REPORT OF 2006-2007 ACTIVITIES ON THE AMIGO CLAIMS,

THE BANDITO PROJECT,

TOOBALLY LAKE AREA

YUKON TERRITORY,

CANADA

Bandito Project – AMIGO Claim Group

CLAIM GROUP	CLAIM NUMBER FROM	CLAIM NUMBER TO	RECORD NUMBER FROM	RECORD NUMBER TO
AMIGO	1	8	YC24964	YC24971

Mining Division: Watson Lake Mining District, Yukon Territory

NTS: 095C/05

Lat./Long.: Latitude 60°22'N; Longitude 126°48'W

Submitted by

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SUMMARY

The AMIGO claims of the Bandito property, are located in the southeastern Yukon at latitude 60°22' N and longitude 126° 48' W on NTS map sheets 095C/05; UTM 6696200 N, 345300 E, NAD 83, Zone 10 and is composed of 72 contiguous, unpatented claims registered with the Watson Lake Mining Recorder in the name of True North Gems Inc. The Property covers an area of approximately 1.6 square kilometres.

The AMIGO claims are in good standing until July 2, 2010 pending approval of current expenditures. True North's 2006 exploration program was completed under the provisions of the Class I Mining Land Use regulations, pursuant to the Yukon Quartz Mining Act.

The original eight Amigo group claims of the Bandito property were staked in June 2004 during the Company's regional gemstone exploration program over a portion of the historical Corundum Dome "corundum" prospect situated in the Toobally Lake area. Previous exploration between 1977 and 1986 was concentrated on the search for uranium and rare earths associated with limonitic gossan zones exposed on Corundum Dome coincident with an airborne radiometric anomaly.

The 2005 Bandito program was focused on due diligence sampling and confirmation of target areas identified by mapping, stream soil and rock sampling, and prospecting in 2004.

High grade nickel was associated primarily with arsenic (As), antimony (Sb), cobalt (Co), copper (Cu), bismuth (Bi) and lead (Pb). The base metals were accompanied by specular hematite, manganese oxides, rare earths and other incompatible elements (including P, Ta, Nb, Be, Cs, Zr), elevated potassium (K) and only traces of sulphur (S) within the oxidized surface material. The suite of eleven rock samples collected in 2005 exhibited highly anomalous multi-element metal values including: Ni to 15.85%, As to 9.84%, Sb to 1.54%, Cu to 1.22%, Bi to 1.36%, and Co to 1125 ppm.

Based on the favourable results, staking of the 72 BANDITO claims was completed and recorded on January 12, 2006. In addition, the MGM 8 claim was acquired, with its accompanying data package, for cash in May 2006 and the transfer of 100% interest in the claim was completed through the Watson Lake Mining Recorder in November 2006.

During the 2006 season, soil geochemistry and prospecting were carried out over the AMIGO claims. Soil and silt sampling was conducted over all principal drainages, including ephemeral streams. Sampling was completed at 50-100 metre intervals. Prospecting was carried out in conjunction with the soil sampling. Rock samples were collected from representative lithologies and where indicated from samples containing visible base metal mineralization.

The geochemical surveys have confirmed the presence of a strong Ni-As-Cu-Pb anomaly spatially associated with nickel and copper oxides (annabergite, malachite, azurite, chrysocolla) and minor copper sulphide, chalcopyrite, identified within brecciated outcrop and scree material. The principal Ni-rich anomaly, located on the AMIGO claims, coincides with intense hematite and manganese oxide alteration envelopes over a strike length of more than 750 metres by 600 metres, locally extending into the BANDITO claims.

A preliminary review of the airborne survey indicated two dominant electromagnetic anomalies, one with NW trend and a weaker EW trend. Offsets suggest a NE fault trace through Zircon and Copper Creeks. The magnetic

maps indicate numerous NE-SW block fault structures, and NW to EW breaks which may be related to regional thrusting coinciding with the syenite contact north of the Gossan Zone. Detailed interpretation of the geological structure based on the 2006 geophysics, and historical mapping and geophysical surveys has been initiated. The results will be reported in an upcoming 43-101 report and summarized in the 2007 assessment report.

The budget for the two phase 2007 exploration program was set at C$250,000 primarily for coverage by synoptic geological mapping, target specific detailed mapping and lithogeochemical sampling, and, as warranted, diamond drilling.

INTRODUCTION

This report will summarize and document results, to date, of the exploration for base metals on the AMIGO claims of the Bandito property, specifically those results of the property-wide airborne geophysical survey. The airborne survey field work was carried out between September 07 and October 02, 2006 and consisted of one party of three persons for a total of forty-seven person days.

Previous work on the Bandito property was carried out by True North Gems in 2005 for a period of only one day and for a total of three person days, and by True North Gems in 2006 for a period of three weeks in June for a total of seventy-five person days, including 12 person days on the AMIGO claims. The 2006 ground exploration work has not been submitted for current assessment credits; the relevant information will be included in a forthcoming 43-101 report on the Bandito property.

All assessable cost units were based on a fixed price contract with McPhar Geosurveys Ltd. of Newmarket, Ontario.

All dollar figures provided herein for work programs and claim management are in Canadian$ currency.

The purpose of the 2006 program was to provide a geological assessment of the Bandito nickel property over the entire eighty-one claims, including the eight AMIGO claims, sufficient to reconnoitre the geology, provide a first pass examination of the geochemical character for target identification, and evaluate airborne THEM and MAG surveys for the identification of geological and structural geology and target opportunities, all with a view to identify drill targets and potential option agreement partners in Q3 or Q4 2006. Due to the delays with completion of the airborne survey to Q3/Q4 2006, the search for JV partners has been deferred to Q1/Q2 2007.

The program line items are as follows (Phase 1 budget $250,000):

June 2006 – August 2006

- Preliminary mapping of the known mineralized areas
- Prospecting and preliminary mapping along soil and silt sampling corridors
- Rock lithogeochemical sampling and analysis as required
- Property scale silt geochemistry in topographic depressions, key drainages and glacial depositional features
- Property scale soil geochemistry in topographic depressions, key drainages and glacial depositional features
- Detailed soil geochemistry in grid 50 x 25 metre over 600 metre strike over known areas of mineralization
- Airborne geophysics specifically 100 metre spaced grid using helicopter time domain electromagnetics survey and cesium magnetometer survey with appropriate support GPS, video, topographic analysis and background base station MAG

August 2006 – December 2006

- Completion of regional and detailed geology map
- Compilation of the soil sample database with 2D geochemical diagrams and plan views of geochemistry using proportional symbol diagrams and contoured maps
- Compilation of the silt sample database with 2D geochemical diagrams and plan views of geochemistry using proportional symbol diagrams

- Compilation of lithogeochemistry from rock samples
- Completion of 2005 YTG Assessment Report – BANDITO claims
- Completion of 2005 YTG Assessment Report – AMIGO claims

December 2006 – March 2007

- Completion of 2006 YTG Assessment Report – BANDITO claims
- Completion of 2006 YTG Assessment Report – AMIGO claims
- Completion of 2006 YTG Assessment Report – MGM claims
- Review and interpretation of airborne geophysics and correlation with geological and geochemical data with a view to drill target identification
- Prepare 2006 exploration, mini-bulk and bulk sample target map based on the above
- Completion of proposed Phase 2 budget and program for 2007
- Discussion with potential JV partners

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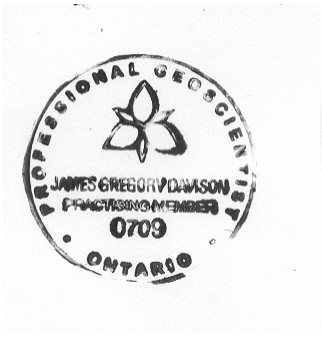

RELIANCE ON OTHER EXPERTS

The author has reviewed the information available and have selected for inclusion the most pertinent and relevant information on the AMIGO claims. The author has relied principally upon data, interpretation, and information supplied by the project files of Archer Cathro and Associates, Silver Standard Resources Inc. and True North Gems Inc. The Silver Standard files were acquired by True North Gems with the transfer of the MGM 8 claim which is wholly enclosed within the Bandito property during 2006. The database compilation is internally consistent, and withstands repeated inquiry over time, along various lines of reasoning.

The author visited the Property area for a one day due diligence analysis in September 2005 and for one week in June 2006 as the Bandito project manager and True North Gems' Vice-President Exploration. The author has been engaged on a continuous basis from May 2004 through to December 2006 and remains as the project manager for the upcoming 2007 exploration season.

PROPERTY LOCATION AND DESCRIPTION

LOCATION

The Bandito property, more specifically the AMIGO claims, is located in the southeastern Yukon at latitude 60°22' N and longitude 126° 48' W on NTS map sheets 095C/05; UTM 6696200 N, 345300 E, NAD 83, Zone 10 (Figure 1).

CLAIM DESCRIPTION

The eight Amigo claims were staked in mid June 2004 over a portion of the Corundum Dome prospect, situated in the Toobally Lake area of the La Biche Map Sheet, in the extreme southeastern part of the Yukon Territory, 170 km east of Watson Lake.

The AMIGO property is composed of 8 contiguous, unpatented claims registered with the Watson Lake Mining Recorder in the name of True North Gems Inc.

The Property covers an area of approximately 1.6 square kilometres (Figure 2).

The AMIGO claims are in good standing until July 2, 2010 pending approval of current expenditures.

The claim registration data is listed in Table 1. In its present state, the property is defined by claim post locations, but has not been the subject of a legal boundary survey.

AGREEMENTS, ROYALTIES AND ENCUMBRANCES

True North Gems holds 100% interest in the AMIGO claims.

PERMITS

True North's 2005 exploration program was completed under the provisions of the Class I Mining Land Use regulations, pursuant to the Yukon Quartz Mining Act.

There are no known environmental liabilities relating to the AMIGO claims of the Bandito project.

PROPERTY DESCRIPTION AND MINERAL TITLES

The AMIGO property claim registration data, with current expiry date, are listed in Table 1. The AMIGO claims are in good standing until July 2, 2010 pending approval of current expenditures for four years renewal.

TABLE 1. BANDITO PROJECT - AMIGO CLAIM GROUP

Claim Group	Claim Number from	Claim Number to	Number of Claims	Record Number from	Record Number to	Expiry Date	Mining District
AMIGO	1	8	8	YC24964	YC24971	02-July-10	Watson L.

ACCESS, LOCAL RESOURCES & INFRASTRUCTURE

Access in 2004 was by helicopter from the abandoned airstrip at Smith River 50 km southwest of the target area, in 2005 from Watson Lake and in 2006 from both Watson Lake and Coal River, 100km SW of the property.

The bulk of the field equipment and supplies are delivered to the project by ground transport from Whitehorse followed by helicopter contracted from Watson Lake-based Trans North in 2004 and 2005, and Whitehorse-based Helidynamics in 2006.

The closest centre of population is the town of Watson Lake located 170 kilometres to the west.

No established rail or water transport routes are present in the vicinity of the project.

The personnel consisted of a crew of four persons, including two graduate P.Geo.-designated geologists, seconded from the Tsa da Glisza Project in September 2005 and June 2006, and the resident project manager, also with P.Geo. qualifications and was the designated Qualified Person for the project.

Temporary camps were utilized at three locations on the Bandito property; no equipment, materials or persons were left upon demobilization.

Final seasonal site demobilization of True North Gems' personnel (five persons) was carried out on June 20 and 21, 2006 by helicopter.

All geophysical surveys were conducted solely from the Coal River base. No camps were required. Temporary fuel storage in 200 litre drums was utilized only for the re-fueling of the helicopter. The contractor was onsite between September 7 and October 2, 2006, though due to a shortage of helicopters and some weather factors, no surveying was completed until September 18, 2006.

CLIMATE & PHYSIOGRAPHY

The Bandito Project – AMIGO claims are located in moderately rugged terrain known as the Hyland Highland or the Liard Plateau (Mathews, 1986), approximately 170 kilometres east of Watson Lake. It lies entirely within the Beaver River Watershed, which drains ultimately to the Arctic Ocean. Elevations in the property area range from less than 600 metres in the river valley bottoms to 1450 metres on ridge tops.

The claims occupy a south to north-trending topographic summit line following for 5 km from southeast to northwest, Corundum Dome (centred on the southern AMIGO and BANDITO claims), Pyrochlore Dome, Beaver Dome, and North Dome, all characterized by relatively steep south and southwest-facing slope showing abundant coarse talus and scattered outcrop, and a more gently inclined east to northeastern face showing extensive tree cover with far less outcrop; extensive thinly covered outcrop characterizes the surface terrain on the ridges and plateau areas. The AMIGO claim specific topography ranges from 1000-1500 metres in elevation. Glacial travel was east to northeast as indicated by striae and ridge profile morphology.

Vegetation consists of dense alder and coniferous trees (to 0.4 metres in diameter) in the valley bottoms, grading upwards into dense growths of stunted balsam, black spruce and occasional pine and cottonwood on the lower slopes, and eventually into scattered fir, dwarf willow, birch, and grasses at elevations above timberline estimated at 1300-1400 metres. The ridge tops only support lichen, alpine grasses and scattered stunted conifers within sheltered areas.

The principal climate of the AMIGO area is classified as boreal to sub-alpine; the timberline exposures above 1400 metres are characterized generally by typical Yukon boreal weather, with more than three months of snow-free conditions.

Based only on the initial site visits, AMIGO and its adjacent properties do not represent critical habitat for any known threatened or endangered species; further research will be initiated pending the proposed and approved exploration plans for 2007. Bears were reported in the bush bordering the stream valleys during the 2006 exploration work though were not spotted above the treeline near the exploration camps.

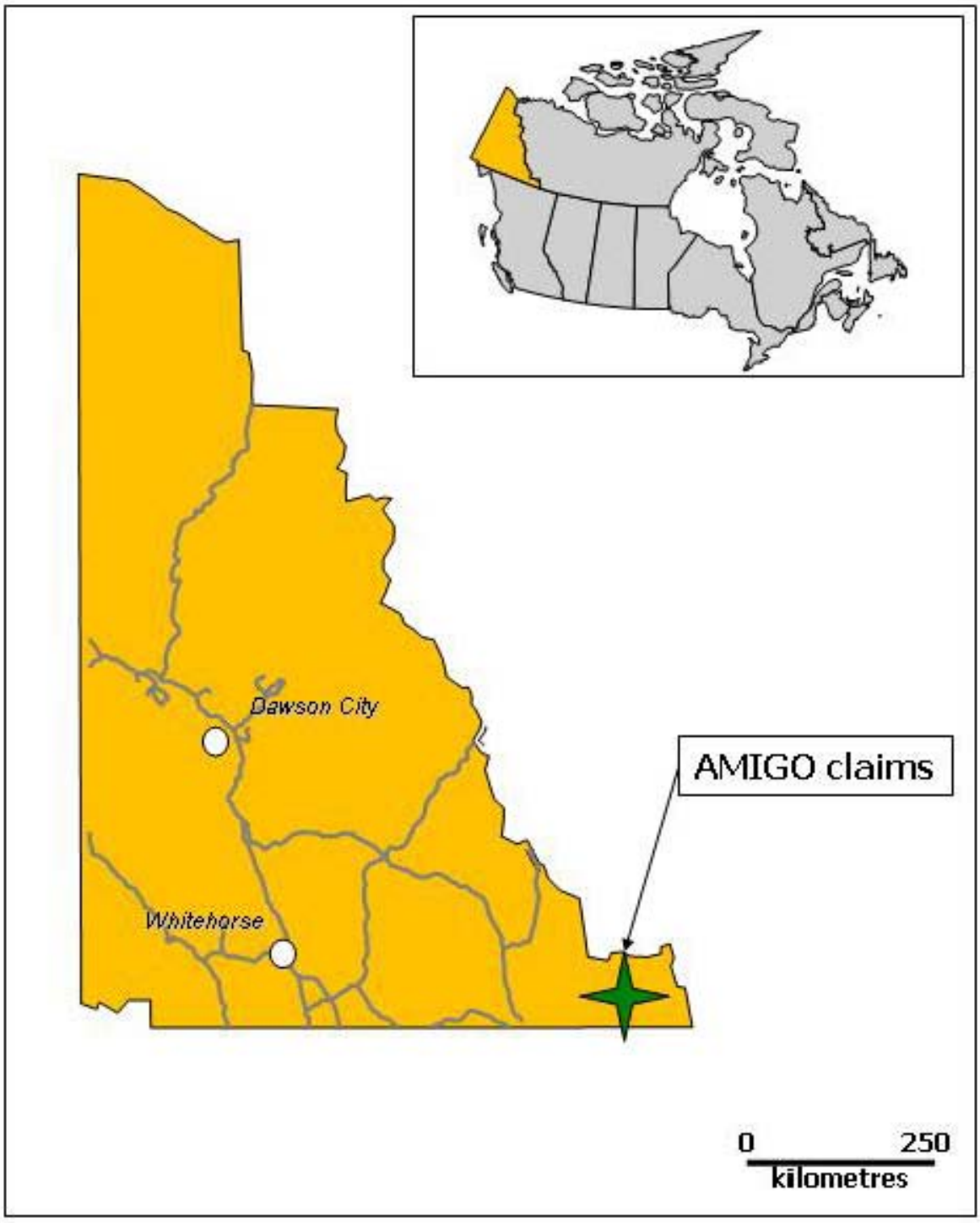

Figure 1. AMIGO Project Location Map

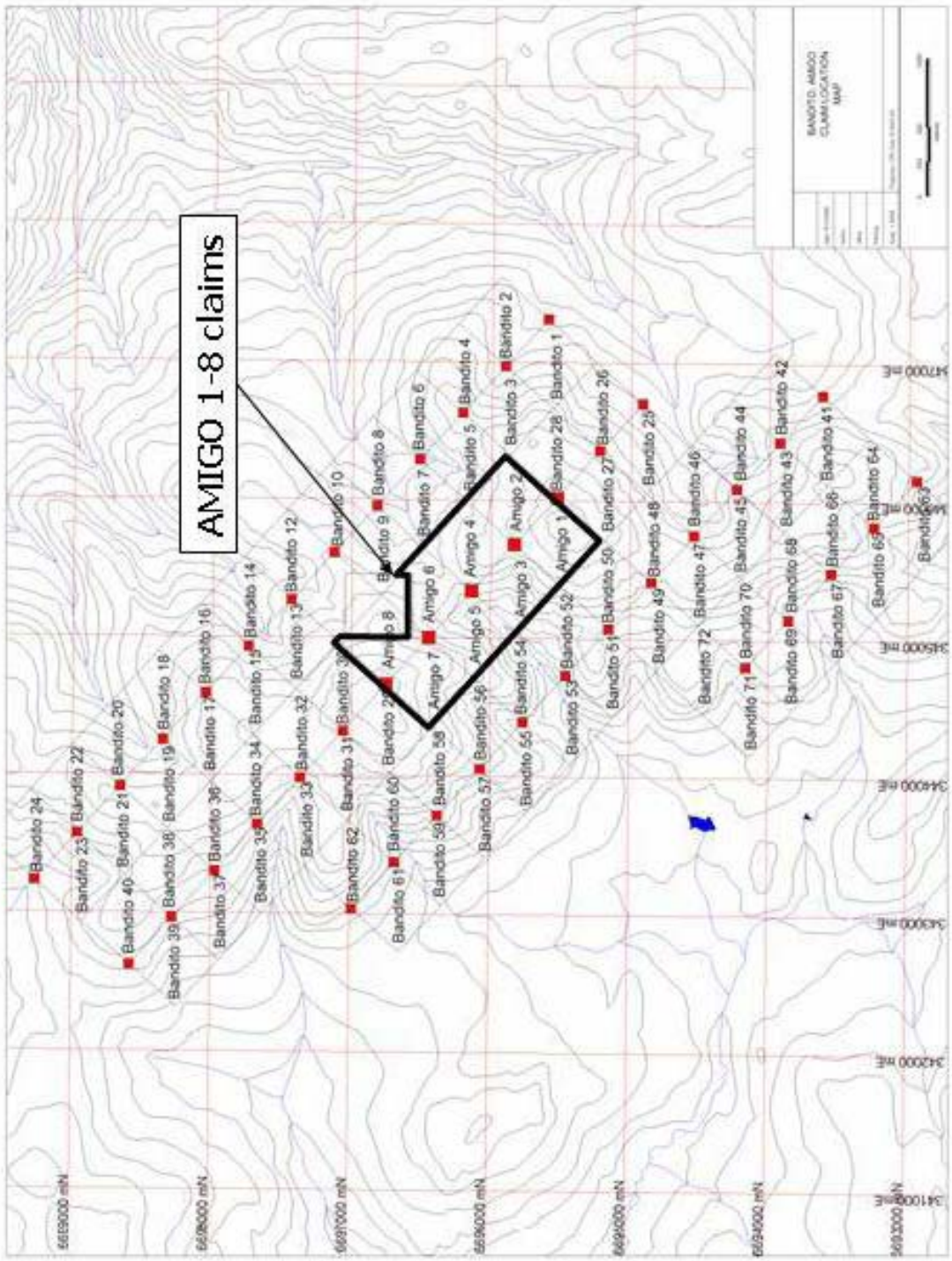

Figure 2. AMIGO claims (8)

EXPLORATION HISTORY

All of the early exploration efforts documented on the Property were focused on uranium and rare earth elements (Archer, 1977; Culbert, 1978; Leighton, 1981; Quartermain, 1986).

The Corundum Dome prospect was first staked as the Beaver property in 1976 following an airborne radiometric survey carried out by Silver Standard Mines Ltd. In 1977, A.R. Archer of Archer Cathro examined the claims and concluded that although the geological setting appeared favourable for uranium and Rare Earth Elements there was no evidence they would occur in any form other than as minor accessories in zirconium or thorium minerals. In addition, mineralized zones were narrow, low grade, and discontinuous. For these reasons, no further work was recommended (Archer, 1977).

The property was optioned in 1980 to E&B Explorations which completed mapping, geophysical and geochemical surveys, and mineralogical studies to identify the rare earth metal minerals (Lammle, 1988).

D.G. Leighton & Associates Ltd. undertook a small drilling program (141 ft/44 m of AQ core) testing bedrock below altered radioactive showings at surface. The most interesting core described by Leighton (1981) was from DDH80-1 in the Gorge Zone which described banded corundum skarn from 7.5 feet to 14 feet. This occurrence reportedly coincided with corundum-bearing skarn in outcrop downhill from the drill site. The core from DDH80-4 was of interest as it described rusty skarn with 10% red corundum, 30% green hornblende and 10% zircon in a soft white feldspar matrix from 14 feet to 27 feet. Leighton (1981) stated that all core was stored adjacent to drill collars on the property. None of the drill was observed during the 2005 and 2006 exploration, only a few scattered remnants of core boxes remain.

In 1986, Consolidated Silver Standard Mines Limited undertook a ten day sampling, trenching, and re-evaluation program on the area of the enclosed AMIGO claims (Quartermain, 1986). Four trenches totalling 40 m in length were excavated in areas of high radioactivity, or where float and/or outcrop with anomalous Rare Earth Elements (REE) had been previously located. Rock and silt samples were submitted for assay for the following elements: Ce, Dy, Er, Eu, Gd, Ho, La, Lu, Nd, Pr, Sc, Sm, Tb, Th, Tm, Yb, U, Y, Li, Sr, Be, Nb, Rb, and Ta. Silt sampling in the upper portion of drainages near the ridge top in the northwestern part of the target area yielded abundant Be values greater than 50 ppm and up to 463 ppm while rock sampled from one of the hand trenches returned values with >1% Be. Additional follow-up work in 1987 and 1988 also focused on the REE and radioactive elements (Haynes, 1987; Lammle, 1988). Scintillometer and soil surveys (Haynes, 1988) identified anomalous radioactivity accompanied by elevated levels of light rare earth elements (LREE). Though additional work was recommended to determine the mode of mineralization, no further follow-up work was reported since the 1988 documents.

Anomalous base metal occurrences have been reported several kilometres to the northwest and east of the Property by regional exploration reported by Silver Standard Resources Inc. (Leighton, 1981) The base metal prospects were identified primarily as carbonate-hosted Pb-Zn-Ag occurrences associated with the overlying Paleozoic limestones and dolostones. Soil samples, reported by Leighton (1980), which included Pb-Zn-Ag analyses, were located east and southeast of Corundum Dome in Landslide Creek and local branching ephemeral tributaries along well defined lineaments. The values reported were less than 26 ppm Pb and less than 138 ppm Zn.

Molybdenum showings were reported west of Pyrochlore Dome near a major east- to west- trending lineament adjacent to the syenite intrusion.

The regional geology was mapped at 1:250,000 scale by L. Pigage in 2003. The maps have not been reviewed by the author. Published versions of the 2001 Pigage and Allen map have been referenced in this report (see Regional Geology).

A regional Gemex program by Archer Cathro and Associates on behalf of True North Gems was conducted during 2003 and 2004 (Wengzynowski, 2005).

Prospecting for corundum in outcrop was conducted in and around the BANDITO and AMIGO claims close to drill pads DDH 80-1 and DDH 80-4. Rocks in the vicinity of DDH 80-1 consist of a variably laminated and bleached, fine grained skarn with irregular pods and veinlets of pink to red potassic feldspar. The feldspar was identified on the basis of colour, hardness, habit, cleavage, and lustre. It is likely the corundum described by Leighton (1981) was feldspar. Outcrops comprising green and white, sucrosic, banded skarn with white feldspar laths and chlorite clots were described below the pad. This unit also contains black tourmaline needles parallel to bedding and randomly oriented.

Prospecting northwest of Corundum Dome in an area where intermittent gossans are developed along prominent recessive linears, identified zones of limonite healed crackle breccia with manganese oxide filled pits and fractures plus an isolated float train up to 3 m wide containing malachite, “nickel bloom” (annabergite, $Ni_3(AsO_4)_2 \cdot 8H_2O$), and specularite.

A select sample of this material collected in 2004 yielded 9.14% Ni, 0.23% Cu, 0.03% Co, 0.28% As and 0.14% Sb. Soil samples collected near the head of the float train yielded up to 128 ppm Co, 305 ppm Cu, 120 ppm Ni, 337 ppm Pb and 3990 ppm Zn.

Soil sampling in the adjacent topographic lows indicated similar anomalous metal values including Pb to 904 ppm and Cd to 38 ppm.

The salient results of the 2004 geochemistry are provided in Table 2 below.

Large boulders of grey-green limy dolomite with cubic coarse pyrite crystals were discovered in the stream on the north side of Corundum Dome. Below this is a black, unaltered argillite with 3-10% medium- to fine-grained pyrite throughout. Parts of this unit show a mild conglomerate history with sub-rounded quartz fragments to 5 mm with 10-30% coarse pyrite.

During 2005 and 2006, float and outcrop samples comprising two areas containing visible secondary nickel and copper oxide mineralization were collected in the southwestern and central sections of the Gossan Zone (see Figure 3). The metal values were sourced primarily from several discrete areas of historical surface trenches, outcrops, frost shattered bedrock and the adjacent talus material.

High grade nickel was associated primarily with arsenic (As), antimony (Sb), cobalt (Co), copper (Cu), bismuth (Bi) and lead (Pb). The base metals were accompanied by specular hematite, manganese oxides, rare earths and other incompatible elements (including Ta, Nb, Be, Cs, Zr), elevated potassium (K) and only traces of sulphur (S) within the oxidized surface material.

Table 2. 2004 Rock Sample Analysis – Selected Elements

Sample #	As ppm	Bi ppm	Co ppm	Cu ppm	Fe%	Ni ppm	P ppm	Pb ppm	Sb ppm	Zn ppm
M011951	742	2	13	47	6.22	10	240	49	8	12
M011952	6	<2	2	5	3.14	7	20	10	2	10
M011953	13	<2	27	41	5.48	50	1030	388	<2	280
M011954	3210	17	30	122	4.09	33	890	44	8	62
M011955	165	<2	34	354	12.25	104	770	80	6	284
M011956	206	<2	50	209	21.4	190	1430	35	4	150
M011957	2820	62	339	2270	5.09	9.14%	380	68	1380	457
M011958	73	13	5	20	4.58	36	250	1.88%	11	2410
M011959	60	6	204	200	6.4	274	1160	190	5	80

The suite of eleven rock samples collected in September 2005 exhibited highly anomalous multi-element metal values including: Ni to 15.85%, As to 9.84%, Sb to 1.54%, Cu to 1.22%, Bi to 1.36%, and Co to 1125 ppm.

Precious metal values typically were subdued with Au to 36 ppb, Pd to 23 ppb and Pt to 3.6 ppb.

The salient 2005 analytical data for the six nickel-rich samples are provided below in Table 3.

Table 3. 2005 Rock Sample Analysis – Selected Elements

Sample #	Ni %	As %	Sb %	S%	Co %	Cu ppm	Pb ppm	Bi ppm	Ge ppm
A478709	7.57	0.27	0.08	0.01	0.012	2870	134.5	64	2.37
A478710	9.55	0.60	1.15	0.06	0.037	181	163.5	13550	2.76
A478711	8.47	0.46	0.11	0.01	0.018	273	24.9	82	2.43
A478712	13.40	3.39	0.87	0.01	0.087	359	62.7	1325	4.08
A478713	15.85	9.84	1.54	0.02	0.100	1575	142.5	3640	4.86
A478714	7.08	4.54	1.00	0.01	0.034	118	91.4	1235	2.52

The predominant minerals included abundant green annabergite ($Ni_3(AsO_4)_2 \cdot 8H_2O$), also known as nickel bloom, with malachite, azurite, specularite, manganese oxides, pyrite and chalcopyrite within oxide-cemented breccias and veins. No petrographic analysis to confirm all of the metal-bearing species has been completed to date.

Currently, there are no other recorded base metal mineral occurrences on the AMIGO claims.

The results from the rock samples collected during the September 2005 due diligence property visit were sufficient to warrant staking of the 72 BANDITO claims in January 2006 around the entire AMIGO claim group. In addition, the embedded MGM claim, with all accompanying reports and files, was acquired for cash from Silver Standard Resources in 2006.

GEOLOGICAL SETTING

REGIONAL GEOLOGY

The regional geological setting coincides with the structural flexure associated with the transition from the Rocky Mountain Trench to the Tintina Trench and the transcurrent Mackenzie Fold and Thrust Belt. The geology of the area is characterized by folded and thrust faulted Selwyn Basin sediments which consist of limestone, dolostone, sandstone, argillite and lesser siltstone, quartzite, quartz pebble conglomerate and shale.

Intrusive complexes in the area are rare. However, an intrusion of syenite is documented at the regional scale to the northeast of the principal metal anomaly. The syenite is multi-phase with white, pink, mauve and red, fine-grained to coarse-grained varieties. This intrusion was previously described as being of Cretaceous age (Lammle, 1988), and only recently has this been changed to lower Cambrian which coincides with the onset of rifting and formation of the Selwyn Basin (see Pigage and Allen, 2001; Pigage and Mortensen, in press). An Eocene syenite which also contained an abundance of fluorite was mapped to the northwest of the Property near the Fluorite Creek and Fluorite Canyon areas.

The area was most recently mapped at 1:250,000 scale by Pigage (2003) as part of the Yukon Geoscience initiative.

PROPERTY GEOLOGY

The Property geology, modified after Pigage and Allen (2001) is displayed with the claim location in Figure 3 (also see Map Pocket).

The mapping by Pigage reported that the Corundum Dome area is underlain by Proterozoic green banded argillite, blocky grey laminated siltstone and fine grained quartzite, and by Proterozoic to Cambrian black argillite. These units are unconformably overlain by a Cambrian or younger conglomerate sequence south of Corundum Dome, which may have a primary or secondary pyroclastic provenance.

To the north and east of Pyrochlore Dome is a coarse grained red-pink lower Cambrian syenite (Pigage and Mortensen, in press) containing ubiquitous fluorite. The contacts between the syenite and the sediments are inferred as two northwest-trending thrust faults however this cannot be confirmed due to poor exposure over most of the area. The surface expression of the contact between the syenite and the argillite is marked by a strong recessive linear valley defining the north side of the adjacent Pyrochlore Dome. At the margins of the syenite and sediment contact are outcrops of what was previously described as disturbed or fenitized syenite containing radioactive zircon, fluorite, rutile, and REE minerals. A younger Eocene-aged intrusive breccia

with abundant fluorite is exposed to the northwest; the syenite breccia was not covered by the current reconnaissance mapping.

Local property scale structures are characterized by numerous orthogonal northeast and northwest trending linears associated with moderate to high degrees of brecciation and fracturing of the adjacent hornfelsed sediments. Numerous step structures similar to normal faults were observed on Corundum Dome with NNW dip slip faces.

DEPOSIT TYPES

Due to the early stage of exploration on the project and the very recent discovery of high grade nickel, a deposit type has not been confirmed. Skarn models have been proposed for the historical exploration for radioactive and rare earth elements.

MINERALIZATION

The predominant minerals included abundant green annabergite ($Ni_3(AsO_4)_2 \cdot 8H_2O$), also known as nickel bloom, with three copper oxides (carbonates and hydrous silicates) including green malachite, blue azurite, chrysocolla, with minor pyrite and a primary copper sulphide, chalcopyrite, within oxide-cemented breccias and veins. The base metals were accompanied by abundant specular hematite and manganese oxides, rare earths and other incompatible elements (including P, K, Ta, Nb, Be, Cs, Y, Zr).

The geochemical surveys have confirmed a strong Ni-As-Cu-Pb anomaly spatially associated with nickel and copper oxides (annabergite and malachite) identified within brecciated outcrop and scree material.

The principal Ni-rich anomaly coincides with intense hematite and manganese oxide alteration envelopes over a strike length of more than 750 metres by 600 metres.

Fluorite and rare earth minerals were reported by the previous operators, specifically mentioning zircon, anatase, and monazite.

MINERALIZATION CONTROLS

The model for the nickel and copper mineralization is under evaluation. The previous model for both rare earth and radioactive element concentration was using a skarn model whereby the metasediments were altered and replaced proximal to an incompatible element –enriched, alkaline syenite intrusion. The presence of copper, zinc and to a certain degree lead may occur in skarn deposits thought the presence of coincident nickel and some questions regarding the age relationships of the intrusion remain.

It is believed that the integration of the 2006 geochemical and airborne geophysical survey data, together with the ongoing compilation of the recently acquired historical drill core and mapping data, and literature review, will contribute to the recognition of structural and geological controls associated with the metals and provide further insight into the range of potential models. Due to receipt of initial airborne geophysical data only in December 2006, geophysical interpretation by the contractor is ongoing and will be provided in a forthcoming 43-101 report, and reviewed in the 2007-2008 assessment report.

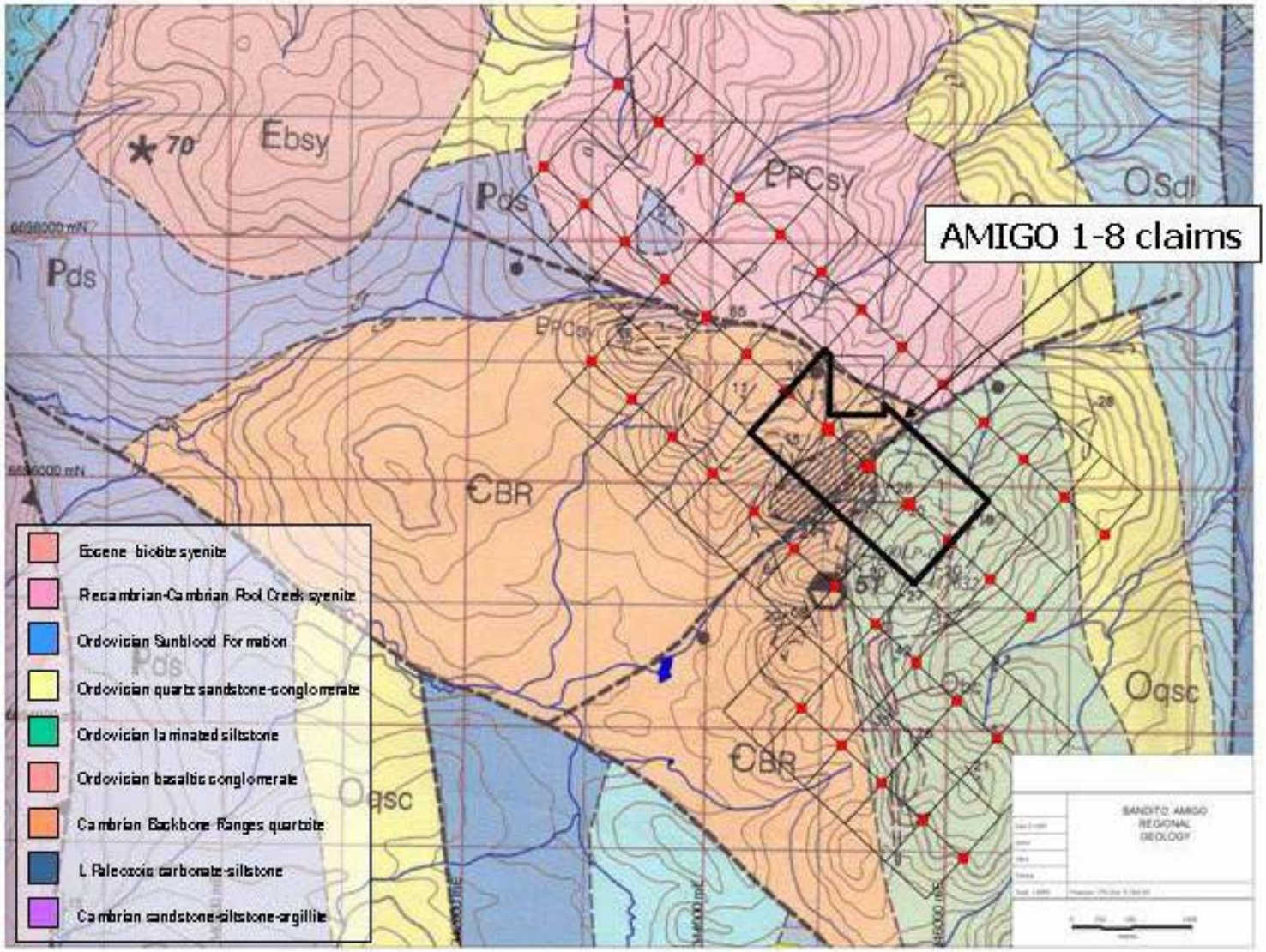

Figure 3. BANDITO Regional Geology 1:40,000 (from Pigage and Allen, 2001)

AMIGO EXPLORATION 2006-2007

The 2005 program was focused on due diligence sampling and confirmation of target areas identified by mapping, stream soil and rock sampling, and prospecting by the Archer Cathro regional Gemex program in 2004 (see Exploration History).

The 2006 ground-based exploration, conducted by True North Gems' geologists, comprised geological and structural mapping, rock lithogeochemistry, soil and silt geochemistry including ICP-MS multi-element analysis for 47 elements, and, if time permitted, mobile metal ion (MMI) analysis focused on base metals, and hand trenching.

In addition, as the key cost component of the 2006 exploration program, True North contracted McPhar Geosurveys Ltd. based in Newmarket, Ontario to carry out a low altitude airborne geophysical survey over the Bandito Property, including the BANDITO, AMIGO and MGM claims.

AIRBORNE GEOPHYSICS

The airborne geophysical survey evaluated an area of 38 square kilometres and covered a total of 416 line kilometres at a nominal line spacing of 100 metres with tielines at a 1000 metre spacing oriented perpendicular to the flight lines.

The survey was comprised of a THEM time domain EM system installed on a Eurocopter A-Star helicopter. The TDEM system was complemented with a Geometrics G-822A high sensitivity cesium magnetometer, GSM-19T proton magnetometer base station, real-time GPS Navigation, and Terra TRA-3000 radar altimeter using an optimum terrain clearance of 30-57 metres. The daily project data was assessed from the forward base of operations in Coal River, British Columbia.

The geophysical survey was flown between September 18 and October 2, 2006.

Preparation of the final report was completed between October and December 2006. The full report is provided in Appendix 1.

McPhar provided maps of the following parameters (see Map Pocket):

- Differentially corrected GPS flight path
- Digital terrain model calculated from survey data
- Total magnetic intensity
- Total magnetic intensity reduced to the magnetic pole
- Calculated first vertical derivative of TMI
- Calculated second vertical derivative of TMI
- Calculated analytical signal of the TMI
- Calculated horizontal gradient of the TMI
- Offset Profiles with picked anomalies
- EM Anomaly map
- Apparent conductance

A preliminary review of the airborne survey indicated two dominant electromagnetic anomalies, one with NW trend and a weaker EW trend. Offsets suggest a NE fault trace through Zircon and Copper Creeks. The EM data displayed one significant anomaly with EW and NNW conductors intersecting one kilometre to the southwest in Cambrian sulphide-bearing argillites underlying Ordovician siliceous laminated siltstones of the target area.

The initial review of the magnetic survey results indicate a broad NNE discontinuity generally coincident with the topographic lineaments traversing the area of the principal polymetallic geochemical anomaly. In general, the magnetic maps indicate numerous NE-SW block fault structures, and NW to EW breaks which may be related to regional thrusting coinciding with the syenite contact north of the Gossan Zone. Detailed interpretation of the geological structure based on the 2006 geophysics, and historical mapping and geophysical surveys has been initiated.

GEOLOGICAL MAPPING

Preliminary geological map due diligence was conducted in conjunction with the 2006 soil and silt sampling program. The preliminary data were consistent with the geological map of Pigage and Allen (2001). The results will be provided in a forthcoming 43-101 report.

The focused geological mapping program was deferred to 2007.

Additional detailed and synoptic mapping will be included with the 1:1,000 and 1:5,000 scale geological mapping on the AMIGO, BANDITO and MGM claims in 2007.

GEOLOGY, ROCK LITHOGEOCHEMISTRY

A suite of one hundred and fifteen rock samples were collected on the Property, including thirty-six on the AMIGO claims, during the 2006 program. The majority of the samples were taken as representative of the various lithologies identified during property-wide prospecting and preliminary mapping.

To date, none of these 2006 rock samples were submitted for multi-element geochemical analysis. The geochemical results from a selected suite of samples will be provided in a forthcoming 43-101 report.

SOIL GEOCHEMISTRY

No soil samples were collected during 2005.

In 2006, a total of 34 soil and 229 silt geochemical samples represent seasonal drainages covering an area of 25 square kilometres, 25 of which were located on the AMIGO claims. In addition, a total of 162 samples were collected from a 650 metre by 300 metre grid utilizing a 50 metre line spacing with 25 metre sampling interval, entirely located on the AMIGO claims.

The sampling programs were carried out by True North Gems' senior geologists, all of whom were university graduates, trained in sampling and reporting techniques. As per the grid location and sampling protocols defined by the TNG project manager, all soil samples from the 2006 program were submitted to ALS Chemex in Vancouver.

In accordance with sampling protocols, all of the key sample locations completed during the 2006 program were checked with GPS locations.

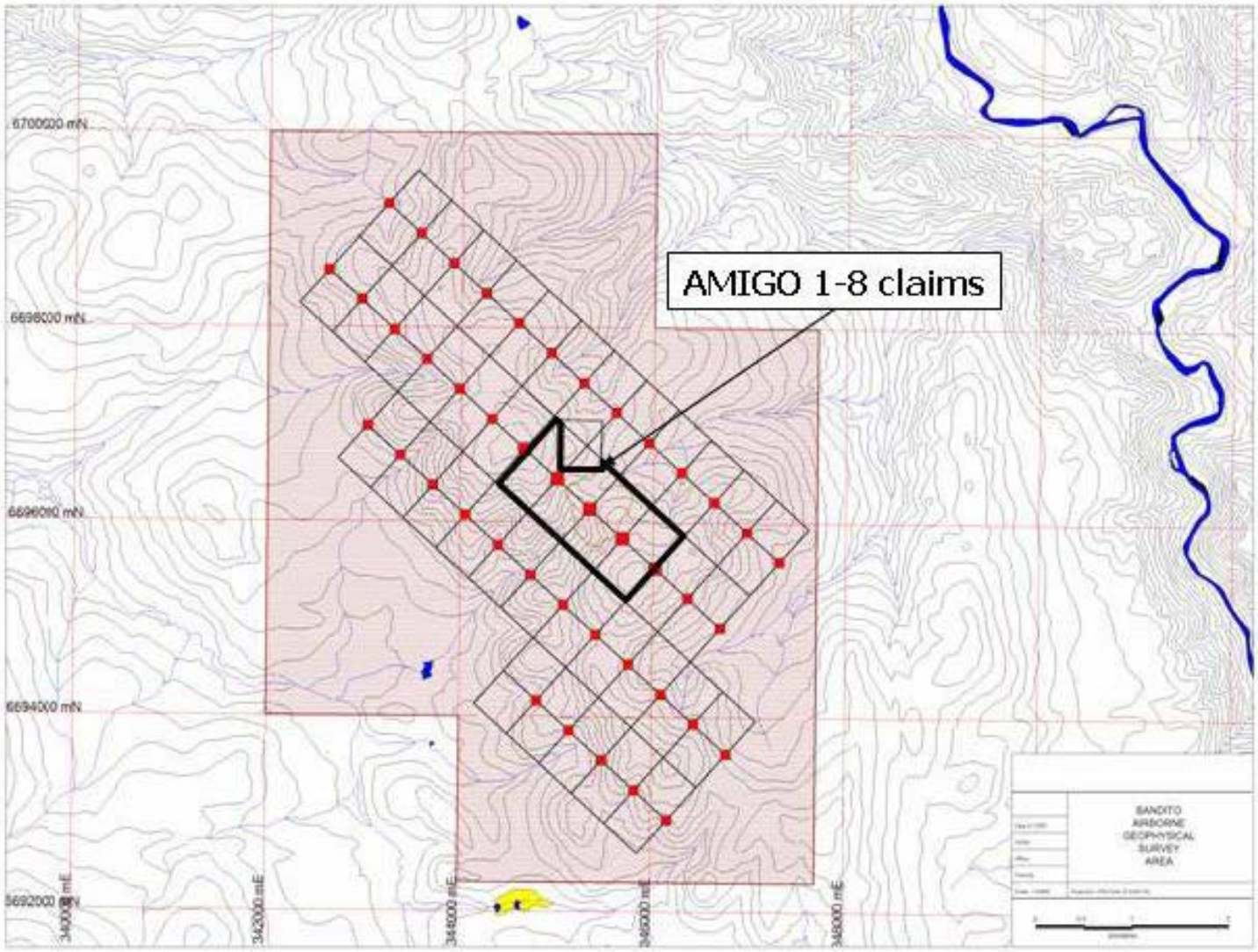

Figure 4. BANDITO Airborne Geophysical Survey Area

In aggregate, 187 soil and silt samples from the AMIGO claims were submitted to ALS Chemex in Vancouver for 47 element ICP-MS multi-element analysis using a four acid, near total digestion. Of note, ALS Chemex employs its own ISO certified testing procedures for quality assurance. Duplicate samples will be submitted to a second commercial laboratory according to True North Gems' in-house QA/QC protocols.

The analytical results will be provided in a forthcoming 43-101 report on the Property.

In summary, the geochemical surveys have confirmed the presence of a strong Ni-As-Cu-Pb anomaly spatially associated with nickel and copper oxides (annabergite and malachite) identified within brecciated outcrop and scree material. The principal Ni-rich anomaly coincides with intense hematite and manganese oxide alteration envelopes over a strike length of more than 750 metres by 600 metres.

TRENCHING

No trenching was completed on the AMIGO claims.

DIAMOND DRILLING

No diamond drilling has been conducted by True North Gems on the AMIGO claims.

UNDERGROUND EXPLORATION

No underground exploration was conducted on the AMIGO claims.

MINI-BULK SAMPLING

No samples were collected on the AMIGO claims.

SAMPLE PROCESSING

No processing was carried out on samples from the AMIGO claims.

MINERALIZATION

No new areas of exposed base metal mineralization outside of the Gossan Zone on the AMIGO claims were confirmed during 2005. In 2006, float containing minor copper oxide and sulphide were identified to the north of the Gossan zone hosted within the Backbone Range Formation. The results will be provided in a forthcoming 43-101 report.

UNIVERSITY RESEARCH PROGRAMS

No programs were active for the AMIGO claims in 2005 or 2006. No activities are planned in the current 2007 budget.

SAMPLING METHOD AND APPROACH

The airborne geophysical survey was completed using east-west flight lines with north-south tie lines; the survey lines were generally orthogonal to the geology and oblique to the principal structural elements. The geology trends in a general northerly to northwesterly strike truncated by several regional fault structures. Local faults include northwest and east-northeast lineaments.

In the author's opinion, True North's data geophysical exploration and data collection measures were adequate for 2006 and are compliant with standard practice in the mineral exploration industry.

The following section is included for completeness with regard to sampling on the property; the results of which will be provided in a forthcoming 43-101 report. Samples were collected on 50-100 metre intervals for the regional portion of the program and at 25 metre intervals on 50 metre grid lines using GPS control for the detailed grid.

Soil samples were collected principally from the B soil horizon and locally from silt, mainly located in ephemeral spring melt water streams. All sampling techniques were approved, supervised, and carried out by senior True North Gems' personnel, including three with P.Geo. designation.

Each sample was packaged in marked kraft bags with Tyvek sample labels, dried and packaged in rice bags for shipment. Rock samples were packaged in heavy plastic bags with Tyvek labels and sealed with cable ties, and then packaged in rice bags for shipment.

The material was then removed from site via helicopter to Watson Lake. From there, all soil, silt, and rock samples were shipped by truck, accompanied by one of True North Gems' Senior Geologists Twila Skinner and Gary Dyck, at the conclusion of the field season to Whitehorse.

The 2005 due diligence rock samples and the 2006 rock samples, which comprised analytical samples and geological samples, were shipped by Greyhound bus parcel express to the True North Gems office in Vancouver for further examination prior to delivery to ALS Chemex by hand. The soil and silt samples were shipped by Greyhound bus parcel express directly to ALS Chemex located at 212 Brooksbank Avenue, North Vancouver, British Columbia, V7J 2C1 for geochemical analysis.

Chain of custody reports were transmitted with shipments to ensure against diversion and permit detection of tampering of geochemical samples.

In the author's opinion, True North's sample collection, storage, shipping and security measures were adequate for 2005 and 2006. True North Gems' protocol and procedure for handling samples are compliant with standard practice in the mineral exploration industry.

SAMPLE PREPARATION, ANALYSES AND SECURITY

All geophysical data and results were provided directly and only to the project manager through a secure ftp (file transfer protocol) site. File access and passwords were provided to the project manager only.

In the author's opinion, McPhar Geosurveys Ltd. and True North Gems security measures were adequate for 2006. True North Gems' protocol and procedure for handling proprietary data are compliant with standard practice in the mineral exploration industry.

The following section is included for completeness with regard to sampling on the property; the results of which will be provided in a forthcoming 43-101 report. In the Vancouver office of True North Gems, as applicable, the shipping packages were inspected to confirm lack of tampering. Then, samples were opened and transmittal sheets verified to ensure arrival of all material transmitted. There were no missing samples or security breaches in transit during 2005 or 2006.

All samples delivered to ALS Chemex are logged, dried, weighed and fine crushed to pass 70% -2mm. a charge of 250 grams is split and pulverized to pass 85% -75 micrometres (-200 Tyler mesh), the standard ALS Chemex protocol – PREP-31.

Analytical protocols for soil, silt and rock lithogeochemistry utilize the ME-MS61 method for 47 elements using four acid dissolution and ICP-MS finish. Analytical protocols for rock lithogeochemistry also utilize the PGM-MS23 method for trace levels of gold, platinum and palladium using fire assay (30 gram) and ICP-MS finish. Detection limits for all elements are available at www.alschemex.com. Duplicate and replicate samples were included as an integral part of the True North QC/QA program.

ALS Chemex standard operating procedures require the analysis of quality control samples (reference materials, duplicates and blanks) with all sample batches. ALS Chemex is an ISO9001:2000 accredited laboratory in North America. In addition, ALS Chemex Vancouver laboratory is accredited to ISO 17025 by Standards Council of Canada for a number of specific test procedures including fire assay Au by AA, ICP and gravimetric finish, multi-element ICP and AA Assays for Ag, Cu, Pb, and Zn.

In the author's opinion, True North's sample preparation, analysis and security measures were adequate for 2006. True North Gems' protocol and procedure for handling samples and proprietary data are compliant with standard practice in the mineral exploration industry.

DATA VERIFICATION

The author has supervised all aspects of the project since the initial due diligence sampling program in September 2005 and includes that carried out during the ground and airborne components of the 2006 field program, and during the compilation of information between September 2005 and December 2006, and has no rationale whereby any of the contained methodologies and data will not withstand the highest levels of scrutiny.

ADJACENT PROPERTIES

Discussion of adjacent properties other than the Bandito property specific, which includes the AMIGO/BANDITO/MGM claims, is not deemed appropriate for this report given the absence of base metal exploration elsewhere in the Toobally district. All of the eighty-one claims in the immediate area are held 100% by True North Gems Inc.

The majority of the area was held by several companies during the 1970's and 1980's for uranium, rare earth and, to a lesser degree, for base metal potential, the latter including carbonate-hosted Pb-Zn occurrences to the northwest and east of the Property. No adjacent work has been reported since 1988.

A coal exploration project, located more than 25km WNW of the Property, is the nearest active exploration in the area.

MINERAL PROCESSING AND METALLURGICAL TESTING

No mineral processing testwork was conducted on samples from the AMIGO claims.

MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

GENERAL

To date, no mineral resource or mineral reserve have been identified or defined on the AMIGO claims.

OTHER RELEVANT DATA AND INFORMATION

No other relevant data or information have been considered for inclusion in this report.

INTERPRETATION AND CONCLUSIONS

In overall terms, the results of the 2005 and 2006 programs from soil sampling and prospecting have identified numerous anomalous samples even compared to the recent 2004 exploration efforts. The coincident presence of base metals, dominated by Ni, As, Sb, Bi, Cu and Pb, coincident with the specular hematite, rare earths and other incompatible elements (including Be), elevated potassium (K) and only traces of sulphur (S) within a discrete airborne radiometric anomaly provides an exciting exploration target.

The Gossan Zone extending from the AMIGO claims onto the BANDITO and MGM claims must be targeted as a high priority; the geochemical signature is the strongest and largest of several geochemical anomalies reported on the Property and additionally occurs along a structural lineament exhibiting intense alteration, oxidation and a series of subparallel normal fault features associated with a major change in topography.

In general, the magnetic maps indicate numerous NE-SW block fault structures, and NW to EW breaks which may be related to regional thrusting coinciding with the syenite contact north of the Gossan Zone, where several lineaments traverse the area of the principal polymetallic geochemical anomaly. The airborne survey indicated two dominant electromagnetic anomalies, one with NW trend and a weaker EW trend. Offsets suggest a NE fault trace through Zircon and Copper Creeks.

The anomalous base metal multielement values within both rock and soil geochemistry coincident with major structural features defined by the airborne geophysical survey clearly warrant further expenditures in upcoming 2007 exploration season.

RECOMMENDATIONS AND BUDGET

The 2007 program is summarized as follows:

- 1:500 - 1:1,000 scale detailed geological mapping of the Gossan Zone through its known extent on the AMIGO claims into the MGM and BANDITO claims.
- 1:2,500 - 1:5,000 scale synoptic geological mapping of the AMIGO, MGM and BANDITO claims.
- Ground truthing of the geochemical and airborne geophysical targets by limited hand trenching, and blasting, as required.
- Focused infill soil geochemistry to cover selected areas around the Gossan Zone and other targets.
- Compilation of all lithogeochemical data by specific rock type, mineral component and spatial association, including distance from the syenite contact, and in association with the soil and silt geochemistry completed to date and new data generated in 2006 on the AMIGO claims.
- Additional interpretive work is planned using Landsat, ASTER, hyperspectral and similar images to better define the effects of major and minor structural lineaments on the distribution of prospective host rocks and potential base metal mineralization.
- Continuing development of the geochemical and mineralization models.

- Diamond drilling of specific targets, specifically associated with the rock geochemical anomalies, initially focusing on the nickel.

The proposed summary budget for the 2007 exploration program is C$ 250,000 dollars and will be itemized as follows:

Project Management	C$ 20,000
Synoptic and Detailed Geological Mapping	30,000
Diamond Drilling	150,000
Logistics, including helicopter support	50,000
Total	**C$ 250,000**

The author, as project manager of the Bandito project (AMIGO, BANDITO, MGM claims), prepared the 2007 exploration program and budget, and believes that the combination of focused detailed mapping of geochemical targets, property-wide synoptic geological and structural mapping, followed by drilling of favourable base metal targets, is the next logical step in the exploration of the property covered by the AMIGO claims.

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STATEMENT OF QUALIFICATIONS

I, James Gregory Davison, residing at 921-7th Street, Montrose, British Columbia, Canada, V0G 1P0 do hereby certify that:

1. I am a Professional Geologist licensed with the Association of Professional Geoscientists of Ontario, Member #0709 in good standing through 2006 and licensed with the Association of Professional Engineers and Geologists of British Columbia, Member #29630 in good standing through 2006. I meet the requirements of a "Qualified Person" as outlined in National Instrument 43-101.

2. I graduated from Dalhousie University in Halifax, Nova Scotia, Canada in 1979 with an Honours B.Sc. in Geology and from Brock University in St. Catharines, Ontario, Canada in 1984 with a M.Sc. in Geological Sciences.

3. I have practised my profession continuously since 1979. I am currently a self-employed contract exploration geologist, mineralogist, process mineralogist and managing director of Davison and Associates.

4. I am a Senior Associate Mineralogist with Watts, Griffis and McOuat Limited, a firm of consulting geologists and engineers, which has been authorized to practice professional engineering by the Professional Engineers Ontario since 1962.

5. I am a Core Member of the Prospectors and Developers Association of Canada, a member of the Mineralogical Association of Canada, a member of the Canadian Institute of Mining and Metallurgy, and a member of the Society for Mining, Metallurgy and Exploration, and was a Fellow of the Geological Association of Canada for 20 years prior to professional registration.

6. I acted in the role of Project Manager with respect to the True North Gems Inc. 2005/2006 exploration project, and am currently Project Manager for 2007. I was appointed as an officer and Vice-President Exploration of True North Gems Inc. effective June 1, 2005 to present.

7. I am the author of this report entitled ***Report on 2006-2007 Activities for the Amigo Claims, Bandito Project, Toobally Lake area, Yukon Territory, Canada*** and it is based on data supplied to me by True North Gems Inc., Archer Cathro and Associates, Silver Standard Resources Inc., and information collected from previously published sources.

8. I have been actively involved in international base metal mineral exploration, mine development and mining operations since 1977.

9. I have earned the majority of my income over the preceding three years from True North Gems Inc.

10. I have not visited the AMIGO claims prior to September 2005.

11. I have worked on the Bandito project, now including the AMIGO claims, from January 2005 through December 2006 and I have been involved

with the initial collection or field preparation of the samples that are the focus of this report since September 2005.

12. I have read the NI 43-101 and Form 43-101F1 and have prepared the technical report in conformity with generally accepted Canadian mining industry practice.

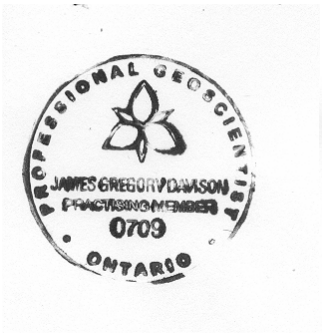
13. I am not aware of any material fact or material change with respect to the subject matter of the technical report which has not been reflected in the technical report, the omission to disclose which makes the technical report misleading.

14. This report may be utilized for the development of the property provided that no portion is used out of context in such a manner as to convey a meaning that differs from that set out in the whole.

15. Consent is hereby given to True North Gems Inc., to use or reproduce this report or any part of it for the purposes of development of the property, or related to the raising of funds.

Montrose, British Columbia
January 31, 2007

James Gregory Davison, M.Sc., P. Geo.
Vice-President Exploration
True North Gems Inc.



CONSENT OF AUTHOR

I, James Gregory Davison, residing at 921-7th Street, Montrose, British Columbia, Canada, V0G 1P0, do hereby consent to the filing of the written disclosure of the technical report entitled "Report of 2006-2007 Activities on the AMIGO claims, Bandito Project, Toobally Lake Area, Yukon Territory, Canada" and dated January 31st, 2007, and any extracts from the technical report, and to the filing of the technical report with the appropriate securities and regulatory bodies.

I also certify that I have read the written disclosure being filed and I do not have any reason to believe that there are any misrepresentations in the information derived from the technical report.

Dated this 31st day of January, 2007.

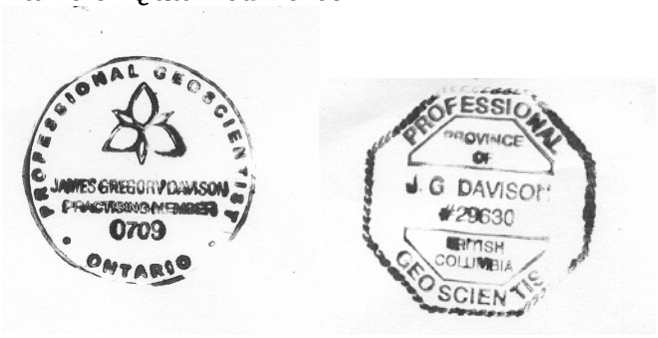
_____

Signature of Qualified Person

James Gregory Davison

_____

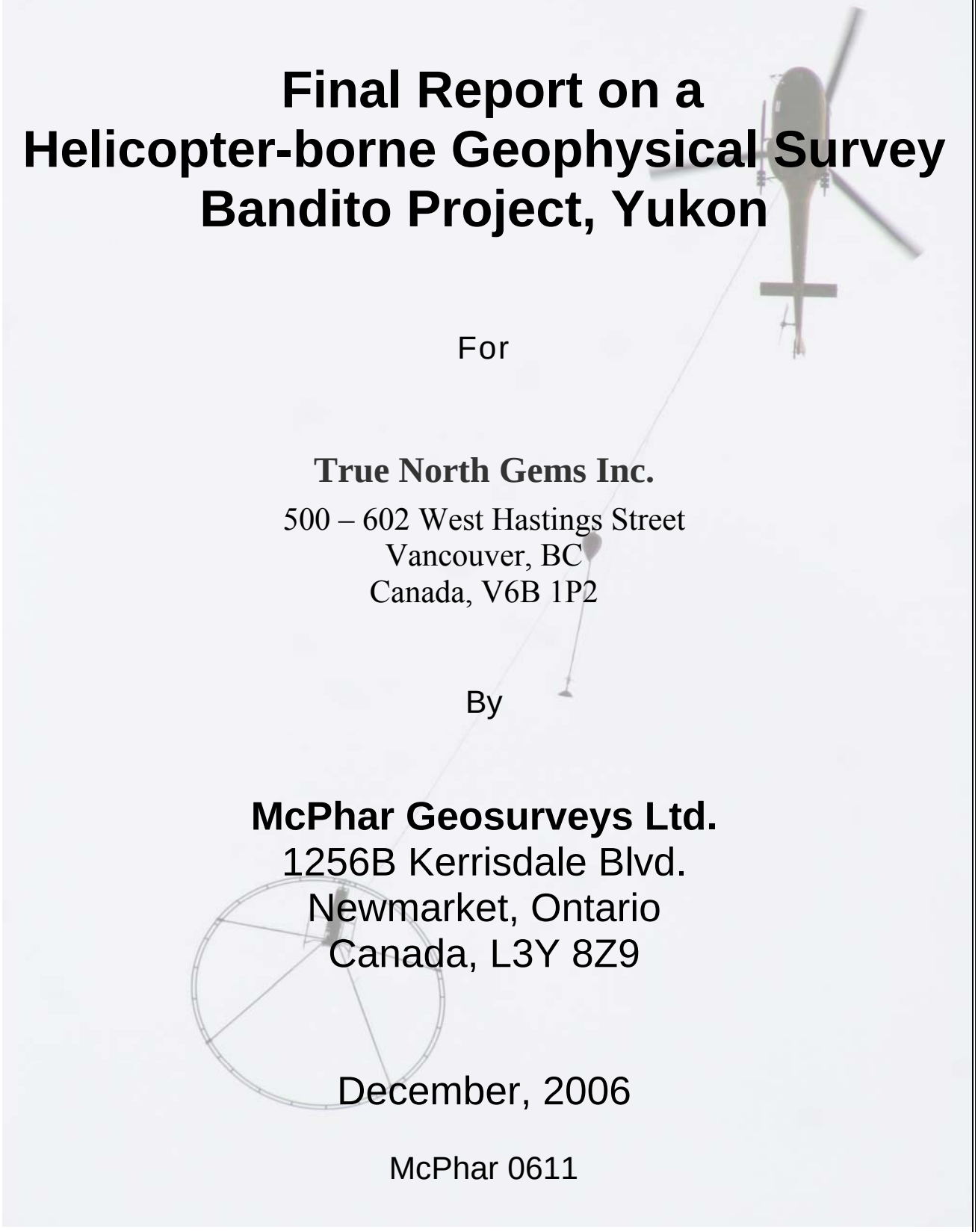
Name of Qualified Person



APPENDIX 1

MCPHAR GEOSURVEYS LTD. REPORT

Final Report on a Helicopter-borne Geophysical Survey Bandito Project, Yukon



For

True North Gems Inc.

500 – 602 West Hastings Street
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By

McPhar Geosurveys Ltd.
1256B Kerrisdale Blvd.
Newmarket, Ontario
Canada, L3Y 8Z9

December, 2006

McPhar 0611

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SUMMARY

An airborne geophysical survey program was completed over the Bandito Area of the Yukon Territory, under contract to True North Gems Inc., signed June 2006. The project area is situated in the Yukon Territory approximately 100 km northwest of Coal River, B.C. The program consisted of a high-resolution helicopter magnetic and time domain electromagnetic (TDEM) survey.

First tests and calibration flights were completed on 19 September 2006 with data acquisition initiated on 23 September 2006. The final survey flight was completed on 02 October 2006. A total of 413 line-kilometres of data were acquired, covering an area of approximately 38 square kilometres. The survey area was flown in one block with a nominal mean helicopter terrain clearance of 85 metres on both flight lines and tie lines. Flight line spacing was approximately 100 metres and tie lines at a spacing of approximately 1,140 metres.

The final data processing was completed in data processing centre of McPhar in Newmarket, Ontario. McPhar Geosurveys Ltd. of Newmarket, Ontario, Canada, was responsible for the field operations, all geophysical matters and the overall coordination and management of the survey.

Figure 1: Helicopter, THEM system.

1. INTRODUCTION

A detailed high-resolution helicopter-borne magnetic and time domain electromagnetic survey was carried out during the period of 07 September 2006 to 02 October 2006 on behalf of True North Gems Inc. hereinafter referred to as "True North Gems", by McPhar Geosurveys Ltd, hereinafter referred to as "McPhar", over the survey block situated in the Bandito Area, Yukon Territory.

The purpose of the survey was to acquire high-resolution geophysical data to map the geophysical characteristics of the geology and structure in an effort to provide an insight into geologic and geophysical settings conducive to economic (Au) mineralization.

The *THEM* geophysical system was mounted on Eurocopter AS-350B2 helicopter. The data acquisition involved the use of precision real-time differential GPS positioning, a high sensitivity magnetometer system incorporated into the *THEM* helicopter electromagnetic time domain system towed beneath a helicopter.

The survey area was flown as an individual block on survey lines flown in a east-west direction (90°) at spacing of 100 metres and tie lines flown in north-south direction (360°) at spacing of 1,140 metres. The survey comprised a total of 413 line kilometres of data acquisition.

Table 1: Description of Survey Block

AREA NAME	APPROX AREA KM^2	LINE /T.L. SPACING	FLIGHT LINE-KM	TIE LINE-KM	TOTAL LINE-KM	PRIMARY FLIGHT DIRECTION
Bandito Project	38	100 m x 1,140 m	374	39	413	90^o /360°
Totals	**38**		**374**	**39**	**413**	

Initial mobilization of the equipment and personnel from Toronto to Mayo was completed on 7 September 2006. After equipment was assembled on site, no helicopter was available for several days. The crew demobilized. A second mobilization of the helicopter and personnel was completed on 18 September 2006. A fuel cache was established near the survey project area on 19 September 2006. Installation of the survey equipment into the helicopter and pre-survey test and calibration flights were completed on 18 and 19 September 2006. Production flights were commenced on 23 September 2006. The final production survey flight as well as the final post-survey tests and calibrations were completed on October 02, 2006.

2. SURVEY AREA

The survey consisted of one block located in the Bandito Area, Yukon Territory (Figure 2). Topography of the survey area was variable, from rolling hills to steep heavily wooded slopes. Elevation ranged from approximately 850 metres to 1500 metres above sea level. Temperature conditions during the survey varied from -2 ^{o}C to 13 ^{o}C.

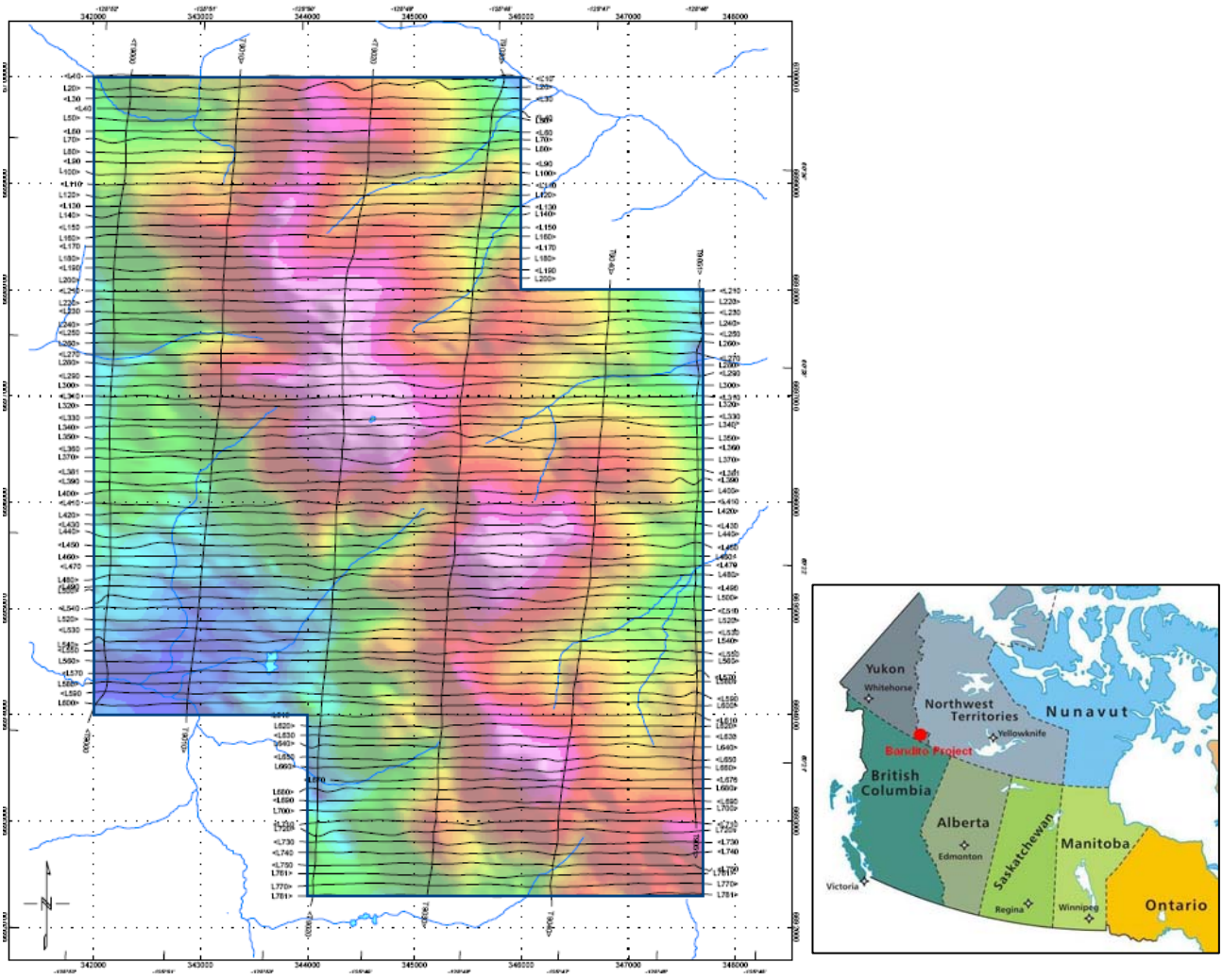

Figure 2: Location of the Survey Area.

True North Gems identified the survey block as the Bandito Project.

The survey block corner coordinates were provided by True North Gems in NAD27, UTM Zone 10N easting and northing. Original coordinates provided in NAD27 were converted to WGS84/Zone 10 N and used for entire project as the project reference coordinates. Final maps were compiled in WGS84, UTM Zone 10N easting and northing. The following table contains the survey block corner coordinates.

Table 2: Boundary Coordinates of Survey Block in NAD27, UTM Zone 10N

Bandito Project		
Corner	**UTM Easting**	**UTM Northing**
1	342,000	6,700,000
2	346,000	6,700,000
3	346,000	6,698,000
4	347,700	6,698,000
5	347,700	6,698,000
6	344,000	6,692,300
7	344,000	6,694,000
8	342,000	6,694,000

Figure 3: Typical Survey Terrain

3. SURVEY OPERATIONS

3.1 Operations Base

Survey operations were based out of Coal River, British Columbia. Permission was obtained to park and operate the helicopter, and locate and operate the base stations from the Coal River Lodge, British Columbia. A fuel cache was also established near the survey area to reduce ferry travel time during survey operations.

Quality control and preliminary data processing was undertaken by the crew at the Coal River Lodge in Coal River, British Columbia.

3.2 Survey Conditions

Weather conditions during the survey were variable. Temperatures ranged from -2 °C to 13 °C, with most days being partly cloudy. Fog and/or high winds delayed some flights. No survey was possible on a total of five days, due to low cloud ceiling, rain or high winds.

Sunspot activity, and hence diurnal geomagnetic activity, was generally quiet during the entire data acquisition period. No data was lost due to the geomagnetic activity being out of contract specifications.

3.3 Navigation

The nominal data acquisition speed of the helicopter was approximately 90 kilometres per hour (25 metres per second). With a sampling rate of 0.1 second, TDEM, magnetometer and altimeter measurements were acquired approximately every 2.5 metres along the survey line. Therefore, a magnetic value, a terrain clearance value, and a position fix every 2.5 metres along the flight track were recorded.

Navigation was assisted by an OmniStar 3000 LRS real-time GPS receiver system that reports GPS co-ordinates as WGS-84 latitude & longitude and directs the pilot over the pre-programmed two-dimensional (2-D) survey grid. The x-y position of the helicopter, as reported by the GPS system, was recorded together with the terrain clearance, as reported by the radar altimeter.

Vertical navigation along flight lines was established using the radar altimeter. The nominal terrain clearance during normal survey flying was 85 metres for the helicopter, 36 metres for the THEM transmitter, and 60 metres for the magnetometer sensor and X, Y and Z-axis receiver coils. However, due to the terrain in some areas and/or the pilot's judgment of safe flying conditions, the prescribed terrain clearances were not possible 100% of the time.

The final vertical and horizontal survey positions were real-time differentially corrected during the flight, computed using the data from the onboard OmniStar 3000 LRS GPS receiver, to a precision of approximately ±1.5 metres.

The following geodetic and mapping parameters were selected throughout the data acquisition phase.

Approximate survey size:	413 line-km
Flight line direction:	east - west
Line spacing:	100 m
Tie line direction:	north - south
Tie line spacing:	1,140 m
Minimum line length:	3.7 km
Mean terrain clearance:	Helicopter – 85 m
	Magnetometer – 60 m
	THEM transmitter – 36 m
Navigation:	Real-Time Differential GPS
Projection:	UTM Zone 10N (WGS84)

3.4 Magnetic Base Station

To monitor and record diurnal variations of the earth's magnetic field, a GSM-19 Overhauser magnetometer base station was utilized. It was set up at the fuel cache near the survey area. The same magnetic base station location was used for all survey lines flown. The details of the magnetic base station are included in the Magnetic Base Station Form in Appendix 1. Every effort was made to ensure that the magnetometer sensor was placed in a location with a low magnetic gradient, away from power lines and moving metallic objects, such as motor vehicles and aircraft, without compromising safety and local activity.

The total magnetic field recorded at the base station was averaged from all measurements acquired during the survey. The average total magnetic intensity was 57,998 nanoTesla (nT).

The base-station magnetometer was operated continuously throughout the airborne data acquisition work with a sensitivity of 0.01 nT. Ground and airborne system clocks were synchronised using UTC time, to an accuracy of 1 second or better. The sampling rate was once per second. A continuously updated profile plot of the base station values was presented on the base station screen. The magnetometer base station's data were recorded in solid-state memory in the GSM-19 and downloaded to the Field Workstation after each day.

3.5 Field Processing & Quality Control

The survey data were transferred to portable recording media on a flight-by-flight basis, and then copied to the field data processing workstation. In-field data processing included reduction of the data to GEOSOFT GDB database format and inspection of the data for adherence to contract specifications. Survey lines that exhibited excessive deviation after differential correction, or that were considered to be of inferior quality, were reflown.

3.6 Survey Statistics and Project Diary

The survey entailed a total of 15 flights; of which 11 flights were production flights. The first production flight was Flt #5 on 23 September 2006, with the last production flight, Flt #15 on 02 October 2006. The remaining 4 flights were either test and/or calibration flights or flights that were

aborted due to aircraft, equipment, or weather problems.

Table 3: Project Diary

Date	Flt #	Hours Flown	Line-Km Accepted	Comments
7 Sept				Crew mobilized by road to Coal River Lodge. Helicopter not available
18 Sept		2.3		Crew mobilized back to Coal River. Helicopter arrived in evening.
19 Sept	1	2.5		Radar test and lag calibration flown. Fuel cache was established near survey area.
20 Sept				No survey flights – rain/fog
21 Sept	2	0.5		Troubleshooting EM system
22 Sept	3	1.0		Troubleshooting EM system
23 Sept	4,5	3.5	51.8	Production flight flown
24 Sept	6,7,8	6.0	145.9	Production flights flown
25 Sept		0.9		No survey flights (fog). Fuel cache restocked
26 Sept	9	4.5	57.3	Production flight flown – crew returned to base for radar repairs
27 Sept	10	2.8	37.6	Production flight flown – crew returned to base due to high winds
28 Sept	11	2.5	11.4	Production flight flown – crew returned to base due to high winds
29 Sept				No survey flights flown due to high winds
30 Sept				No survey flights flown due to high winds
1 Oct				No survey flights flown due to low ceiling
2 Oct	12,13,14,15	6.7	109	Survey flights flown – survey finished; Post-flight radar, heading and lag tests and calibrations
Totals		**33.2**	**413**	

The following personnel were the onsite crew on the project in Coal River:

Table 4: Field Personnel

Title	Name	Days Onsite
Project Manager/QC Geophysicist	Dallas Antill	16
Technician/Operator	Len Sellwood	16
Helicopter Pilot	Doug Hladun	15

McPhar Geosurveys Ltd. of Newmarket, Ontario, Canada, was responsible for the field operations, all geophysical matters and the overall coordination and management of the survey.

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4. HELICOPTER AND EQUIPMENT

4.1 The Helicopter

The survey was flown using a Eurocopter AS-350B2 helicopter. This helicopter was capable of up to 3.0 hours flight duration with the THEM system and a crew of two people on board. The helicopter was rented from Trans North Helicopters Limited of Whitehorse, Yukon.

Figure 4: Survey Helicopter AS-350B2

The installation of the geophysical and ancillary equipment was carried out by McPhar personnel in Whitehorse, with final adjustments, calibration and testing completed prior to production survey flights.

Aircraft Registration:	-	Canadian, C-GTNT
Engine:	-	Turbomeca ARRIEL 1B – 642 HP
Empty weight:	-	1750 lb/795 kg
Gross weight:	-	4960 lb/2254 kg
Max cruise:	-	135 kn/248 kph
Max rate of climb:	-	1350+ fpm/6.9 mps
Service ceiling:	-	16000 ft/4923 m
Standard fuel:	-	142 gal/540 litres
Survey duration:	-	3.0 hours

4.2 The Survey Instrumentation

4.2.1 THEM Survey System Overview

The THEM (**T**ime-domain **H**elicopter **E**lectro**M**agnetic) system is a member of the INPUT/GEOTEM/QUESTEM family of airborne EM systems, utilizing a half-sine wave pulse transmission, followed by an interval of transmitter off time in a continuous alternating series.

The nominal pulse width used in this application was 3.5644 ms for transmitter on-time followed by an off-time interval of approximately 16.6 ms. The system comprised of a vertical-axis 7.5-m diameter dipole transmitter suspended 48.7 metres below the helicopter. A mean terrain clearance of 85 metres for the helicopter yielded a 36.3 metre height above ground for the transmitter.

The receiver consisted of a 3-axis dipole (X, Y and Z-coils) housed in a Kevlar shell, mounted to the magnetometer boom. In this position it was 60.2 metres above the ground at the helicopter's nominal terrain clearance of 85 metres during the survey. Figure: 5 shows the THEM system configuration.

The tow cable was constructed of coaxial cables complete with a strain member. The length of the tow cable was nominally 55 metres between the helicopter and transmitter. A weak link assembly was used to attach the tow cable to the helicopter. The on-board section of the tow cable consisted of coaxial cable, with its length customized to suit the helicopter.

The THEM receiver recorded the time derivative of the magnetic component of electromagnetic field (dB/dt) generated by the EM transmitter, plus the secondary fields generated by conductors in the ground. The vertical and horizontal components of these fields were detected in the X, Y and Z coils respectively. Each of the X, Y and Z signals were recorded in raw form at a sampling rate of 30 kHz, or 1024 samples since the waveform repeated 60 times per second and recorded in the binary DAT file. The nominal sample width was 0.016 ms.

The nominal transmitter frequency was 30 Hz or 60 pulses per second. The current, X-coil, Y-coil and Z-coil data from each pulse was sampled using 1024 points and recorded in a binary file. In post-flight processing, the EM time series were stacked and output at 10 samples per second, or approximately 2.5 metre intervals along flight track. EM channel windows were programmable during post-flight processing.

Ancillary instrumentation installed in the helicopter included:

- A Geometrics G-822A high-sensitivity cesium magnetometer in a towed-bird airfoil, 0.001 nT/20 Hz resolution
- A real-time DGPS Navigation System, comprising a GPS/OmniStar 3000 LS receiver, and a GEONAV GPS computer and pilot steering indicator (PSI)
- A Terra TRA-3000/Tri - 30 Radar Altimeter
- The THEM Data Collector PC-based Data Acquisition System

A complement of spare parts and test equipment were maintained at the survey site.

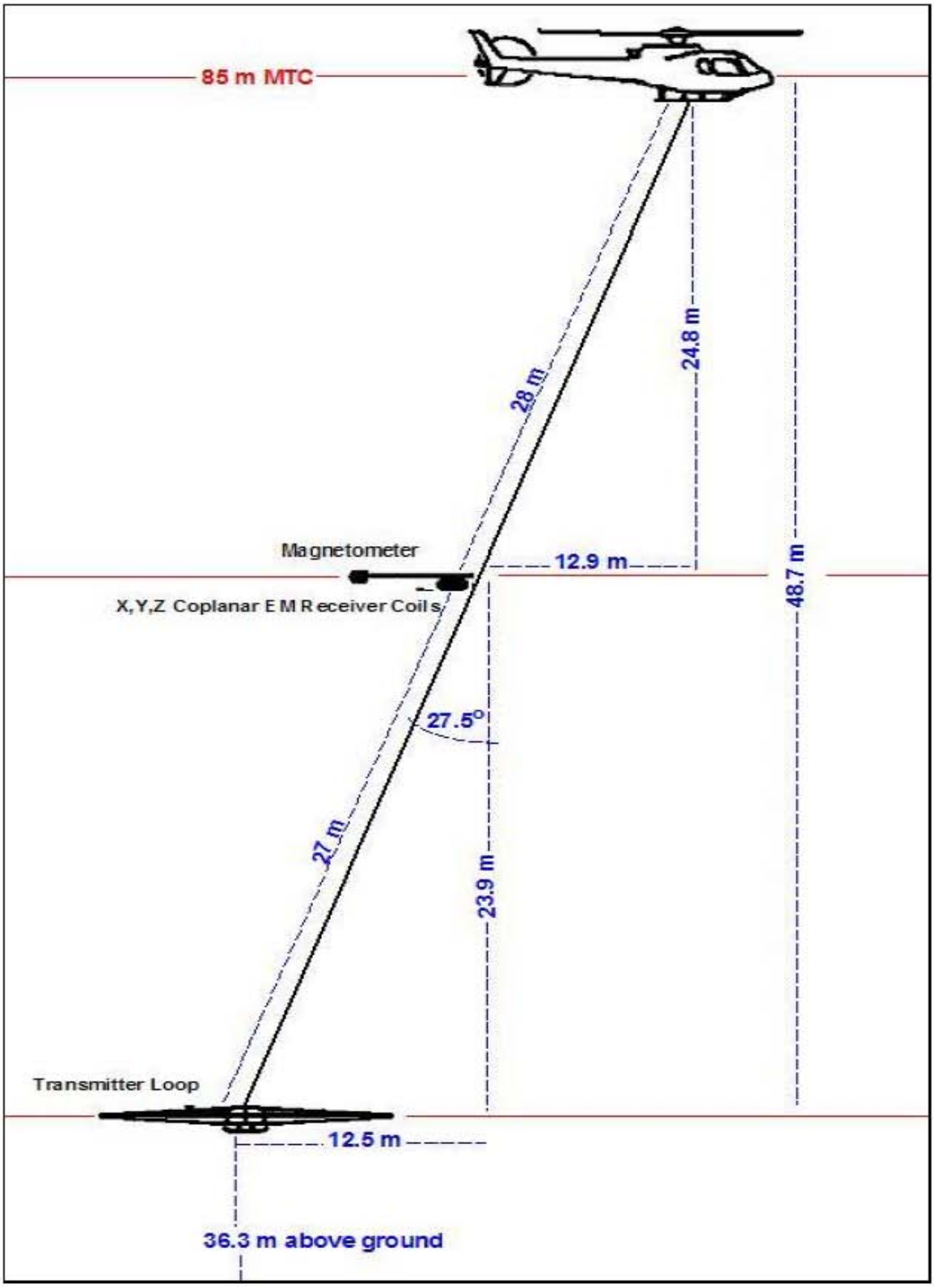


Figure 5: THEM System configuration.

4.2.2 Airborne Magnetometer

Figure 6: Geometrics G-822A Airborne Cesium Magnetometer Sensor

The magnetic sensor utilized for the survey was a Geometrics G-822A optically pumped cesium vapour magnetic field sensor, mounted on a boom. The reported sensitivity of the magnetic sensor is 0.0005 nanoTesla (nT) at a sampling rate of 20 times per second.

A cesium vapour magnetic sensor is in essence a miniature atomic absorption unit, which produces a signal whose frequency (Larmor frequency) is proportional to the intensity of the ambient magnetic field. The unit consists of three main elements: a cesium vapour lamp; an absorption cell; and a photosensitive diode. These three units are all mounted along a common optical axis within the sensor housing. The electronic support system is mounted approximately three metres from the sensor, and transmits the Larmor signal to a counter in the data acquisition system, which converts the signal to magnetic field strength in nanoTesla.

The magnetometer sensor is housed in its own airfoil (bird) and is attached to the tow cable 23.9 metres above the THEM transmitter loop. In this position it was 60.2 metres above the ground at the helicopter's nominal terrain clearance of 85 metres during the survey.

The G-822A magnetometer is described in Appendix 2.

4.2.3 The Base Station Magnetometer

A GEM Systems GSM-19 Overhauser magnetometer, configured to make base station measurements, was utilized as a base station on this project. The GSM-19 has a resolution of 0.001 nT at a sampling rate of once per second. The base station magnetometer was positioned at the fuel cache near the survey area.

Figure 7: The Base station GEM GSM-19 Magnetometer and Data Logger

Every effort was made to ensure that the magnetometer sensor was placed in a location of a low magnetic gradient and away from electric transmission lines, and moving metallic objects, such as motor vehicles and aircraft.

The GSM-19 magnetometer is described in Appendix 2.

4.2.4 Altimeter

A Terra TRA-3000 radar altimeter system recorded the ground clearance to an accuracy of ±1.5 m from 12 m – 30 m; ±5% over a range of 30 m – 152 m; and ±7% over a range of 152 m – 762 m. The antenna was mounted on the nose of the helicopter.

The altimeter was interfaced to the data acquisition system with the output sampled at 10 times/ second, and was digitally recorded.

The altimeter is further described in Appendix 2.

4.2.5 The GPS/Omnistar Navigation System

An OmniSTAR 3000LRS DGPS navigation system input to a navigation computer and pilot steering indicator (PSI) provided the navigation control. The pilot steering indicator (PSI) provided steering and cross-track guidance for the pilot. The pilot was provided with GPS and altimeter data to aid in the flying of the aircraft.

Survey co-ordinates were set-up prior to commencement of the survey, the information loaded into the airborne navigation system. The co-ordinate system employed in the survey design and digital recording was WGS-84 latitude and longitude. The GPS positional data was recorded at one-second intervals and used with data obtained from three different differential services: Space Based Augmentation Systems (SBAS), OmniSTAR, and DGPS beacon stations, to calculate real-time differentially corrected locations.

The GPS receiver is fully described in Appendix 2.

4.2.6 Data Acquisition/Recording System

A PC-based data acquisition system (DAS) referred to as the THEM Data Collector was used to record the geophysical and navigation data on board the helicopter. Data was simultaneously recorded on a hard disk at a repetition rate of 0.1 sec for post-flight computer processing. The five main functions fulfilled by the DAS are:

1) System control and monitoring;
2) Data acquisition;
3) Real-time data processing;
4) Navigation; and
5) Data playback and analysis.

The THEM data collector is a fully PC-compatible microcomputer. All data collection routines, checking, buffering, recording and verification are software controlled for maximum flexibility. The recorded data was monitored on a colour LCD display as pseudo-analog traces to verify quality and functionality of the system.

All geophysical and navigation data on board the helicopter was recorded in binary .DAT files.

The binary data was transferred to portable recording media (DVD) on a flight-by-flight basis, and then copied to the field data processing workstation. Binary data were extracted with THEM Geophysics' proprietary Extractor software and transferred to Geosoft's GDB database format for further inspection.

The THEM Data Collector is described in Appendix 2.

4.2.7 Field Computer Workstation

A Data Processing Field Workstation (FWS), comprised of a dedicated PC- based notebook computer for use at the technical base in the field, was used on this project. The FWS is designed for use with Geosoft's Oasis Montaj™ Data Processing Software. The FWS has a data re-plot capability, and if necessary, can be used to produce pseudo-analogue charts from the recorded digital data within less than 12 hours after the completion of a survey flight. It is also capable of processing and imaging all the geophysical and navigation data acquired during the survey, producing semi-final, preliminary-levelled maps.

The FWS was used to accomplish the following:

- **Quality Control/Digital Data Verification** - flight data quality and completeness were assured by both statistical and graphical means on a daily basis
- **Flight Path Plots** - flight path plots were generated from the GPS satellite data to verify the completeness and accuracy of each day's flying
- **Preliminary Maps** - the Geosoft's software system permitted preliminary maps to be quickly and efficiently created for noise and coherency checks.

The workstation was dedicated to the project, a PC-compatible PENTIUM Centrino Notebook computer, with 1 GB of memory and a 60 GB hard disk drive for Data backup and archiving. Data was backed up and stored on DVD on a regular basis.

The Oasis Montaj software is designed for airborne data editing, compilation, processing and plotting. The software reads the portable data media from the airborne system, then checks for gaps, spikes or other defects, permitting the data to be edited where necessary. The base station GPS/magnetometer data is checked, edited, processed and then merged with the airborne data. GPS flight path plots are created and plotted for both flight planning and flight path verification.

The FWS is described in Appendix 2.

4.2.8 Spares

A normal compliment of spare parts, tools, back-up software, and necessary test instrumentation was kept available in the field office.

5. INSTRUMENT CHECKS AND CALIBRATIONS

5.1 Airborne Magnetometer and THEM System Tests and Calibrations

5.1.1 Magnetic Heading Effect

The magnetic heading effect was determined by flying a cloverleaf pattern oriented in the same direction as the survey lines and tie lines. Two passes in each direction were flown over a pre-programmed test line, to obtain sufficient statistical information for estimating the heading error. A heading error of less then 1 nT was determined and monitored continuously on a daily basis during the survey following the data collected at the at tests line. Results of the post-survey heading test are in Appendix 1.

5.1.2 Lag Tests

A lag test was performed to ascertain the time difference between the magnetometer readings and the operation of the GPS System. The test was flown over an identifiable magnetic anomaly on a selected test line, by flying the same line in opposite direction at survey altitude. The system lag was monitored on a daily basis and individual lag correction was applied for selected individual flights and lines. The lag test results indicated a variable shift lag from 1.2 to 3.5 seconds present in the system.

5.1.3 EM System

The system was calibrated according to the contractor's standard procedures. The operator maintained a daily log of any events that may have affected the overall system performance and calibration. Procedures for calibration outlined by the manufacturer of the THEM system were adhered to by the field personnel.

EM calibration sequences were carried out a minimum of two times per flight, at the beginning and end of each flight and possibly in the middle. The base level for each EM channel and channel drift was inspected and defined on a flight-by-flight basis. The method employed involved a combination of survey and data-processing procedures. The base level was defined by flying a high altitude (500 m or higher) segment at the start, in the middle and at the end of any production flight.

5.1.4 Altimeter Calibration Test

Checks of the radar altimeter calibration were undertaken before the production flights and after survey completion. Calibrations were determined by comparing the radar altitude with a suitable reading from the GPS system during radar "stack" over a flat area. The operator checked the calibration of the radar altimeter on a daily basis, during the landing and taking-off of the helicopter at the operation base. Results of altimeter calibration test are in Appendix 1.

5.1.5 Other Daily Checks

The validity of data on all system channels was checked at the start and end of each survey flight, together with the synchronization of each of the systems (airborne and ground).

6. DATA QUALITY CONTROL AND PROCESSING

Data quality control and data processing were carried out in two stages. The initial field processing was completed on-site at the base of operations in Coal River Lodge, B.C. The final data processing was completed in the data processing centre of McPhar in Newmarket, Ontario. A summary of the basic actions conducted during each data-processing stage appears below.

Field data QC and pre-processing

a.) Data pre-processing and extraction with THEM Geophysics' proprietary Extractor software
b.) Transfer of extracted data into Geosoft's Database
c.) Transfer, QC and pre-processing of magnetic base station data in Geosoft's Database
d.) QC and pre-processing of GPS and altimeter data
e.) Compilation of flight path
f.) QC and pre-processing of magnetic data
g.) QC and pre-processing of EM data

Final Processing

a.) Processing of GPS and altimeter data
b.) Final flight path compilation
c.) Processing of magnetic data
- Processing of magnetic base station data
- Corrections of magnetic data and levelling
- Gridding
- Production of magnetic derivative maps

d.) Processing of EM data
- Normalization to ppm
- Filtering and levelling of EM channels
- Calculation of Apparent Conductance
- EM anomaly selection and analysis

e.) Production of magnetic and EM maps
f.) Compilation of final report

6.1 Data Management

Each production flight was recorded as separate raw data binary DAT files on removable 20 GB hard drives. Data duplication was carried out with DVD-ROM burning hardware and software and archived on DVD.

The raw file was comprised of:

- Real-time differentially corrected GPS data defined by WGS84 longitude, WGS84 latitude, WGS84 ellipsoidal height and GPS time
- Radar altimeter data
- Magnetic data measured by airborne magnetometer
- Bz channel – dB/dt - EM data measured by vertical-axis dipole (Z-coil) on coplanar receiver - 1024 samples for the waveform

Upon completion of the QA/QC process, the flight specific Geosoft database was merged into the project maser database.

Following the survey demobilization, the raw data binary files, daily and master Geosoft databases, flight logs and operational reports were shipped to the Newmarket, Ontario office of McPhar for final processing and archiving.

The project master database was used for basic and advanced data processing and for compilation of final maps and products.

Staff at McPhar's Newmarket, Ontario office completed final data processing, map compilation and report generation.

6.2 Field Data Quality Control and Pre-Processing

Daily quality control, initial processing and archiving of the data were completed on-site at the base of operations in Coal River Lodge using Geosoft's Montaj software and a notebook PC computer. All data were verified upon receipt.

The pre-processing sequence included the following quality control measures:

a) Examination and checking of all incoming data to ensure completeness of data sets.
b) Extraction of pre-processed data using THEM Geophysics' proprietary Extractor software. Data pre-processing and extraction chart flow is described in Figure 8.
c) Transfer of extracted data into a Geosoft database.
d) Merge and processing of magnetic base station data into Geosoft database.
e) The production of preliminary flight path maps, speed checks, terrain clearance checks. The flight path was plotted and compared to the nominal flight plan. The line number and its delimiting fiducials were noted in the Flight Log and in the Geosoft database
f) Full profile quality control of all acquired traces for noise levels, data completeness and adherence to contract specifications.
g) Preliminary processing of magnetic data:
    - The magnetic data were edited for spikes and interpolated.
    - Magnetic diurnal corrections
    - Edited magnetic data was gridded and inspected in plan.
h) Preliminary processing of EM data:
    - The EM channels were processed and inspected as sets of coloured stacked profiles.

i) Archiving of raw and in field pre-processed data

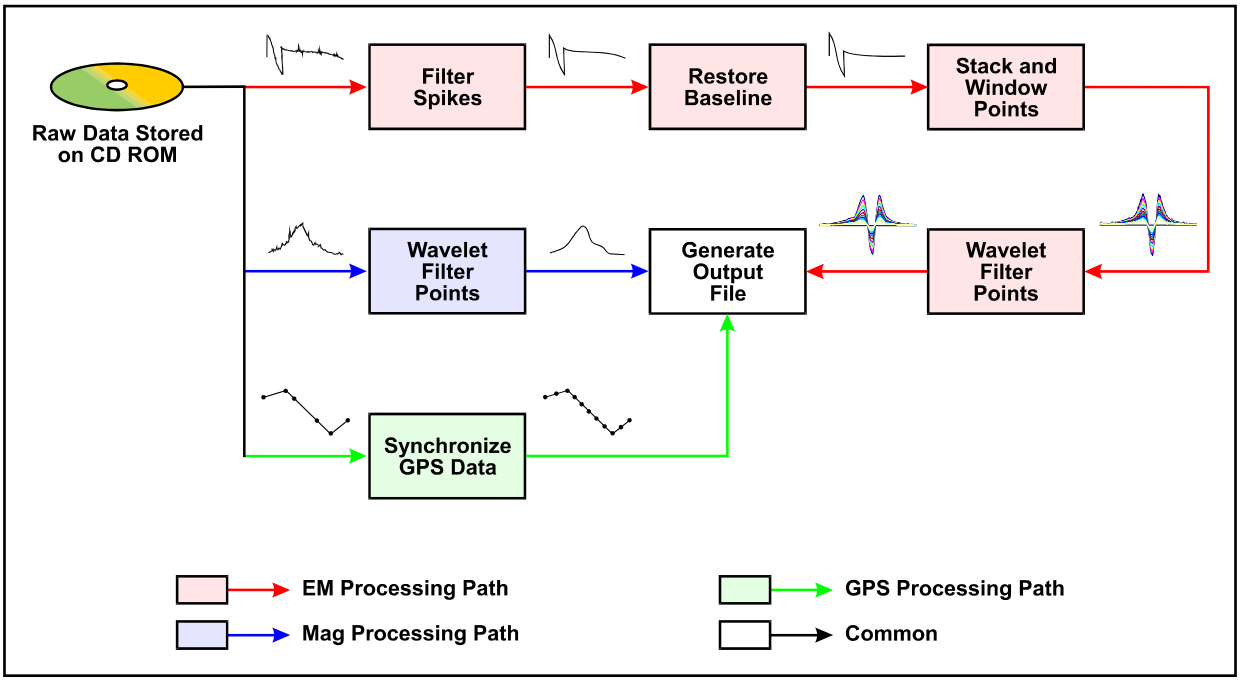


Figure 8: Data processing flow chart (THEM Extractor)

The following data were merged into the master Geosoft Database:

- Real-time differentially corrected GPS data
- Radar altimeter data
- Magnetic data measured by airborne magnetometer
- Magnetic data measured by ground bases station magnetometer
- EM data – 35 extracted time windows for channel Bz

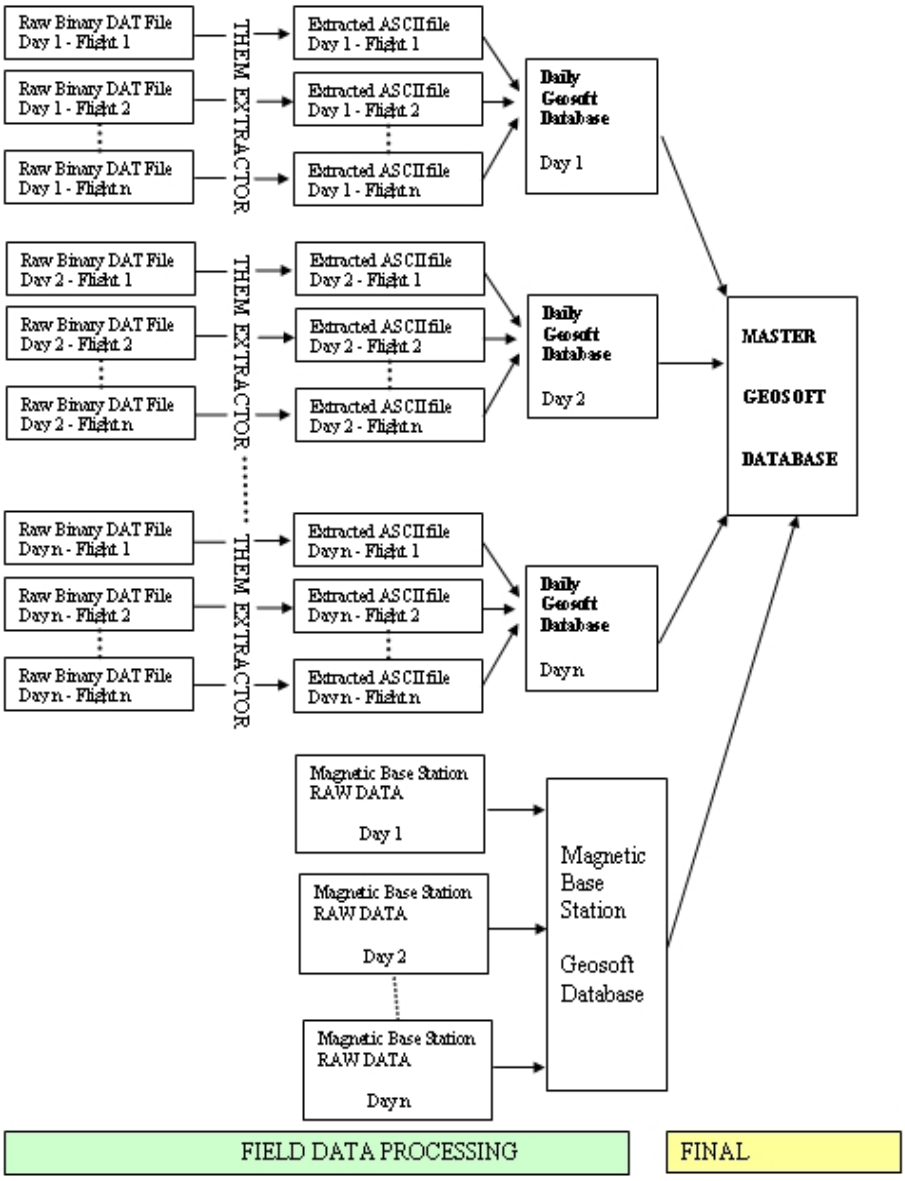


Figure 9: Data Processing and Data Loading Flow Chart

6.3 Positional Data Processing and Flight Path Compilation

The flight path was derived from differentially corrected GPS positions using the recorded real-time airborne GPS data. A position was calculated every 1.0 second (approx. each 25 meters along the flight path) to an accuracy of +/- 2-3 metres. The position data was merged with geophysical and ancillary data in the Geosoft GDB database.

As part of the QA/QC process, the following parameters were checked during a flight:

- Number of satellites under observation (average of 6, minimum of 4 allowed)
- PDOP (position dilution of precision; maximum value of 3 allowed)

Flight path deviation in position (maximum +/-25 m over a linear distance of 2000 metres) was checked on daily basis as a part of QA/QC process after the flight.If the above specification was not met, a reflight was necessary.

All positional data (X,Y,Z) was recorded in WGS 84 (World) geographic coordinates, and presented in WGS 84, UTM zone 10N projected coordinates.

Parameters for datum used on this project are as follows:

Datum	WGS 84
Ellipsoid	WGS 84
MajAx,Eccen,PrimeMer	6378137,0.08181919084,0
Local datum transform	[WGS 84] World
Warped	No

Length units	metre
Projection	UTM zone 10N
Type	Transverse Mercator
Lat0,Lon0,SF,FE,FN	0,-123,0.9996,500000,0
Datum	WGS 84
Ellipsoid	WGS 84
MajAx,Eccen,PrimeMer	6378137,0.08181919084,0
Local datum transform	[WGS 84] World
Warped	No

6.4 Altimeter Data and Digital Terrain Model

The radar altimeter data was recorded in feet at a frequency of 10 Hz. Data was converted to metres and filtered with a non-linear filter to remove spurious spikes. Additional smoothing of the radar altimeter data was achieved through application of low-pass filtering.

Altimeter data was inspected for criteria given by contract (nominal 85 m helicopter terrain clearance above ground level). Based on the pilot's judgement of safe flying conditions around man-made structures or tall trees or in rugged terrain, it was not possible to achieve the criteria for all of the survey. The mean terrain clearance achieved over the survey was 110 m AGL.

A digital terrain model (DTM) channel was calculated by subtracting the filtered radar altimeter data from the GPS elevation, defined by the WGS84 ellipsoidal height. This model provided information on the topography for interpretation of the radiometric data.

The DTM channel was gridded using a minimum curvature algorithm with a grid cell size of 30 metres

and inspected for continuity. Micro-levelling of the DTM was then completed accompanied by further smoothing utilizing three passes of a 3 x 3 cell Hanning filter prior to contouring and DTM map production.

6.5 Magnetic Data Processing

Final processing of the magnetic data involved the application of traditional corrections to compensate for diurnal variation, lag, heading effects and levelling prior to gridding. Processes applied to improve the gridding include micro-levelling and application of higher order filter operators.

Advanced full processing of magnetic data was implemented in Geosoft Oasis Montaj software's follows:

1. Processing of static magnetic data acquired on magnetic base station
2. Filtering
3. Standard corrections to compensate the diurnal variation, lag a heading effect
4. Advanced levelling of magnetic data - Microlevelling
5. IGRF correction
6. Gridding
7. Calculation of magnetic derivative grids
8. Production of standard magnetic and derivative maps

6.5.1 Processing of Static Magnetic Data Acquired on Magnetic Base Station

The base station magnetometer data was edited, plotted and merged into the base station Geosoft GDB database on a daily basis for further processing. A non-linear filter to remove spikes and a 5 fiducial (5 seconds) low-pass filter were applied to smooth the diurnal channel. To adjust the airborne magnetic data for relative drift only, an average total field value of 57 988 nT was subtracted from all diurnal values.

6.5.2 Filtering

A non-linear filter to remove spikes and a 5 fiducials (0.5 seconds) low-pass filter were applied to smooth the airborne magnetic data.

6.5.3 Corrections to the Magnetic Data

The processing of the data involved the application of the following corrections:

- Correction for diurnal variation using the digitally recorded ground base station magnetic values
- Adjustment of the data for the time lag between the GPS position and the position of the magnetic sensor
- Heading correction
- Network adjustment using the flight line and tie line information to level the survey data set.

The corrected data were then used to generate the Total Magnetic Intensity grid.

6.5.4 Advanced Levelling of Magnetic Data - Microlevelling

After applying the above corrections to the profile data, residual line-direction-related noise was removed through application of micro-levelling. This technique consists of applying directional and high pass filters to produce a grid containing noise-only in the line direction. In order to differentiate between the signal and noise, the noise grid is extracted from the profile database. An optimum amplitude limit and a filter length are determined, so that the final error channel reflects only the noise present on the grid, without removing or changing the geological signal content. This error channel is then subtracted from the initial data channel to obtain the final micro levelled channel. The corrected data were then used to generate the final Total Magnetic Intensity grid free of line direction noise.

6.5.5 IGRF Correction

The International Geomagnetic Reference Field (IGRF) is a long-wavelength regional magnetic field calculated from permanent observatory data collected around the world. The IGRF is updated and determined by an international committee of geophysicists every 5 years. Secular variations in the Earth's magnetic field are incorporated into the determination of the IGRF.

The IGRF was calculated using the following parameters for the survey area:

IGRF model year: 2005
Date: point by point following the datum in survey date channel
Elevation: point by point following the calculated DTM channel

6.5.6 Gridding

The corrected data was used to generate the Total Magnetic Intensity grid. Corrected magnetic line data was interpolated between survey lines using a random point minimum curvature gridding algorithm to yield x-y grid values for a standard grid cell size of 1/3rd of the nominal flight line spacing (a 30 metre grid cell).

6.5.7 Magnetic Derivatives

The Total Magnetic Intensity data were subjected to a variety of filtering techniques, yielding colour/contour images of the following:

- Reduction to the magnetic pole (RTP)
- Calculation of the first vertical derivative (1VD)
- Calculation of the second vertical derivative (2VD)
- Calculation of the horizontal gradient
- Calculation of the analytic signal (AS)

All of these spatial filtering techniques were completed using the Oasis Montaj Magmap module for filtering in the 2D FFT domain.

Reduction-to-the-Pole

The true magnetic anomaly position over the source may be shifted by the magnetic inclination and declination of the magnetic field at a given location on the Earth. To compensate for the shift, the magnetic data was recomputed so that magnetic anomalies will appear as if located at the north magnetic pole. The result of this operation is that in theory, the magnetic anomaly is located directly overtop of the source. The computation is referred to as "reduction-to-the-pole" (RTP) and is computed using a FFT (Fast Fourier Transform) operation.

The RTP not only shifts the anomalies to their correct position with respect to the causative magnetic bodies, but assists in the direct correlation and comparison of magnetic anomalies, trends, structural axis, and discontinuities with mapped geologic surface expression.

The RTP was calculated using the following parameters for the survey area:

Geomagnetic Inclination: 78^{o} N
Geomagnetic Declination: 24^{o}

First Vertical Derivative

The vertical derivative indicates the rate of change of the magnetic field with height. The first vertical derivative (1VD) has the effect of sharpening anomalies, allowing improved spatial location of source axes and contacts. The 1VD was calculated using standard procedures implemented with the Geosoft Magmap module, using the TMI grid for processing.

Second Vertical Derivative

To enhance local anomalies in the map and help outline the edges of anomalous bodies from the data, a second vertical derivative (2VD) map was computed from the data. A second vertical derivative map is a powerful interpretive tool that can be used to assist in the delineation of causative bodies and accurately locate changes in the magnetic field gradients. Better definition of discontinuities and their relation to geology can be gained from the use of this tool. A second vertical derivative map will show steep gradients over faults and positive closures over “up thrown” blocks. The 2VD was calculated using standard procedures implemented with the Geosoft Magmap module, using the TMI grid for processing.

Analytic Signal

The Analytic signal (Roest et al. 1992) is the square root of the sum of the squares of the derivatives in the x, y, and z directions of the TMI:

$$AS = \sqrt{\left(\frac{dTF}{dx}\right)^2 + \left(\frac{dTF}{dy}\right)^2 + \left(\frac{dTF}{dz}\right)^2}$$

Where: AS is the Analytic Signal;
dTF/dx is the horizontal gradient in the x direction;

dTF/dy is the horizontal gradient in the y direction;
dTF/dz is the horizontal gradient in the z direction;
and TF is the total magnetic field intensity.

The analytic signal image is useful for interpretation, as it does not depend of the direction of magnetization or the direction of the Earth's magnetic field. As a result, bodies of the same geometry will have the same analytic signal shape. The Analytic was also calculated using Geosoft Magmap module. Analytic Signal (AS) was calculated from the grid of TMI.

Horizontal Gradient

To highlight anomalous areas that may be the result of a magnetic source of limited strike length, a Total Horizontal Derivative (Horizontal Gradient) is computed. The horizontal gradient is an interpretive tool that can accurately define the edges of magnetic features such as dykes and vertical cylindrical geologic units that have sharp, but limited in area, magnetic gradients and geometry. The horizontal gradient will indicate peak gradients along the edges of narrow dykes and a circular, donut shaped anomaly over vertical cylinder sources. The Geosoft Magmap module is used again. The horizontal derivative in x direction and y direction was calculated from the TMI grid. The total horizontal gradient of was calculated from the x and y components.

6.6 Electromagnetic Data Processing

Final Processing of electromagnetic data comprised of the following basic actions:

- Data pre-processing and window extraction with THEM Geophysics' Extractor software
- Application of lag, normalization and drift corrections to the electromagnetic data
- Application of additional levelling corrections to profile data
- Calculation of Apparent Conductance
- EM anomaly selection and analysis

6.6.1 Data Pre-Processing and Window Extraction

All production flight raw binary .DAT files were accessed with THEM Geophysics' proprietary Extractor software. Among the functions included in Extractor are:

- Average dB/dt – Z component and current full waveform reviewing
- GPS and geophysical data synchronization
- Raw data high frequency noise rejection
- Raw data rectification and stacking
- End of pulse ringing suppression
- Baseline correction
- Interactive output window definition
- Output window filtering
- Output sample interval selection
- ASCII file preparation

Data pre-processing and extraction chart flow is illustrated in flow chart form in figure 9.

The Extractor program was used to convert the raw EM data to ASCII windowed data suitable for importing to Geosoft. While Extractor offered a number of processing options to smooth, normalize, and compensate the data, more control could be exercised once the data were imported into Geosoft. Therefore only minimal smoothing and the normalization options were selected in the Extractor program.

Post-flight processing of the EM time series consisted of stacking the signal to obtain output at 10 samples per second, or approximately 2.5 m intervals along the survey path. The full waveforms for receiver were also integrated from 1024 samples into 35 "windows" or time-constrained channels (selected time gates).

The THEM data was extracted into nine (9) on-time windows and twenty-six (26) off-time windows. The on-time windows were used for calculation of the total primary field and for normalization/conversion of the measurement units to parts-per-million (ppm). The 26 off-time windows covered the entire off-time spectra including early, medium and late time gates. The window channel setting is described in Appendix 1.

6.6.2 Correction to the Electromagnetic Data

The processing of the data involved the application of the following corrections:

- Filtering and normalization to ppm
- Offset levelling and drift corrections
- Adjustment of the data for the time lag between the GPS position and the position of the EM coils, according to lag test carried out at the beginning of the production flights.

Extracted EM data were normalized to ppm by primary field strength as recorded at the receiver coils. Two windows (window # 1 and window # 9) were positioned in time such that the ranges of the on-time measurements were maximized. These channels were used for the calculation of the total primary field and to normalize to ppm.

The normalized EM data were filtered to remove spurious spikes through application of a non-linear filtering technique. This was followed by a low-pass filter with a wavelength of 35 fiducials (3.5 seconds) to remove any remaining high-frequency noise.

The objective of offset levelling and drift corrections was to establish the absolute base (zero) level for the EM data. Each EM channel base level was inspected and defined on a flight-by-flight basis. The method employed involved a combination of survey and data-processing procedures. The base level was defined by flying at high altitude (500 m or higher) at the start and at the end of each flight. To carry out levelling and/or drift corrections, the high-altitude flight data segments were inspected to determine the base (zero) level for each EM channel. "Base levels" were tabulated into a look up table and then interpolated over time across the entire dataset providing an adjustment for each data point on every EM channel. The "base level" look up table file was created using McPhar's proprietary TDEMZERO.GX for use in Geosoft's Oasis Montaj. Finally the tabulated and interpolated "base levels" were subtracted from the EM data.

6.6.3 Additional Corrections Applied to Profile Data

After applying the above corrections to the profile data, residual line-direction-related noise was removed through application of micro-levelling. The micro-levelling technique consists of adding additional "base level" points for each EM channel at the locations between high-altitude zero levels. To carry out "micro-levelling", the additional base levels for each EM channel were inspected and determined at flat non-anomalous data segments on a line-by-line basis.

6.6.4 Calculation of Apparent Conductance

The Apparent Conductance (AC) in units of Siemens (S) was calculated from the extracted time windows of the total secondary field, calculated from the dB/dt - Z component.

The calculation of apparent conductance comprised of the following steps:

- Generation of an Apparent Conductance Nomogram
- Calculation of the Apparent Time Constant (Tau)
- Apparent Conductance Inversion

The generation of the Apparent Conductance Nomogram was based on forward modelling carried out by Dr. Gordon West from University Toronto. The forward model was computed from the Maxwell image solution for the B field of a step (in time) magnetic dipole source over an infinite, conductive, thin sheet (Grant and West, Interpretation Theory in Applied Geophysics, 1965, p 498). The computed nomogram is unique to the technical specification of the THEM System (the transmitter current and waveform specifications, system geometry etc.) and this particular survey specification (nominal survey height, time window definitions/setting). Model results were calculated for set of conductance (S = conductivity-thickness product) and depths (D) below nominal ground surface. The model results were tabulated and further gridded in Geosoft to produce the Apparent Conductance and Depth Nomogram. The generated nomograms have an X-axis of decade logarithm of the time constant (Tau), and a Y-axis of decade logarithm of the secondary total field amplitude for the selected window (time gate) amplitude.

The total field amplitude (A) was calculated from the Bz component for window channel No. 15 (start time 3.939 msec, end time 4.4004 msec.)

The Apparent Time Constant (Tau) was statistically determined as the median of a series of Tau's, calculated for early-medium time windows No. 13, 14, 15, 16, and 17.

The values of the total field amplitude (A) and time constant (Tau) were calculated across the entire dataset of surveyed EM data.

The apparent conductance inversion processing involved conversion of the amplitude (A) and time constant (Tau) into an Apparent Conductance value in Siemens by using the pre-generated conductance and depth nomograms.

The next stage of processing involved filtering and gridding of the calculated apparent conductance channel.

6.6.5 Anomaly Selection and Analysis

Anomaly selection was based on the detection of an existing anomaly in one selected off-time window covering the early time gate of the decay curve.

For final anomaly selection the following criteria were applied.

- Automatic picking was applied to off-time window channel No. 12 of the dB/dt -Z component.
- The anomaly peaks of the selected window channel No. 12 were selected if they exhibited minimum anomaly amplitude of 200 ppm above the local background.

Selected anomalies were plotted on the EM map products as symbols with annotations. The annotations include the anomaly strength, reported as the calculated apparent conductance in Siemens. No anomaly classification was used for this technical report

The list of all picked anomalies is included in Anomaly Report in Appendix 1.

7. DELIVERABLE PRODUCTS

The survey data are presented as colour/contour maps on paper, produced at a scale of 1:20,000. A set of report-sized colour/contour images, on paper, is included as Appendix 5. The basic co-ordinate system used is WGS84, Universal Transverse Mercator Zone 10N.

The deliverable items of this survey are:

7.1 Maps

The following maps, at a scale of 1:20,000 are delivered in two (2) paper copies.

- Differentially Corrected GPS Flight Path
- Digital Terrain Model Calculated from Survey Data
- Total Magnetic Intensity (TMI)
- Total Magnetic Intensity Reduced to the Magnetic Pole (IGRF Removed)
- Calculated First Vertical Derivative of TMI
- Calculated Second Vertical Derivative of TMI
- Calculated Analytical Signal of the TMI
- Calculated Horizontal Gradient of TMI
- Offset Profiles with Picked Anomalies; dB/dt Z-channel – Window No. 12
- EM Anomaly Map – dB/dt Z-channel – Window No. 15
- Apparent Conductance for selected time window No. 15; dB/dt - Z-channel

7.2 Digital Data

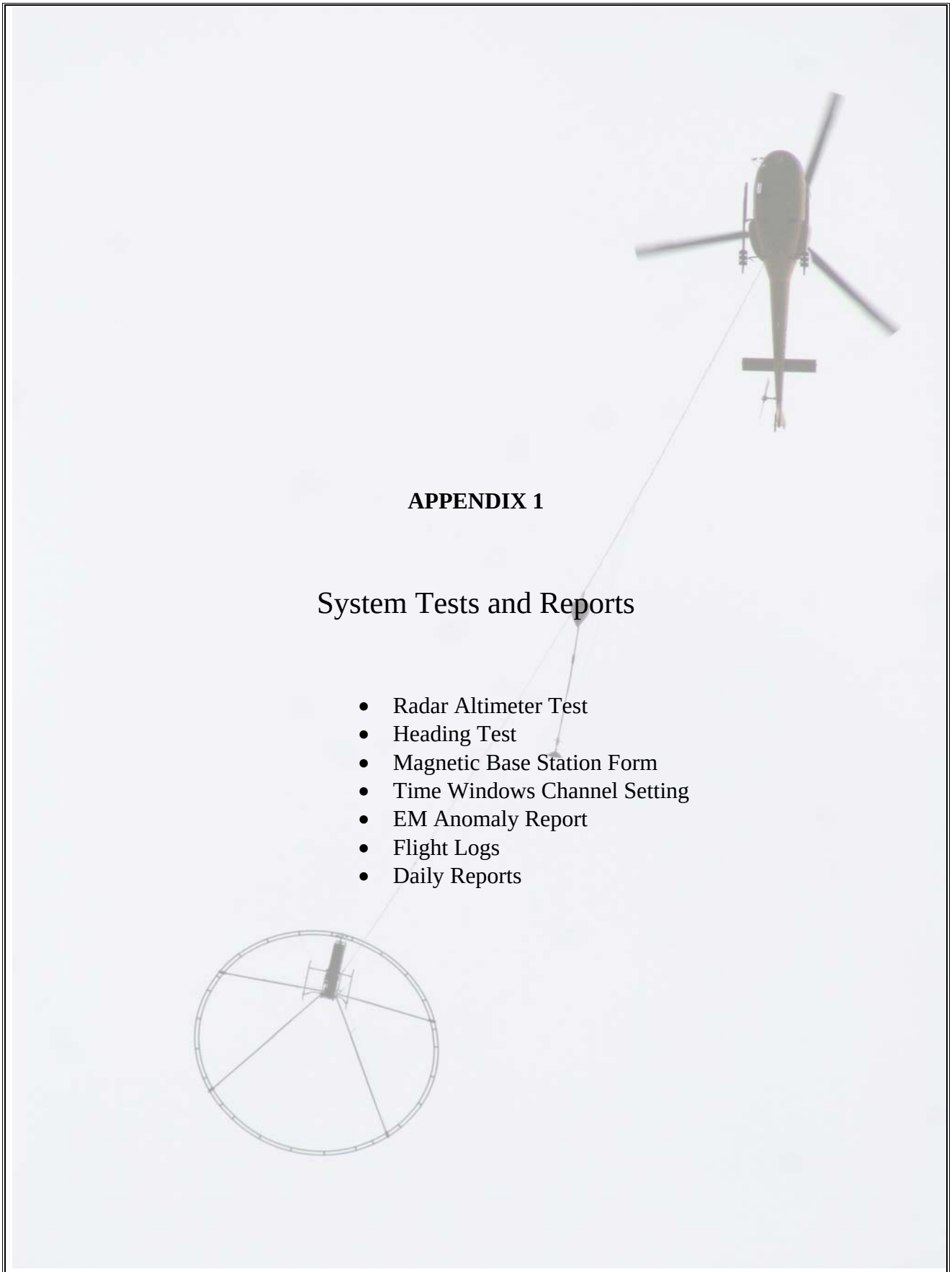
The final processed line and grid data, in GEOSOFT format, are delivered in three (3) copies on CD/DVD-ROM. Full descriptions of the digital data formats are included in Appendix 4.

7.3 Report

Three (3) copies of a survey report were delivered, complete with all final maps as page size maps. This report provides information about the acquisition, processing and presentation of the survey data.

Respectfully submitted,
McPhar Geosurveys Ltd.

Dr. Tomas Grand
Chief Geophysicist



APPENDIX 1

System Tests and Reports

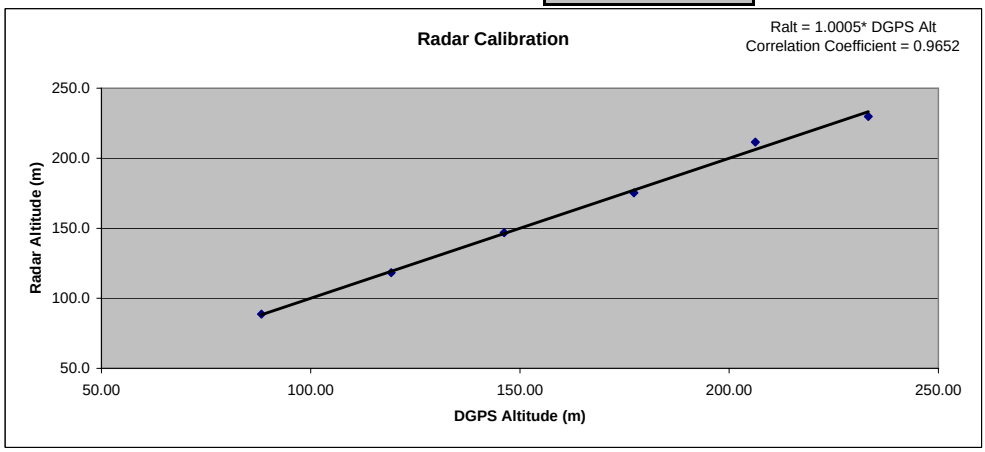
- Radar Altimeter Test
- Heading Test
- Magnetic Base Station Form
- Time Windows Channel Setting
- EM Anomaly Report
- Flight Logs
- Daily Reports

McPhar Geosurveys Ltd.
Altimeter Calibration Test

Project:	**0611 - True North Gems Inc.**
Location:	Coal River Lodge, BC
Date:	02-Oct-06
Flight:	15
Test No.	1
Aircraft:	Eurocopter AS350 B2 - Reg #: C-GTNT

mV Ratio 2.5 mV/feet

Line	Nominal Altitude above ground (m)	Nominal Altitude above ground (ft)	Radar Altitude Raw Data (m)	DGPS Altitude Ellipsoidal Height (m)	DTM = DGPS - Radar Alt Ellipsoidal Height WGS84 (m)	DGPS Altitude (ALT) ALT=DGPS - AVERAGE(DTM) (m)
radar1	91.44	300	88.7	570	481.30	88.25
radar2	121.92	400	118.3	601	482.74	119.25
radar3	152.40	500	146.9	628	481.09	146.25
radar4	182.88	600	175.3	659	483.74	177.25
radar5	213.36	700	211.5	688	476.47	206.25
radar6	228.60	750	229.8	715	485.18	233.25
					481.75	
					AVERAGE	



Pilot: Doug Hladun
Operator: Len Sellwood
QC: Dallas Antill
PM: Dallas Antill
Clients Rep.:

Approved: Date: 02/10/2006
Name: Dallas Antill

McPhar Geosurveys Ltd.
MAGNETIC HEADING EFFECT TEST

Project:	**0611 True North Gems Inc.**
Location:	Coal River Lodge
Altitude:	1150 ASL
Date:	02/10/2006
Flight:	15
Test No.	1
Aircraft:	Eurocopter AS350B2 - Reg# C-GTNT

RAW DATA

(note: MAG1 is FOM compensated and for diurnal corrected value of Total Magnetic Intensity)

	Direction			Mag1
pass 1	180			58247.80
	270			58248.67
	360			58248.63
	90			58248.40
pass 2	180			58248.18
	270			58247.69
	360			58248.94
	90			58249.18

HEADING EFFECT CALCULATION

Direction:	pass 1 MAG1	pass 2 MAG1	AVG MAG1	offset 1	corrected MAG1	offset 2	corrected MAG1	offset 1+2 = offset 3
180	58247.8	58248.2	58248.0	0.40	58248.39	0.05	58248.44	0.45
270	58248.7	58247.7	58248.2	0.31	58248.49	-0.05	58248.44	0.26
360	58248.6	58248.9	58248.8	-0.40	58248.39	0.05	58248.44	-0.35
90	58248.4	58249.2	58248.8	-0.31	58248.49	-0.05	58248.44	-0.35

HEADING EFFECT COEFFICIENTS

Direction	Heading Correction
180	0.45
270	0.26
360	-0.35
90	-0.35

HEADING CORRECTED DATA

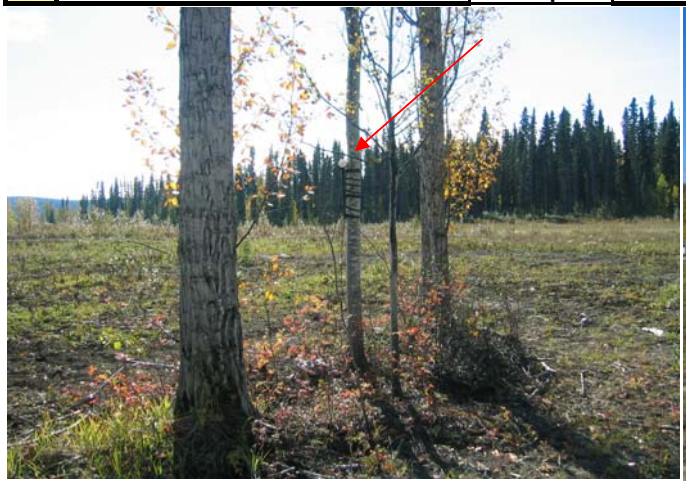
Direction			Mag1 Corr
180			58248.2
270			58248.9
360			58248.3
90			58248.0
180			58248.6
270			58247.9
360			58248.6
90			58248.8

Pilot: Doug Hladun
Operator: Len Sellwoood
QC: Dallas Antill
PM: Dallas Antill
Clients Rep.:

Approved: Date: 02/10/2006
Name: Tomas Grand

Magnetic Base Station Form

Station	*Number:*	**MB01**	*Location:*	**Coal River**		*Type:*	**Base Station**
	City:	**Coal River**	*Prov:*	**BC**	*Country:*	**Canada**	
Position	*System:*	*Latitude:*	*SD*	*Longitude:*	*SD*	*Ellipsoidal Height*	*SD*
	WGS-84	**N 59° 39' 23.3"**	**3 m**	**W 126° 57' 02.6"**	**3 m**	**468 m**	
	System:	*Easting*	*SD*	*Northing*	*SD*	*Sensor Height*	*SD*
	UTM zone 9 N	**615468**	**3 m**	**6614950**	**3 m**	**175 cm**	
Magnetic	*System:*	*Total Magnetic Field*	*SD*	Inclination Declination			
	IGRF 2005	**58103.34 nT**		**I=77.2°; D= 23.4°**			
	Av.Total Filed	**57998 nT**					
Info	*Topographic description / Notes:* **Magnetic sensor was fastened to a tree due to roaming buffalo that would walk through the area.**						
	Date of establishment:	**19-Sep-06**	*By:*	**McPhar Geosurveys Ltd.**			
	Date of measurement:	**19-Sep-06**	*By:*	**McPhar Geosurveys Ltd.**			



EM Time Windows Settings

Project: 0611 - True North Gems Inc.

Window #	Start at sample	# of samples in window	Start Time	End Time	Window Centre	
			in milliseconds			
1	7	2	0.114	0.130	0.1221	ON TIME
2	44	1	0.716	0.716	0.7161	
3	69	1	1.123	1.123	1.1230	
4	91	1	1.481	1.481	1.4811	
5	108	2	1.758	1.774	1.7659	
6	131	1	2.132	2.132	2.1322	
7	157	1	2.555	2.555	2.5553	
8	197	1	3.206	3.206	3.2064	
9	219	1	3.564	3.564	3.5644	
10	227	3	3.695	3.727	3.7109	OFF TIME
11	229	3	3.727	3.760	3.7435	
12	231	3	3.760	3.792	3.7760	
13	233	5	3.792	3.857	3.8249	
14	238	5	3.874	3.939	3.9062	
15	242	5	3.939	4.004	3.9713	
16	246	11	4.004	4.167	4.0853	
17	249	17	4.053	4.313	4.1829	
18	258	23	4.199	4.557	4.3782	
19	265	29	4.313	4.769	4.5410	
20	272	35	4.427	4.980	4.7038	
21	283	41	4.606	5.257	4.9316	
22	298	47	4.850	5.599	5.2246	
23	312	53	5.078	5.924	5.5013	
24	328	59	5.339	6.283	5.8105	
25	345	65	5.615	6.657	6.1360	
26	364	71	5.924	7.064	6.4941	
27	382	77	6.217	7.454	6.8359	
28	400	83	6.510	7.845	7.1777	
29	415	89	6.755	8.187	7.4707	
30	432	95	7.031	8.561	7.7962	
31	452	101	7.357	8.984	8.1705	
32	476	107	7.747	9.473	8.6100	
33	495	113	8.057	9.880	8.9681	
34	520	119	8.464	10.384	9.4238	
35	540	125	8.789	10.807	9.7981	

True North Gems Inc.
Bandito Project Survey Area
EM Anomaly Report - dB/dt - Z-coil - Time Window No. 12 (3.78 ms; 0.21 ms after pulse)

Easting (m) NAD83 8N	Northing (m) NAD83 8N	Line #	Flight #.	Date	UTC Time (seconds)	Fiducial	Anomaly Bz12 (ppm)	Anomaly Bz15 (ppm)	Anomaly Bz25 (ppm)	Conductance (Siemens)	Anomaly Label
342333	6697291	L280	12	02/10/2006	63500.7	306	908.42	178.23	15.51	0.85	A
342257	6697189	L290	12	02/10/2006	63414.3	13582	460.20	179.90	8.16	0.88	A
342063	6697094	L300	12	02/10/2006	62831.6	7755	362.36	177.67	9.67	0.85	A
342107	6696995	L310	12	02/10/2006	62757.5	7014	318.05	104.19	10.30	0.57	A
342067	6696913	L320	12	02/10/2006	62133.1	770	342.38	123.59	12.13	0.68	A
342212	6696910	L320	12	02/10/2006	62139.5	834	307.63	77.00	14.52	0.52	B
342404	6696777	L330	11	28/09/2006	75217.1	8462	259.04	74.50	6.23	0.64	A
342136	6696717	L340	11	28/09/2006	74428.8	579	319.14	176.03	-41.05	0.92	A
342518	6696600	L350	10	27/09/2006	67252.1	646	376.60	137.38	9.25	0.95	A
342235	6696493	L360	10	27/09/2006	67145.0	14443	376.21	128.93	3.99	0.77	A
342501	6696471	L360	10	27/09/2006	67134.7	14340	349.71	146.68	13.00	1.00	B
342773	6696480	L360	10	27/09/2006	67123.1	14224	390.62	108.44	1.98	0.62	C
342073	6696415	L370	10	27/09/2006	66267.6	5669	307.98	134.43	14.78	0.90	A
342388	6696423	L370	10	27/09/2006	66284.6	5839	354.09	148.23	9.44	1.09	B
342109	6696286	L381	10	27/09/2006	66182.0	4813	429.71	138.18	7.40	0.83	A
342593	6696283	L381	10	27/09/2006	66162.5	4618	392.68	159.27	11.80	0.98	B
342574	6696160	L390	7	24/09/2006	78088.3	19288	534.42	180.89	-1.44	0.94	A
342024	6696097	L400	7	24/09/2006	77190.9	10314	534.28	188.16	3.67	1.04	A
342427	6695977	L410	7	24/09/2006	77099.2	9397	593.40	188.38	23.17	0.95	A
342622	6695973	L410	7	24/09/2006	77090.8	9313	624.59	181.83	1.27	0.89	B
342426	6695900	L420	7	24/09/2006	76213.5	540	531.61	174.40	12.33	0.90	A
342439	6695777	L430	7	24/09/2006	76105.0	17617	477.93	161.06	28.10	0.97	A
342635	6695764	L430	7	24/09/2006	76097.6	17543	643.18	174.60	5.24	0.84	B
343296	6695793	L430	7	24/09/2006	76072.9	17296	280.32	47.87	5.86	0.45	C
342043	6695686	L440	7	24/09/2006	75236.6	8933	336.54	108.48	-9.69	0.71	A
342373	6695702	L440	7	24/09/2006	75252.4	9091	554.50	200.53	28.72	1.00	B
342967	6695702	L440	7	24/09/2006	75276.7	9334	352.02	86.79	6.37	0.53	C
342313	6695567	L450	7	24/09/2006	75145.2	8019	556.18	218.29	3.78	1.05	A
343146	6695592	L450	7	24/09/2006	75108.2	7649	312.01	93.57	13.24	0.55	B
344686	6695571	L450	7	24/09/2006	75016.4	6731	263.79	2.27	8.10	0.22	C
342371	6695490	L460	7	24/09/2006	74384.9	416	502.01	168.75	21.77	1.00	A
343169	6695498	L460	7	24/09/2006	74412.1	688	264.76	86.64	-9.25	0.53	B
344563	6695499	L460	7	24/09/2006	74492.5	1492	818.88	210.57	-16.44	0.81	C
342343	6695401	L470	7	24/09/2006	74291.5	16064	514.54	146.02	-2.62	0.88	A
343333	6695390	L470	7	24/09/2006	74246.7	15616	237.83	44.25	-8.46	0.45	B
344471	6695371	L470	7	24/09/2006	74150.4	14653	671.83	299.03	18.44	1.05	C
342247	6695319	L480	7	24/09/2006	73512.8	8277	435.30	154.00	11.00	0.77	A
344424	6695326	L480	7	24/09/2006	73616.1	9310	779.02	379.13	-11.20	1.26	B
342346	6695209	L490	7	24/09/2006	73414.4	7293	583.36	177.52	-3.20	0.97	A
342581	6695200	L490	7	24/09/2006	73405.5	7204	497.59	133.92	29.41	0.85	B
344294	6695172	L490	7	24/09/2006	73334.8	6497	878.26	333.16	-0.22	1.08	C
344330	6695086	L500	7	24/09/2006	72828.7	1436	912.23	335.15	21.93	1.40	A
344431	6695094	L500	7	24/09/2006	72836.0	1509	942.34	547.41	33.62	1.71	B
342294	6695003	L510	6	24/09/2006	66313.2	7121	738.10	199.96	16.56	0.87	A
342585	6695012	L510	6	24/09/2006	66299.7	6986	591.67	1.00	35.27	0.20	B
344362	6694994	L510	6	24/09/2006	66216.9	6158	1400.18	704.40	25.24	2.77	C
344498	6694999	L510	6	24/09/2006	66206.3	6052	2230.63	1063.94	104.14	1.95	D
344563	6694998	L510	6	24/09/2006	66201.0	5999	2604.23	1146.33	75.71	2.01	E
342240	6694885	L520	6	24/09/2006	65630.6	295	577.01	252.10	-46.41	0.92	A
342854	6694879	L520	6	24/09/2006	65655.2	541	446.19	83.51	-80.29	0.53	B
343899	6694886	L520	6	24/09/2006	65700.7	996	482.65	178.60	-35.77	0.76	C
344397	6694887	L520	6	24/09/2006	65728.0	1269	2033.03	880.79	59.12	1.87	D
344491	6694888	L520	6	24/09/2006	65734.9	1338	2112.59	1149.44	35.82	2.06	E
344652	6694900	L520	6	24/09/2006	65746.8	1457	1627.06	742.27	76.26	1.85	F
342376	6694796	L530	6	24/09/2006	65522.6	15637	775.91	275.59	19.55	1.17	A
343937	6694780	L530	6	24/09/2006	65454.2	14953	308.38	1.00	6.28	0.20	B
344513	6694784	L530	6	24/09/2006	65418.9	14600	1296.14	654.57	46.40	1.97	C
344643	6694797	L530	6	24/09/2006	65408.6	14497	954.14	382.51	51.16	1.57	D
344943	6694801	L530	6	24/09/2006	65386.4	14275	320.66	150.83	-54.63	1.24	E
345325	6694799	L530	6	24/09/2006	65357.4	13985	322.83	57.19	-18.34	0.48	F
344351	6694714	L540	6	24/09/2006	64923.4	9645	775.55	308.16	0.04	1.20	A
342248	6694722	L541	13	02/10/2006	72292.3	1456	740.01	231.14	20.15	1.09	A
342334	6694605	L550	6	24/09/2006	64715.7	7568	800.57	299.02	8.40	1.27	A
344559	6694594	L550	6	24/09/2006	64612.2	6533	447.28	196.02	30.63	1.14	B

342499	6694496	L560	6	24/09/2006	64017.1	582	684.80	279.33	16.51	1.01	A
344433	6694525	L560	6	24/09/2006	64104.8	1459	491.94	119.78	18.41	0.70	B
342463	6694391	L570	7	24/09/2006	63910.6	16546	1035.35	367.43	27.67	1.11	A
344576	6694405	L570	7	24/09/2006	63816.3	15603	791.26	333.17	33.70	1.47	B
342594	6694292	L580	7	24/09/2006	63110.7	8547	969.55	276.63	15.93	1.01	A
344690	6694293	L580	7	24/09/2006	63216.6	9606	802.50	342.00	59.51	1.46	B
342322	6694208	L590	7	24/09/2006	63004.6	7486	822.54	219.57	2.32	0.89	A
344631	6694174	L590	7	24/09/2006	62884.8	6288	245.30	131.25	19.05	0.88	B
342532	6694095	L600	7	24/09/2006	62310.1	541	1035.03	319.40	15.72	1.04	A
345321	6694087	L600	7	24/09/2006	62472.8	2168	223.81	92.81	-3.13	0.67	B
345234	6693880	L620	6	24/09/2006	61703.8	7867	278.47	81.09	3.57	0.69	A
345538	6693716	L640	6	24/09/2006	61092.0	1749	184.18	36.19	8.39	0.41	A
345428	6693507	L660	5	23/09/2006	3652.1	1184	321.79	87.58	17.47	0.79	A
345525	6693504	L660	5	23/09/2006	3663.0	1293	236.27	69.48	27.12	0.90	B
345585	6693390	L670	5	23/09/2006	3190.0	5347	291.52	123.05	-9.11	0.72	A
345438	6693300	L680	5	23/09/2006	2777.0	1217	582.59	127.64	-16.46	0.64	A
345639	6693181	L690	5	23/09/2006	2500.8	14257	523.09	164.88	0.27	1.03	A
345894	6693186	L690	5	23/09/2006	2481.9	14068	235.00	105.06	32.90	0.73	B
345451	6693091	L700	5	23/09/2006	2130.7	10556	432.21	120.39	-5.21	0.62	A
345783	6693104	L700	5	23/09/2006	2150.6	10755	323.40	92.89	25.49	0.73	B
345721	6692989	L710	5	23/09/2006	1828.2	7531	448.94	112.12	8.44	0.73	A
345950	6693001	L710	5	23/09/2006	1812.3	7372	411.42	152.56	16.37	0.83	B
345693	6692906	L720	5	23/09/2006	1496.5	4214	254.49	86.56	-8.44	0.75	A
345965	6692912	L720	5	23/09/2006	1513.0	4379	389.01	136.87	-2.68	0.85	B
345788	6692787	L730	5	23/09/2006	1212.5	1374	264.29	174.14	12.71	0.99	A
345746	6692701	L740	13	02/10/2006	77267.9	1584	749.02	186.52	-14.84	0.81	A
346020	6692589	L750	13	02/10/2006	78633.1	8186	724.00	258.41	10.36	0.99	A
346450	6692582	L750	13	02/10/2006	78602.9	7884	361.45	116.29	10.57	0.76	B
346032	6692485	L761	9	26/09/2006	71251.8	8269	470.26	228.79	6.33	0.94	A
346338	6692490	L761	9	26/09/2006	71269.2	8443	484.78	174.05	22.45	0.97	B
346133	6692384	L770	13	02/10/2006	78337.9	5234	601.33	225.28	27.03	1.11	A
346351	6692383	L770	13	02/10/2006	78358.5	5440	317.67	156.41	20.17	0.82	B
346191	6692298	L781	9	26/09/2006	70588.8	1639	731.38	288.30	13.24	1.11	A

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: True North Gems	BLOCK: Bandito	JOB: 0611	PAGE 1 of 1

FLT #: 1 Date(dd/mm/yr): 19/09/06 OPERATOR: Len S.

PILOT: Doug Hladun O.A.T.: _____/_____ A/C REG: C-GTNT

DEPART TIME: 17:45 RETURN TIME: 18:30 TOTAL FLIGHT TIME: 0.7

SURVEY HEIGHT: 36 m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
				Radar Stack
	2701	3001	2	100 feet
	3411	3801	2	200 feet
	4301	4905	2	300 feet
	5371	5870	2	400 feet
	6451	7071	2	500 feet
	301	701	5	lag test over bridge
	1201	1801	5	lag test over bridge

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: True North Gems	BLOCK: Bandito	JOB: 0611	PAGE 1 of 1

FLT #: 2 Date(dd/mm/yr): 21/09/06 OPERATOR: Len S.

PILOT: Doug Hladun O.A.T.: _____/_____ A/C REG: C-GTNT

DEPART TIME: 10:10 RETURN TIME: 10:40 TOTAL FLIGHT TIME: 0.5

SURVEY HEIGHT: 36 m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
				Radar Test
	761	1501	9	500 feet
	2231	2871	9	400 feet
	3491	4231	9	300 feet
	4951	5621	9	200 feet
	6401	7161	9	100 feet
	251	901	10	Lag test
	1451	1951	10	Lag test

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: True North Gems	BLOCK: Bandito	JOB: 0611	PAGE 1 of 1

FLT #: 3 Date(dd/mm/yr): 22/09/06 OPERATOR: Len S.

PILOT: Doug Hladun O.A.T.: _____/_____ A/C REG: C-GTNT

DEPART TIME: 14:00 RETURN TIME: 15:00 TOTAL FLIGHT TIME: 1

SURVEY HEIGHT: 36 m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
	951	2171		Generator Off
	2861	4111		Generator ON

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: True North Gems	BLOCK: Bandito	JOB: 0611	PAGE 1 of 1

FLT #: 4 Date(dd/mm/yr):23/09/06 OPERATOR: Len S.

PILOT: Doug Hladun O.A.T.:_____/_____ A/C REG: C-GTNT

DEPART TIME: 10:00 RETURN TIME: 10:30 TOTAL FLIGHT TIME: 0.5

SURVEY HEIGHT: 36 m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
	1051	1701		High Level - C1
	3701	4351		Lag with C1
	5081	5741		Lag with C1
	7301	7901		High Level - C1
	51	581		High Level - C280
	2131	2601		Lag with C280
	3401	4081		Lag with C280
	5301	6081		High Level - C280

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: True North Gems	BLOCK: Bandito	JOB: 0611	PAGE 1 of 1

FLT #: 5 Date(dd/mm/yr):23/09/06 OPERATOR: Len S.

PILOT: Doug Hladun O.A.T.:_____/_____ A/C REG: C-GTNT

DEPART TIME: 16:10 RETURN TIME: 19:10 TOTAL FLIGHT TIME: 3

SURVEY HEIGHT: 36 m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
	101		2	Lag control line
	1601	2201	2	high level
780	101	1851	5	10 + C
770	2691	4801	5	
760	5241	7051	5	High wind
750	7601	9951	5	
740	10501	12791	5	High wind
730	61	2611	6	
720	3201	5441	6	High wind
710	6161	8871	6	
700	9441	11091	6	
690	12701	15257	6	
680	251	2651	7	
670	3651	6381	7	Computer froze
660	151	2881	8	
650	3441	6101	8	5 + C
	101	751	9	high level
	401	1151	10	lag control line

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: True North Gems	BLOCK: Bandito	JOB: 0611	PAGE 1 of 1

FLT #: 6 Date(dd/mm/yr): 24/09/06 OPERATOR: Len S.

PILOT: Doug Hladun O.A.T.: _____/_____ A/C REG: C-GTNT

DEPART TIME: 9:10 RETURN TIME: 11:50 TOTAL FLIGHT TIME: 2.6

SURVEY HEIGHT: 36 m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
	401	2801	4	Lag control line and high level
640	351	3171	6	light wind about 15mph
630	3701	6201	6	
620	6931	9471	6	
610	9011	12501	6	
600	251	3601	7	4 degrees in valley 2 degress on hill
590	4151	7731	7	
580	6201	11641	7	
570	13301	16721	7	
560	331	3701	8	
550	4371	7701	8	
540	8141	11541	8	3400 feet
530	12311	15001	8	
520	81	3131	9	
510	3811	7251	9	4 degrees
	21	741	10	high level

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: True North Gems	BLOCK: Bandito	JOB: 0611	PAGE 1 of 1

FLT #: 7 Date(dd/mm/yr):24/09/06 OPERATOR: Len S.

PILOT: Doug Hladun O.A.T.:_____/_____ A/C REG: C-GTNT

DEPART TIME: 12:50 RETURN TIME: 15:20 TOTAL FLIGHT TIME: 2.5

SURVEY HEIGHT: 36 m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
	1301	1941	15	high level
500	211	3501	16	1 degree
490	4101	7371	16	
480	8111	11411	16	
470	12071	16161	16	
460	91	3801	17	
450	4301	8201	17	
440	8751	13051	17	
430	13681	17761	17	5 degrees
420	51	4631	18	
410	5791	9601	18	
400	10171	14191	18	
390	14851	19581	18	
380	211	4281	19	4 degrees
370	4731	9001	19	
	11	701	20	high level

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: True North Gems	BLOCK: Bandito	JOB: 0611	PAGE 1 of 1

FLT #: 8 Date(dd/mm/yr):24/09/06 OPERATOR: Len S.

PILOT: Doug Hladun O.A.T.:_____/_____ A/C REG: C-GTNT

DEPART TIME: 16:20 RETURN TIME: 17:10 TOTAL FLIGHT TIME: 0.9

SURVEY HEIGHT: 36 m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
				Flight aborted due to rain
	301	1001	22	Lag control line

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: True North Gems	BLOCK: Bandito	JOB: 0611	PAGE 1 of 1

FLT #: 9 Date(dd/mm/yr):26/09/06 OPERATOR: Len S.

PILOT: Doug Hladun O.A.T.:_____/_____ A/C REG: C-GTNT

DEPART TIME: 11:50 RETURN TIME: 14:15 TOTAL FLIGHT TIME: 2.5

SURVEY HEIGHT: 36 m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
	521	831	1	Lag control line
	401	1131	2	high level
780	271	3001	4	3 degrees C
770	3551	6361	4	
760	7071	9481	4	
750	10001	12831	4	
740	13391	16251	4	3 degrees C
9050	91	3151	5	hill top in fog
9040	51	4881	6	
9000	21	2711	7	
9010	41	3841	8	
9020	261	4901	9	
9030	21	5711	10	Rad alt quit - RTB
	191	811	13	Lag control line and high level

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: True North Gems	BLOCK: Bandito	JOB: 0611	PAGE 1 of 1

FLT #: 10 Date(dd/mm/yr):27/09/06 OPERATOR: Len S.

PILOT: Doug Hladun O.A.T.:_____/_____ A/C REG: C-GTNT

DEPART TIME: 10:30 RETURN TIME: 13:10 TOTAL FLIGHT TIME: 2.8

SURVEY HEIGHT: 36 m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
	431	871	1	lag control line
	1851	2571	1	high level
9030	201	2501	2	high wind and turbulence
380	431	4901	3	
370	5401	9471	3	very turbulent
360	10301	14501	3	
350	41	4601	4	flying sideways - high wind
10	31	2991	5	skipped to first line - still turbulent
20	3371	6461	5	
30	6871	9621	5	Flight aborted due to winds
	201	931	6	high level
	461	931	7	lag control line

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: True North Gems	BLOCK: Bandito	JOB: 0611	PAGE 1 of 1

FLT #: 11 Date(dd/mm/yr):28/09/06 OPERATOR: Len S.

PILOT: Doug Hladun O.A.T.:_____/_____ A/C REG: C-GTNT

DEPART TIME: 13:00 RETURN TIME: 15:00 TOTAL FLIGHT TIME: 2

SURVEY HEIGHT: 36 m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
	41	801	2	lag control line
			3	high level
340	351	3571	4	high winds 25 - 35 knots
330	4281	8701	4	very turbulent
	121	1031	5	high level
	531	1001	6	lag control line

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: True North Gems	BLOCK: Bandito	JOB: 0611	PAGE 1 of 1

FLT #: 12 Date(dd/mm/yr): 02/10/06 OPERATOR: Len S.

PILOT: Doug Hladun O.A.T.: _____/_____ A/C REG: C-GTNT

DEPART TIME: 9:25 RETURN TIME: 12:10 TOTAL FLIGHT TIME: 2.6

SURVEY HEIGHT: 36 m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
	1031	1251	6	lag control line
	2571	3231		high level flight
320	671	4351		0 degrees
310	4031	7101		
300	7641	9981		snow line 3500 ft
290	10591	13651		
280	221	2931		
270	3521	6821		
260	7281	10301		
250	10001	1430		
240	71	3141		
230	3751	6921		
220	7471	10181		
210	10821	14201		
200	171	2621		
190	2931	5401		
180	5821	8301		
170	8841	11331		
	12231	13101		high level flight

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: True North Gems	BLOCK: Bandito	JOB: 0611	PAGE 1 of 1

FLT #: 13 Date(dd/mm/yr): 02/10/06 OPERATOR: Len S.

PILOT: Doug Hladun O.A.T.: _____/_____ A/C REG: C-GTNT

DEPART TIME: 12:45 RETURN TIME: 15:15 TOTAL FLIGHT TIME: 2.5

SURVEY HEIGHT: 36 m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
	371	1131	1	
540				scrub line
540	1071	1901	2	
160	301	2721	3	
150	3191	5551	3	
140	5971	8581	3	
130	8991	11701	3	
120	12061	14681	3	
110	15161	12601	3	
100	221	2661	4	
90	3001	5451	4	
80	5771	7901	4	
80	8451	9861	4	
70	361	2741	5	
60	3081	5301	5	
50	5691	7911	5	
40	8411	10901	5	
9050	281	3561	6	
740	41	2851	7	
750	811	3531	8	
770	4071	6301	9	
750	6271	9461	9	
	10201	10901	9	high level flight

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: True North Gems	BLOCK: Bandito	JOB: 0611	PAGE 1 of 1

FLT #: 14 Date(dd/mm/yr): 02/10/06 OPERATOR: Len S.

PILOT: Doug Hladun O.A.T.: _____/_____ A/C REG: C-GTNT

DEPART TIME: 15:40 RETURN TIME: 16:15 TOTAL FLIGHT TIME: 0.6

SURVEY HEIGHT: 36 m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
	401	801	2	Lag control line

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: True North Gems	BLOCK: Bandito	JOB: 0611	PAGE 1 of 1

FLT #: 15 Date(dd/mm/yr): 02/10/06 OPERATOR: Len S.

PILOT: Doug Hladun O.A.T.: _____/_____ A/C REG: C-GTNT

DEPART TIME: 17:45 RETURN TIME: 18:30 TOTAL FLIGHT TIME: 0.8

SURVEY HEIGHT: 36 m BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
	321	621	1	Lag control line
1N	2131	3351	1	
2S	3931	4911	1	
3N	5721	6551	1	
4S	7271	8091	1	
5W	9131	10001	1	
6E	10701	11341	1	
7W	12041	12981	1	
8E	13651	14301	1	
	15931	16201	1	Lag control line
100	16501	17201	1	Radar Calibration
200	17761	18501	1	
300	19001	19701	1	
400	20221	21051	1	
500	21501	22271	1	
600	22701	23401	1	

ANY LINE REFLOWN SHOULD HAVE THE LINE NUMBER INCREMENTED BY 1 EACH TIME

Project #: 0611	Daily Field Production Report						
Report Date:	Sept 07 2006	Aircraft:	A-Star B2	Reg. # C-GTNT		SURVEY PERSONNEL	
Report Number:	1	Ops Base:	Coal River Lodge			Pilot	Doug Hladun
Client:	True North Gems Inc.	Location	Coal River, BC			Pilot	
Survey Type:	High-Resolution Aeromagnetic Survey					Field Data QC:	Dallas Antill
Survey Area:			Bandito Project			Operator/Technician	Len Sellwood
Project Km:			413.0			Operator/Technician	
Km flown today:						Systems Engineer:	
Accumulated km:						Project Manager	Dallas Antill
Percent Completed:						Client Supervisor	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time	Hours Flown	

Weather:						Hours Flown Today:		
Accum. Standby:		Accumulated Survey Days:		Accumulated Days on site:	1	Accumulated Project Hours:		

COMMENTS:

Len Sellwood and Dallas Antill arrived at the Coal River Lodge late afternoon.
Equipment will be assembled tomorrow.
Expecting the helicopter to arrive this weekend.

CONTROL			Flight date:		
POST FLIGHT	Accepted km	Rejected km	Reasons for Rejection		

REFLIGHTS	OBSERVATIONS.	LINES REFLOWN
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel			
General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
President:	Tim Bodger	905-830-6880	tbodger@mgssurveys.com
Project Manager:	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Systems Engineer			
QC	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Operator:	Len Sellwood	905-830-6880	lsellwood@mgssurveys.com

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Tel: (905) 830-6880, Fax: (905) 898-0336, E-mail: info@mgssurveys.com

Please note that kilometres flown are estimates.

Exact kilometres will be calculated upon completion of survey, and will be based on GPS observations & contractual boundaries

Project #: 0611	Daily Field Production Report						
Report Date:	Sept 18 2006	**Aircraft:**	A-Star B2	Reg. # C-GTNT		**SURVEY PERSONNEL**	
Report Number:	2	**Ops Base:**	Coal River Lodge			**Pilot**	Doug Hladun
Client:	True North Gems Inc.	**Location**	Coal River, BC			**Pilot**	
Survey Type:	High-Resolution Aeromagnetic Survey					**Field Data QC:**	Dallas Antill
Survey Area:	Bandito Project					**Operator/Technician**	Len Sellwood
Project Km:	413.0					**Operator/Technician**	
Km flown today:						**Systems Engineer:**	
Accumulated km:						**Project Manager**	Dallas Antill
Percent Completed:						**Client Supervisor**	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time		Hours Flown
ferry - Whitehorse to Watson Lake							1.8
ferry - Watson Lake to Coal River							0.5
Weather:					**Hours Flown Today:**		2.3
Accum. Standby:		**Accumulated Survey Days:**		**Accumulated Days on site:** 2	**Accumulated Project Hours:**		2.3

COMMENTS:

Len Sellwood and Dallas Antill arrived at the Coal River Lodge late afternoon.
Equipment already assembled on site.
Helicopter arrived in evening.

CONTROL			**Flight date:**	
POST FLIGHT	***Accepted km***	***Rejected km***	***Reasons for Rejection***	

REFLIGHTS	OBSERVATIONS.	LINES REFLOWN
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel

General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
President:	Tim Bodger	905-830-6880	tbodger@mgssurveys.com
Project Manager:	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Systems Engineer			
QC	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Operator:	Len Sellwood	905-830-6880	lsellwood@mgssurveys.com

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Please note that kilometres flown are estimates.
Exact kilometres will be calculated upon completion of survey, and will be based on GPS observations & contractual boundaries

Project #: 0611	Daily Field Production Report						
Report Date:	19-Sep-06	**Aircraft:**	A-Star B2	Reg. # C-GTNT		**SURVEY PERSONNEL**	
Report Number:	3	**Ops Base:**	Coal River Lodge			**Pilot**	Doug Hladun
Client:	True North Gems Inc.	**Location**	Coal River, BC			**Pilot**	
Survey Type:	High-Resolution Aeromagnetic Survey					**Field Data QC:**	Dallas Antill
Survey Area:			Bandito Project			**Operator/Technician**	Len Sellwood
Project Km:			413.0			**Operator/Technician**	
Km flown today:						**Systems Engineer:**	
Accumulated km:						**Project Manager**	Dallas Antill
Percent Completed:						**Client Supervisor**	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time		Hours Flown
Recon flight							1.0
ferry - fuel cache							0.8
1	17:45				18:30		0.7
Weather: Parly cloudy 12^{0} C					**Hours Flown Today:**		2.5
Accum. Standby:	**Accumulated Survey Days:**		1	**Accumulated Days on site:**	3	**Accumulated Project Hours:**	4.8

COMMENTS:

Fuel cache established near survey area.
Equipment assembled in helicopter.
Mag base station established.

Flew radar calibration and lag test.

CONTROL			**Flight date:**	
POST FLIGHT	***Accepted km***	***Rejected km***	***Reasons for Rejection***	

REFLIGHTS	OBSERVATIONS.	LINES REFLOWN
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel

General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
President:	Tim Bodger	905-830-6880	tbodger@mgssurveys.com
Project Manager:	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Systems Engineer			
QC	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Operator:	Len Sellwood	905-830-6880	lsellwood@mgssurveys.com

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***Please note that kilometres flown are estimates.**

***Exact kilometres will be calculated upon completion of survey, and will be based on GPS observations & contractual boundaries**

Project #: 0611	Daily Field Production Report						
Report Date:	20-Sep-06	Aircraft:	A-Star B2	Reg. # C-GTNT		SURVEY PERSONNEL	
Report Number:	4	Ops Base:	Coal River Lodge			Pilot	Doug Hladun
Client:	True North Gems Inc.	Location	Coal River, BC			Pilot	
Survey Type:	High-Resolution Aeromagnetic Survey					Field Data QC:	Dallas Antill
Survey Area:			Bandito Project			Operator/Technician	Len Sellwood
Project Km:			413.0			Operator/Technician	
Km flown today:						Systems Engineer:	
Accumulated km:						Project Manager	Dallas Antill
Percent Completed:						Client Supervisor	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time		Hours Flown

Weather: Morning fog and afternoon rain 12^0 C					Hours Flown Today:		
Accum. Standby:	1	Accumulated Survey Days:	1	Accumulated Days on site:	4	Accumulated Project Hours:	4.8

COMMENTS:

Due to the weather no survey flights were flown.

CONTROL			Flight date:	
POST FLIGHT	Accepted km	Rejected km	Reasons for Rejection	

REFLIGHTS	OBSERVATIONS.	LINES REFLOWN
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel			
General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
President:	Tim Bodger	905-830-6880	tbodger@mgssurveys.com
Project Manager:	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Systems Engineer			
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Project #: 0611	Daily Field Production Report						
Report Date:	21-Sep-06	Aircraft:	A-Star B2	Reg. # C-GTNT		SURVEY PERSONNEL	
Report Number:	5	Ops Base:	Coal River Lodge			Pilot	Doug Hladun
Client:	True North Gems Inc.	Location	Coal River, BC			Pilot	
Survey Type:	High-Resolution Aeromagnetic Survey					Field Data QC:	Dallas Antill
Survey Area:			Bandito Project			Operator/Technician	Len Sellwood
Project Km:			413.0			Operator/Technician	
Km flown today:						Systems Engineer:	
Accumulated km:						Project Manager	Dallas Antill
Percent Completed:						Client Supervisor	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time		Hours Flown
2	10:10				10:40		0.5

Weather: Morning fog and afternoon rain 9^0 C						Hours Flown Today:		0.5
Accum. Standby:	1	Accumulated Survey Days:	1	Accumulated Days on site:	5	Accumulated Project Hours:		5.3

COMMENTS:

Due to equipment problems we were unable to fly today.
Troubleshooting the circuit boards within the DAS
Focusing on the analog to digital card.
Test flight flown.
Crew heading back to Watson Lake where communication is better.

CONTROL			Flight date:		
POST FLIGHT	Accepted km	Rejected km	Reasons for Rejection		

REFLIGHTS	OBSERVATIONS.	LINES REFLOWN
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel			
General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
President:	Tim Bodger	905-830-6880	tbodger@mgssurveys.com
Project Manager:	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Systems Engineer			
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Please note that kilometres flown are estimates.
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Project #: 0611	Daily Field Production Report						
Report Date:	22-Sep-06	Aircraft:	A-Star B2	Reg. # C-GTNT		SURVEY PERSONNEL	
Report Number:	6	Ops Base:	Coal River Lodge			Pilot	Doug Hladun
Client:	True North Gems Inc.	Location	Coal River, BC			Pilot	
Survey Type:	High-Resolution Aeromagnetic Survey					Field Data QC:	Dallas Antill
Survey Area:	Bandito Project					Operator/Technician	Len Sellwood
Project Km:	413.0					Operator/Technician	
Km flown today:						Systems Engineer:	
Accumulated km:						Project Manager	Dallas Antill
Percent Completed:						Client Supervisor	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time		Hours Flown
3	14:00				15:00		1.0

Weather: Afternoon rain 12° C						Hours Flown Today:		1.0
Accum. Standby:	1	Accumulated Survey Days:	1	Accumulated Days on site:	6	Accumulated Project Hours:		6.3

COMMENTS:

Crew in Watson Lake working on EM system.
Circuit boards were replaced.
Test flight flown in afternoon.
Results were good.

Final verifcation check tomorrow before heading back down to Coal River Lodge.

CONTROL		Flight date:	
POST FLIGHT	Accepted km	Rejected km	Reasons for Rejection

REFLIGHTS	OBSERVATIONS.	LINES REFLOWN
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel			
General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
President:	Tim Bodger	905-830-6880	tbodger@mgssurveys.com
Project Manager:	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Systems Engineer			
QC	Dallas Antill	905-830-6880	dantill@mgssurveys.com
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Please note that kilometres flown are estimates.

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Project #: 0611	Daily Field Production Report						
Report Date:	23-Sep-06	**Aircraft:**	A-Star B2	Reg. # C-GTNT		**SURVEY PERSONNEL**	
Report Number:	7	**Ops Base:**	Coal River Lodge			**Pilot**	Doug Hladun
Client:	True North Gems Inc.	**Location**	Coal River, BC			**Pilot**	
Survey Type:	High-Resolution Aeromagnetic Survey					**Field Data QC:**	Dallas Antill
Survey Area:	Bandito Project					**Operator/Technician**	Len Sellwood
Project Km:	413.0					**Operator/Technician**	
Km flown today:	51.8					**Systems Engineer:**	
Accumulated km:	51.8					**Project Manager**	Dallas Antill
Percent Completed:	12.54%					**Client Supervisor**	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time		Hours Flown
4	10:00				10:30		0.5
5	16:10	16:55		18:09	19:10		3.0

Weather: Partly cloudy 9° C					**Hours Flown Today:**		3.5
Accum. Standby: 2	**Accumulated Survey Days:**	1	**Accumulated Days on site:**	7	**Accumulated Project Hours:**		9.8

COMMENTS:

Crew arrived back from Watson Lake at 3:30 pm
Equipment was prepared and production flight flown.

CONTROL		**Flight date:**	
POST FLIGHT	**Accepted km**	**Rejected km**	**Reasons for Rejection**

REFLIGHTS	**OBSERVATIONS.**	**LINES REFLOWN**
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel

General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
President:	Tim Bodger	905-830-6880	tbodger@mgssurveys.com
Project Manager:	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Systems Engineer			
QC	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Operator:	Len Sellwood	905-830-6880	lsellwood@mgssurveys.com

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Please note that kilometres flown are estimates.

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Project #: 0611	Daily Field Production Report						
Report Date:	24-Sep-06	Aircraft:	A-Star B2	Reg. # C-GTNT		SURVEY PERSONNEL	
Report Number:	8	Ops Base:	Coal River Lodge			Pilot	Doug Hladun
Client:	True North Gems Inc.	Location	Coal River, BC			Pilot	
Survey Type:	High-Resolution Aeromagnetic Survey					Field Data QC:	Dallas Antill
Survey Area:	Bandito Project					Operator/Technician	Len Sellwood
Project Km:	413.0					Operator/Technician	
Km flown today:	145.9					Systems Engineer:	
Accumulated km:	197.7					Project Manager	Dallas Antill
Percent Completed:	47.87%					Client Supervisor	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time		Hours Flown
6	9:10	9:56		11:19	11:50		2.6
7	12:50	13:11		14:43	15:20		2.5
8	16:20				17:10		0.9

Weather: Overcast 7 ^{0} C					Hours Flown Today:		6.0
Accum. Standby:	2	Accumulated Survey Days:	2	Accumulated Days on site:	8	Accumulated Project Hours:	15.8

COMMENTS:

Three production flights flown.
Third production flight was aborted due to rain.

CONTROL		Flight date:	
POST FLIGHT	Accepted km	Rejected km	Reasons for Rejection

REFLIGHTS	OBSERVATIONS.	LINES REFLOWN
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel			
General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
President:	Tim Bodger	905-830-6880	tbodger@mgssurveys.com
Project Manager:	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Systems Engineer			
QC	Dallas Antill	905-830-6880	dantill@mgssurveys.com
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*Please note that kilometres flown are estimates.
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Project #: 0611	Daily Field Production Report						
Report Date:	25-Sep-06	**Aircraft:**	A-Star B2	Reg. # C-GTNT		**SURVEY PERSONNEL**	
Report Number:	9	**Ops Base:**	Coal River Lodge			**Pilot**	Doug Hladun
Client:	True North Gems Inc.	**Location**	Coal River, BC			**Pilot**	
Survey Type:	High-Resolution Aeromagnetic Survey					**Field Data QC:**	Dallas Antill
Survey Area:	Bandito Project					**Operator/Technician**	Len Sellwood
Project Km:	413.0					**Operator/Technician**	
Km flown today:	145.9					**Systems Engineer:**	
Accumulated km:	197.7					**Project Manager**	Dallas Antill
Percent Completed:	47.87%					**Client Supervisor**	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time		Hours Flown
fuel cache ferry							0.9

Weather: Overcast 10 ^{0} C						**Hours Flown Today:**		0.9
Accum. Standby:	3	**Accumulated Survey Days:**	2	**Accumulated Days on site:**	9	**Accumulated Project Hours:**		16.7

COMMENTS:

Due to weather (low ceiling/overcast) no survey flights were flown.
Four more fuel drums were flown to our fuel cache near the survey block

CONTROL		**Flight date:**	
POST FLIGHT	**Accepted km**	**Rejected km**	**Reasons for Rejection**

REFLIGHTS	OBSERVATIONS.	LINES REFLOWN
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel

General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
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Project Manager:	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Systems Engineer			
QC	Dallas Antill	905-830-6880	dantill@mgssurveys.com
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Please note that kilometres flown are estimates.

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Project #: 0611	Daily Field Production Report						
Report Date:	26-Sep-06	**Aircraft:**	A-Star B2	Reg. # C-GTNT		**SURVEY PERSONNEL**	
Report Number:	10	**Ops Base:**	Coal River Lodge			**Pilot**	Doug Hladun
Client:	True North Gems Inc.	**Location**	Coal River, BC			**Pilot**	
Survey Type:	High-Resolution Aeromagnetic Survey					**Field Data QC:**	Dallas Antill
Survey Area:	Bandito Project					**Operator/Technician**	Len Sellwood
Project Km:	413.0					**Operator/Technician**	
Km flown today:	57.3					**Systems Engineer:**	
***Accumulated km:**	255.0					**Project Manager**	Dallas Antill
Percent Completed:	61.74%					**Client Supervisor**	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time		Hours Flown
9	11:50				14:15		2.5
ferry and test flight							2.0

Weather: Overcast 10 ^{0} C					**Hours Flown Today:**		4.5
Accum. Standby:	3	**Accumulated Survey Days:**	2	**Accumulated Days on site:**	10	**Accumulated Project Hours:**	21.2

COMMENTS:

Late start to the day due to morning fog.
Radar alt quit working at the end of Flt#9.
Crew had to return to base for repairs.

Repairs made and test flight flown. Problem fixed. Too late in the day to return to block for more survey.

*Line Km for today include 18.5 Km in reflights

CONTROL			**Flight date:**	
POST FLIGHT	***Accepted km***	***Rejected km***	***Reasons for Rejection***	

REFLIGHTS	**OBSERVATIONS.**	**LINES REFLOWN**
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel

General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
President:	Tim Bodger	905-830-6880	tbodger@mgssurveys.com
Project Manager:	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Systems Engineer			
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Project #: 0611	Daily Field Production Report						
Report Date:	27-Sep-06	**Aircraft:**	A-Star B2	Reg. # C-GTNT		**SURVEY PERSONNEL**	
Report Number:	11	**Ops Base:**	Coal River Lodge			**Pilot**	Doug Hladun
Client:	True North Gems Inc.	**Location**	Coal River, BC			**Pilot**	
Survey Type:	High-Resolution Aeromagnetic Survey					**Field Data QC:**	Dallas Antill
Survey Area:			Bandito Project			**Operator/Technician**	Len Sellwood
Project Km:			413.0			**Operator/Technician**	
Km flown today:			37.6			**Systems Engineer:**	
***Accumulated km:**			292.6			**Project Manager**	Dallas Antill
Percent Completed:			70.85%			**Client Supervisor**	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time		Hours Flown
10	10:30	11:08		12:05	13:10		2.8

Weather: Overcast 13 ^{0} C High gusty winds						**Hours Flown Today:**		
Accum. Standby:	4	**Accumulated Survey Days:**	2	**Accumulated Days on site:**	11	**Accumulated Project Hours:**		24.0

COMMENTS:

One survey flight flown - crew returned to base due to high winds

*Line Km for today include 2.8 Km in reflights

CONTROL			**Flight date:**	
POST FLIGHT	***Accepted km***	***Rejected km***	***Reasons for Rejection***	

REFLIGHTS	OBSERVATIONS.	LINES REFLOWN
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel

General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
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Project #: 0611	Daily Field Production Report						
Report Date:	28-Sep-06	**Aircraft:**	A-Star B2	Reg. # C-GTNT		**SURVEY PERSONNEL**	
Report Number:	12	**Ops Base:**	Coal River Lodge			**Pilot**	Doug Hladun
Client:	True North Gems Inc.	**Location**	Coal River, BC			**Pilot**	
Survey Type:	High-Resolution Aeromagnetic Survey					**Field Data QC:**	Dallas Antill
Survey Area:	Bandito Project					**Operator/Technician**	Len Sellwood
Project Km:	413.0					**Operator/Technician**	
Km flown today:	11.4					**Systems Engineer:**	
Accumulated km:	304.0					**Project Manager**	Dallas Antill
Percent Completed:	73.61%					**Client Supervisor**	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time		Hours Flown
weather check flight							0.5
11	13:00				15:00		2.0

Weather: Overcast 13 ^{0} C High gusty winds						**Hours Flown Today:**		2.5
Accum. Standby:	5	**Accumulated Survey Days:**	2	**Accumulated Days on site:**	12	**Accumulated Project Hours:**		26.5

COMMENTS:

One survey flight flown - flight aborted - crew returned to base due to high winds

CONTROL			**Flight date:**	
POST FLIGHT	***Accepted km***	***Rejected km***	***Reasons for Rejection***	

REFLIGHTS	**OBSERVATIONS.**	**LINES REFLOWN**
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel

General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
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***Please note that kilometres flown are estimates.**

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Project #: 0611	Daily Field Production Report						
Report Date:	29-Sep-06	Aircraft:	A-Star B2	Reg. # C-GTNT		SURVEY PERSONNEL	
Report Number:	13	Ops Base:	Coal River Lodge			Pilot	Doug Hladun
Client:	True North Gems Inc.	Location	Coal River, BC			Pilot	
Survey Type:	High-Resolution Aeromagnetic Survey					Field Data QC:	Dallas Antill
Survey Area:	Bandito Project					Operator/Technician	Len Sellwood
Project Km:	413.0					Operator/Technician	
Km flown today:						Systems Engineer:	
Accumulated km:	304.0					Project Manager	Dallas Antill
Percent Completed:	73.61%					Client Supervisor	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time		Hours Flown

Weather: Overcast 13 ^{0} C High gusty winds						Hours Flown Today:		
Accum. Standby:	6	Accumulated Survey Days:	2	Accumulated Days on site:	13	Accumulated Project Hours:		26.5

COMMENTS:

Wx day - high gusty winds

CONTROL			Flight date:	
POST FLIGHT	Accepted km	Rejected km	Reasons for Rejection	

REFLIGHTS	OBSERVATIONS.	LINES REFLOWN
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel			
General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
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Project #: 0611	Daily Field Production Report						
Report Date:	30-Sep-06	**Aircraft:**	A-Star B2	Reg. # C-GTNT		**SURVEY PERSONNEL**	
Report Number:	14	**Ops Base:**	Coal River Lodge			**Pilot**	Doug Hladun
Client:	True North Gems Inc.	**Location**	Coal River, BC			**Pilot**	
Survey Type:	High-Resolution Aeromagnetic Survey					**Field Data QC:**	Dallas Antill
Survey Area:	Bandito Project					**Operator/Technician**	Len Sellwood
Project Km:	413.0					**Operator/Technician**	
Km flown today:						**Systems Engineer:**	
Accumulated km:	304.0					**Project Manager**	Dallas Antill
Percent Completed:	73.61%					**Client Supervisor**	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time		Hours Flown

Weather: Overcast 10 ^{0} C High gusty winds						**Hours Flown Today:**		
Accum. Standby:	7	**Accumulated Survey Days:**	2	**Accumulated Days on site:**	14	**Accumulated Project Hours:**		26.5

COMMENTS:

Wx day - high gusty winds

CONTROL		**Flight date:**	
POST FLIGHT	***Accepted km***	***Rejected km***	***Reasons for Rejection***

REFLIGHTS	**OBSERVATIONS.**	**LINES REFLOWN**
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel

General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
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Project Manager:	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Systems Engineer			
QC	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Operator:	Len Sellwood	905-830-6880	lsellwood@mgssurveys.com

McPhar Geosurveys Ltd.
1256B Kerrisdale Boulevard, Newmarket, Ontario, Canada L3Y 8Z9
Tel: (905) 830-6880, Fax: (905) 898-0336, E-mail: info@mgssurveys.com

***Please note that kilometres flown are estimates.**

***Exact kilometres will be calculated upon completion of survey, and will be based on GPS observations & contractual boundaries**

Project #: 0611	Daily Field Production Report						
Report Date:	1-Oct-06	Aircraft:	A-Star B2	Reg. # C-GTNT		SURVEY PERSONNEL	
Report Number:	15	Ops Base:	Coal River Lodge			Pilot	Doug Hladun
Client:	True North Gems Inc.	Location	Coal River, BC			Pilot	
Survey Type:	High-Resolution Aeromagnetic Survey					Field Data QC:	Dallas Antill
Survey Area:	Bandito Project					Operator/Technician	Len Sellwood
Project Km:	413.0					Operator/Technician	
Km flown today:						Systems Engineer:	
Accumulated km:	304.0					Project Manager	Dallas Antill
Percent Completed:	73.61%					Client Supervisor	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time		Hours Flown

Weather: Overcast 8 ^{0} C						Hours Flown Today:		
Accum. Standby:	8	Accumulated Survey Days:	2	Accumulated Days on site:	15	Accumulated Project Hours:		26.5

COMMENTS:

Wx day - low ceiling

CONTROL			Flight date:		
POST FLIGHT	Accepted km	Rejected km	Reasons for Rejection		

REFLIGHTS	OBSERVATIONS.	LINES REFLOWN
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel			
General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
President:	Tim Bodger	905-830-6880	tbodger@mgssurveys.com
Project Manager:	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Systems Engineer			
QC	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Operator:	Len Sellwood	905-830-6880	lsellwood@mgssurveys.com

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*Please note that kilometres flown are estimates.

*Exact kilometres will be calculated upon completion of survey, and will be based on GPS observations & contractual boundaries

Project #: 0611	Daily Field Production Report						
Report Date:	2-Oct-06	**Aircraft:**	A-Star B2	Reg. # C-GTNT		**SURVEY PERSONNEL**	
Report Number:	16	**Ops Base:**	Coal River Lodge			**Pilot**	Doug Hladun
Client:	True North Gems Inc.	**Location**	Coal River, BC			**Pilot**	
Survey Type:	High-Resolution Aeromagnetic Survey					**Field Data QC:**	Dallas Antill
Survey Area:	Bandito Project					**Operator/Technician**	Len Sellwood
Project Km:	413.0					**Operator/Technician**	
Km flown today:	109.0					**Systems Engineer:**	
Accumulated km:	413.0					**Project Manager**	Dallas Antill
Percent Completed:	100.00%					**Client Supervisor**	Greg Davidson

Flight #	Take off Time	First line start		Last line end	Land Time		Hours Flown
12	9:25				12:10		2.6
13	12:45				15:15		2.5
14	15:40				16:15		0.6
15	17:45				18:30		0.8

Weather: Sunny 13 ^{0} C						**Hours Flown Today:**		6.7
Accum. Standby:	8	**Accumulated Survey Days:**	3	**Accumulated Days on site:**	16	**Accumulated Project Hours:**		33.2

COMMENTS:

Four survey flights flown.
All survey and tie lines have been flown.

CONTROL			**Flight date:**	
POST FLIGHT	***Accepted km***	***Rejected km***	***Reasons for Rejection***	

REFLIGHTS	OBSERVATIONS.	LINES REFLOWN
Rejected km		
Kms today		
Accumulated km		
Percent Completed		

Operations Personnel

General Manager:	Andy Andersen	905-830-6880	aandersen@mgssurveys.com
President:	Tim Bodger	905-830-6880	tbodger@mgssurveys.com
Project Manager:	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Systems Engineer			
QC	Dallas Antill	905-830-6880	dantill@mgssurveys.com
Operator:	Len Sellwood	905-830-6880	lsellwood@mgssurveys.com

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Please note that kilometres flown are estimates.
Exact kilometres will be calculated upon completion of survey, and will be based on GPS observations & contractual boundaries

APPENDIX 2

Equipment Documentation

- Eurocopter AS350B2 A-STAR Helicopter
- THEM Digital Time-Domain Electromagnetic System
- Geometrics G-822A Airborne Cesium Magnetometer
- GEM Systems GSM-19 Overhauser Magnetometer
- Terra TRA-3000/TRI-30 Radar Altimeter
- Omnistar 3000 LR GPS Receiver
- Field Data Processing Workstations
- Geosoft Montaj Processing Software

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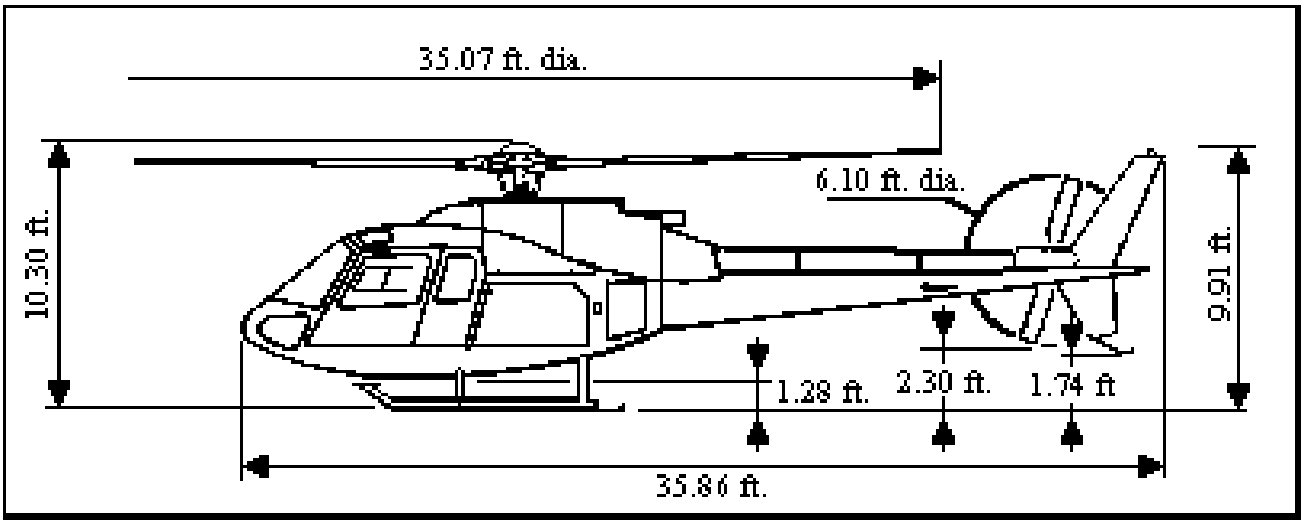
WebSite: www.mgssurveys.com

THE EUROCOPTER AS350B2 A-STAR HELICOPTER

Specification	Unit	Ac/Wt	Ac/Wt	Ac/Wt	MGW
Weight (standard aircraft 2,561 lbs.)	lb	3,530	3,970	4,410	4,991
VNE	kts	155	155	155	155
Cruising speed	kts	131	130	127	122
Fuel consumption at cruising speed	lb/nm	2.49	2.51	2.57	2.67
Rate of climb, oblique flight	ft/min	2,185	2,085	1,950	1,670
Range	nm	350	374	371	360
Endurance	hr	4.4	5.3	4.4	4.5
Hovering ceiling I.G.E. ISA	ft	20,000	16,580	13,450	9,850
Hovering ceiling I.G.E. ISA + 20 degrees	ft	17,900	14,450	11,000	7,050
Hovering ceiling O.G.E. ISA	ft	17,700	14,450	11,300	7,550
Hovering ceiling O.G.E. ISA + 20 degrees	ft	15,600	12,150	8,700	4,250
Service Ceiling	ft	20,000	>20,000	18,700	15,100



T.H.E.M.

Geophysics Inc.

THEM is a versatile state-of-the-art **T**ime-domain **H**elicopter-borne **E**lectro**M**agnetic button-on system based on a computer controlled electronics, a very powerful transmitter and an advanced digital signal processing software package. It is highly adaptable and suited for shallow soil mapping and/or deep ore body exploration. A standard system comprises a two-turn loop-transmitter assembly, a digital receiver and 2 separate EM sensors (X,Z and Zz). ***THEM*** works at 30 Hz and transmits a half sine wave 4ms pulse with a 250 KNIA peak moment, is light, easily transportable, rapidly deployed (half a day). The survey system includes a high-sensitivity cesium magnetometer, real-time OmniSTAR/GPS navigation, radar altimeter. Gamma-ray package available on request.

Specifications:

Transmitter	
Loop diameter	7.5 metres
Loop axis	Vertical
Current waveform	Half-Sine
Pulse length	0.5, 1, 2.5, 4.5 ms
Frequencies	30, 45, 90, 150 Hz programmable
Loop area	45 m²
Peak current	2200 A (2 turns)
Tow bridle length	55 metres
Receiver	
Coils axis	Horizontal and vertical
Configuration	Tx and Z coil coplanar
Four channels	Current, Z axial and towed Z + X
Max sampling rate	1024 points per half cycle at 90 Hz
Survey sampling rate	1024 per half cycle at 30 Hz,
Sampling	Full waveform
Gates, position-width	Programmable - max 256
Separation	45 m
Mechanical	
Mass (slinged)	250kg
Survey speed	50 knots (25m/s)
Power (motor-alternator)	5 kW max
Survey height (Tx)	30 m
Altitude (Helicopter)	85 m
Processing	
Proprietary software	EXTRACTOR
Field pre-processing	Daily with QC

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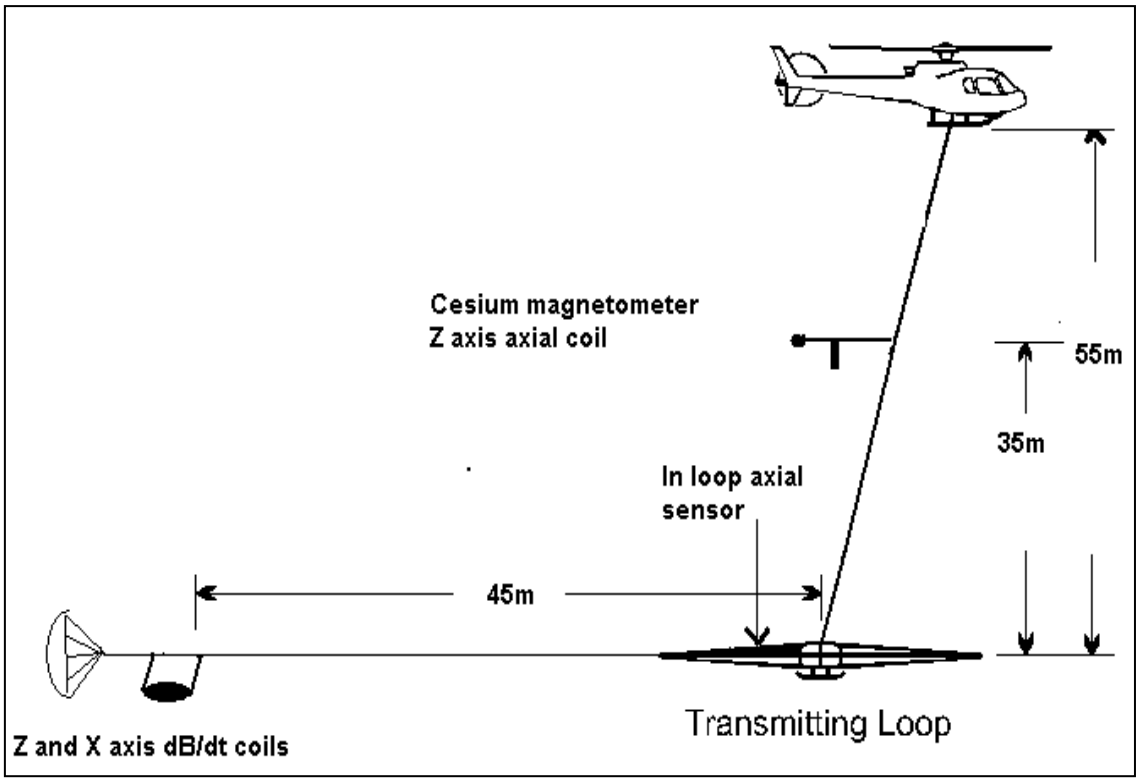
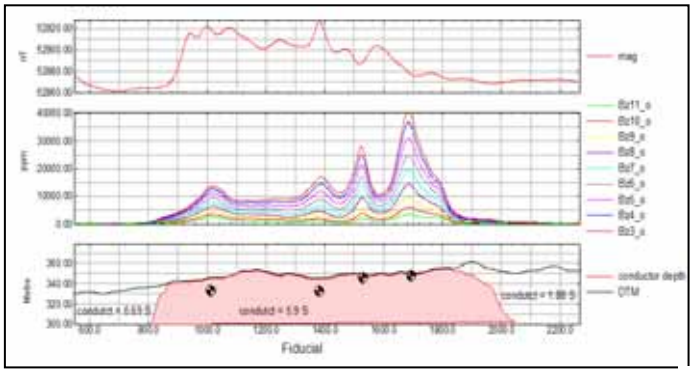
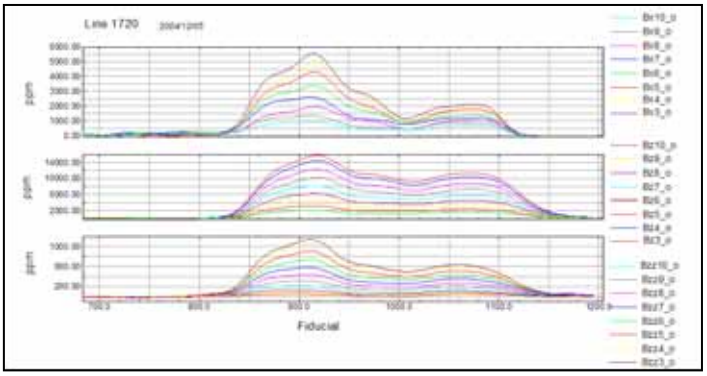
T.H.E.M.
Geophysics Inc.

Basic THEM configuration





Multi channel stacked profiles - magnetics, TDEM, preliminary geological interpretation from the calculated conductance. Depth section is created using a DTM calculated from radar altimeter and GPS-Z data



Stacked profiles of an anomaly detected by all 3 receivers of THEM system.
Upper panel: X-axis receiver (towed behind the transmitter loop)
Middle panel: Z-axis receiver (towed behind the transmitter loop)
Bottom panel: Zz-axis receiver (mounted directly above the transmitter loop)
*Because X-axis and Z-axis data are acquired, we can calculate the total field; Btot = (Bx**2 + Bz**2)**0.5. Using B-field data, further processing and interpretation (conductivity mapping, anomaly picking, modeling) may be more easily and accurately undertaken.*

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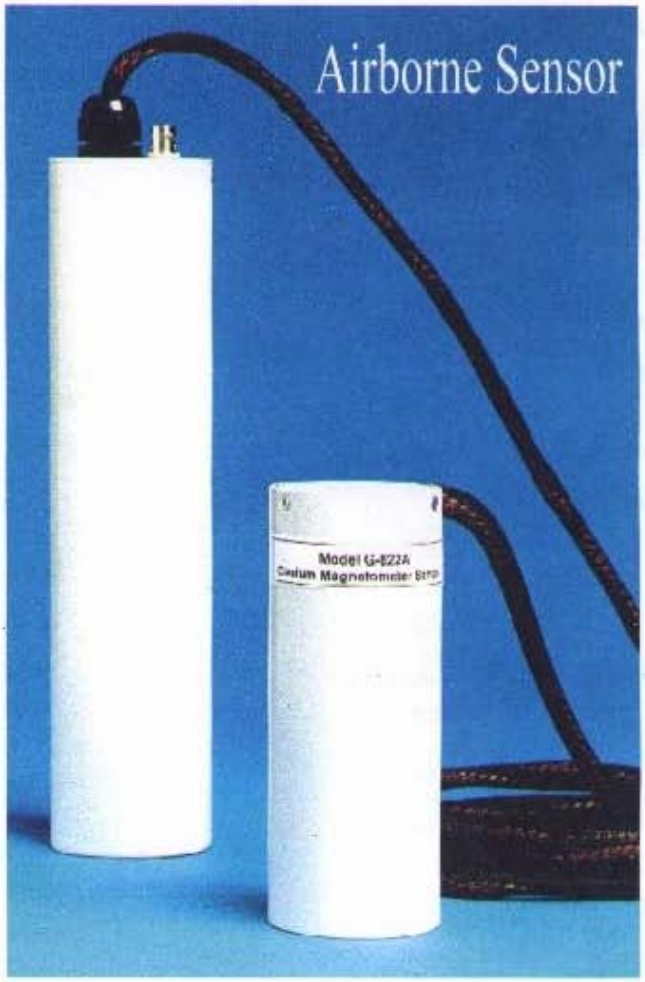
GEOMETRICS

G-822A CESIUM MAGNETOMETER

- ***Airborne and Vehicle Applications with Multi-Sensor Array Capability***
- ***Automatic Hemisphere Switching***
- ***Highest Sensitivity ___ 0.0005 nT/√Hz RMS with the G-822A Super-Counter***
- ***Highest Versatility ___ Full Aircraft Compensation with RMS AADCII or Button-on Towed Bird system with CM-201 Internal Mini-Counter, with 6 Channel 12 bit A to D converters***
- ***Superior resolution of the Cesium Larmor signal, tracking earth's field variation rates exceeding thousands of nT (γ) over 0.01second periods when using the G-822A Super-Counter***
- ***Gradiometer arrays offering simultaneous operation of up to four separate sensors with the RMS Instruments AADCII , Geometrics' G-822A Super-Counter or CM-201 Internal Mini-counter (See 823A Data Sheet)***
- ***Geometrics offers complete turnkey systems including Birds, Stingers, Wingtip installation accessories as well as Digital Data Acquisition Systems, Flight Path Recovery, GPS Navigation, Gamma Ray Spectrometers, VLF EM , Post Acquisition Data Processing Software and Training***



The G-822A is designed for all airborne or mobile applications where the unique combination of high sensitivity and very rapid sampling of the earth's magnetic field are required. Applications include mapping geologic structure for mining, oil and gas exploration, and the detection and delineation of target bodies in environmental or military type surveys. The unit consists of a high performance low heading error cesium vapor sensor with its associated cables and driver electronics package.

The G-822A sensor uses a precise well-proven design, carefully selected and tested components to insure the very best specifications in sensitivity, noise, heading error and absolute accuracy. A proven record of stable and reliable operation over long periods is the hallmark of the industry standard G-822A. A single coaxial cable of up to 50 meters length supplies both 28 VDC power and Larmor signal transmission from the sensor driver electronics to the 822A Super-Counter or the RMS Instruments' AADCII Automatic Aeromagnetic Digital Compensator. Internal or external signal/power filter-decoupler assemblies are available to provide extremely low noise operation.

The interconnect cable from the driver/electronics to the sensor may be supplied in lengths of 82 and 136 inches. Tuning throughout the earth's field range is fully automatic, and includes automatic hemisphere switching for equatorial surveys.

The sensor/electronics package is watertight, temperature controlled, and delivers full performance under extreme operating conditions. Accessories include special mounting clamps and orientation platforms for installation into a variety of vehicle or aircraft mounting configurations, as well as Birds, Stingers and Wing Tip fairings.

MODEL G-822A AIRBORNE CESIUM MAGNETOMETER SENSOR SPECIFICATIONS

OPERATING PRINCIPLE:	Self-oscillating split-beam Cesium Vapor (non-radioactive)
OPERATING RANGE:	20,000 to 100,000 nT
OPERATING ZONES:	The earth's field vector should be at an angle greater than 6 from the sensor's equator and greater than 6° away from the sensor's long axis. Automatic hemisphere switching.
SENSITIVITY:	<0.0005 nT/√Hz rms. Typically 0.003 nT P-P at a 0.1 second sample rate (90% of all readings falling within the P-P envelope) using 822A Supercounter, 0.02nT P-P for CM-201
HEADING ERROR:	±0.25 nT (over entire 360° spin and tumble)
ABSOLUTE ACCURACY:	<3 nT throughout range
OUTPUT:	Cycle of Larmor frequency = 3.498572 Hz/nT, 2V P-P coupled through the sensor power input
MECHANICAL:	
Sensor:	2.375" (60.32 mm) dia., 6.25" (158.75 mm) long, 12 oz (339 g) - any orientation in 7" dia. stinger
Sensor Electronics:	2.5" (63.5 mm) dia., 11" (279.4 mm) long, 22 oz (623 g)
Cables:	
Sensor to electronics:	70" (1.78 m) or additional 40" (1.1 m) increments with quick disconnect on electronic end. Longer lengths available - Up to 19.5 ft (6.1m)
Sensor Electronics to Counter:	Up to 220 ft (70 m)
OPERATING TEMPERATURE:	-30°F to +122°F (-35°C to +50°C)
STORAGE TEMPERATURE:	-48°F to +158°F (-45°C to +70°C)
ALTITUDE:	Up to 30,000 ft (9,000 m)
WATER TIGHT:	Sealed for up to 2 ft (0.9 m) depth
POWER:	24 to 32 VDC, 0.75 amp at turn-on and 0.5 amp thereafter
ACCESSORIES:	
Standard:	Power/Larmor coaxial cable (electronics to counter), lengths to be specified, spare O rings, operation manual and carrying case
Optional:	
Signal/Power Decoupler:	Separates the Larmor signal from the power (28 V) to enable connect on to RMS Instruments' AADCII Automatic Aeromagnetic Compensator or Customer supplied counter
Internal Decoupler:	P/N 27504 - up to two sensor installation
External Decoupler:	P/N 27560 - three and four sensor installation
Internal CM-201 Counter	See G-823 A Data Sheet
Stinger, Wingtip, Bird	Contact Factory for complete system integration information
Base Station Accessories	Non-magnetic Tripod, clamps cables

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE **1/98**

GEOMETRICS, INC. 2190 Forture Drive, San Jose, California 95131
408-954-0522 • Fax 408-954-0902 • Internet: sales@mail.geomtrics.com

GEOMETRICS Europe Manor Farm Cottage, Galley Lane, Great Brickhill, Bucks,
England MK179AB • 44-1525-261874 • Fax 44-1525-261867

GEOMETRICS

GEOMETRICS China Laurel Industrial Co. Inc. - Beijing Office, Room 2509-2511, Full Link Plaza
#18 Chaoyangmenwai Dajie, Chaoyang District, Beijing, China 100020
10-6588-1126 (1127..1130), 10-6588-1132 • Fax 010-6588-1162

GSM-19 Overhauser Magnetometer

Features of the magnetometer

- **Sensitivity = 0.02 nT**
- **Absolute Accuracy = 0.2 nT**
- **Sample Rates up to 5 Hz**
- **Low Power Consumption**

General

"Overhauser" Once you experience it, you'll never go back to proton. Overhauser technology brings you sensitivities one to two orders of magnitude better than proton, yet in a light weight package. This is because the overhauser magnetometer consumes an order of magnitude less power than proton magnetometer, allowing a lighter weight for batteries.

What is the Overhauser technique? The Overhauser sensor contains the electrons' fluid that has been added to a hydrogen rich in the form of "free radial". The resulting mixture yields a sensor with 5000 times gain in proton polarization. Since the Overhauser polarization effect does not require static magnetic fields, but uses radio frequency fields transparent to protons, measurement can be done concurrently with polarization. The result is a sensor with much greater sensitivity, that can be sampled much more rapidly than the standard proton sensor.

Overhauser magnetometer systems therefore maximize resolution while minimizing power consumption. Even with Walking Gradiometer systems, sampling at rates of once per second or betterare posible; Even in cold temperatures of minus 40 zero degrees Celsius and greater, the internal rechargeable battery can still be relied on for a 10 hour day, or longer.

The GSM-19 Overhauser magnetometer is thus truly a State-of-the-Art Magnetometer / VLF system. The GSM-19 offers the data quality, reliability, and extensive list of capabilities, and options, that allow it to meet a very wide spectrum of applications.

Standard Features of the magnetometer

The GSM-19 magnetometer console features a real time graphic display of the current profile. In addition digital display of the current reading, current position, and warning messages are provided. The console design, with internal rechargeable battery pack, allows the unit to be completely sealed against the elements. With the built in heater for the display the GSM-19 magnetometer is ready to go wherever your surveys may take you.

Tuning is automatic worldwide, with provision for manual override. In high gradient conditions the GSM-19 magnetometer monitors the signal decay rate and displays a warning message when the gradient becomes too great. Filters for rejection of 50 or 60 Hz noise are provided.

Diurnal corrections may be done in traditional fashion with one magnetometer unit as a base station and a second unit used as the mobile field unit. At the end of the survey the two units are connected and the field unit creates a corrected data file (which still includes the raw data file) based on the temporal drift recorded by the base station.

As a standard feature GSM-19 magnetometer also offer the capability of making tie point measurements for automatic diurnal corrections. To use this feature the operator records a base value and then loops back to this point periodically during the survey to record another measurement, and thus build a file of the drift. In this way a single instrument may be used to make diurnal corrections.

The RS-232 port on the GSM-19 magnetometer will output data as it is collected. This allows interface to GPS loggers that will accept RS232 data. The standard GSM-19 magnetometer may be operated in a remote mode via computer. Memory storage is 512 K in the standard unit, and may be upgraded to 2 MB.

Grid coordinates are stored with either numeric or compass designations. A seven digit number may be used to designate lines and positions. Line and position spacing is entered so that with every reading the position may be automatically updated. An End of Line feature allows the next line to be quickly selected, plus changes the sign on the position spacing. If the previous line had been adding positions as the operator moved, then on the next line, positions will be subtracted as the operator moves. The operator may also easily manually enter his grid position for cases where gaps in the line are necessary.

SPECIFICATIONS

Performance

	Overhauser	Proton
Resolution:	0.01 nT	0.01 nT
Relative Sensitivity:	0.02 nT	0.2 nT
Absolute Accuracy:	0.2 nT	1 nT
Range:	20,000 to 120,000 nT	20,000 to 120,000 nT
Gradient Tolerance:	Over 10,000 nT/m	Over 7,000 nT/m

Storage Capacity (readings)

	Overhauser	Proton
Std. Magnetometer:	32,000 to 131,000	16,000 to 32,000
With 3 VLF stations:	12,000 to 58,000	6,000 to 12,000
Base Station:	170,000 to 700,000	84,000 to 170,000
Gradiometer:	25,000 to 110,000	12,000 to 25,000
With 3 VLF stations:	12,000 to 46,000	6,000 to 12,000

Operating Modes

Manual:	Coordinates, time, date and reading stored automatically at a minimum 3 second interval.
Base Station:	Time, date and reading stored at 3 to 60 second interval (higher speeds available).
Walking:	Time, date and reading stored at coordinates of fiducial with 0.5, 1 or 2 second cycle time.
Hip Chain:	Equidistant coordinates, time, date and reading stored automatically. Distance interval of readings is programmable.
Remote Control:	Optional remote control using RS-232 interface.
Input/Output:	RS-232 or analog (optional) output using 6 pin weatherproof connector.

Operating Parameters

Power Consumption:	Only 2 Ws per reading for Overhauser, and 12 Ws per reading for Proton magnetometer. Will operate continuously for 45 hours on standby.
Power Source:	12V 2.6 Ah sealed lead acid battery standard, other batteries available.
Operating Temperature:	Overhauser: -50°C to +60°C. Proton: -40°C to +60°C.

Dimensions and Weight

Dimensions:
- Console 223 x 69 x 240 mm.
- Sensor 170 x 71 mm diameter cylinder. Omnidirectional sensor 180 x 80mm.

Weight:
- Console 2.1 kg.
- Sensor and staff assembly 2.0 kg.

A Standard package includes a console with batteries, harness, battery charger, case, sensor with 2m cable, and staff.

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E-Mail: info@mgssurveys.com
WebSite: www.mgssurveys.com

TERRA TRA-3000 / TRI-30 Radar Altimeter

The Terra TRA-3000 Radar Altimeter unit provides AGL (Above Ground Level) altitude information from 40 feet (12.3 m) up to 2,500 feet (769 m). The system consists of a single TRA-3000 receiver/transmitter/antenna unit and a TRI-30 indicator.

SPECIFICATIONS

TRA-3000 Unit

Type:	Single antenna, FMCW
Altitude Range:	40 to 2,500 ft
System Accuracy:	
• **40 to 100 ft**	+/- 5 ft
• **100 to 500 ft**	+/- 5%
• **500 to 2,500 ft**	+/- 7%
Frequency Range:	100 MHz sweep within 4,200 to 4,400 GHz range
Input Voltage:	Approx. 20 VDC from indicator
Input Current:	600 ma
Altitude Output:	Digital
Self-Test:	Ground or flight, initiated at indicator
Transmitter/Receiver/Antenna:	All solid-state, microstrip antenna,
Physical:	Size - 1" H x 5" W x 7.625" L, Weight - 1.5 lb.
Environment:	-40° C to + 70° C
Unlock display:	Altitude – 45,000 ft

TRI-30 Indicator

Power Supply:	Input voltage – 27.5 VDC +/- 20%
Environment:	Power – 16 watts nominal (includes power to T/R/A unit
Physical:	Size – 3.25" H x 3.25" W x 4" L, Weight – 1 lb.
Mounting:	Front panel mounting; requires a 3" ATI mounting space
Altitude range:	40 ft. to 2,500 ft (linear); 40 – 500 ft (enlarged linear)
Analog display:	Servo; pointer and dial type Needle will go off scale on the high-end
Decision height:	Bug, continuous setting from 40 to 2,500 ft.
Display update rate:	continuous
Analog output:	2.5 mv/ft., 100 mv = 40 ft.
Display disable:	One strut switch input, ground to enable
Altitude accuracy:	
• **40 to 100 ft**	+/- 5 ft
• **100 to 500 ft**	+/- 5%
• **500 to 2,500 ft**	+/- 7%
Aural Decision Height alert:	1 KHz tone for 2 sec. (500 ohms) adjustable audio level
Self-test:	Indicates 40 ft., DH operates normally
Visual alert:	Amber lamp with automatic adjustable intensity; internal LED standard; external lamp operation available.

OmniSTAR 3000LS SERIES DGPS RECEIVER PRODUCT FAMILY

Technical Data

3000 LRS Receiver Products

The 3000L Series DGPS receivers are the product of years of research and development and represent the latest technology and one of the highest levels of integration yet be seen in Satellite DGPS receivers.

Fugro transmits differential GPS correction data to user mobile receiver units via L-band satellites worldwide. The correction data is generated by a network of ground (reference) stations located worldwide and monitored around the clock by three regional control centres. The normal operating environments for the receivers is vessel mounting for precise navigation.

The 3000L series incorporates high quality RF components and circuitry which ensures the best possible performance in fringe area reception and/or noisy reception areas where good signal to noise performance means the difference between the receiver "locking on" to the signal or failing to receive.

The 3000L series also incorporates a powerful DSP (digital signal processing computer), and one of the latest technology RISC (Reduced Instruction Set Computing) embedded processors for receiver control and general purpose processing. The embedded processor operates in real time continuously checking the data integrity, the receiver system health and the computed solution integrity and immediately notifies any out of limits or other alarm condition to the operator. A CAN bus interface is available for access to the processor for machine control and data transfer functions under special software controls. The 3000L Series uses Forward Error Correction Techniques and Fugro proprietary data compression and encryption algorithms to ensure data integrity security and efficiency. These systems are software implemented so that the receiver remains a flexible tool for a wide variety of applications which may require specialised software implementations to suit different users needs.

3000LRS A full function receiver system inside a field case with a display and push button operator interface, Antenna input, Power & Data inputs & outputs.

3000LR8S A full function receiver system inside a field case with a display and push button operator interface, Antenna input, Power and Data inputs and outputs. This unit is equipped with special enhanced differential solution software and also incorporates an internal 8 channel GPS engine.

3000LR12S A full function receiver system inside a field case with a display and push button operator interface, Antenna input, Power and Data inputs and outputs. This unit is equipped with special enhanced differential solution software and also incorporates an internal 12 channel GPS engine.

3000LMS A modular OEM Unit with Antenna, Power and Data inputs and outputs and LED alarm and status indicators.

3000LC A minimum configuration OEM eurocard size receiver board with minimum configuration RF and Power Supply assemblies where integration into other equipment is the responsibility of the original manufacturer (release mid 1997).

Subscription Service Options

VRC This is the Virtual Reference Cell Service where the user selects a "virtual reference cell" which provides an optimised set of RTCM corrections.

VBS This is the Virtual Base Station Service where the user is provided with optimised RTCM corrections for the user current position.

DGPS This is to the Satellite DGPS Service providing DGPS Corrections.

OmniSTAR 3000LS SERIES DGPS RECEIVER PRODUCT FAMILY

Technical Data

Receive Frequency

Automatic scanning:	1525 MHz to 1559 MHz

Environment

Operating Temperature:	- 20° to 80°C
Non-Operating:	- 40° to 85°C
Humidity:	95% non-condensing
Vibration:	3G/30 Hz/ x, y & z axes
Shock:	Max 7G, 5-20 msec zero rebound
Acceleration:	4G (with optional software)

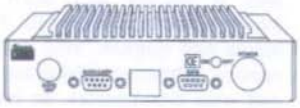
Data inputs and outputs

Three Serial Ports:	Command, Data & Auxiliary
Electrical Interface:	RS-232-C
Data Rates:	300, 600, 1200, 2400, 4800, 9600, 19200
Message Rate:	Typically 1-2 seconds output
Plug Types:	DB-9 and RJ 45 connectors

Active Filtered Splitter

RF Input :	1525MHz - 1559MHz and 1575MHz
GPS RF Output :	1575MHz
RF Connector	TNC
Power Connector:	KYCON

3000LM Receiver Module Front View



3000LM Receiver Module Rear View

Power

Power Supply:	10 Vdc to 32 Vdc
Power Consumption:	250-500 mA at 12 Vdc

Antennas

Satellite Signal:	Plate and Helix antennas
Frequency Range:	1525 MHz to 1559 MHz
Gain:	2dBi to 8 dBi
Polarisation:	RHC
Elevation Angles:	5°-20° or 20°-45° or 45°-90°

Memory

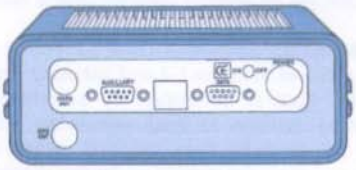
Program Memory:	640kB
Expansion Memory:	512kB to 2 MB

Physical Characteristics

Dimensions (approx):	200mm D x 150mm W x 50mm H
Weight (approx.):	1.5 kg
Display:	Two lines by 20 characters LCD display with yellow backlight
Control:	Five button control

Approvals

Complies with European and USA EMI/EMC Directives



3000LR Rear Panel

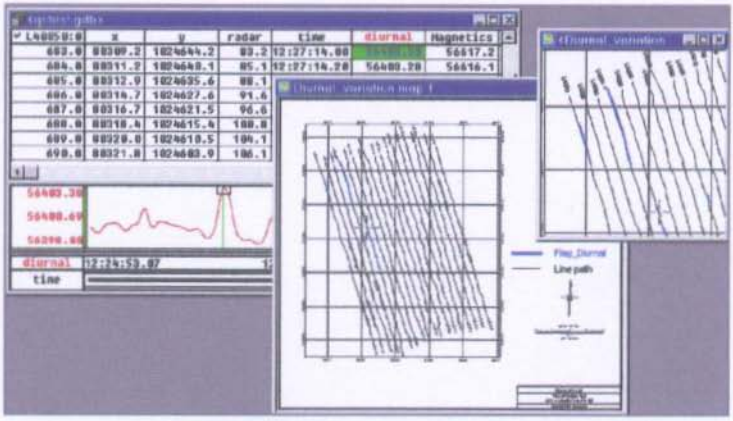
3000LR12/LRFM Extended Case

The system is available world-wide from :

Australia: OmniSTAR Pty Ltd.	Tel: 61-8-93225295	Fax: 61-8-93224164
Norway: Fugro Starfix Europe AS.	Tel: 47-22-134700	Fax: 47-22-134646
Netherlands: OmniSTAR BV.	Tel: 31 71 5814710	Fax: 31 71 5814710
Singapore: Fugro OmniSTAR Pte Ltd.	Tel: 65-5430200	Fax: 65-5430500
United Kingdom: Fugro Starfix UK .	Tel: 44-1224-257500	Fax: 44-1224-257501
USA: OmniSTAR Inc.	Tel: 1-713-785-5850	Fax: 1-713-785-5164

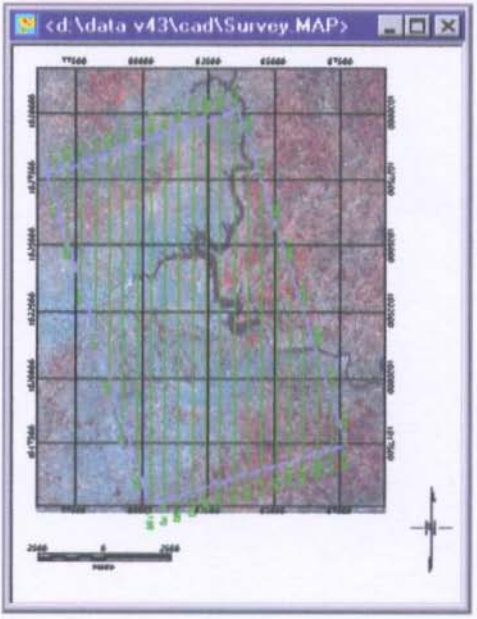
Airborne Quality Control Toolkit

product description



The Airborne Quality Control toolkit offers the productivity tools to plan an airborne survey, and meet basic tender specifications. This provides flight path planning tools, the ability to monitor the survey progress, and streamlined quality control (QC) tools. A built-in mapping wizard automatically displays QC results.

The Airborne Quality Control toolkit provides the tools to accomplish the tasks below:



- Generate flight path map of planned survey
- Display survey statistics
- Display survey line distance
- Perform altitude deviation QC test
- Perform flight path deviation QC test
- Perform flight line separation QC test
- Perform sample spacing QC test
- Perform diurnal drift QC test
- Perform magnetic noise QC test
- Map and print QC results

This tool can be added to any Geosoft application to offer you a more complete data processing and analysis solution. For more information about specialized data processing and analysis tools, please contact your local Geosoft representative.

product capabilities

This tool includes the following capabilities:

- Map Creation
- Importing
- Symbol plots
- Survey line plots
- Quality Control
- Grid Compression
- Database compression
- Coordinate Utilities and Warping

Aiborne Quality Control Toolkit capabilities

Map Creation

Map creation capabilities consist of the "Mapping Wizard" which simplifies the mapmaking process. The wizard uses a series of dialog boxes in which the user can define each specification for the map. The Mapping Wizard uses an existing grid or database to define the extent (area) and scale of the map. The first step in mapping data is to create a new map, which is a blank map with the size, scale and name defined. Once a blank map has been created, plot data, grids or other information can then be added. Map surrounds, north arrows, coordinates and titles can also be add to a map.

Importing

Oasis montaj provides seamless access to both original spatial data and processed information (grids, images and plots).

Spatial data import formats include:

- ASCII data files
- Database table files (single or all tables)
- Geosoft XYZ data files
- Geosoft binary data files
- Flat archive data files
- Blocked binary data files
- ODBC data files
- RMS data files
- Picodas PDAS data files
- USGS data files

Processed data import formats include:

- Geosoft plot (PLT)
- AutoCAD DXF (DXF)
- MapInfo TAB files
- ArcView shape files

Database Compression

Oasis montaj (v4.3 or later) features a database compression option that can reduce file size and improve the performance of Geosoft database files (*.gdb). Processing speed is improved by compressing files because the computer takes less time to read and write to disk. Power users will especially benefit from using compressed databases.

Grid Compression

Oasis montaj (v4.3 or later) features a grid compression option that can reduce the file size and improve the performance of Geosoft grids files (*.grd). Processing speed is improved by compressing files because the computer takes less time to read and write to disk. Power users will especially benefit from using compressed grids.

Symbol Plots

The symbol plotting function can draw symbols on a map at all data points along all selected lines in a database. Symbol plotting methods include adding:

- Symbols
- Proportionally scaled symbols
- Zoned colored symbols (symbols can be a fixed size, or sized in proportion to data values)
- Range classified symbols

Survey Line Plots

The survey line path plots and labels survey line locations.

Quality Control (Airborne)

Airborne Quality Control includes three main functions:

- The Flight Path Planning creates a flight line plan tailored to the shape and size of the survey area. Boundary maps of the survey area can be imported from an AutoCAD DXF file or digitized as polygon files. Planning controls specify the direction, starting reference point, and distance between flight lines for the airborne survey area. The software plots both regular flight lines and tie lines. The flight planning utility produces a database and a map of the flight lines that can be viewed, printed or exported.
- Database Statistics extends the statistical reporting tools included in the basic **Oasis montaj** system. The QC statistical tool generates and prints a statistical report for specific channels or an entire database. The statistical report provides the number of dummies, minimum, maximum, mean and total distance flown for each channel and for the whole database. The survey line distance tool displays the total distance flown for a specific flight line.
- Airborne Quality Control Tool identifies line sections that do not meet survey specifications. Examples include evaluating the diurnal variation, altitude deviation, flight path deviation, and flight line separation of each point along the flight lines to ensure they are within specification. Points that do not meet specifications are identified by a coloured symbol using a colour that corresponds to the type of error. These results are plotted to a map so that the user can visualize the sections of the survey that must be re-flown.

Warping & Coordinate Utilities

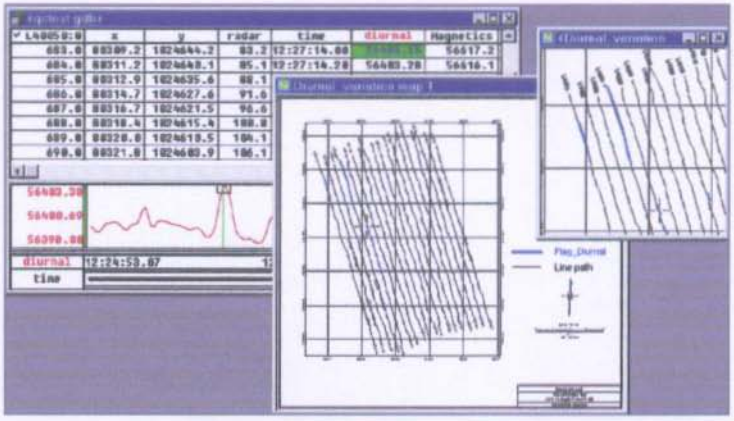
Warping is the process of re-projecting or moving data coordinates numerically, instead of using standard analytical methods for projecting to UTM, longitude/latitude and other coordinate systems. **Oasis montaj** warping defines a polygonal outline (either in a file or interactively) by defining a maximum of four control points. Then data can be warped (creating new X and Y channels) or an entire grid can be warped based on this polygonal outline.

Warping and coordinate utilities include capabilities to do the following:

- Change coordinates
- Backup current X, Y channels
- Restore backup X, Y channels
- Translate coordinates
- Rotate coordinates
- Interpolate X, Y channels
- Convert longitude, latitude to local X, Y
- Convert local X, Y to longitude, latitude
- Define a warp
- Apply a warp

Airborne Geophysics

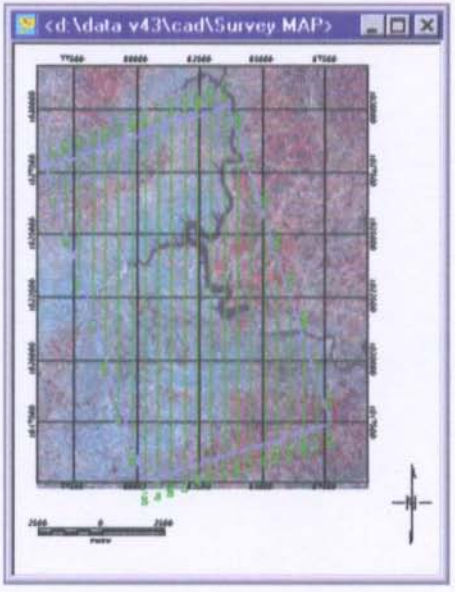
product description



Geosoft's **Airborne Geophysics** application for the **Oasis montaj**™ software platform provides field geophysicists with the ability to process, filter, grid, and map data from airborne geophysical surveys.

This application includes **Oasis montaj** the core software platform for working with large volume spatial data. The core software platform consists of an Interface and a Processing engine. For detailed information on the system and its capabilities, see the **Oasis montaj** Core software platform information page.

In addition to the features provided in the core platform, the **Airborne Geophysics** application provides a variety of gridding methods and 1-D filters for processing your data. Perform quality control tasks on airborne data including levelling survey lines and correcting IGRF, lag, heading, and base station errors. Several map-creation capabilities are also provided to present your processed data for interpretation.



product capabilities

The **Airborne Geophysics** application includes the following capabilities:

- Basic grid utilities
- Advanced grid utilities
- Basic 1-D Filters
- 1D Non-linear Filters
- Line levelling
- Line intersections
- Lag, heading, and base station corrections
- IGRF
- Picodas (PDAS) import
- C3NAV support
- Profile Plotting
- Symbol plotting
- Posting (label) plotting
- Contouring
- Line gridding (Bigrid)
- Minimum curvature gridding
- Tinning
- Target Picking
- Survey line plotting
- Quality Control
- Trend gridding (**GeoStrike**™ Tool)

Airborne Geophysics capabilities

Basic Grid Utilities

The following functions can be performed with the basic grid utilities:

- Display grid as a terenary image
- Display grids as two, three or four grid composites
- Grid windowing (create a grid from a window of a larger grid)
- Colour shaded grid (apply shading to create a quick shaded relief grid)
- Display statistics (display header and grid details on screen)
- Import ASCII grid
- Point grid value (the grid value at a selected location from up to four grid files)
- Grid outline (find edge points in a grid image and either save the edges in a polygon file or draw the edges on the current map)
- Sample a grid (sample a grid at specified X,Y locations and create a new channel that contains the sampled grid data)
- Grid profile (extract a data profile from a grid and place it in a new line of the current database)
- Transpose a grid by swapping the grid rows with the grid columns
- Save grid to database (import grid data into new or existing databases)
- Shaded relief grid (create a shaded relief image from a grid)

Advanced Grid Utilities

The following functions can be performed with advanced grid utilities:

- Trend enforcement (**GeoStrike**)
- Remove regional trends and gradients (remove a regional trend or gradient from a grid)
- Locate grid peaks
- Grid masking (insert placeholder values based on a polygonal area you specify in a file)
- Grid expansion and filling
- Grid volume (calculate the volume of space defined by a grid surface, above and below a base of reference)
- Grid peak (find peaks in a grid file)
- Apply a 3 X 3 convolution filter such as hanning, laplace, horizontal derivative (X direction), horizontal derivative (Y direction), horizontal derivative (45 degree direction)
- Apply a 5x5 symmetric convolution filter
- Apply a vertical derivative convolution filter
- Create and apply user defined filters
- Horizontal gradient (calculate the grid gradient amplitude in a specified direction)
- AGC (apply automatic gain compensation to a grid)
- Use Boolean operators to merge overlapping grids or display the parts of grids which overlap
- Expressions: mathematical operations such as remove base, multiply by factor, add grids, subtract grids, multiply grids, ratio grids and general expressions

Basic 1D Filters

Basic one dimensional filters are commonly used to smooth data, with or without non-linear filtering. The following are descriptions of the different 1D filters:

- High-pass filter applies a high-pass (sharpening) filter to a channel.
- Low-pass filter applies a low-pass (smoothing) filter to a channel.
- Bandpass filter applies a filter that removes features longer than the long wavelength cutoff and shorter than the short wavelength cutoff.
- Convolution filter applies space-domain averaging filter to a channel. The filter can be defined in a filter file or in a comma delimited string.
- Difference filter calculates differences between values in a channel. The common fourth difference can be calculated by specifying four differences, which is useful for identifying noise.
- Polynomial filter calculates n'th (maximum nine) order trend of a data channel by (least square) best-fit polynomial. The trend is then evaluated and placed in a new channel. An optional residual channel (input trend) may also be created.
- B-Spline filter calculates a B-spline interpolation of data in a channel. A B-spline allows you to control the smoothness of the spline and the tension applied to the ends of the spline.
- Linear Regression filter fits a least-square linear regression to a set of marked data in a channel and reports the slope and intercept.

1D Non-Linear Filters

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 signal from surficial features.

The 1D Non-Linear Filter is used to locate and remove data that is recognized as noise. The algorithm is 'non- linear' because it looks at each data point and decides if that data is noise or a valid signal. If the

— continued on next page

Airborne Geophysics capabilities

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 at all.

Line Levelling

Statistical levelling corrects for intersection errors (miss ties) that follow a specific pattern or trend. The algorithm calculates a least-squares trend line through an error channel to derive a trend error curve, which is then added to the channel to be levelled.

The objective of full line levelling is to adjust the survey lines so that all lines match the trended tie lines exactly at each intersection that has been included in the process.

The line levelling system:

- Identifies potential errors in data sets
- Applies systematic corrections including magnetic base station, lag and heading corrections and select line direction
- Performs conventional levelling using simple (tie line and full levelling) and careful levelling methods

Line Intersections

The output intersection table file tabulates every intersection between tie lines and regular survey lines. It includes the exact ground location of the intersection point, the tie line and survey line numbers, the recorded value on each line, and the horizontal gradient of the data at that location. The line intersection system can find and edit intersection between any lines in a data set (lines can either be regular survey lines or tie lines).

Lag, Heading and Base Station Corrections

Correction routines include applying a:

- Lag correction to a channel of data by shifting the start fiducial by a specified lag amount
- Heading correction to data for a systematic shift (in the data) that is a function of the direction of travel for a survey line
- Magnetic base station correction to a magnetic channel

IGRF

The International Geomagnetic Reference Field **IGRF** or the Definitive International Geomagnetic Reference Field **DGRF** correction (field strength, inclination and declination) can be calculated from a geographic coordinate channel or a single geographic point.

Picodas import

Picodas is an airborne instrument data acquisition system that records multi-parameter airborne survey data. The system produces a set of files for each survey flight. The files include an ASCII header file and a number of binary data files that contain the data for each survey flight. The ASCII header file fully documents the contents of the binary data files and includes a list of the binary files for that flight.

C3NAV

C3Nav software corrects errors caused by the difference between recorded GPS location and the true ground loaction.

C3Nav matches the ground GPS and moving GPS readings at the same time, and uses the data only from the common set of satellites that both are observing at that time. C3Nav produces a listing file that contains the GPS time (seconds from the start of the week), and the differentially corrected location of the moving GPS receiver.

Profile Plots

The profile plotting capability features the ability to draw profiles of channel values for all selected lines in a database.

Posting Plots

Posting plots means the user can post the data values for a channel on a map.

Symbol Plots

The symbol plotting function can draw symbols on a map at all data points along all selected lines in a database. Symbol plotting methods include adding:

- Symbols
- Proportionally scaled symbols
- Zoned colored symbols (symbols can be a fixed size, or sized in proportion to data values)
- Range classified symbols

Contouring

Contouring is the capability to draw contours on a map using a specified grid.

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Airborne Geophysics capabilities

Line Gridding

Line gridding is the capability to create a new grid file (.GRD) using the bi-directional gridding method (BIGRID).

The BIGRID method uses a two step process:

1. Each line is interpolated along the original survey line to yield data values at the intersection of each required grid line with the observed value.
2. The intersected points from each line are then interpolated in the across-line direction to produce a value at each required grid node.

The BIGRID GX has the following capabilities:

- Unlimited line based data
- LP, HP filters
- Data presort options
- Enhanced trended gridding
- Output any grid size

Minimum Curvature Gridding

Minimum curvature gridding uses a minimum curvature gridding algorithm (RANGRID) to create a new grid file (.GRD).

The RANGRID method fits a minimum curvature surface to the data points. A minimum curvature surface is the smoothest possible surface that will fit the given data values and settings.

The RANGRID GX also has the capability to:

- Access unlimited number of input observation points
- Adjust internal tension
- Apply de-aliasing filter
- Apply linear and logarithmic gridding
- Blank un-sampled areas
- Output grids up to any size

Tinning

The Triangular Irregular Network (TIN) method, utilizes the Sweepline algorithm implemented by Steven Fortune of Bell Laboratories. The Sweepline algorithm calculates the X,Y (Z-optional) values to create a binary (*.TIN) file.

When Z values are included in the (*.TIN) file, a TIN grid can be created using the TINGRID GX. The TINGRID GX applies the Natural Neighbour algorithm (Sambridge, Brown & McQueen 1995) to the Z values in the (*.TIN) file to create a grid.

Survey Line Plots

The survey line path plots and labels survey line locations.

Quality Control (Airborne)

Airborne Quality Control includes three main functions:

1 **The Flight Path Planning** which creates a flight line plan tailored to the shape and size of the survey area. Boundary maps of the survey area can be imported from an AutoCAD DXF file or digitized as polygon files.
   - Planning controls specify the direction, starting reference point, and distance between flight lines for the airborne survey area.
   - The software plots both regular flight lines and tie lines. The flight planning utility produces a database and a map of the flight lines that can be viewed, printed or exported.

2 **Database Statistics** extends the statistical reporting tools included in the basic **OASIS montaj**™ system.
   - The QC statistical tool generates and prints a statistical report for specific channels or an entire database. The statistical report provides the number of dummies, minimum, maximum, mean and total distance flown for each channel and for the whole database.
   - The survey line distance tool displays the total distance flown for a specific flight line.

3 **Airborne Quality Control Tool** identifies line sections that do not meet survey specifications. Examples include evaluating the diurnal variation, altitude deviation, flight path deviation, flight line separation of each point along the flight lines to ensure they are within specification. Points that do not meet specifications are identified by a coloured symbol using a colour that corresponds to the type of error. These results are plotted to a map so that the user can visualize the sections of the survey that must be re-flown.

Trend Gridding (GeoStrike™)

Trend Gridding (GeoStrike™) alleviates the aliasing problem that results when there are more samples "along the lines" than across lines — a traditional problem in gridding geophysical data. This problem leads to undesirable effects including ellipsoids or ellipsoidal "beads" between lines in gridded data. The Trend Gridding (GeoStrike™) algorithm is designed to provide a solution that preserves the character of local trends while eliminating aliasing effects.

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Target Picking

Two new target-picking capabilities have been added to the Geophysics application:

- The new Pick anomalies option, located on the X-Utility menu, enables the users to pick anomalies from one or multiple channels based on the channel(s) values and the amplitude of the troughs on either side of the anomaly in the channel(s) profile. The target results will be stored in a new "targets" line using the actual values of the input channel or with alphabetical or numerical numbering.
- The Select target option, located on the profile window popup menu, enables individual targets to be picked directly from the profile window. The selected targets are appended to the "targets" line and, optionally, can be plotted simultaneously to the current map using user-defined symbols.

Advanced Gridding Toolkit

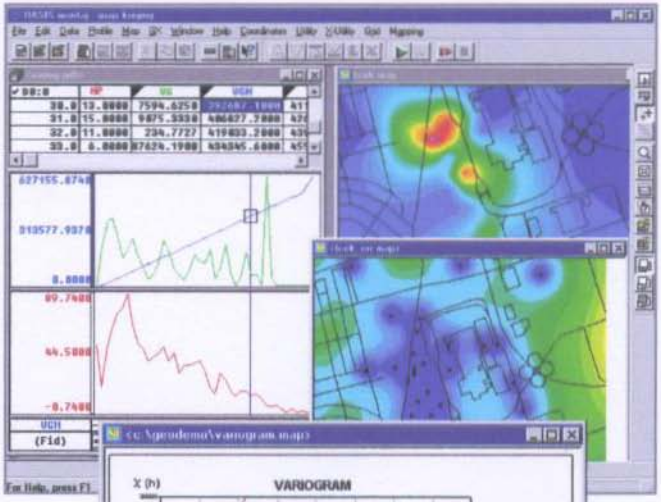
product description

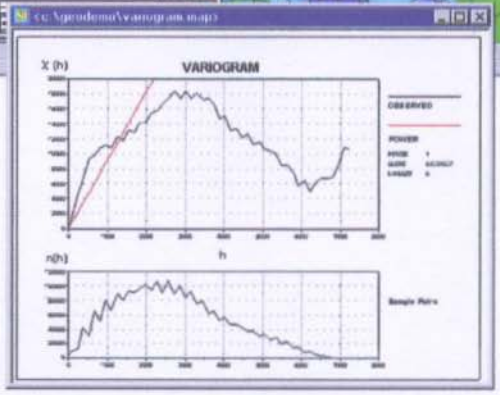
Geosoft's **Advanced Gridding Toolkit** expands your **Oasis montaj™** core system to enable advanced gridding capabilities, including four proven gridding routines and basic grid analysis methods.

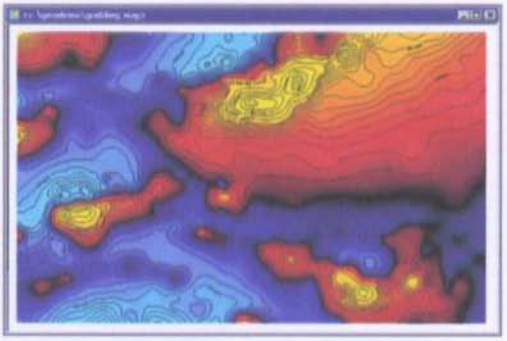
The **Advanced Gridding Toolkit** enables you to interpolate data and produce a grid using any of Geosoft's four gridding routines; Minimum Curvature (Random) Gridding, Line (Bi-Directional) Gridding, TIN Gridding using the Natural Neigbours method, and Kriging. Basic grid utilities provide processing and grid enhancement tools, including:

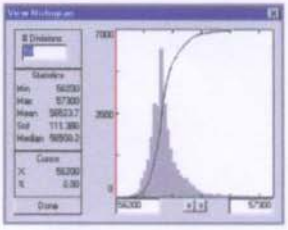
- Grid outline
- Grid windowing
- Point grid value
- Apply shading to create a shaded relief grid
- Display and update standard grid statistics

This tool can be added to any Geosoft application to meet your specific data processing and analysis needs. For more information about specialized data processing and analysis tools, please contact your local Geosoft representative.









product capabilities

This tool includes the following capabilities:

- Basic Grid Utilities
- Line gridding
- Minimum curvature gridding
- Tinning
- Kriging

Advanced Gridding Toolkit capabilities

Basic Grid Utilities

The following functions can be performed with the basic grid utilities:

- Display grid as a terenary image
- Display grids as two, three or four grid composites
- Grid windowing (create a grid from a window of a larger grid)
- Colour shaded grid (apply shading to create a quick shaded relief grid)
- Display statistics (display header and grid details on screen)
- Import ASCII grid
- Point grid value (the grid value at a selected location from up to four grid files)
- Grid outline (find edge points in a grid image and either save the edges in a polygon file or draw the edges on the current map)
- Sample a grid (sample a grid at specified X,Y locations and create a new channel that contains the sampled grid data)
- Grid profile (extract a data profile from a grid and place it in a new line of the current database)
- Transpose a grid by swapping the grid rows with the grid columns
- Save grid to database (import grid data into new or existing databases)
- Shaded relief grid (create a shaded relief image from a grid)

Line Gridding

Line gridding is the capability to create a new grid file (.GRD) using the bi-directional gridding method (BIGRID). The BIGRID method uses a two step process:

1. Each line is interpolated along the original survey line to yield data values at the intersection of each required grid line with the observed value.
2. The intersected points from each line are then interpolated in the across-line direction to produce a value at each required grid node.

The BIGRID GX has the following capabilities:

- Unlimited line based data
- LP, HP filters
- Data presort options
- Enhanced trended gridding
- Output any grid size

Minimum Curvature Gridding

Minimum curvature gridding uses a minimum curvature gridding algorithm (RANGRID) to create a new grid file (.GRD). The RANGRID method fits a minimum curvature surface to the data points. A minimum curvature surface is the smoothest possible surface that will fit the given data values and settings. The RANGRID GX also has the capability to:

- Access unlimited number of input observation points
- Adjust internal tension
- Apply de-aliasing filter
- Apply linear and logarithmic gridding
- Blank un-sampled areas
- Output grids up to any size

Tinning

The Triangular Irregular Network (TIN) method, utilizes the Sweepline algorithm implemented by Steven Fortune of Bell Laboratories. The Sweepline algorithm calculates the X,Y (Z-optional) values to create a binary (*.TIN) file.

When Z values are included in the (*.TIN) file, a TIN grid can be created using the TINGRID GX. The TINGRID GX applies the Natural Neighbour algorithm (Sambridge, Brown & McQueen 1995) to the Z values in the (*.TIN) file to create a grid.

Kriging

The Kriging Tool provides you with the capability to:

- Apply de-aliasing filter
- Apply linear and logarithmic gridding options
- Blank un-sampled areas
- Calculate a variogram from the input data channel
- Output grids up to any size
- Process unlimited number of input observation points
- Support linear, power, spherical, Gaussian, exponen-

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E-Mail: info@mgssurveys.com
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FIELD DATA PROCESSING WORKSTATIONS

Our Field Data Processing Workstations (FWS) are dedicated PC-based microcomputer systems for use at the technical base in the field. The workstations are designed for use with Geosoft OASIS, MPS and MONTAJ, ENCOM, and other data processing software, as well as in-house developed software and utilities.

The FWS has a data replot capability, and may be used to produce pseudo analog charts from the recorded digital data within less than 12 hours after the completion of a survey flight, if this is necessary. It is also capable of processing and imaging all the geophysical and navigation data acquired during the survey, producing semi-final, preliminary-levelled maps in either black-line contours on Mylar or full colour contours on paper.

FWS FEATURES

- **Portability** - the workstations can be packaged and transported to the field with a minimum of effort
- **Digital Data Verification** - flight data quality and completeness can be assured by both statistical and graphical means
- **Flight Path Plots** - flight path plots can be quickly generated from the GPS satellite data to verify the completeness and accuracy of a day's flying
- **Versatility** - the FWS can be used in both the field and the office. Data pre-processed in the field can be up-loaded to the computers at the Data Processing Centre to speed data turnaround.
- **QC and Preliminary Maps** - the software will permit preliminary maps of the magnetic and gamma-ray spectrometer data to be quickly and efficiently created in the field, providing a quick and efficient method to undertake QC Verification of newly acquired data.

THE HARDWARE

The workstations are PC-compatible PENTIUM microcomputers with a 2GHz or faster processor, 512 MB of memory, a large capacity hard disk drive, an extended VGA graphics card with VGA monitor and a colour inkjet plotter for generating maps and/or profiles, and ZIP, JAZZ and writeable CD-ROM drives to backup data.

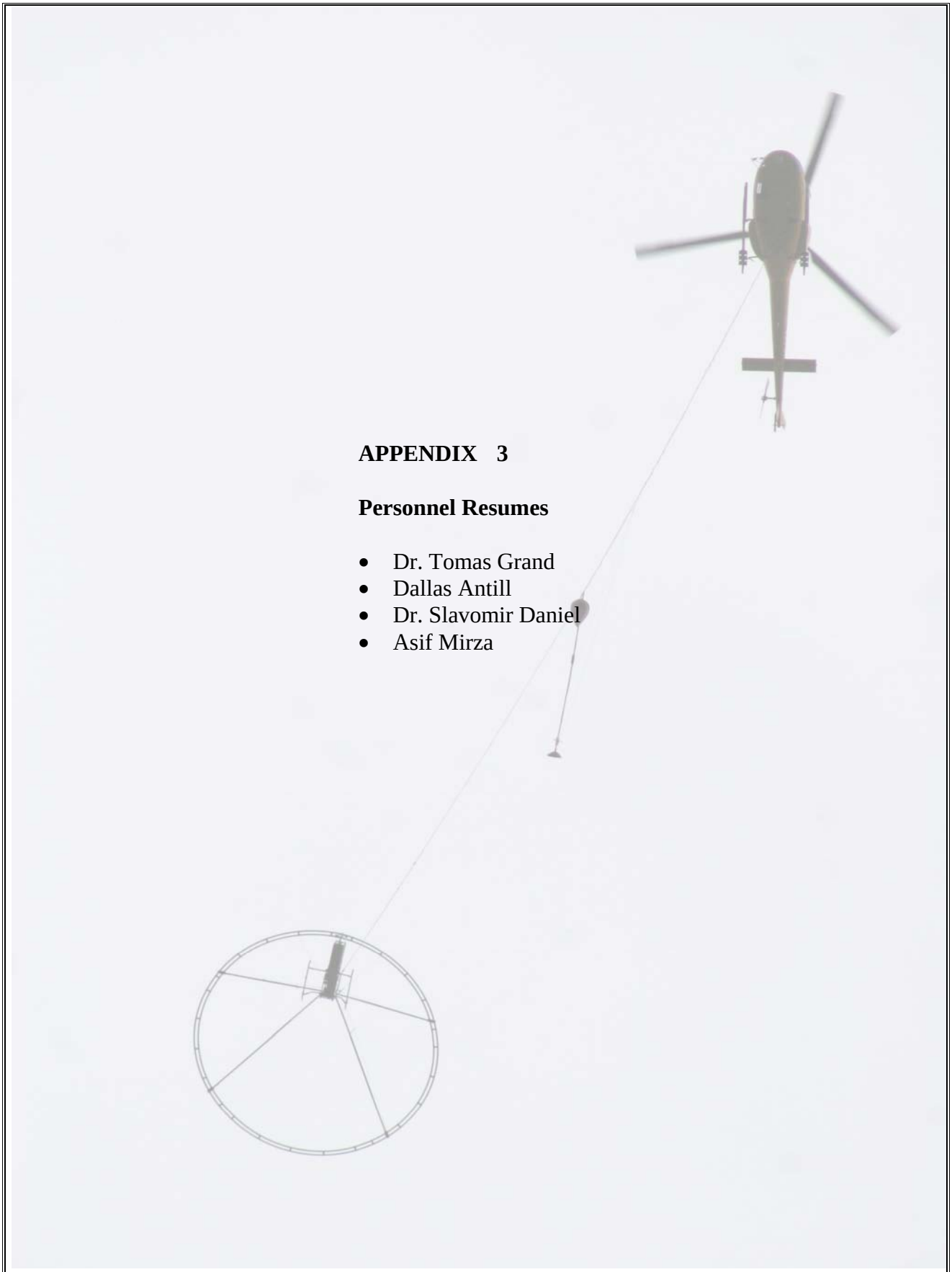
THE SOFTWARE

The FWS software enables the user to read the FLASH cards, ZIP cartridges or PCMCIA removable hard disks from the airborne system, check the data for gaps, spikes or other defects and permits editing where necessary.

The base station GPS/magnetometer data is checked and edited, and where necessary merged with the airborne data. Post-survey differential GPS corrections are made using either C^{3}NAV and/or WAYPOINT software. GPS flight path plots may be created and plotted. Multi-channel stacked profiles of the recorded and edited data may be produced on the dot-matrix printer.

The Software includes:

- Geosoft OASIS/Montaj Airborne Processing Software
- PC-based airborne data compilation and binary database system for in-field processing and compilation of large volumes of time or fiducial based airborne data
- Proprietary data for processing HEM data
- GrafNAV GPS processing/differential GPS correction software
- McPhar's proprietary software and utilities
- General Utility software (WINDOWS 200 PRO, Norton Utilities, Norton Anti-virus, Xtree Gold, LapLink, etc.)



APPENDIX 3

Personnel Resumes

- Dr. Tomas Grand
- Dallas Antill
- Dr. Slavomir Daniel
- Asif Mirza

McPhar Geosurveys Ltd.
1256B Kerrisdale Blvd., Newmarket
Ontario, Canada L3Y 8Z9
Tel: (905) 830-6880, Fax: (905) 898-0336
E-Mail: info@mgssurveys.com
WebSite: www.mgssurveys.com

RÉSUMÉ

Name: Tomas Grand
Profession: Chief Geophysicist
Education: Dr. (Ph.D.), Geophysics (1988)
Comenius University, Bratislava, Czechoslovakia

Experience:

2005 **McPhar Geosurveys Ltd., Newmarket, Ontario, Canada - Chief Geophysicist** - supervising all geophysical activities of the company, including research and development of instrumentation and software; training and workshops, data processing, interpretation and reporting. Project Management and QC of field surveys.

2003 to 2005 **Senior Geophysicist/Projects Manager, McPhar Geosurveys Ltd., Newmarket, Ontario, Canada** - responsible for processing of airborne geophysical data in the field; on-site quality control (QC) of acquired geophysical data; installation of ground base station geophysical instruments; operational logistics and client liaison report writing.

1995 to 1996 **Aero Surveys Inc., Uxbridge, Ontario, Canada – Geophysicist** – field QC and data processing on HEM/MAG surveys, Voisey's Bay, Labrador.

1994 to 2003 **Zebra Earth Sciences Ltd**., **Vice-President and Geophysicist -** an agency based in Czech Republic providing geotechnical services and representing several Canadian manufacturers of geotechnical equipment. Since 2000 associated with AEA Technology PLC of U.K., acting as training manager and consultant for EU geological and environmental projects conducted in Central and Eastern Europe. Various projects, surveys and/or processing and interpretation of geophysical data; mineral exploration, coal exploration, geothermal energy exploration, engineering and environmental geophysics, undertaken in Europe, North and Central America, Asia.

1988 -1994 **Geofyzika Brno (in 1992 transformed to Geocomplex a.s. Bratislava, Slovakia) - Senior Geophysicist, Project Manager**. Responsible for managing and conducting of gravity surveys, data processing, interpretation and development of geophysical software for mineral exploration, coal exploration, oil and gas exploration, regional geology studies and geotechnical surveys

Languages: English, German, Russian, Slovak

Relevant Work Experience (geophysical surveys and training/ data processing of geophysical data) :

Gravity

Responsible for managing and conducting of more than 50 gravity surveys, data processing, interpretation (mineral exploration, coal exploration, oil and gas exploration, geothermal energy exploration, geotechnical and environmental projects) - surveys in Czech and Slovak Republics, Turkey, United Arab Emirates, Mexico, Thailand.

Induced Polarization/Resistivity

Surveys in Thailand, Philippines, Slovak Republic, U.A.E. Training programs conducted in Philippines Yemen, Costa-Rica, Mexico.

Magnetics

Mineral exploration, environmental and geotechnical surveys conducted in Czech and Slovak Republics, Philippines

Ground and Airborne Data Processing

Responsible for managing and conducting of data processing (gravity, ground and airborne magnetic/EM/radiometric, IP/Resistivity and GPR data) in various projects undertaken in Czech and Slovak Republics, Denmark, Mexico, Canada, South-eastern Asia, Russia, Turkey, U.A.E., Mexico.

Data processing and data interpretation training programs undertaken in Europe, Canada, USA, Costa Rica, Mexico, Yemen, Turkey and Saudi Arabia.

Major Clients for whom the surveys and geophysical/geological compilations have been performed include:

Geological Survey of Slovakia, Ministry of Environment of Slovakia, H&O Consulting (Denmark), AEA Technology plc. (U.K), European Commission, Geonika, G-Impulz Inset and GHE (Czech Republic), TIMCO (U.A.E), RTZ Mining, KACST (Saudi Arabia), Ministry of Agriculture of Yemen, Ban Pu Coal (Thailand), Birlik Co. Ltd (Turkey), Pemex (Mexico), Scintrex Ltd., Geosoft Inc., Quantec, GEM Systems, Inc (Canada)

NAME: **Dallas Antill**

PROFESSION: Geophysical Technician

EDUCATION:

University of Lethbridge, Lethbridge, Alberta
- B.Sc. Environmental Science major - graduated December, 1999

Lethbridge Community College, Lethbridge, Alberta
- Watershed Management Diploma - graduated April, 1998

WORK EXPERIENCE:

May 04 -	McPhar Geosurveys Ltd., Geophysical Operator/ QC Geophysical Technician • Gravity meter operator in Bolivia • QC technician on numerous airborne surveys in Canada and Greenland
May 02 – May 03	Excel Geophysics Inc., Geophysical Operator/Data Processor • crew supervisor on various Western Canada and US projects • field acquisition and processing of gps and gravity survey data for oil and gas exploration • repaired and maintained LaCoste and Romberg gravity meters
Mar. 02 – May 02	Airport Terminal Services, Calgary International Airport, Ramp Agent Pinebrook Golf and Country Club, Grounds Crew
Oct. 00 – Oct. 01	Traveled and worked throughout Australia
June 2000	Sid's Oilfield Service, Shaunavon, Saskatchewan Under the direction of Erditas Environmental Solutions • landfill reclamation • well monitoring • soil sampling
Summer 1999	Traveled throughout Southwest USA studying environmental and geographical attributes of the area through the University of Lethbridge
Summer 1998	JRT Communications, GPS Field Technician, Lethbridge, Alberta • mapped fields throughout Southern Alberta using Motorola LGT 1000 GPS units

SKILLS

Technical Skills (Field/Lab)

- global positioning system/surveying
- soil classification and surveys
- reclamation/contaminant management
- gravity surveying

Computer Skills

- GIS (Arc View)
- Leica SkiPro, Map Source
- spreadsheets/word processors

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E-Mail: info@mgssurveys.com
WebSite: www.mgssurveys.com

RÉSUMÉ

Name: Slavomir DANIEL
Profession: Geophysicist
Education: Dr. (Ph.D.), Geophysics (1988)
Comenius University, Bratislava, Czechoslovakia

Experience:

2005 -2006 **McPhar Geosurveys Ltd., Newmarket, Ontario, Canada - Quality control processor** - geophysical processing of the airborne and field measurement data, quality control of data.

1997 to 2006 **Senior Geophysicist/Projects Manager, Koral,s.r.o. Slovakia** - Responsible for creation of GIS. Logistic operation and Project management of geophysical data

1996 to 1997 **Geological Survey of Slovak republic – Chief of GIS department** – Responsible for quality control of processing data. Logistic manager

1988 -1994 **Geofyzika Brno (in 1992 transformed to Geocomplex a.s. Bratislava, Slovakia) - Senior Geophysicist**. Responsible for managing and conducting data processing, interpretation and development of GIS software.

Languages: English, Russian, Slovak

Relevant Work Experience (data processing of geophysical data) :

Data processing

More than 50 projects conducted mainly in Slovak republic.

Field data quality control, processing of gravimetry and magnetometry survey

India , Cuddalore, 2005

Quality control and data processing of Airborne surveys

2006, McPhar Canadian projects.

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E-Mail: info@mgssurveys.com
WebSite: www.mgssurveys.com

RÉSUMÉ

NAME: **ASIF M. MIRZA**

PROFESSION: **Geophysicist**

EDUCATION:

- M.Sc., Applied Environmental Measurement Techniques, Chalmers University of Technology, Sweden
- M.Sc., Applied Geophysics, Dept. of Earth Science, Quaid-I-Azam University, Islamabad, Pakistan
- B.Sc., Applied Geology, Institute of Geology, University of the Punjab, Lahore, Pakistan

TRAINING:

Internship

- Seismic Data Processing, OGDCL, Islamabad, Pakistan

Technical Courses

- Evaluation of Aggregates as constructional material, Course arranged by the Kent State University, Ohio, USA and Institute of Geology, University of the Punjab, Lahore, Pakistan
- Course on Geographical Information System (GIS), Course arranged by the National University of Science and Technology, Islamabad, Pakistan
- Course on Seismic Stratigraphy and Tectonics (Basin Analysis and Computer Modelling), Course arranged by Petroleum Geology Investigators ApS, Copenhagen, Denmark and the Dept. of Earth Sciences, Quaid-i-Azam University, Islamabad, Pakistan
- Well Logging interpretation, course arranged by Petroleum Geology Investigators ApS, Copenhagen, Denmark and the Dept. of Earth Sciences, Quaid-i-Azam University, Islamabad, Pakistan

PROFESSIONAL EXPERIENCE:

2004 McPhar Geosurveys Ltd, Newmarket, Ont, Canada - Geophysicist

- Airborne geophysical field data management and preliminary processing, of different projects, using Geosoft Oasis Montaj
- Quality control decisions of survey data within the specification laid down with clients and McPhar's standards
- Gridding, contouring and leveling of magnetic and electromagnetic geophysical data to produce profiles and contours maps
- Set up and operate ground base station system, comprising magnetometer and GPS system
- Producing of backup CD-ROM's of the processed data for forwarding to clients via internet or company network site
- Making final reports of the processed geophysical data for clients

2000 – 2001 SEFEC (Pvt.) Ltd, Karachi, Pakistan - Field Geophysicist

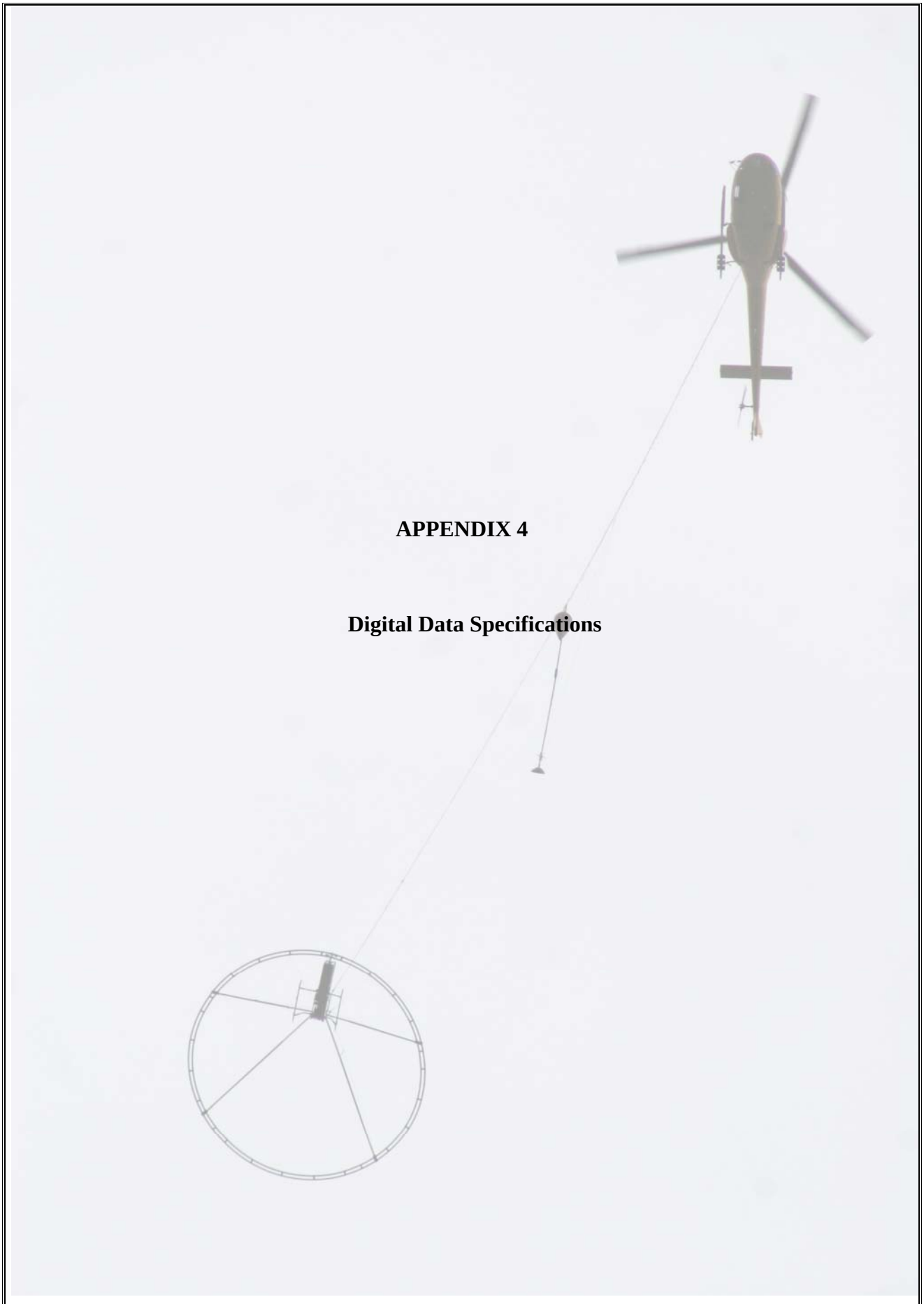
- Seismic reflection data acquisition with the help of dynamite in Attock Area, Pakistan
- Seismic reflection data recorded in the field using well-defined field parameters, i.e. source and spread configuration
- Seismic spread and geophone arrays designed using walk away test and spectral analysis
- Performed field seismic data processing Attock Area, Pakistan

HIGHLIGHTS OF QUALIFICATIONS:

- Experience as a field geophysicist
- Airborne geophysical data management and processing
- Seismic reflection data processing experience in Geophysical Investigations for the demarcation of overburden from the bedrock and concerning oil resources
- Extensive experience in 2-D seismic reflection data interpretation
- Experience in seismic data interpretation with the help of Seismic Straitigraphy, Borehole logging, Gravity and Resistivity methods
- Data acquisition with the help of different environmental instruments
- Research about new environmental issues
- Risk assessments and cost estimates related to environmental clean up
- Evaluation of groundwater potential along sea shoreline, environmental investigations, remedial activities
- Master's in Environmental Science, Master's in Geophysics and Bachelor of Applied Geology
- Knowledge and work experience of the software's, Geosoft Montaj, DOS, Windows XP/NT/2000, M.S.Office, Corel DRAW 9, Arc view GIS

LANGUAGES

- English, Urdu, Hindi and Punjabi



APPENDIX 4

Digital Data Specifications

McPhar Geosurveys Ltd.

Digital File Organization

Directory Structure:

Digital data is arranged on the CD/DVD_ROM in the following structure:

Report:

Report

- 0611_TrueNorth_Final_Report.pdf

Appendices

- Appendices.pdf

APPENDIX 1 **System Tests and Reports**

- Radar Altimeter Test
- Heading Test
- Magnetic Base Station Form
- Time Windows Channel Setting
- EM Anomaly Report
- Flight Logs
- Daily Reports

APPENDIX 2 **Equipment Documentation**

- Eurocopter AS350B2 A-STAR Helicopter
- THEM Digital Time-Domain Electromagnetic System
- Geometrics G-822A Airborne Cesium Magnetometer
- GEM Systems GSM-19 Overhauser Magnetometer
- Terra TRA-3000/TRI-30 Radar Altimeter
- Omnistar 3000 LR GPS Receiver
- Field Data Processing Workstations
- Geosoft Montaj Processing Software

APPENDIX 3 **Personnel Resumes**

- Dr. Tomas Grand
- Dallas Antill
- Dr. Slavomir Daniel
- Asif Mirza

APPENDIX 4 **Digital Data Specifications**

APPENDIX 5 **Page Size Maps**

- Differentially Corrected GPS Flight Path
- Digital Terrain Model Calculated from Survey Data
- Total Magnetic Intensity (TMI)
- Total Magnetic Intensity Reduced to the Magnetic Pole (IGRF Removed)
- Calculated First Vertical Derivative of TMI
- Calculated Second Vertical Derivative of TMI
- Calculated Analytical Signal of the TMI
- Calculated Horizontal Gradient of TMI
- Offset Profiles with Picked Anomalies; dB/dt Z-channel – Window No. 12
- EM Anomaly Map – dB/dt Z-channel – Window No. 15
- Apparent Conductance for selected time window No. 15; dB/dt - Z-channel

Geosoft Grid Files:

- **Dtm.grd**- Digital Terrain Model Calculated from Survey Data
- **TMI.grd**- Total Magnetic Intensity (TMI)
- **RTP_TMI_IGRF.grd**- Total Magnetic Intensity Reduced to the Magnetic Pole (IGRF Removed))
- **1VD_TMI.grd**- Calculated First Vertical Derivative of TMI
- **2VD_TMI.grd**- Calculated Second Vertical Derivative of TMI
- **AS_TMI.grd**- Calculated Analytical Signal of TMI
- **HG_TMI.grd**- Calculated Horizontal Gradient of the TMI
- **z15c.grd**- EM Anomaly Grid – dB/dt Z-channel – Window No. 15
- **cond1.grd**- Apparent Conductance for selected time window No. 15; dB/dt - Z-channel

Packed Geosoft Map Files:

- **0611_FP.map** - Differentially Corrected GPS Flight Path
- **0611_DTM.map** - Digital Terrain Model Calculated from Survey Data
- **0611_TMI.map** - Total Magnetic Intensity (TMI)
- **0611_TMI_RTP.map** - Total Magnetic Intensity Reduced to the Magnetic Pole (IGRF Removed))
- **0611_1VD.map** - Calculated First Vertical Derivative of TMI
- **0611_2VD.map** - Calculated Second Vertical Derivative of TMI
- **0611_AS.map** – Calculated Analytical Signal of TMI
- **0611_HG.map** - Calculated Horizontal Gradient of the TMI

- **0611_EM_Profiles.map** - Offset Profiles with Picked Anomalies; dB/dt Z-channel – Window No. 12
- **0611_EM.map** - EM Anomaly Map – dB/dt Z-channel – Window No. 15
- **0611_Cond.map** - Apparent Conductance for selected time window No. 15; dB/dt - Z-channel

Free Viewer:

- **Geosoft Oasis Montaj 6.3 free viewer for viewing maps**

Databases:

Geosoft gdb files

- 0611_Mag.gdb
- 0611_EM.gdb

CLIENT: True North Gems Inc. Project # 0611 | **PAGE 1 OF 1**

Databases: 0611_Mag

QC: D.Antill, S.Daniel

Proc: T.Grand, S.Daniel

Rev.: T.Grand

DATABASE DESCRIPTION

Channel	Type	Units	Description
Frame	RAW		fiducial
Flt	RAW/PROC		Flight Number
UTC_s	RAW	Secods of Day	UTC Time
Date	RAW	YYYY/MM/DD	Date
Line	RAW		Line Number
x	RAW/PROC	metre	X coordinate (Easting) - UTM Zone 10N WGS84
y	RAW/PROC	metre	Y coordinate (Northing) - UTM Zone 10N WGS84
Lon	RAW	degrees decimal	Longitude - WGS84 - Real Time DGPS
Lat	RAW	degrees decimal	Latitude - WGS84 - Real Time DGPS
Ralt	RAW	metre	Radar altimetry - Filtered
Galt	RAW/PROC	metre	WGS84 Ellipsoidal Height - Real Time DGPS - filtered
dtm	PROC	metre	Digital Terrain Model - dtm=Galt_filt-Ralt_filt - after levelling
Magbase	RAW/PROC	nT	Magnetic base data
Maglb	RAW/PROC	nT	Raw mag - corrected for lag and diurnal
TMI	PROC	nT	Final Total Magnetic Intensity - after levelling
IGRF	PROC	nT	IGRF - model 2005 - 2006/09/20 calculated for dtm elevation channel
TMI_IGRF	PROC	nT	Total Magnetic Intensity - IGRF Removed

CLIENT: True North Gems Inc. Project # 0611 | **PAGE 1 OF 1**

DATABASE DESCRIPTION

Databases: 0611_EM

QC: D.Antill, S.Daniel
Proc: T.Grand, S.Daniel
Rev.: T.Grand

Channel	Type	Units	Description
Frame	RAW		fiducial
Flt	RAW/PROC		Flight Number
UTC_s	RAW	Secods of Day	UTC Time
Date	RAW	YYYY/MM/DD	Date
Line	RAW		Line Number
x	RAW/PROC	metre	X coordinate (Easting) - UTM Zone 10N WGS84
y	RAW/PROC	metre	Y coordinate (Northing) - UTM Zone 10N WGS84
Lon	RAW	degrees decimal	Longitude - WGS84 - Real Time DGPS
Lat	RAW	degrees decimal	Latitude - WGS84 - Real Time DGPS
Ralt	RAW	metre	Radar altimetry - Filtered
Galt	RAW/PROC	metre	WGS84 Ellipsoidal Height - Real Time DGPS - filtered
z1_o - z9_o	RAW/PROC		EM data of Vertical Coplanar Coil - dB/dz - Extracted On-time Windows
z10_o - z35_o	RAW/PROC	ppm	EM data of Vertical Coplanar Coil - dB/dz - Extracted Off-time Windows
z13l	PROC	ppm	EM data of Vertical Coplanar Coil - dB/dz - Extracted Early Off-time Window No. 13
z15l	PROC	ppm	EM data of Vertical Coplanar Coil - dB/dz - Extracted Medium Off-time Window No. 15
z17l	PROC	ppm	EM data of Vertical Coplanar Coil - dB/dz - Extracted Late Off-time Window No. 17
cond	PROC	Siemens	Calculated Apparent Pseudo Conductance

APPENDIX 5

Page Size Maps

- Differentially Corrected GPS Flight Path
- Digital Terrain Model Calculated from Survey Data
- Total Magnetic Intensity (TMI)
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- Calculated Analytical Signal of the TMI
- Calculated Horizontal Gradient of TMI
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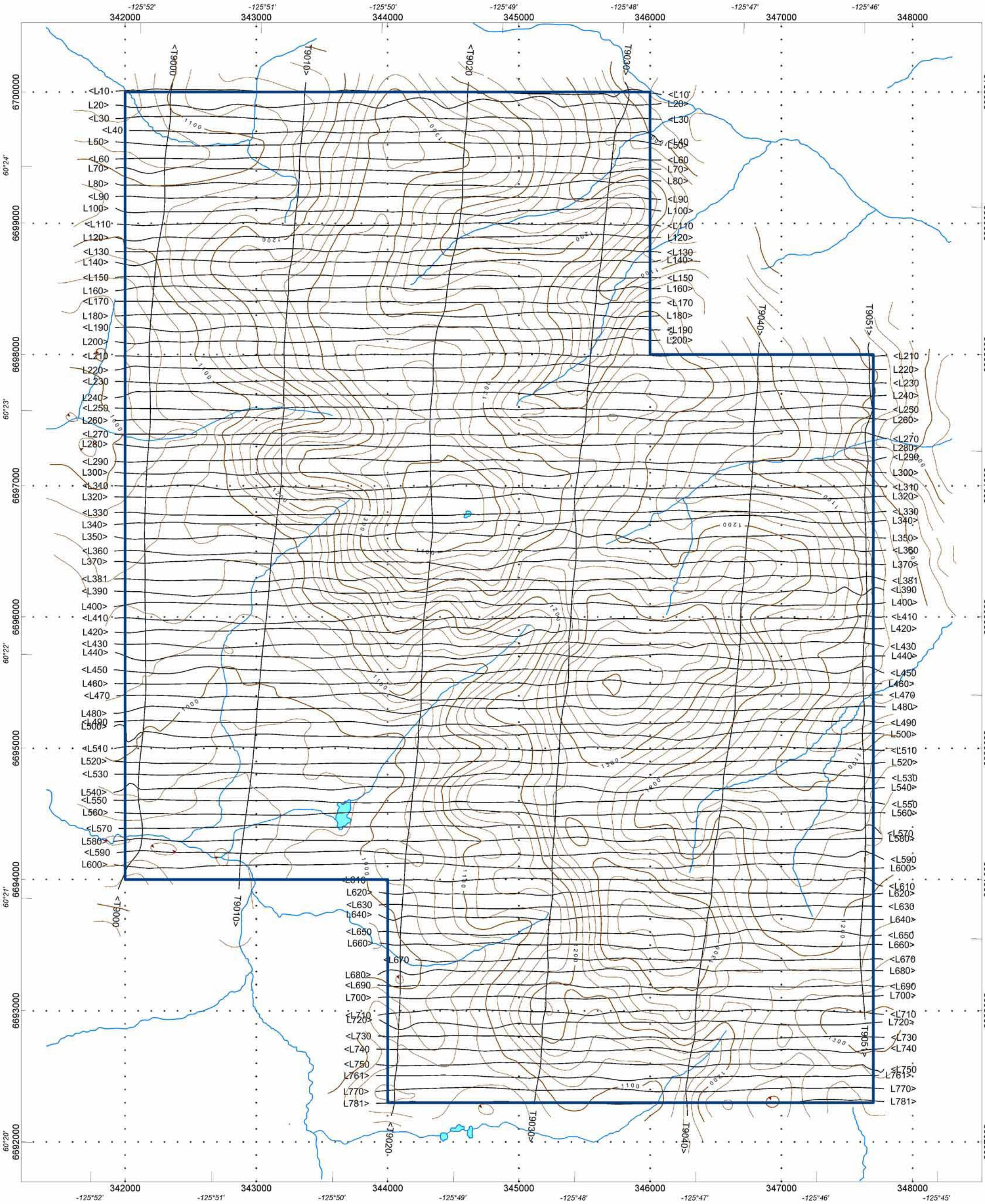


LEGEND

Helicopter Type: Eurocopter AS350B2
Helicopter Registration: C-GTNT
Survey Period: September-October, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 85 m (Helicopter)
Traverse Line Spacing: 100 m
Traverse Line Direction: 90°
Control Line Spacing: 1000 m
Control Line Direction: 180°

AIRBORNE MAGNETOMETER SYSTEM:

Geometrics G822A Cesium magnetometer
Sensitivity: 0.0005 nT
Noise Level: +/- 0.001 nT
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the helicopter
Sampling Rate: 10 readings/second

AIRBORNE ELECTROMAGNETIC SYSTEM:

T.H.E.M. Helicopter-borne Digital Time-domain Electromagnetic System

Receiver:

Three axis (X,Y and Z) dipole coils with coplanar configuration
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the aircraft
Sampling Rate: 10 readings/second

Transmitter:

Horizontal transmitter loop of 7.5 m diameter
Sensor Height: Nominally 36 m above ground level
Sensor Location: Horizontal loop towed 49 m beneath the aircraft
Frequency: 30 Hz; 60 half-sine pulses per second

DATA ACQUISITION SYSTEM:

T.H.E.M. Data Collector

AIRBORNE NAVIGATION SYSTEM:

T.H.E.M navigation system
OmniSTAR 3000LR DGPS receiver.
Pilot steering and navigation computer.

BASE STATIONS SYSTEMS:

GEM GSM-19 Overhauser Magnetometer
Sample Interval: 1 second
Sensitivity: 0.001 nT

Topo Legend

Minor Elevation Contour (25 m interval)
Major Elevation Contour (100 m interval)
Water Course
Water Body

Scale 1:20000

250 0 250 500 750 1000 1250 1500
(meters)
WGS 84 / UTM zone 10N

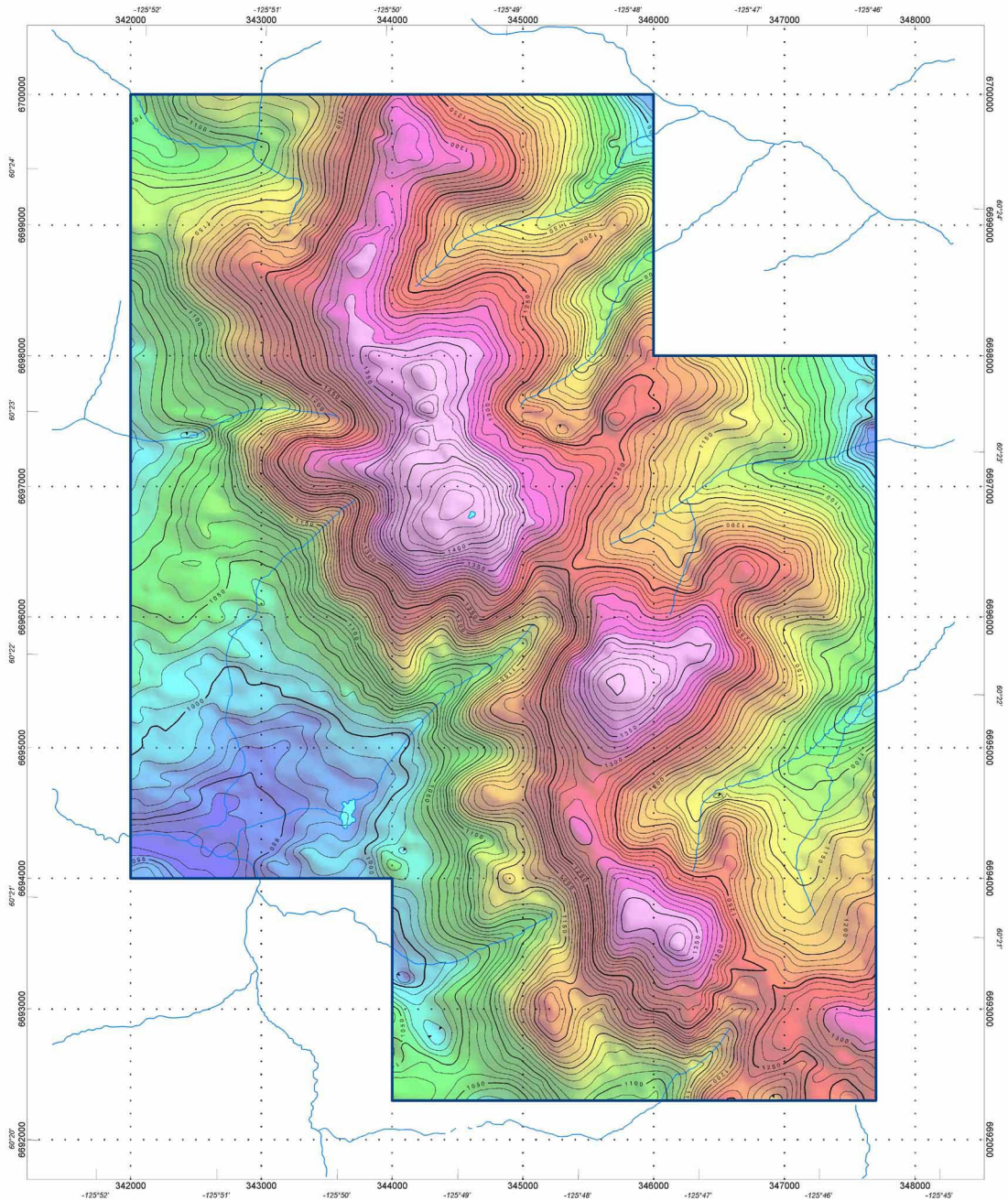
McPHAR

True North Gems Inc.

Differentially Corrected GPS Flight Path
Bandito Project

Airborne TDEM and Magnetic Survey

McPhar Geosurveys Ltd.



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Helicopter Type: Eurocopter AS350B2
Helicopter Registration: C-GTNT
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Pilot steering and navigation computer.

BASE STATIONS SYSTEMS:

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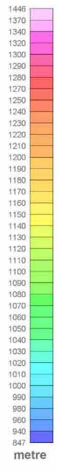
Sample Interval: 1 second
Sensitivity: 0.001 nT

Topo Legend

Water Course
Water Body

Contour Legend

10 m
50 m
250 m



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(meters)
WGS 84 / UTM zone 10N

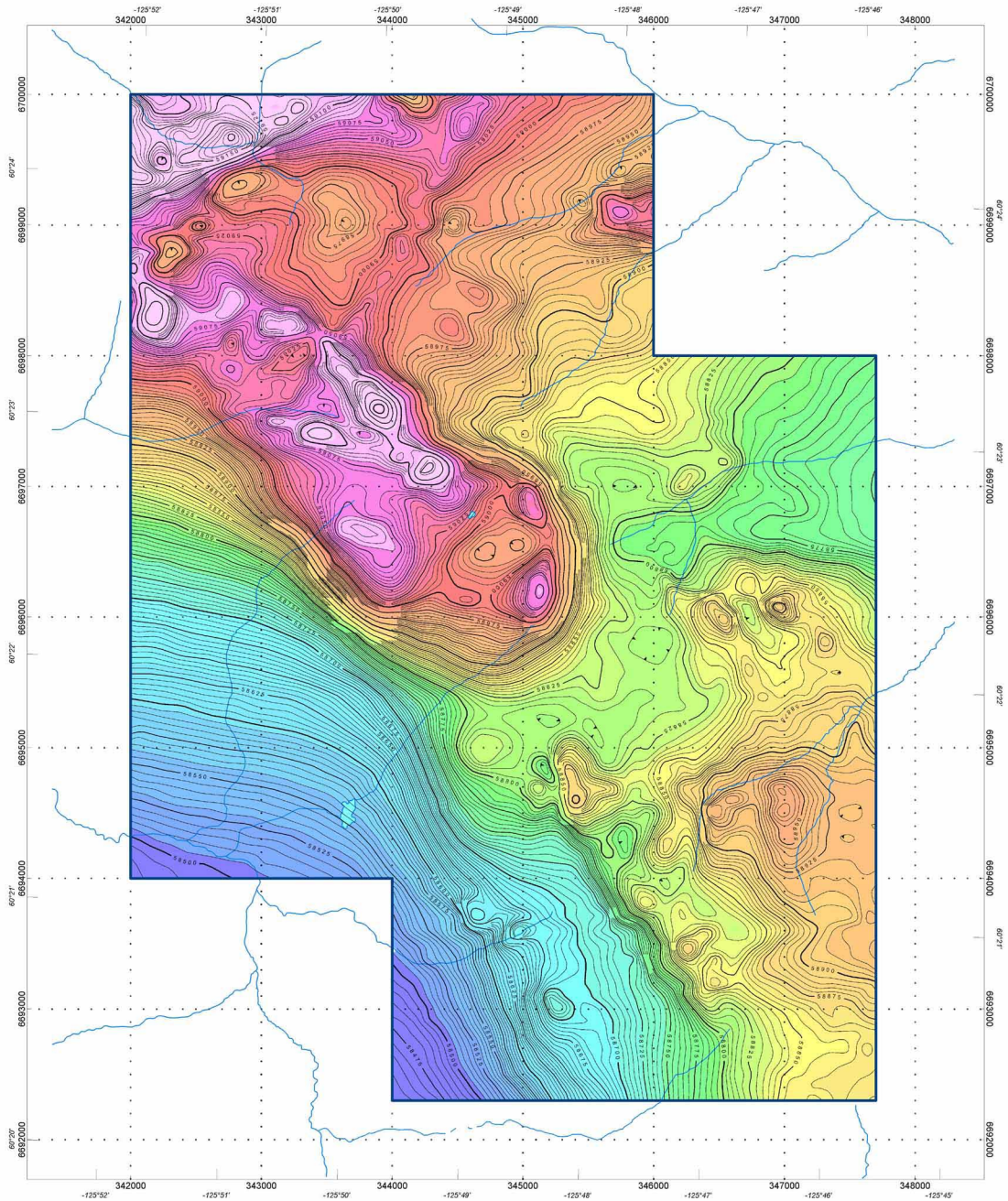
McPHAR

True North Gems Inc.

Digital Terrain Model Calculated from Survey Data
Bandito Project

Airborne TDEM and Magnetic Survey

McPhar Geosurveys Ltd.



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BASE STATIONS SYSTEMS:

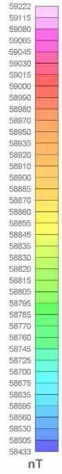
GEM GSM-19 Overhauser Magnetometer
Sample Interval: 1 second
Sensitivity: 0.001 nT

Topo Legend

Water Course
Water Body

Contour Legend

5 nT
25 nT
100 nT



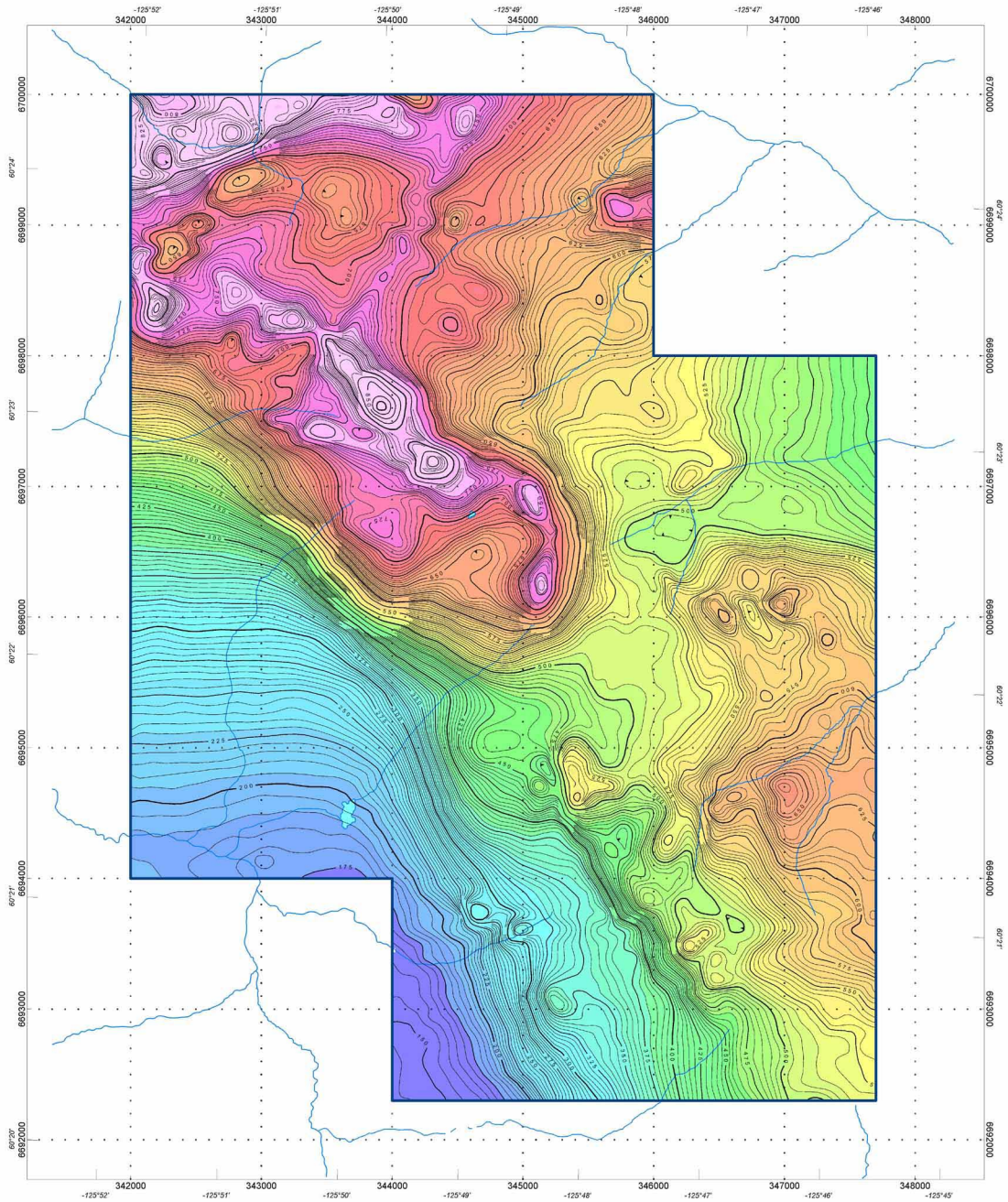
Scale 1:20000

250 0 250 500 750 1000 1250 1500
(meters)

WGS 84 / UTM zone 10N

McPHAR

True North Gems Inc.
Total Magnetic Intensity **Bandito Project**
Airborne TDEM and Magnetic Survey
McPhar Geosurveys Ltd.



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Three axis (X,Y and Z) dipole coils with coplanar configuration
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the aircraft
Sampling Rate: 10 readings/second

Transmitter:

Horizontal transmitter loop of 7.5 m diameter
Sensor Height: Nominally 36 m above ground level
Sensor Location: Horizontal loop towed 49 m beneath the aircraft
Frequency: 30 Hz; 60 half-sine pulses per second

DATA ACQUISITION SYSTEM:

T.H.E.M. Data Collector

AIRBORNE NAVIGATION SYSTEM:

T.H.E.M navigation system
OmniSTAR 3000LR DGPS receiver.
Pilot steering and navigation computer.

BASE STATIONS SYSTEMS:

GEM GSM-19 Overhauser Magnetometer
Sample Interval: 1 second
Sensitivity: 0.001 nT

IGRF Model 2005

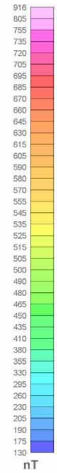
Date : 20 September 2006
Elevation : DTM - Survey Data

Topo Legend

Water Course
Water Body

Contour Legend

5 nT
25 nT
100 nT



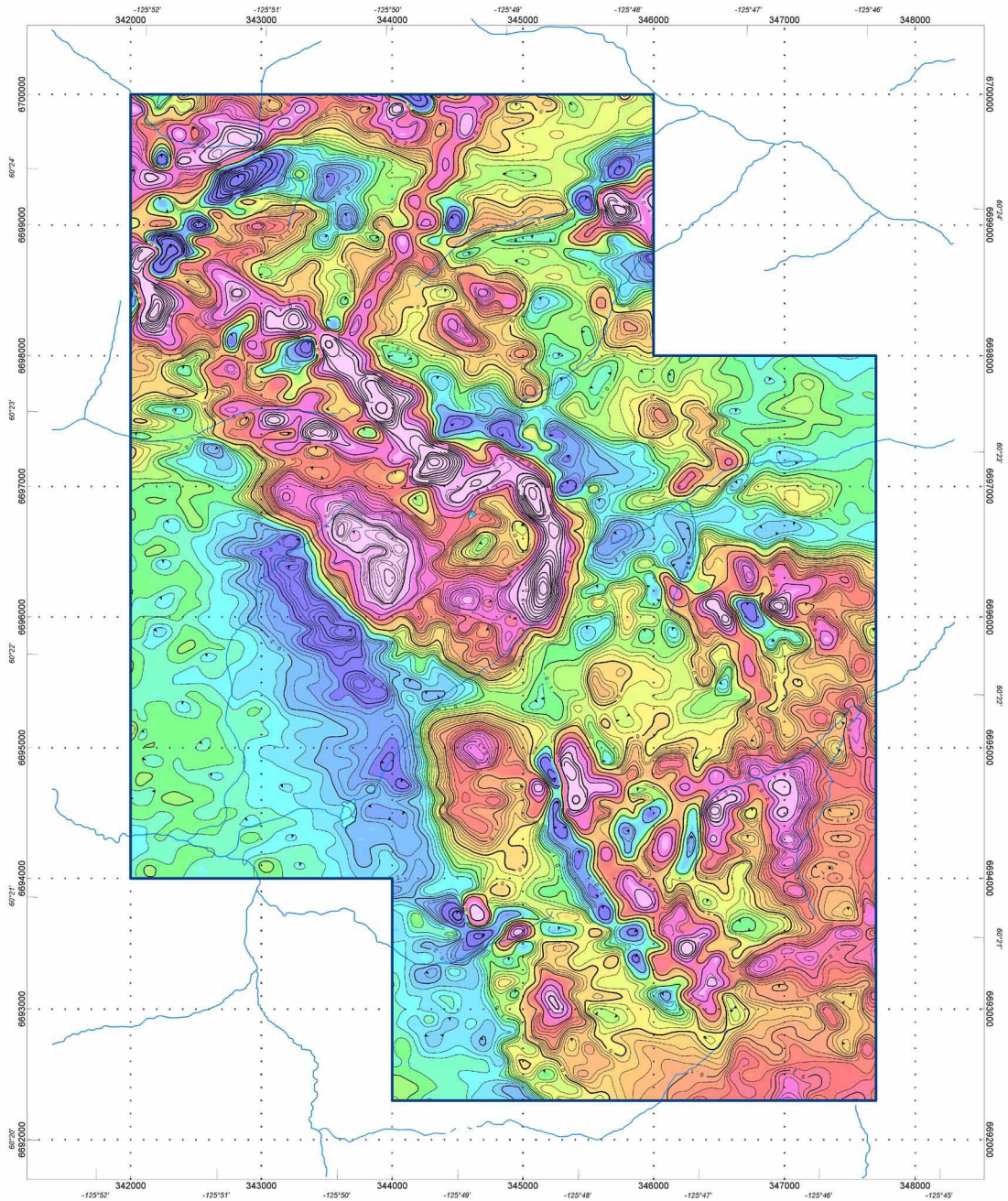
Scale 1:20000

250 0 250 500 750 1000 1250 1500
(meters)

WGS 84 / UTM zone 10N

McPHAR

True North Gems Inc.
Total Magnetic Intensity Reduced to the Magnetic Pole (IGRF Removed)
Bandito Project
Airborne TDEM and Magnetic Survey
McPhar Geosurveys Ltd.



LEGEND

Helicopter Type: Eurocopter AS350B2
Helicopter Registration: C-GTNT
Survey Period: September-October, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 85 m (Helicopter)
Traverse Line Spacing: 100 m
Traverse Line Direction: 90°
Control Line Spacing: 1000 m
Control Line Direction: 180°

AIRBORNE MAGNETOMETER SYSTEM:

Geometrics G822A Cesium magnetometer
Sensitivity: 0.0005 nT
Noise Level: +/- 0.001 nT
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the helicopter
Sampling Rate: 10 readings/second

AIRBORNE ELECTROMAGNETIC SYSTEM:

T.H.E.M. Helicopter-borne Digital Time-domain Electromagnetic System

Receiver:

Three axis (X,Y and Z) dipole coils with coplanar configuration
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the aircraft
Sampling Rate: 10 readings/second

Transmitter:

Horizontal transmitter loop of 7.5 m diameter
Sensor Height: Nominally 36 m above ground level
Sensor Location: Horizontal loop towed 49 m beneath the aircraft
Frequency: 30 Hz; 60 half-sine pulses per second

DATA ACQUISITION SYSTEM:

T.H.E.M. Data Collector

AIRBORNE NAVIGATION SYSTEM:

T.H.E.M navigation system
OmniSTAR 3000LR DGPS receiver.
Pilot steering and navigation computer.

BASE STATIONS SYSTEMS:

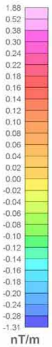
GEM GSM-19 Overhauser Magnetometer
Sample Interval: 1 second
Sensitivity: 0.001 nT

Topo Legend

Water Course
Water Body

Contour Legend

0.02 nT/m
0.1 nT/m
0.5 nT/m



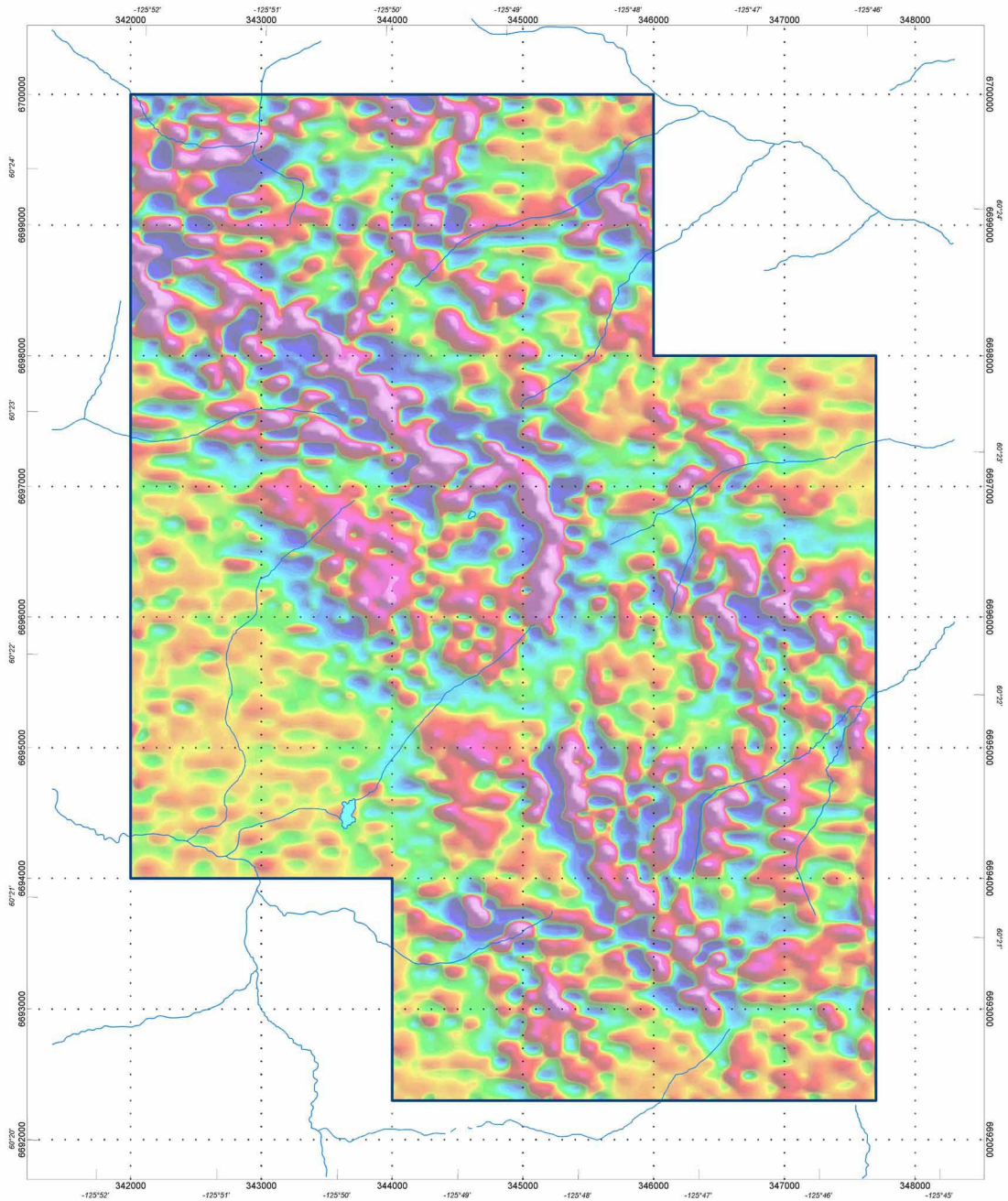
Scale 1:20000

250 0 250 500 750 1000 1250 1500
(meters)
WGS 84 / UTM zone 10N

McPHAR

True North Gems Inc.

Calculated First Vertical Derivative of TMI
Bandito Project
Airborne TDEM and Magnetic Survey
McPhar Geosurveys Ltd.



LEGEND

Helicopter Type: Eurocopter AS350B2
Helicopter Registration: C-GTNT
Survey Period: September-October, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 85 m (Helicopter)
Traverse Line Spacing: 100 m
Traverse Line Direction: 90°
Control Line Spacing: 1000 m
Control Line Direction: 180°

AIRBORNE MAGNETOMETER SYSTEM:

Geometrics G822A Cesium magnetometer
Sensitivity: 0.0005 nT
Noise Level: +/- 0.001 nT
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the helicopter
Sampling Rate: 10 readings/second

AIRBORNE ELECTROMAGNETIC SYSTEM:

T.H.E.M. Helicopter-borne Digital Time-domain Electromagnetic System

Receiver:

Three axis (X,Y and Z) dipole coils with coplanar configuration
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the aircraft
Sampling Rate: 10 readings/second

Transmitter:

Horizontal transmitter loop of 7.5 m diameter
Sensor Height: Nominally 36 m above ground level
Sensor Location: Horizontal loop towed 49 m beneath the aircraft
Frequency: 30 Hz; 60 half-sine pulses per second

DATA ACQUISITION SYSTEM:

T.H.E.M. Data Collector

AIRBORNE NAVIGATION SYSTEM:

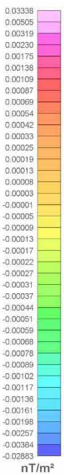
T.H.E.M navigation system
OmniSTAR 3000LR DGPS receiver.
Pilot steering and navigation computer.

BASE STATIONS SYSTEMS:

GEM GSM-19 Overhauser Magnetometer
Sample Interval: 1 second
Sensitivity: 0.001 nT

Topo Legend

Water Course
Water Body



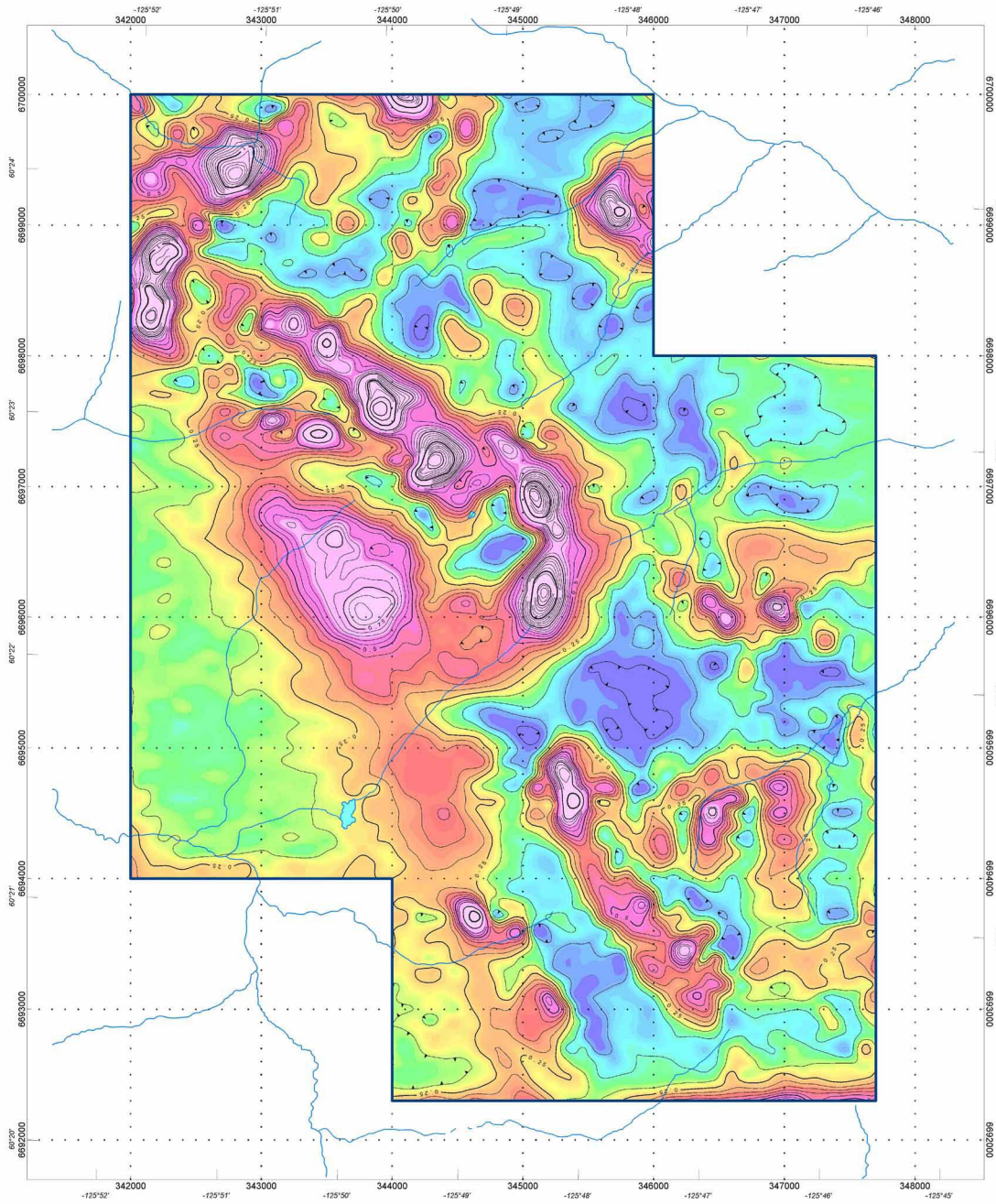
Scale 1:20000

250 0 250 500 750 1000 1250 1500
(meters)

WGS 84 / UTM zone 10N

McPHAR

True North Gems Inc.
Calculated Second Vertical Derivative of TMI **Bandito Project**
Airborne TDEM and Magnetic Survey
McPhar Geosurveys Ltd.



LEGEND

Helicopter Type: Eurocopter AS350B2
Helicopter Registration: C-GTNT
Survey Period: September-October, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 85 m (Helicopter)
Traverse Line Spacing: 100 m
Traverse Line Direction: 90°
Control Line Spacing: 1000 m
Control Line Direction: 180°

AIRBORNE MAGNETOMETER SYSTEM:

Geometrics G822A Cesium magnetometer
Sensitivity: 0.0005 nT
Noise Level: +/- 0.001 nT
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the helicopter
Sampling Rate: 10 readings/second

AIRBORNE ELECTROMAGNETIC SYSTEM:

T.H.E.M. Helicopter-borne Digital Time-domain Electromagnetic System

Receiver:

Three axis (X,Y and Z) dipole coils with coplanar configuration
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the aircraft
Sampling Rate: 10 readings/second

Transmitter:

Horizontal transmitter loop of 7.5 m diameter
Sensor Height: Nominally 36 m above ground level
Sensor Location: Horizontal loop towed 49 m beneath the aircraft
Frequency: 30 Hz; 60 half-sine pulses per second

DATA ACQUISITION SYSTEM:

T.H.E.M. Data Collector

AIRBORNE NAVIGATION SYSTEM:

T.H.E.M navigation system
OmniSTAR 3000LR DGPS receiver.
Pilot steering and navigation computer.

BASE STATIONS SYSTEMS:

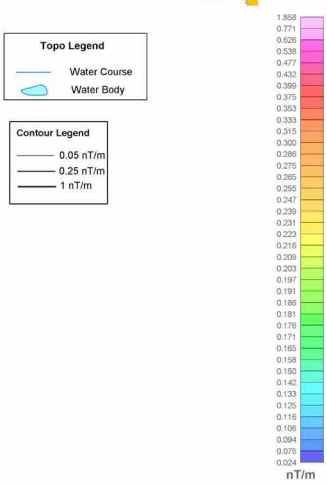
GEM GSM-19 Overhauser Magnetometer
Sample Interval: 1 second
Sensitivity: 0.001 nT

Topo Legend

Water Course
Water Body

Contour Legend

0.05 nT/m
0.25 nT/m
1 nT/m



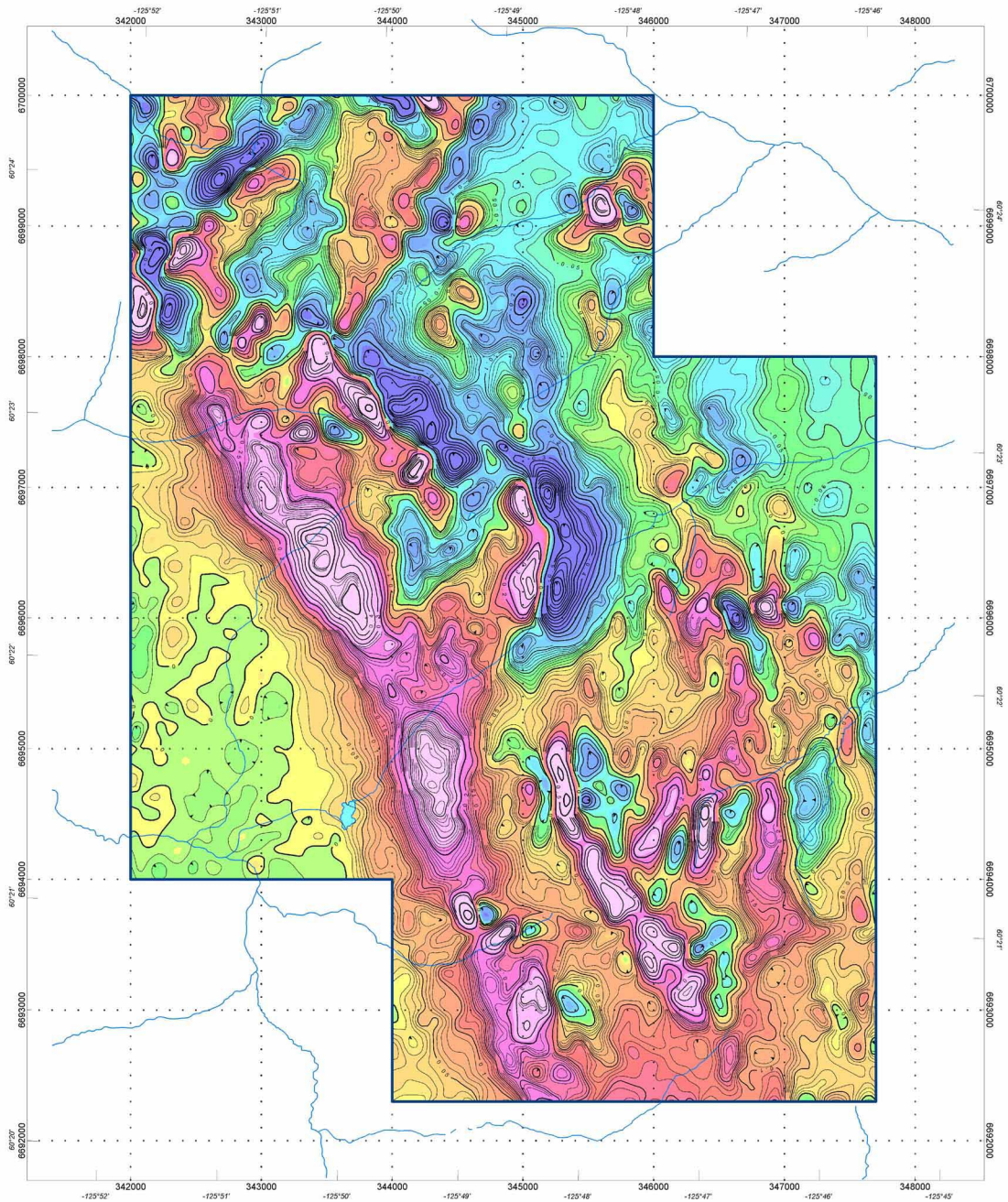
Scale 1:20000

250 0 250 500 750 1000 1250 1500
(meters)

WGS 84 / UTM zone 10N

McPHAR

True North Gems Inc.
Calculated Analytical Signal of TMI
Bandito Project
Airborne TDEM and Magnetic Survey
McPhar Geosurveys Ltd.



LEGEND

Helicopter Type: Eurocopter AS350B2
Helicopter Registration: C-GTNT
Survey Period: September-October, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 85 m (Helicopter)
Traverse Line Spacing: 100 m
Traverse Line Direction: 90°
Control Line Spacing: 1000 m
Control Line Direction: 180°

AIRBORNE MAGNETOMETER SYSTEM:

Geometrics G822A Cesium magnetometer
Sensitivity: 0.0005 nT
Noise Level: +/- 0.001 nT
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the helicopter
Sampling Rate: 10 readings/second

AIRBORNE ELECTROMAGNETIC SYSTEM:

T.H.E.M. Helicopter-borne Digital Time-domain Electromagnetic System

Receiver:

Three axis (X,Y and Z) dipole coils with coplanar configuration
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the aircraft
Sampling Rate: 10 readings/second

Transmitter:

Horizontal transmitter loop of 7.5 m diameter
Sensor Height: Nominally 36 m above ground level
Sensor Location: Horizontal loop towed 49 m beneath the aircraft
Frequency: 30 Hz; 60 half-sine pulses per second

DATA ACQUISITION SYSTEM:

T.H.E.M. Data Collector

AIRBORNE NAVIGATION SYSTEM:

T.H.E.M navigation system
OmniSTAR 3000LR DGPS receiver.
Pilot steering and navigation computer.

BASE STATIONS SYSTEMS:

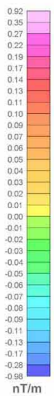
GEM GSM-19 Overhauser Magnetometer
Sample Interval: 1 second
Sensitivity: 0.001 nT

Topo Legend

Water Course
Water Body

Contour Legend

0.01 nT/m
0.05 nT/m
0.25 nT/m

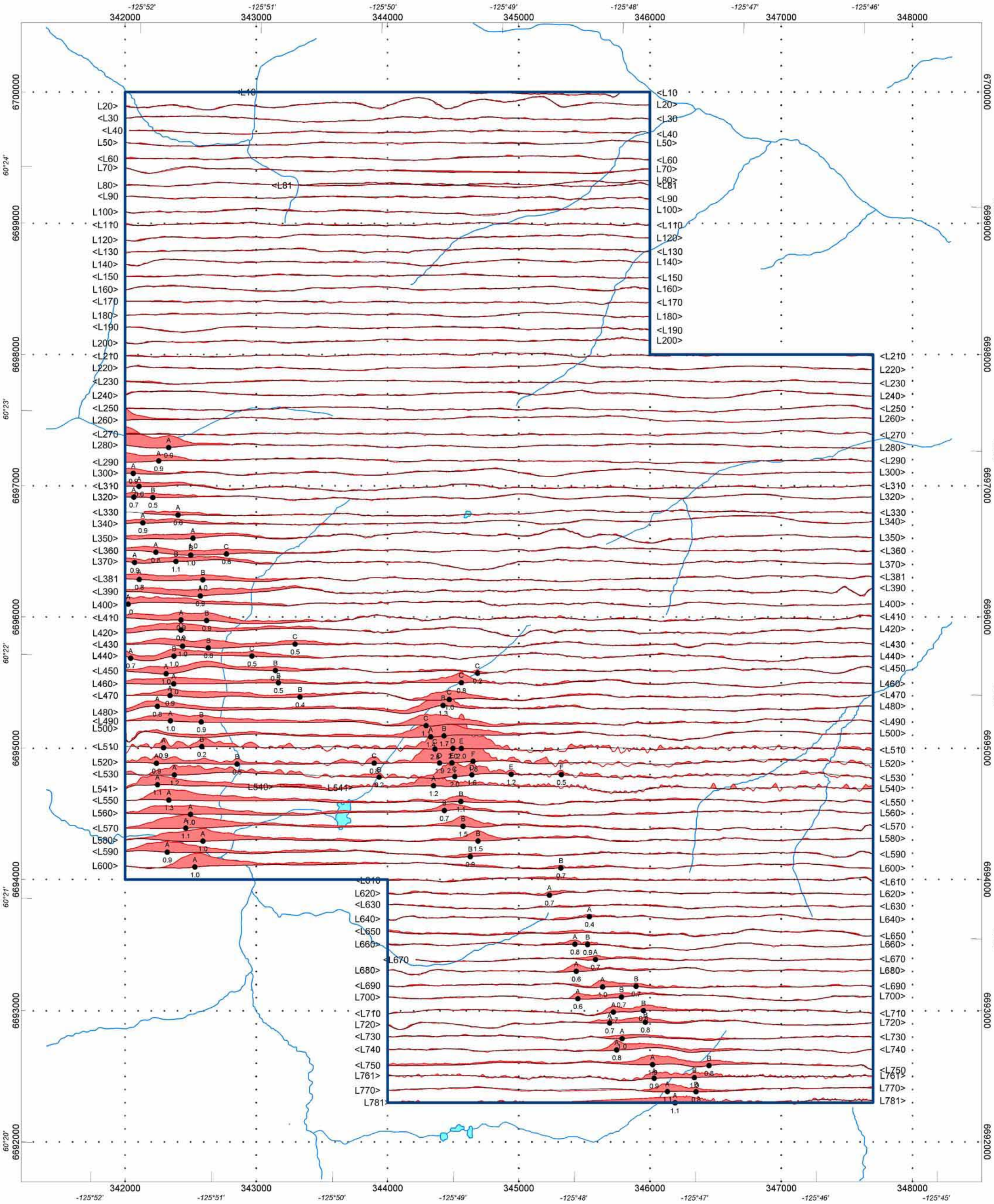


Scale 1:20000

250 0 250 500 750 1000 1250 1500
(meters)
WGS 84 / UTM zone 10N

McPHAR

True North Gems Inc.
Calculated Horizontal Gradient of TMI
Bandito Project
Airborne TDEM and Magnetic Survey
McPhar Geosurveys Ltd.



LEGEND

Helicopter Type: Eurocopter AS350B2
Helicopter Registration: C-GTNT
Survey Period: September-October, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 85 m (Helicopter)
Traverse Line Spacing: 100 m
Traverse Line Direction: 90°
Control Line Spacing: 1000 m
Control Line Direction: 180°

AIRBORNE MAGNETOMETER SYSTEM:

Geometrics G822A Cesium magnetometer
Sensitivity: 0.0005 nT
Noise Level: +/- 0.001 nT
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the helicopter
Sampling Rate: 10 readings/second

AIRBORNE ELECTROMAGNETIC SYSTEM:

T.H.E.M. Helicopter-borne Digital Time-domain Electromagnetic System

Receiver:

Three axis (X,Y and Z) dipole coils with coplanar configuration
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the aircraft
Sampling Rate: 10 readings/second

Transmitter:

Horizontal transmitter loop of 7.5 m diameter
Sensor Height: Nominally 36 m above ground level
Sensor Location: Horizontal loop towed 49 m beneath the aircraft
Frequency: 30 Hz; 60 half-sine pulses per second

DATA ACQUISITION SYSTEM:

T.H.E.M. Data Collector

AIRBORNE NAVIGATION SYSTEM:

T.H.E.M navigation system
OmniSTAR 3000LR DGPS receiver.
Pilot steering and navigation computer.

BASE STATIONS SYSTEMS:

GEM GSM-19 Overhauser Magnetometer
Sample Interval: 1 second
Sensitivity: 0.001 nT

Topo Legend

Water Course
Water Body

EM Profiles Legend

base level 0 ppm
Vertical scale : 200 ppm / mm

EM Anomaly Legend

A Anomaly label
3.4 Conductance in Siemens

Settings of Time Windows of THEM System

Window #	Start at sample	# of samples in window	Start Time	End Time	Window Centre	
			in milliseconds			
1	7	2	0.114	0.130	0.1221	ON TIME
2	44	1	0.716	0.716	0.7161	
3	69	1	1.123	1.123	1.1230	
4	91	1	1.481	1.481	1.4811	
5	108	2	1.758	1.774	1.7659	
6	131	1	2.132	2.132	2.1322	
7	157	1	2.555	2.555	2.5553	
8	197	1	3.206	3.206	3.2064	
9	219	1	3.564	3.564	3.5644	
10	227	3	3.695	3.727	3.7109	OFF TIME
11	229	3	3.727	3.760	3.7435	
12	231	3	3.760	3.792	3.7760	
13	233	5	3.792	3.857	3.8249	
14	238	5	3.874	3.939	3.9062	
15	242	5	3.939	4.004	3.9713	
16	246	11	4.004	4.167	4.0853	
17	249	17	4.053	4.313	4.1829	
18	258	23	4.199	4.557	4.3782	
19	265	29	4.313	4.769	4.5410	
20	272	35	4.427	4.980	4.7038	
21	283	41	4.606	5.257	4.9318	
22	298	47	4.850	5.599	5.2246	
23	312	53	5.078	5.924	5.5013	
24	328	59	5.338	6.283	5.8105	
25	345	65	5.615	6.657	6.1360	
26	364	71	5.924	7.064	6.4941	
27	382	77	6.217	7.454	6.8359	
28	400	83	6.510	7.845	7.1777	
29	415	89	6.755	8.187	7.4707	
30	432	95	7.031	8.561	7.7962	
31	452	101	7.357	8.984	8.1705	
32	476	107	7.747	9.473	8.6100	
33	495	113	8.057	9.880	8.9681	
34	520	119	8.464	10.384	9.4238	
35	540	125	8.789	10.807	9.7981	

Scale 1:20000

250 0 250 500 750 1000 1250 1500

(meters)

WGS 84 / UTM zone 10N

McPHAR

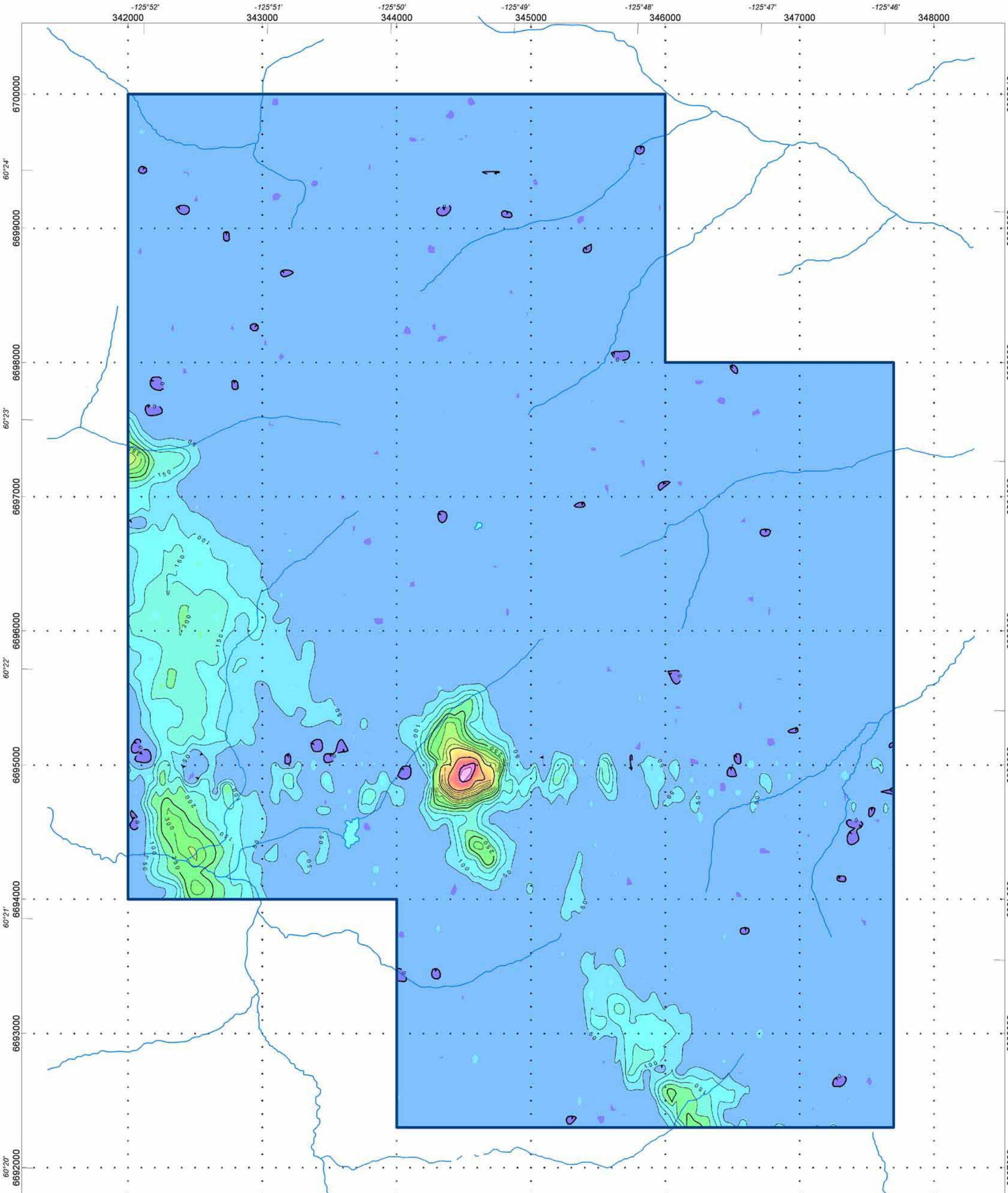
True North Gems Inc.

EM Offset Profiles with Picked Anomalies
dB/dt - Z-channel - Time Window No. 12

Bandito Project

Airborne TDEM and Magnetic Survey

McPhar Geosurveys Ltd.



LEGEND

Helicopter Type: Eurocopter AS350B2
Helicopter Registration: C-GTNT
Survey Period: September-October, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 85 m (Helicopter)
Traverse Line Spacing: 100 m
Traverse Line Direction: 90°
Control Line Spacing: 1000 m
Control Line Direction: 180°

AIRBORNE MAGNETOMETER SYSTEM:

Geometrics G822A Cesium magnetometer
Sensitivity: 0.0005 nT
Noise Level: +/- 0.001 nT
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the helicopter
Sampling Rate: 10 readings/second

AIRBORNE ELECTROMAGNETIC SYSTEM:

T.H.E.M. Helicopter-borne Digital Time-domain Electromagnetic System

Receiver:

Three axis (X,Y and Z) dipole coils with coplanar configuration
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the aircraft
Sampling Rate: 10 readings/second

Transmitter:

Horizontal transmitter loop of 7.5 m diameter
Sensor Height: Nominally 36 m above ground level
Sensor Location: Horizontal loop towed 49 m beneath the aircraft
Frequency: 30 Hz; 60 half-sine pulses per second

DATA ACQUISITION SYSTEM:

T.H.E.M. Data Collector

AIRBORNE NAVIGATION SYSTEM:

T.H.E.M navigation system
OmniSTAR 3000LR DGPS receiver.
Pilot steering and navigation computer.

BASE STATIONS SYSTEMS:

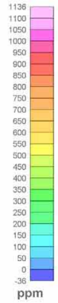
GEM GSM-19 Overhauser Magnetometer
Sample Interval: 1 second
Sensitivity: 0.001 nT

Topo Legend

Water Course
Water Body

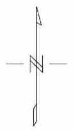
Contour Legend

50 ppm
250 ppm
1000 ppm



Settings of Time Windows of THEM System

Window #	Start at sample	# of samples in window	Start Time	End Time	Window Centre	
			in milliseconds			
1	7	2	0.114	0.130	0.1221	ON TIME
2	44	1	0.718	0.718	0.7181	
3	60	1	1.123	1.123	1.1230	
4	91	1	1.481	1.481	1.4811	
5	108	2	1.758	1.774	1.7659	
6	131	1	2.132	2.132	2.1322	
7	157	1	2.556	2.555	2.5553	
8	197	1	3.208	3.208	3.2084	
9	219	1	3.564	3.564	3.5644	
10	227	3	3.696	3.727	3.7109	OFF TIME
11	229	3	3.727	3.760	3.7435	
12	231	3	3.760	3.792	3.7760	
13	233	6	3.792	3.857	3.8249	
14	238	5	3.874	3.939	3.9062	
15	242	6	3.939	4.004	3.9713	
16	246	11	4.004	4.167	4.0853	
17	249	17	4.053	4.313	4.1829	
18	258	23	4.199	4.557	4.3782	
19	265	29	4.313	4.769	4.5410	
20	272	35	4.427	4.980	4.7038	
21	283	41	4.606	5.257	4.9316	
22	298	47	4.850	5.599	5.2248	
23	312	53	5.078	5.924	5.5013	
24	328	59	5.338	6.283	5.8105	
25	345	65	5.616	6.657	6.1360	
26	364	71	5.924	7.064	6.4941	
27	382	77	6.217	7.454	6.8359	
28	400	83	6.510	7.845	7.1777	
29	416	89	6.758	8.187	7.4707	
30	432	95	7.031	8.561	7.7962	
31	452	101	7.357	8.984	8.1706	
32	476	107	7.747	9.473	8.6100	
33	495	113	8.057	9.880	8.9681	
34	520	119	8.464	10.384	9.4238	
35	540	125	8.789	10.807	9.7981	



Scale 1:20000

250 0 250 500 750 1000 1250 1500

(meters)

WGS 84 / UTM zone 10N

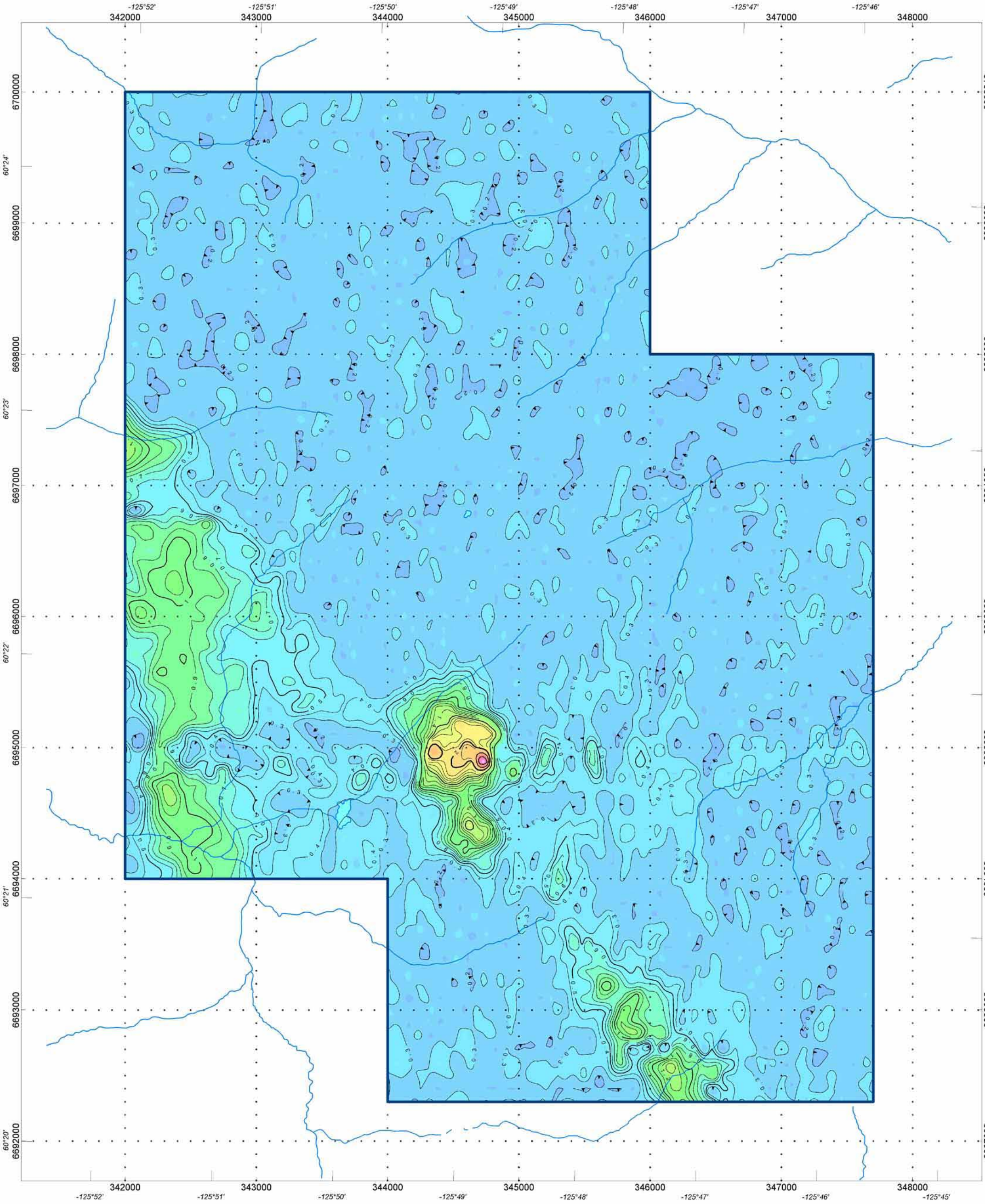
McPHAR

True North Gems Inc.

EM Anomaly Map
dB/dt - Z-channel - Window No. 15
Bandito Project

Airborne TDEM and Magnetic Survey

McPhar Geosurveys Ltd.



LEGEND

Helicopter Type: Eurocopter AS350B2
Helicopter Registration: C-GTNT
Survey Period: September-October, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 85 m (Helicopter)
Traverse Line Spacing: 100 m
Traverse Line Direction: 90°
Control Line Spacing: 1000 m
Control Line Direction: 180°

AIRBORNE MAGNETOMETER SYSTEM:

Geometrics G822A Cesium magnetometer
Sensitivity: 0.0005 nT
Noise Level: +/- 0.001 nT
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the helicopter
Sampling Rate: 10 readings/second

AIRBORNE ELECTROMAGNETIC SYSTEM:

T.H.E.M. Helicopter-borne Digital Time-domain Electromagnetic System

Receiver:

Three axis (X,Y and Z) dipole coils with coplanar configuration
Sensor Height: Nominally 60 m above ground level
Sensor Location: Mounted in aerofoil towed 25 m beneath the aircraft
Sampling Rate: 10 readings/second

Transmitter:

Horizontal transmitter loop of 7.5 m diameter
Sensor Height: Nominally 36 m above ground level
Sensor Location: Horizontal loop towed 49 m beneath the aircraft
Frequency: 30 Hz; 60 half-sine pulses per second

DATA ACQUISITION SYSTEM:

T.H.E.M. Data Collector

AIRBORNE NAVIGATION SYSTEM:

T.H.E.M navigation system
OmniSTAR 3000LR DGPS receiver.
Pilot steering and navigation computer.

BASE STATIONS SYSTEMS:

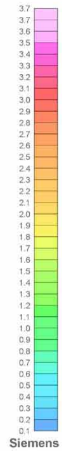
GEM GSM-19 Overhauser Magnetometer
Sample Interval: 1 second
Sensitivity: 0.001 nT

Topo Legend

Water Course
Water Body

Contour Legend

0.1 siemens
0.5 siemens
2 siemens



Settings of Time Windows of THEM System

Window #	Start at sample	# of samples in window	Start Time	End Time	Window Centre	
			in milliseconds			
1	7	2	0.114	0.130	0.1221	ON TIME
2	44	1	0.716	0.716	0.7161	
3	69	1	1.123	1.123	1.1230	
4	91	1	1.481	1.481	1.4811	
5	108	2	1.758	1.774	1.7659	
6	131	1	2.132	2.132	2.1322	
7	157	1	2.555	2.555	2.5553	
8	197	1	3.206	3.206	3.2064	
9	219	1	3.564	3.564	3.5644	
10	227	3	3.695	3.727	3.7109	OFF TIME
11	229	3	3.727	3.760	3.7435	
12	231	3	3.760	3.792	3.7760	
13	233	5	3.792	3.857	3.8249	
14	238	5	3.874	3.939	3.9062	
15	242	5	3.939	4.004	3.9713	
16	246	11	4.004	4.167	4.0853	
17	249	17	4.053	4.313	4.1829	
18	258	23	4.199	4.557	4.3782	
19	265	29	4.313	4.769	4.5410	
20	272	35	4.427	4.980	4.7038	
21	283	41	4.606	5.257	4.9318	
22	298	47	4.850	5.599	5.2246	
23	312	53	5.078	5.924	5.5013	
24	328	59	5.338	6.283	5.8105	
25	345	65	5.615	6.657	6.1360	
26	364	71	5.924	7.064	6.4941	
27	382	77	6.217	7.454	6.8359	
28	400	83	6.510	7.845	7.1777	
29	415	89	6.755	8.187	7.4707	
30	432	95	7.031	8.561	7.7962	
31	452	101	7.357	8.984	8.1705	
32	476	107	7.747	9.473	8.6100	
33	495	113	8.057	9.890	8.9681	
34	520	119	8.464	10.384	9.4238	
35	540	125	8.789	10.807	9.7981	

Scale 1:20000

250 0 250 500 750 1000 1250 1500

(meters)

WGS 84 / UTM zone 10N

McPHAR

True North Gems Inc.

Apparent Conductance for Selected Time Window No. 15
dB/dt - Z-channel

Bandito Project

Airborne TDEM and Magnetic Survey

McPhar Geosurveys Ltd.