removable hard-drive and was later backed-up onto DVD-ROM from the field processing computer.

The RMS Instruments DGR-33A data acquisition system ( was used to collect and record the analogue data stream, i.e. the positional and secondary geophysical data, including processed 6 channel EM, magnetics, radar altimeter, GPS position, and time. The data was recorded on 128Mb capacity FlashCard. The RMS output was also directed to a thermal chart recorder for on-board real-time QA/QC.



Figure 6. The AeroTEM II Instrument Rack

## 7. PERSONNEL

The following AeroQuest personnel were involved in the project:

- Manager of Operations: Bert Simon
- Field Data Processor: Rory Kutluoglu
- Field Operator: Marcus Watson
- Data Interpretation and Reporting: Jonathan Rudd, Gord Smith, Matthew Pozza, Marion Bishop

The survey pilot, Paul Kendal was employed directly by the helicopter operator – Hi-Wood Helicopters Ltd.

## 8. DELIVERABLES

The report includes a set of nine (9) geophysical maps plotted at a scale of 1:10,000. The survey area is covered by three (3) map plates. Three (3) geophysical data products are presented for each Plate (listed below).

- Map 1: Coloured Total Magnetic Intensity (TMI) with line contours and EM anomalies
- Map 2: Coloured Tilt Derivative of the TMI with line contours and EM anomalies
- Map 3: AeroTEM Off-Time Profiles (Z5-Z15) and EM anomalies

All the maps show flight path trace, skeletal topography, and conductor picks represented by an anomaly symbol classified according to calculated off-time conductance. The anomaly symbol is accompanied by postings denoting the calculated off-time conductance, a thick or thin classification and an anomaly identifier label. The anomaly symbol legend is given in the margin of the maps. The magnetic field data is presented as superimposed line contours with a minimum contour interval of 1nT. Bold contour lines are separated by 100nT.

The geophysical profile data is archived digitally in a Geosoft GDB binary format database. A description of the contents of the individual channels in the database can be found in Appendix 3. A copy of this digital data is archived at the Aeroquest head office in Milton.

## 9. DATA PROCESSING AND PRESENTATION

All in-field and post-field data processing was carried out using Aeroquest proprietary data processing software, and Geosoft Oasis montaj software. Maps were generated using 36-inch wide Hewlett Packard ink-jet plotters.

### 9.1. Base Map

The geophysical maps accompanying this report are based on positioning in the NAD83 datum. The survey geodetic GPS positions have been projected using the Universal Transverse Mercator projection in Zone 10 north. A summary of the map datum and projection specifications is given following:

- Ellipse: GRS 1980
- Ellipse major axis: 6378137m eccentricity: 0.081819191
- Datum: North American 1983 - Canada Mean
- Datum Shifts (x,y,z) : 0, 0, 0 metres
- Map Projection: Universal Transverse Mercator Zone 17
- Central Scale Factor: 0.9996
- False Easting, Northing: 500,000m, 0m

For reference, the latitude and longitude in NAD83 are also noted on the maps. The skeletal topography was derived from the Federal Government's 1: 50,000 NTS map series.

## 9.2. Flight Path & Terrain Clearance

The position of the survey helicopter was directed by use of the Global Positioning System (GPS). Positions were updated five times per second (5Hz) and expressed as WGS84 latitude and longitude calculated from the raw pseudo range derived from the C/A code signal. The instantaneous GPS flight path, after conversion to UTM co-ordinates, is drawn using linear interpolation between the x/y positions. The terrain clearance was maintained with reference to the radar altimeter. The raw Digital Terrain Model (DTM) was derived by taking the GPS survey elevation and subtracting the radar altimeter terrain clearance values. The calculated topography elevation values are relative and are not tied in to surveyed geodetic heights.

Each flight included at least two high elevation ‘background’ checks. During the high elevation checks, an internal 5 second wide calibration pulse in all EM channels was generated in order to ensure that the gain of the system remained constant and within specifications.

## 9.3. Electromagnetic Data

The raw streaming data, sampled at a rate of 46,080 Hz (256 channels, 180 times per second) was reprocessed using a proprietary software algorithm developed and owned by Aeroquest Limited. Processing involves the compensation of the X and Z component data for the primary field waveform. Coefficients for this compensation for the system transient are determined and applied to the stream data. The stream data are then pre-filtered, stacked, binned to the 33 on and off-time channels and checked for the effectiveness of the compensation and stacking processes. The stacked data is then filtered, leveled and split up into the individual line segments. The filtering of the stacked data is designed to remove or minimize high frequency noise that can not be sourced from the geology. Further base level adjustments may be carried out at this stage.

The final field processing step was to merge the processed EM data with the other data sets into a Geosoft GDB file. The EM fiducial is used to synchronize the two datasets. The processed channels are presented in a Geosoft “array” channel format in the final GDB (Appendix 2) and are labeled in the database as Zon, Zoff, Xon, and Xoff.

Apparent bedrock EM anomalies were interpreted with the aid of an auto-pick from positive peaks and troughs in the on-time Z channel responses correlated with X channel responses. The auto-picked anomalies were reviewed and edited by a geophysicist on a line by line basis to discriminate between bedrock and conductive overburden sources as well as to determine the source type response (thin vs. thick – discussed later). Anomaly picks locations were migrated and removed as required. This process ensures the optimal representation of the conductor centres on the maps.

At each conductor pick, estimates of the on-time and off-time conductance have been generated based on calculation of the decay constant ( $\tau$ ) of the EM decay curves for those data points along the line where the response amplitude is sufficient to yield an acceptable estimate. Only channels that had a minimum response of 15 nT/s were included in the  $\tau$  calculation. A minimum of three channels responding above the 15 nT/s threshold were required to produce an acceptable  $\tau$  estimate. The  $\tau$  values were then windowed to exclude any values that had a correlation-coefficient less than 97%.

Conductance values (in Siemens) were then directly calculated from tau values at each conductor pick. Each conductor pick was then classified according to a set of seven ranges of calculated off-time conductance values as indicated on the map legends (Figure 7). Each symbol is also given an identification letter label, unique to each flight line. Conductor picks that did not yield an acceptable estimate of off-time conductance were assigned a 'null' conductance value of "0.01", thus plotting as a low conductance source on the maps.

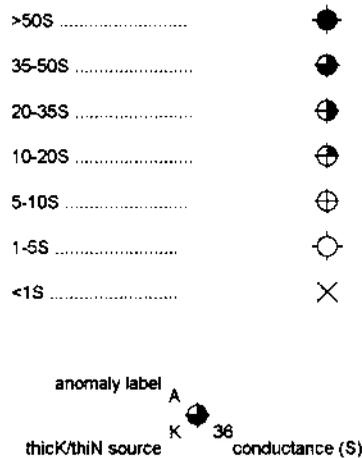


Figure 7. AeroTEM classified anomaly symbols.

#### 9.4. Magnetic Data

Prior to any leveling the magnetic data was subjected to a lag correction of -0.1 seconds and a spike removal filter. The filtered aeromagnetic data were then corrected for diurnal variations using the magnetic base station and the intersections of the tie lines. No corrections for the regional reference field (IGRF) were applied. The corrected profile data were interpolated on to a grid using a random grid technique with a grid cell size of 25 metres. The final leveled TMI grid provided the basis for threading the presented contours which have a minimum contour interval of 10 nT.

In order to map shallow basement response a 'tilt' derivative product was calculated from the TMI grid. The Tilt Derivative (TDR) of the TMI enhances smaller wavelength magnetic features which define shallow basement structures as well as potential mineral exploration targets.

The TDR is defined as:

$$TDR = \arctan (VDR/THDR)$$

where VDR and THDR are first vertical and total horizontal derivatives, respectively, of the total magnetic intensity T.

$$VDR = dT/dz$$

$$THDR = \text{sqrt} ( (dT/dx)^2 + (dT/dy)^2 )$$

Due to the nature of the arctan trigonometric function in the filter, all amplitudes are restricted to  $+\pi/2$  and  $-\pi/2$  radians. This gives the Tilt derivative the added advantage of acting like an automatic gain control (AGC) filter. The calculated TDR grid is presented a colour sun-shaded image (illumination from the north-northeast). Line contours are also overlain which have a minimum contour interval of 0.5 radians.

## 10. Results and Interpretation

The survey was successful in mapping the magnetic and conductive properties of the geology throughout the survey area. The following is a brief summary and interpretation of the results. For a detailed interpretation of the survey data please contact Aeroquest Limited.

### 10.1. Magnetic Response

The magnetic data provide a high resolution map of the distribution of the magnetic mineral content of the survey area. The sources for anomalous magnetic responses are thought to be predominantly magnetite because of the relative abundance and strength of response (high magnetic susceptibility) of magnetite over other magnetic minerals such as pyrrhotite.

The magnetic data ranges from lows of 56290 nT to highs of up to 57875 nT with an average background of 56850 nT. The highest magnetic response is located in the northwest corner of the survey block (Figure 8A, Mag Plate 1). This anomaly (and other oblate magnetic highs throughout the survey area) are interpreted to define intrusive bodies, where the magnetite concentrations are slightly higher than the host rock. The magnetic response in the eastern portion of the survey block is relatively quiescent, indicating sedimentary rocks with a fairly uniform magnetic mineral content. Lower amplitude and higher frequency magnetic response (such as visible in the TILT maps) identifies subtle linear magnetic lows and sharp contrasts in magnetic lithologies which likely indicate faulting and geological contacts. Faults often appear as magnetic-low lineaments and often have strike length of several kilometers. Offsets in narrow, magnetic stratigraphic trends can also delineate structure. The dominant magnetic trends are north-northwest and north-northeast, although the subtle magnetic lows generally trending northeast-south west to east-west likely resolve the most recent faulting in the survey area.

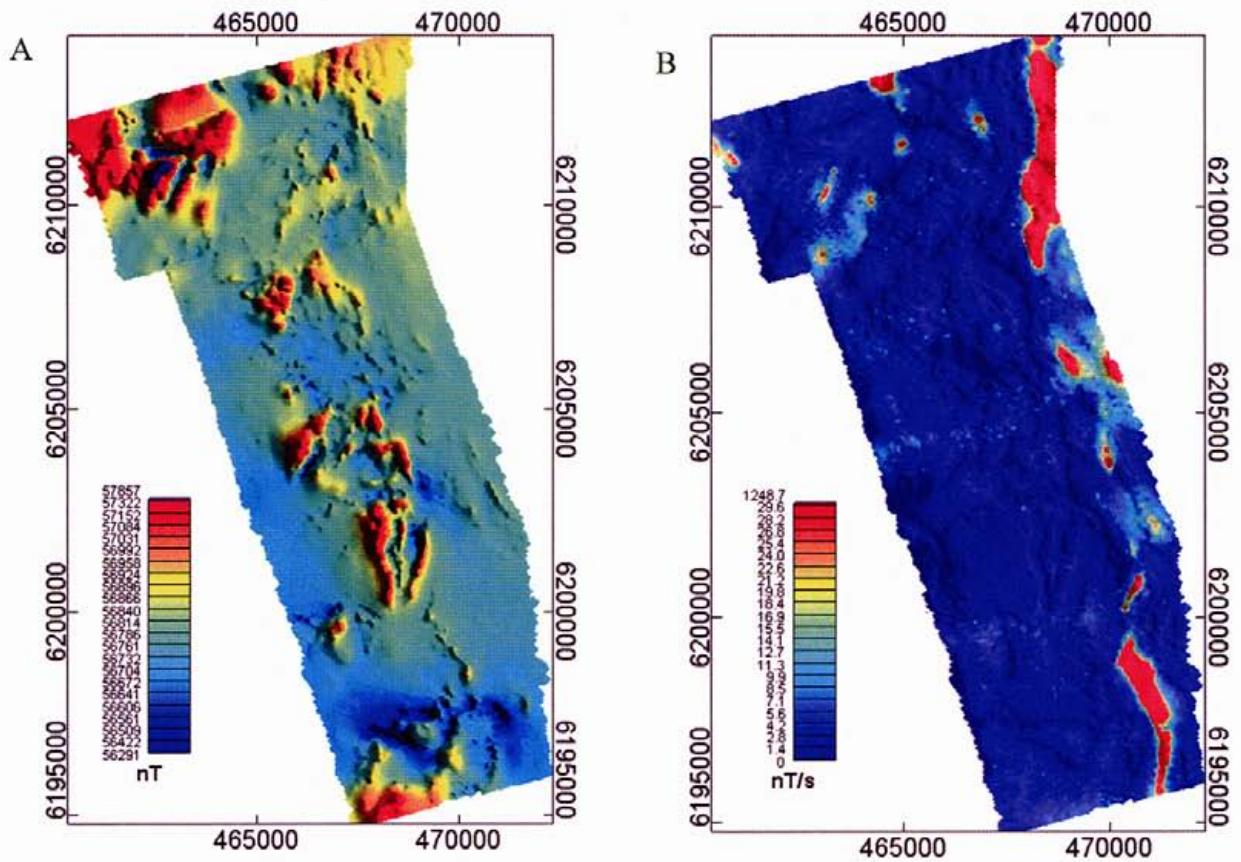


Figure 8. A. TMI colour map. B. AeroTEM Late off-time (zoff11) colour grid overlain on shaded TILT derivative magnetics.

### 10.2. EM Anomalies – General Comments

The EM anomalies on the maps are classified by conductance (as described earlier in the report) and also by the thickness of the source. A thin, vertically orientated source produces a double peak anomaly in the z-component response and a positive to negative crossover in the x-component response (Figure 9). For a vertically orientated thick source (say, greater than 10m), the response is a single peak in the z-component response and a negative to positive crossover in the x-component response (Figure 10). Because of these differing responses, the AeroTEM system provides discrimination of thin and thick sources and this distinction is indicated on the EM anomaly symbols (N = thin and K = thick). Where multiple, closely spaced conductive sources occur, or where the source has a shallow dip, it can be difficult to uniquely determine the type (thick vs. thin) of the source

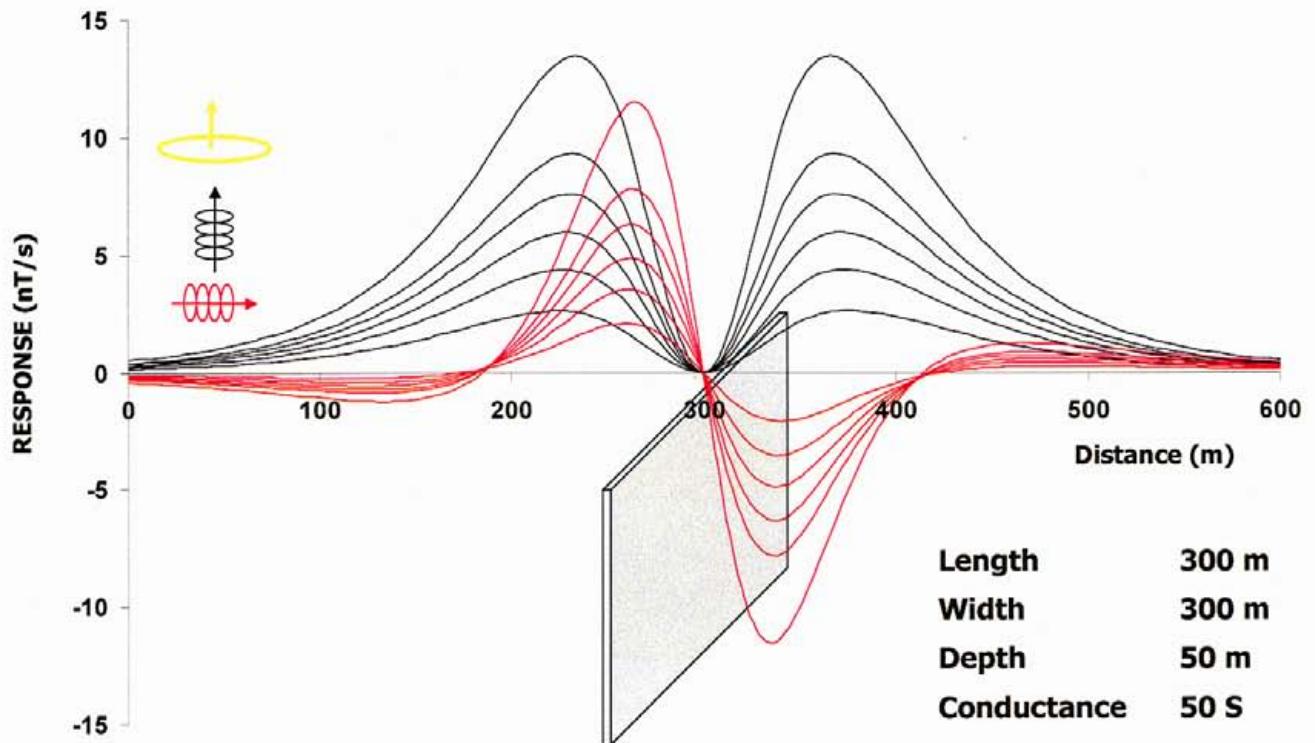


Figure 9. AeroTEM response to a 'thin' vertical conductor.

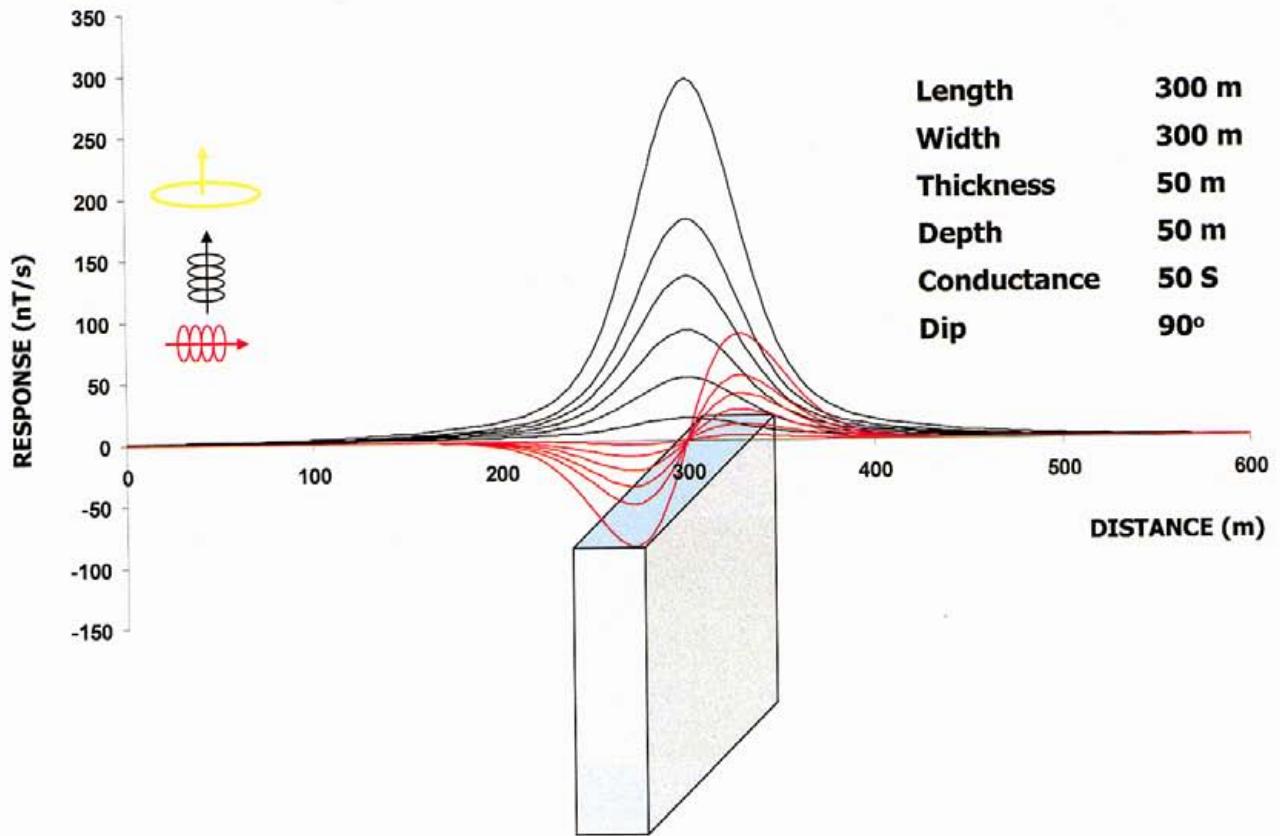


Figure 10. AeroTEM response for a 'thick' vertical conductor.

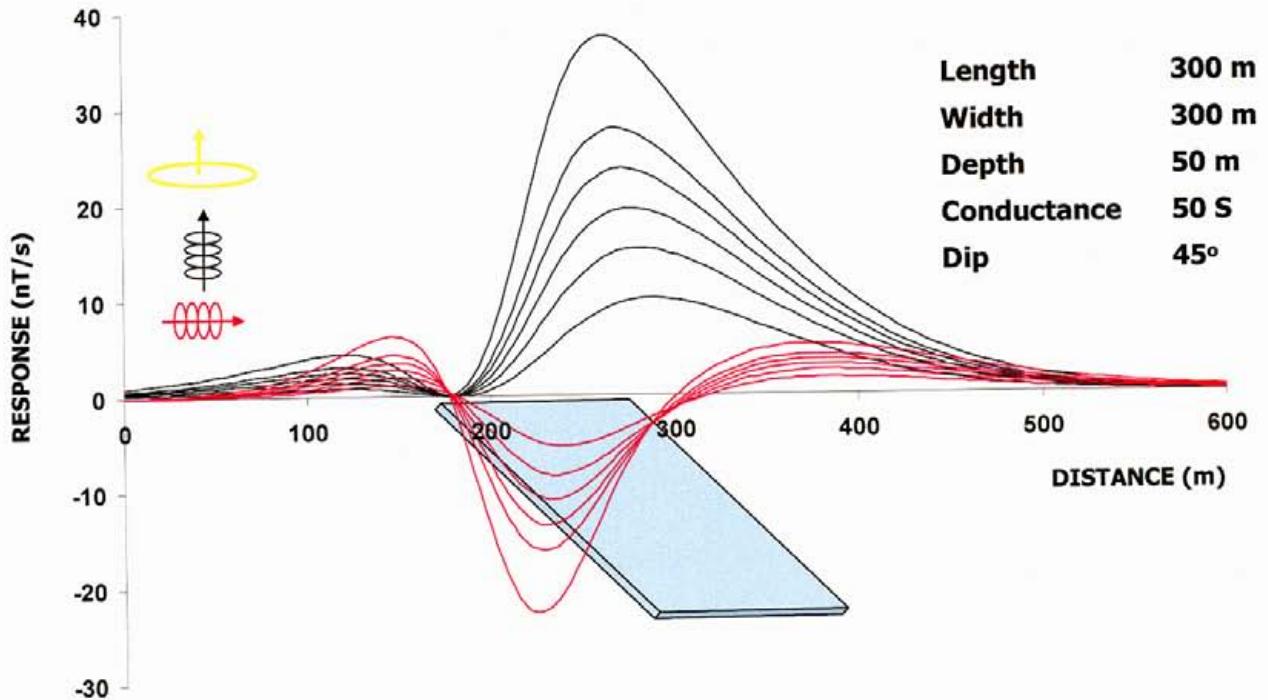


Figure 11. AeroTEM response over a 'thick' dipping conductor.

(Figure 11). In these cases both possible source types may be indicated by picking both thick and thin response styles. For shallow dipping conductors the 'thin' (N) pick will be located over the top edge of the source, whereas the 'thick' (K) pick will fall over the down-dip 'heart' of the anomaly.

### 10.3. EM Response

Several low to moderately conductive bedrock sources have been identified on the maps and a few discrete high conductance sources have been identified. Figure 8B shows a colour grid of a late time AeroTEM channel to generally highlight the more conductive zones of the survey area. The majority of the conductive responses of the survey area generally trend north northeast along the eastern border on the survey block. The majority of the sources are steeply dipping to the east, and are likely sourced by conductive sedimentary units of more conductive zones or horizons within the sedimentary package.

All anomalies indicated on the maps and should be reviewed in conjunction with available geological or geochemical information. The 'thick' and 'thin' response styles must also be considered when analyzing the interpreted picks and prioritizing for follow-up. The highest priority EM targets should then be subjected to quantitative modeling prior to drill testing to determine the azimuth and dip of the source.

Respectfully submitted,

Matt Pozza, M.Sc.  
Aeroquest Limited  
January, 2006

## APPENDIX 1 – PROJECT CORNER COORDINATES

The Del Norte Survey Block has a boundary which is defined in the following table. All geophysical data presented in this report have been windowed to this outline. Positions are in UTM Zone 11 – NAD83.

Easting (m)	Northing (m)
461439.8	6212355.5
468539.28	6214231.9
468546.9	6210018.8
471343.7	6201962.6
472023.4	6195990.3
467711.2	6194853.
462803.4	6208554.7
461823.8	6208283.5
460459.2	6212123.5
461447.6	6212368.4

**APPENDIX 2 - Description of Database Fields**

The GDB file is a Geosoft binary database. In the database, the Survey lines and Tie Lines are prefixed with an "L" for "Line" and "T" for "Tie".

Database (05012\_ final.gdb):

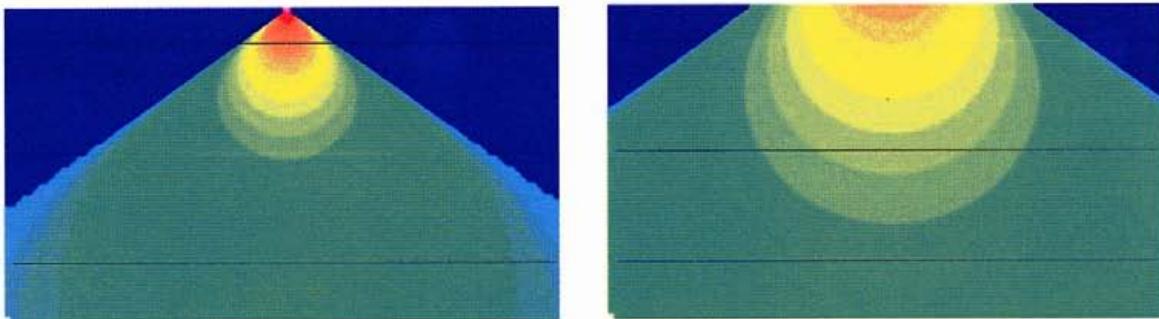
<b>Column</b>	<b>Units</b>	<b>Description</b>
emfid		AERODAS Fiducial
utctime	hh:mm:ss.ss	UTC time
X	m	UTM Easting (NAD83, zone 10N)
Y	m	UTM Northing (NAD83, zone 10N)
Lat_wgs84	dd.dddddd	Raw WGS84 Latitude
Long_wgs84	dd.dddddd	Raw WGS84 Longitude
bheight	m	Terrain clearance of EM bird
galtf	m	GPS altitude (WGS 84)
dtm	m	Digital Terrain Model
magf	nT	Final leveled total magnetic intensity
basemagf	nT	Base station total magnetic intensity
ZOn	nT/s	Processed Streaming On-Time Z component Channels 2-16
ZOff	nT/s	Processed Streaming Off-Time Z component Channels 2-16
XOn	nT/s	Processed Streaming On-Time X component Channels 2-16
XOff	nT/s	Processed Streaming Off-Time X component Channels 2-16
Anom_labels		Letter label of conductor pick
tau	microseconds	Decay constant at conductor pick
off_con	S	Off-time conductance
grade		Classification from 1-7 based on conductance of conductor pick

## APPENDIX 3: AeroTEM Design Considerations

### Advantage 1 – Spatial Resolution

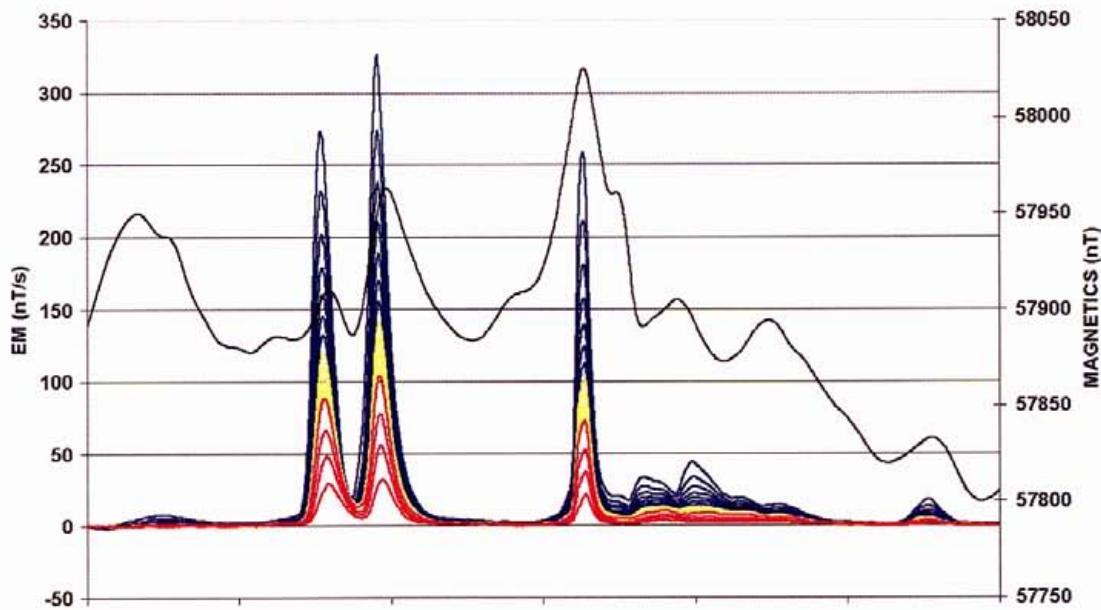
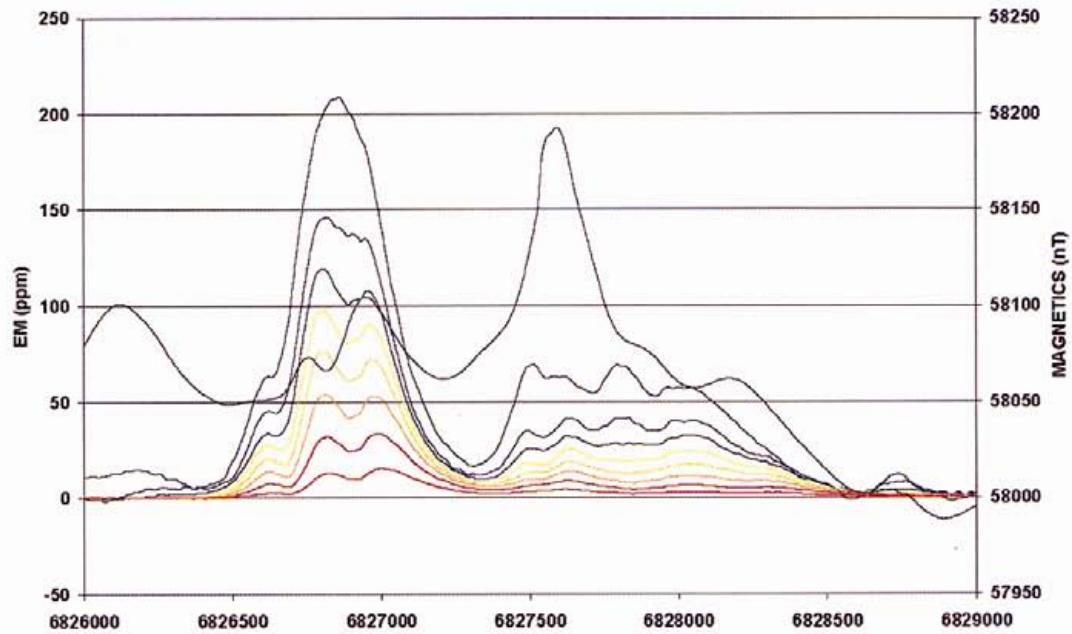
Helicopter-borne EM systems offer an advantage that cannot be matched from a fixed-wing platform. The ability to fly depth penetration, advantageonlyhelicopter-borne high-moment time domain EM systems the fixed-wing platforms are losing their especially important in areas of complex geology and in the search for discrete conductors. With the advent of systems provide more detail than any other EM configuration, airborne or ground-based. Spatial resolution is at a slower speed and collect data with high spatial resolution, and with great accuracy, means that helicopter EM –

The AeroTEM system is specifically designed to have a small footprint. This is accomplished through the use of concentric transmitter-receiver coils and a relatively small diameter transmitter coil (5 m). The result is a highly focused exploration footprint, which allows for more accurate "mapping" of discrete conductors. Consider the transmitter primary field images shown in Figure 1, for AeroTEM versus a fixed-wing transmitter. The footprint of AeroTEM at the earth's surface is the footprint of a fixed-wing system is roughly 150 m roughly 50 m on either side of transmitter. on either side of the transmitter.



**Figure 1. A comparison of the footprint between AeroTEM and a fixed-wing system, highlights the greater resolution that is achievable with a transmitter located closer to the earth's surface. The AeroTEM footprint is one third that of a fixed-wing system and is symmetric, while the fixed-wing system has even lower spatial resolution along the flight line because of the separated transmitter and receiver configuration.**

At first glance one may want to believe that a transmitter footprint that is distributed more evenly over a larger area is of benefit in mineral exploration. In fact, the opposite is true; by energizing a larger surface area, the ability to energize and detect discrete conductors is reduced. Consider, for example, a comparison between AeroTEM and a fixed-wing system over the Mesamax Deposit (1,450,000 tonnes of 2.1% Ni, 2.7% Cu, 5.2 g/t Pt/Pd). In a test survey over three flight lines spaced 100 m apart, AeroTEM detected the Deposit on all three flight lines. The fixed-wing system detected the Deposit only on two flight lines. In exploration programs that seek to expand the flight line spacing in an effort to reduce the cost of the airborne survey, discrete conductors such as the Mesamax Deposit can go undetected. The argument often put forward in favor of using fixed-wing systems is that because of their larger footprint, the flight line spacing can indeed be widened. Many fixed-wing surveys are flown at 200 m or 400 m. Much of the survey work performed by Aeroquest has been to survey in areas that were previously flown at these wider line spacings. One of the reasons for AeroTEM's impressive discovery record has been the strategy of flying closely spaced lines and finding all the discrete near-surface conductors. These higher resolution surveys are being flown within existing mining camps, areas that improve the chances of discovery.

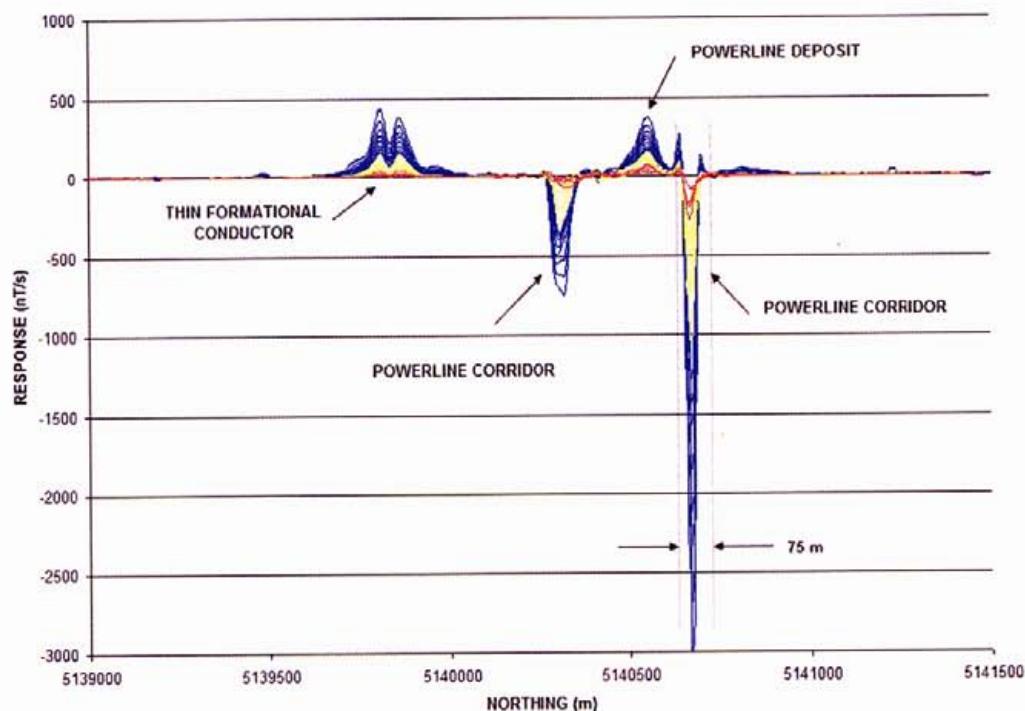


**Figure 2. Fixed-wing (upper) and AeroTEM (lower) comparison over the eastern limit of the Mesamax Deposit, a Ni-Cu-PGE zone located in the Raglan nickel belt and owned by Canadian Royalties. Both systems detected the Deposit further to the west where it is closer to surface.**

The small footprint of AeroTEM combined with the high signal to noise ratio (S/N) makes the system more suitable to surveying in areas where local infrastructure produces electromagnetic noise, such as power lines and railways. In 2002 Aeroquest flew four exploration properties in the Sudbury Basin that were under option by FNX Mining Company Inc. from Inco Limited. One such property, the Victoria Property, contained three major power line corridors.

The resulting AeroTEM survey identified all the known zones of Ni-Cu-PGE mineralization, and detected a response between two of the major power line corridors but in an area of favorable geology. Three boreholes were drilled to test the anomaly, and all three intersected sulphide. The third borehole encountered 1.3% Ni, 6.7% Cu, and 13.3 g/t TPMs over 42.3 ft. The mineralization was subsequently named the Powerline Deposit.

The success of AeroTEM in Sudbury highlights the advantage of having a system with a small footprint, but also one with a high S/N. This latter advantage is achieved through a combination of a high-moment (high signal) transmitter and a rigid geometry (low noise). Figure 3 shows the Powerline Deposit response and the response from the power line corridor at full scale. The width of power line response is less than 75 m.



**Figure 3.** The Powerline Deposit is located between two major power line corridors, which make EM surveying problematic. Despite the strong response from the power line, the anomaly from the Deposit is clearly detected. Note the thin formational conductor located to the south. The only way to distinguish this response from that of two closely spaced conductors is by interpreting the X-axis coil response.

#### **Advantage 2 – Conductance Discrimination**

The AeroTEM system features full waveform recording and as such is able to measure the on-time response due to high conductance targets. Due to the processing method (primary field removal), there is attenuation of the response with increasing conductance, but the AeroTEM on-time measurement is still superior to systems that rely on lower base frequencies to detect high conductance targets, but do not measure in the on-time.

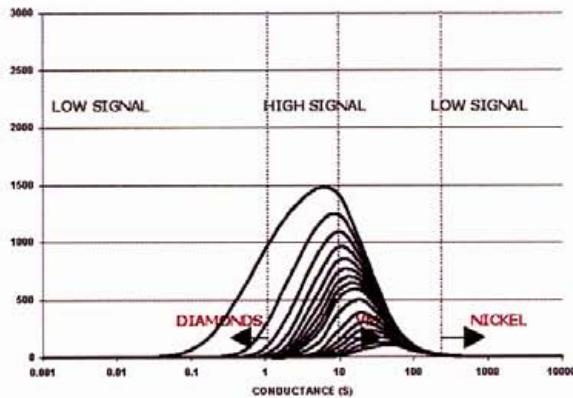
The peak response of a conductive target to an EM system is a function of the target conductance and the EM system base

frequency. For time domain EM systems that measure only in the off-time, there is a drop in the peak response of a target as the base frequency is lowered for all conductance values below the peak system response. For example, the AeroTEM peak response occurs for a 10 S conductor in the early off-time and 100 S in the late off-time for a 150 Hz base frequency. Because base frequency and conductance form a linear relationship when considering the peak response of any EM system, a drop in base frequency of 50% will double the conductance at which an EM system shows its peak response. If the base frequency were lowered from 150 Hz to 30 Hz there would be a fivefold increase in conductance at which the peak response of an EM occurred.

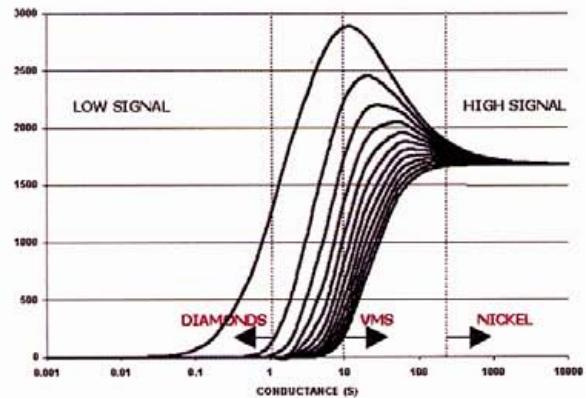
However, in the search for highly conductive targets, such as pyrrhotite-related Ni-Cu-PGM deposits, a fivefold increase in conductance range is a high price to pay because the signal level to lower conductance targets is reduced by the same factor of five. For this reason, EM systems that operate with low base frequencies are not suitable for general exploration unless the target conductance is more than 100 S, or the target is covered by conductive overburden.

Despite the excellent progress that has been made in modeling software over the past two decades, there has been little work done on determining the optimum form of an EM system for mineral exploration. For example, the optimum configuration in terms of geometry, base frequency and so remain unknown. Many geophysicists would argue that there is no single ideal configuration, and that each system has its advantages and disadvantages. We disagree.

When it comes to detecting and discriminating high-conductance targets, it is necessary to measure the pure inphase response of the target conductor. This measurement requires that the measured primary field from the transmitter be subtracted from the total measured response such that the secondary field from the target conductor can be determined. Because this secondary field is in-phase with the transmitter primary field, it must be made while the transmitter is turned on and the transmitter current is changing. The transmitted primary field is several orders of magnitude larger than the secondary field. AeroTEM uses a bucking coil to reduce the primary field at the receiver coils. The only practical way of removing the primary field is to maintain a rigid geometry between the transmitter, bucking and receiver coils. This is the main design consideration of the AeroTEM airframe and it is the only time domain airborne system to have this configuration.



The off-time AeroTEM response for the 16 channel configuration.

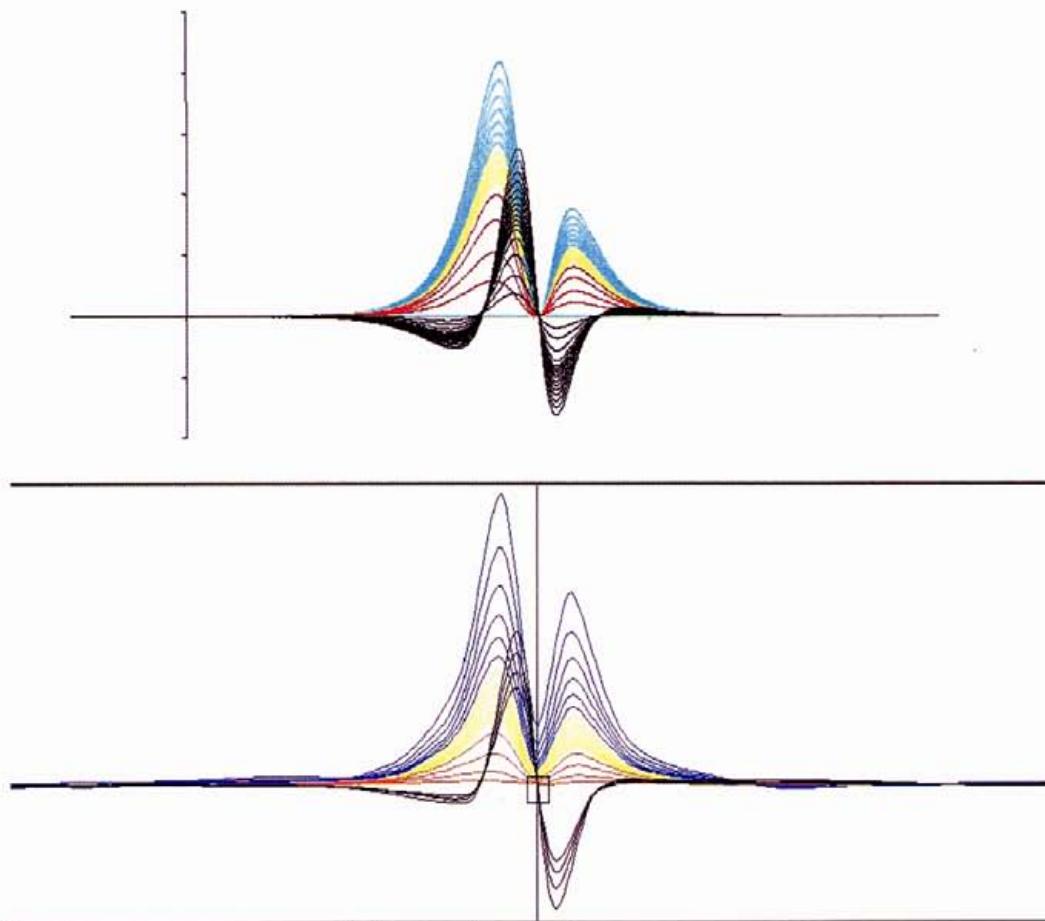


The on-time response assuming 100% removal of the measured primary field.

**Figure 4. The off-time and on-time response nomogram of AeroTEM for a base frequency of 150 Hz. The on-time response is much stronger for higher conductance targets and this is why on-time measurements are more important than lower frequencies when considering high conductance targets in a resistive environment.**

**Advantage 3 – Multiple Receiver Coils**

AeroTEM employs two receiver coil orientations. The Z-axis coil is oriented parallel to the transmitter coil and both are horizontal to the ground. This is known as a maximum coupled configuration and is optimal for detection. The X-axis coil is oriented at right angles to the transmitter coil and is oriented along the line-of-flight. This is known as a minimum coupled configuration, and provides information on conductor orientation and thickness. These two coil configurations combined provide important information on the position, orientation, depth, and thickness of a conductor that cannot be matched by the traditional geometries of the HEM or fixed-wing systems. The responses are free from a system geometric effect and can be easily compared to model type curves in most cases. In other words, AeroTEM data is very easy to interpret. Consider, for example, the following modeled profile:



**Figure 5.** Measured (lower) and modeled (upper) AeroTEM responses are compared for a thin steeply dipping conductor. The response is characterized by two peaks in the Z-axis coil, and a cross-over in the X-axis coil that is centered between the two Z-axis peaks. The conductor dips toward the higher amplitude Z-axis peak. Using the X-axis cross-over is the only way of differentiating the Z-axis response from being two closely spaced conductors.

#### **HEM versus AeroTEM**

Traditional helicopter EM systems operate in the frequency domain and benefit from the fact that they use narrowband as opposed to wide-band transmitters. Thus all of the energy from the transmitter is concentrated in a few discrete frequencies. This allows the systems to achieve excellent depth penetration (up to 100 m) from a transmitter of modest power. The Aeroquest Impulse system is one implementation of this technology.

The AeroTEM system uses a wide-band transmitter and delivers more power over a wide frequency range. This frequency range is then captured into 16 time channels, the early channels containing the high frequency information and the late time channels containing the low frequency information down to the system base frequency. Because frequency domain HEM systems employ two coil configurations (coplanar and coaxial) there are only a maximum of three comparable frequencies per configuration, compared to 16 AeroTEM off-time and 12 AeroTEM on-time channels.

Figure 6 shows a comparison between the Dighem HEM system (900 Hz and 7200 Hz coplanar) and AeroTEM (Zaxis) from surveys flown in Raglan, in search of highly conductive Ni-Cu-PGM sulphide. In general, the AeroTEM peaks are sharper and better defined, in part due to the greater S/N ratio of the AeroTEM system over HEM, and also due to the modestly filtered AeroTEM data compared to HEM. The base levels are also better defined in the AeroTEM data. AeroTEM filtering is limited to spike removal and a 5-point smoothing filter. Clients are also given copies of the raw, unfiltered data.

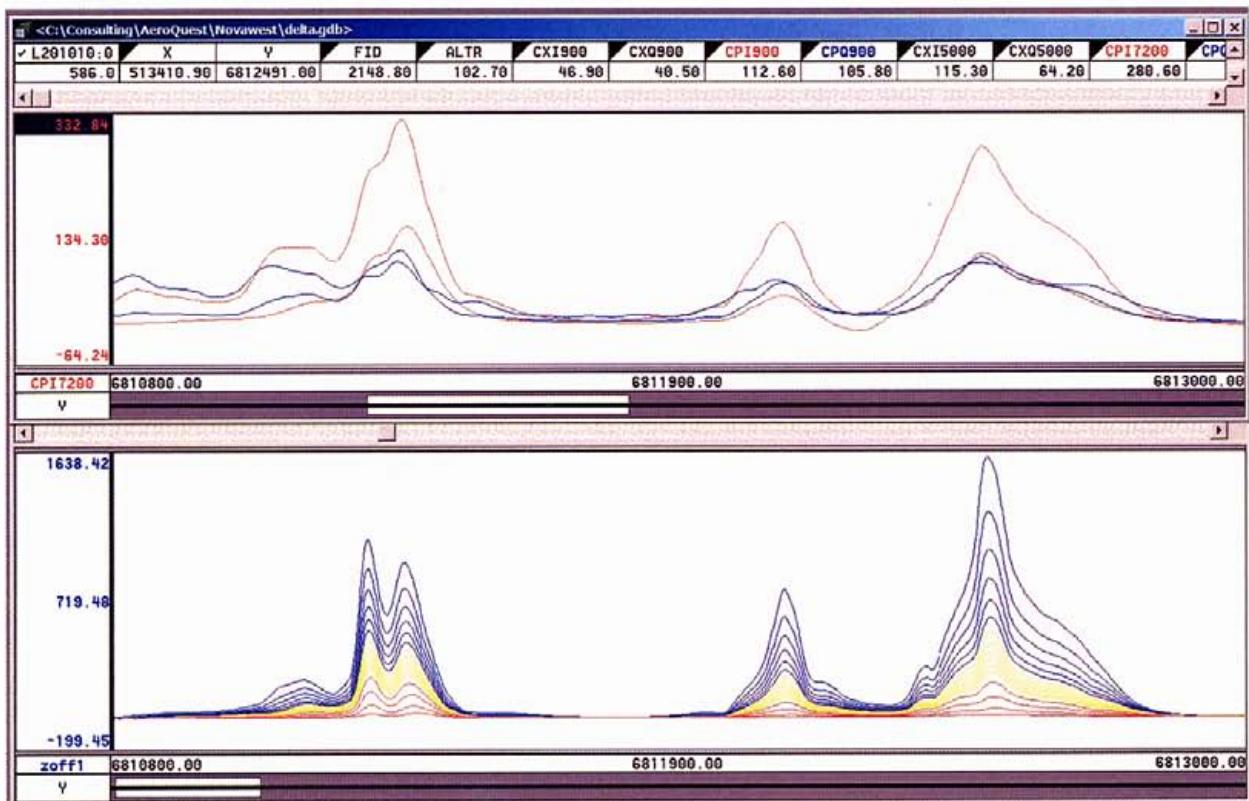


Figure 6. Comparison between Dighem HEM (upper) and AeroTEM (lower) surveys flown in the Raglan area. The AeroTEM responses appear to be more discrete, suggesting that the data is not as heavily filtered as the HEM data. The S/N advantage of AeroTEM over HEM is about 5:1.

Aeroquest Limited is grateful to the following companies for permission to publish some of the data from their respective surveys: Wolfden Resources, FNX Mining Company Inc, Canadian Royalties, Nova West Resources, Aurogin Resources, Spectrem Air. Permission does not imply an endorsement of the AeroTEM system by these companies.

## APPENDIX 4: AeroTEM Instrumentation Specification Sheet

## AEROTEM Helicopter Electromagnetic System

### System Characteristics

- Transmitter: Triangular Pulse Shape Base Frequency 30 or 150 Hz
- Tx On Time - 5,750 (30Hz) or 1,150 (150Hz)  $\mu$ s
- Tx Off Time - 10,915 (30Hz) or 2,183 (150Hz)  $\mu$ s
- Loop Diameter - 5 m
- Peak Current - 250 A
- Peak Moment - 38,800 NIA
- Typical Z Axis Noise at Survey Speed = 8 ppb peak
- Sling Weight: 270 Kg
- Length of Tow Cable: 40 m
- Bird Survey Height: 30 m or less nominal

### Receiver

- Three Axis Receiver Coils (x, y, z) positioned at centre of transmitter loop
- Selectable Time Delay to start of first channel 21.3 , 42.7, or 64.0 ms

### Display & Acquisition

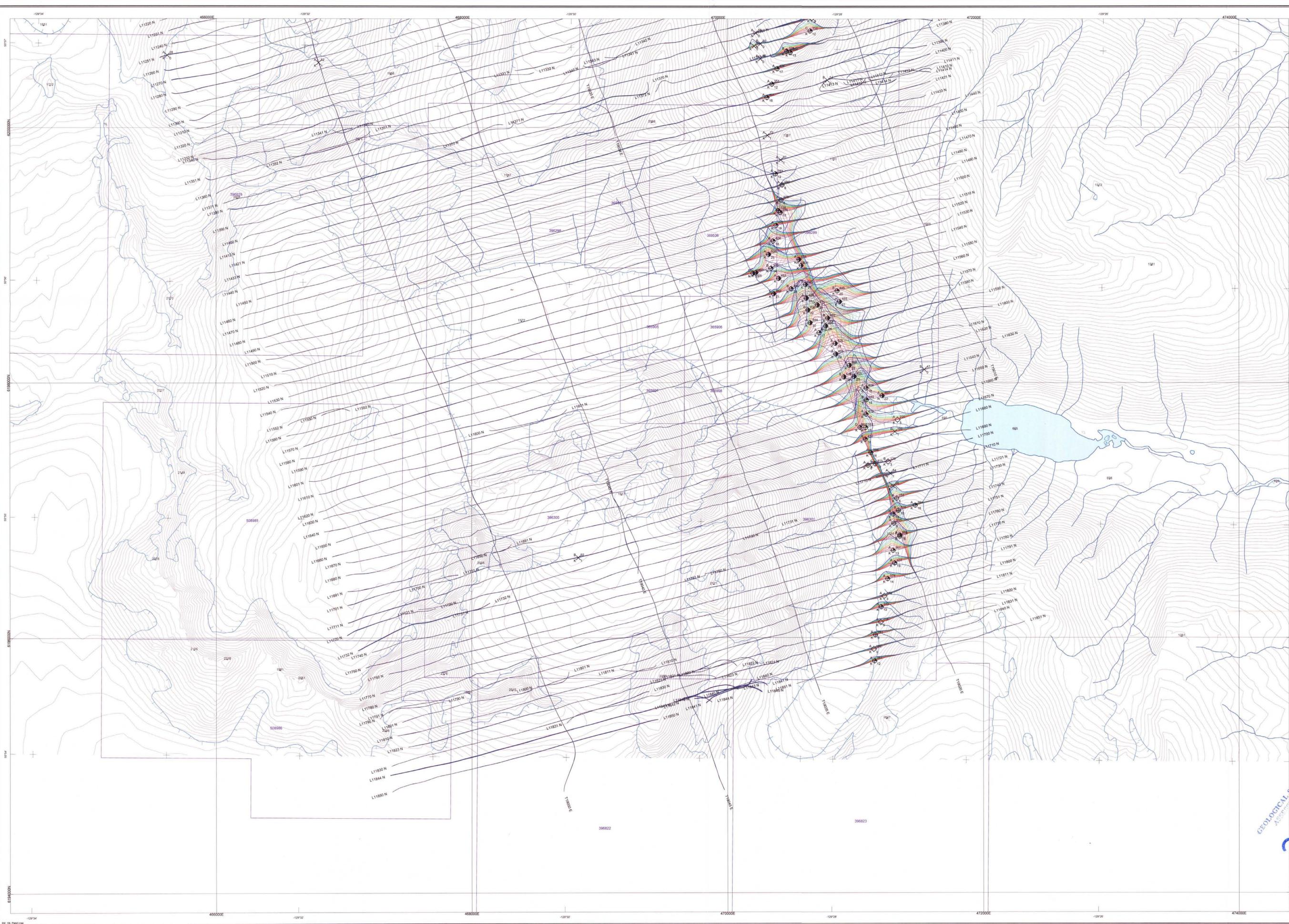
- PROTODAS Digital recording at 126 samples per decay curve at a maximum of 300 curves per second (26.455  $\mu$ s channel width)
- RMS Channel Widths: 52.9, 132.3, 158.7, 158.7, 317.5, 634.9  $\mu$ s
- Recording & Display Rate = 10 readings per second.
- On-board display - six channels Z-component and 1 X-component

### System Considerations

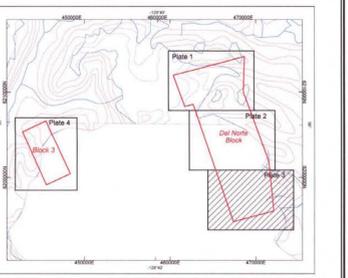
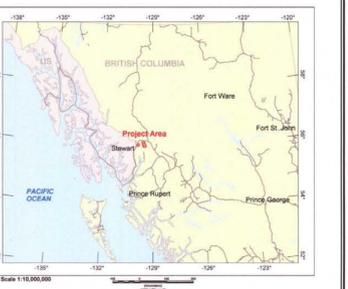
Comparing a fixed-wing time domain transmitter with a typical moment of 500,000 NIA flying at an altitude of 120 m with a Helicopter TDEM at 30 m, notwithstanding the substantial moment loss in the airframe of the fixed wing, the same penetration by the lower flying helicopter system would only require a sixty-fourth of the moment. Clearly the AeroTEM system with nearly 40,000 NIA has more than sufficient moment. The airframe of the fixed wing presents a response to the towed bird, which requires dynamic compensation. This problem is non-existent for AeroTEM since transmitter and receiver positions are fixed. The AeroTEM system is completely portable, and can be assembled at the survey site within half a day.

**Tel: +1 905 878-5616. Fax: +1 905 876-0193.**

**Email: [sales@aeroquestsurveys.com](mailto:sales@aeroquestsurveys.com)**



The topographic data base was derived from 1:50,000 NTDS data  
 Level 2 image base 1:2.2 geo-referenced from "Natural Resources Canada"  
 Top contours derived from NASA SRTM data  
 Inset data derived from Natural Resources Canada "Atlas of Canada Base Map"  
 This map accompanies the technical report entitled "Report on a  
 Helicopter-Borne Magnetic and Electromagnetic Survey, Del Norte Property,  
 by Aeroquest Limited, November 2005"



- AeroTEM Profiles**  
 positive excursion to top and right, 1mm=50nTs
- 25 Off-Time Channel
  - 22 Off-Time Channel
  - 28 Off-Time Channel
  - 29 Off-Time Channel
  - 210 Off-Time Channel
  - 211 Off-Time Channel
  - 212 Off-Time Channel
  - 213 Off-Time Channel
  - 214 Off-Time Channel
  - 215 Off-Time Channel
- Off-Time Anomaly Symbols**
- +50S
  - 35-50S
  - 20-35S
  - 10-20S
  - 5-10S
  - 1-5S
  - <1S
- anomaly label A 125 decay constant (μs)  
 thick thin source 36 off-time conductance (S)

**SURVEY SPECIFICATIONS:**  
 Survey from: September 25 - October 10, 2005  
 Traverse line spacing: 100 metres  
 Traverse line direction: NE-SW (azimuth 75°)  
 Nominal EM bird height: 30 metres  
 Aircraft: Aerospaciale A-Star 3508A (C-FPTG)

**INSTRUMENTATION:**  
 Data acquisition: ADAS & RM5 DGR-33  
 Magnetometer: Geometrics G-823A cesium vapour  
 Installation: Towed bird 17 m above EM bird  
 Sensitivity: 501 nanoTesla  
 Electromagnetics: AeroTEM II System (ECHO)  
 Configuration: Towed bird

**NAVIGATION:**  
 Navigation: Differential Global Positioning System (DGPS)  
 Navigation equipment: AGNAV with MID-TECH RX400p receiver  
 Radar Altimeter: Terra TR43000TR-30

**DATA PROCESSING:**  
 Magnetics: diurnal, helix and micro-leveling corrections

**POSITIONING:**  
 Datum: NAD83  
 Major Axis: 6378137.000  
 Eccentricity: 0.081819191

**MAP PROJECTION:**  
 Projection: Universal Transverse Mercator  
 Central Meridian: Terra TR43000TR-30  
 Central Scale Factor: 0.9996  
 False Easting/Northing: 500,000m/0m

GEOLOGICAL SURVEY BRANCH  
 Assessment Project

28-131

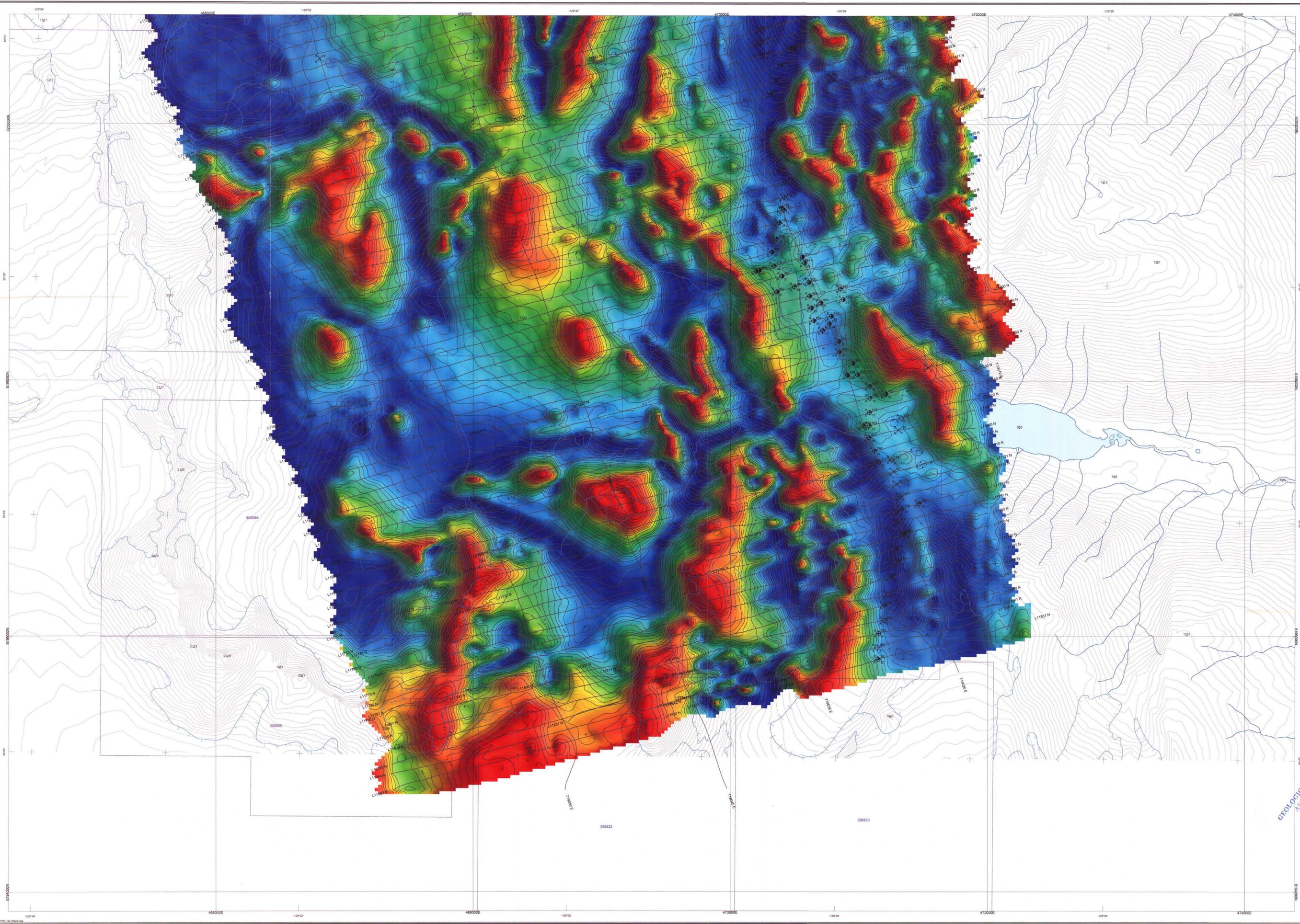
Teuton Resources Corporation  
 Del Norte Area, British Columbia

AEROTEM OFF-TIME  
 PROFILES

Plate 3, Del Norte Block  
 NTS 103P13.14

Survey flown by  
**AEROQUEST LIMITED**  
 4845 Main St. East  
 Milton, Ont. CANADA L7T 3Z3  
 Tel: (905) 882-8222 Fax: (905) 881-1128  
 www.aeroquest.com

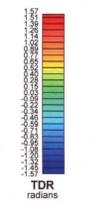
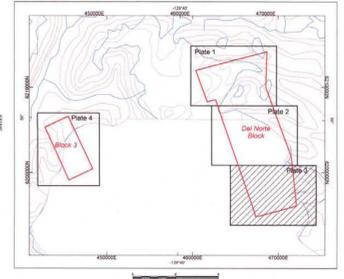
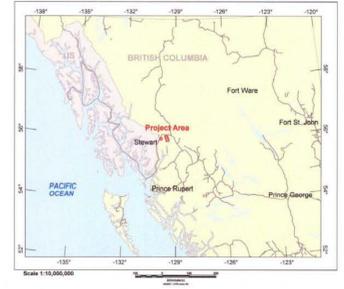
January 2006



The topographic data base was derived from 1:50,000 NTDS data. Latest 7 mpa bands 1, 2, 3 are shown from 'Natural Resources Canada' Top contours derived from NADA 01TM data. Inset data derived from Natural Resources Canada Atlas of Canada Base Map.

This map accompanies the technical report entitled 'Report on a Helicopter-Borne Magnetic and Electromagnetic Survey, Del Norte Property, by AERQUEST LIMITED, January 2006'.

Grid North  
NAD83 Zone 9



TDR Contour Interval  
0.10, 0.25, 1.00 radians

Off-Time Anomaly Symbols

- >50S
- 35-50S
- 20-35S
- 10-20S
- 5-10S
- 1-5S
- <1S

anomaly label  
thick/thin source

**SURVEY SPECIFICATIONS:**  
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 Sensitivity: 100 nanoTesla  
 Electromagnetic: AeroTEM II System (ECHO)  
 Configuration: Towed bird

**NAVIGATION:**  
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 Navigation equipment: AGNAV with MID-TECH RX400p receiver  
 Radar altimeter: Terra TRA3000TR-30

**DATA PROCESSING:**  
 Magnetics: diurnal, tidal and micro-leveling corrections

**POSITIONING:**  
 Datum: NAD83  
 Major Axis: 6378137.000  
 Eccentricity: 0.081819191

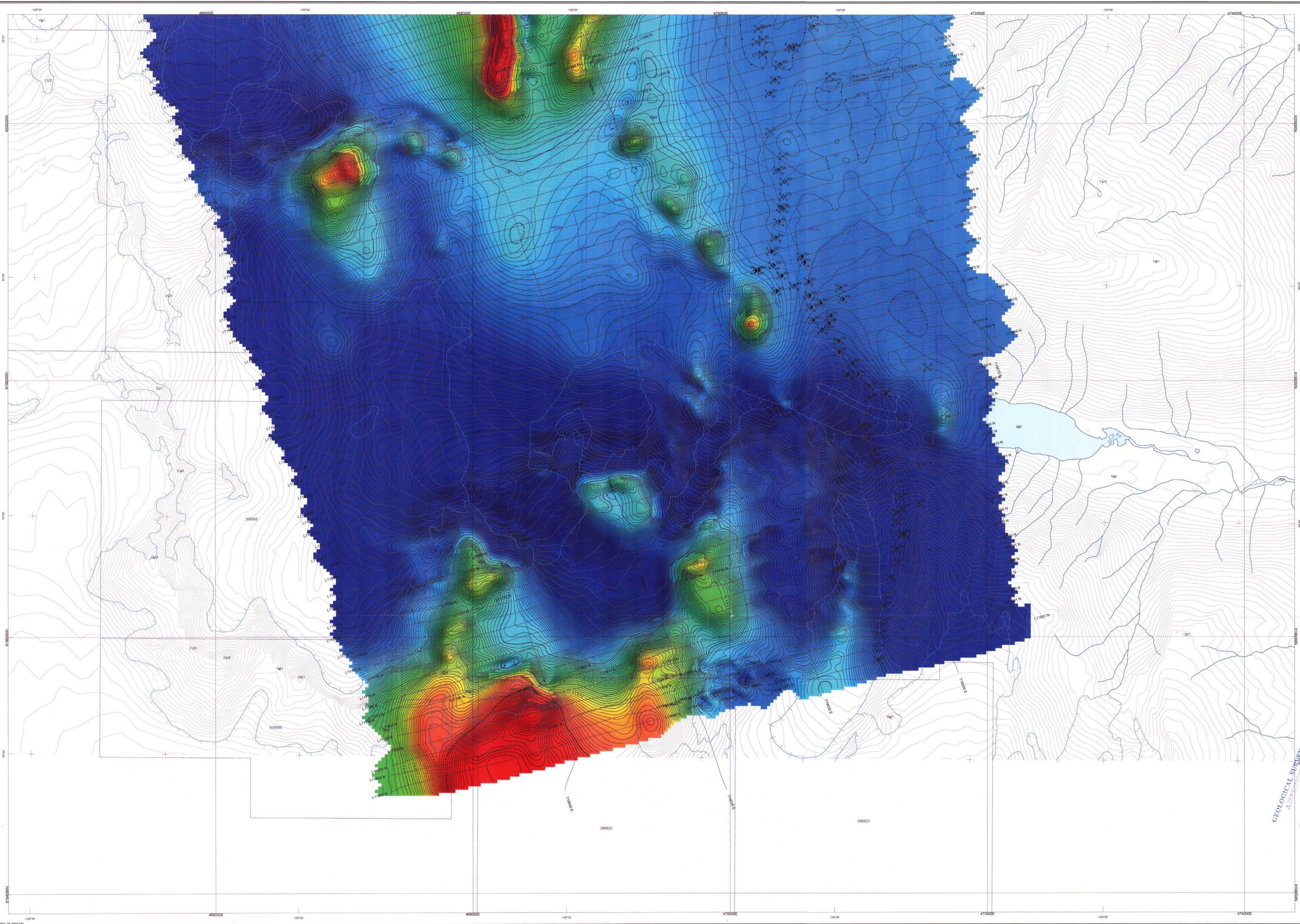
**MAP PROJECTION:**  
 Projection: Universal Transverse Mercator  
 Central Meridian: 129°W (Zone 9)  
 Central Scale Factor: 0.9996  
 False Easting/Northing: 500,000m/0m

scale 1:10,000

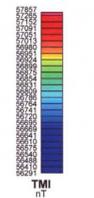
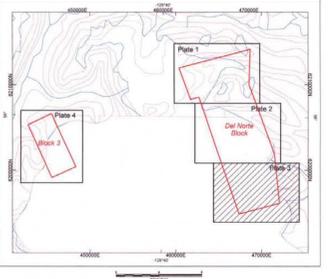
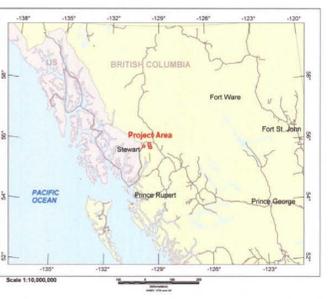
GEOLOGICAL SURVEY BRITISH COLUMBIA  
ASSESSMENT REPORT

Teuton Resources Corporation  
 Del Norte Area, British Columbia  
**TILT DERIVATIVE  
 OF TMI**  
 Plate 3, Del Norte Block  
 NTS 103P13.14

Survey from by:  
**AERQUEST LIMITED**  
 4-845 Main St. East  
 Milton, Ont., CANADA L9T 3Z5  
 Tel: (905) 884-9129 Fax: (905) 884-9126  
 www.aerquest.com  
 January 2006



The topographic data base was derived from 1:50,000 HTDB data  
 Lateral image bands 1,2,3 are shared from Natural Resources Canada  
 Topographic contours derived from NASA SRTM data  
 Inset data derived from Natural Resources Canada Index of Canada Base Map  
 This map accompanies the technical report entitled "Report on a  
 Helicopter-Borne Magnetic and Electromagnetic Survey, Del Norte Property,"  
 by Aeroquest Limited, November 2005.



**TMI**  
nT

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 5, 25, 50 nT  
 100 nT  
 1000 nT
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- +50S
  - 35-50S
  - 20-35S
  - 10-20S
  - 5-10S
  - 1-5S
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GEOLOGICAL SURVEY BRANCH  
 ASSESSMENT REPORT



Teuton Resources Corporation  
 Del Norte Area, British Columbia

**TOTAL MAGNETIC INTENSITY**  
 Plate 3, Del Norte Block  
 NTS 103P13.14

Survey from by:  
**AEROQUEST LIMITED**  
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