SIGNET MINERALS INC.

PROSPECTING, DRILLING, AIRBORNE RADIOMETRICS, VLF-EM and MAGNETIC SURVEYS AT THE MT. MURPHY PROPERTY, QUIET LAKE AREA, YUKON TERRITORY

Quartz claims
Murf 1-30, YC40998-YC41027

By
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For
Signet Minerals Inc.
282 Castle Way
Nanaimo, BC, V9T 1L4

Location: 61^{o} 0'20" N, 133^{o} 35' W
NTS: 105F04, 105C13
Mining District: Whitehorse, YT
Date: January 31, 2007

SUMMARY

Signet Minerals Inc. contracted Aurora Geosciences Ltd to manage and conduct an exploration program on the Mt. Murphy Property located near Quiet Lake, Yukon in the summer/fall of 2006. The program consisted of prospecting, diamond drilling, ground VLF-EM and magnetic surveys. As well, McPhar Geosurveys Ltd. was contracted by Signet to conduct an airborne radiometric survey on the property.

The Mt. Murphy property is within the Big Salmon Mountain Range and is located on the Quiet Lake Batholith of the Cassiar Suite Intrusion. The Quiet Lake Batholith is a northwest trending body 65 km long 32 km wide and is predominantly composed of coarse-grained to porphyritic biotite granite, although, in the area of the claims, this intrusive is a coarse-grained biotite rich monzonite to granodiorite with disseminated pyrite. The Cassiar suite of intrusive rocks have been historically explored as a source of uranium mineralization. Elevated levels of uranium have been reported in silt samples collected from creeks draining areas underlain by the Cassiar intrusives. Secondary oxides of uranium have also been observed in leached voids and within fractures in the granitic rocks of the Cassiar suite of intrusives.

The McPhar survey covered 178.35 line km and identified an area approximately 1.7 km^2 which was moderately anomalous in total count uranium radiometrics. This anomalous area coincides very closely with bedrock exposure of the granodiorite.

The ground VLF-EM survey has indicated the presence several weak conductors. The magnetic survey indicated the presence of several linear features on the Mt. Murphy property. Generally there is only a poor correlation between the VLF conductors and the magnetic linears. Magnetic high features in the central part of the survey area appear to be related to magnetite rich granodiorite.

Seventeen rock samples were collected in the prospecting program. They did not return any significant uranium values. The best sample assayed 78 ppm U from a float grab sample. The remaining 16 samples returned between 3 and 26 ppm U.

Four BTW-size diamond drill holes totaling 384.26 m (MU06-01 to MU06-04) were collared on the MURF 16 claim to test for radioactive mineralization at depth. Twenty eight samples (MU-01 to MU-28) were collected from the four holes and failed to return any significant results. A single sample of a fine grained mafic dyke (MU-04) collected from hole MU06-01 did return 2010 ppm zinc and 220 ppm lead. A downhole gamma survey of MU06-03 indicated only a moderate increase in radiometric response from to 135.5 m to 135.89 m (EOH). This spike was observed in both the downward and upward log but did not correspond to any significant sample assay results.

Recommendations for future work on the property are to:

1 Conduct a program of geological mapping and prospecting in an attempt to locate the historical mineral occurrence and to further understand radioactive anomalies.
2 If warranted complete the drilling of hole MU06-04.

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1.0 INTRODUCTION

Signet Minerals Inc. contracted Aurora Geosciences Ltd to manage and conduct an exploration program on the Mt. Murphy Property located near Quiet Lake, Yukon in the summer/fall of 2006. The program consisted of prospecting, diamond drilling, ground VLF-EM and magnetic surveys, and a downhole gamma survey. As well, McPhar Geosurveys Ltd. was contracted by Signet to conduct an airborne radiometric survey on the property.

The property was optioned by Signet Minerals from Archer, Cathro and Associates in the winter 2006. The 2006 work program was conducted to locate the source of uranium geochemical anomalies on the property. The program involved the evaluation of historical showings on the property and the collection of 6.5 line km of VLF-EM and Magnetic data, diamond drilling and downhole gamma logging.

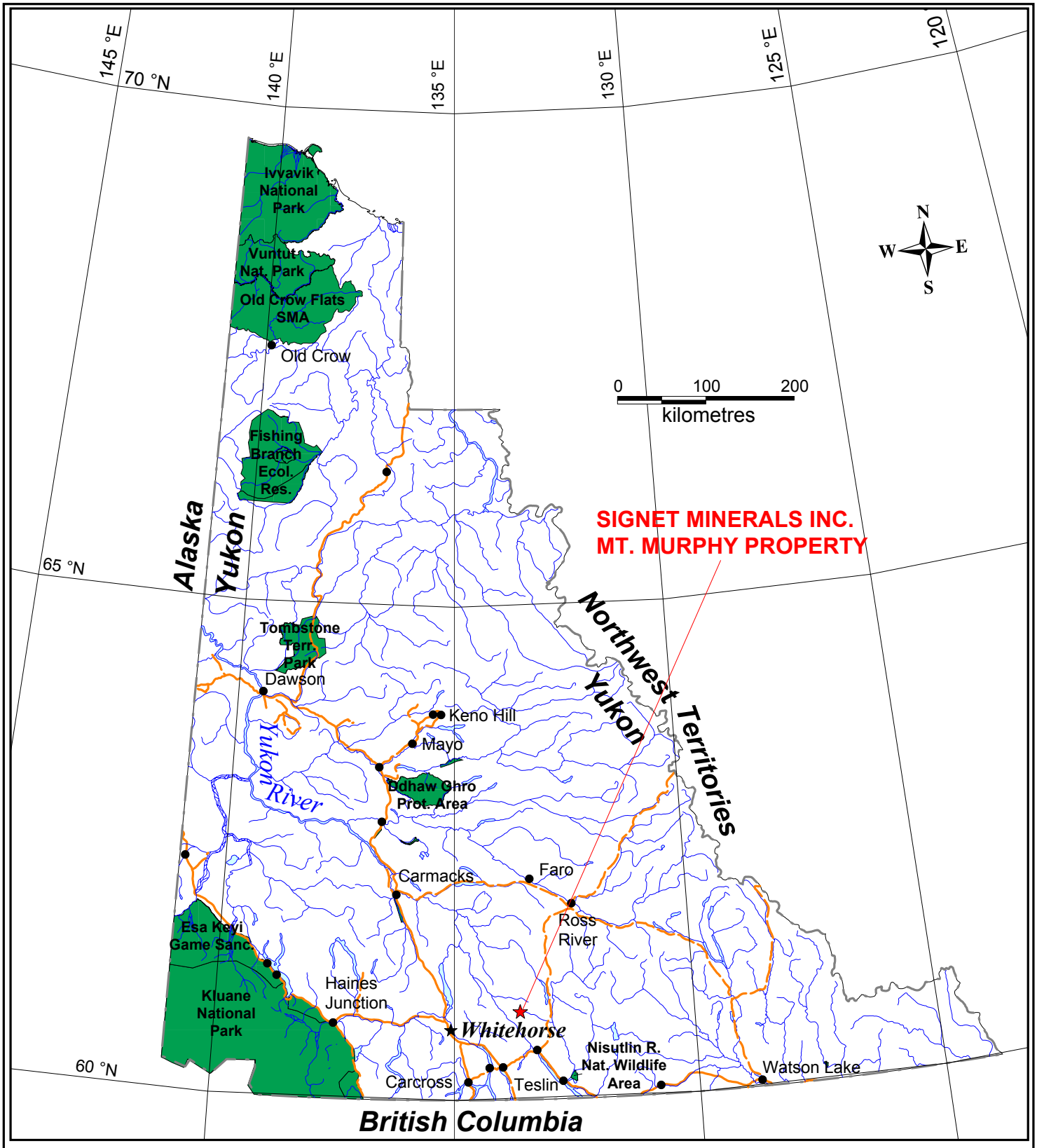
The Aurora crew consisted of Derek Torgerson (project geologist), Mike Schultz (geologist), Mike Power (Geophysicist), Kim Gallagher (field assistant), Cody Woodman (field assistant), Calvin Delwisch (expediter). The program was conducted from September 19 to November 1, 2006 . This report describes the survey, data processing and results, and contains an interpretation of the data.

The drill contractor for the program was Top Rank Diamond Drilling of Ste. Rose du Lac, Manitoba.

2.0 LOCATION AND ACCESS

The Mt. Murphy Property is located 95 km NE of Whitehorse and 110 km NNW of Teslin, Yukon Territory. The property is centered at 61^{o} 0' N, 133^{o} 35' W in the Big Salmon Mountain Range on NTS map sheets 105C13 and 105F04.

The property lies above tree line on a rugged mountain with peak elevations of 2000 m and local relief up to 750 m. The property is quite remote, however there is an airstrip located at the Boswell River , 4 km west of the property, that allows access to the region by fixed wing aircraft or helicopter from Whitehorse. Several staging areas exist along the South Canol road, which are within 30 km of the property. The South Canol Road is accessible from Whitehorse by traveling 100 km south on the Alaska Highway to Johnson Crossing.



SIGNET MINERALS INC.
MT. MURPHY PROPERTY
Location Map

Figure 1 January 10, 2007

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3.0 CLAIM STATUS

The Mt. Murphy Property consists of 30 Quartz Claims staked in accordance with the Yukon Quartz Mining Act in the Whitehorse Mining District[1] (Figure 2). The claims have not been surveyed and expiry dates are as listed in the table below:

Table 1. Claim Information

CLAIM NAME	GRANT NUMBER	Expiry Date
MURF 1 to 30	YC40998 to YC41027	2010-12-14

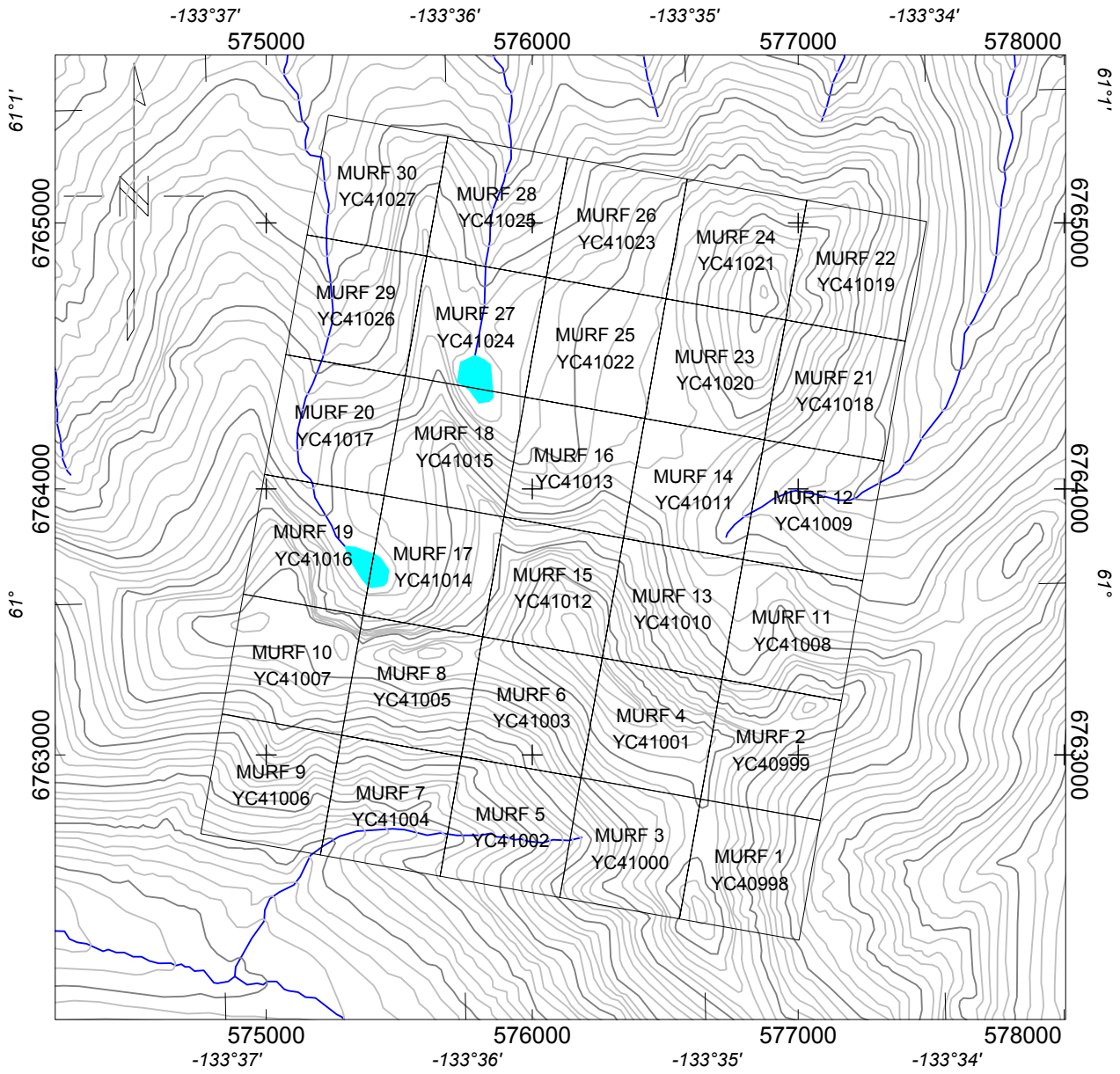
The MURF 1 to 30 claims are owned 100% by Archer, Cathro & Associates (1981) Ltd . These claims are subject to an agreement with Signet Minerals Inc., whereby Signet Minerals Inc. may acquire a 100% interest in the Murphy claims by making escalating option payments totaling $2 million over 8 years to Twenty-Seven Capital Corp. according to the following schedule:

Date	Option Payment
On regulatory approval	$25,000
January 24, 2007	$50,000
January 24, 2008	$75,000
January 24, 2009	$150,000
January 24, 2010	$200,000
January 24, 2011	$300,000
January 24, 2012	$400,000
January 24, 2013	$800,000
Totals	**$2,000,000**

Upon exercising of the option, Twenty-Seven Capital Corp. will retain a 2% net smelter royalty ("NSR"), 1% of which can be purchased at any time prior to production for $1 million.

The property is subject to a two (2) kilometer area of influence such that any claims acquired by staking within the area of influence will become part of the property. Signet is the operator with the responsibility to file maximum assessment credits.

[1] Claim information from Whitehorse Mining Recorder on Jan 02, 2007.



Scale 1:25000

250 0 250 500

metres

NAD83 / UTM zone 8N

SIGNET MINERALS INC.

MT. MURPHY PROPERTY
2006 EXPLORATION PROGRAM
Figure 2 - Claims Location Map

NTS: 105C13 / 105F04 — Mining District: Whitehorse
Projection: UTM Zone 8N — Datum: NAD83
Date: January 10 2007 — Job: SGN-06-04-YT
Drawn By: Derek Torgerson

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4.0 HISTORY

The Mount Murphy property has had a limited work history.

In 1975, the Ukon Joint Venture (Chevron Canada and Kerr-Addison Mines) identified a uranium geochemical anomaly on the property and staked 24 quartz mineral claims.

In 1976, they conducted an exploration program consisting of ground and airborne radiometrics and reconnaissance geochemical sampling and scintillometry. During this program a mineral occurrence and several new geochemical anomalies were discovered. The airborne program identified the north eastern slopes of Mt Murphy to exhibit the strongest radiometric response. Subsequent prospecting in the cirque area failed to locate any further mineralization. Ground based scintillometry in the area of the mineral occurrence returned responses in the range of 600 to 2000 counts per second (cps). Prospecting of these zones returned assays up to 0.149 % U3O8 and float samples from elsewhere on the property returned up to 0.264 % U3O8. Uranium mineralization was mainly in the form of secondary yellow and green oxides coating leached cavities. Silt and soil samples collected on the property returned up to 190 ppm U and 165 ppm U respectively. The overall results of this program failed to outline a clear geochemical pattern and the mineralized showings did not appear to have any lateral extent. Further claim staking and a diamond drilling program was recommended as a follow up to the 1976 program, but were never performed.

In 1977, a program consisting of prospecting, trenching, radiometric and geochemical surveys was undertaken. A total of 8 trenches were cut in the area of mineralization using cobra drills and explosives. The hand trenches ranged from 1m to 2m in depth. Assays from these trenches returned up to 0.137 % U3O8 and float samples from the area assayed 0.226 % U3O8. The radioactive zones appeared to be weakly leached with traces of yellow secondary uranium oxides. Also in 1977, radiometric and geochemical surveys were conducted over the northern portion of the property. The results of this survey indicated a background of 180 to 250 cps in the intrusion and a 30 m by 30m area around the mineralized showing where radiometrics were between 320 and 520 cps. The uranium mineralization was found to be related to discontinuous, biotite-rich patches or clots in the granodiorite intrusion. This mineralization returned low uranium assays and as a result it was hypothesized that a large portion of the radioactivity on the claims was related to Thorium and was confined to a 30m by 30m area. As a result of these findings no further work was recommended on the property.

In1980, Amoco Canada Petroleum Company Limited staked the MMM claims located adjacent to the Murphy claims on the north eastern side of Mt. Murphy. Amoco conducted reconnaissance stream sediment / soil sampling, and prospecting to evaluate the property for porphyry molybdenum mineralization. The results of this work indicated the presence of a moderate molybdenum soil anomaly at the northern end of the claim group. The soil anomaly was 300 m by 200 m in size and molybdenum values in soil ranged from 20 ppm to 377 ppm. This anomaly was related to the underlying gossanous bedrock. No bedrock assays were reported. Recommendations for future work included detailed soil sampling and rock chip sampling, but no further work was conducted until the program by Signet in 2006.

5.0 REGIONAL GEOLOGY

The regional geology of the Mt. Murphy Property area is taken from Gordey and Makepiece (2003), Brown (1981) and from Archer and Onasick (1977). The geology of the area is shown in Figure 3 and summarized in Table 2 below.

Table 2. Mt. Murphy Area Regional Stratigraphy
(After Gordey & Makepiece (2003))

Formation (Age)	Description
Prospector Mountain Suite (LKqP) (Late Cretaceous to Tertiary)	Quartz monzonite; porphyritic alaskite and granite; quartz monzodiorite
Cassiar Suite (mKqC) (Middle Cretaceous)	Porphyritic (K-feldspar) granite; biotite-hornblende quartz monzonite and granodiorite
Aishihik Suite (EJgA) (Early Jurassic)	Medium to coarse grained, foliated biotite-hornblende granodiorite; foliated hornblende diorite to monzodiorite
Nasina Suite (DMN) (Devonian, Mississippian)	Quartzite, micaceous quartzite, quartz muscovite schist, minor metaconglomerate
Unclassified (PPa) (Proterozoic and Paleozoic)	Proterozoic and Paleozoic mafic and ultramafic rocks including amphibolite

The property is within the Big Salmon Mountain Range and is located on the Quiet Lake Batholith of the Cassiar Suite Intrusion. The Quiet Lake Batholith is a northwest trending body 65 km long 32 km wide and is predominantly composed of coarse-grained to porphyritic biotite granite, although, in the area of the claims, this intrusive is a coarse-grained biotite rich monzonite to granodiorite with disseminated pyrite. Regional mapping in the area indicates that the Mt. Murphy property straddles the contact between the Devonian Nasina group and the mid-Cretaceous Cassiar Suite. This regional mapping differs from observations on the property, which indicate the intrusives to be the dominant rock. The metamorphosed rocks of the Nasina suite are made up of quartzite, quartz muscovite schist and minor metaconglomerate. The Cassiar suite is primarily comprised of coarse-grained granite, quartz monzonite and granodiorite.

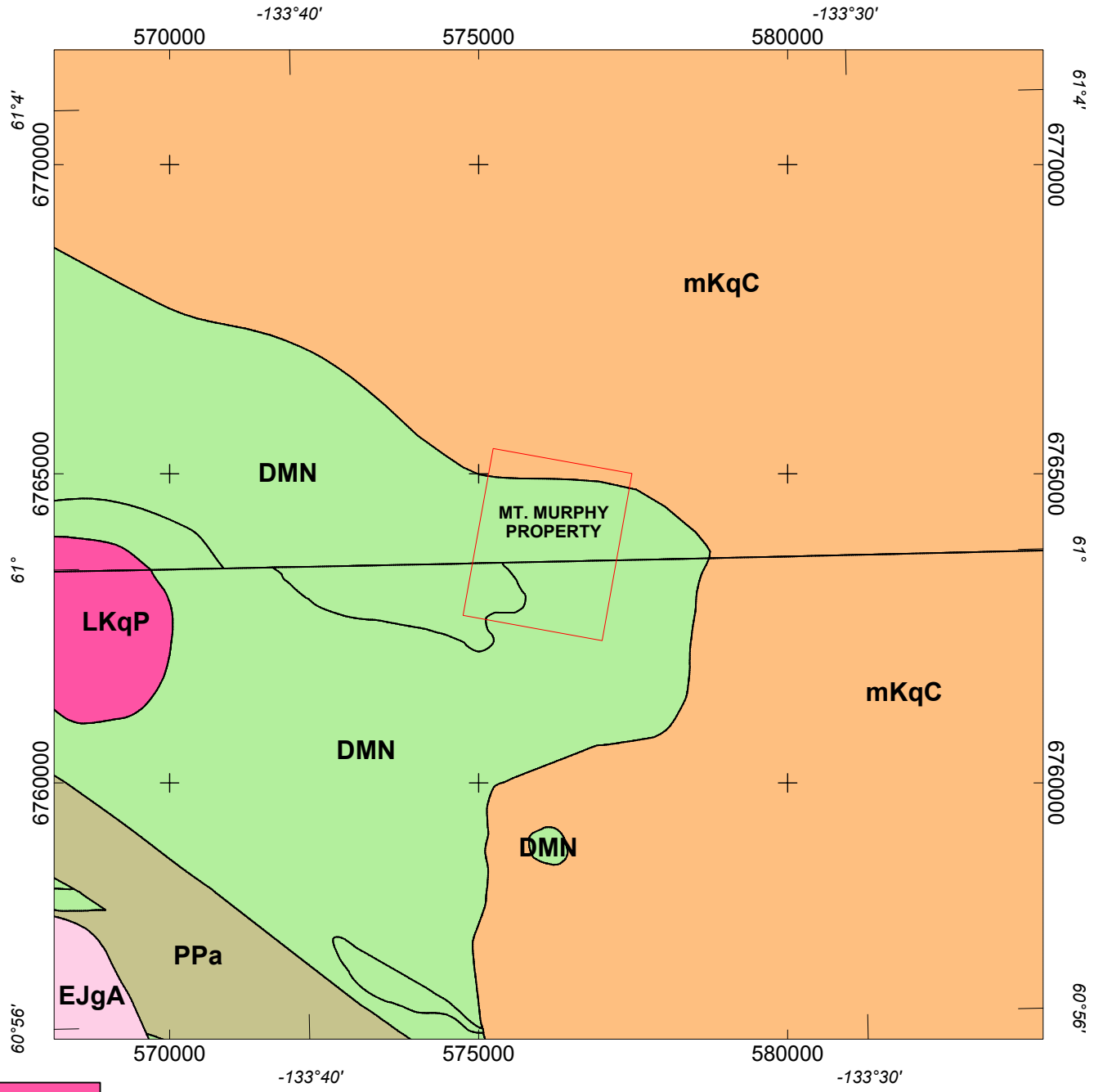
6.0 PROPERTY GEOLOGY AND MINERALIZATION

The MURF claims are underlain predominantly by the Quiet Lake Batholith. The batholith typically contains plagioclase with potassic feldspar, smoky quartz, magnetite and significant amounts of biotite or hornblende. The Quiet Lake Batholith intrudes the meta-

sedimentary Nasina group quartzites but this contact was not observed on a property scale. Rusty weathering is common within the intrusion and locally abundant pyrite is found within two strongly gossanous zones. Weathering and alteration is typically bright yellow to limonitic and possibly related to the degradation of pyrite and mafic minerals, although some fracture surfaces exhibit a chalky weathering. This discoloration has been observed on both fresh and exposed surfaces and is most common in the vicinity of the gossans. The intrusive is well leached and pyrite leached voids are common.

Jointing within the granodiorite is well developed and typically strikes 060^{o} dipping steeply (76^{o}) to vertical. Rusty and limonitic staining is also common on the joint surfaces

Several chlorite-rich mafic dikes have been observed within the claim group. These dikes are generally fine grained and contain up to 2% pyrite. They do not exhibit elevated radioactivity. Radioactive mineralization has been observed as yellow to green secondary oxides filling leached voids within the intrusive. Within the drill core radioactivity appears to share a closer relationship with the more mafic portions of the intrusion. This observation correlates with work of Archer (1977), which found radioactivity at the mineral showing to be related to small, discontinuous, biotite-rich patches or clots. Radioactive mineralization in hand samples is weak with the best assays returning only 78 ppm U, and does not appear to share a direct relationship with the gossans.



LKqP	**Late Cretaceous to Tertiary Prospector Mountain Suite - Quartz monzonite; porphyritic alaskite and granite; quartz monzodiorite**
mKqC	**Mid-Cretaceous Cassiar Suite - Porphyritic (K-feldspar) granite; biotite-hornblende quartz monzonite and granodiorite**
EJgA	**Early Jurassic Aishihik Suite - Medium to coarse grained, foliated biotite-hornblende granodiorite; foliated hornblende diorite to monzodiorite**
DMN	**Devonian, Mississippian Nasina Suite - Quartzite, micaceous quartzite, quartz muscovite schist, and minor metaconglomerate**
PPa	**Proterozoic and Paleozoic mafic and untramafic rocks including Amphibolite**

Scale 1:100000

1000 0 1000 2000

metres

NAD83 / UTM zone 8N

SIGNET MINERALS INC.

MT. MURPHY PROPERTY
2006 EXPLORATION PROGRAM
Figure 3 - Regional Geology Map

NTS: 105C13 / 105F04
Projection: UTM Zone 8N
Date: January 10 2007
Mining District: Whitehorse
Datum: NAD83
Job: SGN-06-04-YT
Drawn By: Derek Torgerson

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7.0 2006 EXPLORATION PROGRAM AND EQUIPMENT

For the 2006 season, the exploration program at Mt. Murphy was based out of Whitehorse, with helicopter support provided by Trans North Helicopters. The Airborne Radiometric Survey was performed on August 28 and 29, 2006. The Aurora crew mobilized to the property on September 19-20, 2006 to perform two (2) days of prospecting and mapping. The drill and equipment was staged from the South Canol Road in the Quiet Lake area and was mobilized to the property on September 23, 2006. Emergency camp gear, drill supplies and fuel were flown by fix wing aircraft into the Boswell Airstrip on September 28 and slung to the property by helicopter on September 29. At this time the emergency accommodations were set up.

The magnetic and VLF-EM surveys were completed from October 1 to 3, 2006. Diamond drilling was conducted from October 12th to the 30th. Crew logs for the exploration program are included in Appendix B.

The airborne radiometrics survey involved flying forty one (41) 4.35 km lines at a nominal sensor height of 50 m above ground level. Line spacing was 150 m and the sampling rate was 1 reading per second. System specifications are summarized below.

Helicopter Type	Eurocopter AS350-B2
Airborne Gammaray Spectrometer	Pico-Envirotec GRS-410 multi-channel gamma-ray spectrometer with 16.8 litres "downward looking" Nal Sensor
Data Acquisition System	Pico-Envirotec AGIS Data Acquisition System
Airborne Navigation System	CSI-Wireless DGPSMax real time differentially corrected DGPS reciever

Emergency accommodations for the drill program consisted of a 12'x14' tent, kitchen gear, a 1000 Kva generator, food and a satellite phone. The crew, survey parameters and equipment for each of the components of the program are described below.

The prospecting was conducted by Derek Torgerson and Kim Gallagher. A total of 17 rock grab samples were collected from the property. While prospecting the crew utilized a gamma scintillometer as a screening tool to identify areas and samples of anomalous radioactivity. The location of samples are shown in Figure 4. The crew was equipped with the following instruments:

Scintillometer: Ludlum Model 3 Survey Meter with Ludlum Model 44-2 Gamma Scintillometer

The scintillometer registered readings in microR per hour

Other: Sample location coordinates were recorded with a non-differential Garmin GPS 76 handheld receiver.

The magnetic and VLF-EM surveys were performed by Derek Torgerson and Cody Woodman.

They were equipped with the following instruments and equipment:

Magnetometer:	GEM GSM-19
VLF	Geonics EM-16
GPS:	Garmin GPS-72

The Magnetic survey was conducted according the following specifications with exceptions as noted:

MAGNETICS SURVEY

Station spacing	12.5 m
Base station	Installed at a fixed location (575877, 6764488) and cycled at a five second interval throughout the survey period.
Registration	Data was registered to UTM Zone 8N, NAD83 coordinates using interpolated GPS points uploaded to handheld non-differential GPS's

Data processing included the following steps and procedures for the magnetic survey:

1. *Registration.* GPS points, were uploaded to Non-differential GPS's for navigation in NAD83, UTM Zone 8N coordinates.
2. *Geomagnetic variation removal.* Base and rover magnetometers were synchronized to GPS time prior to each survey day. Temporal geomagnetic variation was removed by linear interpolation using the base station data. Data collected during periods in which geomagnetic variation exceeds 5 nT / 5 s were not included in the final data set; no data were rejected as being above this noise threshold.
3. *Levelling.* Data were levelled using 19 common points that were surveyed daily in two directions.
4. *Filtering.* The data were de-spiked using a filter width of 1 and a threshold of 30 nT.

VLF SURVEY

Grid.

The survey was conducted along 14 North-South lines. GPS points, were uploaded to non-differential GPS's for navigation in NAD83, UTM Zone 8N coordinates

VLF-EM specifications.

The VLF survey was conducted according to the following specifications:

Station locations:	12.5 m.
Facing direction:	Grid South.
VLF Transmitter:	24.0 kHz, NAA Cutler, Maine, USA

Data processing.

Data was entered into a spreadsheet and imported into Geosoft Oasis Montaj. De-spiking fliters were applied to both the in-phase and quadrature with a filter length of 1 fiducial and a threshold of 5%. A 4-fiducial low-pass filter was then applied to both the despiked inphase and quadrature data and these results are shown in the stacked profiles map. A 5-point Fraser Filter (0.5, 1, 0, -1, -0.5), with a positive result corresponding to positive to negative dip moving south to north, was then applied and gridded using a bidirectional gridding with a 100-280 degree trend. This is displayed in the colour contoured Fraser filtered inphase map.

Downhole Gamma Survey

A downhole gamma survey was conducted at the Mt. Murphy property and was conducted by Derek Torgerson and Mike Power. The downhole gamma survey was successfully completed only on drill hole MU06-03. Upward and downward direction gamma logs for MU06-03 are included in Appendix E. Hole MU06-01 was lost at the bottom of the casing and could not be surveyed, MU06-02 froze back to the bottom of the drill casing and the instrument could not enter the hole, MU06-04 was shut down due to weather before the drilling could be completed.

Data Interface	BIN-05 Digital Data Interface
Probe	BSG-01 256 Channel Spectral Gamma Probe
Winch	BW-500 Borehole Logging Winch

8.0 GEOCHEMICAL ANALYTICAL PROCEDURE

The samples collected during the program were sent to Saskatchewan Research Council (SRC) in Saskatoon in Saskatoon, Saskatchewan, for processing. SRC was established in 1947 by the Government of Saskatchewan and is ISO/IEC 17025 accredited by the Standards Council of Canada as a testing laboratory for specific tests and maintains a Certificate of Laboratory Proficiency from the Standards Council of Canada.

A total of 17 rock samples and 28 core samples were collected. All samples were handled in a secure manner and placed in sealed poly bags and in sealed 5-gallon containers for shipment to the lab. Rock samples were analyzed for SRC's Uranium Exploration Major and Trace Element Package, which involved an ICP analysis. Geochemical Analytical Certificates are included in Appendix D and sample descriptions are included in Appendix C.

Samples were analyzed using three specific analytical procedures. Samples were analyzed using SRC's regular ICP 55 element Uranium exploration package, individual single element assays were completed for Boron, and Gold.

The sample preparation procedure involves drying of samples in the original plastic bags @80C overnight, then jaw crushing to 60% -2mm and a 100-200g sub sample is split out using a riffle splitter. The sub sample is pulverized to 90% - 106 microns using a puck and ring grinding mill. The grinding mills were cleaned between samples using steel wool and compressed air or, in the case of clay rich samples, silica sand cleaning is employed. The pulp is then transferred to a labelled plastic snap top vial.

Both a partial and total digestion procedure were employed. Total digestions were performed on an aliquot of the sample for 55 elements by ICP. The procedure uses a 0.25 g aliquot of pulp digested to dryness in a teflon beaker using a hotplate in a mixture of concentrated HF:HNO_3:$HClO_4$. The residue was then dissolved in 15 ml of dilute $HN0_3$.

Partial Digestions were performed on an aliquot of the sample also for the analysis of 55 elements by ICP. The partial digestion involves a 2 g aliquot of pulp digested in a digestion tube in a mixture of HNO_3:HCl, in a hot water bath for approximately 1 hour, then diluted to 15ml using deionized water.

All samples were assayed for Boron. The single element ICP method for Boron consists of standard drying and crushing procedures. The specific analysis for Boron involves a 100 mg of pulp being fused in a mixture of NaO_2/$NaCO_3$ in a muffle.

Samples were analyzed for Gold using a gold fire assay process. This process involves an aliquot of sample pulp mixed with a standard fire assay flux in a clay crucible and a silver in-quart is added. The mixture is fused at approximately 1200°C for approximately 90 minutes. The fusion melt is poured into a form and cooled and the lead bead recovered and cupelled at 980°C until only the precious metal bead remains. The bead is then parted in a 15ml test tube with 18% HNO_3 v/v solution by heating in a boiling water

bath until the silver dissolves. The 18% HNO_3 solution containing the silver is decanted leaving the gold in the test tube. 1ml of aqua regia is added to the gold in the test tube and heated on the boiling water bath until the gold dissolves. The sample is then diluted to volume and analyzed by ICP-OES and/or Atomic Absorption Spectrometry (AAS).

SRC utilizes rigorous quality control standards. All Quality Control data generated at SRC Geoanalytical Laboratory is reviewed by the Quality Assurance Specialist. The Quality Control Techniques used for verifying all results generated includes data verification, instrument calibration, analysis of blanks, analysis of duplicates, and analysis of reference (QC) samples. Quality Control charts are produced for each QC standard for all elements analyzed. Upper and lower limits are set at 3 standard deviations. Appropriate corrective action is initiated and the effectiveness of that action is evaluated internally before reporting the final results to the customer. Control Charts are monitored by QA on a regular basis. Any deviations or bias observed for a QC in the method is documented and reported to the customer.

The chain of custody for the sealed sample bags included delivery to the lab by a recognized freight carrier. The handling of samples and shipping procedure was according to industry standards and done in a secure manner.

9.0 RESULTS

The Cassiar suite of intrusive rocks have been historically explored as a source of uranium mineralization. Elevated levels of uranium have been reported in silt samples collected from creeks draining areas underlain by the Cassiar intrusives. Secondary oxides of uranium have also been observed in leached voids and within fractures in the granitic rocks of the Cassiar suite of intrusives.

9.1 PROSPECTING PROGRAM RESULTS

The prospecting program was conducted over a four-day period and focused mainly around the airborne radiometric highs. Prospecting was conducted in an attempt to locate and evaluate the historical Mt. Murphy mineral showings.

The highest value from the sampling program returned 78 ppm U. The remaining 16 samples assayed between 3 and 26 ppm Uranium. Uranium mineralization on the property is very weak and the historical mineral showing was not located.

9.2 SCINTILLOMETER PROSPECTING RESULTS

The scintillometer was used as a prospecting tool. It assisted the field crew to locate areas of anomalous radiometric readings to allow them to focus their prospecting and sampling activity. The results show the Mt. Murphy property to have very weak radioactivity and there appeared to be no correlation between anomalous radioactivity and the prominent gossans.

9.3 MAGNETIC AND VLF-EM SURVEY RESULTS

The VLF-EM survey has indicated the presence several weak conductors, although there is not a strong quadrature response . The magnetic survey indicates the presence of several linear features on the property. These linear features have been interpreted to be related to faulting. Generally there is only a low correlation between the VLF conductors and the magnetic response. Magnetic high features in the central part of the survey area appear to be related to magnetite rich granodiorite.

9.4 DIAMOND DRILLING RESULTS

Four BTW-size diamond drill holes (MU06-01 to MU06-04) were collared on the MURF 16 claim to test for radioactive mineralization at depth. Drill hole locations are plotted in plan view on Figure 4, drill hole sections are included as Figures 5A to 5C, drill logs and downhole gamma logs are included in appendix E. Assays are included in appendix D. Table 3 summarizes the diamond drilling information.

Table 3. Diamond Drilling Summary

Hole ID	UTME_NAD83	UTMN_NAD83	Elevation (m)	Azimuth	Dip	Depth (m)
MU06-01	576063	6764037	1632.4	245	-45	79.25
MU06-02	576063	6764037	1632.4	180	-45	151.09
MU06-03	575954	6764102	1560.6	184	-45	135.89
MU06-04	576322	6764007	1697.8	220	-45	18.03

Holes MU06-01 and MU06-02 were collared on the prominent gossan on the MURF 16 claim. These holes were designed to test for the presence of uranium mineralization associated with the gossan, airborne radiometric highs and interpreted structural (embayment) features.

Hole MU06-01 penetrated 37.5 m of rusty oxidized talus and overburden. From 37.5 m to 79.25 m (EOH) the rock type encountered was a coarse grained (megacrystic) granodiorite comprised of plagioclase, potassic feldspar, magnetite and smoky quartz with less than 1% disseminated pyrite. Throughout this hole the rock exhibits periodic fracturing typically at 50^{o} to CA. Fracture surfaces were coated with an orange iron oxide staining. From 71.1 m to 73.17 m a fine-grained chlorite rich mafic dike was encountered. This dike was moderately magnetic and contained pyrite and calcite healed fractures typically at 50^{o} to core axis. No elevated radioactivity was noted in either unit. MU06-01 reached 79.25 m when it was lost after a bit change.

MU06-02 was collared at the same location as MU06-01 and encountered 33.7 m of rusty oxidized talus and overburden. A similar megacrystic granodiorite was logged from 33.7 m to 151.1 m (EOH). From 119.9 m to 128.37 m a biotite-rich mafic dyke was observed. This dyke contained zones with up to 5% disseminated pyrite. To 46 m the core is

periodically fractured at 50° to CA. Fracture surfaces were observed to be coated with iron oxide staining. Zones of magnetite enrichment were noted from 29 m to 112 m. From 112 m to 151 m granodiorite appears to be depleted of magnetite and biotite is now the primary mafic mineral. Within this granodiorite uranium mineralization was not noted. This hole was lost when return water melted the ice under the drill pad and the drill shifted and the drill rods were bent.

Hole MU06-03 was collared 125 m to the northwest and was designed to test a prominent bedrock surficial radiometric high at depth. MU06-03 reached bedrock at 2.15 m and progressed through granodiorite to 135.89 m (EOH). Notable fracturing occurs in the upper 75 m of this hole. Fractures are typically well healed with a pinkish calcite and are orientated at 50° to CA. A very fine grained mafic dyke containing cross cutting stringers of pyrite was encountered from 106.5 m to 107.32 m. From 107 m to EOH core is darkening and contains a darker smoky quartz, feldspar is more potassic and darker pink in colour. Core is barren of pyrite within this interval. Radioactive mineralization was not noted in this hole, although a moderate spike in the down-hole gamma log was noted between 135.5 m to EOH.

Hole MU06-04 was collared 260 m to the southeast of MU06-01. MU06-04 penetrated 18.0 m of rusty oxidized talus. With the onset of winter conditions, the water lines froze and burst. Hole MU06-04 was shut down and the drilling abandoned until a later date. The drill remained on the property with the intent to re-commence the following spring.

Assays of samples collected from the four holes failed to return any significant results. Assays of drill core returned values of between 2 and 46 ppm uranium which does not indicate any significant radioactive enrichment. A single sample of a fine grained mafic dyke (MU-04) collected from hole MU06-01 did return 2010 ppm zinc and 220 ppm lead.

9.5 AIRBORNE RADIOMETRIC SURVEY RESULTS

The airborne radiometric survey indicated an area approximately 1.7 km^2 which was moderately anomalous in total count uranium radiometrics. This area is plotted on figure 9. Radiometrics in this area indicate Uranium between 50 and 97 counts per second. This anomalous area seems to coincide very closely with bedrock exposure of the granodiorite.

9.6 DOWNHOLE GAMMA SURVEY RESULTS

The downhole gamma survey of MU06-03 indicated only a moderate increase in radiometric response from to 135.5 m to 135.89 m (EOH). This spike was observed in both the downward and upward log but did not correspond to any significant assay results.

11.0 CONCLUSIONS AND RECOMMENDATIONS

The goal of the 2006 program was to determine the source of the uranium mineralization and to look for possible uranium enrichment and mineralization within the granodiorite intrusive. The program failed to return any significantly anomalous uranium values from rock samples collected in the area. The best sample returned 78 ppm uranium, and a single float grab sample ran 589 ppm zinc. The scintillometer prospecting revealed background radioactivity to be between 40 to 80 microR/hr and failed to indicate sources of elevated radioactivity.

Diamond drilling failed to return any significantly anomalous samples with the best sample returning 2010 ppm zinc and 220 ppm lead. Downhole gamma logging did not indicate any areas of significant radioactive enrichment at depth.

Figure 6 is a contoured Total Field Magnetics map showing the colour contoured magnetics data. Figure 7 and 8 are maps of VLF data. Figure 7 is a VLF profile map showing inphase and quadrature responses. Figure 8 is a bidirectional Fraser Filtered VLF map. Several weak conductors were identified by the VLF survey. As well, several magnetic linaments were identified, and areas of magnetite enrichment were observed from the magnetics data. The results do not indicate a strong correlation between VLF and Magnetics data.

As was discovered by previous explorers in the area, radioactivity is only weakly anomalous and the source of enrichment is poorly understood.

Recommendations for future work on the property are to:

1. Conduct a program of geological mapping and prospecting in an attempt to locate the historical mineral occurrence and to further understand radioactive anomalies.
2. If warranted complete the drilling of hole MU06-04.

Respectfully submitted,
AURORA GEOSCIENCES LTD.

Derek Torgerson, B.Sc.
Geologist

12.0 STATEMENT OF EXPENDITURES

STATEMENT OF EXPENDITURES

Wages	S. Casselman (5 hours @ $90)	450.00
	Calvin Delwisch (30.5 hours @$56.15)	1,712.50
	Derek Torgerson (67 hours @ $65)	4,355.00
	Mike Power (14 hours @ $90)	1,260.00
	Dave Hildes (1.25 hours @ $90)	112.50
	Derek Torgerson (25 days @ $500)	12,500.00
	Mike Schultz (1 day @ $500)	500.00
	Cody Woodman (5 days @ $350)	1,750.00
	Kim Gallagher (2 days @ $350)	700.00
Helicopter Charter (Trans North Helicopters and Capitol Helicopters)		160,781.41
Fixed Wing charter (Big Salmon Air)		6,000.00
Drilling charges (Top Rank Drilling)		137,696.83
Airborne radiometric Survey charges (McPhar Geosurveys)		11,404.80
Tristia Ventures (Kieran Downes field charges)		2,000.00
Fuel		13,232.81
Field supplies		1,312.96
Analytical costs		2,512.65
Room and Board		10,265.75
Aurora Administrative charges		2,783.46
Report Writing and reproduction costs		5,000.00
Total		**$ 376,330.67**

13.0 REFERENCES

Archer, A. R., and Onasick, E.P., 1977. Report on Geochemistry, Geology, and Radiometric Survey Murphy 1 – 24 Claims. Yukon Government Assessment Report # 090179.

Archer, A. R., 1978. Assessment Report on The Murphy 1 – 24 Claims. Yukon Government Assessment Report # 090342.

Brown, P., 1981. MMM Claim Group: Soil Geochemistry, Whitehorse Mining Division, MMM 1 to 20 claims . Yukon Government Assessment Report # 090806.

Gordey, S.P. and A.J. Makepeace (1999) Yukon Digital Geology, Open File D3826. Geological Survey of Canada: CD-ROM.

APPENDIX A

CERTIFICATES OF QUALIFICATIONS

Statement of Qualifications

I, Derek Torgerson.B.Sc, certify that:

1) I reside at Km 1400 Alaska Highway, Whitehorse, Yukon Territory, Y1A 5P7

2) I am a geologist employed by Aurora Geosciences Ltd. of Whitehorse, Yukon Territory.

3) I graduated from Brock University in St. Catharines, Ontario with a Bachelor of Science Degree Dual Major in Geology and Environmental Sciences in 1994.

4) I have worked as a Geologist since 2004.

5) I conducted field work form September 19 to October 31, 2006 on the Mt. Murphy Property in Yukon Territory, Canada for Signet Minerals Inc.

6) I am responsible for the preparation of this report entitled "PROSPECTING, DRILLING, AIRBORNE RADIOMETRICS, VLF-EM and MAGNETIC SURVEYS AT THE MT. MURPHY PROPERTY, QUIET LAKE AREA, YUKON TERRITORY" dated, January 31 2007.

Dated this 31st day of January, 2007, at Whitehorse, Yukon Territory.

Derek Torgerson, BSc.

APPENDIX B

CREW LOG

SGN-06-04-YT Murphy Property
Crew Log

Crew

Derek Torgerson, Crew Chief, Geologist
Mike Power, Geophysicist
Kim Gallagher, Field Assistant
Cody Woodman, Field Assistant
Calvin Delwisch, Expiditer
Wesley Kemble, core splitter

Sept 19, 2006 – DT, KG prospect and map Murphy property. Snowy, overcast, -1C.

Sept 20, 2006 – DT, KG prospect and map Murphy property with Kieran Downes. Overcast, cloudy, 1C. Drillers begin to demobe drill from Ross River.

Sept 21, 2006 – DT works on mob logistics – 8.0 hours and Calvin spend 0.25 hours on logistics. Drillers move load of drill equipment to Look Out Point staging area.

Sept 22, 2006 – DT, CW work on drill mob logistics. Drillers to Ross River to pick up more drill equipment, to take to Staging area, to windy windy to fly

Sept 23, 2006 – DT work with Aggressive drilling to mobe drill into Murphy Property from Quiet Lake area. Clear, windy, cold, -4C.

Sept 25, 2006 – DT to Quiet Lake area to pick up driller's trailer and used fuel drums from drill mobe. Overcast, snowy, -2C.

Sept 26, 2006 – DT works on mag survey grids and logistics.

Sept 27, 2006 – DT works on mag/vlf grids, tests mags, assembles emergency tent equipment.

Sept 28, 2006 – DT gets camp gear and fuel to Big Salmon air for delivery to Boswell Strip.

Sept 29, 2006 – DT, CW sling fuel and camp gear from Boswell airstrip to Murphy property. Set up Murphy emergency camp. Overcast, -2C.

Sept 30, 2006 – DT, CW fly to Murphy property to start Mag / VLF survey. Heavy snow / sleet, and clouds prevent access to Property. Wait at Boswell Airstrip until PM to see if weather clears. Bad weather chases out of the Boswell strip. Weather day. Cloudy, sleet, snow, -1C.

Oct 1, 2006 – DT, CW begin Mag survey. Sunny, cold, turning overcast in PM, -3C.

Oct 2, 2006 – DT, CW finish Mag survey, begin VLF survey. Sunny, cold, -2C.

Oct 3, 2006 – DT, CW finish VLF survey. Clear, sunny, cold, -1C.

Oct 4, 2006 – DT process mag and vlf data. Drill logistics.

Oct 5, 2006 – DT finish mag/vlf data processing, compile maps, assess drilling targets.

Oct 8, 2006 – Drillers travel to Edmonton.

Oct 9, 2006 – Drillers travel from Edmonton to Ft. Nelson.

Oct 10, 2006 – DT works on maps for Kieran, drill logistics. Drillers travel from Ft. Nelson to Whitehorse.

Oct 11, 2006 – DT works on maps, and drill logistics. Drillers standby, helicopter in maintenance, unavailable until the 12th of October.

Oct 12, 2006 – DT help set up and spot drill on Murphy Property. Fly plywood and coil stove from Look Out Point staging area. Drillers assemble drill.

Oct 13, 2006 – DT to Murphy to map and prospect along ridge line, assess structures. Drillers string water line, begin drilling – dayshift 28 ft drilling, 12 ft casing. Night shift 90 ft drilling, 64 ft casing.

Oct 14, 2006 – DT prepare maps. Bad weather helicopter cannot fly night shift drillers stranded at emergency tent.

Oct 15, 2006 – Weather finally clears in PM, Night shift drillers pulled out. Day shift drill 70 ft. Night shift drills 60ft.

Oct 16, 2006 – DT to drill to check, move core to town, look at core. Night shift change drill bit, broken ground hole caves at 150 ft, lose hole at 260 ft.

Oct 17, 2006 – DT to drill to spot MU-06-02, help move drill. Drillers move drill, burn anchor 8 ft drilling, 60ft casing. Bad weather no nightshift.

Oct 18, 2006 – DT builds and sets up core racks, tech core from MU-06-01. Day shift drills 57 ft, casing 45 ft. Bad weather no night shift.

Oct 19, 2006 – DT get fuel to Big Salmon Air, Log and tech core from MU-06-01. Day shift drills 80ft. Night Shift drills 140 ft.

Oct 20, 2006 – DT to Murphy to check drill, position fuel from Boswell to Murphy, check gamma downhole logging gear with MP, Log core. Day Shift drills 150 ft, drill slips on pad from ice melting under pad, breaks rods, lost hole at 487 ft. Bad weather unable to fly to Murphy, drillers stranded at emergency tent.

Oct 21, 2006 - DT, MP attempt to fly to Murphy to downhole gamma log. Bad weather turn around return to Whitehorse, DT move core to logging facility at Big Salmon Air, scint and finish logging core. Drillers still stranded, unable to drill until hole is gamma logged.

Oct 22, 2006 – DT, MP attempt to fly Murphy to downhole gamma log, bad weather unable to fly, try again in PM, still bad weather, unable to fly. Drillers stranded until late in afternoon.

Oct 23, 2006 – DT, MP to Murphy to gamma log MU-06-02, hole frozen, refusal at 28m. DT assess drill location for MU-06-04 prepare maps. Day shift drillers pull casing, move drill to MU-06-03 pad, set up of drill completed, unable to finish building plywood drill shack, no night shift.

Oct 24, 2006 – DT, meet with drillers in AM, work on drill/project log, work on Curie compilation map for gravity survey and Wind River Trail cat train.

Oct 25, 2006 – DT to Murphy property. Chain waterline length for MU-06-04, spot hole for MU-06-04. Prepare maps for client.

Oct 26, 2006 – DT to Murphy to do downhole geophysics, drill not ready. Move fuel and coreboxes from Boswell to Murphy.

Oct 27, 2006 – DT to Murphy, complete downhole gamma survey of MU-06-03. Help move drill to new hole. To late unable to complete drill set up, no night shift drilling.

Oct 29, 2006 – DT get propane to Trans North for coil stoves, move core to logging facility at Big Salmon Air. Prepare sample compilation for Curie. Begin teching core of MU-06-02.

Oct 30, 2006 – DT get snowmobile to TNTA to sling into Murphy property. Further teching core of MU-06-02. Water line for MU-06-04 bursts and freezes solid on day shift. Drillers come out, weather moves in unable to get water line out to thaw. No night shift drilling. Deal with water line problems between Drill contractor and client.

Oct 31, 2006 – DT work on drill logistics and work on wind river maps. Drillers fly water line to Whitehorse to thaw. Client shuts down drill program.

Nov 1, 2006 – DT and CD to quiet lake area to clean up staging area and pick up fuel. Drillers to Murphy to winterize drill and bring water hose back in, tear down emergency tent.

Nov 6, 2006 – DT reviews daily drill time sheets, prepares logging forms, data input of Murphy core teching / logging.

Nov 16, 2006 – DT tech and RQD core for MU06-03.

Dec 6, 2006 – DT log, mag susc, and scint core for MU06-03

Dec 8, 2006 – DT sample Murphy drill core, prepare and ship samples for assay and petrography. Wesley splits core.

APPENDIX C

SAMPLE DESCRIPTIONS

Drill Core Assays

Sample #	Hole	From (m)	To (m)	Length	Description
MU 01	MU06-01	49.7	50.7	1	Fractured oxidized zone
MU 02	MU06-01	58.68	59.68	1	Fractured oxidized zone, slightly coarser crystallinity, minor potassic alteration
MU 03	MU06-01	70.1	71.1	1	Pyritic coatings on fracture surfaces, coarse dissemenated pyrite.
MU 04	MU06-01	71.1	72.1	1	Fine granied mafic dyke, crushed upper contact.
MU 05	MU06-01	73.2	74.2	1	Pyritic granodioite, competant, unfractured, at lower contact of mafic dyke
MU 06	MU06-03	13.29	14.29	1	Coarse grained granodiorite, potassic / calcite healed fractures.
MU 07	MU06-03	34.57	35.57	1	Coarse grained granodiorite
MU 08	MU06-03	47.73	48.73	1	Coarse grained granodiorite
MU 09	MU06-03	63	65	2	Coarse Grained granodiorite, elevated radioactivity
MU 10	MU06-03	72.1	74.1	2	Coarse Grained granodiorite, elevated radioactivity
MU 11	MU06-03	75.6	76.1	0.5	Coarse Grained granodiorite, elevated radioactivity, calcite healed fractures parallel to CA, clay(?) alteration, crushed zone.
MU 12	MU06-03	78.13	80.13	2	Coarse Grained granodiorite, elevated radioactivity
MU 13	MU06-03	86.25	87.25	1	Coarse Grained granodiorite, elevated radioactivity, 1cm x 15cm smokey quartz vein, cross cuts core at 50 deg to CA.
MU 14	MU06-03	90.29	92.29	2	Coarse Grained granodiorite, elevated radioactivity
MU 15	MU06-03	102	104	2	Coarse Grained granodiorite, elevated radioactivity, minor clay(?) alteration.
MU 16	MU06-03	104.58	105.08	0.5	Coarse Grained granodiorite, elevated radioactivity, minor clay(?) alteration, bleaching of plagioclase.
MU 17	MU06-03	106.62	107.37	0.75	Fine granied mafic dyke, crushed upper contact.
MU 18	MU06-03	116.49	117.49	1	Coarse Grained granodiorite, elevated radioactivity, zone of darkening and potassic alteration
MU 19	MU06-03	125.43	126.23	0.8	Coarse Grained granodiorite, elevated radioactivity, zone of darkening and stronger potassic alteration
MU 20	MU06-03	126.57	127.17	0.6	Fine Grained granodiorite section, elevated radioactivity, zone of darkening and stronger potassic alteration
MU 21	MU06-03	133.37	133.77	0.4	Coarse Grained granodiorite, green clay(?) alteration, zone of darkening and stronger potassic alteration
MU 22	MU06-02	35.6	36.6	1	Coarse Grained granodiorite, oxidized weathered fracture surfaces
MU 23	MU06-02	56.45	57.45	1	Coarse Grained granodiorite, calcite on fracture surfaces.
MU 24	MU06-02	83.5	84.5	1	Coarse Grained granodiorite, calcite on fracture surfaces zone of elevated radioactivity.
MU 25	MU06-02	86.35	87.35	1	Coarse Grained granodiorite calcite on fracture surfaces.
MU 26	MU06-02	115	116	1	Coarse Grained granodiorite, depleted of magnetite.
MU 27	MU06-02	120.96	121.86	0.9	Fine grained biotite rich mafic dyke, includes upper and lower contacts.
MU 28	MU06-02	135.89	136.39	0.5	Fine grained mafic dyke, includes upper and lower contacts.

Sample ID	UTME_NAD83	UTMN_NAD83	Description
MUR-06-01	576042	6764160	Float grab sample from base of large Gossan. Coarse grained (pegmatitic?) gossanous granodiorite. Quartz matrix, chloritic inclusions, up to 10% disseminated pyrite.
MUR-06-02	576043	6764166	Float grab sample from base of large Gossan. Coarse grained (pegmatitic?) gossanous granodiorite. Quartz feldspar matrix, smokey quartz inclusions, up to 10% disseminated pyrite. Trace biotite.
MUR-06-03	576719	6764288	In-situ grab sample, Orange limonitic stained, leached pegmatite. Patchy biotite and smokey quartz.
MUR-06-04	576757	6764338	In-situ grab sample, Orange limonitic stained, granodiorite. Biotite and smokey quartz inclusions.
MUR-06-05	576774	6764364	Float grab sample granodiorite, abundant biotite, appears to be barren.
MUR-06-06	576769	6764372	In-Situ grab sample, feldspar>quartz coarse grained pegmatite. Bright yellow staining on fresh surfaces.
MUR-06-07	577141	6763193	In-Situ grab sample, feldspar>quartz coarse grained pegmatite. Rusty orange staining on weathered surfaces. <2% pyrite.
MUR-06-08	576472	6764000	Composite float grab sample granodiorite (pegmatoidal?) quartz feldspar matrix, smokey quartz and hematized inclusions, leached and pyritic vugs, limonitic and hematitic staining, <2% pyrite. Trace biotite and magnetite. 40-50 cps.
MUR-06-09	576419	6763947	Composite float grab sample granodiorite (pegmatoidal?) quartz feldspar matrix, smokey quartz inclusions, leached and vuggy, limonitic and hematitic staining, <2% pyrite. 80-90 cps.
MUR-06-10	576484	6763873	In-situ grab sample, smokey quartz plagioclase matrix, hematized vugs and and staining, bright yellow staining. Sp 031/70
MUR-06-11	576484	6763873	Float grab sample feldspar >> quartz pophyritic diorite, f.g mafic, 2-6% disseminated pyrite, hematized fresh surfaces, trace magnetite, primarily biotite matrix, rare accessory epidote, feldspar is crystalline, quartz is subangular.
MUR-06-12	576080	6764073	Float grab sample f.g quartz feldspar felsic intrusive, biotite, up to 10% pyrite, bright orange to limonitic staining on weathered surfaces.
MUR-06-13	576080	6764073	Float grab sample c.g quartz feldspar pegmatite, bright yellow staining on fresh surfaces.
MUR-06-14	575672	6764160	In-Situ Grab sample quartz>>feldspar (plagioclase) granodiorite, trace biotite, trace pyrite mineralization. Rusty to limonitic staining on fresh surfaces, exposed surfaces weather white and chalky.
MUR-06-15	575664	6764177	In-situ grab sample f.g mafic, trace pyrite mineralization.
MUR-06-16	575932	6764120	In-situ grab sample smokey quartz>plag. Abundant biotite. Minor rusty iron oxide staining on weathered surfaces, trace on fresh.
MUR-06-17	576022	6764083	Float grab sample, felsic plagioclase granodiorite trace pyrite, smokey quartz eyes, minor iron oxide staining on weathered surfaces.

APPENDIX D

GEOCHEMICAL ANALYTICAL CERTIFICATES

SRC Geoanalytical Laboratories

Signet Minerals Inc.
Attention: Kieran Downes
PO #/Project:
Samples: 31

125 - 15 Innovation Blvd., Saskatoon, Saskatchewan, S7N 2X8
Tel: (306) 933-8118 Fax: (306) 933-5656 Email: geochem@src.sk.ca

Report No: 06-1803
Date: January 31, 2007

ICP4.3R Partial Digestion

Column Header Details

Silver in ppm (Ag)
Arsenic in ppm (As)
Bismuth in ppm (Bi)
Cobalt in ppm (Co)
Copper in ppm (Cu)

Germanium in ppm (Ge)
Mercury in ppm (Hg)
Molybdenum in ppm (Mo)
Nickel in ppm (Ni)
Lead in ppm (Pb)

Antimony in ppm (Sb)
Selenium in ppm (Se)
Tellurium in ppm (Te)
Uranium (Fluorimetry) in ppm (U, Fl.)
Vanadium in ppm (V)

Zinc in ppm (Zn)
Boron by Fusion in ppm (B)

SRC Geoanalytical Laboratories

Signet Minerals Inc. 125 - 15 Innovation Blvd., Saskatoon, Saskatchewan, S7N 2X8

Attention: Kieran Downes Tel: (306) 933-8118 Fax: (306) 933-5656 Email: geochem@src.sk.ca

Report No: 06-1803

PO #/Project:

Date: January 31, 2007

Samples: 31

ICP4.3R Partial Digestion

Sample Number	Ag ppm	As ppm	Bi ppm	Co ppm	Cu ppm	Ge ppm	Hg ppm	Mo ppm	Ni ppm	Pb ppm	Sb ppm	Se ppm	Te ppm	U, Fl. ppm	V ppm	Zn ppm	B ppm
CG515/LS4/BM	<0.1	10.7	0.5	40.3	48.3	<0.2	<0.2	12.3	49.9	24.2	<0.2	<0.2	<0.2	33.4	100	205	100
MU-01	<0.1	<0.2	0.5	3.1	2.6	<0.2	<0.2	3.0	3.1	6.55	<0.2	<0.2	<0.2	13.5	17.9	152	4
MU-02	0.7	<0.2	2.1	2.4	11.9	<0.2	<0.2	4.0	2.6	48.6	<0.2	<0.2	<0.2	24.8	11.9	196	28
MU-03	<0.1	3.2	0.6	4.3	18.3	<0.2	<0.2	5.1	3.4	21.5	<0.2	<0.2	<0.2	22.9	9.3	742	12
MU-04	1.0	4.9	0.6	35.5	74.3	<0.2	<0.2	<0.1	70.5	218	<0.2	0.5	<0.2	1.44	89.2	1700	5
MU-05	<0.1	<0.2	0.8	2.4	13.2	<0.2	<0.2	4.4	4.1	29.1	<0.2	<0.2	<0.2	20.0	9.6	57.9	18
MU-06	<0.1	0.8	0.3	2.2	4.8	<0.2	<0.2	3.7	2.2	9.81	<0.2	<0.2	<0.2	23.0	16.4	48.4	23
MU-07	<0.1	0.5	0.5	2.9	3.7	<0.2	<0.2	3.7	3.7	5.99	<0.2	<0.2	<0.2	44.4	19.4	40.2	7
MU-08	<0.1	0.4	1.1	2.8	1.6	<0.2	<0.2	4.2	3.4	12.2	<0.2	<0.2	<0.2	18.8	18.2	39.1	10
MU-09	<0.1	0.2	0.4	2.6	1.2	<0.2	<0.2	4.0	2.6	20.3	<0.2	<0.2	<0.2	17.1	16.8	51.8	4
MU-10	<0.1	<0.2	0.4	2.3	1.1	<0.2	<0.2	4.0	3.7	6.23	<0.2	<0.2	<0.2	17.8	15.5	32.5	8
MU-11	<0.1	11.1	0.3	2.6	1.6	<0.2	<0.2	3.7	5.2	8.71	<0.2	<0.2	<0.2	28.9	11.6	65.6	9
MU-12	<0.1	1.2	0.3	2.5	1.4	<0.2	<0.2	4.8	2.8	8.25	<0.2	<0.2	<0.2	21.0	16.7	48.3	7
MU-13	<0.1	0.3	0.5	2.2	1.3	<0.2	<0.2	4.5	3.0	5.54	<0.2	<0.2	<0.2	26.3	15.2	36.7	8
MU-14	<0.1	0.3	<0.2	2.2	1.0	<0.2	<0.2	5.8	3.0	7.99	<0.2	<0.2	<0.2	22.2	15.6	47.2	10
MU-15	<0.1	2.1	1.1	2.4	1.9	<0.2	<0.2	3.7	3.6	14.9	<0.2	<0.2	<0.2	20.8	17.5	44.5	15
MU-16	<0.1	13.9	0.9	3.2	20.4	<0.2	<0.2	4.8	3.6	51.2	<0.2	<0.2	<0.2	29.6	16.0	106	13
MU-17	<0.1	2.5	0.3	9.2	11.0	0.2	<0.2	0.6	15.4	4.34	<0.2	<0.2	<0.2	3.90	53.5	65.6	18
MU-18	<0.1	<0.2	0.5	2.7	0.8	<0.2	<0.2	8.1	3.5	9.38	<0.2	<0.2	<0.2	19.3	17.7	54.4	10
MU-19	<0.1	0.4	0.5	2.5	3.8	<0.2	<0.2	3.7	3.9	15.8	<0.2	<0.2	<0.2	28.8	13.9	87.8	5
CG515/LS4/BH	<0.1	11.6	0.5	40.8	48.5	<0.2	<0.2	13.0	50.4	24.3	<0.2	<0.2	<0.2	34.0	101	205	885
MU-20	<0.1	0.5	0.4	1.7	0.9	<0.2	<0.2	3.3	4.0	7.22	<0.2	<0.2	<0.2	18.9	10.1	32.9	5
MU-21	<0.1	1.6	0.3	2.8	16.3	<0.2	<0.2	3.7	3.6	175	<0.2	<0.2	<0.2	25.6	12.9	198	10
MU-22	<0.1	<0.2	0.4	2.5	0.7	<0.2	<0.2	4.3	2.7	6.01	0.3	<0.2	<0.2	18.1	9.8	76.1	6
MU-23	0.6	<0.2	2.0	2.6	7.8	<0.2	<0.2	4.7	3.8	83.5	<0.2	<0.2	<0.2	24.9	10.5	170	8
MU-24	<0.1	<0.2	0.6	2.7	1.6	<0.2	<0.2	3.9	2.5	8.36	<0.2	<0.2	<0.2	49.0	10.6	55.9	7
MU-25	<0.1	<0.2	0.5	2.8	2.0	<0.2	<0.2	4.3	3.7	8.06	<0.2	<0.2	<0.2	21.6	10.6	32.7	5
MU-26	<0.1	0.5	0.6	3.0	3.7	<0.2	<0.2	8.5	3.3	16.4	<0.2	<0.2	<0.2	16.8	7.0	51.7	6
MU-27	<0.1	2.1	<0.2	30.3	49.2	0.6	<0.2	12.5	189	0.30	<0.2	<0.2	<0.2	3.16	143	116	3
MU-28	0.6	1.1	2.1	5.9	16.1	0.2	<0.2	2.6	4.8	64.9	<0.2	<0.2	<0.2	18.1	49.1	274	3
MU-27 R	<0.1	1.9	<0.2	28.8	48.0	0.4	<0.2	11.7	187	0.32	<0.2	<0.2	<0.2	3.11	140	116	4

Partial Digestion: A 1.00 g pulp is digested with 2.25 ml of 8:1 HNO3:HCl for 1 hour at 95C.
The standard is LS4.
Boron: A 0.1 gram pulp is fused at 650 C in a mixture of Na2O2/Na2CO3.
The standards are BM and BH.

SRC Geoanalytical Laboratories
125 - 15 Innovation Blvd., Saskatoon, Saskatchewan, S7N 2X8
Tel: (306) 933-8118 Fax: (306) 933-5656 Email: geochem@src.sk.ca

Aurora Geosciences
Attention: Scott Cesselmar
PO #/Project:
Samples: 6

Report No: 06-1702
Date: January 17, 2007

ICP6.3 Total Digestion

Column Header Details

Silver in ppm (Ag)
Aluminum in wt % (Al2O3)
Barium in ppm (Ba)
Berylium in ppm (Be)
Calcium in wt % (CaO)

Cadmium in ppm (Cd)
Cerium in ppm (Ce)
Cobalt in ppm (Co)
Chromium in ppm (Cr)
Copper in ppm (Cu)

Dysprnnosium in ppm (Dy)
Erbium in ppm (Er)
Europium in ppm (Eu)
Iron in wt % (Fe2O3)
Gallium in ppm (Ga)

Gadolinium in ppm (Gd)
Hafnium in ppm (Hf)
Holmium in ppm (Ho)
Potassium in wt % (K2O)
Lanthanum in ppm (La)

Lithium in ppm (Li)
Magnesium in wt % (MgO)
Manganese in wt % (MnO)
Molybdenum in ppm (Mo)
Sodium in wt % (Na2O)

Niobium in ppm (Nb)
Neodymium in ppm (Nd)
Nickel in ppm (Ni)
Phosphorus in wt % (P2O5)
Lead in ppm (Pb)

Praseodymium in ppm (Pr)
Scandium in ppm (Sc)
Samarium in ppm (Sm)
Tin in ppm (Sn)
Strontium in ppm (Sr)

Tantalum in ppm (Ta)
Terbium in ppm (Tb)
Thorium in ppm (Th)
Titanium in wt % (TiO2)
Uranium in ppm (U, ICP)

SRC Geoanalytical Laboratories

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Report No: 06-1702
PO #/Project:
Date: January 17, 2007
Samples: 6

ICP6.3 Total Digestion

Column Header Details

Vanadium in ppm (V)
Tungsten in ppm (W)
Yttrium in ppm (Y)
Ytterbium in ppm (Yb)
Zinc in ppm (Zn)

Zirconium in ppm (Zr)
Au Fire Assay by ICP in ppb (Au)

SRC Geoanalytical Laboratories

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Report No: 06-1702
PO #/Project:
Date: January 17, 2007
Samples: 6

ICP6.3 Total Digestion

Sample Number	Ag ppm	Al2O3 wt %	Ba ppm	Be ppm	CaO wt %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Dy ppm	Er ppm	Eu ppm	Fe2O3 wt %	Ga ppm	Gd ppm	Hf ppm
CG515/LS4/BM	<0.2	16.9	2300	2.0	4.62	1.0	152	19	110	4	3.2	2.1	2.3	7.08	21	5.5	3.7
MUR-06-14	<0.2	13.8	525	3.7	0.49	1.7	71	2	89	7	3.0	1.6	0.4	2.07	21	3.4	1.7
MUR-06-15	<0.2	11.9	1500	2.1	3.11	1.5	44	13	137	17	2.6	1.4	1.1	5.13	18	2.6	3.5
MUR-06-16	<0.2	13.5	492	7.0	1.11	1.0	99	2	110	1	3.7	2.1	0.6	2.44	20	4.1	1.7
MUR-06-17	1.2	13.0	3080	1.7	0.43	14.6	44	<1	99	6	1.2	0.7	0.5	1.31	12	1.9	2.2
MUR-06-14 R	<0.2	13.3	520	3.7	0.48	1.7	68	2	88	6	2.9	1.5	0.5	2.00	20	3.2	1.6

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Report No: 06-1702
PO #/Project:
Date: January 17, 2007
Samples: 6

ICP6.3 Total Digestion

Sample Number	Ho ppm	K2O wt %	La ppm	Li ppm	MgO wt %	MnO wt %	Mo ppm	Na2O wt %	Nb ppm	Nd ppm	Ni ppm	P2O5 wt %	Pb ppm	Pr ppm	Sc ppm	Sm ppm	Sn ppm
CG515/LS4/BM	1.4	3.00	86	27	2.74	0.071	1	3.12	8	62	20	0.661	17	18	12	8.3	2
MUR-06-14	0.6	6.46	40	46	0.422	0.034	3	1.78	29	24	2	0.147	49	7	3	4.6	6
MUR-06-15	1.2	3.39	24	63	3.03	0.099	2	4.68	15	19	16	0.412	14	5	9	3.1	<1
MUR-06-16	1.0	5.19	56	46	0.418	0.050	2	3.49	41	32	2	0.158	23	11	4	5.4	8
MUR-06-17	<0.4	5.02	26	10	0.145	0.006	3	2.69	2	15	2	0.046	160	5	2	2.9	<1
MUR-06-14 R	<0.4	6.40	37	44	0.413	0.033	3	1.74	28	22	2	0.144	48	7	3	4.4	5

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Report No: 06-1702
PO #/Project:
Date: January 17, 2007
Samples: 6

ICP6.3 Total Digestion

Sample Number	Sr ppm	Ta ppm	Tb ppm	Th ppm	TiO2 wt %	U, ICP ppm	V ppm	W ppm	Y ppm	Yb ppm	Zn ppm	Zr ppm	Au ppb
CG515/LS4/BM	1180	<1	0.4	11	0.997	2	120	1	21	1.8	80	141	N/R
MUR-06-14	115	<1	0.5	31	0.273	11	18	<1	18	1.5	112	55	4
MUR-06-15	586	1	<0.3	6	0.825	3	122	<1	13	1.4	154	126	6
MUR-06-16	148	1	0.7	31	0.393	6	21	<1	22	2.1	85	48	<2
MUR-06-17	118	<1	0.5	13	0.029	4	3	<1	8	0.8	589	73	<2
MUR-06-14 R	113	<1	0.5	30	0.270	12	18	1	17	1.5	109	53	5

Total Digestion: A 0.125 g pulp is gently heated in a mixture of HF/HNO3/HClO4 until dry and the residue is dissolved in dilute HNO3.
The standard is CG515.
Fire Assay: A 30 g pulp is subjected to standard fire assaying procedures.

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Report No: 06-1702
PO #/Project:
Date: January 17, 2007
Samples: 6

ICP6.3R Partial Digestion

Column Header Details

Silver in ppm (Ag)
Arsenic in ppm (As)
Bismuth in ppm (Bi)
Cobalt in ppm (Co)
Copper in ppm (Cu)

Germanium in ppm (Ge)
Mercury in ppm (Hg)
Molybdenum in ppm (Mo)
Nickel in ppm (Ni)
Lead in ppm (Pb)

Antimony in ppm (Sb)
Selenium in ppm (Se)
Tellurium in ppm (Te)
Uranium (Fluorimetry) in ppm (U, Fl.)
Vanadium in ppm (V)

Zinc in ppm (Zn)
Boron by Fusion in ppm (B)

Sample Number	Ag ppm	As ppm	Bi ppm	Co ppm	Cu ppm	Ge ppm	Hg ppm	Mo ppm	Ni ppm	Pb ppm	Sb ppm	Se ppm	Te ppm	U, Fl. ppm	V ppm	Zn ppm	B ppm
CG515/LS4/BM	<0.1	10.3	0.5	38.2	49.1	<0.2	<0.2	10.3	48.6	23.3	<0.2	<0.2	1.2	31.3	101	199	92
MUR-06-14	<0.1	1.6	0.3	2.1	6.4	<0.2	<0.2	3.8	1.9	41.1	0.3	<0.2	0.4	12.2	8.6	85.2	9
MUR-06-15	<0.1	3.2	0.3	10.6	16.5	0.3	<0.2	1.4	15.5	7.17	<0.2	<0.2	1.1	0.79	64.7	131	4
MUR-06-16	<0.1	0.4	1.1	1.9	1.2	<0.2	<0.2	3.2	2.4	8.55	0.3	<0.2	0.6	11.2	12.2	64.5	10
MUR-06-17	0.4	0.8	1.7	0.5	5.8	0.2	<0.2	3.1	1.6	155	0.7	<0.2	<0.2	3.83	1.0	532	22
MUR-06-14 R	<0.1	1.8	0.4	2.0	6.4	<0.2	<0.2	3.7	1.9	41.4	0.2	<0.2	0.4	12.4	8.2	83.7	9

Partial Digestion: A 1.00 g pulp is digested with 2.25 ml of 8:1 HNO3:HCl for 1 hour at 95C.
The standard is LS4.
Boron: A 0.1 gram pulp is fused at 650 C in a mixture of Na2O2/Na2CO3.
The standards are BM and BH.

SRC Geoanalytical Laboratories

Signet Minerals Inc.
125 - 15 Innovation Blvd., Saskatoon, Saskatchewan, S7N 2X8
Attention: Kieran Downes
Tel: (306) 933-8118 Fax: (306) 933-5656 Email: geochem@src.sk.ca

Report No: 06-1394
PO #/Project:
Date: October 13, 2006
Samples: 4

ICP6.3R Partial Digestion

Column Header Details

Silver in ppm (Ag)
Arsenic in ppm (As)
Bismuth in ppm (Bi)
Cobalt in ppm (Co)
Copper in ppm (Cu)

Germanium in ppm (Ge)
Mercury in ppm (Hg)
Molybdenum in ppm (Mo)
Nickel in ppm (Ni)
Lead in ppm (Pb)

Antimony in ppm (Sb)
Selenium in ppm (Se)
Tellurium in ppm (Te)
Uranium (Fluorimetry) in ppm (U, Fl.)
Vanadium in ppm (V)

Zinc in ppm (Zn)
Boron by Fusion in ppm (B)

Sample Number	Ag ppm	As ppm	Bi ppm	Co ppm	Cu ppm	Ge ppm	Hg ppm	Mo ppm	Ni ppm	Pb ppm	Sb ppm	Se ppm	Te ppm	U, Fl. ppm	V ppm	Zn ppm	B ppm
CG515/LS4/BM	<0.1	10.0	0.5	41.3	50.6	<0.2	<0.2	10.4	50.0	22.7	<0.2	<0.2	<0.2	31.0	99.6	202	98
MUR06-06	<0.1	0.6	<0.2	<0.1	3.1	<0.2	<0.2	3.7	2.0	22.1	<0.2	<0.2	0.4	48.6	5.4	9.6	8
MUR06-07	<0.1	3.1	<0.2	0.2	2.6	<0.2	<0.2	4.2	1.1	4.68	<0.2	<0.2	0.7	28.7	11.9	63.8	7
MUR06-07 R	<0.1	2.7	<0.2	0.3	2.4	0.2	<0.2	4.0	1.0	4.57	<0.2	<0.2	0.6	28.0	10.9	62.0	8

Partial Digestion: A 0.5 g pulp is digested with 2.25 ml of 9:1 HNO3:HCl for 1 hour at 95 C.
The standard is LS4.
Boron: A 0.1 gram pulp is fused at 650 C in a mixture of Na2O2/Na2CO3.
The standard is BM.

SRC Geoanalytical Laboratories

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Signet Minerals Inc.

Attention: Kieran Downes

PO #/Project:

Samples: 4

Report No: 06-1394

Date: October 13, 2006

ICP6.3 Total Digestion

Column Header Details

Silver in ppm (Ag)
Aluminum in wt % (Al2O3)
Barium in ppm (Ba)
Berylium in ppm (Be)
Calcium in wt % (CaO)

Cadmium in ppm (Cd)
Cerium in ppm (Ce)
Cobalt in ppm (Co)
Chromium in ppm (Cr)
Copper in ppm (Cu)

Dysprnnosium in ppm (Dy)
Erbium in ppm (Er)
Europium in ppm (Eu)
Iron in wt % (Fe2O3)
Gallium in ppm (Ga)

Gadolinium in ppm (Gd)
Hafnium in ppm (Hf)
Holmium in ppm (Ho)
Potassium in wt % (K2O)
Lanthanum in ppm (La)

Lithium in ppm (Li)
Magnesium in wt % (MgO)
Manganese in wt % (MnO)
Molybdenum in ppm (Mo)
Sodium in wt % (Na2O)

Niobium in ppm (Nb)
Neodymium in ppm (Nd)
Nickel in ppm (Ni)
Phosphorus in wt % (P2O5)
Lead in ppm (Pb)

Praseodymium in ppm (Pr)
Scandium in ppm (Sc)
Samarium in ppm (Sm)
Tin in ppm (Sn)
Strontium in ppm (Sr)

Tantalum in ppm (Ta)
Terbium in ppm (Tb)
Thorium in ppm (Th)
Titanium in wt % (TiO2)
Uranium in ppm (U, ICP)

SRC Geoanalytical Laboratories

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Report No: 06-1394
PO #/Project:
Date: October 13, 2006
Samples: 4

ICP6.3 Total Digestion

Column Header Details

Vanadium in ppm (V)
Tungsten in ppm (W)
Yttrium in ppm (Y)
Ytterbium in ppm (Yb)
Zinc in ppm (Zn)

Zirconium in ppm (Zr)
Au Fire Assay by ICP in ppb (Au)

SRC Geoanalytical Laboratories

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Report No: 06-1394

PO #/Project:

Date: October 13, 2006

Samples: 4

ICP6.3 Total Digestion

Sample Number	Ag ppm	Al2O3 wt %	Ba ppm	Be ppm	CaO wt %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Dy ppm	Er ppm	Eu ppm	Fe2O3 wt %	Ga ppm	Gd ppm	Hf ppm
CG515/LS4/BM	<0.2	17.4	2240	2.3	4.87	0.9	163	19	115	3	3.0	2.5	2.7	7.23	23	6.1	4.2
MUR06-06	0.3	15.0	653	6.4	0.34	1.2	106	<1	105	4	1.3	0.7	0.6	1.54	21	2.6	1.7
MUR06-07	<0.2	14.2	501	8.6	0.56	0.9	88	<1	109	4	3.5	2.3	0.6	1.95	20	4.5	1.9
MUR06-07 R	<0.2	14.1	497	8.5	0.55	0.9	87	<1	108	4	3.5	2.3	0.6	1.93	20	4.4	1.9

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Report No: 06-1394

PO #/Project:

Date: October 13, 2006

Samples: 4

ICP6.3 Total Digestion

Sample Number	Ho ppm	K2O wt %	La ppm	Li ppm	MgO wt %	MnO wt %	Mo ppm	Na2O wt %	Nb ppm	Nd ppm	Ni ppm	P2O5 wt %	Pb ppm	Pr ppm	Sc ppm	Sm ppm	Sn ppm
CG515/LS4/BM	1.1	3.19	87	30	2.77	0.074	<1	3.14	8	66	26	0.677	19	17	12	8.7	5
MUR06-06	0.4	6.89	58	13	0.252	0.010	5	3.25	17	31	2	0.114	42	9	2	3.7	2
MUR06-07	0.8	5.66	48	19	0.306	0.046	4	3.64	43	30	1	0.161	18	8	3	4.7	10
MUR06-07 R	0.8	5.62	48	19	0.303	0.046	4	3.61	43	30	1	0.159	17	8	3	4.7	10

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Report No: 06-1394

PO #/Project:

Date: October 13, 2006

Samples: 4

ICP6.3 Total Digestion

Sample Number	Sr ppm	Ta ppm	Tb ppm	Th ppm	TiO2 wt %	U, ICP ppm	V ppm	W ppm	Y ppm	Yb ppm	Zn ppm	Zr ppm	Au ppb
CG515/LS4/BM	1200	<1	0.3	15	1.04	2	129	<1	22	1.8	89	139	N/R
MUR06-06	162	<1	<0.3	23	0.211	78	16	1	7	0.5	29	53	<2
MUR06-07	107	3	0.3	48	0.339	26	18	<1	26	2.4	129	60	<2
MUR06-07 R	106	3	0.3	48	0.336	25	18	<1	26	2.4	128	60	<2

Total Digestion: A 0.125 g pulp is gently heated in a mixture of HF/HNO3/HClO4 until dry and the residue is dissolved in dilute HNO3.
The standard is CG515.
Fire Assay: A 30 g pulp is subjected to standard fire assaying procedures.

SRC Geoanalytical Laboratories

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Report No: 06-1394
PO #/Project:
Date: October 13, 2006
Samples: 13

ICP6.3R Partial Digestion

Column Header Details

Silver in ppm (Ag)
Arsenic in ppm (As)
Bismuth in ppm (Bi)
Cobalt in ppm (Co)
Copper in ppm (Cu)

Germanium in ppm (Ge)
Mercury in ppm (Hg)
Molybdenum in ppm (Mo)
Nickel in ppm (Ni)
Lead in ppm (Pb)

Antimony in ppm (Sb)
Selenium in ppm (Se)
Tellurium in ppm (Te)
Uranium (Fluorimetry) in ppm (U, Fl.)
Vanadium in ppm (V)

Zinc in ppm (Zn)
Boron by Fusion in ppm (B)

Sample Number	Ag ppm	As ppm	Bi ppm	Co ppm	Cu ppm	Ge ppm	Hg ppm	Mo ppm	Ni ppm	Pb ppm	Sb ppm	Se ppm	Te ppm	U, Fl. ppm	V ppm	Zn ppm	B ppm
CG515/LS4/BM	0.2	11.9	0.7	37.9	47.7	0.4	0.2	11.2	46.9	22.7	<0.2	<0.2	<0.2	32.4	95.5	194	98
MUR06-01	<0.1	0.6	0.9	2.6	5.9	1.1	<0.2	12.1	2.5	2.34	<0.2	0.7	<0.2	1.41	1.4	3.5	16
MUR06-02	1.8	<0.2	4.1	1.6	3.2	0.4	<0.2	2.5	0.8	251	<0.2	<0.2	<0.2	1.29	<0.1	67.9	19
MUR06-03	<0.1	2.7	0.3	2.0	5.6	0.5	<0.2	3.8	1.2	9.47	<0.2	<0.2	0.3	16.9	9.6	28.8	5
MUR06-04	<0.1	0.9	<0.2	0.9	9.5	0.4	<0.2	5.1	0.5	7.31	<0.2	<0.2	0.4	25.4	7.3	20.4	7
MUR06-05	<0.1	1.0	2.8	2.1	5.1	0.3	<0.2	0.4	2.4	7.78	<0.2	<0.2	0.3	14.8	13.5	37.2	17
MUR06-08	0.2	<0.2	0.4	0.4	15.4	0.4	<0.2	5.1	1.5	123	<0.2	0.6	<0.2	4.58	1.3	15.9	3
MUR06-09	<0.1	0.3	0.2	1.1	6.9	0.3	<0.2	7.7	0.5	32.1	<0.2	<0.2	<0.2	8.51	2.6	7.4	6
MUR06-10	0.2	0.3	0.6	0.7	7.3	0.6	<0.2	27.6	0.7	11.9	<0.2	<0.2	<0.2	1.39	0.8	5.6	8
MUR06-11	<0.1	2.1	<0.2	6.6	10.6	1.6	<0.2	<0.1	<0.1	35.9	<0.2	<0.2	0.4	2.78	88.2	108	7
MUR06-12	<0.1	1.8	<0.2	5.8	4.4	1.5	<0.2	<0.1	<0.1	13.5	<0.2	<0.2	0.5	1.75	56.9	45.5	9
MUR06-13	<0.1	1.8	0.3	4.9	7.9	0.9	<0.2	27.7	0.6	14.2	<0.2	0.7	<0.2	11.0	<0.1	20.4	14
MUR06-09 R	<0.1	<0.2	<0.2	0.9	7.0	0.3	<0.2	7.9	0.5	31.8	<0.2	0.3	<0.2	8.74	2.6	7.2	7

Partial Digestion: A 1.00 g pulp is digested with 2.25 ml of 9:1 HNO3:HCl for 1 hour at 95C.
The standard is LS4.
Boron: A 0.1 gram pulp is fused at 650 C in a mixture of Na2O2/Na2CO3.
The standard is BM.

SRC Geoanalytical Laboratories

125 - 15 Innovation Blvd., Saskatoon, Saskatchewan, S7N 2X8

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Signet Minerals Inc.

Attention: Kieran Downes

PO #/Project:

Samples: 13

Report No: 06-1394

Date: October 13, 2006

ICP6.3 Total Digestion

Column Header Details

Silver in ppm (Ag)
Aluminum in wt % (Al2O3)
Barium in ppm (Ba)
Berylium in ppm (Be)
Calcium in wt % (CaO)

Cadmium in ppm (Cd)
Cerium in ppm (Ce)
Cobalt in ppm (Co)
Chromium in ppm (Cr)
Copper in ppm (Cu)

Dysprnnosium in ppm (Dy)
Erbium in ppm (Er)
Europium in ppm (Eu)
Iron in wt % (Fe2O3)
Gallium in ppm (Ga)

Gadolinium in ppm (Gd)
Hafnium in ppm (Hf)
Holmium in ppm (Ho)
Potassium in wt % (K2O)
Lanthanum in ppm (La)

Lithium in ppm (Li)
Magnesium in wt % (MgO)
Manganese in wt % (MnO)
Molybdenum in ppm (Mo)
Sodium in wt % (Na2O)

Niobium in ppm (Nb)
Neodymium in ppm (Nd)
Nickel in ppm (Ni)
Phosphorus in wt % (P2O5)
Lead in ppm (Pb)

Praseodymium in ppm (Pr)
Scandium in ppm (Sc)
Samarium in ppm (Sm)
Tin in ppm (Sn)
Strontium in ppm (Sr)

Tantalum in ppm (Ta)
Terbium in ppm (Tb)
Thorium in ppm (Th)
Titanium in wt % (TiO2)
Uranium in ppm (U, ICP)

SRC Geoanalytical Laboratories

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Report No: 06-1394
PO #/Project:
Date: October 13, 2006
Samples: 13

ICP6.3 Total Digestion

Column Header Details

Vanadium in ppm (V)
Tungsten in ppm (W)
Yttrium in ppm (Y)
Ytterbium in ppm (Yb)
Zinc in ppm (Zn)

Zirconium in ppm (Zr)
Au Fire Assay by ICP in ppb (Au)

SRC Geoanalytical Laboratories

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Report No: 06-1394
PO #/Project:
Date: October 13, 2006
Samples: 13

ICP6.3 Total Digestion

Sample Number	Ag ppm	Al2O3 wt %	Ba ppm	Be ppm	CaO wt %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Dy ppm	Er ppm	Eu ppm	Fe2O3 wt %	Ga ppm	Gd ppm	Hf ppm
CG515/LS4/BM	<0.2	17.2	2100	2.4	4.67	0.5	161	19	116	3	2.9	2.3	2.8	7.02	22	5.8	4.5
MUR06-01	<0.2	11.3	239	3.0	0.08	0.5	87	3	259	7	1.0	0.6	0.7	4.98	21	2.4	2.5
MUR06-02	3.1	12.7	3150	1.6	0.16	2.4	34	1	139	4	0.6	0.4	0.5	1.84	12	1.0	2.6
MUR06-03	0.3	14.4	601	6.3	0.68	1.0	71	2	197	7	1.9	1.3	0.9	2.65	20	2.7	1.6
MUR06-04	0.3	13.4	541	5.8	0.50	1.1	85	3	98	12	1.7	1.1	0.7	2.29	19	2.8	1.7
MUR06-05	<0.2	14.5	802	10.7	1.29	0.6	41	4	170	6	1.2	0.8	0.6	1.49	18	1.9	1.1
MUR06-08	0.3	11.5	593	7.4	0.11	1.3	101	3	201	19	1.0	0.6	0.5	2.33	14	2.2	1.8
MUR06-09	<0.2	13.5	523	5.8	0.32	0.7	62	1	111	9	1.0	0.6	0.5	1.94	19	1.8	1.5
MUR06-10	0.5	11.4	487	3.5	0.07	0.5	67	2	117	11	0.8	0.4	0.5	3.15	14	1.6	1.6
MUR06-11	0.2	17.2	987	2.4	3.81	1.5	54	6	69	12	1.9	2.0	1.8	6.61	20	3.3	2.3
MUR06-12	<0.2	16.3	1040	2.7	3.07	0.8	40	7	83	5	1.6	1.4	1.4	4.84	21	2.5	1.7
MUR06-13	0.2	12.8	669	7.4	0.65	0.8	164	7	50	9	1.8	1.0	0.8	3.06	16	4.4	2.4
MUR06-09 R	<0.2	13.5	527	5.9	0.32	0.7	67	2	113	9	1.0	0.6	0.6	1.92	19	1.8	1.4

SRC Geoanalytical Laboratories

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Report No: 06-1394

PO #/Project:

Date: October 13, 2006

Samples: 13

ICP6.3 Total Digestion

Sample Number	Ho ppm	K2O wt %	La ppm	Li ppm	MgO wt %	MnO wt %	Mo ppm	Na2O wt %	Nb ppm	Nd ppm	Ni ppm	P2O5 wt %	Pb ppm	Pr ppm	Sc ppm	Sm ppm	Sn ppm
CG515/LS4/BM	0.9	3.16	83	28	2.72	0.072	<1	3.20	8	65	24	0.667	17	16	11	8.4	1
MUR06-01	0.4	2.93	45	28	0.144	0.008	13	0.09	10	28	5	0.054	3	7	2	4.8	3
MUR06-02	<0.4	5.60	19	11	0.158	0.004	2	2.41	5	11	<1	0.080	289	2	2	2.0	<1
MUR06-03	0.6	5.90	39	15	0.291	0.027	3	3.63	24	22	3	0.184	26	5	3	3.7	3
MUR06-04	0.4	5.42	46	13	0.337	0.026	3	3.21	24	25	3	0.161	23	6	3	3.9	4
MUR06-05	<0.4	4.80	22	37	0.362	0.046	1	4.01	20	15	4	0.162	38	3	2	2.8	5
MUR06-08	<0.4	6.18	56	16	0.152	0.006	5	1.71	10	28	4	0.107	153	7	2	4.1	1
MUR06-09	<0.4	5.57	34	24	0.248	0.007	7	2.54	9	20	2	0.125	45	5	2	3.0	2
MUR06-10	<0.4	5.66	37	18	0.146	0.006	34	1.62	18	20	<1	0.081	26	5	2	3.2	2
MUR06-11	0.9	2.18	29	49	2.92	0.134	<1	2.80	13	24	3	0.413	51	5	15	3.8	<1
MUR06-12	0.6	2.49	21	45	1.95	0.071	<1	3.88	7	19	2	0.327	23	4	8	3.1	<1
MUR06-13	0.5	5.21	86	20	0.419	0.015	28	2.54	3	51	3	0.147	26	13	2	7.6	<1
MUR06-09 R	<0.4	5.54	36	24	0.251	0.007	7	2.53	8	21	2	0.125	45	5	2	3.2	2

SRC Geoanalytical Laboratories

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Report No: 06-1394

PO #/Project:

Date: October 13, 2006

Samples: 13

ICP6.3 Total Digestion

Sample Number	Sr ppm	Ta ppm	Tb ppm	Th ppm	TiO2 wt %	U, ICP ppm	V ppm	W ppm	Y ppm	Yb ppm	Zn ppm	Zr ppm	Au ppb
CG515/LS4/BM	1140	2	0.6	15	0.994	2	123	1	22	1.8	85	141	N/R
MUR06-01	19	<1	<0.3	24	0.106	5	31	6	5	0.5	13	47	17
MUR06-02	100	<1	<0.3	18	0.046	2	4	10	4	0.6	76	69	<2
MUR06-03	150	<1	<0.3	33	0.286	24	20	3	13	1.2	43	38	<2
MUR06-04	141	<1	<0.3	30	0.293	25	19	3	10	0.9	32	47	<2
MUR06-05	253	1	<0.3	11	0.154	14	18	3	9	0.8	46	21	<2
MUR06-08	107	<1	<0.3	24	0.111	6	10	3	5	0.5	30	37	<2
MUR06-09	135	<1	<0.3	23	0.120	10	16	5	5	0.5	18	42	<2
MUR06-10	109	<1	<0.3	12	0.163	3	15	5	5	0.4	20	38	4
MUR06-11	638	<1	<0.3	8	0.859	4	159	<1	18	1.9	146	70	<2
MUR06-12	712	<1	<0.3	8	0.447	3	94	2	14	1.5	64	44	<2
MUR06-13	112	<1	<0.3	33	0.049	12	11	1	9	0.7	32	72	<2
MUR06-09 R	134	<1	<0.3	23	0.118	9	16	3	6	0.5	17	39	<2

Total Digestion: A 0.125 g pulp is gently heated in a mixture of HF/HNO3/HClO4 until dry and the residue is dissolved in dilute HNO3.
The standard is CG515.
Fire Assay: A 30 g pulp is subjected to standard fire assaying procedures.

SRC Geoanalytical Laboratories

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Signet Minerals Inc.

Attention: Kieran Downes

PO #/Project:

Samples: 31

Report No: 06-1803

Date: January 31, 2007

ICP4.3 Total Digestion

Column Header Details

Silver in ppm (Ag)
Aluminum in wt % (Al2O3)
Barium in ppm (Ba)
Berylium in ppm (Be)
Calcium in wt % (CaO)

Cadmium in ppm (Cd)
Cerium in ppm (Ce)
Cobalt in ppm (Co)
Chromium in ppm (Cr)
Copper in ppm (Cu)

Dysprnnosium in ppm (Dy)
Erbium in ppm (Er)
Europium in ppm (Eu)
Iron in wt % (Fe2O3)
Gallium in ppm (Ga)

Gadolinium in ppm (Gd)
Hafnium in ppm (Hf)
Holmium in ppm (Ho)
Potassium in wt % (K2O)
Lanthanum in ppm (La)

Lithium in ppm (Li)
Magnesium in wt % (MgO)
Manganese in wt % (MnO)
Molybdenum in ppm (Mo)
Sodium in wt % (Na2O)

Niobium in ppm (Nb)
Neodymium in ppm (Nd)
Nickel in ppm (Ni)
Phosphorus in wt % (P2O5)
Lead in ppm (Pb)

Praseodymium in ppm (Pr)
Scandium in ppm (Sc)
Samarium in ppm (Sm)
Tin in ppm (Sn)
Strontium in ppm (Sr)

Tantalum in ppm (Ta)
Terbium in ppm (Tb)
Thorium in ppm (Th)
Titanium in wt % (TiO2)
Uranium in ppm (U, ICP)

SRC Geoanalytical Laboratories

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Report No: 06-1803
PO #/Project:
Date: January 31, 2007
Samples: 31

ICP4.3 Total Digestion

Column Header Details

Vanadium in ppm (V)
Tungsten in ppm (W)
Yttrium in ppm (Y)
Ytterbium in ppm (Yb)
Zinc in ppm (Zn)

Zirconium in ppm (Zr)
Au Fire Assay by ICP in ppb (Au)

SRC Geoanalytical Laboratories

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Tel: (306) 933-8118 Fax: (306) 933-5656 Email: geochem@src.sk.ca
Report No: 06-1803
PO #/Project:
Date: January 31, 2007
Samples: 31

ICP4.3 Total Digestion

Sample Number	Ag ppm	Al2O3 wt %	Ba ppm	Be ppm	CaO wt %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cu ppm	Dy ppm	Er ppm	Eu ppm	Fe2O3 wt %	Ga ppm	Gd ppm	Hf ppm
CG515/LS4/BM	<0.2	17.2	2280	2.2	4.86	1.0	161	20	122	3	3.5	2.6	2.3	7.49	26	6.0	4.7
MU-01	<0.2	14.1	512	6.8	1.33	3.7	75	2	97	3	3.3	2.0	0.6	2.87	23	3.7	0.9
MU-02	0.8	14.1	489	8.5	0.96	9.0	74	2	139	14	3.9	2.1	0.7	2.11	22	4.3	0.8
MU-03	<0.2	13.9	520	7.4	0.90	1.7	80	4	87	18	3.7	2.0	0.6	2.50	22	3.6	1.0
MU-04	1.1	15.8	248	7.8	5.24	4.2	14	44	244	78	5.3	2.9	1.1	10.6	18	2.0	1.8
MU-05	<0.2	13.9	508	7.1	1.23	1.8	60	2	101	14	3.4	1.8	0.6	2.45	23	3.5	1.2
MU-06	<0.2	14.5	556	7.7	1.37	0.9	83	2	93	6	3.8	2.1	0.6	2.61	23	4.1	0.5
MU-07	<0.2	14.1	465	8.0	1.38	0.6	100	3	114	4	4.3	2.6	0.6	2.93	23	4.7	0.8
MU-08	<0.2	14.3	490	7.9	1.41	0.7	96	3	106	2	3.9	2.2	0.6	2.85	23	4.5	1.7
MU-09	<0.2	14.3	522	8.0	1.38	1.0	82	2	92	2	4.2	2.4	0.6	2.85	24	4.5	1.7
MU-10	<0.2	14.1	479	7.5	1.33	0.6	90	2	99	2	3.3	1.9	0.6	2.63	23	3.9	1.1
MU-11	<0.2	13.8	459	7.5	2.00	0.9	97	2	119	3	3.3	1.8	0.5	2.32	25	4.0	1.1
MU-12	<0.2	14.0	434	7.9	1.34	0.8	92	2	122	2	3.6	2.3	0.6	2.70	22	4.0	1.3
MU-13	<0.2	13.7	437	7.1	1.26	0.7	104	2	92	1	3.3	1.9	0.5	2.45	23	4.0	1.0
MU-14	<0.2	14.2	456	7.3	1.26	0.7	102	2	119	2	3.8	2.2	0.6	2.50	23	4.4	1.3
MU-15	<0.2	14.1	510	7.7	1.31	0.7	100	2	86	3	4.3	2.4	0.6	2.77	23	4.5	1.4
MU-16	<0.2	14.5	506	6.3	1.16	2.2	93	3	71	22	3.7	1.9	0.6	2.59	23	4.1	0.6
MU-17	<0.2	16.5	1940	3.3	4.55	1.0	74	14	136	13	3.6	2.3	1.4	5.67	21	3.9	4.2
MU-18	<0.2	14.4	518	7.5	1.34	0.8	97	2	104	2	4.0	2.2	0.6	2.79	23	4.3	1.3
MU-19	<0.2	13.8	447	7.3	1.55	1.7	76	2	124	5	3.7	2.0	0.6	2.52	23	3.9	0.9
CG515/LS4/BH	<0.2	17.5	2230	2.2	4.80	1.0	164	19	116	6	3.5	2.7	2.3	7.29	25	6.1	4.3
MU-20	<0.2	13.3	321	5.8	0.87	0.5	71	1	171	2	2.8	1.6	0.5	2.11	21	3.3	1.2
MU-21	<0.2	13.9	471	7.8	1.53	4.6	88	3	107	17	3.8	2.1	0.6	2.50	23	4.2	<0.5
MU-22	<0.2	14.4	462	7.9	1.19	1.1	104	2	81	2	3.6	2.1	0.5	2.41	24	4.0	1.2
MU-23	0.7	14.0	488	7.3	1.28	4.5	117	3	125	9	3.9	2.1	0.6	2.77	23	4.7	1.0
MU-24	<0.2	13.7	469	8.7	1.18	1.2	93	2	96	2	3.9	2.2	0.6	2.27	23	4.4	0.8
MU-25	<0.2	14.1	513	8.0	1.43	1.0	83	2	119	3	3.1	1.8	0.6	2.45	24	3.7	1.3
MU-26	<0.2	13.7	515	5.3	0.95	1.5	79	3	123	4	2.8	1.7	0.6	2.59	23	3.8	0.8
MU-27	<0.2	14.2	842	3.2	5.60	0.9	22	37	589	50	4.2	2.7	1.3	9.19	19	3.7	2.6
MU-28	0.8	15.0	646	4.8	2.23	7.9	88	7	76	17	3.1	1.9	0.9	4.45	24	3.6	1.7
MU-27 R	<0.2	14.0	833	3.2	5.53	0.7	23	37	577	48	4.1	2.9	1.2	9.07	19	3.9	2.4

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Report No: 06-1803

PO #/Project:

Date: January 31, 2007

Samples: 31

ICP4.3 Total Digestion

Sample Number	Ho ppm	K2O wt %	La ppm	Li ppm	MgO wt %	MnO wt %	Mo ppm	Na2O wt %	Nb ppm	Nd ppm	Ni ppm	P2O5 wt %	Pb ppm	Pr ppm	Sc ppm	Sm ppm	Sn ppm
CG515/LS4/BM	1.8	3.22	87	31	2.93	0.077	2	3.34	9	67	23	0.683	18	16	12	8.6	2
MU-01	1.3	5.21	41	44	0.552	0.056	2	3.68	41	27	3	0.201	21	7	3	4.6	6
MU-02	1.1	5.27	43	31	0.344	0.037	4	3.42	33	27	2	0.193	61	7	3	4.9	6
MU-03	0.6	5.47	48	25	0.464	0.082	23	3.08	28	27	3	0.145	33	8	2	4.6	4
MU-04	0.8	2.25	10	88	7.31	0.380	<1	2.48	1	7	93	0.135	220	<1	34	1.6	<1
MU-05	0.9	5.53	34	19	0.466	0.059	4	3.50	30	22	4	0.154	39	5	3	4.0	5
MU-06	1.3	5.76	48	39	0.450	0.045	3	3.63	44	29	2	0.164	26	8	4	4.8	9
MU-07	1.2	5.60	55	55	0.489	0.053	3	3.67	50	35	4	0.185	22	10	4	6.0	10
MU-08	1.2	5.33	56	49	0.479	0.046	3	3.72	47	33	3	0.177	28	9	4	5.7	9
MU-09	1.2	5.44	47	59	0.467	0.054	4	3.67	47	30	2	0.174	35	8	5	5.3	9
MU-10	0.9	5.38	54	63	0.429	0.042	3	3.65	41	30	4	0.167	22	8	3	4.9	6
MU-11	1.0	5.26	57	43	0.665	0.043	4	1.44	33	32	5	0.162	23	9	3	4.8	4
MU-12	1.3	5.17	54	69	0.431	0.050	4	3.63	43	31	3	0.162	23	9	3	5.1	7
MU-13	0.9	5.28	62	66	0.399	0.046	4	3.54	39	34	4	0.149	21	10	3	5.1	6
MU-14	1.2	5.51	60	62	0.395	0.047	7	3.66	39	33	4	0.152	24	10	2	5.4	7
MU-15	1.2	5.49	58	50	0.469	0.052	3	3.56	43	34	4	0.169	31	9	4	5.7	8
MU-16	0.9	6.60	54	33	0.474	0.050	4	3.22	28	32	4	0.162	60	9	3	5.1	5
MU-17	1.4	4.10	46	53	3.33	0.106	1	4.24	16	30	22	0.410	12	7	13	4.4	<1
MU-18	1.3	5.66	56	76	0.474	0.054	8	3.72	44	33	4	0.167	24	9	4	5.4	9
MU-19	0.9	5.41	43	77	0.395	0.051	3	3.41	40	26	4	0.158	30	7	3	4.5	8
CG515/LS4/BH	1.5	3.17	91	30	2.85	0.075	2	3.33	8	68	23	0.674	19	16	12	8.8	2
MU-20	0.6	6.06	41	64	0.259	0.035	3	3.16	26	24	4	0.087	24	6	3	4.0	6
MU-21	1.0	5.48	51	70	0.343	0.055	3	3.32	36	30	3	0.161	177	8	2	5.1	7
MU-22	0.9	5.57	63	27	0.395	0.049	4	3.66	36	32	3	0.149	22	9	3	5.1	8
MU-23	1.0	5.54	68	24	0.508	0.051	3	3.49	31	38	4	0.167	93	11	3	5.7	6
MU-24	0.9	5.15	52	24	0.447	0.046	3	3.51	19	32	3	0.149	22	9	3	5.4	6
MU-25	0.5	5.41	48	27	0.503	0.042	3	3.25	18	28	4	0.154	22	8	3	4.6	6
MU-26	<0.4	5.19	45	25	0.484	0.027	8	3.13	7	28	3	0.176	26	7	4	4.8	3
MU-27	1.0	2.84	14	75	8.32	0.203	13	1.41	3	12	261	0.183	7	1	27	2.4	<1
MU-28	0.6	4.81	52	43	1.55	0.068	2	2.66	8	32	4	0.227	74	8	8	5.0	3
MU-27 R	0.9	2.78	14	74	8.25	0.200	14	1.39	3	12	259	0.179	8	2	27	2.4	<1

SRC Geoanalytical Laboratories

Signet Minerals Inc. 125 - 15 Innovation Blvd., Saskatoon, Saskatchewan, S7N 2X8

Attention: Kieran Downes Tel: (306) 933-8118 Fax: (306) 933-5656 Email: geochem@src.sk.ca

Report No: 06-1803

PO #/Project:

Date: January 31, 2007

Samples: 31

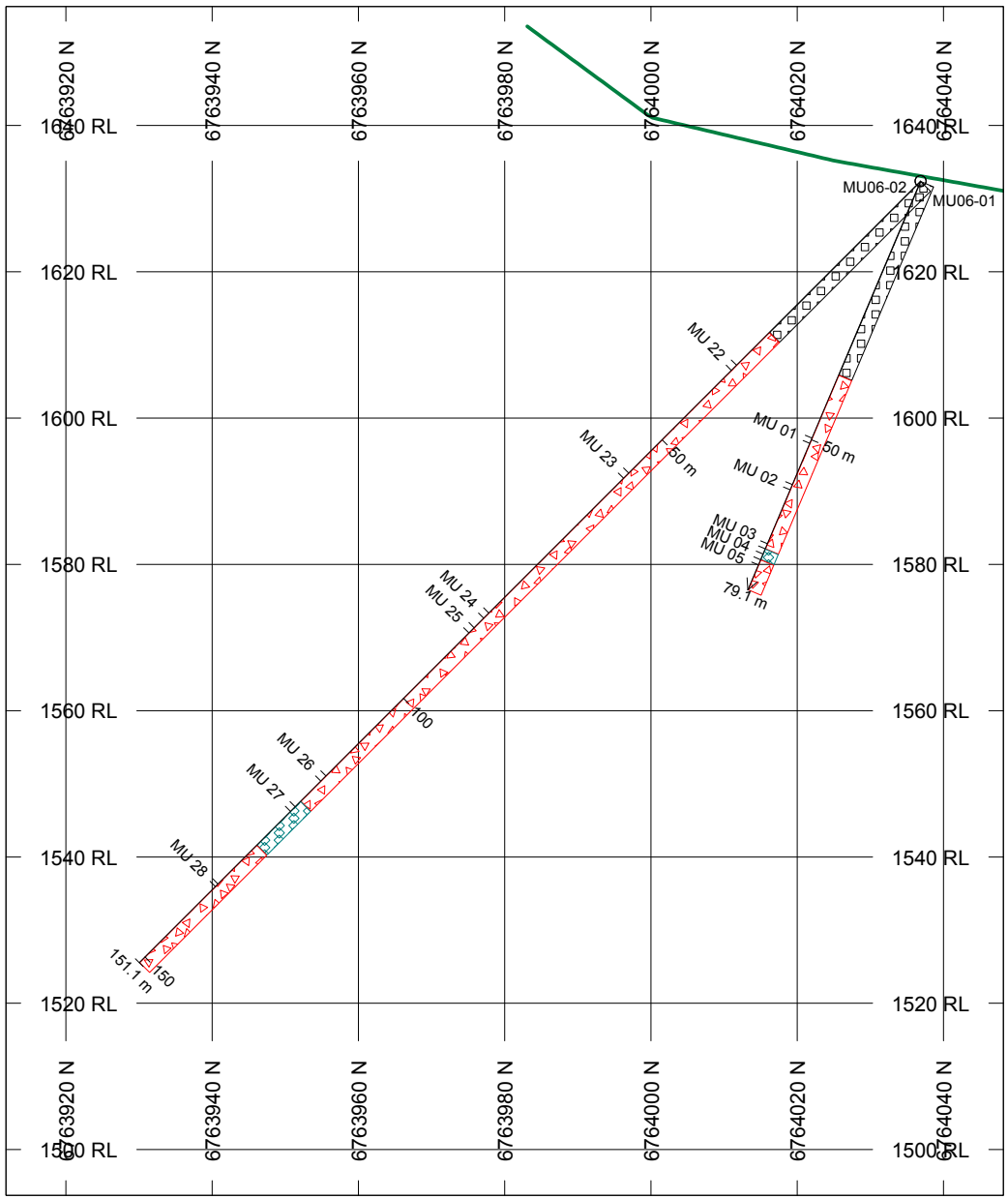
ICP4.3 Total Digestion

Sample Number	Sr ppm	Ta ppm	Tb ppm	Th ppm	TiO2 wt %	U, ICP ppm	V ppm	W ppm	Y ppm	Yb ppm	Zn ppm	Zr ppm	Au ppb
CG515/LS4/BM	1180	<1	<0.3	12	1.09	<2	130	2	22	2.0	88	166	N/R
MU-01	151	<1	<0.3	27	0.471	12	26	<1	18	1.6	209	31	<2
MU-02	169	<1	<0.3	25	0.313	25	16	<1	22	2.1	295	29	<2
MU-03	129	<1	0.3	31	0.283	20	17	<1	22	1.8	871	52	<2
MU-04	295	2	<0.3	1	0.917	2	193	<1	29	2.9	2010	40	11
MU-05	140	<1	<0.3	30	0.297	18	19	3	20	1.7	78	45	<2
MU-06	159	<1	<0.3	32	0.427	24	21	2	23	2.0	61	43	<2
MU-07	142	2	<0.3	32	0.467	42	24	2	24	2.2	49	48	<2
MU-08	155	1	<0.3	34	0.445	18	23	3	25	2.1	49	53	<2
MU-09	155	<1	<0.3	32	0.428	17	23	2	25	2.1	66	48	<2
MU-10	149	<1	<0.3	32	0.409	22	21	2	20	1.7	45	56	<2
MU-11	109	<1	<0.3	36	0.336	27	19	10	20	1.6	86	40	2
MU-12	148	1	<0.3	33	0.419	24	21	2	22	2.0	63	55	<2
MU-13	140	<1	<0.3	40	0.379	25	19	2	19	1.6	48	38	<2
MU-14	144	1	<0.3	36	0.381	22	19	2	23	2.0	63	41	<2
MU-15	156	1	<0.3	32	0.414	21	23	1	25	2.1	58	45	<2
MU-16	149	<1	<0.3	29	0.281	30	20	4	21	1.7	120	34	<2
MU-17	645	<1	<0.3	10	0.831	5	122	5	23	2.1	131	180	<2
MU-18	156	<1	<0.3	33	0.438	19	23	5	23	2.0	70	38	<2
MU-19	136	<1	<0.3	31	0.382	33	20	5	21	1.9	104	51	<2
CG515/LS4/BH	1210	<1	<0.3	12	1.02	2	126	2	23	2.0	89	138	N/R
MU-20	115	<1	<0.3	40	0.276	19	14	4	16	1.5	46	47	<2
MU-21	141	<1	<0.3	33	0.342	46	20	2	21	1.8	215	43	<2
MU-22	153	<1	<0.3	36	0.364	17	21	1	21	1.9	110	40	<2
MU-23	158	<1	<0.3	37	0.353	24	21	6	23	2.0	208	43	<2
MU-24	144	<1	0.3	31	0.270	45	19	1	24	2.1	75	33	<2
MU-25	148	<1	<0.3	31	0.269	22	19	2	19	1.7	47	46	<2
MU-26	150	<1	<0.3	30	0.132	16	26	3	18	1.5	66	33	<2
MU-27	270	2	0.4	3	0.899	6	222	<1	26	2.7	188	39	<2
MU-28	346	<1	0.3	27	0.386	19	91	13	20	1.7	320	50	<2
MU-27 R	267	2	0.4	4	0.892	5	217	<1	26	2.8	185	40	<2

Total Digestion: A 0.125 g pulp is gently heated in a mixture of HF/HNO3/HClO4 until dry and the residue is dissolved in dilute HNO3.
The standard is CG515.
Fire Assay: A 30 g pulp is subjected to standard fire assaying procedures.

APPENDIX E

DRILL LOGS



Rock Unit
Granodiorite
Mafic Intrusive
Overburden

SECTION SPECS:

REF. PT. E, N	576040 m	6763980 m
EXTENTS	136.4 m	162.5 m
SECTION TOP, BOT	1656 m	1494 m
TOLERANCE +/-	27.93 m	

MU 22 - Sample Location

Scale 1:1000

10 0 10 20 30

metres

NAD83 / UTM zone 8N

AZIMUTH = 0°

N W E S

SIGNET MINERALS INC.

MT. MURPHY PROPERTY
2006 EXPLORATION PROGRAM
FIGURE 5A - MU06-01 / 02 DRILL SECTION MAP

NTS: 105C13 / 105F04
Projection: UTM Zone 8N
Date: January 10 2007
Mining District: Whitehorse
Datum: NAD83
Job: SGN-06-04-YT
Drawn By: Derek Torgerson

AURORA GEOSCIENCES LTD.

SIGNET MINERALS INCORPORATED
MT. MURPHY PROJECT
DIAMOND DRILL LOG

HOLE # :

HOLE # : MU06-01

UTM Coordinates
NAD 83, zone 8
Northing : **6764036.87**
Easting : **576062.73**
Elevation (m) : **1632.4**

Hole Length : **79.25 m**
Azimuth (true) : **245**
Dip : **-45**
Claim : **MURF 16**
NTS : 105F04

Overburden : **37.5 m**
Contractor : Top Rank Diamond Drilling
Logged By : **Derek Torgerson**
Date Hole Started : **Oct 13, 2006**
Date Hole Completed : **Oct 16, 2006**

Structure Tadpoles
Dip only, relative to core axis

Core Size: **BTW**

Depth (m)	R.Q.D. weak / strong	Fractures / Veins 0 – 90	From (m)	To (m)	Unit	DESCRIPTION
0 – 55			0.00	37.50		Overburden and Talus
			37.50	71.10	Fractured oxidized zone	Quartz / smoky quartz potassic feldspar and plagioclase granodiorite, primary mafic mineral is fine disseminated magnetite, and trace pyrite mineraliztion. Rock is made up of 10% magnetite, 30% smokey quartz and quartz, 30% potassic feldspar and 30% plagioclase. Fracturing is common at approx. 50 deg. To core axis and fractured surfaces are coated with a dark orange iron oxidation. Grain size is coarse and contains angular megacrysts up to 2cm. From 44.04 to 44.12 m is another highly crushed zone and is possibly related to faulting. At 52.27 a fracture has been filled/ healed with a very thin pyrite film.

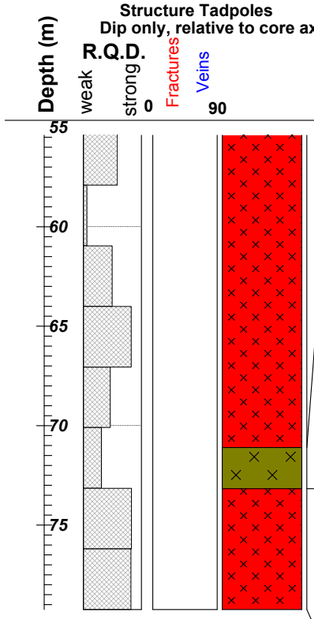
From (m)	To (m)	Width (m)	Sample Number	Au (ppb)	U (ppm)	Mo (ppm)	Cu (ppm)
49.7	50.7	1	MU 01	<2	12	2	3

SIGNET MINERALS INCORPORATED
MT. MURPHY PROJECT
DIAMOND DRILL LOG

HOLE # : MU06-01

HOLE # : MU06-01

Structure Tadpoles
Dip only, relative to core axis



From (m)	To (m)	Unit	DESCRIPTION
			71.10, 73.17 Dark Grey to Dk. Green fine grained chlorite rich mafic intrusion. This unit is moderately magnetic and has common fractures at 50 degrees to the core axis. Other fractures appear healed with pyrite mineralization and crushed calcite. The upper contact between this unit and the surrounding granodiorite is very soft and altered to a clay consistency.
			73.17, 79.25 Smoky quartz, magnetite and feldspar coarse grained granodiorite. Rock is generally quite competent and unfractured. From 79.0 to 79.15 m rock appears to be again fractured and dark orange iron oxide staining is coating the fractured surfaces.

Sample Data

From (m)	To (m)	Width (m)	Sample Number	Au (ppb)	U (ppm)	Mo (ppm)	Cu (ppm)	
58.68	59.68	1	MU 02	<2	25	4	14	Fractured oxidized zone, slightly coarser crystallinity, minor potassic alteration
70.1	71.1	1	MU 03	<2	20	23	18	Pyritic coatings on fracture surfaces, coarse dissemenated pyrite.
71.1	72.1	1	MU 04	11	2	<1	78	Fine granied mafic dyke, crushed upper contact.
73.2	74.2	1	MU 05	<2	18	4	14	Pyritic granodioite, competant, unfractured, at lower contact of mafic dyke

Drill Hole:MU06-01

NAD 83 UTM

EASTING: 576063 m **NORTHING:** 6764037m **ELEVATION:** 1632 m

LOCATION: On Gossan **AZIMUTH:** 245 **DIP:** -45

HOLE DEPTH 79.25 m **HORIZONTAL PROJECTION:** 56.0 m **VERTICAL PROJECTION:** 56.0 m

DRILLED BY: Top Rank Diamond Drilling **STARTED:** Oct 13, 2006 **COMPLETED:** Oct 16, 2006

CORE SIZE: BTW **LOGGED BY:** Derek Torgerson

From To (m)	
0– 3.05	**Ice no core recovery**
3.05 – 33.73	**Very broken core, likely talus and overburden**
33.73 – 34.86	**Quartz / smoky quartz potassic feldspar and plagioclase granodiorite, minor biotite, and trace pyrite mineraliztion. Fracturing is common at approx. 50 deg. To core axis and fractured surfaces are coated with a dark orange iron oxidation. Grain size is coarse and is angular up to 1cm.**
34.86 – 37.5	**Possable fault. Core is very crushed and broken down to a sandy texture, material contains country rock constituents and is rusty orange in colour and oxidized.**
37.5 – 71.10	**Quartz / smoky quartz potassic feldspar and plagioclase granodiorite, primary mafic mineral is fine disseminated magnetite, and trace pyrite mineraliztion. Rock is made up of 10% magnetite, 30% smokey quartz and quartz, 30% potassic feldspar and 30% plagioclase. Fracturing is common at approx. 50 deg. To core axis and fractured surfaces are coated with a dark orange iron oxidation. Grain size is coarse and contains angular megacrysts up to 2cm. From 44.04 to 44.12 m is another highly crushed zone and is possibly related to faulting. 59.25 to 60.45 m core contains patchy clots that fluoresce bright green under UV light on fracture surfaces, core is generally more broken up for a meter above and below this zone. Flourescence appears related to a fine white (clay?) alteration on iron oxide stained fracture surfaces. Bright blue fluorescence occurs as haloes surrounding some grains of magnetite. At 52.27 a fracture has been filled/ healed with a very thin pyrite film.**
71.1 – 73.17	**Dark Grey to Dk. Green fine grained chlorite rich mafic intrusion. This unit is moderately magnetic and has common fractures at 50 degrees to the core axis. Other fractures appear healed with pyrite mineralization and crushed calcite. The upper contact between this unit and the surrounding granodiorite is very soft and altered to a clay consistency.**

73.17 – 79.25	**Back into the smoky quartz, magnetite and feldspar coarse grained granodiorite. Rock is generally quite competent and unfractured. From 79.0 to 79.15 m rock appears to be again fractured and dark orange iron oxide staining is coating the fractured surfaces.**

Scintillometer Readings							
Hole:	MU-6-01						
Depth (m)	Reading (microR/hr)		Depth (m)	Reading (microR/hr)		Depth (m)	Reading (microR/hr)
0.5			24			47.5	18
1			24.5			48	17
1.5			25			48.5	17
2			25.5			49	18
2.5			26			49.5	16
3			26.5			50	16
3.5			27			50.5	15
4			27.5			51	16
4.5			28			51.5	18
5			28.5			52	17
5.5			29			52.5	17
6			29.5			53	18
6.5			30			53.5	19
7			30.5			54	19
7.5			31			54.5	20
8			31.5			55	18
8.5			32			55.5	18
9			32.5			56	18
9.5			33			56.5	17
10			33.5			57	17
10.5			34			57.5	17
11			34.5			58	18
11.5			35			58.5	17
12			35.5			59	16
12.5			36			59.5	17
13			36.5			60	17
13.5			37			60.5	17
14			37.5	15		61	17
14.5			38	14		61.5	17
15			38.5	15		62	16
15.5			39	16		62.5	17
16			39.5	15		63	16
16.5			40	15		63.5	16
17			40.5	16		64	16
17.5			41	16		64.5	17
18			41.5	18		65	17
18.5			42	17		65.5	17
19			42.5	18		66	18
19.5			43	18		66.5	18
20			43.5	18		67	16
20.5			44	18.5		67.5	16
21			44.5	18		68	16
21.5			45	15		68.5	16
22			45.5	17		69	17
22.5			46	18		69.5	17
23			46.5	19		70	16
23.5			47	17		70.5	15

Scintillometer Readings							
Hole:	MU06-01						
Depth (m)	Reading (microR/hr)		Depth (m)	Reading (microR/hr)		Depth (m)	Reading (microR/hr)
71	16		94.5			118	
71.5	16		95			118.5	
72	14		95.5			119	
72.5	17		96			119.5	
73	17		96.5			120	
73.5	17		97			120.5	
74	17		97.5			121	
74.5	19		98			121.5	
75	18		98.5			122	
75.5	19		99			122.5	
76	18		99.5			123	
76.5	17		100			123.5	
77	18		100.5			124	
77.5	17		101			124.5	
78	16		101.5			125	
78.5	16		102			125.5	
79	15		102.5			126	
79.5			103			126.5	
80			103.5			127	
80.5			104			127.5	
81			104.5			128	
81.5			105			128.5	
82			105.5			129	
82.5			106			129.5	
83			106.5			130	
83.5			107			130.5	
84			107.5			131	
84.5			108			131.5	
85			108.5			132	
85.5			109			132.5	
86			109.5			133	
86.5			110			133.5	
87			110.5			134	
87.5			111			134.5	
88			111.5			135	
88.5			112			135.5	
89			112.5			136	
89.5			113			136.5	
90			113.5			137	
90.5			114			137.5	
91			114.5			138	
91.5			115			138.5	
92			115.5			139	
92.5			116			139.5	
93			116.5			140	
93.5			117			140.5	
94			117.5			141	

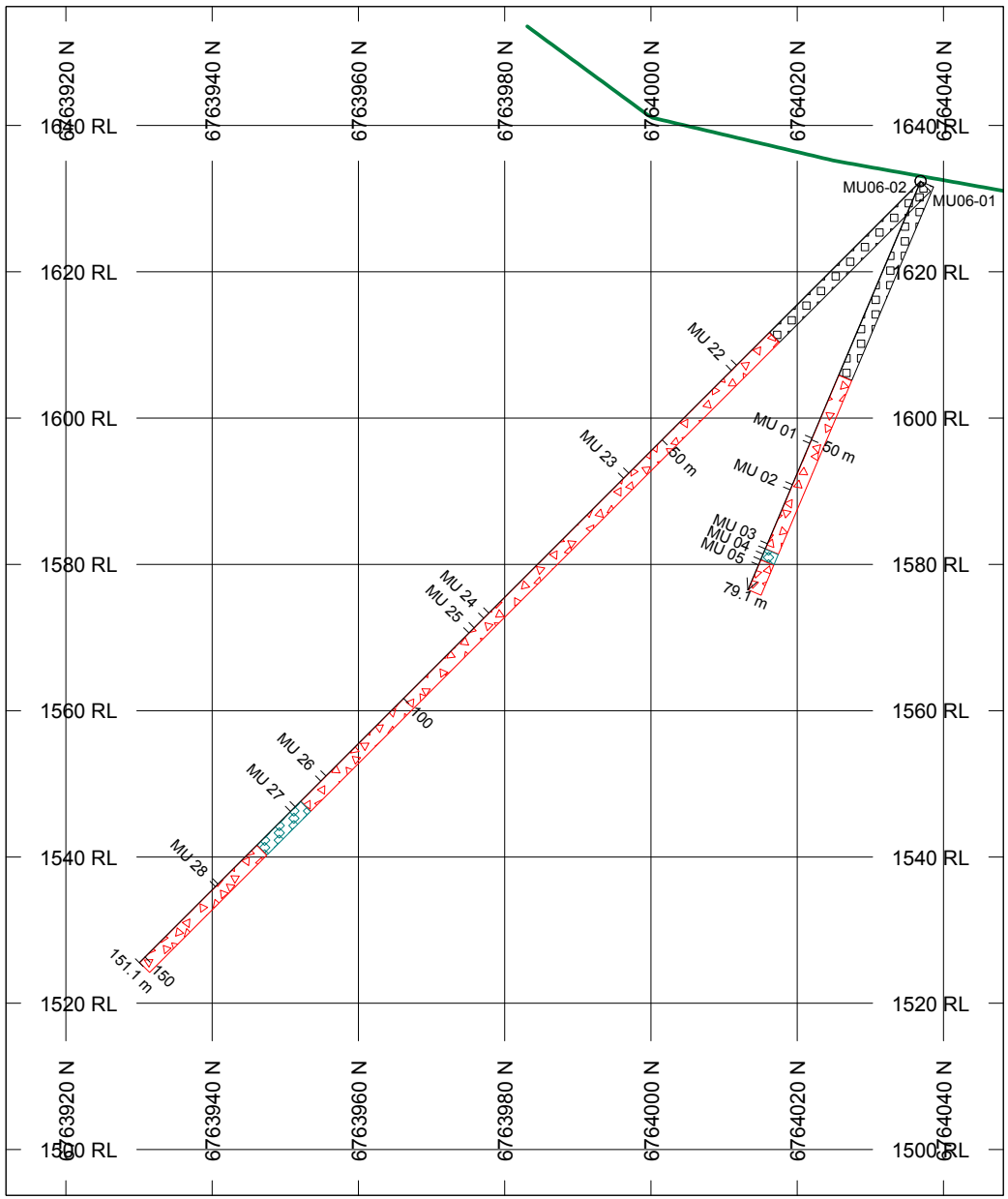
Hole: MU06-01	Magnetic Susceptibility			
Depth (m)	Reading 1	Reading 2	Reading 3	Average Susceptibility
37.52	5.94	3.58	5.08	4.87
39.62	6.06	5.71	9.26	7.01
42.67	9.06	11.6	15	11.89
45.72	7.2	9.94	8.48	8.54
48.77	10.2	7.4	6.1	7.90
51.82	11.3	10.9	13.3	11.83
54.86	9.12	13.4	10.6	11.04
57.91	18.6	13.8	11	14.47
60.96	10.7	10.4	9.88	10.33
64.01	20.4	10.8	8.28	13.16
67.06	14.5	13.8	14.6	14.30
70.1	4.92	5.06	1.68	3.89
72	23.8	19.5	25.1	22.80
73.15	1.9	2.5	3.58	2.66
76.2	7.09	6.35	31.4	14.95
79	7.03	6.27	6.27	6.52

DRILL HOLE MU06-01
RQD

From_m	To_m	Width_m	Actual_Rec	%_Rec	>10cm	RQD
38.00	39.62	1.6	1.46	90.12	0.35	0.24
39.62	42.67	3.1	2.82	92.46	1.21	0.43
42.67	45.72	3.1	2.97	97.38	2.80	0.94
45.72	48.77	3.1	2.96	97.05	2.33	0.79
48.77	51.82	3.1	2.95	96.72	1.92	0.65
51.82	54.86	3.0	2.98	98.03	2.49	0.84
54.86	57.91	3.1	2.81	92.13	1.65	0.59
57.91	60.96	3.1	2.19	71.80	0.14	0.06
60.96	64.01	3.1	2.09	68.52	1.04	0.50
64.01	67.06	3.1	2.54	83.28	2.10	0.83
67.06	70.10	3.0	2.51	0.36	1.17	0.47
70.10	73.15	3.1	2.55	83.61	0.80	0.31
73.15	76.20	3.1	3.07	100.66	2.55	0.83
76.20	79.25	3.1	2.63	86.23	2.16	0.82

DRILL HOLE MU06-01
RQD

From_m	To_m	Width_m	Actual_Rec	%_Rec	>10cm	RQD



Rock Unit
Granodiorite
Mafic Intrusive
Overburden

SECTION SPECS:

REF. PT. E, N	576040 m	6763980 m
EXTENTS	136.4 m	162.5 m
SECTION TOP, BOT	1656 m	1494 m
TOLERANCE +/-	27.93 m	

MU 22 - Sample Location

Scale 1:1000

10 0 10 20 30

metres

NAD83 / UTM zone 8N

AZIMUTH = 0°

N W E S

SIGNET MINERALS INC.

MT. MURPHY PROPERTY
2006 EXPLORATION PROGRAM
FIGURE 5A - MU06-01 / 02 DRILL SECTION MAP

NTS: 105C13 / 105F04
Projection: UTM Zone 8N
Date: January 10 2007
Mining District: Whitehorse
Datum: NAD83
Job: SGN-06-04-YT
Drawn By: Derek Torgerson

AURORA GEOSCIENCES LTD.

SIGNET MINERALS INCORPORATED
MT. MURPHY PROJECT
DIAMOND DRILL LOG

HOLE # :

HOLE # : MU06-02

UTM Coordinates
NAD 83, zone 8
Northing : **6764036.87**
Easting : **576062.73**
Elevation (m) : **1632.4**

Hole Length : **151.09 m**
Azimuth (true) : **180**
Dip : **-45**
Claim : **MURF 16**
NTS : 105F04

Overburden : **29.25 m**
Contractor : Top Rank Diamond Drilling
Logged By : **Derek Torgerson**
Date Hole Started : **Oct 17, 2006**
Date Hole Completed : **Oct 20, 2006**

Structure Tadpoles
Dip only, relative to core axis

Core Size: **BTW**

Depth (m)	R.Q.D. weak / strong	Fractures / Veins 0 – 90	From (m)	To (m)	Unit	DESCRIPTION
0			0.00	29.25		0.00, 29.25 Very broken core, likely talus and overburden
29.25			29.25	112.50	Coarse Grained granodiorite, oxidized weathered fracture surfaces	29.25, 112.50 Quartz / smoky quartz potassic feldspar and plagioclase granodiorite, trace pyrite mineraliztion occurs as veins and patchy clots, primary mafic mineral is fine disseminated magnetite. Rock is made up of 10% magnetite, 30% smokey quartz and quartz, 30% potassic feldspar and 30% plagioclase. Fracturing is more common until 46m and rock is less fractured beneath, fractures occur at approx. 50 deg. to core axis and fractured surfaces are coated with a dark orange iron oxidation. Grain size is coarse and contains angular megacrysts up to 2cm. From 73.6m to 74.2m a fracture runs parallel to CA and has been healed with calcite. From 85.6m to 87.0m is a zone of highly fractured rock; fractures have been partially healed with calcite and rusty oxide staining; these fractures commonly appear at both 50 deg. to CA and parallel to CA.

From (m)	To (m)	Width (m)	Sample Number	Au (ppb)	U (ppm)	Mo (ppm)	Cu (ppm)
36.6			MU 22	<2	17	4	2

HOLE # : **MU06-02**

SIGNET MINERALS INCORPORATED
MT. MURPHY PROJECT
DIAMOND DRILL LOG

HOLE # : **MU06-02**

Structure Tadpoles
Dip only, relative to core axis

Depth (m) | R.Q.D. weak / strong | 0 | Fractures | Veins | 90

From (m)	To (m)	Unit	DESCRIPTION
	112.50		Coarse Grained granodiorite, calcite on fracture surfaces.
112.50	119.90		Rock is very similar to above but no longer contains magnetite and now contains trace biotite. Potassic feldspar is less common and has been replaced with plagioclase. Pyrite mineralization is still present and occurs as small (up to 3mm scale) clots. Composition of rock is approximately less than 1% biotite, 30% smokey quartz, 10% potassic feldspar, 60% plagioclase. Megacrysts of plagioclase up to 2cm are common.
119.90	128.37		Core cuts through a fine grained mafic biotite dyke. Dyke is made up of a 20cm

---------- Sample Data ----------

From (m)	To (m)	Width (m)	Sample Number	Au (ppb)	U (ppm)	Mo (ppm)	Cu (ppm)	
	57.45		MU 23	<2	24	3	9	
	84.5		MU 24	<2	45	3	2	Coarse Grained granodiorite, calcite on fracture surfaces zone of elevated radioactivity.
	87.35		MU 25	<2	22	3	3	Coarse Grained granodiorite calcite on fracture surfaces.
	116		MU 26	<2	16	8	4	Coarse Grained granodiorite, depleted of magnetite.
	121.86		MU 27	<2	6	13	50	Fine grained biotite rich mafic dyke, includes upper and lower contacts.

HOLE # : **MU06-02**

SIGNET MINERALS INCORPORATED
MT. MURPHY PROJECT
DIAMOND DRILL LOG

HOLE # : **MU06-02**

Structure Tadpoles
Dip only, relative to core axis

Depth (m)	R.Q.D. weak	R.Q.D. strong	0	Fractures	Veins	90	From (m)	To (m)	Unit	DESCRIPTION
125										wide biotite rich zone centered at 121.6m. The upper and lower contacts are a fine grained granitoid with up to 5% disseminated pyrite. These contact zones are beginning g to pick up magnetite again (approximately 1%). Rock is primarily very fine plagioclase and smokey quartz.
130										128.37, 151.09 Granodiorite which is barren of magnetite and now contains trace biotite. Potassic feldspar is less common and has been replaced with plagioclase. Pyrite mineralization is still present and occurs as small (up to 3mm scale) clots. Composition of rock is approximately less than 1% biotite, 30% smokey quartz, 10% potassic feldspar, 60% plagioclase. Megacrysts of plagioclase up to 2cm are common. Core cuts through several narrow fine grained mafic dykes. A 20 cm dyke occurs at 136.05m and contains 1% disseminated pyrite.
135										Fine grained mafic dyke, includes upper and lower contacts.
140										
145										
150										

Sample Data

From (m)	To (m)	Width (m)	Sample Number	Au (ppb)	U (ppm)	Mo (ppm)	Cu (ppm)
	136.39		MU 28	<2	19	2	17

Drill Hole:MU06-02

NAD 83 UTM
EASTING: 576063 m **NORTHING:** 6764037m **ELEVATION:** 1632 m

LOCATION: On Gossan **AZIMUTH:** 180 **DIP:** -45

HOLE DEPTH: 151.09 m **HORIZONTAL PROJECTION** 106.8 m **VERTICAL PROJECTION:** 106.8 m

DRILLED BY: Top Rank Diamond Drilling **STARTED**: Oct 17, 2006 **COMPLETED**: Oct 20, 2006

CORE SIZE: BTW **LOGGED BY:** Derek Torgerson

From To (m)	
0– 5.00	**Ice no core recovery**
5.00 – 29.25	**Very broken core, likely talus and overburden**
29.25 – 112.5	**Quartz / smoky quartz potassic feldspar and plagioclase granodiorite, trace pyrite mineraliztion occurs as veins and patchy clots, primary mafic mineral is fine disseminated magnetite. Rock is made up of 10% magnetite, 30% smokey quartz and quartz, 30% potassic feldspar and 30% plagioclase. Fracturing is more common until 46m and rock is less fractured beneath, fractures occur at approx. 50 deg. to core axis and fractured surfaces are coated with a dark orange iron oxidation. Grain size is coarse and contains angular megacrysts up to 2cm. From 73.6m to 74.2m a fracture runs parallel to CA and has been healed with calcite. From 85.6m to 87.0m is a zone of highly fractured rock; fractures have been partially healed with calcite and rusty oxide staining; these fractures commonly appear at both 50 deg. to CA and parallel to CA.**
112.5 – 119.9	**Rock is very similar to above but no longer contains magnetite and now contains trace biotite. Potassic feldspar is less common and has been replaced with plagioclase. Pyrite mineralization is still present and occurs as small (up to 3mm scale) clots. Composition of rock is approximately less than 1% biotite, 30% smokey quartz, 10% potassic feldspar, 60% plagioclase. Megacrysts of plagioclase up to 2cm are common.**
119.9- 128.37	**Core cuts through a fine grained mafic biotite dyke. Dyke is made up of a 20cm wide biotite rich zone centered at 121.6m. The upper and lower contacts are a fine grained granitoid with up to 5% disseminated pyrite. These contact zones are beginning g to pick up magnetite again (approximately 1%). Rock is primarily very fine plagioclase and smokey quartz.**

128.37- 151.09	Back into granodiorite which is barren of magnetite and now contains trace biotite. Potassic feldspar is less common and has been replaced with plagioclase. Pyrite mineralization is still present and occurs as small (up to 3mm scale) clots. Composition of rock is approximately less than 1% biotite, 30% smokey quartz, 10% potassic feldspar, 60% plagioclase. Megacrysts of plagioclase up to 2cm are common. Core cuts through several narrow fine grained mafic dykes. A 20 cm dyke occurs at 136.05m and contains 1% disseminated pyrite. Another 20cm fine grained mafic occurs at 144.3m and is very similar in texture and appearance to the previous unit.

Scintillometer Readings							
Hole:	MU06-02						
Depth (m)	Reading (microR/hr)		Depth (m)	Reading (microR/hr)		Depth (m)	Reading (microR/hr)
0.5			24			47.5	20
1			24.5			48	20
1.5			25			48.5	20
2			25.5			49	22
2.5			26			49.5	22
3			26.5			50	21
3.5			27			50.5	20
4			27.5			51	22
4.5			28			51.5	20
5			28.5			52	21
5.5			29	18		52.5	21
6			29.5	19		53	20
6.5			30	20		53.5	22
7			30.5	22		54	22
7.5			31	20		54.5	21
8			31.5	20		55	21
8.5			32	20		55.5	21
9			32.5	22		56	22
9.5			33	20		56.5	21
10			33.5	20		57	22
10.5			34	20		57.5	22
11			34.5	19		58	21
11.5			35	19		58.5	21
12			35.5	20		59	23
12.5			36	20		59.5	21
13			36.5	19		60	22
13.5			37	20		60.5	22
14			37.5	21		61	23
14.5			38	21		61.5	22
15			38.5	22		62	23
15.5			39	20		62.5	23
16			39.5	20		63	22
16.5			40	21		63.5	21
17			40.5	21		64	21
17.5			41	21		64.5	22
18			41.5	20		65	22
18.5			42	19		65.5	21
19			42.5	20		66	20
19.5			43	20		66.5	21
20			43.5	18		67	22
20.5			44	20		67.5	20
21			44.5	20		68	21
21.5			45	18		68.5	22
22			45.5	18		69	21
22.5			46	20		69.5	22
23			46.5	20		70	22
23.5			47	20		70.5	23

Scintillometer Readings							
Hole:	MU06-02						
Depth (m)	Reading (microR/hr)		Depth (m)	Reading (microR/hr)		Depth (m)	Reading (microR/hr)
71	20		94.5	24		118	25
71.5	22		95	23		118.5	24
72	22		95.5	23		119	25
72.5	23		96	22		119.5	24
73	21		96.5	23		120	24
73.5	20		97	23		120.5	25
74	20		97.5	23		121	23
74.5	20		98	24		121.5	22
75	21		98.5	24		122	22
75.5	22		99	23		122.5	22
76	22		99.5	25		123	22
76.5	22		100	24		123.5	22
77	22		100.5	24		124	24
77.5	23		101	25		124.5	24
78	23		101.5	25		125	25
78.5	24		102	24		125.5	24
79	25		102.5	24		126	25
79.5	26		103	24		126.5	25
80	26		103.5	25		127	26
80.5	21		104	24		127.5	28
81	21		104.5	24		128	28
81.5	23		105	25		128.5	25
82	24		105.5	25		129	27
82.5	25		106	24		129.5	26
83	25		106.5	23		130	25
83.5	24		107	25		130.5	24
84	32		107.5	24		131	25
84.5	28		108	24		131.5	25
85	26		108.5	23		132	25
85.5	25		109	22		132.5	24
86	25		109.5	24		133	23
86.5	25		110	24		133.5	25
87	25		110.5	24		134	24
87.5	24		111	23		134.5	24
88	25		111.5	23		135	24
88.5	25		112	22		135.5	23
89	26		112.5	23		136	24
89.5	25		113	23		136.5	23
90	25		113.5	23		137	23
90.5	25		114	23		137.5	23
91	24		114.5	24		138	22
91.5	24		115	24		138.5	23
92	25		115.5	23		139	23
92.5	25		116	25		139.5	22
93	25		116.5	25		140	22
93.5	25		117	23		140.5	22
94	25		117.5	24		141	20

Scintillometer Readings							
Hole:	MU06-02						
Depth (m)	Reading (microR/hr)		Depth (m)	Reading (microR/hr)		Depth (m)	Reading (microR/hr)
140.5			164			187.5	
141			164.5			188	
141.5	19		165			188.5	
142	19		165.5			189	
142.5	20		166			189.5	
143	20		166.5			190	
143.5	20		167			190.5	
144	19		167.5			191	
144.5	20		168			191.5	
145	21		168.5			192	
145.5	21		169			192.5	
146	21		169.5			193	
146.5	20		170			193.5	
147	20		170.5			194	
147.5	20		171			194.5	
148	20		171.5			195	
148.5	20		172			195.5	
149	20		172.5			196	
149.5	20		173			196.5	
150	19		173.5			197	
150.5	19		174			197.5	
151	18		174.5			198	
151.5	EOH		175			198.5	
152			175.5			199	
152.5			176			199.5	
153			176.5			200	
153.5			177			200.5	
154			177.5			201	
154.5			178			201.5	
155			178.5			202	
155.5			179			202.5	
156			179.5			203	
156.5			180			203.5	
157			180.5			204	
157.5			181			204.5	
158			181.5			205	
158.5			182			205.5	
159			182.5			206	
159.5			183			206.5	
160			183.5			207	
160.5			184			207.5	
161			184.5			208	
161.5			185			208.5	
162			185.5			209	
162.5			186			209.5	
163			186.5			210	
163.5			187			210.5	

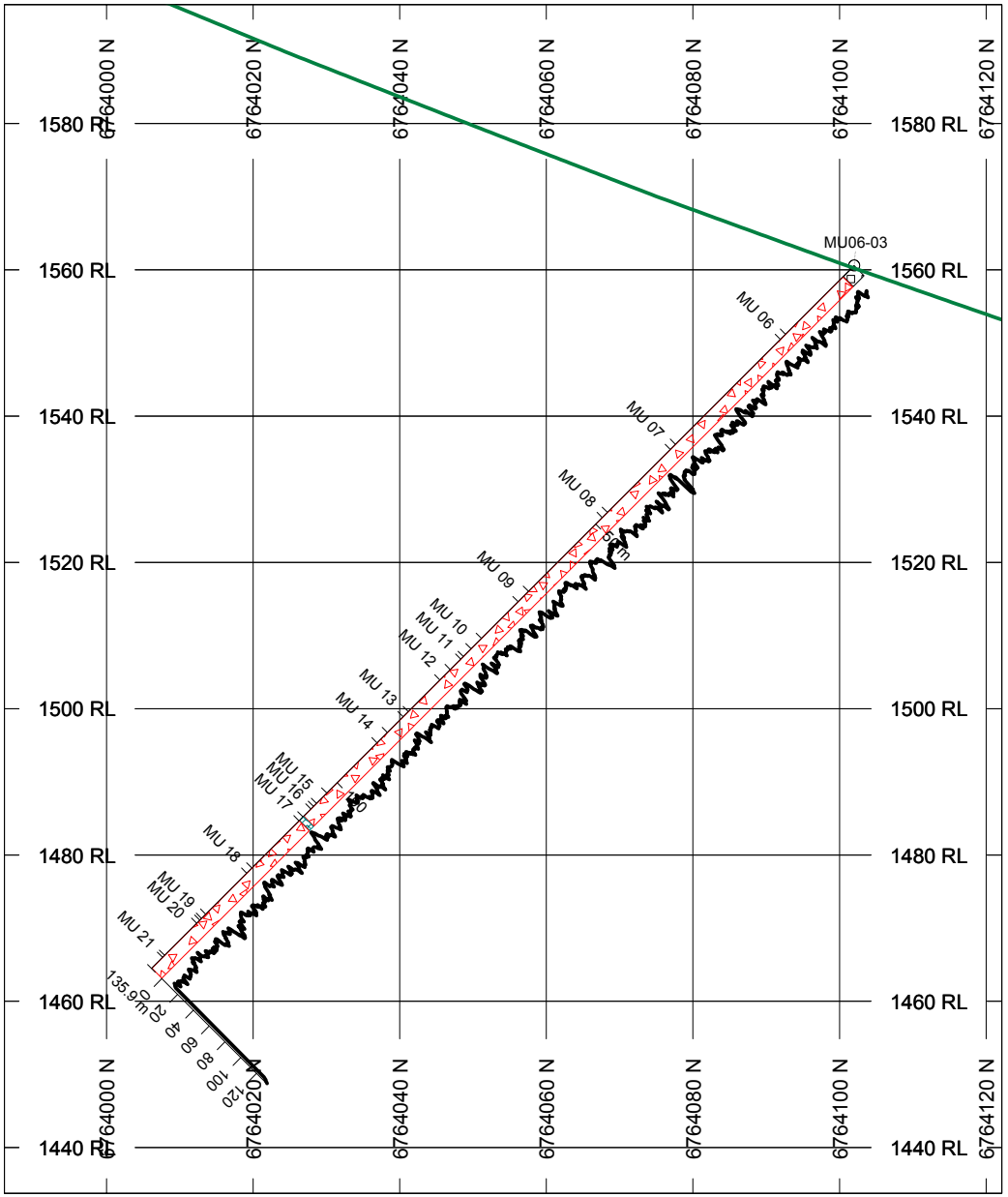
Hole: MU06-02 Magnetic Susceptibility

Depth (m)	Reading 1	Reading 2	Reading 3	Average Susceptibility
29	22.8	17.1	19.4	19.8
31	13.8	26	11.9	17.2
33	31.5	26	11.9	23.1
35	21.2	32	8.99	20.7
37	26.8	26.7	31.8	28.4
39	25.9	27.1	37.1	30.0
41	30.2	28.9	28.2	29.1
43	27.9	21.8	25.2	25.0
45	18	10.3	31.5	19.9
47	24	25.5	30.3	26.6
49	23.8	23.8	23.2	23.6
51	29.8	22.4	20	24.1
53	19.5	21.2	21.9	20.9
55	20.8	19.9	19.2	20.0
57	18.9	19.2	19	19.0
59	28.1	32.9	33.5	31.5
61	23.1	20.1	20.4	21.2
63	32.1	33.5	28.8	31.5
65	21.4	28.2	21.3	23.6
67	25	33.1	25.6	27.9
69	20.2	31.1	23.8	25.0
71	38	31.7	32.8	34.2
73	33	23.7	24.8	27.2
75	21.4	32.3	26.1	26.6
77	21.3	40.4	25.8	29.2
79	20.2	12.8	14.2	15.7
81	28.2	20.2	25.2	24.5
83	21.3	21.5	16.8	19.9
85	5.5	2.9	5.8	4.7
87	28.7	29	4.7	20.8
89	10.6	23.6	14.3	16.2
91	31.6	24.7	26.7	27.7
93	25.1	21.1	24.4	23.5
95	28.8	21.8	26	25.5
97	36.8	28.8	41.1	35.6
99	25.6	30.5	32.3	29.5
101	2.33	5.77	7.96	5.4
103	24.4	22.8	11.8	19.7
105	10.1	20.2	27.4	19.2
107	6.9	9.5	4.75	7.1
109	6.08	32.2	15.9	18.1
111	15.7	19.2	14.2	16.4
113	2.65	5.55	5.74	4.6
115	18.8	17	18.4	18.1
117	20.7	17.6	18	18.8
119	3.13	2.17	3.83	3.0
121	6.04	11.3	13.1	10.1
123	2.05	2.19	2.05	2.1
125	8.67	5.75	4.78	6.4
127	2.39	2.35	1.9	2.2
129	1.8	1.76	1.86	1.8
131	1.66	1.68	1.66	1.7
133	1.99	1.98	2.07	2.0
135	3.09	1.99	2.78	2.6
137	2.41	6.58	1.88	3.6
139	2.15	1.96	1.83	2.0
141	2.78	8.89	3.96	5.2
143	4.38	1.86	1.76	2.7
145	1.3	1.8	1.7	1.6
147	1.78	1.98	1.8	1.9
149	2.49	2.96	4.98	3.5
151	1.88	2.62	1.82	2.1

DRILL HOLE MU06-02
RQD

Hole: MU06-02 **RQD**

From_m	To_m	Width_m	Actual_Rec	%_Rec	>10cm	RQD
29.49	32.53	3.04	2.85	93.75	1.55	0.54
32.53	35.57	3.04	2.78	91.45	1.88	0.68
35.57	38.61	3.04	2.95	97.04	1.34	0.45
38.61	41.65	3.04	2.95	97.04	2.52	0.85
41.65	44.69	3.04	2.99	98.36	2.96	0.99
44.69	47.73	3.04	3.01	99.01	2.88	0.96
47.73	50.77	3.04	2.91	95.72	2.77	0.95
50.77	53.81	3.04	2.88	94.74	2.59	0.90
53.81	56.85	3.04	3.01	99.01	2.87	0.95
56.85	59.89	3.04	3.05	100.33	2.64	0.87
59.89	62.93	3.04	2.98	0.36	2.91	0.98
62.93	65.97	3.04	2.99	98.36	2.95	0.99
65.97	69.01	3.04	3.01	99.01	2.75	0.91
69.01	72.05	3.04	3.05	100.33	2.68	0.88
72.05	75.09	3.04	3.01	99.01	2.54	0.84
75.09	78.13	3.04	2.13	70.07	1.80	0.85
78.13	81.17	3.04	3.80	125.00	3.46	0.91
81.17	84.21	3.04	3.10	101.97	2.31	0.75
84.21	87.25	3.04	3.01	99.01	1.85	0.61
87.25	90.29	3.04	3.00	98.68	2.82	0.94
90.29	93.33	3.04	2.79	91.78	2.79	1.00
93.33	96.37	3.04	3.16	103.95	3.12	0.99
96.37	99.41	3.04	2.99	98.36	2.77	0.93
99.41	102.45	3.04	2.88	94.74	2.38	0.83
102.45	105.49	3.04	2.80	92.11	2.25	0.80
105.49	108.53	3.04	2.97	97.70	2.45	0.82
108.53	111.57	3.04	3.10	101.97	2.88	0.93
111.57	114.61	3.04	2.73	89.80	2.61	0.96
114.61	117.65	3.04	2.72	89.47	2.47	0.91
117.65	120.69	3.04	3.08	101.32	2.50	0.81
120.69	123.73	3.04	2.99	98.36	2.90	0.97
123.73	126.77	3.04	2.85	93.75	2.37	0.83
126.77	129.81	3.04	3.02	99.34	2.84	0.94
129.81	132.85	3.04	2.82	92.76	2.32	0.82
132.85	135.89	3.04	2.84	93.42	2.03	0.71
135.89	138.93	3.04	3.03	99.67	2.48	0.82
138.93	141.97	3.04	3.01	99.01	2.93	0.97
141.97	145.01	3.04	2.69	88.49	2.47	0.92
145.01	148.05	3.04	3.05	100.33	2.89	0.95
148.05	151.09	3.04	2.80	92.11	2.05	0.73

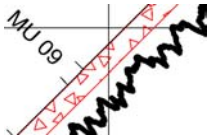


Rock Unit
Granodiorite
Mafic Intrusive
Overburden

SECTION SPECS:

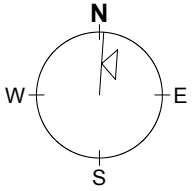
REF. PT. E, N	575951 m	6764054 m
EXTENTS	136.4 m	162.5 m
SECTION TOP, BOT	1596 m	1434 m
TOLERANCE +/-	0.5285 m	

MU 07 - Sample Location



Gamma Log Profile
U counts/second

AZIMUTH = 4°



Scale 1:1000

10 0 10 20 30 40

metres

NAD83 / UTM zone 8N

SIGNET MINERALS INC.

MT. MURPHY PROPERTY
2006 EXPLORATION PROGRAM
FIGURE 5B - MU06-03 Drill Section

NTS: 105C13 / 105F04 — Mining District: Whitehorse
Projection: UTM Zone 8N — Datum: NAD83
Date: January 10 2007 — Job: SGN-06-04-YT
Drawn By: Derek Torgerson

AURORA GEOSCIENCES LTD.

SIGNET MINERALS INCORPORATED
MT. MURPHY PROJECT
DIAMOND DRILL LOG

HOLE # :

HOLE # : MU06-03

UTM Coordinates
NAD 83, zone 8
Northing : **6764102**
Easting : **575954**
Elevation (m) : **1560.6**

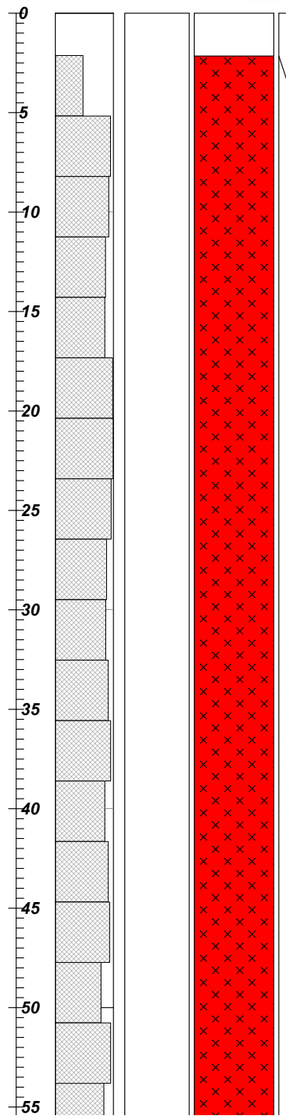
Hole Length : **135.89**
Azimuth (true) : **184**
Dip : **-45**
Claim : **MURF 16**
NTS : 105F04

Overburden : **2.15**
Contractor : Top Rank Diamond Drilling
Logged By : **Derek Torgerson**
Date Hole Started : **Oct 24, 2006**
Date Hole Completed : **Oct 27, 2006**

Structure Tadpoles
Dip only, relative to core axis

Core Size: **BTW**

Depth (m) | R.Q.D. weak strong | Fractures Veins 0 90 | From (m) | To (m) | Unit | **DESCRIPTION**



0.00, 2.15
Very broken core, likely talus and overburden

2.15, 106.50
Quartz / smoky quartz potassic feldspar and plagioclase granodiorite, trace pyrite mineraliztion occurs as veins and patchy clots, primary mafic mineral is coarse disseminated magnetite. Rock is made up of 10% magnetite, 30% smokey quartz and quartz, 30% potassic feldspar and 30% plagioclase. Fracturing occurs periodically through this interval but rock is generally very competent, notable fracturing occurs at 28.4m, 27.5m, 13.3m, and 53.8m and is approx. 50 deg. to core axis fractures are well healed with a pinkish calcite. Grain size is coarse and contains angular megacrysts up to 2cm. From 75.6m to 76.2m a fracture runs parallel to CA and has been healed with calcite, this zone of fracturing shows signs of oxidation and bleaching, a pale green (clay?) alteration is also present on partially healed surfaces, core is moderately crushed in this zone.

From (m)	To (m)	Unit
13.29	14.29	Coarse grained granodiorite, potassic / calcite healed fractures.
34.57	35.57	Coarse grained granodiorite
47.73	48.73	Coarse grained granodiorite

From (m)	To (m)	Width (m)	Sample Number	Au (ppb)	U (ppm)	Mo (ppm)	Cu (ppm)
13.29	14.29	1	MU 06	<2	24	3	6
34.57	35.57	1	MU 07	<2	42	3	4
47.73	48.73	1	MU 08	<2	18	3	2

SIGNET MINERALS INCORPORATED
MT. MURPHY PROJECT
DIAMOND DRILL LOG

HOLE # : MU06-03

HOLE # : MU06-03

Structure Tadpoles
Dip only, relative to core axis

Depth (m) | R.Q.D. weak / strong | 0 | Fractures | Veins | 90

From (m)	To (m)	Unit	DESCRIPTION
			106.50, 107.32 Core cuts through a very fine grained dark grey silicified mafic dyke. Dyke contains trace pyrite mineralization which occurs as very fine stringers (healed sutures?). This unit is strongly magnetic. The upper and lower contacts are very sharp and appear as 1cm zones which are bleached to a pale grey.
			107.32, 135.89 Granodiorite which is beginning to contain a darker smokey quartz, the rock is now considerably darker due to this darker smokey quartz. Composition of rock is now approximately 10% magntite, 20% smokey quartz, 40% potassic feldspar, 25% plagioclase. Megacrysts of potassic feldspar up to 2cm are common. Core is now barren of Pyrite mineralization. From 120.7m to 135.89m(EOH) potassic alteration of feldspar is stronger and feldspars are now darker pink in colour.

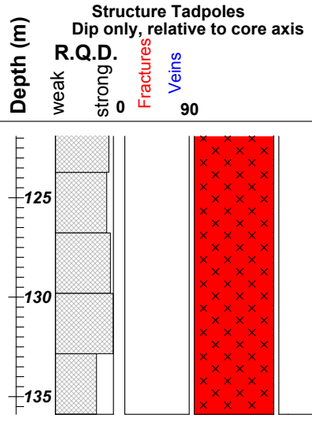
Sample Data

From (m)	To (m)	Width (m)	Sample Number	Au (ppb)	U (ppm)	Mo (ppm)	Cu (ppm)	
63	65	2	MU 09	<2	17	4	2	Coarse Grained granodiorite, elevated radioactivity
72.1	74.1	2	MU 10	<2	22	3	2	Coarse Grained granodiorite, elevated radioactivity
75.6	76.1	0.5	MU 11	2	27	4	3	Coarse Grained granodiorite, elevated radioactivity, calcite healed fractures parallel to CA, clay(?) alteration, crushed zone.
78.13	80.13	2	MU 12	<2	24	4	2	Coarse Grained granodiorite, elevated radioactivity
86.25	87.25	1	MU 13	<2	25	4	1	Coarse Grained granodiorite, elevated radioactivity, 1cm x 15cm smokey quartz vein, cross cuts core at 50 deg to CA.
90.29	92.29	2	MU 14	<2	22	7	2	Coarse Grained granodiorite, elevated radioactivity
102	104	2	MU 15	<2	21	3	3	Coarse Grained granodiorite, elevated radioactivity, minor clay(?) alteration.
104.58	105.08	0.5	MU 16	<2	30	4	22	Coarse Grained granodiorite, elevated radioactivity, minor clay(?) alteration, bleaching of plagioclase.
106.62	107.37	0.75	MU 17	<2	5	1	13	Fine grained mafic dyke, crushed upper contact.
116.49	117.49	1	MU 18	<2	19	8	2	Coarse Grained granodiorite, elevated radioactivity, zone of darkening and potassic alteration

SIGNET MINERALS INCORPORATED
MT. MURPHY PROJECT
DIAMOND DRILL LOG

HOLE # : MU06-03

HOLE # : MU06-03



From (m)	To (m)	Unit	DESCRIPTION
			Coarse Grained granodiorite, elevated radioactivity, zone of darkening and stronger potassic alteration
			Fine Grained granodiorite section, elevated radioactivity, zone of darkening and stronger potassic alteration
			Coarse Grained granodiorite, green clay(?) alteration, zone of darkening and stronger potassic alteration

---------- Sample Data ----------

From (m)	To (m)	Width (m)	Sample Number	Au (ppb)	U (ppm)	Mo (ppm)	Cu (ppm)
125.43	126.23	0.8	MU 19	<2	33	3	5
126.57	127.17	0.6	MU 20	<2	19	3	2
133.37	133.77	0.4	MU 21	<2	46	3	17

Scintillometer Readings							
Hole:	MU06-03						
Depth (m)	Reading (microR/hr)		Depth (m)	Reading (microR/hr)		Depth (m)	Reading (microR/hr)
0.5			24	19		47.5	20
1			24.5	19		48	21
1.5			25	19		48.5	21
2	16		25.5	20		49	21
2.5	17		26	21		49.5	20
3	17		26.5	20		50	21
3.5	18		27	20		50.5	22
4	19		27.5	20		51	26
4.5	19		28	20		51.5	20
5	18		28.5	18		52	22
5.5	18		29	18		52.5	22
6	19		29.5	18		53	19
6.5	19		30	17		53.5	20
7	18		30.5	19		54	22
7.5	19		31	19		54.5	21
8	18		31.5	21		55	22
8.5	18		32	21		55.5	20
9	19		32.5	20		56	20
9.5	19		33	22		56.5	21
10	20		33.5	22		57	21
10.5	19		34	21		57.5	20
11	18		34.5	22		58	20
11.5	19		35	24		58.5	20
12	20		35.5	22		59	22
12.5	20		36	21		59.5	24
13	20		36.5	21		60	25
13.5	21		37	21		60.5	26
14	21		37.5	21		61	27
14.5	20		38	19		61.5	28
15	20		38.5	22		62	30
15.5	20		39	23		62.5	29
16	21		39.5	21		63	29
16.5	20		40	23		63.5	30
17	20		40.5	23		64	29
17.5	20		41	21		64.5	29
18	18		41.5	20		65	31
18.5	18		42	20		65.5	29
19	19		42.5	22		66	30
19.5	19		43	22		66.5	31
20	18		43.5	23		67	29
20.5	20		44	23		67.5	31
21	21		44.5	22		68	32
21.5	21		45	22		68.5	29
22	21		45.5	24		69	31
22.5	21		46	23		69.5	32
23	20		46.5	21		70	31
23.5	20		47	22		70.5	33

Scintillometer Readings							
Hole:	MU06-03						
Depth (m)	Reading (microR/hr)		Depth (m)	Reading (microR/hr)		Depth (m)	Reading (microR/hr)
71	29		94.5	32		118	30
71.5	31		95	33		118.5	31
72	32		95.5	32		119	29
72.5	32		96	30		119.5	30
73	32		96.5	30		120	29
73.5	33		97	31		120.5	26
74	29		97.5	31		121	28
74.5	33		98	31		121.5	30
75	33		98.5	34		122	27
75.5	28		99	31		122.5	29
76	32		99.5	32		123	30
76.5	33		100	30		123.5	28
77	30		100.5	32		124	28
77.5	31		101	31		124.5	31
78	34		101.5	32		125	29
78.5	34		102	33		125.5	30
79	33		102.5	35		126	30
79.5	34		103	34		126.5	30
80	31		103.5	35		127	30
80.5	31		104	27		127.5	28
81	34		104.5	30		128	28
81.5	29		105	31		128.5	28
82	33		105.5	31		129	28
82.5	34		106	32		129.5	28
83	33		106.5	31		130	27
83.5	32		107	30		130.5	28
84	33		107.5	30		131	28
84.5	33		108	31		131.5	26
85	35		108.5	33		132	26
85.5	32		109	30		132.5	27
86	32		109.5	30		133	25
86.5	34		110	25		133.5	24
87	31		110.5	27		134	27
87.5	30		111	31		134.5	25
88	32		111.5	29		135	25
88.5	33		112	31		135.5	26
89	35		112.5	31		136	EOH 135.89m
89.5	32		113	29		136.5	
90	29		113.5	30		137	
90.5	32		114	32		137.5	
91	32		114.5	29		138	
91.5	32		115	29		138.5	
92	34		115.5	29		139	
92.5	34		116	29		139.5	
93	29		116.5	30		140	
93.5	30		117	33		140.5	
94	29		117.5	29		141	

Hole: MU06-03 Magnetic Susceptibility

Depth (m)	Reading 1	Reading 2	Reading 3	Average Susceptibility
2	11.8	12.5	11.6	11.97
4	8.07	9.1	8.3	8.49
6	19.3	10.9	13	14.40
8	7.33	7.17	7.25	7.25
10	6.39	7.39	8	7.26
12	5.16	6.88	10	7.35
14	3.5	10	8.68	7.39
16	7.42	7.31	6.9	7.21
18	9.22	12.1	12.2	11.17
20	9.22	9.16	8.19	8.86
22	5.9	6.39	11.1	7.80
24	18.8	13.7	12.5	15.00
26	4.2	7.79	8.22	6.74
28	9.69	9.26	10	9.65
30	10.5	6.1	6.7	7.77
32	2.31	7.58	7.01	5.63
34	8.36	6.53	5.08	6.66
36	6.49	1.37	1.11	2.99
38	26	32.7	22.3	27.00
40	13.3	15	8.73	12.34
42	18.6	14.9	13.2	15.57
44	25.8	20.3	15.7	20.60
46	11.2	13.6	18.6	14.47
48	9.08	12.6	15.1	12.26
50	2.8	7.93	9.37	6.70
52	20.2	24.1	23.7	22.67
54	30	21.6	11.8	21.13
56	2.37	2.27	6.64	3.76
58	5.67	6.45	5.3	5.81
60	8.75	14.8	8.83	10.79
62	8.48	8.15	8.24	8.29
64	11.3	10.4	8.26	9.99
66	14.3	14.9	10.6	13.27
68	7.35	9.28	8.38	8.34
70	6.62	7.88	13.2	9.23
72	7.44	6.88	11.8	8.71
74	2.29	5.86	6.92	5.02
76	5.47	5.08	5.14	5.23
78	7.91	7.44	7.9	7.75
80	14.5	10.8	9.75	11.68
82	8.73	8.89	12.4	10.01
84	8.83	7.44	7.99	8.09
86	5.82	6.8	14.1	8.91
88	11.2	8.48	9.9	9.86
90	5.49	6.08	6.51	6.03
92	5.8	6.88	7.05	6.58
94	4.98	2.6	2.44	3.34
96	6.25	10	7.8	8.02
98	8.66	6.94	7.23	7.61
100	7.87	7.33	7.99	7.73
102	7.39	8.2	10.2	8.60
104	7.07	6.56	1.14	4.92
106	12.1	11.8	12.6	12.17
108	7.44	9.88	7.88	8.40
110	7.23	6.29	7.29	6.94
112	6.12	7.48	7.31	6.97
114	4.63	6.68	7.42	6.24
116	4.89	5.86	10.4	7.05
118	13.6	13.9	9.92	12.47
120	6.43	6.1	5.43	5.99
122	7.27	5.74	6.08	6.36
124	6.88	5.3	6.08	6.09
126	7.54	8.42	8.9	8.29
128	4.71	6.23	5.65	5.53
130	8.95	6.94	7.79	7.89
132	7.19	7.25	8.63	7.69
134	8.3	8.76	9.02	8.69
136	EOH 135.89			

Drill Hole:MU06-03

NAD 83 UTM
EASTING: 575954 m **NORTHING**: 6764102m **ELEVATION**: 1560 m

LOCATION: Targeting Radiometric High **AZIMUTH:** 184 **DIP:** -45

HOLE DEPTH: 135.89m **HORIZONTAL PROJECTION:** 96.09 m **VERTICAL PROJECTION:** 96.09 m

DRILLED BY: Top Rank Diamond Drilling **STARTED:** Oct 24, 2006 **COMPLETED:** Oct 27, 2006

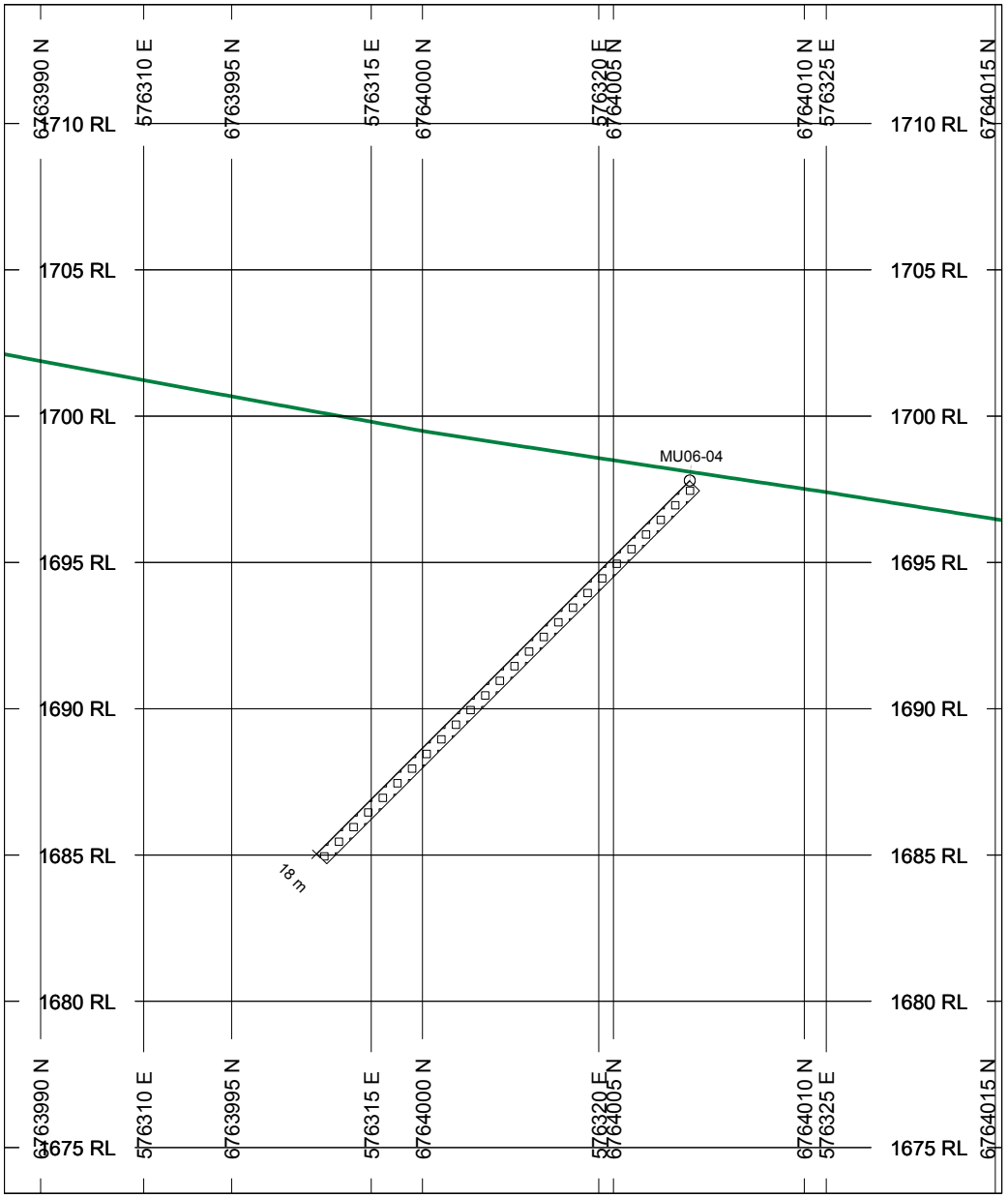
CORE SIZE: BTW **LOGGED BY:** Derek Torgerson

From To (m)	
0– 1.75	**Talus no core recovery**
1.75 – 2.15	**Very broken core, likely talus and overburden**
2.15 – 106.5	**Quartz / smoky quartz potassic feldspar and plagioclase granodiorite, trace pyrite mineraliztion occurs as veins and patchy clots, primary mafic mineral is coarse disseminated magnetite. Rock is made up of 10% magnetite, 30% smokey quartz and quartz, 30% potassic feldspar and 30% plagioclase. Fracturing occurs periodically through this interval but rock is generally very competent, notable fracturing occurs at 28.4m, 27.5m, 13.3m, and 53.8m and is approx. 50 deg. to core axis fractures are well healed with a pinkish calcite. Grain size is coarse and contains angular megacrysts up to 2cm. From 75.6m to 76.2m a fracture runs parallel to CA and has been healed with calcite, this zone of fracturing shows signs of oxidation and bleaching, a pale green (clay?) alteration is also present on partially healed surfaces, core is moderately crushed in this zone.**
106.5 – 107.32	**Core cuts through a very fine grained dark grey silicified mafic dyke. Dyke contains trace pyrite mineralization which occurs as very fine stringers (healed sutures?). This unit is strongly magnetic. The upper and lower contacts are very sharp and appear as 1cm zones which are bleached to a pale grey.**
107.32 – 135.89	**Back into granodiorite which is beginning to contain a darker smokey quartz, the rock is now considerably darker due to this darker smokey quartz. Composition of rock is now approximately 10% magntite, 20% smokey quartz, 40% potassic feldspar, 25% plagioclase. Megacrysts of potassic feldspar up to 2cm are common. Core is now barren of Pyrite mineralization. From 120.7m to 135.89m(EOH) potassic alteration of feldspar is stronger and feldspars are now darker pink in colour.**

DRILL HOLE MU06-03
RQD

Hole: MU06-03 **RQD**

From_m	To_m	Width_m	Actual_Rec	%_Rec	>10cm	RQD
2.13	5.17	3.04	2.23	73.36	1.07	0.48
5.17	8.21	3.04	3.00	98.68	2.86	0.95
8.21	11.25	3.04	2.95	97.04	2.72	0.92
11.25	14.29	3.04	3.03	99.67	2.62	0.86
14.29	17.33	3.04	2.80	92.11	2.39	0.85
17.33	20.37	3.04	2.85	93.75	2.82	0.99
20.37	23.41	3.04	3.06	100.66	3.05	1.00
23.41	26.45	3.04	2.80	92.11	2.70	0.96
26.45	29.49	3.04	2.96	97.37	2.62	0.89
29.49	32.53	3.04	2.85	93.75	2.48	0.87
32.53	35.57	3.04	2.77	91.12	2.53	0.91
35.57	38.61	3.04	3.04	100.00	2.90	0.95
38.61	41.65	3.04	3.04	100.00	2.60	0.86
41.65	44.69	3.04	3.02	99.34	2.76	0.91
44.69	47.73	3.04	3.06	100.66	2.87	0.94
47.73	50.77	3.04	2.95	97.04	2.33	0.79
50.77	53.81	3.04	3.03	99.67	2.89	0.95
53.81	56.85	3.04	2.96	97.37	2.48	0.84
56.85	59.89	3.04	3.05	100.33	3.00	0.98
59.89	62.93	3.04	3.02	99.34	2.52	0.83
62.93	65.97	3.04	3.01	99.01	2.59	0.86
65.97	69.01	3.04	2.92	96.05	2.15	0.74
69.01	72.05	3.04	3.07	100.99	3.00	0.98
72.05	75.09	3.04	2.94	96.71	2.87	0.98
75.09	78.13	3.04	2.77	91.12	1.85	0.67
78.13	81.17	3.04	2.97	97.70	2.97	1.00
81.17	84.21	3.04	3.13	102.96	3.00	0.96
84.21	87.25	3.04	2.83	93.09	2.78	0.98
87.25	90.29	3.04	3.11	102.30	2.91	0.94
90.29	93.33	3.04	2.85	93.75	2.68	0.94
93.33	96.37	3.04	3.03	99.67	3.00	0.99
96.37	99.41	3.04	2.98	98.03	2.79	0.94
99.41	102.45	3.04	3.03	99.67	2.85	0.94
102.45	105.49	3.04	3.00	98.68	3.00	1.00
105.49	108.53	3.04	2.90	95.39	2.76	0.95
108.53	111.57	3.04	2.99	98.36	2.80	0.94
111.57	114.61	3.04	3.05	100.33	2.99	0.98
114.61	117.65	3.04	2.94	96.71	2.92	0.99
117.65	120.69	3.04	3.01	99.01	2.83	0.94
120.69	123.73	3.04	2.97	97.70	2.74	0.92
123.73	126.77	3.04	3.00	98.68	2.66	0.89
126.77	129.81	3.04	3.05	100.33	2.90	0.95
129.81	132.85	3.04	3.00	98.68	2.99	1.00
132.85	135.89	3.04	2.90	95.39	2.06	0.71



Rock Unit
Overburden

SECTION SPECS:

REF. PT. E, N	576318 m	6764002 m
EXTENTS	34.1 m	40.63 m
SECTION TOP, BOT	1714 m	1673 m
TOLERANCE +/-	0.5 m	

Scale 1:250

2.5 0 2.5 5 7.5 10

metres

NAD83 / UTM zone 8N

AZIMUTH = 40°

N W E S

SIGNET MINERALS INC.

MT. MURPHY PROPERTY
2006 EXPLORATION PROGRAM
FIGURE 5C - MU06-04 Drill Section

NTS: 105C13 / 105F04 — Mining District: Whitehorse
Projection: UTM Zone 8N — Datum: NAD83
Date: January 10 2007 — Job: SGN-06-04-YT
Drawn By: Derek Torgerson

AURORA GEOSCIENCES LTD.

SIGNET MINERALS INCORPORATED
MT. MURPHY PROJECT
DIAMOND DRILL LOG

HOLE # : MU06-04

HOLE # : MU06-04

UTM Coordinates
NAD 83, zone 8
Northing : **6764007**
Easting : **576322**
Elevation (m) : **1697.8 m**

Hole Length : **18.03**
Azimuth (true) : **220**
Dip : **-45**
Claim : **MURF 16**
NTS : 105F04

Overburden : **18.03**
Contractor : Top Rank Diamond Drilling
Logged By : **Derek Torgerson**
Date Hole Started : **Oct 30, 2006**
Date Hole Completed : **Oct 31, 2006**

Structure Tadpoles
Dip only, relative to core axis

Core Size: **BTW**

Depth (m)	R.Q.D. weak / strong	Fractures / Veins 0 – 90	From (m)	To (m)	Unit	DESCRIPTION
0			0.00	18.03		Very broken core, likely talus and overburden
5						
10						
15						

From (m)	To (m)	Width (m)	Sample Number	Au (ppb)	U (ppm)	Mo (ppm)	Cu (ppm)

Drill Hole:MU06-04

NAD 83 UTM

EASTING **576322** m **NORTHING** 6764007m **ELEVATION** 1697.8 m

LOCATION Targeting interprted fault/structure **AZIMUTH 220** **DIP** -45

HOLE DEPTH **18.03**m **HORIZONTAL PROJECTION** m **VERTICAL PROJECTION** m

DRILLED BY Top Rank Diamond Drilling **DATE STARTED** **Oct 30, 2006** **COMPLETED**, 2006

CORE SIZE BTW **LOGGED BY** **Derek Torgerson**

From	To (m)	
0–	**18.03**	**Talus no core recovery. Waterline bursts drill shut down.**

APPENDIX F
INSTRUMENT SPECIFICATIONS

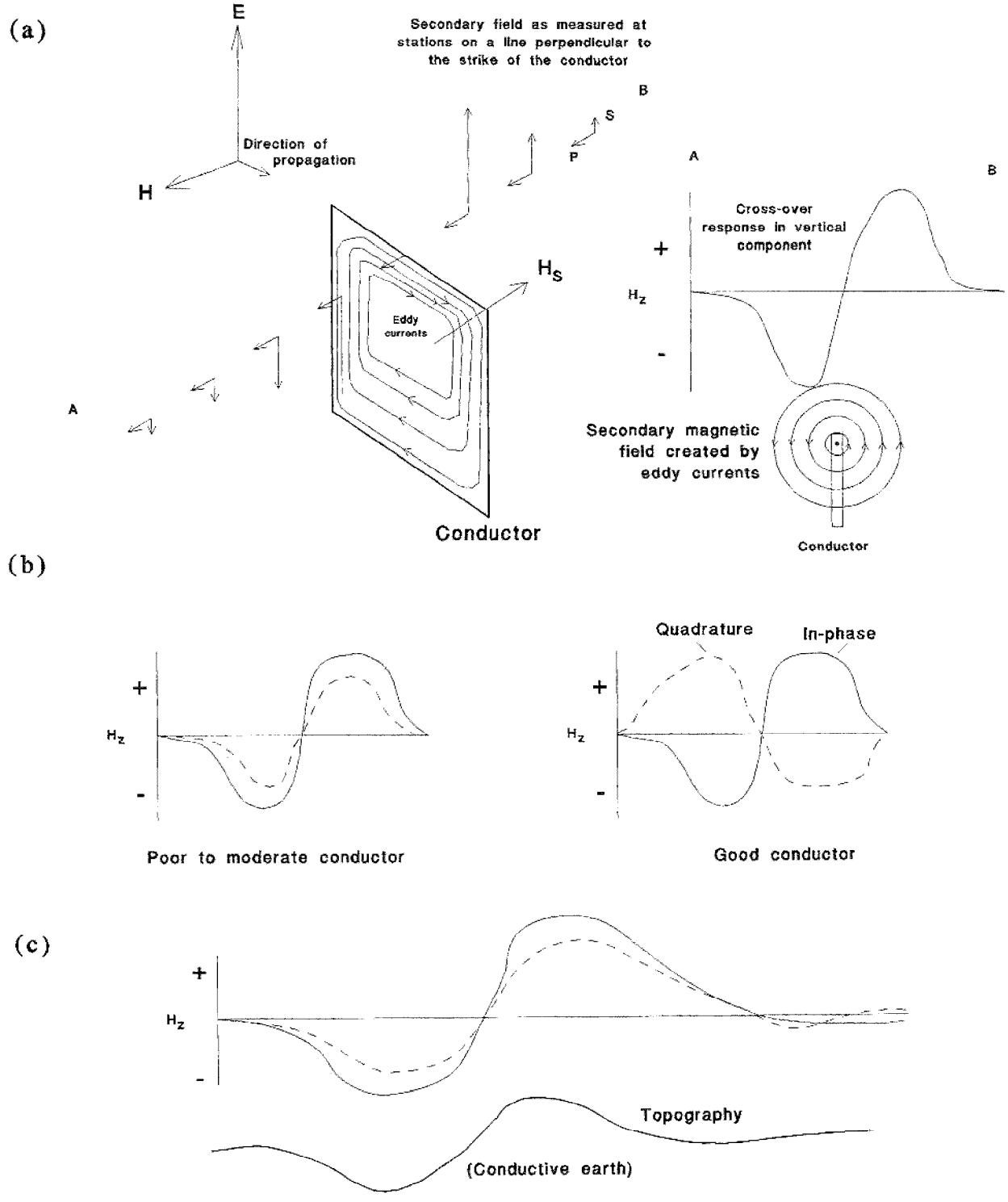
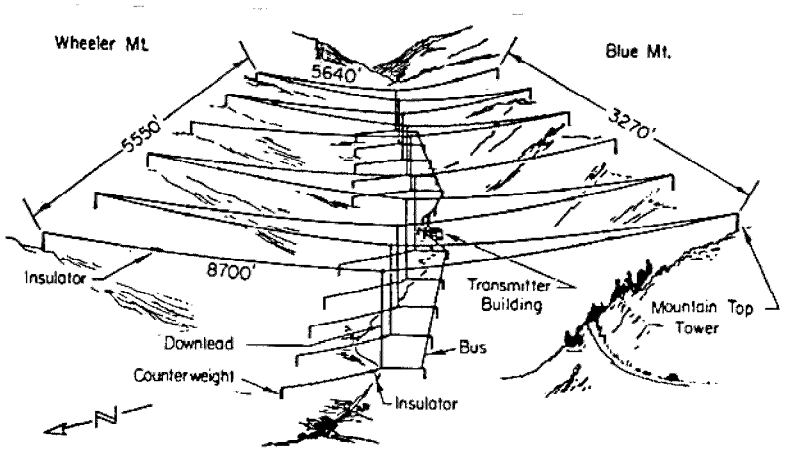
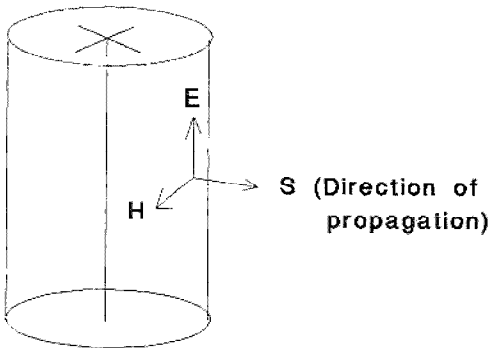


Figure VLF-2. VLF responses. (a) The horizontal magnetic flux from a VLF signal induces a secondary field in a conductor. This, together with the primary field, produces a cross-over response. (b) Quadrature sign can be determined by target conductance. (c) If the ground is conductive, topography can induce VLF responses similar to those expected from bedrock conductors.

(a)



(b)



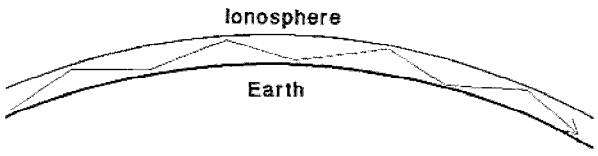


Figure VLF-1. VLF source fields and propagation. (a) Diagram showing Jim Creek, WA VLF transmitter (McNeill and Labson 1990). (b) Propagation of VLF field at a distance from the antenna. The VLF wave propagates between the earth's ionosphere and the surface with a vertical electrical field and horizontal magnetic field. At great distances the signal forms a plane wave.

GEONICS LIMITED
VLF EM 16

Source of Primary Field:	VLF transmitting stations
Transmitting Stations Used:	Any desired station frequency can be supplied with the instrument in the form of plug-in tuning units. Two tuning units can be plugged in at one time. A switch selects either station.
Operating Frequency Range:	About 15-25 Hz
Parameters Measured:	(1) The vertical in-phase component (tangent of the tilt angle of the polarization ellipsoid). (2) The vertical out-of-phase (quadrature) component (the short axis of the polarization ellipsoid compared to the long axis).
Method of Reading:	In-phase from a mechanical inclinometer and quadrature from a calibrated dial. Nulling by audio tone.
Scale Range:	In-phase ±150%; quadrature ±40%
Readability:	±1%
Reading Time:	10-40 seconds depending on signal strength
Operating Temperature Range:	-40 to 50° C.
Operating controls:	ON-OFF switch, battery testing push button, station selector, switch, volume control, quadrature, dial ±40%, inclinometer dial ±150%
Power Supply:	6 size AA (penlight) alkaline cells. Life about 200 hours
Dimensions:	42 x 14 x 9 cm (16 x 5.5 x 3.5 in)
Weight:	1.6 kg (3.5 lbs)
Instrument Supplied With:	Monotonic speaker, carrying case, manual of operation, 3 station selector plug-in tuning units (additional frequencies are optional), set of batteries
Shipping Weight:	4.5 kg (10 lbs.)
Name and Address of Manufacturer:	Geonics Limited 1745 Meyerside Drive/Unit 8 Mississauga, Ontario L5T 1C5

INSTRUMENT SPECIFICATIONS

MAGNETOMETER / GRADIOMETER

Resolution:	0.01nT (gamma), magnetic field and gradient.
Accuracy:	0.2nT over operating range.
Range:	20,000 to 120,000nT.
Gradient Tolerance:	Over 10, 000nT/m
Operating Interval:	3 seconds minimum, faster optional. Readings initiated from keyboard, external trigger, or carriage return via RS-232C.
Input / Output:	6 pin weatherproof connector, RS-232C, and (optional) analog output.
Power Requirements:	12V, 200mA peak (during polarization), 30mA standby. 300mA peak in gradiometer mode.
Power Source:	Internal 12V, 2.6Ah sealed lead-acid battery standard, others optional. An External 12V power source can also be used.
Battery Charger:	**Input:** 110 VAC, 60Hz. Optional 110 / 220 VAC, 50 / 60Hz. **Output:** dual level charging.
Operating Ranges:	Temperature: - 40°C to +60°C. Battery Voltage: **10.0V minimum to 15V maximum.** Humidity: **up to 90% relative, non condensing.**
Storage Temperature:	-50°C to +65°C.
Display:	LCD: 240 X 64 pixels, OR 8 X 30 characters. Built in heater for operation below -20°C.
Dimensions:	**Console:** 223 x 69 x 240mm. **Sensor Staff:** 4 x 450mm sections. **Sensor:** 170 x 71mm dia. **Weight:** console 2.1kg, Staff 0.9kg, Sensors 1.1kg each.
VLF	
Frequency Range:	15 - 30.0 kHz plus 57.9 kHz (Alaskan station)
Parameters Measured:	Vertical in-phase and out-of-phase components as percentage of total field. 2 relative components of horizontal field. Absolute amplitude of total field.
Resolution:	0.1%.
Number of Stations:	Up to 3 at a time.
Storage:	Automatic with: time, coordinates, magnetic field / gradient, slope, EM field, frequency, in- and out-of-phase vertical, and both horizontal components for each selected station.
Terrain Slope Range:	0° - 90° (entered manually).
Sensor Dimensions:	140 x 150 x 90 mm. (5.5 x 6 x 3 inches).
Sensor Weight:	1.0 kg (2.2 lb).

9 V 1997

APPENDIX G
GSM-19T MAGNETOMETER/GRADIOMETER

THEORETICAL DESCRIPTION

Introduction

The GSM-19T is a portable standard proton magnetometer/gradiometer designed for handheld or base station use for geophysical, geotechnical, or archaeological exploration, long term magnetic field monitoring at Magnetic Observatories, volcanological and seismic research, etc. The GSM-19T is a secondary standard for measurement of the Earth's magnetic field, having 0.2nT resolution, and 1nT absolute accuracy over its full temperature range.

The GSM-19T is a microprocessor based instrument with storing capabilities. Large memory storage is a available (up to 2Mbytes). Synchronized operation between hand held and base station units is possible, and the corrections for diurnal variations of magnetic field are done automatically. The results of measurement are made available in serial form (RS-232-C interface) for collection by data acquisition systems, terminals or computers. Both on-line and post-operation transfer are possible.

The measurement of two magnetic fields for determination of gradient is done concurrentlly with strict control of measuring intervals. The result is a high quality gradient reading, independent of diurnal variations of maganetic field.

Optionally the addition of a VLF sensor for combined magnetometer / gradiometer-VLF measurement is available.

Magnetic Field Measurement

The magnetic field measuring process consist of the following steps:

a) Polarization: A strong DC current is passed through the sensor creating polarization of a proton-rich fluid in the sensor.

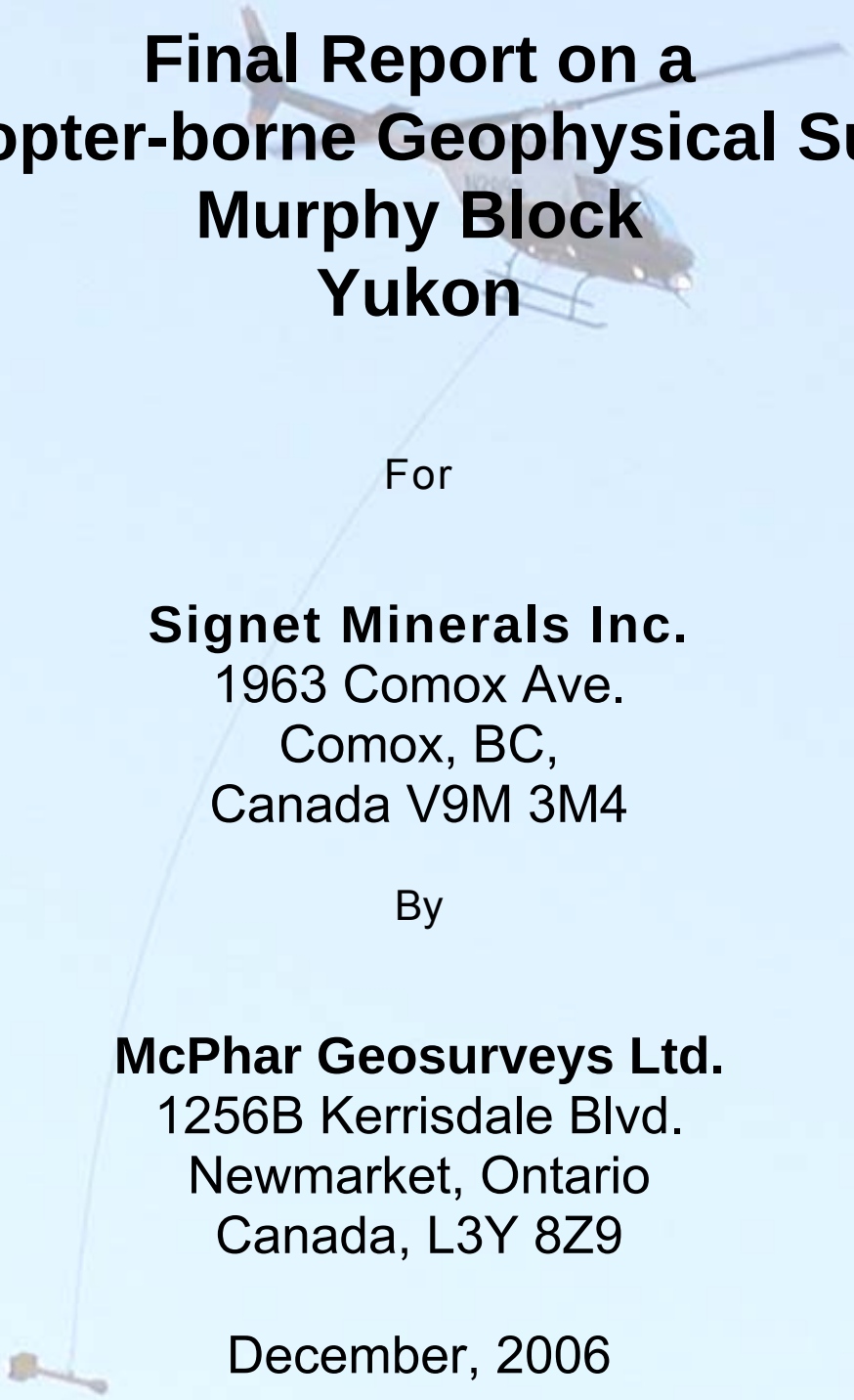
b) Pause: The pause allows the electrical transients to die off, leaving a slowly decaying proton precession signal above the noise level.

c) Counting: The proton precession frequency is measured and converted into magnetic field units.

d) Storage: The results are stored in memory together with date, time and coordinates of measurement. In base station mode, only the time and total field are stored.

APPENDIX G
AIRBORNE RADIOMETRICS REPORT

Final Report on a Helicopter-borne Geophysical Survey Murphy Block Yukon



For

Signet Minerals Inc.
1963 Comox Ave.
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By

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1256B Kerrisdale Blvd.
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December, 2006

McPhar 0613a

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- Pico-Envirotec AGIS Data Acquisition System
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SUMMARY

McPhar Geosurveys Ltd conducted an airborne geophysical survey on the Murphy Block, Yukon, on behalf of Signet Minerals, Vancouver, BC.

The project area was located approximately 65 kms northeast of the Whitehorse and was flown using a helicopter equipped with a high-resolution radiometric system.

The McPhar crew was in the survey area on August 28, 2006. Instrument calibration flights for spectrometer cosmic stripping coefficients, background effect and radar altimeter calibration (radar stack) were completed prior to the survey and also after the completion of survey. The first production flight was flown on August 29, 2006. A total of **176** line-kilometres of data were acquired, covering an area of approximately 18 square kilometres. The survey area was flown with a mean terrain clearance of 50 metres. Flight lines were flown at 60 degrees with spacing of 150 metres.

1. INTRODUCTION

A detailed high-resolution helicopter-borne radiometric survey was conducted during the period from August 28, 2006 to August 30, 2006 on behalf of Signet Minerals, ("Signet") by McPhar Geosurveys Ltd, ("McPhar"), over a Murphy Block, Yukon.

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 geological and geophysical settings.

The geophysical system was mounted in the cabin of a Eurocopter AS-350B2 helicopter. Data acquisition utilized precision differential GPS positioning and a Pico-Envirotec GRS-410 multi channel gamma-ray spectrometer. This instrument has a 16.8 litres "downward looking" NaI sensor mounted in the cabin inside the side of the helicopter. Ancillary equipment included a differential GPS navigation and positioning system, barometric pressure transducer, temperature and relative humidity probe and a radar altimeter.

The survey area flown, comprised one block named as 'Murphy'. The survey lines were flown in north-east at (10°) direction at spacing of 100 metres. The survey comprised a total of 176 line kilometres of data acquisition.

Table 1: Survey Area Description

AREA NAME	APPROX AREA KM^2	LINE SPACING	LINE-KM	PRIMARY FLIGHT DIRECTION
Murphy	18	100 m	176	10°
Totals	**18**		**176**	

Mobilization of the helicopter, equipment and personnel to Mayo, Yukon was completed on August 28, 2006. Final settlement was in the Whitehorse, where fuel and accommodations were established. Pre-survey test and calibration flights for spectrometer cosmic stripping coefficients, aircraft background and for radar altimeter calibration (radar stack) were completed prior to the survey flight and after the survey. The final survey flight was completed on August 30, 2006.

The final data processing, map compilation and report was completed by McPhar at its Newmarket, Ontario office.

2. SURVEY AREA

The survey consisted of one block, identified by Signet as 'Murphy'. The block is situated about 65 km northeast of the Whitehorse. The primary objective of the survey was to acquire geophysical data in support of uranium exploration.

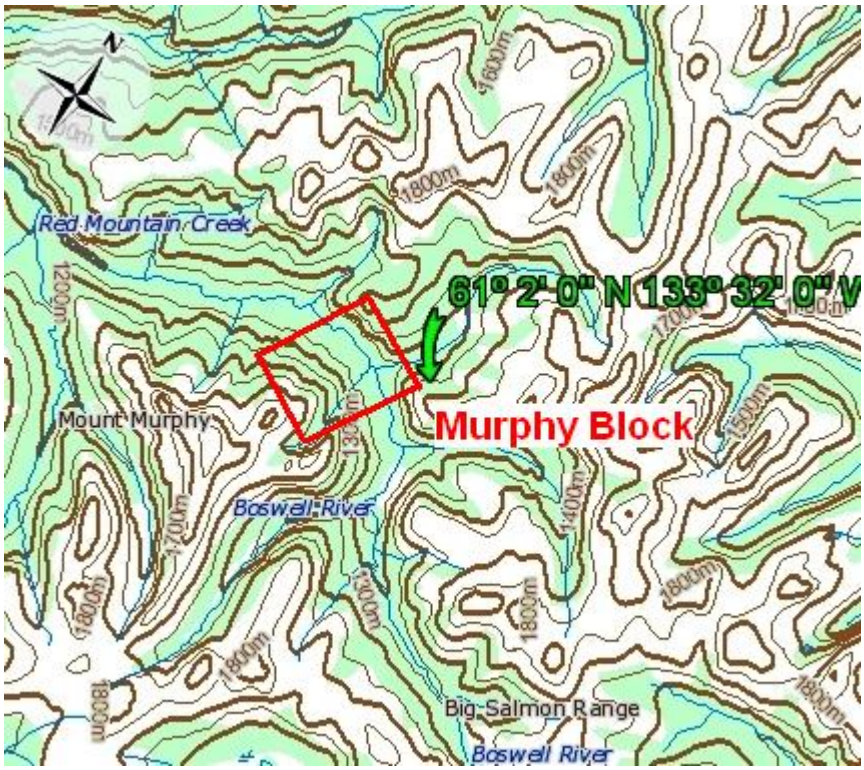


Figure 1: Location of the survey block, Yukon

Figure 2: Typical survey topography, Yukon

The elevation ranged from approximately 500 metres to over 1800 metres above sea level. Weather conditions were generally favourable. Temperature varied from anywhere from 10 to 20 degrees Celsius.

Signet Minerals provided the survey block corner coordinates, in easting and northing, with projection NAD83, UTM zone 8N. The geographic location and corner coordinates follows.

Table 2: Survey Area Coordinates

Murphy Block	
X	Y
574410	6766276
578484	6765640
577773	6761334
573750	6762106

3. SURVEY OPERATIONS

3.1 Operations Base

Survey operations were based from Whitehorse, with daily pre/post flight calibrations performed at the cleared helipad, and approximately 400m from the airstrip.

All quality control and preliminary data processing were performed at the hotel.

3.2 Survey Conditions

Weather conditions were not altogether a large factor. When survey conditions were fair, production was obtained. The average temperature over the course of the survey was approximately 18^{o}C.

3.3 Navigation

An air speed of approximately 150 kilometres per hour was maintained during data acquisition. The sampling rates for the spectrometer, radar, barometric altimeters and GPS navigation/positioning system occurred every 1.0 second. This resulted in spectrometric spatial sampling and position fixes every 41 metres along the flight path.

Navigation was assisted by a GPS receiver system that reported real-time differentially corrected GPS co-ordinates in WGS-84 latitude and longitude and directed the pilot over a pre-programmed two-dimensional (2-D) survey grid. The x-y position and ellipsoidal altitude of the aircraft, as reported by the GPS system, was recorded together with the terrain clearance as reported by the radar altimeter. The coordinates of the survey area were submitted as NAD83 but transformed into WGS84, UTM zone 8N coordinates for purposes of navigation.

Vertical navigation along flight lines was effectively controlled through the use of a radar altimeter. The optimum terrain clearance during normal survey flying was 50 metres for the helicopter. However, due to rugged terrain in some areas, and the pilot's judgment of safe flying conditions in these areas, these terrain clearances were not possible 100% of the time.

The final vertical and horizontal survey positions, as obtained with onboard real time differentially corrected GPS, had a precision of approximately +/- 1.5 metre.

3.4 Field Processing & Quality Control

The survey data was transferred to magnetic 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 or that were considered to be of inferior quality were designated to be reflown.

3.5 Survey Statistics and Project Diary

The survey was completed with a total of 3 flights; and all flights were production flights. The first production flight was Flt # 01 on August 29, 2006, with the last production flight, Flt # 03 on August 30, 2006.

Table 3: Project Diary

Date	Flt #	Hours Flown	Line-Km Accepted	Comments
August 28				Mobilization of crew with helicopter
August 29	1 & 2	4.8	144.6	Two production flights
August 30	3	2.4	93.3	One production flight and Survey complete
Totals		**7.2**	**237.9**	

- Total are inclusive 61.9 line-kms of reflights

Title	Name	Days Onsite
Project Manager/QC/QA	Adam Barrett	3
Operator	Adam Barrett	3
Helicopter Pilots	Al Stannard	3

Table 4: Field Personnel

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.

4. HELICOPTER AND EQUIPMENT

4.1 The Helicopter

The survey was flown using a Eurocopter AS-350B2 A-Star model helicopter, with Canadian registration C-GTNT provided by TransNorth Helicopters, Yukon. This helicopter featured up to 2.5 hours flight duration with the geophysical system and a crew of 2 persons onboard.

Figure 3: Survey Helicopter C-GTNT refuelling

McPhar personnel, at the TransNorth base in Mayo, Yukon, did the installation of the geophysical and ancillary equipment. Final adjustments, calibration and testing were completed prior to production survey flights in the Copperpoint camp.

The survey helicopter was flown at a nominal terrain clearance of 50 m. Nominal helicopter airspeed was approximately 150 km/hr but this may vary in the areas of rugged terrain. The sampling rates for the spectrometer, radar, barometric altimeters and GPS navigation/positioning system occurred every 1.0 second. This resulted in spectrometric data recorded at rate of 1 Hz and position fixes every 41 metres along the flight path.

Table5: Survey Helicopter Specifications

Helicopter Model	Eurocopter AS-350 B2
Registration	C-GTNT
Engine	Turbomeca Arriel 1D1 - 732 shp
Gross Weight	4,991 lb
Empty Weight	2,561 lb
Useful Load	3,530 lb
Useful Fuel Capacity	143 gal /540 liters
Cargo-swing Load	2,557 lb / 1.160 kg
Typical Survey Speeds	45 – 60 knots/ 80 – 120 kph
Survey Fuel Consumption	47 gal/hour / 180 litres/hour
Flight Duration (no reserves)	3 hours
Cruise Speed - Ferry	122 knots
Cruise Range	371 nm / 688 km
Maximum Operating Altitude	18,700 ft / 5,700 m
H.I.G.E. (ISA)	13,450 ft / 4,100 m
H.O.G.E. (ISA)	11,300 ft / 3,450 m
Climb Performance	1,950 ft min / 594 m / min
Power Available for Equipment (28 VDC)	150 amps

4.2 The Survey Instrumentation

4.2.1 Survey System Overview

The equipment installed in the helicopter included:

- A Pico-Envirotec GRS-410 self-stabilizing multi-channel gamma-ray spectrometer with 16.8 litres "downward looking" NaI sensor.
- A navigation system, comprising an CSI Wireless DGPS-MAX and a Pico-Envirotec AGNAV GPS computer with pilot guidance unit (PGU)
- A SETRA model-276 digital barometric altimeter/pressure transducer
- A Campbell Scientific Model-CS500 Temperature and Relative Humidity Probe
- Pico-Envirotec AGIS Data Acquisition System
- A Terra TRA-3000/TRI-30 Radar Altimeter

The processing and base stations included:

- A Field Workstation, consisting of a portable Pentium PC, printer and full data processing software

4.2.2 Gamma-ray Spectrometer System

The gamma ray system included a Pico-Envirotec GRS-410 multi-channel gamma-ray spectrometer with 16.8 litres of "downward looking" NaI sensor with sampling rate of 1 second. The thermally insulated NaI crystal sensor was installed inside the cabin of the helicopter.

The GRS-410 is a 512 channel, self-stabilizing spectrometer that tracks and corrects for the spectral drift of the system by following a Thorium spectral peak. Standard regions of interest for Total Count (TC), Potassium (K), Uranium (U), Thorium (Th) and cosmic radiation were recorded for post survey processing. The averages recorded with window limits in MeV are shown in the following table:

Table 6: Standard Gamma-ray Spectrometer Data Acquisition Windows

Standard Gamma-ray Spectrometer Data Acquisition Windows		
Element	Lower Boundary (MeV)	Upper Boundary (MeV)
Total Count	0.41	2.81
Potassium	1.37	1.57
Uranium	1.66	1.86
Thorium	2.41	2.81
Cosmic	3.00	∞

The recommendations in the International Atomic Energy Agency – IAEA – TECDOC-1363 – *Guidelines for radioelement mapping using gamma ray spectrometry* were followed throughout the survey.

Gamma-ray spectrometer specifications are further described in Appendix 2.

4.2.3 Altimeter

A Terra TRA-3000/TRI-30 radar altimeter was used to record terrain clearance to an accuracy of about 1 ft (30 cm), over a range of 12 metres to 762 metres. The antenna was mounted beneath the bubble of the helicopter cockpit.The altimeter was interfaced to the data acquisition system with an output repetition rate of 0.1 second, and digitally recorded.

A Setra model 276 Barometric Altimeter was utilized to measure height above sea level and barometric pressure changes. The barometric pressure transducer was connected directly to the data acquisition system with an output repetition rate of 1 second, and digitally recorded. The barometric altimeter has a resolution of approximately 30 cm (1 ft) and an accuracy of +/-0.02% full scale at 70^{o}F (19^{o}C).

System specifications are further described in Appendix 2.

4.2.4 The Outside Air Temperature System

A Campbell Scientific CS500 Temperature & Relative Humidity Probe was used to record outside air temperature and humidity. The probe was attached to GRS-410 gamma ray sensor housing.

System specifications are further described in Appendix 2.

4.2.5 The GPS Satellite Navigation/Positioning System

CSI-Wireless DGPS navigation system input to a Pico-Envirotec AGNAV navigation computer and pilot steering indicator (PGU) provided in-flight real-time navigation control. Mounted on top of the cockpit dashboard, in front of the pilot, it provided steering and cross-track guidance in conjunction with GPS and altimeter data.

This navigation system yielded a real-time positional accuracy of better than ± 2 metre.

Survey co-ordinates were set-up prior to commencement of the survey, the information fed into the airborne navigation system. The co-ordinate system employed in the survey design and digital recording was WGS-84 latitude and longitude. The real time differentially corrected GPS positional data was recorded at one-second intervals.

The GPS receiver is fully described in Appendix 2.

4.2.6 Data Acquisition/Recording System

A PC-based Pico-Envirotec AGIS data acquisition system was used to record the geophysical and ancillary survey data on an internal hard disk drive and comprised of a colour pilot guidance display. Data is displayed on an LCD screen as traces allowing the operator to monitor the integrity of the system. The system records temperature, barometric pressure and humidity by itself.

The Pico-Envirotec AGIS provides for the:

- System control and monitoring
- Data acquisition recording
- Real-time data processing
- Navigation processing, and
- Post flight data playback and analysis

All data collection routines, checking and verification, buffering and recording are software controlled for maximum flexibility both during and after the survey flight. The Pico-Envirotec AGIS is fully described in Appendix 2.

4.2.7 Field Computer Workstations

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 OASIS Montaj Data Processing Software. The FWS has a data replot capability, and may be used to produce pseudo-analogue charts from the recorded digital data within less than 12 hours after the completion of a survey flight, if 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.

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 software system permitted preliminary maps to be quickly and efficiently created for noise and coherency checks.

The Montaj software is designed for airborne data editing, compilation, processing and plotting. The software reads the portable data media from the airborne system, checks them for gaps, spikes or other defects and permits the data to be edited where necessary. GPS flight path plots are created and plotted for both flight planning and flight path verification.

4.2.8 Spares

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

5. INSTRUMENT CHECKS AND CALIBRATIONS

5.1 Airborne Gamma-ray Spectrometer System Tests and Calibrations

All gamma-ray spectrometer system tests and calibrations were carried out according to the standard procedures following the recommendations of:

IAEA-TECDOC-1363 - Guidelines for radioelement mapping using gamma ray spectrometry data, *IAEA-TECDOC-323 – Airborne Gamma Ray Spectrometer Surveying,*
GSC-TECPAEPER 90-23 – Transportable Calibration Pads for Ground and Airborne Gamma Ray Spectrometers

5.1.1 Spectrometer Calibration on Transportable Pads – Stripping Ratios

The stripping ratios for the gamma-ray spectrometer were determined as a part of seasonal calibration prior to the survey on July 18, 2006 using the Pico Envirotec calibration pads. These pads are stored at the Holland Landing Airpark nearby Newmarket, Ontario. The tests were performed with the crystal box placed on U, Th, K and background pads and data recorded over a minimum of 10 minutes for each pad.

The results of this calibration are included in Appendix 1.

5.1.2 Altitude Attenuation Coefficient

The exponential altitude attenuation coefficients were derived from test flights completed on September 07, 2006 in the survey area and on September 26, 2006 at the Holland Landing Airpark, Newmarket. This was accomplished by flying a test line at various altitudes of approximately 50, 100, 150, 200, 250 and 300 feet. A series of background measurements were made at the same time and same altitudes over the water body to determine the background due to cosmic radiation, radon decay products in the air and the radioactivity of the aircraft and equipment.

The closure altitude attenuation coefficients of this calibration are included in Appendix 1.

5.1.3 Spectrometer System Sensitivity

Sensitivity coefficients were determined during the post-survey seasonal test by hovering at different altitudes over McPhar's calibration spot at Holland Landing Airpark, Ontario on September 26, 2006. A series of background measurements were made at the same time at different altitudes over Lake Simcoe. These were to determine the background due to cosmic radiation, radon decay products in the air and the radioactivity of the aircraft.

The test flights served to determine system sensitivities through comparison of airborne data with data acquired on the ground, and to determine the variation of the window counts with aircraft altitude.

The ground measurements were made with an Exploranium portable gamma ray spectrometer by the Geological Survey of Canada. Measurements were acquired at 37 stations along 2 diagonal lines crossing the 300 x 300 m calibration spot. Measurements were also made with the portable spectrometer on the lake located near Holland Landing to determine background radiation due to cosmic radiation, radon decay products in the air and any radioactivity of the equipment. The background was subtracted from the ground measurements. Next ground concentrations of potassium, uranium and thorium were determined by calibration of the portable spectrometer using the Pico Envirotec calibration pads located at Holland Landing Airport.

The sensitivities of the airborne system to potassium, equivalent uranium, and equivalent thorium were calculated by dividing the average count rates corrected to an effective height of 50 m above ground by the ground concentrations of the test spot.

The results of this calibration are included in Appendix 1.

5.1.4 Cosmic Stripping and Aircraft Background

Cosmic stripping coefficients and aircraft background for K, U, Th & TC windows were measured and calculated for the detector crystal packs prior to the survey on August 11, 2006 near Copper point camp. The coefficients were calculated from a sequence of passes flown at various high altitudes above the ground (approximately 1532, 1843, 2154, 2465, 2772 & 3083 metres). Each altitude was flown for a minimum of 2 minutes.

Coefficients were determined by linear regression of cosmic counts versus each spectral window (TC, K, Th and U) as described in the IAEA Report 323 (1991).

The results of the calibration are presented in Appendix 1.

5.1.5 Radon Background

No self-sustaining test or calibrations for radon background were made. The radon background was removed using the 'Full Spectrum' method analyzing the survey and test line data.

5.1.6 Test Line

A test line was flown and recorded at survey altitude at the start and end of each survey day to test the repeatability of the gamma-ray spectrometer system and to monitor the effects of soil moisture. The statistics and average deviation of the radiometric data were calculated and inspected for repeatability. After live time, background, and height correction, the average Th window count rate over the test line should be within +/-5% of the mean Th window count rate for all previous flights. No flights were suspended following the criteria of this test.

5.2 Altimeter & Barometer Calibration Checks

The altimeter and barometer test flight was performed on September 07, 2006 after the completion of 'Murphy' block but during the survey over other blocks which also belong to 'Signet Minerals Inc'. The calibrations were done by comparing the radar altitudes and barometric pressure with a suitable reading from the GPS navigation system, during radar "stack" flown over Fairchild Lake, Yukon. The ellipsoidal height at the lake was determined by GPS. This procedure involved having the helicopter hover for 30 seconds at various altitudes above the ground (69, 96, 118, 142, 180, 206 and 230 metres) and recording the values of the radar altimeter, GPS altimeter and barometric pressure, which were then plotted and compared. These calibrations were checked on a daily basis by completing a vertical calibration test flight during take off and landing.

The results of the test are included in Appendix 1.

6. QC AND DATA PROCESSING

Data quality control and processing were carried out in two stages.

Daily quality control, initial processing and archiving of the data were completed on-site at the base of operations using Geosoft MONTAJ software and a notebook PC computer. All data were verified upon receipt, and checked against the operator's flight logs.

The final data processing was completed in the data processing centre of McPhar in Newmarket, Ontario.

All processing of radiometric and ancillary data was undertaken according to the standard procedures incorporated in Geosoft Radiometric Data Processing and Praga3 software, following the recommendations of:

IAEA-TECDOC-1363 - Guidelines for radioelement mapping using gamma ray spectrometry data, *IAEA-TECDOC-323 – Airborne Gamma Ray Spectrometer Surveying*

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 PicoEnvirotec PEIView Extractor software
b.) Transfer of extracted data into Geosoft Database
c.) QC and pre-processing of GPS and altimeter data
d.) Compilation of flight path
e.) QC and pre-processing and evaluation of test and calibration data
f.) QC and pre-processing of radiometric data

Final Processing

a.) Processing of GPS and altimeter data
b.) Final flight path compilation
c.) Processing of radiometric data
- Principal component (NASVD and MNF) analysis and spectra processing
- Window (ROI) extraction
- Corrections and levelling of radiometric data
- Conversion to radioelement concentration
- Gridding
- Calculation of radioelement ratios

d.) Production of radioelement, ratio and ternary maps
e.) Compilation of final report

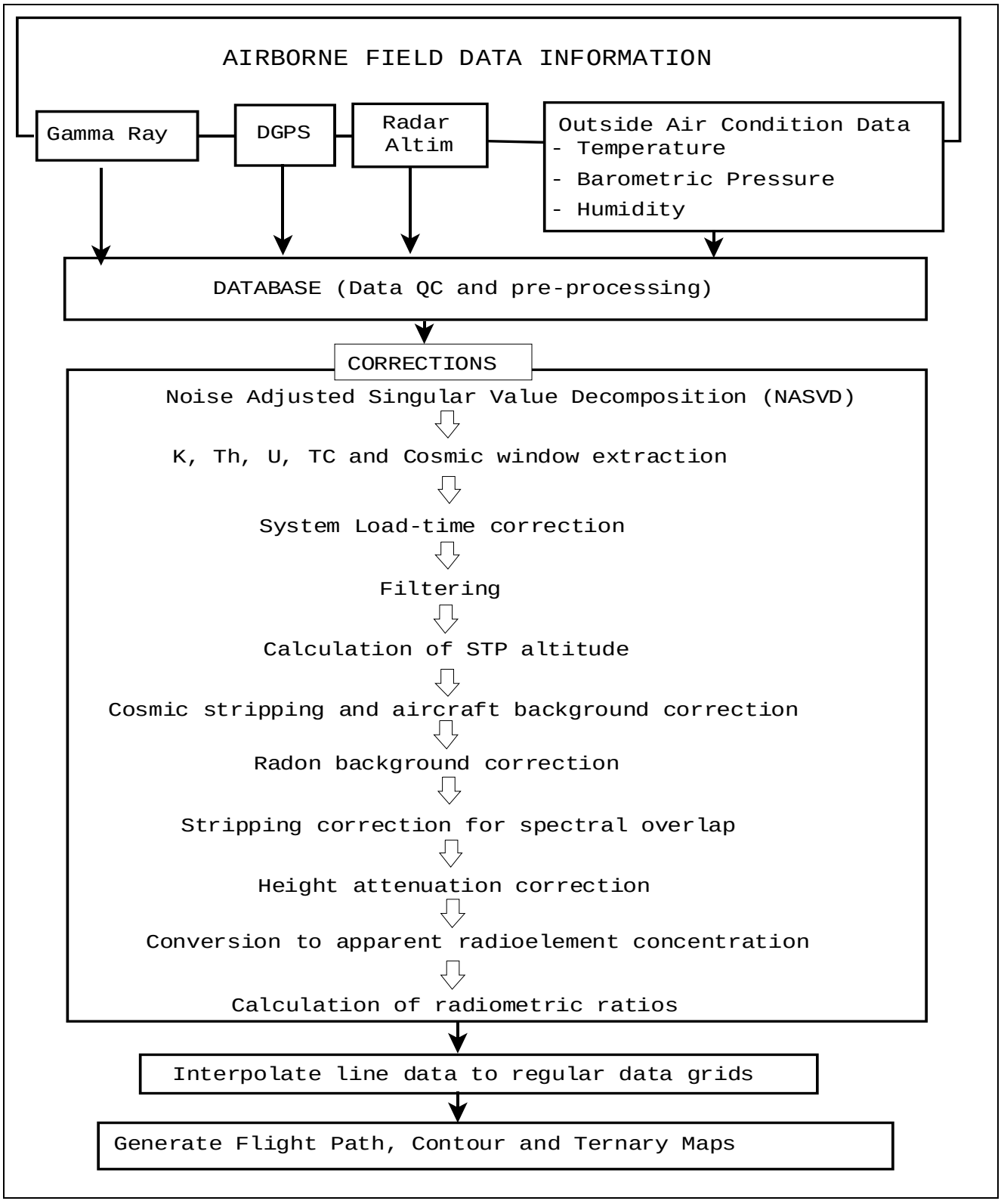


Figure 4: Data Processing Flow Chart

6.1 Data Management

Raw data in binary file format were recorded in the helicopter on portable media. 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 and latitude, WGS84 ellipsoidal height and GPS time
- Radar Altimeter data
- Outside air condition data – temperature, barometric pressure and humidity
- Radiometric data recorded as gamma ray spectrum resolved into 256 channels over the energy detection range of 50 keV to 3000 keV and the cosmic channel over 3 MeV.

The binary raw file was pre-processed and extracted using PicoEnvirotec PEIView extractor software. The extracted data was loaded on a daily basis into a flight specific Geosoft database.

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) Production of preliminary flight path maps, speed checks, terrain clearance checks and evaluation of test and calibration data
c) Full profile quality control of all acquired traces for noise levels, data completeness, spike editing, and adherence to contract specifications.

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. Final data processing, map compilation and report generation were completed by McPhar at the Newmarket, Ontario office.

6.2 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 each second (approx. every 39 meters along the flight path) to an accuracy of +/- 2-3 metres. This position data was merged with gamma ray spectrometry 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 of +/-15 m over a linear distance of 2,000 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 converted to the contract specified NAD83 UTM zone 08N projected coordinates.
Parameters for datum used on this project are as follows:

X,Y channels	Lon_deg,Lat_deg
Datum	WGS 84
Ellipsoid	WGS 84
MajAx,Eccen,PrimeMer	6378137,0.08181919084,0
Local datum transform	[WGS 84] World

X,Y channels	x,y
Length units	metre
Projection	UTM zone 8N
Type	Transverse Mercator
Lat0,Lon0,SF,FE,FN	0,-135,0.9996,500000,0
Datum	NAD83
Ellipsoid	GRS 1980
MajAx,Eccen,PrimeMer	6378137,0.08181919104,0
Local datum transform	[NAD83] Canada; Central America; Mexico; USA (

6.3 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 the contract (nominal 50 m 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, or where prohibited by civil aviation authority regulations). The mean terrain clearance achieved over the entire survey was 47 m AGL.

Barometric pressure data was recorded in system units at a frequency of 1 Hz, and then converted to air pressure in mbar, following the results of barometric calibrations. Additional smoothing of the barometric data was achieved by low-pass filtering.

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 20 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.

6.4 Radiometric Data Processing

6.4.1 Background to Corrections and Processing

Gamma-ray spectrometer surveys are utilized for mapping the concentration and distribution of naturally occurring radio elements. The use of an airborne gamma-ray spectrometer allows for the in-situ analysis of radioelement concentrations of naturally occurring potassium (K), uranium (U) and thorium (Th) in the field.

For a geologist, maps showing concentrations of K, U, and Th can be diagnostic in the mapping of rocks and soils, which aid in geological mapping, and exploration for uranium, gold, tin and tungsten. With these deposits, the primary mineralization process is often related to K metasomatism or alteration.

Radioactivity measurements from an airborne platform are dependent upon the detection of gamma rays produced through radioactive decay of the nuclide to be detected. Only three natural radioactive elements emit sufficient gamma radiation to be measured by airborne methods. The three major sources are:

- Potassium-40 (^{40}K) which is 0.011% of all potassium
- Daughter products from the ^{238}U decay series,
- Daughter products from the ^{232}Th decay series.

High-energy cosmic rays of non-terrestrial origin can be detected by airborne gamma-ray spectrometer surveys. This cosmic radiation interacts with molecules in the atmosphere, the aircraft, and the NaI detectors resulting in the production of high-energy radiation. This radiation is detectable and increases exponentially with height above sea level. It must be compensated for to obtain reliable and repeatable measurements and the detection of terrestrial radiation sources.

The traditional energy windows used to detect gamma ray radiation from K, Th, and U sources have overlapping areas where the energy recorded for a given element contains some contribution from all three radio elements. A correction procedure, known as stripping, is applied to the data to compensate for this spectral overlapping.

The natural gamma ray spectrum over the range of 0 to approximately 3000 keV is resolved by the spectrometer into 256 or 512 channels, each channel ranging from 5 to 6.5 keV in width. A separate channel records all high-energy radiation above 3000 KeV, the cosmic radiation contribution. Within the defined radioelement windows, the counts recorded are summed over a given time period.

Care must be taken during the acquisition of gamma-ray spectrometer data because the contribution from radon gas, related to decay products in the atmosphere, can result in misleading count rates. Radon gas can also diffuse from the ground, but only one radon nuclide is directly related to the uranium decay series. In order to minimize the impact of radon "contamination", radiometric surveys are not completed during rain, which "washes" radon from the air, increasing ground concentrations. Also surveys are not carried out in fog conditions and for a period of not less than 2 hours after precipitation has finished, allowing for dispersion of radon gas to normal background levels.

Radiometric surveys have no depth penetration; most radioactive sources are recorded from the upper 1.5 metres of the ground. Over water bodies or snow-covered areas, these surveys are ineffective, as the presence of water (in either liquid or solid state) effectively masks the radiation.

Spectrometer data are recorded in counts per second. The instrumentation requires a fraction of a second to process the incoming data – during this time period no counts are recorded. This interval is referred to as "*equipment down time or system dead-time*". A correction is applied to compensate for this time period.

6.4.2 Processing Applied Using GEOSOFT Radiometric Processing System and Praga3

Please refer to Fig.4 for a summary of radiometric data processing.
The reduction of radiometric data follows standard processing steps implemented in the Geosoft Radiometric Processing System with the Praga 3 module, as outlined in the recommendations of IAEA-TECDOC-1363 - Guidelines for radioelement mapping using gamma ray spectrometry data.

The processing of radiometric data involved advanced full spectrum processing of downward looking detectors:

1. Principal component (NASVD and MNF) analysis and spectra processing
2. Extraction of uncorrected data accumulated in K, U, Th, TC and Cosmic windows from NASVD smoothed spectra
3. System dead-time correction
4. Filtering
5. Calculation of STP (Standard Temperature and Pressure) altitude.
6. Cosmic stripping and aircraft background correction
7. Radon background correction
8. Stripping correction for spectral overlap
9. Altitude attenuation correction
10. Reduction to apparent radio elemental concentrations
11. Calculation of radioelement ratios
12. Gridding
13. Production of radioelement, ratio and ternary maps

Principal component (NASVD and MNF) analysis

Principal component (NASVD and MNF) analysis tools allow us to investigate spectrum signatures included in the actual dataset. A spectrum dataset is converted into a limited set of spectral components (eigenvectors) which are ordered by variance (NASVD) or by signal to noise ratio (MNF). NASVD expects noise to be Poisson distributed, while MNF computes a noise model directly from the data. Higher order components can be explained as mixed nuclide responses collected at average survey altitude. They are followed by components that account for the altitude changes. Remaining components contain statistical and instrumental noise.

Principal components can be used for gamma-ray data processing. The approach is very similar to the spectrum fitting technique. However, instead of model responses, a subset of spectrum components, derived directly from the data, is used to replace the input spectrum.

Using ***Praga3***, an "*eigenvalue plot"* can be displayed, allowing the user to browse through the individual *components (eigenvectors)* to investigate their shape. C*ovariance matrices* can be displayed as well. Spectra can be *interactively composed* from the chosen number of components and compared with input spectra or alternatively, *residual spectra* can be displayed. In a situation where the user chooses to re-process data with another subset of components, there is no need to compute the eigenvectors again.

Energy Window Extraction

The uncorrected data accumulated in K, Th, U and TC energy windows was extracted from the spectra after the principal component analysis and full spectra processing completion. Further standard radiometric processing was applied following the guidelines defined by IAEA technical reports.
A summary of coefficients applied for corrections of radiometric data is presented in Appendix 1.
For this extraction, standard energy regions of interest (ROI) were used.

Dead-time Correction and filtering

A dead-time system correction of 10 micro seconds/pulse was applied to each window using the following equation:

$N = n / (1 – TC\ t)$

where:
- N - corrected count rate (counts/sec);
- n - observed count rate (counts/sec);
- TC - total count rate over all channels(counts/sec);
- t - the equipment dead time per pulse.

The data was subjected to a suitable low pass filter to minimize the statistical noise and to improve the count statistics.

Calculation of the Effective Altitude above Ground Level

The low-pass pre-filtered radar altimetry, barometric pressure and temperature data was used to calculate the effective height AGL for standard temperature and pressure (STP) using the following equation:

$$H_{STP} = (273.15\ P\ H_s) / [101.325\ (T + 273.15)]$$

where:
- H_s - observed height above ground level (metres);
- H_{STP} - effective height at STP (metres);
- T - air temperature (°C);
- P - barometric pressure (kPa).

Cosmic stripping and aircraft background correction

Cosmic radiation and aircraft background radiation was removed from each spectral window using the cosmic coefficients and aircraft background radiation values determined from test flight data using the following equation:

$$N = a + bC$$

where:
- N - the combined cosmic and aircraft background in each spectral window,
- a - the aircraft background in the window,
- b - the cosmic stripping factor for the window, and
- C - the low-pass pre-filtered cosmic channel count.

Radon background correction

The presence of radon (^{222}Rn) gas in the atmosphere contributes to the measured spectrometric data which constitutes the 'Radon Background' component.

A 'Full Spectrum' method implemented in Praga 3 software was used as the radon detection and removal technique for this survey. The 'Full Spectrum' method is based on the difference in source–detector geometry for the radon spectrum. The atmospheric radon component of the spectrum is defined as the response due to close sources. The terrestrial radiation component of the spectrum is defined as the response due to distant sources. This difference in geometry produces relative differences in the amplitudes of the photo peaks of the uranium disintegration series and also in the contribution of scattered radiation.

Stripping correction for spectral overlap

The stripping correction was used to correct each of the K, U and Th window count rates for gamma rays not originating from their particular radioelement or decay series using the following equations:

$$n_{K,K} = [n_{Th}\ (\alpha\ \gamma - \beta) + n_U\ (a\ \beta - \gamma) + n_K\ (1 - a\ \alpha)] / A$$
$$n_{U,U} = [n_{Th}\ (g\ \beta - \alpha) + n_U\ (1 - b\ \beta) + n_K\ (b\ \alpha - g)] / A$$

$n_{Th,Th} = [n_{Th} (1 – g \gamma) + n_U (b \gamma - a) + n_K (a g - b)] / A$
$A = 1 – g \gamma – a (\alpha – g \beta) – b (\beta – \alpha \gamma)$

where: n_{Th}, n_U, n_K - unstripped counts in Th, U, K windows
$n_{Th,Th}$, $n_{U,U}$, $n_{K,K}$ - stripped counts in Th, U, K windows

Coefficients α,β,γ are forward stripping ratios and a, b, and g are reverse stripping ratios

Coefficients α, β, γ, a, b and g were determined by system experiments during the pad calibrations. Summary of the determined coefficients used for processing is presented in Appendix 1.

Altitude attenuation correction

This correction was used to normalize the data to a constant terrain clearance of 50 m above ground level (AGL) at standard temperature and pressure (STP). Attenuation coefficients for each of the energy windows were determined from test flights. The measured count rate is related to the actual count rate at the nominal survey altitude by the equation:

$N_s = N e^{\mu(h-ho)}$

where: N_S - the count rate normalized to the nominal survey altitude, h_o
N - the background corrected, stripped count rate at effective height
μ - the attenuation coefficient for that window,
h_o - the nominal survey altitude, and
h - the effective height.

Finally, de-corrugation and micro-levelling techniques were applied to minimize the fine line directional levelling noise.

Reduction to apparent radio elemental concentrations

The final corrected units of the count rates (cps) for each spectral radioelement window (K,Th,U) and Total Count (TC) were converted to “Apparent Radio Element Concentrations” and “Ground Level Dose Rate” using the following equation:
$C = N / S$

where: C - concentration of the radio element
N - count rate for the energy window after dead time, background, stripping and attenuation
S -sensitivity coefficient

Sensitivities were determined from test flight data and are indicated in Appendix 1.

Potassium concentration is expressed as a percentage, while thorium and uranium as parts per million of the accepted standards. Uranium and thorium are described as "equivalent" since their presence is inferred from gamma-ray radiation from daughter elements (^{214}Bi for uranium, ^{208}Tl for thorium). Total count is expressed as ground level dose rate in nGy/h.

Calculation of radioelement ratios

U/Th, U/K and Th/K ratios were calculated using the final reduced concentration of radio elements.

Gridding

The K, Th, U concentrations, TC dose rate and radio element ratios were gridded using a minimum curvature algorithm with a grid cell size of 20 metres and used for contouring and map compilation.

Ternary Radio Element Maps

Finally ternary radio element maps were produced. A ternary radio element map is a color composite image generated by modulating the red, green and blue colors in RGB color space in proportion to the radio element concentrations of K, Th and U grids. The standard display practice is to use red, green and blue for K, Th and U respectively. The radio element values are scaled to an equal range (0 to 1) to distribute the ranges of K, Th and U equally in RGB color space and the normalization is applied according to the following relations:

$$K_n = K_{01}/(K_{01}+eU_{01}+eTh_{01})$$
$$eU_n = eU_{01}/(K_{01}+eU_{01}+eTh_{01})$$
$$eTh_n = eTh_{01}/(K_{01}+eU_{01}+eTh_{01})$$

where subscript n refers to the normalized channel and the subscript 01 refers to the scaled values in (0, 1) range.

The normalization converts the radio element concentrations in to relative abundances and helps in reducing the effects of the attenuation of gamma rays by vegetation, soil and moisture. The ternary radio element maps are generated using the composite display of normalized grids in the RGB color model with histogram equalization stretching.

7. DELIVERABLE PRODUCTS

The survey data are presented as colour/contour maps on paper, produced at a scale of 1:10,000. A set of report-sized colour/contour images, on paper, is included in Appendix 5 of the report.

The deliverable items of this survey are:

7.1 Maps

For the Murphy Block, the following maps, at a scale of 1:10,000, were delivered in two (2) paper copies.

- Differentially Corrected GPS Flight Path
- Digital Terrain Model Calculated from survey data (DTM)
- Calculated Dose rate from Total Count
- Apparent Concentration of Uranium
- Apparent Concentration of Thorium
- Apparent Concentration of Potassium
- Uranium/Potassium Ratio Map
- Uranium/Thorium Ratio Map
- Thorium/Potassium Ratio Map
- Ternary Radio Element Map

7.2 Digital Data

The final processed line and grid data, in GEOSOFT format is also delivered in two (2) copies on CD/DVD-ROM. Full descriptions of the digital data formats are included in this final report.

7.3 Report

Two (2) 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

APPENDICES

APPENDIX 1 **System Tests and Reports**

- Altimeter Calibration Test
- Barometric Calibration Test
- Cosmic Stripping and Aircraft Background Calibration
- Spectrometer Calibration on Transportable PAD-Stripping Ratios
- Sensitivity Factors
- Summary of Processing Coefficients used in the reduction of Spectrometric Data
- Flight Logs
- Daily Reports

APPENDIX 2 **Equipment Documentation**

- Pico-Envirotec GRS 410 Gamma Spectrometer
- Pico-Envirotec AGIS Data Acquisition System
- Terra TRA-3000 / TRI-30 Radar Altimeter
- Stra Model 276 Barometric Pressure Transducer
- Campbell Temperature and Relative Humidity Probe
- CSI-Wireless DGPS Max positioning system
- Geosoft Montaj Processing Software
- Geosoft Montaj Plus Praga 3 Radiometrics
- Field Data Processing Workstations

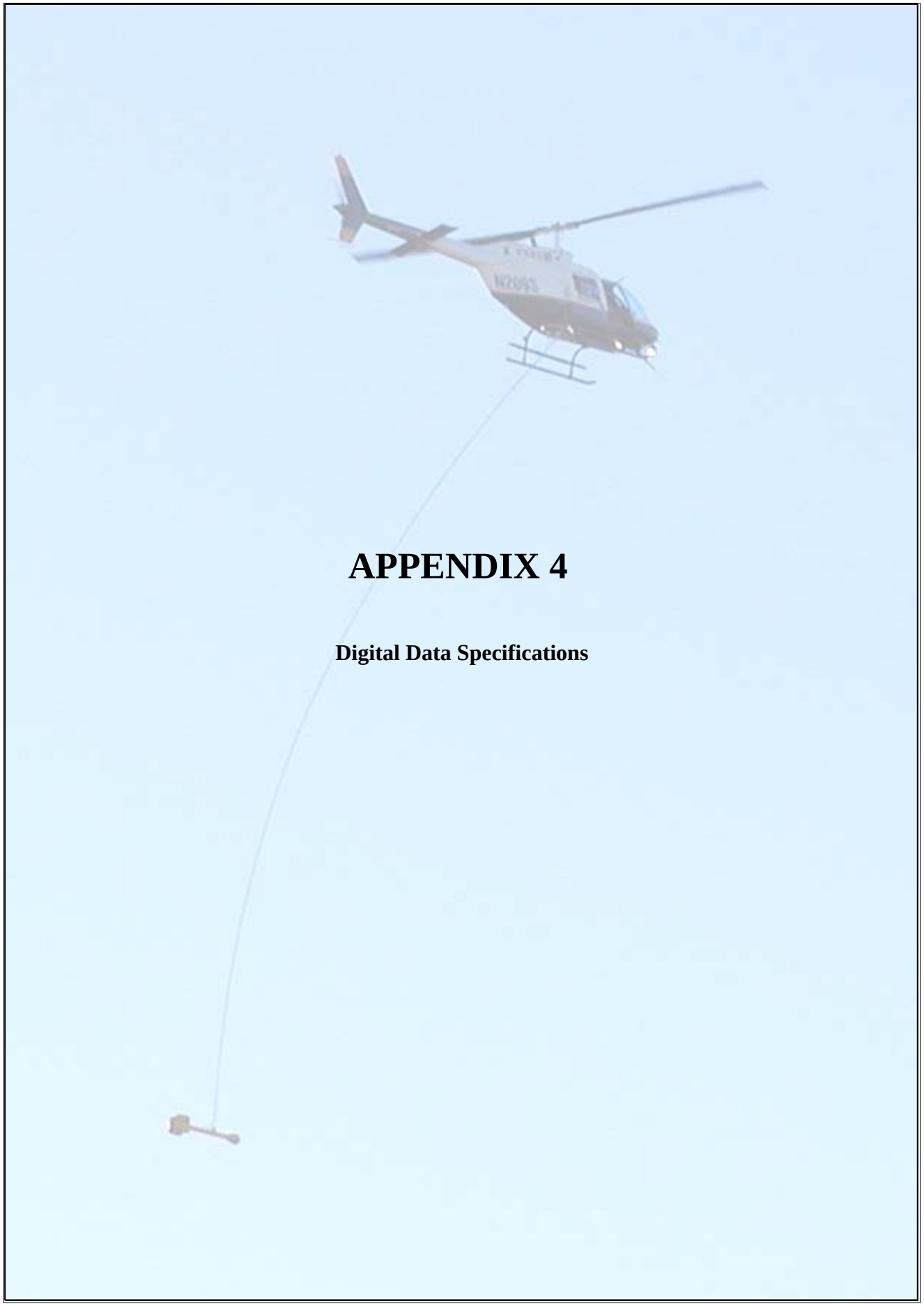
APPENDIX 3 **Personnel Resumes**

- Dr. Tomas Grand
- Ramesh Acharya
- Adam Barrett
- Asif Mirza

APPENDIX 4 **Digital Data Specifications**

APPENDIX 5 **Page Size Maps**

- Differentially Corrected GPS Flight Path
- Digital Terrain Model Calculated from survey data (DTM)
- Calculated Dose rate from Total Count
- Apparent Concentration of Uranium
- Apparent Concentration of Thorium
- Apparent Concentration of Potassium
- Uranium/Potassium Ratio Map
- Uranium/Thorium Ratio Map
- Thorium/Potassium Ratio Map
- Ternary Radio Element Map



APPENDIX 4

Digital Data Specifications

McPhar Geosurveys Ltd.

Digital File Organization

Directory Structure:

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

Report:

Report

- Signet Murphy_Final_Report.pdf

Appendices

- Appendices.pdf

Appendix 1: System Tests and Reports

- Altimeter Calibration Test
- Barometric Calibration Test
- Cosmic Attenuation Coefficient Calibration Test
- Summary of Processing Coefficients used in the reduction of Spectrometric Data
- PAD Calibration
- Sensitivity Factors
- Spectrometer Test Line Statistics
- Flight Logs
- Daily Reports

Appendix 2: Technical Information

- Pico-Envirotec GRS 410 Gamma Spectrometer
- Pico-Envirotec AGIS Data Acquisition System
- Terra TRA-3000 / TRI-30 Radar Altimeter
- Stra Model 276 Barometric Pressure Transducer
- Campbell Temperature and Relative Humidity Probe
- CSI-Wireless DGPS Max positioning system
- Geosoft Montaj Processing Software
- Geosoft Montaj Plus Praga 3 Radiometrics
- Field Data Processing Workstations

Appendix 3: McPhar Personnel Resumes

- Dr. Tomas Grand
- Ramesh Acharya
- Adam Barrett
- Asif Mirza

Appendix 4: Digital Data Specifications

Appendix 5: Page Sized Maps of Three Blocks

- Differentially Corrected GPS Flight Path
- Digital Terrain Model Calculated from survey data (DTM)
- Calculated Dose rate from Total Count
- Apparent Concentration of Uranium
- Apparent Concentration of Thorium
- Apparent Concentration of Potassium
- Uranium/Potassium Ratio Map
- Uranium/Thorium Ratio Map
- Thorium/Potassium Ratio Map
- Ternary Radio Element Map

Geosoft Grid Files for Three Blocks:

- **DTM.grd**- Digital Terrain Model Calculated from survey data (DTM)
- **TC_doserate.grd**- Calculated Dose Rate from Total Count
- **Ucon.grd**- Apparent Concentration of Uranium (eU)
- **Thcon.grd**- Apparent Concentration of Thorium (eTh)
- **Kcon.grd**- Apparent Concentration of Potassium (K %)
- **THKratio.grd –** Thorium ratio Potassium (Th/K)
- **UKratio.grd –** Uranium ratio Potassium (U/K)
- **UTHratio.grd –** Uranium ratio Thorium (U/Th)

Packed Geosoft Map Files:

Murphy Block:

- **Murf_FP.map** - Differentially Corrected GPS Flight Path
- **Murf_DTM.map** - Digital Terrain Model Calculated from survey data
- **Murf_TC.map** – Calculated Dose Rate from Total Count (TC)
- **Murf_U.map** - Apparent Concentration of Uranium (U)
- **Murf_Th.map** - Apparent Concentration of Thorium (Th)
- **Murf_K.map** - Apparent Concentration of Potassium (K)
- **Murf_ThratioK.map** - Thorium/Potassium Ratio Map (Th/K)
- **Murf_UratioK.map** - Uranium/Potassium Ratio Map (U/K)

- **Murf_UratioTh.map** - Uranium/Thorium Ratio Map (U/Th)
- **Murf_Ternary.map** – Ternary Radio Element Map

Databases:

Geosoft gdb files:

- **0613A_Murphy.gdb**

Free Viewer:

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

CLIENT: Signet Minerals Inc. Project # 0613a				PAGE 1 OF 1
DATABASE DESCRIPTION	**Databases:**	**0613A_Murphy**	**QC:**	**Adam Barrett**
			Proc:	**Ramesh Acharya**
			Rev.:	**T.Grand**

Channel	Type	Units	Description
Identifiers			
Line	RAW		line no.
Fid	RAW		fiducial
flt	RAW		flight number
date	RAW	YYYY/MM/DD	date
GPStm_sec	RAW	Secods of Day	GPS Time
positional data			
Lat_deg	RAW	degrees decimal	Latitude - NAD83 - Real Time DGPS
Lon_deg	RAW	degrees decimal	Latitude - NAD83 - Real Time DGPS
x	RAW/PROC	metre	Easting - projected to UTM zone 8 N / NAD83
y	RAW/PROC	metre	Northing - projected to UTM zone 8 N / NAD83
altitudes			
Galt_m	RAW	metre	Measured helicopter GPS Altitude - WGS84 - Real Time DGPS
Ralt_m	RAW/PROC	metre	Radar altitude of the Helicopter AGL - after calibration correction Despiked and filtered
RALTSP	PROC	metre	Radar altitude of the Helicopter AGL -corrected to standard temperature and pressure
dtm	PROC	metre	digital terrain model calculated from GPS and radar data
air condition data			
Baro_mbar	PROC	mbar	Outside Barometric Pressure
Temp_deg	PROC	degree Celsius	Outside Air Temperature
spectrometry data			
ISP1D	RAW	cps	Raw 256 channel spectra - Downward
PsvdSpec	PROC	cps	Processed 256 channel spectra - Downward - NASVD smoothed
PTcrawN	PROC	cps	Total Count (TC) extracted from NASVD smoothed spectra
PKrawN	PROC	cps	Potassium (K) extracted from NASVD smoothed spectra
PUrawN	PROC	cps	Uranium (U) extracted from NASVD smoothed spectra
PThrawN	PROC	cps	Thorium (Th) extracted from NASVD smoothed spectra
PcosrawN	PROC	cps	Cosmic gamma ray extracted from NASVD smoothed spectra
Kcon	PROC	%	Apparent concentration of Potassium (K)
Ucon	PROC	ppm	Apparent concentration of equvalent Uranium (U)
Thcon	PROC	ppm	Apparent concentration of equivalent Thorium (Th)
TC_doserate	PROC	nGy/h	Apparent dose rate calculated from Total Count (TC)
UKRATIO	PROC	10^{-4}	equivalent Uranium / Potassium ratio; U/K ratio
UTHRATIO	PROC		equvalent Uranium/ equivalent Thorium ratio ; U/Th ratio
THKRATIO	PROC	10^{-4}	equivalent Thorium / Potassium ratio ; Th/K ratio

APPENDIX 3

Personnel Resumes

- Dr. Tomas Grand
- Ramesh Acharya
- Adam Barrett
- Asif Mirza

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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)

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RÉSUMÉ

NAME: G. Ramesh Acharya

PROFESSION: Geophysicist

EDUCATION: M.Sc.(Tech) Geophysics from Center of Exploration Geophysics, Osmania University , Hyderabad , India (First class with distinction).

TRAINING:

i) Airborne geophysical data processing on Geosoft Oasis Montaj DPA platform, image processing & GIS with ERMapper, PICODAS airborne geophysical data acquisition system software, SCINTREX, Ontario, CANADA for 18 weeks (7/1998-11/1998) and a refresher training course by SCINTREX experts for 6 weeks (1/2000 – 2/2000) at Bangalore, India.

ii) Intensive course on methods of geophysical data interpretation - at GSI training institute, Hyderabad, India for 6 weeks in 1994.

iii) Training on Arc GIS by NIIT-GIS, Bangalore from 9/2004

WORK EXPERIENCE:

2005 - **Alcock, McPhar, Geotech (Pvt) Ltd., Kolkata, India (subsidiary office of McPhar), Senior Geophysicist/Data Processor - -** responsible for processing and interpretation of airborne geophysical data in the field and office; on-site quality control (QC) of acquired geophysical data; installation of ground base station geophysical instruments; operational logistics and client liaison report writing.

1989 - 2004 **Airborne Mineral Surveys & Exploration Wing, Geological Survey of India, Bangalore, India, Senior Geophysicist** - responsible for processing of airborne geophysical data in the field and at AMSE's data processing centre in Bangalore. Performed on-site quality control (QC) of acquired geophysical data; installation of ground base station geophysical instruments; operational logistics reports. Performed detailed geophysical and geological interpretation of airborne geophysical data.

PROFESSIONAL EXPERIENCE:

- 16 years of continuous experience in airborne geophysics.
- Management of all phases of numerous airborne magnetic and/or EM/magnetics/ radiometric programs in India

- Familiar with a wide variety of processing, interpretation and mapping software, including Geosoft MONTAJ, ERMapper, ArcGIS.

PUBLICATIONS:

- Structural features of Bundelkhand Granite Complex delineated by aeromagnetic expression around Jhansi, Madhya Pradesh, India by D.Ghosh and G.Ramesh Acharya. (paper accepted for publication in Journal of Geological Society of India)

- Prognostication for Kimberlite Clan Rocks in Kandakur-Raichur-Mantralayam area from airborne magnetic and radiometric maps by C.Ramachandran, G.S.R.Umasankar, Ch.V.V.S.Murty, G.Ramesh Acharya, H.Rajaram and P.Ramasastry. Geol. Surv.India spl. Publication no.75,2002.pp: 97-110

- Aeromagnetic anomaly interpretation and correlation with geological features of central India by H.M.Ramachandra, M.P.Mathew, G.Ramesh Acharya, H.C.Gouda and R.K.Singh. Geol. Surv.India spl. Publication no.64,2001.pp: 163-176

- Report on interpretation of multisensor airborne geophysical anomaly maps of block CHB-II, Chattisgarh basin and adjoining areas, M.P. & Orissa, India by A.U.S.Sarma, G.Ramesh Acharya. Unpublished GSI report, Dec 1999, F.S.1998-99.sl.no. 19

LANGUAGES:

English, Hindi

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

RESUMÉ

NAME: Adam Barrett

PROFESSION: Technician/Operator

EDUCATION: Conestoga College of Technology, Computer Science 1989 - 1992
University of Western Ontario, Geophysics

WORK EXPERIENCE:

2005 - **McPhar Geosurveys Ltd., Operator/Geophysical Technician**

- Maintaining and operating airborne geophysical systems in the field
- In-field Quality Control and preliminary data processing
- GEOSOFT and in-house software applications used for data analysis and presentation (gridding, leveling, contour/TMI maps)
- experienced in operating fixed-wing magnetometer and multi-sensor systems.

2003 – 2005 **Waste Management, Houston, Texas, USA – Logistics Analyst**

- Routing and logistics analyst for major North American reroute
- Collaborated on an initiative to provide monthly cost savings to Southwest Ontario market
- Utilize proprietary web based GIS routing application for statistical data analysis
- GPS data tracking/cleansing (hardware/software), driver evaluations, vehicle inventory
- Scheduling changes/container upgrades, benchmark analysis (KPI's)
- Work with region/district/city officials to implement new routing strategy
- Lead Commercial/Residential routing education/training classes

2002 – 2003 **Franklin County, Pasco, Washington, USA – Logistics Analyst**

- County map maintenance for 911 Computer Aided Dispatch system
- Create and maintain database information for street centerlines, Census Bureau records and data sets related to E911 operation such as deployment plans, equipment lists and unit information (Master Street Address Guide)
- Provide instruction and documentation for dispatchers in the E911 situation room on modifications and upgrades
- Utilize Intergraph's I/CAD software suite as well as GEOMEDIA to enhance information interchange with GIS department i.e. anomalies in accordance with county address policies
- Experience with RDBMS (Oracle, ACCESS), schema organizations across NT platform
- Map verification/graphic linkages confirmed with both MICROSTATION and Intergraph's integrated CADTOOLS software
- Diagnostic troubleshooting of GPS systems on board county owned Police and Emergency response vehicles

1999 – 2002 **Schlumberger, Calgary, Alberta - Geophysical Technician**

- Implementation of VTS (Vehicle Tracking System) for seismic crews working in the Arctic
- Documenting and maintaining equipment distribution databases for over 100 vehicles
- Configuration of RACAL GPS receivers and associated components receiving Real-time differential corrections across a VHF network
- Field Support/Installation/Troubleshooting ALL components
- Configure interface of seismic Vibrators with 'corrected' GPS data for Center of Gravity analysis
- Custom developed software installation for use on Windows NT operating systems as well as for mounted Palm Pilots and portable laptops
- Map verification and GPS data integration using MAPINFO, AutoCAD including importing/exporting files, JPEG/TIF layer editing and database management
- Geo-referencing, spatial analysis for delivery of final hard-copy reporting, maps and graphs to be referenced within seismic vehicles
- Working principally autonomously within measured cost/time constraints in remote locations
- Initiated field staff procedure/operational training through user guides and classroom participation; familiar with Datum translations, map projections, coordinate systems

1997 - 1999 **Spectra Exploration, Calgary, Alberta – Technician/Operator/Dataman-**

- Field project coordinator for Airborne Surveys throughout Canada and U.S.
- Installation/calibration/operation of aircraft Magnetometers and Spectrometers for data acquisition system
- Working with various map coordinate systems and datum translations for integration with operating software (pre/post flight planning/recovery using topographic and photo mosaic maps)
- GEOSOFT and in-house software applications used for data analysis and presentation (gridding, leveling, contour/TMI maps)
- Euler Deconvolution for anomaly depth/location analysis
- Experience with GPS navigational software/hardware including Novatel and Ashtech receivers (including real-time differential)
- Board level repairs and maintenance
- Development of in-house training procedures and related documentation

1995 – 1997 **Scintrex Ltd, Toronto, Ontario - – Technician/Operator/Dataman-**

- Participation in Airborne Surveys throughout Canada, U.S, South America and Mexico
- Experience as listed in aforementioned job description including unique involvement in Pipeline Detection Surveys
- In-field processing using GEOSOFT and related PICODAS software.

1993 – 1995 **Tech-Know, Toronto, Ontario**

- Provider of hardware/software solutions for personnel and business applications
- System setup and configuration in both a single and multi-user environment
- Network installations (LAN,WAN) and development of custom written RDMS
- Experience on DOS, Windows and UNIX operating systems and various industry applications including FOXPRO, AutoCAD and Visual Basic

LANGUAGES: English, some Spanish

McPhar Geosurveys Ltd.
1256B Kerrisdale Blvd., Newmarket
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E-Mail: info@mgssurveys.com
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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 2

Equipment Documentation

- Pico-Envirotec GRS 410 Gamma Spectrometer
- Pico-Envirotec AGIS Data Acquisition System
- Terra TRA-3000 / TRI-30 Radar Altimeter
- Setra Model 276 Barometric Pressure Transducer
- Campbell Temperature and Relative Humidity Probe
- CSI-Wireless DGPS Max positioning system
- Geosoft Montaj Processing Software
- Geosoft Montaj Plus Praga 3 Radiometrics
- Field Data Processing Workstations

GRS410 Intelligent Gamma Spectrometer

The GRS410 Gamma spectrometer is an advanced Spectrometer utilizing the NaI(Tl) detectors with the newest technology. It is hardware-software designed system, exhibiting simplicity, easy interfacing and substantial versatility. It is based on the experience with the individual detector signal processing reducing potential hazards (or complex circuitry) of "zero base shift" and practically eliminating the "dead time". It is achieved through a special design feature almost completely eliminating the decaying part of each detected and eliminating any internal DC coupling and completely digital peak detector unit.
New - natural peak detection algorithm provides safe and fast system stabilization without temperature stabilization of the detector housing and without implanted radioactive sources in the detector housing. No implanted sources (usually Cs137) for stabilization means no spectra pollution on low energies and therefore better sensitivity of the system for low energies - mostly for man-made sources.
When calibrated (with Th source about once a year) linearity of the each detector is measured and linearity correction coefficients are calculated. When operating in real time, collecting data, the linearity of each detector is mathematically corrected for each measurement.
Individual detector tracking (tuning) and linearity correction provides better fit of the individual spectra that are being summed and therefore sharper (better resolution) spectrum is obtained.
Optionally the GRS410 system can be controlled by the altitude of the aircraft and calculate absolute values of contamination by individual radionuclei related to the ground and provide the dose rate related to 1meter above the ground.
Interfacing via single RS232 communication channel makes the system very flexible.

Technical parameters:

Spectra resolution:	256/512 channels Individual spectra recording in 256 or 512 channels
Data sampling:	1sec and longer, 0.5sec optional
Energy spectra:	50keV to 3MeV with threshold adjustable from 50keV 300keV. All energies above 3MeV are detected as Cosmic Rays.
Anticoincidence:	For improvement peak-valley ratio on lower energies, Coincidental pulses detected among neighboring

© Pico Envirotec Inc.

	detectors are removed and placed in a special channel.
Spectra tracking:	Individual detectors. with recorded status of tuning
Time to stabilization:	Automatic on natural radionuclei. Usually less than 30 sec on the ground and less than 2minutes in the air at 100 m altitude. In case of a system failure old tracking because of low counts, parameters (not more than 15 minutes) are used till new tracking is re-established.
Spectra linearization:	Automatic after system calibration. Calibration is required once a year or when a detector or electronics are replaced.
Windows (ROIs):	Additionally to the full spectra up to 22 special windows can be collected (4 are IAEA standard windows, 8 are optional activities altitude related).
Detector Box:	For logical distribution of detectors one detector box may contain up to six individual detectors served by one concentrator. Physically the detectors may be packaged differently.
Recommended Detectors:	4x4x16inch NaI(Tl);
Max. number of detectors	
With one Concentrator:	Ten (10)
With a Superconcentrator:	Four (4) Concentrators or Forty(40) detectors. Any of the detectors may used as down or up looking.
Signal sampling:	20 MHz by an internal 12bit A to D for each detector.
Peak detector:	Digital - time resolution 50nsec.
Dead time:	Negligible for up to 60000 pulses/sec/detector
Pulse rate per detector:	> 60000 pulses per second with negligible dead time.
Channel capacity:	65500 counts/sampling period.
Communication:	Serial among all units (Detector,Concentrator, Superconcentrator and Host).
Test programs:	Supplied with hardware
Interfacing:	Supplied with the hardware
Operating temperature:	-10 to 55 deg. C.

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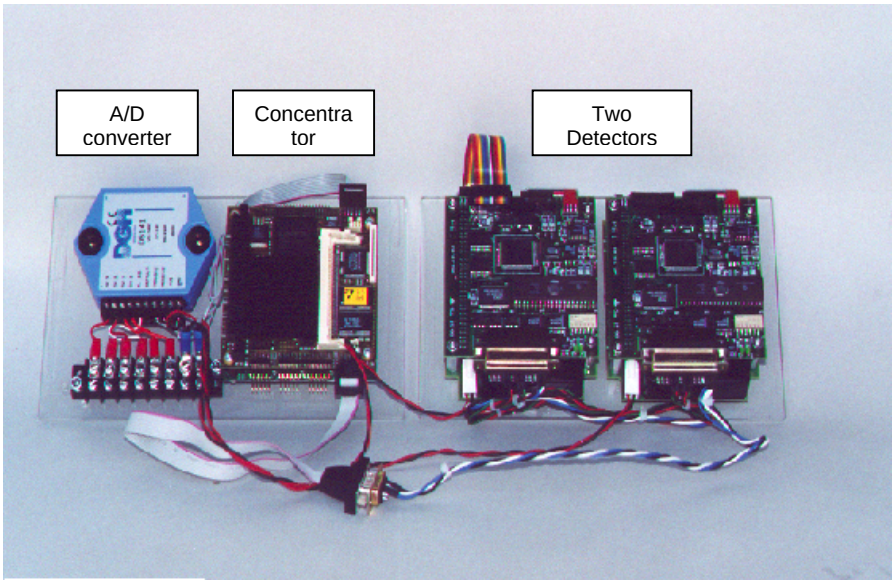
Two-detector GRS4 Gamma Spectrometer with IRIS (Integrated Radiation Information System).



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PICO ENVIROTEC INC.

AGIS
AIRBORNE GEOPHYSICAL INFORMATION SYSTEM

Real Time Data Acquisition, Navigation and man machine communication tasks are integrated into a single unit that can be easily installed in a wide variety of mobile platforms without need for a permanent installation in the carrying vehicle.

AGIS is designed to operate using Pico Envirotec "intelligent sensors". Special processors dedicated to each sensor handle tasks required by individual sensors with the main CPU concentrates on "housekeeping" chores such as data recording, navigation, pilot display information, and data presentation for the system operator.

The use of common processors for different sensor modules reduces maintenance and spares requirements.

Software standardization and modularity shortens and simplifies the learning curve of service personnel

Interfacing of individual sensors is accomplished via standard RS-232 serial communication channels

AGIS Main Features

- **High brightness color display** displaying navigation and acquired data in a variety of user configurations
- **Available Touch Screen** eliminates frustration of keyboard entries under stressful or turbulent sea states
- **User friendly Man-machine interface**
- AGIS design increases reliability and reduces complexity. Mean time between failures is increased and mean repair time is decreased. This has a direct positive impact on the cost of data acquisition and system readiness
- Modularity of the system lends itself to be used universally either as a complete system, or as a unique instrument
- AGIS data format is easily converted into Geosoft –Oasis or ASCII formats by a supplied conversion program (PEI View)
- Easy connection to "Intelligent Sensors" via standard serial communication link

System Consists of:

NAVIGATION
- Aircraft guidance
- Operator information
- Data synchronization to GPS position
- Pilot Guidance Unit (PGU)
- UTM, UPS, Lambert, and ADRG support

DATA ACQUISITION
- High Capacity Data storage
- Data integrity verification Special data algorithms

DATA INPUTS / OUTPUTS
- Navigation data to other instruments
- Sun readable color operators display
- Touch screen and / or keyboard
- Standard serial data protocols
- Multiple asynchronous communication links

Optional outputs
- Video overlay information
- Digital video flight path recording system

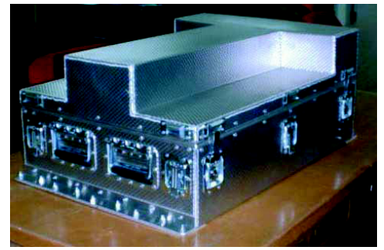
Specifications, *Continued*

Intelligent sensors
- Pico Envirotec Intelligent Gamma Spectrometer with optional recalculation to absolute units
- Pico Envirotec magnetometer processor with optional compensation
- Pico Envirotec intelligent multi-channel analog processor
- Other supported instruments
  - Exploranium Gamma Spectrometer
  - RMS magnetometer and compensation
  - Special interfaces to user developed instruments

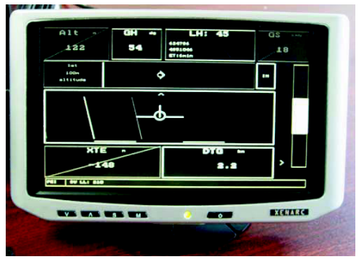
Software
- A complete survey program consisting of navigation, pilot guidance and data acquisition for all supported sensors
- A map conversion program allowing calibration and display of any scanned map or picture
- A data replay / verification program allowing for instant selected data replay after data collection termination
- A conversion program allowing data export to ASCII or Geosoft GBN files
- Support software for intelligent sensors for calibration, testing, firmware upgrades

Main Features:
- PC compatible embedded processor
- VGA TFT daylight readable LCD touch screen display 640 x 480 pixels (supports 1024 x 768)
- Color pilot Guidance Display (PGU)
- High capacity storage on compact flash cards
- +/- 10 volt 16 bit analog inputs
- PCMCIA III port
- Multiple RS-232 serial communication ports
- Operating temperature -10 to +55 C
- Operating Altitude range to 3000 meter (exclusive of radar altimeter)
- Power 10 to 30 VDC at 60 watts typical

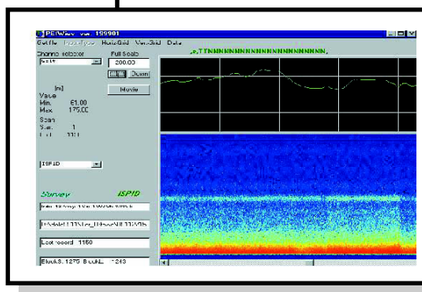
PEi Crystal Detector Array



Pilot Navigation Display (PGU)



PEIView Data QC Tool



PICO ENVIROTEC INC.

Pico Envirotec Inc., 222 Snidercroft Rd.,
Concord, Ontario, Canada L4K 2K1

Tel: (905) 760-9512
Fax: (905) 760-9513
Email: picoenv@bellnet.ca
www.picoenvirotec.com

Dealer Info:

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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

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

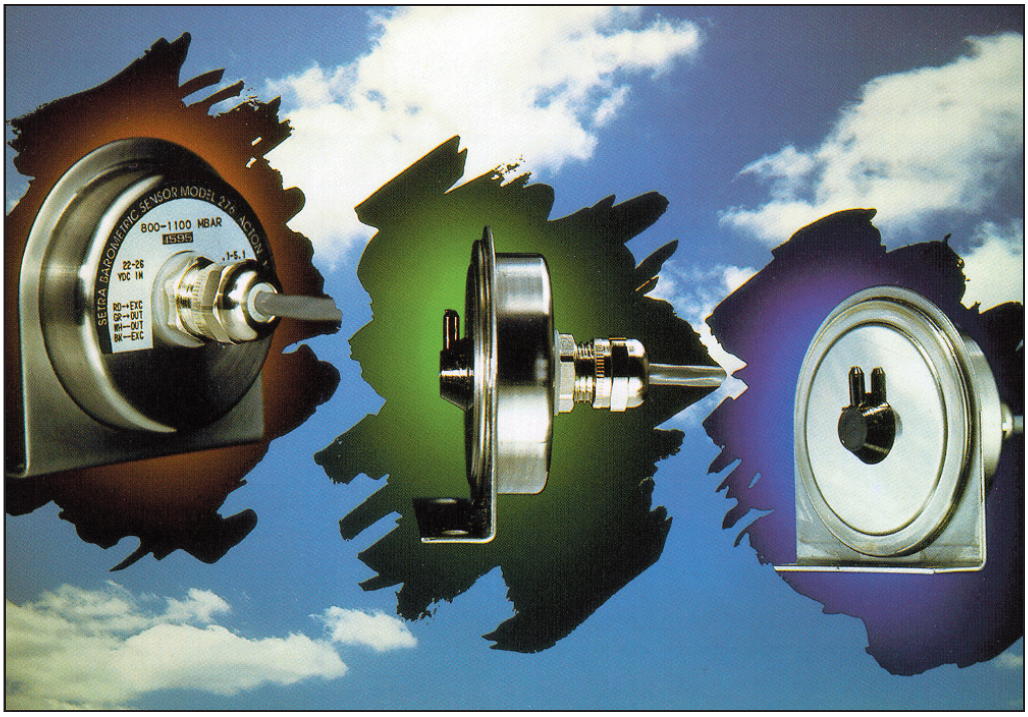
Type:	Single antenna, FMCW
Altitude Range:	40 to 2,500 ft
System Accuracy:	
• 40 to 100 ft	+/- 5 ft
• 100 to 500 ft	+/- 5%
• 500 to 2,500 ft	+/- 7%
Frequency Range:	100 MHz sweep within 4,200 to 4,400 GHz range
Input Voltage:	Approx. 20 VDC from indicator
Input Current:	600 ma
Altitude Output:	Digital
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.

Model 276
Low Cost Barometric Pressure Transducer

Featuring the SETRACERAM™ Sensor
Barometric Pressure: 600-1100, 800-1100 hPa/mb
Absolute Pressure: 0-20 psia



Setra Systems has been a technology leader in Environmental Pressure Measurement for over three decades. The Model 276 is an extremely accurate and stable transducer based on the proven Setraceram™ sensing element. The glass fused ceramic capacitive sensing capsule is the heart of Setra's environmental pressure transducers because of its inherent thermal stability, low hysteresis and fundamentally simple design.

Another major feature of the 276 is Setra's custom Application Specific Integrated Circuit (ASIC). The ASIC works hand-in-hand with the Setraceram™ sensor to achieve long-term stability and high accuracy, unmatched by other manufacturers - even at a much higher cost. The ASIC circuit allows the 276 to operate with an excitation as low as 5 VDC for remote battery or solar powered applications.

The 276 is designed specifically to give maximum flexibility to system integrators and OEM's. The standard unit has a convenient mounting bracket and simple 1/8" tube fitting for quick installations. Its low cost, small size and available options make it application configurable.

If your OEM environmental application requires low cost, combined with superior performance, specify Setra's Model 276 and apply the savings to the bottom line.

Type of Pressure	Pressure Range	Maximum Pressure
Barometric	600-1100 mb 800-1100 mb	20 PSIA 20 PSIA
Absolute	0-20 PSIA	30 PSIA

NOTE: Setra quality standards are based on ANSI-Z540-1.
The calibration of this product is NIST traceable.

U.S. Patent Nos. 4168518; 4054833

Applications

- Environmental Monitoring Systems
- Weather Measurement Systems
- Weather and Environmental Data Logging
- Barometric Pressure Compensation for Internal Combustion Engine Performance
- Cleanroom Barometric Pressure Compensation
- Automotive Emissions Test Equipment

Features

- Proven SETRACERAM™ Sensor
- 0.25% FS Accuracy
- Environmentally Rugged
- <±0.25% FS, 6 Month Stability
- Compact Size (2" dia. x 1")
- Excellent Long-Term Stability
- Low Power Consumption (for Solar or Battery Power)
- Fast Response
- Meets CE Conformance Standards

When it comes to a product to rely on - choose the Model 276. When it comes to a company to trust - choose Setra.

ISO 9001: 2000 Certified

Visit Setra Online:
http://www.setra.com

setra

800-257-3872

159 Swanson Rd., Boxborough, MA 01719/Telephone: 978-263-1400/Fax: 978-264-0292

Model 276 Specifications

Performance Data

Accuracy RSS* (at constant temp)	±0.25% FS**
Thermal Effects***	
Compensated Range °F(°C)	+30 to +130 (0 to +55)
Zero Shift (Over Compensated Range)	1% FS
Span Shift (Over Compensated Range)	1% FS
Resolution	Infinite, limited only by output noise level (0.0005% FS)
Time Constant	10 milliseconds to reach 90% final output with step function pressure input.
Long Term Stability	0.25% FS/6 months

*RSS of Non-Linearity, Hysteresis and Non-Repeatability.

**FS = 300mb for 800-1100mb range; 500 for 600-1100mb range; and 20 PSI for 0 to 20 PSIA.

***Units calibrated at nominal 70°F. Maximum thermal error computed from this datum.

Environmental Data

Temperature	
Operating* °F (°C)	0 to +175 (-18 to +79)
Storage °F (°C)	-65 to +250 (-55 to +121)
Vibration	2g from 5 Hz to 500 Hz
Shock	50g (Operating, 1/2 sine 10 ms)
Acceleration	10g

*Operating temperature limits of the electronics only. Pressure media temperatures may be considerably higher or lower.

Physical Description

Case	Stainless Steel
Electrical Connection	2ft. Multiconductor Cable
Pressure Fitting	1/8" Tube Fitting

Electrical Data (Voltage)

Circuit	3-Wire* (Exc, Out, Com)
Specify One:	
Excitation	Output
12 VDC (9.0 to 14.5)	0.1 to 5.1 VDC**
24 VDC (21.6 to 26.0)	0.1 to 5.1 VDC**
5 VDC (4.9 to 7.1)	0.5 to 4.5 VDC**
Power Consumption	0.2 Watts (24 VDC)
Output Impedance	5 ohms
Output Noise	<200 microvolts RMS (0 to 100 Hz)

*There are separate leads for +Exc, -Exc, +Out, -Out. The -Exc and -Out are commoned internally. The shield is connected to the case. For best performance, either the -Exc or -Out should be connected to the case. Unit is calibrated at the factory with the -Exc connected to the case. The insulation resistance between all signal leads tied together and case ground is 100 megohms minimum at 25 VDC.

**Zero and Full Scale Outputs are factory set to within ±0.25% Full Scale.

Pressure Media

Non-condensing air or gas compatible with stainless steel, alumina ceramics, gold and elastomer.

Available Options

Performance Options

Option #715	0.1% FS (RSS) Accuracy

Mechanical Options

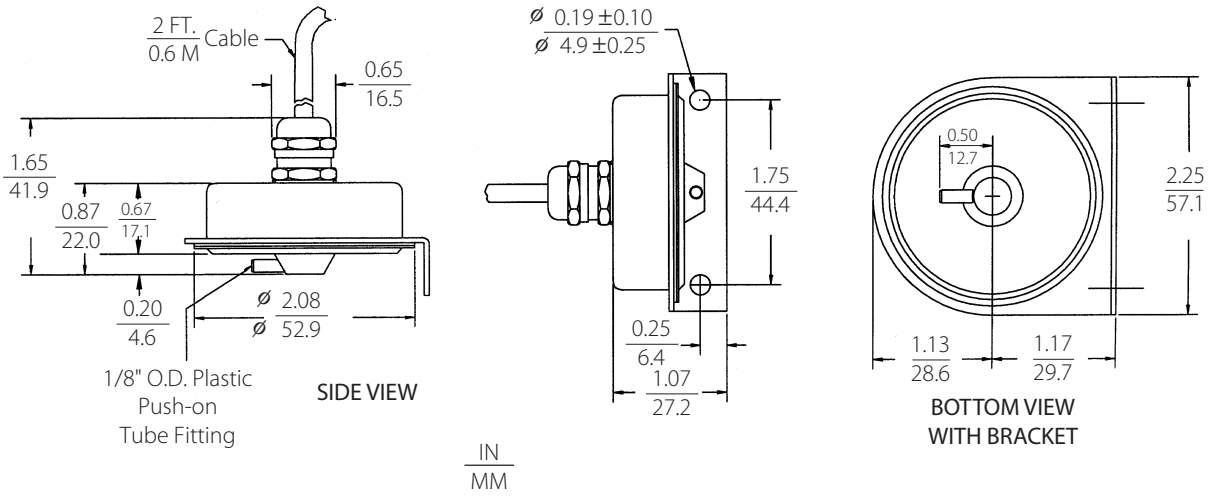
Option #803-825	Up to 25 ft. of cable can be supplied. Specify cable length when ordering (i.e., 805 for 5 ft. cable). Consult factory for cable lengths longer than 25 ft.
Option #839	1/8" NPT Pressure Connection

Calibration Certificate Option

Option #901	11-point Calibration Certificate

Specifications subject to change without notice.

Outline Drawings



SSP276 RevC 07/14/04

ORDERING INFORMATION

Example: Order as a Model 276, specify Pressure Range, Excitation, Electrical Output and Options.

While we provide application assistance on all Setra products, both personally and through our literature, it is the customer's responsibility to determine the suitability of the product in the application.

159 Swanson Road, Boxborough, MA 01719/Tel: 978-263-1400;
Toll Free: 800-257-3872; Fax: 978-264-0292; email: sales@setra.com

Temperature and Relative Humidity Probe
Model CS500

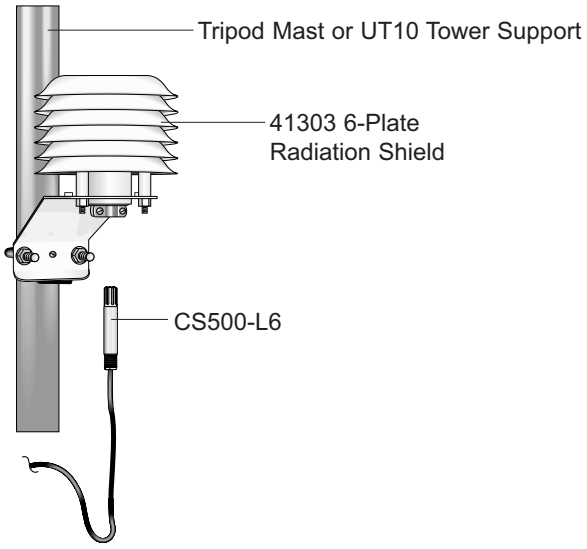
The CS500 is a modified version of Vaisala's 50Y Humitter. The CS500 measures air temperature with a 1000 ohm platinum resistance thermometer (PRT); RH is measured by a laser-trimmed INTERCAP capacitive chip. The chip is field-replaceable, as needed, and eliminates the downtime typically required for the recalibration process.

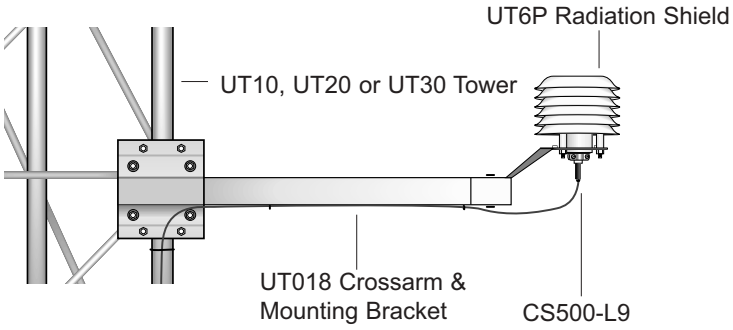
Sensor Mounts

When exposed to sunlight, the CS500 must be housed in a radiation shield. If the CS500 is mounted to a CM6/CM10 tripod or a UT10 tower, a model 41303 6-plate radiation shield is used. If the CS500 is mounted on a UT20 or UT30 tower, a UT018 Crossarm and Mounting Bracket and a UT6P 6-plate radiation shield are used.

Ordering Information

CS500-L6	6 ft lead length for use with CM6/CM10 tripods or a UT10 tower.
CS500-L9	9 ft lead length for use with a UT10, UT20 or UT30 tower and a UT018
L9598	Replacement chip for the CS500.
UT018	Crossarm and Mounting Bracket; required for mounting the CS500 to a UT20 or UT30 tower





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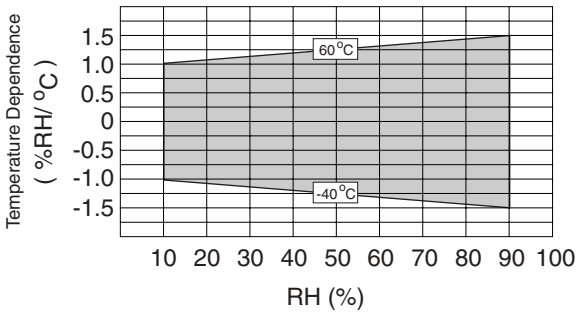
Specifications

Relative Humidity

Operating Range: 0 to 100% RH

Accuracy: 0-10% range: unspecified
10-90% range: ±3.0%
90-100% range: ±6.0%

Temperature Dependence of Relative Humidity Measurement:

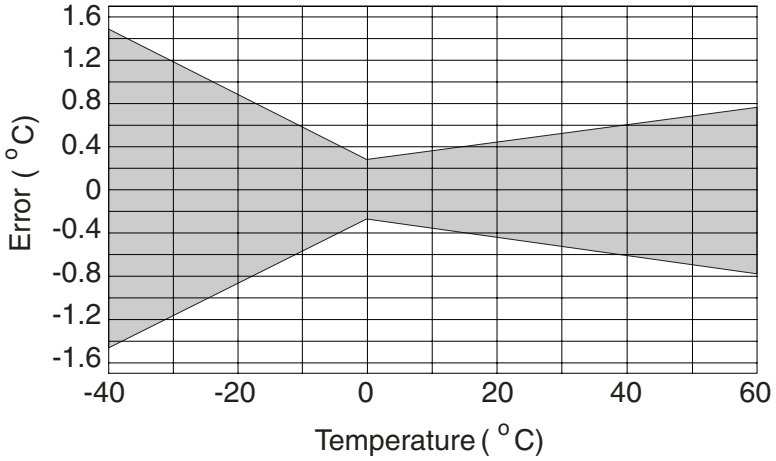


Typical Long-Term Stability: Better than ±1% RH per year

Temperature

Measurement Range: -40° to +60°C

Temperature Accuracy:



General

Supply Voltage: 7-28 Vdc (typically powered by datalogger's 12 V supply)

Current Consumption: < 2 mA typical

Diameter: 0.47" (12 mm)

Length: 2.66" (67.5 mm)

Housing Material: ABS plastic

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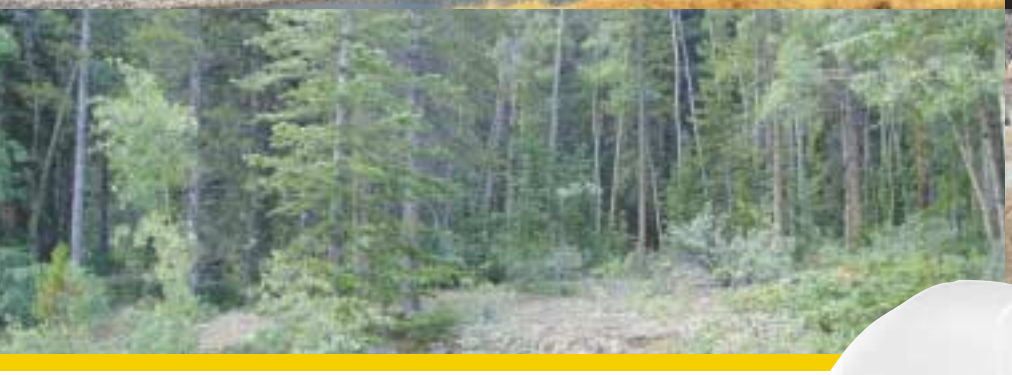
DGPS MAX

Feature-packed sub-meter GPS positioning



DGPS MAX

- Receives GPS, SBAS, OmniSTAR, and beacon signals
- Automatic dual channel SBAS tracking for more reliable reception
- Sub-meter positioning at rates of up to 5 Hz
- Raw measurement data for post-processing applications
- COAST™ technology allows use of corrections for up to 40 minutes without significant performance loss
- Easy configuration using the Setup Wizard
- User-defined profiles save receiver configurations for later use

ESRI Technology
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csi wireless™
www.csi-wireless.com

DGPS MAX

Feature-packed sub-meter GPS positioning

GPS Sensor Specifications

Receiver Type:	L1, C/A code, with carrier phase smoothing
Channels:	12-channel, parallel tracking (10-channel when tracking WAAS)
WAAS Tracking:	2-channel, parallel tracking
Update Rate:	1 Hz default, 5 Hz max
Horizontal Accuracy:	<1 m 95% confidence (DGPS*) <5 m 95% confidence** (autonomous, no SA)
Cold Start:	1 min typical
Antenna Input Impedance:	50 Ω

L-band Sensor Specifications

Frequency Range:	1525 to 1559 MHz
Sensitivity:	-120 dBm for $<10^{-3}$ BER
Tuning Mode:	Manual or automatic
Adjacent Channel Rejection:	50 kHz spacing >25 dB, 1 MHz spacing >60 dB

Beacon Sensor Specifications

Channels:	2-channel, parallel tracking
Frequency Range:	283.5 to 325 kHz
Channel Spacing:	500 Hz
MSK Bit Rates:	50, 100, and 200 bps
Operating Modes:	Manual, automatic, semi-automatic
Cold Start Time:	< 1 minute typical
Reacquisition Time:	< 2 seconds typical
Demodulation:	Minimum shift keying (MSK)
Sensitivity:	2.5 µV/m for 6 dB SNR @ 200 bps
Dynamic Range:	100 dB
Frequency Offset:	± 8 Hz (~ 27 ppm)
Adjacent Channel Rejection:	61 dB ± 1 dB @ f_o ± 400 Hz

Communications

Serial ports:	1 full duplex, 1 RTCM input
Interface Level:	RS-232C
Baud Rates:	4800, 9600, 19200
CAN Bus:	CAN 2.0B
Correction Input / Output Protocol:	RTCM SC-104
Data Input / Output Protocol:	NMEA 0183
Raw Measurement Data:	Proprietary binary (RINEX utility available)
Timing Output:	1 PPS (HCMOS, active high, rising edge sync, 10 kΩ, 10 pF load)
Event Marker Input:	HCMOS, active low, falling edge sync,10 kΩ, 10 pF load

Environmental

Operating Temperature:	-32°C to +74°C
Storage Temperature:	-40°C to +85°C
Humidity:	95% non-condensing
EMC:	FCC Part 15, Subpart B, Class B CISPR 22

Power

Input Voltage Range:	9.2 to 48 VDC
Reverse Polarity Protection:	Yes
Power Consumption:	< 4.8 W
Current Consumption:	< 400 mA @ 12 VDC
Load Dump Protection:	Up to 86 VDC
Antenna Voltage Output:	5 VDC
Antenna Short Circuit Protection:	Yes

Mechanical

Enclosure:	Powder-coated aluminum
Dimensions:	203 mm L x 125 mm W x 51 mm H (8.0" L x 4.9" W x 2.0" H)
Weight:	0.80 kg (1.76 lb)
Display:	2-line x 16-character LCD
Keypad:	3-button
Power Switch:	Push-button
Power Connector:	2-pin miniature
Data Connector:	DB9-socket
Antenna Connector:	TNC-socket

Pin-out

Main Port

Pin 2	Transmit data (TXD)
Pin 3	Receive data (RXD)
Pin 5	Signal ground

RTCM Input Port

Pin 2	Transmit data (TXD)
Pin 3	Receive data (RXD)
Pin 5	Signal ground
Pin 6	Event marker input
Pin 9	1 PPS

CDA-3 Antenna

GPS Freq. Range:	L1 (1575 MHz ± 20 MHz)
GPS LNA Gain:	27 dB
L-band Freq. Range:	1525 to 1585 MHz
L-band LNA Gain:	28 dB
Beacon Freq. Range:	283.5 to 325 kHz
Beacon LNA Gain:	34 dB
Dimensions:	141 mm dia x 127 mm H (5.57" dia 5.00" H)
Weight:	0.478 kg (1.1 lb)
Antenna Connector:	TNC-socket
Enclosure:	polycarbonate
Mounting Thread:	1-14-UNS-2B
Input Voltage:	5.0 to 15.0 VDC
Input Current:	50 to 60 mA
Operating Temp.:	-40°C to +85°C
Storage Temp.:	-40°C to +85°C
Relative Humidity:	100% condensing

* SVs > 5, HDOP < 2, RTCM SC-104 correction data from a dual frequency reference station, short baseline, and low multipath environment.

** Dependent upon ionospheric activity and multipath

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Warranty: Each CSI Wireless product is covered by a limited one-year warranty on parts and labor.

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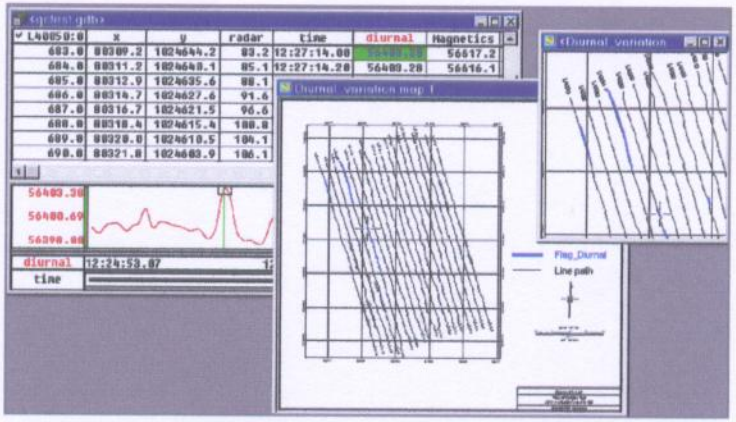
Airborne Quality Control Toolkit

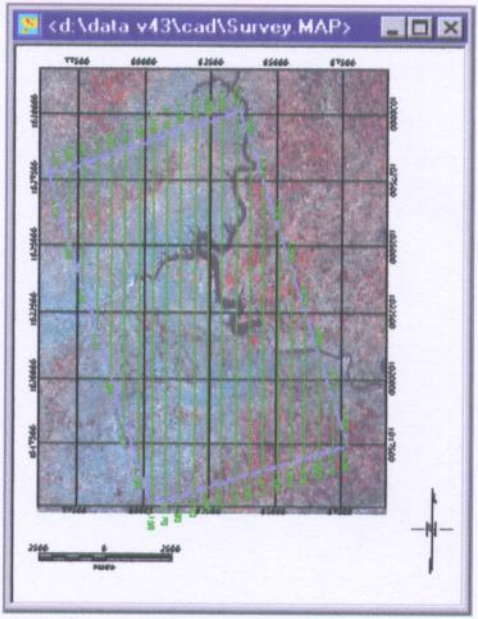
product description

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

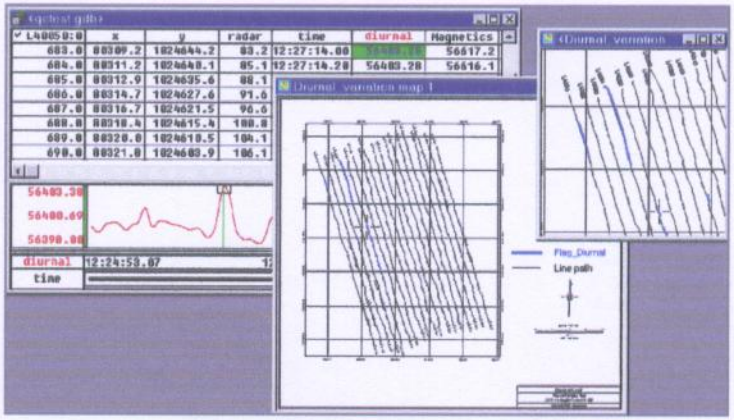
Warping is the process of re-projecting or moving data coordinates numerically, instead of using standard analytical methods for projecting to UTM, longitude/latitude and other coordinate systems. **Oasis montaj** warping defines a polygonal outline (either in a file or interactively) by defining a maximum 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

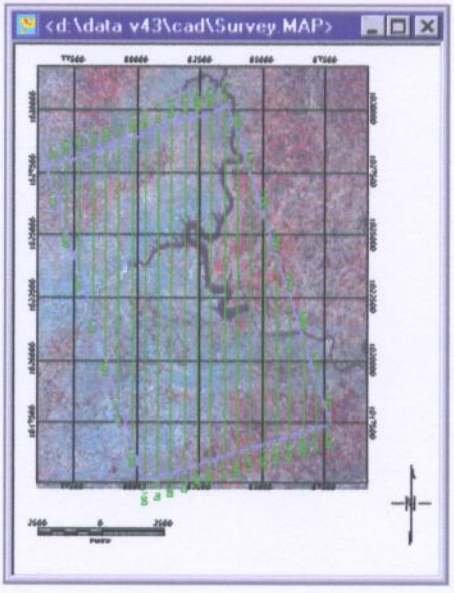
product description



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.

— continued on next page

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.

— continued on next page

Airborne Geophysics capabilities

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

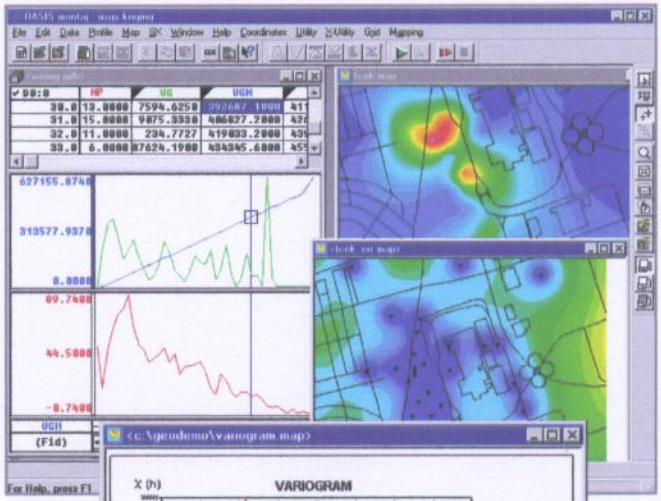
product description

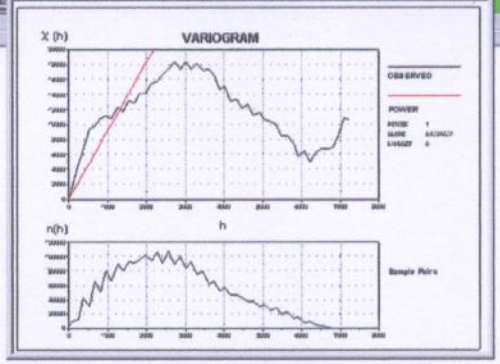
Geosoft's **Advanced Gridding Toolkit** expands your **Oasis montaj**™ core system to enable advanced gridding capabilities, including four proven gridding routines and basic grid analysis methods.

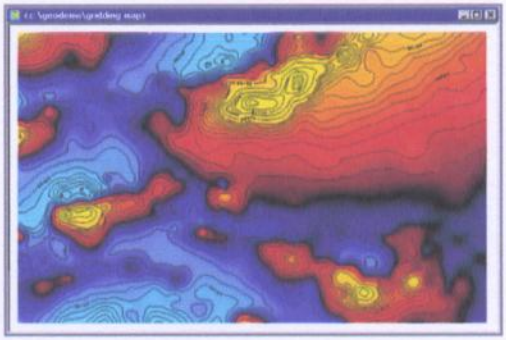
The **Advanced Gridding Toolkit** enables you to interpolate data and produce a grid using any of Geosoft's four gridding routines; Minimum Curvature (Random) Gridding, Line (Bi-Directional) Gridding, TIN Gridding using the Natural Neigbours method, and Kriging. Basic grid utilities provide processing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

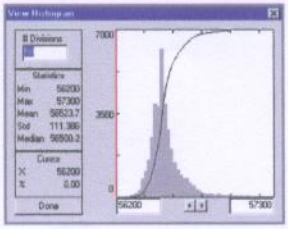
- Grid outline
- Grid windowing
- Point grid value
- Apply shading to create a shaded relief grid
- Display and update standard grid statistics

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-

GEOSOFT

PICO ENVIROTEC INC.

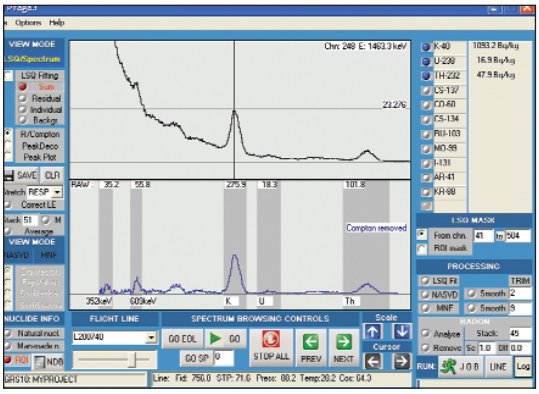
SPECTRONICA

montaj plus Praga3 Radiometrics

Feature Sheet

Praga3 Radiometrics provides an advanced solution for the mapping and processing of airborne and ground gamma-ray spectrometry data acquired by modern spectrometers using NaI(Tl) detectors.

This feature-rich, GUI-oriented software was specifically developed to perform whole spectrum gamma-ray data processing. The use of whole-spectrum information is consistent with the latest developments in the theory and instrumentation of gamma-ray spectrometry. The full-spectrum technique includes a complete system of spectrum background removal. Aircraft, cosmic and radon background components can be separately adjusted by the user with the control of experimental calibration constants.



The integration of Praga3 within Oasis montaj provides geoscientists with a complete solution, and a seamless workflow for principle component analysis and advanced full-spectrum processing.

Use of Praga3 Radiometrics

Praga3 Radiometrics is suited for high quality mineral or soil mapping applications as well as for environmental studies where monitoring of man-made radiation is required.

As Praga3 is a full-spectrum processing system, it is especially well-suited for the processing of man-made (artificial) radiation data. It uses a weighted least-squares fitting algorithm to find the contributions of individual radionuclides to the input spectra. The algorithm uses model detector responses derived by the Monte Carlo photon transport simulation code.

Key Functionality

- Spectrum browser with tools for peak identification
- Window (ROI) based processing following IAEA standards
- Advanced full-spectrum processing using least-squares fitting technique
- Principal component (NASVD or MNF) analysis and spectrum processing
- Advanced support for radon removal including extended spectral-ratio and full-spectrum techniques

Spectrum Browser

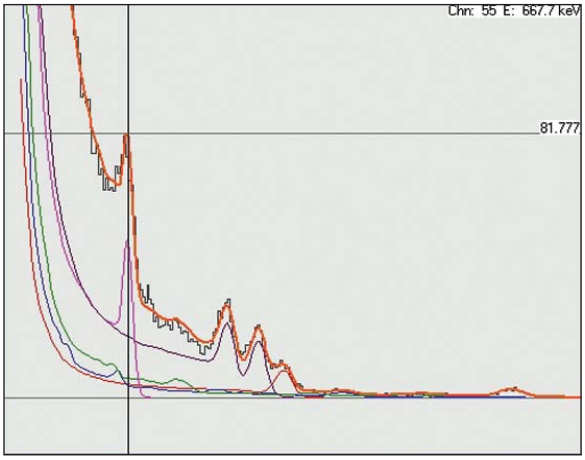
Visual control over various spectrum operations is an important feature of Praga3 Radiometrics. Using the spectrum browser, the user can view spectra, advance one spectrum at a time or to go quickly through a range of spectra. Spectra can be stacked or averaged to reduce statistical noise. Peak identification tools include Compton continuum removal, identification of individual peak positions and scatter-plot of peak positions for the selected range of spectra. Residual spectra can be displayed to assess the quality of input spectra approximation by model responses or by principal components.

Window based processing

Praga3 Radiometrics provides window based processing functionality for: background removal, stripping, live-time, altitude and sensitivity corrections. The user is required to enter correct experimental calibration constants for the actual project using a dedicated program dialog. Processing methodology adheres to industry standards recommended by the IAEA .

Advanced full-spectrum processing

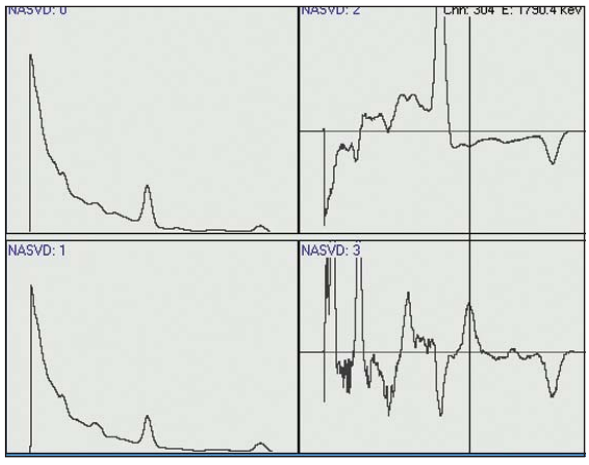
The software's full-spectrum processing was specifically designed for the processing of man-made (artificial) radiation data. It uses weighted least-squares fitting algorithm to find contributions of individual radionuclides into input spectra. The Praga3 technique uses model detector responses derived by the Monte Carlo photon transport simulation code.



New model responses allow for the contribution of the secondary radiation and for the peak resolution to fit characteristics of the real spectrometer system. Using these detector responses, **Praga3** is able to process spectrum information from 0.2 to 3.0 MeV. Background removal for aircraft, cosmic and radon background components can be separately adjusted by the user with the control of experimental calibration constants.

Principal component (NASVD and MNF) analysis

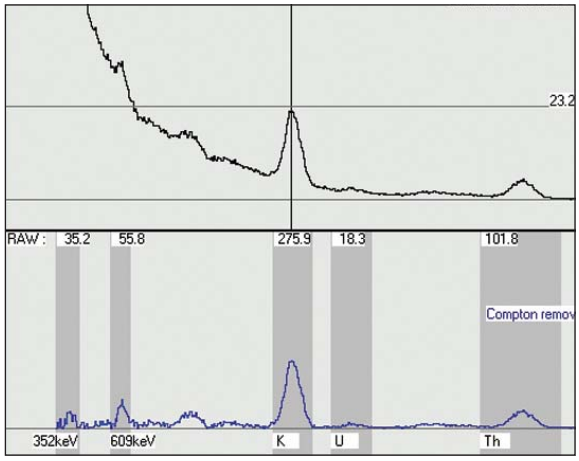
Praga3 Radiometrics provides principal component analysis tools for the investigation of spectrum signatures included in the actual dataset. The spectrum dataset is converted into a limited set of spectrum components (eigenvectors) which are ordered by variance (NASVD) or by signal to noise ratio (MNF). NASVD expects noise to be Poisson distributed, while MNF computes a noise model directly from the data.



Higher order components can be explained as mixed nuclide responses collected at average survey altitude. They are followed by components that account for the altitude changes.The remaining components contain statistical and instrumental noise.

Principal components can be used for gamma-ray data processing. The approach is very similar to the spectrum fitting technique. However, instead of model responses, a subset of spectrum components, derived directly from data, is used to replace the input spectrum.

Using Praga3 Radiometrics, the eigenvalue plot can be displayed. Users can browse through the individual components (eigenvectors) to investigate their shape. Covariance matrices can be displayed as well. Spectra can be interactively composed from the selected number of components and compared with input spectra or alternatively, residual spectra can be displayed. Once the eigenvectors are computed, there is no need to compute them again, for subsequent re-processing of data with another subset of components.



Advanced support for radon removal

Radon removal can be completed using the extended 'spectral-ratio' or full spectral technique. The window based, 'spectral-ratio' method compares count rates of low and high-energy uranium peaks. The full-spectrum technique uses the full spectrum difference in responses of the radon and ground uranium sources. The window based 'spectral-ratio' method has the option to use low-energy ^{214}Pb (0.352 MeV) photopeak instead of commonly used ^{214}Bi (0.609 MeV) photopeak. This approach is beneficial in areas with substantial ^{137}Cs fall-out (Northern hemisphere) or for data with extreme Th/U ratio.

Interactive mode

Praga3' Radiometric's GUI oriented software enables analysis and interactive control of the dataset prior the final processing. Using the spectrum browser, spectra can be investigated on spectrum-by-spectrum basis, and the proper function of the spectrum-fitting or principal component process can be assessed. Spectra displayed can be saved in an ASCII file.

Processing mode

Actual processing is done using a special processing mode where the spectrum display is disabled to speed-up processing tasks. All tasks needed for a given project including standard window, full-spectrum fitting, principal component analysis and processing can be done within the single processing run. Data output has range of options, there is a choice of relative (window count rate) or absolute (activity, exposure and dose rates) units for all, window, spectrum-fitting and principal component/window techniques. In addition, results can be multiplied and offset by user defined constants if it is required. Output is currently provided in the form of ASCII delimited files.

The Pico-Radiation-Air-to-Ground-Algorithm (PRAGA3) software was developed by Pico Envirotec and Spectronica. Geosoft licenses Praga3 Radiometrics as a montaj plus™ extension to Oasis montaj.

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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 1

System Tests and Reports

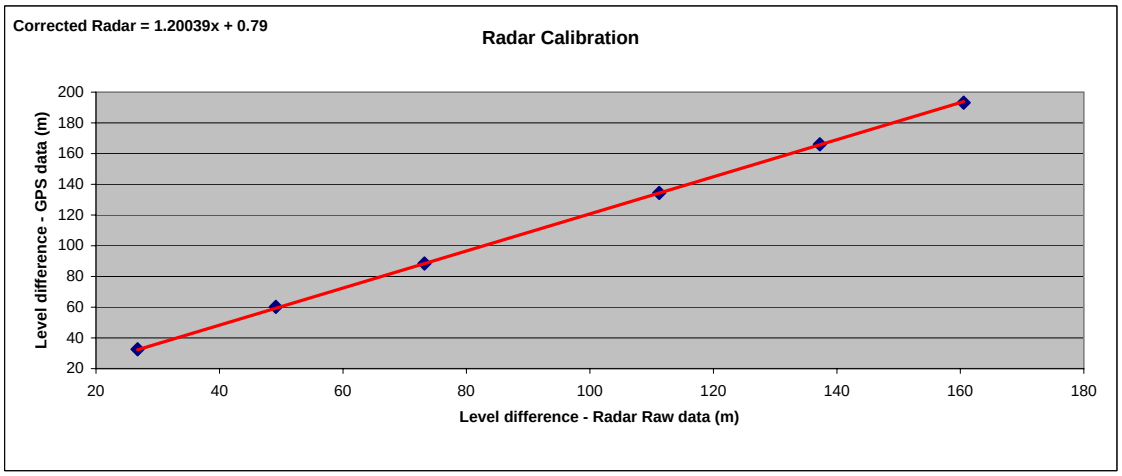
- Altimeter Calibration Test
- Barometric Calibration Test
- Cosmic Stripping and Aircraft Background Calibration
- Spectrometer Calibration on Transportable PAD-Stripping Ratios
- Sensitivity Factors
- Summary of Processing Coefficients used in the reduction of Spectrometric Data
- Flight Logs
- Daily Reports

McPhar Geosurveys Ltd.
Altimeter Calibration Test

Project:	**0613a - Signet Minerals Inc.**
Location:	over Fairchild Lake
Date:	07-Sep-06
Flight:	15
Test No.	1
Aircraft:	Eurocopter AS-350B2 - C-GTNU

Radar Correction:

Line	Radar Altitude Raw data (ft)	Radar Altitude Raw Data (m)	GPS alt - sea level alt MSL (m)	Level Difference GPS data (m)	Level Difference Radar Raw Data (m)	Radar Altitude recalculated (m)
S200	226.9	69.16	768.1			83.81
S300	314.6	95.89	800.7	32.6	26.731	115.90
S400	388.1	118.29	828.3	60.2	49.134	142.79
S500	467.1	142.37	856.6	88.4	73.213	171.69
S600	591.8	180.38	902.5	134.4	111.222	217.32
S700	677.2	206.41	934.1	166.0	137.251	248.56
S800	753.6	229.70	961.2	193.1	160.538	276.52



Pilot: Doug Hladun
Operator: Adam Barrett
QC: Adam Barrett
PM:
Clients Rep.:

Approved:

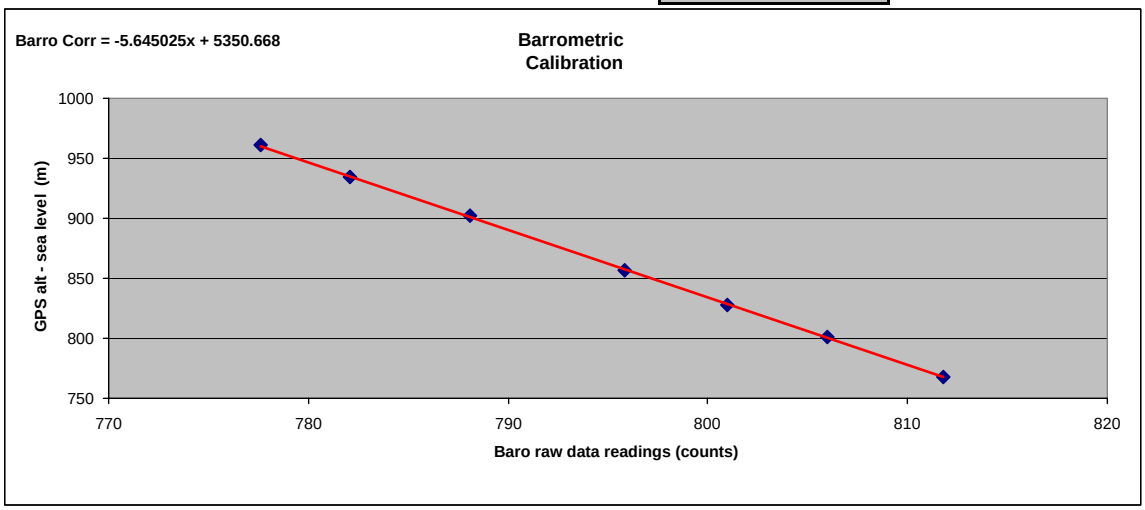
Date: 30/09/2006
Name: Tomas Grand

McPhar Geosurveys Ltd.
Barometric Calibration Test

Project:	**0613a - Signet Minerals Inc.**
Location:	over Fairchild Lake
Date:	07-Sep-06
Flight:	15
Test No.	1
Aircraft:	Eurocopter AS-350B2 - C-GTNU

Barro Correction:

Line	Nominal Altitude above ground (m)	Nominal Altitude above ground (ft)	Barrometer Raw Data (counts)	GPS alt - sea level alt MSL (m)	Barrometric Altitude Recalculated (m)	Barrometric Pressure Recalculated (kPa)
S200	69.16	226.9	812	768.0	768.037	926.50
S300	95.89	314.6	806	800.7	800.778	922.97
S400	118.29	388.1	801	828.3	829.003	919.94
S500	142.37	467.1	796	856.6	858.244	916.81
S600	180.38	591.8	788	902.5	901.824	912.17
S700	206.41	677.2	782	934.1	935.694	908.57
S800	229.70	753.6	778	961.2	961.097	905.89



Pilot: Doug Hladun
Operator: Adam Barrett
QC: Adam Barrett
PM:
Clients Rep.:

Approved:

Date: 30/09/2006
Name: Tomas Grand

McPhar Geosurveys Ltd.
Cosmic Stripping and Aircraft Background Calibration

Project:	**0613a - Signet Minerals Inc.**
Location:	Copper Point camp
Date:	11-Aug-06
Flight:	Prior to Survey
Test No.	1
Aircraft:	Eurocopter AS - 350B2 C-GTNT

COSMIC ATTENUATION COEFFICIENT CALIBRATION

DATA SUMMARY : AVERAGED DATA AT INDICATED GPS ELEVATIONS

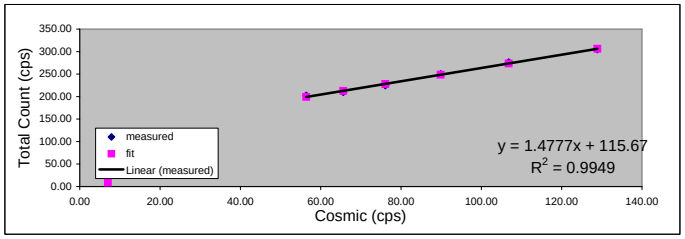
LINE	GPS ALT (m)	TC (cps)	K (cps)	U (cps)	TH (cps)	COSMIC (cps)
5000	1532.2	202.3	16.20	8.90	6.70	56.40
6000	1843.4	209.9	16.80	9.30	7.30	65.60
7000	2154.3	224.7	17.60	9.90	8.20	76.10
8000	2465.3	249.9	19.00	11.10	9.60	89.90
9000	2772.8	276.2	20.40	12.20	11.10	106.80
10000	3083.4	304.9	21.90	13.30	12.90	128.90

RESULTS OF LSQ FIT TO $N_n = a_n.COS + b_n$ RELATION :

	COEFFICIENTS	
	SLOPE (a_n)	INTERCEPT (b_n)
TC	1.47774	115.66774
K	0.08119	11.56388
U	0.06362	5.23001
Th	0.08769	1.64634

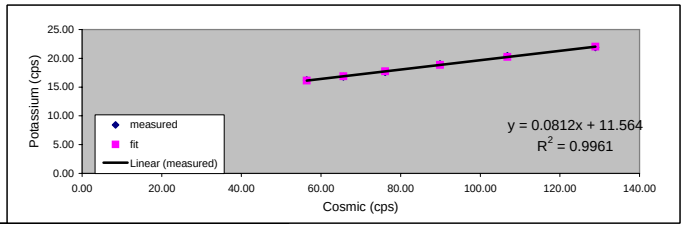
TOTAL COUNT COSMIC DEPENDENCE:

Cosmic	Measured	Fit
56.40	202.30	199.01
65.60	209.90	212.61
76.10	224.70	228.12
89.90	249.90	248.52
106.80	276.20	273.49
128.90	304.90	306.15



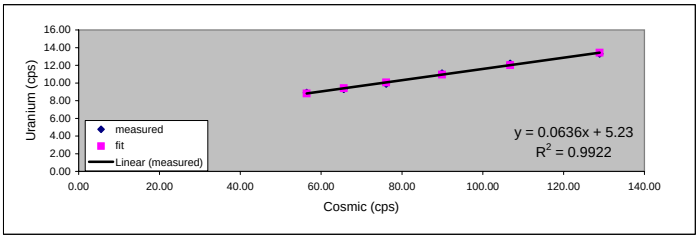
POTASSIUM COSMIC DEPENDENCE:

Cosmic	Measured	Fit
56.40	16.20	16.14
65.60	16.80	16.89
76.10	17.60	17.74
89.90	19.00	18.86
106.80	20.40	20.23
128.90	21.90	22.03



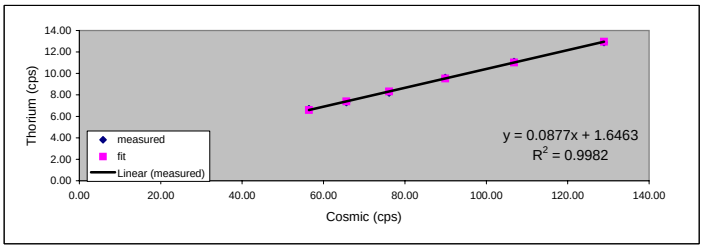
URANIUM COSMIC DEPENDENCE:

Cosmic	Measured	Fit
56.40	8.90	8.82
65.60	9.30	9.40
76.10	9.90	10.07
89.90	11.10	10.95
106.80	12.20	12.03
128.90	13.30	13.43



THORIUM COSMIC DEPENDENCE:

Cosmic	Measured	Fit
56.40	6.70	6.59
65.60	7.30	7.40
76.10	8.20	8.32
89.90	9.60	9.53
106.80	11.10	11.01
128.90	12.90	12.95



Pilot: Doug Hladun
Operator: Adam Barrett
QC: Adam Barrett
PM:

Approved: Date:
Name:

McPhar Geosurveys Ltd.

SPECTROMETER CALIBARTION ON TRANSPORTABLE PADS

Project:	**0613a - Signet Minerals Inc.**
Test Location:	Holland Landing, Ontario, Canada
Altitude:	850 ft
Date:	July 18, 2006
Test No.	No. 1 for Season 2006

Calibration Pads Info

No. of PADS	**4**
	Constructed by Geological Survey of Canada
Owner:	Pico Envirotec Inc.
Date of Construction:	1994
Location:	Holland Landing, Ontario, Canada

Pad Concentrations

PAD	PAD Label	K %	U ppm	Th ppm
Background	B6-94	1.410 (SD 0.010)	0.97 (SD 0.030)	2.26 (SD 0.10)
K-Pad	K6-94	8.710 (SD 0.090)	0.32 (SD 0.02)	0.74 (SD 0.10)
U-Pad	U6-94	1.340 (SD 0.020)	52.9 (SD 1.00)	3.40 (SD 0.14)
Th-Pad	Th6-94	1.340 (SD 0.020)	2.96 (SD 0.06)	136.0 (SD 2.10)

Deadtime Corrected Accumulated Counts

PAD	Time seconds	K (cps)	U (cps)	Th (cps)	Geometric Correction Factors
Background	600	79697	6250	9019	
K-Pad	600	415642	3421	6369	1.17
U-Pad	600	157359	170518	21506	1.17
Th-Pad	600	135023	41151	301489	1.19

Calculated Stripping Ratios

Th into U	α =	0.098	SD = 0.0011
Th into K	β =	0.1899	SD = 0.0039
U into K	γ =	0.4903	SD = 0.0071
U into Th	a =	0.061	SD = 0.0025
K into Th	b =	0.0024	SD = 0.0010
K into U	g =	-0.0013	SD = 0.0005

Operator: Adam Barrett
QC: Tonia Bojkova
PM:
Clients Rep.:

Approved : Tomas Grand

McPhar Geosurveys Ltd.
Sensitivity Factors

Project:	**0613a- Signet Minerals Inc.**	
Location:	Holland Landing Airport, Newmarket	
Date:	26-Sep-06	
Flight:	NA	
Test No.	1	
Aircraft:	C-GTNT	
Lines:		

Sensitivity Factors	
Element	Sensitivity Factor at 50 m STP Height
K	0.018126232 %/cps
U	0.177164519 ppm eU/cps
Th	0.3050723318 ppm eTh/cps
Doserate	0.0473157437 nG/h/cps

Pilot:
Operator: Adam Barrett
QC: Ramesh Acharya
PM: Tomas Grand

Approved: Date:
Name:

McPhar Geosurveys Ltd

Project 0613a - Signet Minerals Inc.

Summary of Processing Coefficients used in the reduction of Spectrometric Data

Energy Windows (ROI)

Potassium (K) (KeV)		Uranium (U) (KeV)		Thorium (Th) (KeV)		Total Count (TC) (KeV)	
1370	1570	1660	1860	2410	2810	410	2810

Aircraft Background and Cosmic Stripping Ratios - (Helicopter C-GTNT)

	K	U	Th	TC
Aircraft Background (cps)	11.5	5.2	1.6	115.6
Cosmic Stripping Ratio	0.08119	0.06362	0.08769	1.47774

Stripping Coefficients for Compton Scattering Overlap

Thorium into Uranium (Alpha)	0.098
Thorium into Potassium (Beta)	0.1899
Uranium into Potassium (Gamma)	0.4903
Uranium into Thorium (a)	0.061
Potassium into Thorium (b)	0.0024
Potassium into Uranium (g)	-0.0013

Height Attenuation Factors

Potassium (K)	-0.01
Uranium (U)	-0.0058
Thorium (Th)	-0.008
Total Count (TC)	-0.007

Sensitivity Factors at 50 m STP height for detector volume of 16.8 litres

Potassium (K)	0.018126232 (%/cps)
Uranium (U)	0.177164519 (ppm eU/cps)
Thorium (Th)	0.3050723318 (ppm eTh/cps)
Total Count (TC)	0.0473157437 (nGy/hr/cps)

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: Signet Minerals Inc.	BLOCK#: Murphy	JOB: 0613a	PAGE 1 of 1

FLT #: 1 Date (dd/mm/yr): 29/08/06 OPERATOR: Adam Barrett

PILOT: Al Stannard O.A.T.: 12 / A/C REG: C-GTNT

DEPART TIME: 11:30 RETURN TIME: 14:10 TOTAL FLIGHT TIME: 2.6

SURVEY HEIGHT: 165' BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
			2919.p01	test line
10	*			
20				
30				
40	*			
50				
60	*			
70				
80				
80			2920.p04	again
90	*			
100				
110				
120				
130				
140				
150				
160	*			
170				
180	*			* Partial Lines

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

SPECTROMETER SAMPLE CALIBRATION CHECKS

Presurvey Spec Calibration

Cs137 Peak Chan: _____

	Start	End	Comments
BKG			
Cs 137			
U			
Th			
BKG			

Binary File Name:_____

Postsurvey Spec Calibration

Cs137 Peak Chan: _____

	Start	End	Comments
BKG			
Cs 137			
U			
Th			
BKG			

Binary File Name:_____

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: Signet Minerals Inc.	BLOCK#: Murphy	JOB: 0613a	PAGE 1 of 1

FLT #: 2 Date (dd/mm/yr): 29/08/06 OPERATOR: Adam Barrett

PILOT: Al Stannard O.A.T.: 13 / A/C REG: C-GTNT

DEPART TIME: 14:40 RETURN TIME: 16:50 TOTAL FLIGHT TIME: 2.6

SURVEY HEIGHT: 165' BASE MAG/GPS FILES: _____

LINE #	FIDUCAL		BINARY FILE NAME	COMMENTS
	START	END		
			2921.p45	test line
200				
210	*			
220				
230				
240	*			
250				
260				
270				
280	*			
290	*			
300				
310	*			
320				
330	*			
340				
350	*			* Partial Lines
				Flight aborted

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

SPECTROMETER SAMPLE CALIBRATION CHECKS

Presurvey Spec Calibration

Cs137 Peak Chan: _____

	Start	End	Comments
BKG			
Cs 137			
U			
Th			
BKG			

Binary File Name:_____

Postsurvey Spec Calibration

Cs137 Peak Chan: _____

	Start	End	Comments
BKG			
Cs 137			
U			
Th			
BKG			

Binary File Name:_____

AIRBORNE GEOPHYSICAL FLIGHT LOG

CLIENT: Signet Minerals Inc.	BLOCK#: Murphy	JOB: 0613a	PAGE 1 of 1

FLT #: 3 Date (dd/mm/yr): 30/08/06 OPERATOR: Adam Barrett

PILOT: Al Stannard O.A.T.: 13 / A/C REG: C-GTNT

DEPART TIME: 10:00 RETURN TIME: 12:40 TOTAL FLIGHT TIME: 2.4

SURVEY HEIGHT: 165' BASE MAG/GPS FILES: _____

LINE #	FIDUCAL START	FIDUCAL END	BINARY FILE NAME	COMMENTS
			3017.p27	test line
360				
370				
380				
390				
400				
410				
			Reflights	
350				
330				
310				
290				
280				
240				
210				
200				
180				
160				
150				
110				
90				
60			3019.p01	test line
40				
10				

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

SPECTROMETER SAMPLE CALIBRATION CHECKS

Presurvey Spec Calibration

Cs137 Peak Chan: _____

	Start	End	Comments
BKG			
Cs 137			
U			
Th			
BKG			

Binary File Name:_____

Postsurvey Spec Calibration

Cs137 Peak Chan: _____

	Start	End	Comments
BKG			
Cs 137			
U			
Th			
BKG			

Binary File Name:_____

Daily Field Production Report

Project #:	0613a					**SURVEY PERSONNEL**	
Report Date:	28-Aug-06	***Aircraft:***	Astar B2	Reg. #	C-GTNT	***Pilot***	Al Stannard
Report Number:	1	***Ops Base:***	Copperpoint Camp			***AME:***	Darren Shipman
Client:	Signet Minerals Inc.	***Location***	Wernecke Range			***Field Data QC:***	Adam Barrett
Survey Type:	**Helicopter RADIOMETRIC Survey**					***Operator/Technician***	Adam Barrett
		Murphy			**TOTAL**	***Operator/Technician***	
Project Km:		176.0			176.00	***Systems Engineer:***	
Km flown today:						***Project Manager***	Adam Barrett
Accumulated km:						***Client Supervisor***	
Percent Completed:							

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

Weather: overcast								***Hours Flown Today:***	
Accum. Standby:		***Survey Day:***		***Non Survey Day:***		***Accum on site:***	1	***Accumulated Project Hours:***	

COMMENTS:

Mobilize to 'Murphy' block, near Boswell strip.
Cloudy

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

President:	Tim Bodger	905-830-6880
Project Manager:	Adam Barrett	905-830-6880
QC	Adam Barrett	905-830-6880
Operator:	Adam Barrett	905-830-6880

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

Daily Field Production Report

Project #:	0613a					**SURVEY PERSONNEL**	
Report Date:	29-Aug-06	***Aircraft:***	Astar B2	Reg. #	C-GTNT	***Pilot***	Al Stannard
Report Number:	2	***Ops Base:***	Whitehorse			***AME:***	Darren Shipman
Client:	Signet Minerals Inc.	***Location***	Murphy Block			***Field Data QC:***	Adam Barrett
Survey Type:	**Helicopter RADIOMETRIC Survey**					***Operator/Technician***	Adam Barrett
		Murphy			**TOTAL**	***Operator/Technician***	
Project Km:		176.0			176.00	***Systems Engineer:***	
Km flown today:		144.63				***Project Manager***	Adam Barrett
Accumulated km:		144.63				***Client Supervisor***	
Percent Completed:		82.18%					

Flight #	**Take off Time**	**First line start**		**Last line end**	**Land Time**		**Hours Flown**
1	11:30				14:10		2:40
2	14:40				16:50		2:10
Weather: overcast					***Hours Flown Today:***		4.8
Accum. Standby:	***Survey Day:***	1	***Non Survey Day:***	***Accum on site:***	2	***Accumulated Project Hours:***	4.8

COMMENTS:

Commence survey on Murphy 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

President:	Tim Bodger	905-830-6880
Project Manager:	Adam Barrett	905-830-6880
QC	Adam Barrett	905-830-6880
Operator:	Adam Barrett	905-830-6880

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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

Daily Field Production Report

Project #:	0613a							**SURVEY PERSONNEL**	
Report Date:	30-Aug-06	**Aircraft:**	Astar B2		Reg. #	C-GTNT		**Pilot**	Al Stannard
Report Number:	3	**Ops Base:**	Whitehorse					**AME:**	Darren Shipman
Client:	Signet Minerals Inc	**Location**	Murphy Block					**Field Data QC:**	Adam Barrett
Survey Type:		**Helicopter RADIOMETRIC Survey**						**Operator/Technician**	Adam Barrett
		Murphy				**TOTAL**		**Operator/Technician**	
Project Km:		176.0				176.00		**Systems Engineer:**	
Km flown today:		93.3						**Project Manager**	Adam Barrett
Accumulated km:		237.93						**Client Supervisor**	
Percent Completed:		135.19%							

Flight #	**Take off Time**	**First line start**		**Last line end**	**Land Time**		**Hours Flown**
3	10:00				12:40		2:40
Weather: overcast					**Hours Flown Today:**		2.4
Accum. Standby:	**Survey Day:**	2	**Non Survey Day:**	**Accum on site:** 3	**Accumulated Project Hours:**		7.2

COMMENTS:

Complete 'Murphy' block survey.
Including reflights (61.9 kms reflown from previous days flying)

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

President:	Tim Bodger	905-830-6880
Project Manager:	Adam Barrett	905-830-6880
QC	Adam Barrett	905-830-6880
Operator:	Adam Barrett	905-830-6880

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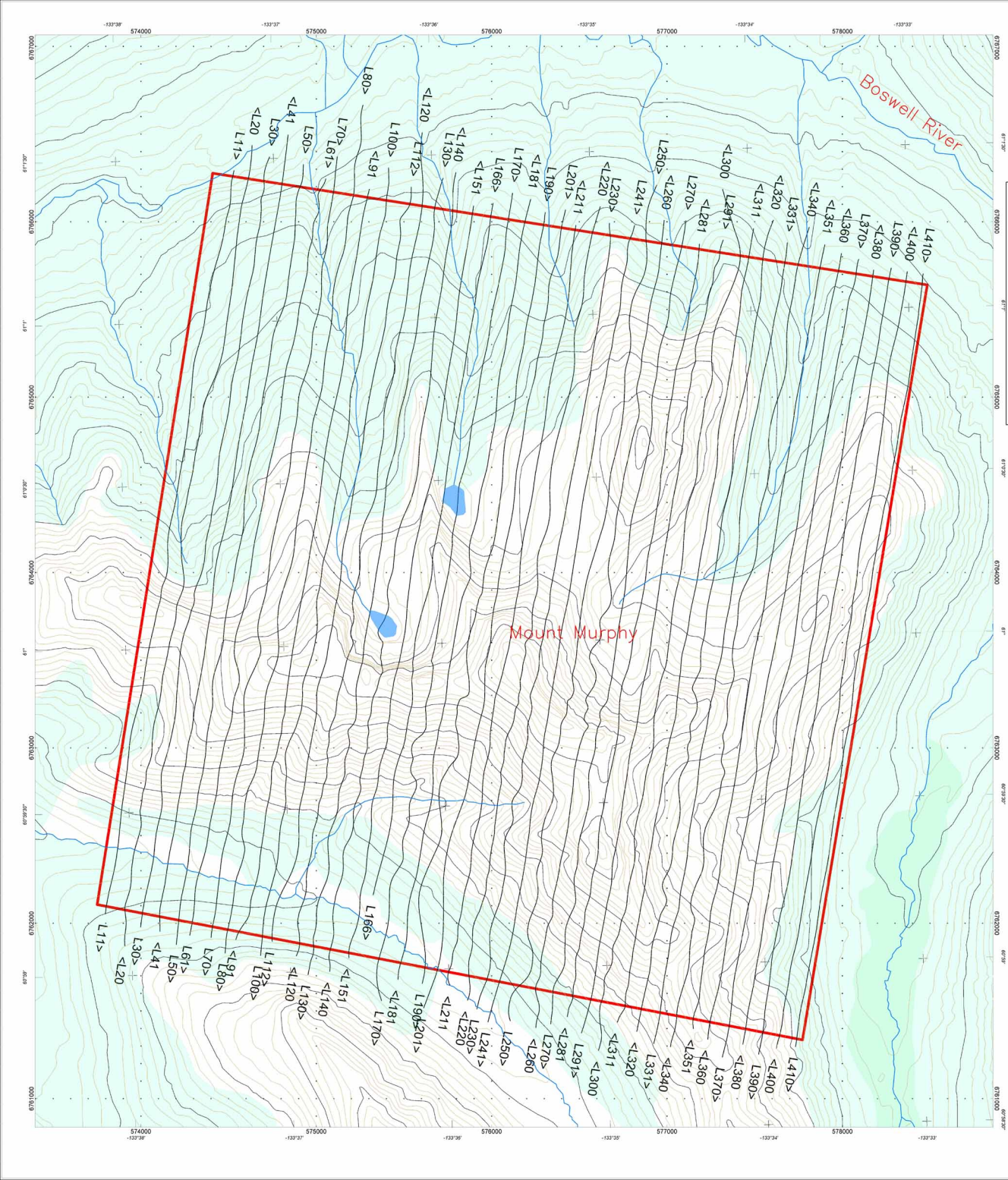
Please note that kilometres flown are estimates.
Exact kilometres will be calculated upon completion of survey, and will be based on GPS observations & contractual boundaries

APPENDIX 5

Page Size Maps

- Differentially Corrected GPS Flight Path
- Digital Terrain Model Calculated from survey data (DTM)
- Calculated Dose rate from Total Count
- Apparent Concentration of Uranium
- Apparent Concentration of Thorium
- Apparent Concentration of Potassium
- Uranium/Potassium Ratio Map
- Uranium/Thorium Ratio Map
- Thorium/Potassium Ratio Map
- Ternary Radio Element Map



LEGEND

Helicopters Type: Eurocopter AS-350B2
Helicopter Registration: C-GTNT
Survey Period: August, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 50 (Helicopter)
Traverse Line Spacing: 150 m
Traverse Line Direction: 60°

AIRBORNE GAMMARAY SPECTROMETER:

Pico-Envirotec GRS-410 multi-channel gamma-ray spectrometer with 16.8 liters "downward looking" NaI sensor
Sampling Rate: 1 readings/second
Sensor Height: Nominal 50 m above ground level

DATA ACQUISITION SYSTEM:

Pico-Envirotec AGIS Data Acquisition System

AIRBORNE NAVIGATION SYSTEM:

AGNAV Navigation System
CSI-Wireless DGPSMax Receiver
Pilot steering and navigation computer

Topo Legend

- Major Contour
- Minor Contour
- Water Course
- Water Body
- Vegetation

Scale 1:10000

200 0 200 400 600
metres
NAD83 / UTM zone 8N

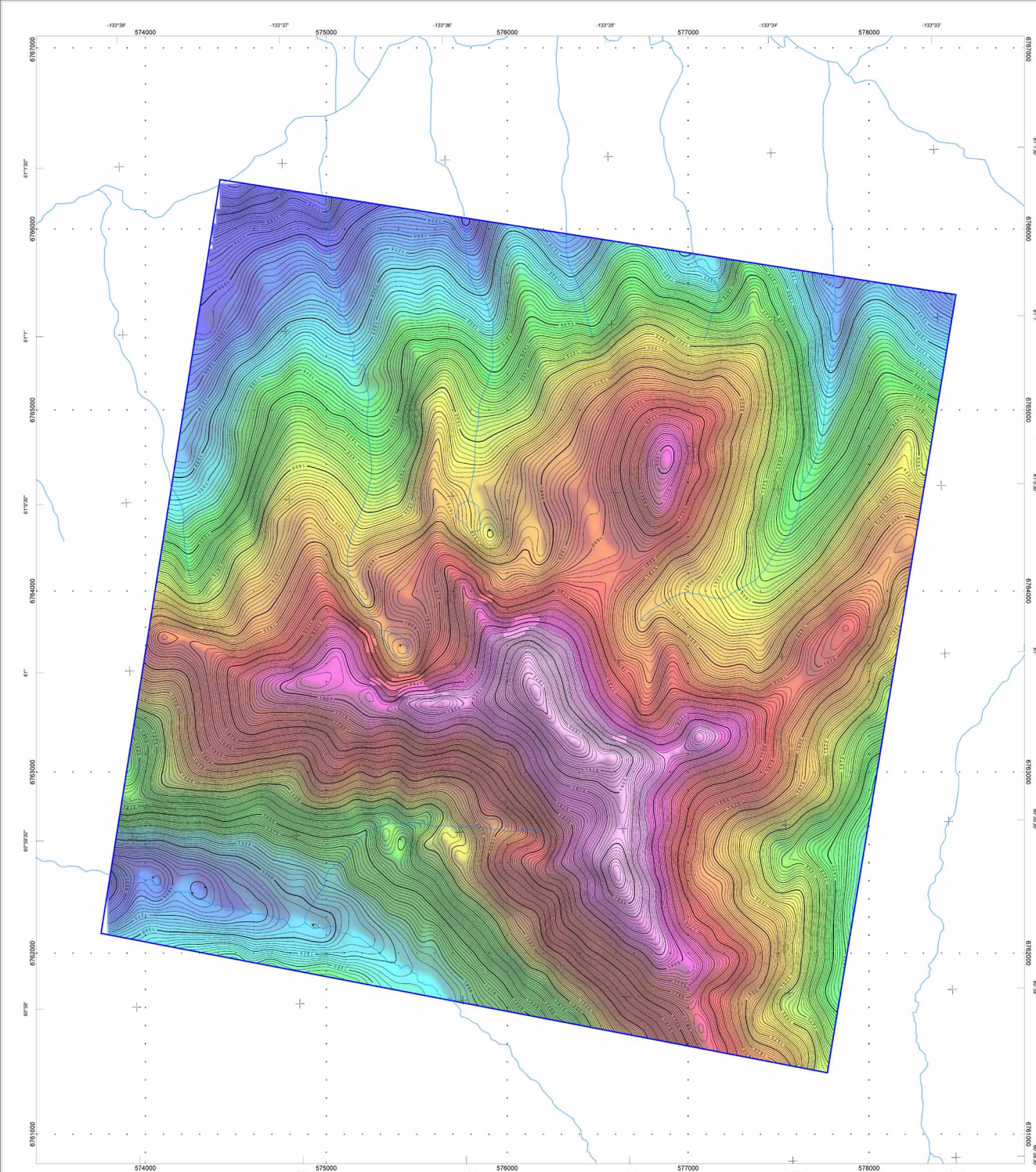
McPHAR

Signet Minerals Inc.

Differentially Corrected GPS Flight Path
Murphy Block

High-resolution Helicopter-borne Gamma Ray Spectrometry Survey
Wernecke Mountains, Yukon Territory

McPhar Geosurveys Ltd.



LEGEND

Helicopters Type: Eurocopter AS-350B2
Helicopter Registration: C-GTNT
Survey Period: August, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 50 (Helicopter)
Traverse Line Spacing: 150 m
Traverse Line Direction: 60°

AIRBORNE GAMMARAY SPECTROMETER:

Pico-Envirotec GRS-410 multi-channel gamma-ray spectrometer with 16.8 liters "downward looking" NaI sensor
Sampling Rate: 1 readings/second
Sensor Height: Nominal 50 m above ground level

DATA ACQUISITION SYSTEM:

Pico-Envirotec AGIS Data Acquisition System

AIRBORNE NAVIGATION SYSTEM:

AGNAV Navigation System
CSI-Wireless DGPSMax Receiver
Pilot steering and navigation computer

Topo Legend

- Water Course
- Water Body

Contour Legend

- 5 m
- 25 m
- 100 m

1989
1875
1820
1790
1760
1735
1710
1690
1670
1655
1640
1630
1620
1605
1595
1580
1565
1555
1540
1530
1515
1500
1485
1470
1455
1440
1420
1405
1390
1375
1360
1350
1335
1320
1305
1290
1270
1250
1210
1021
metre

Scale 1:10000
200 0 200 400 600
metres
NAD83 / UTM zone 8N

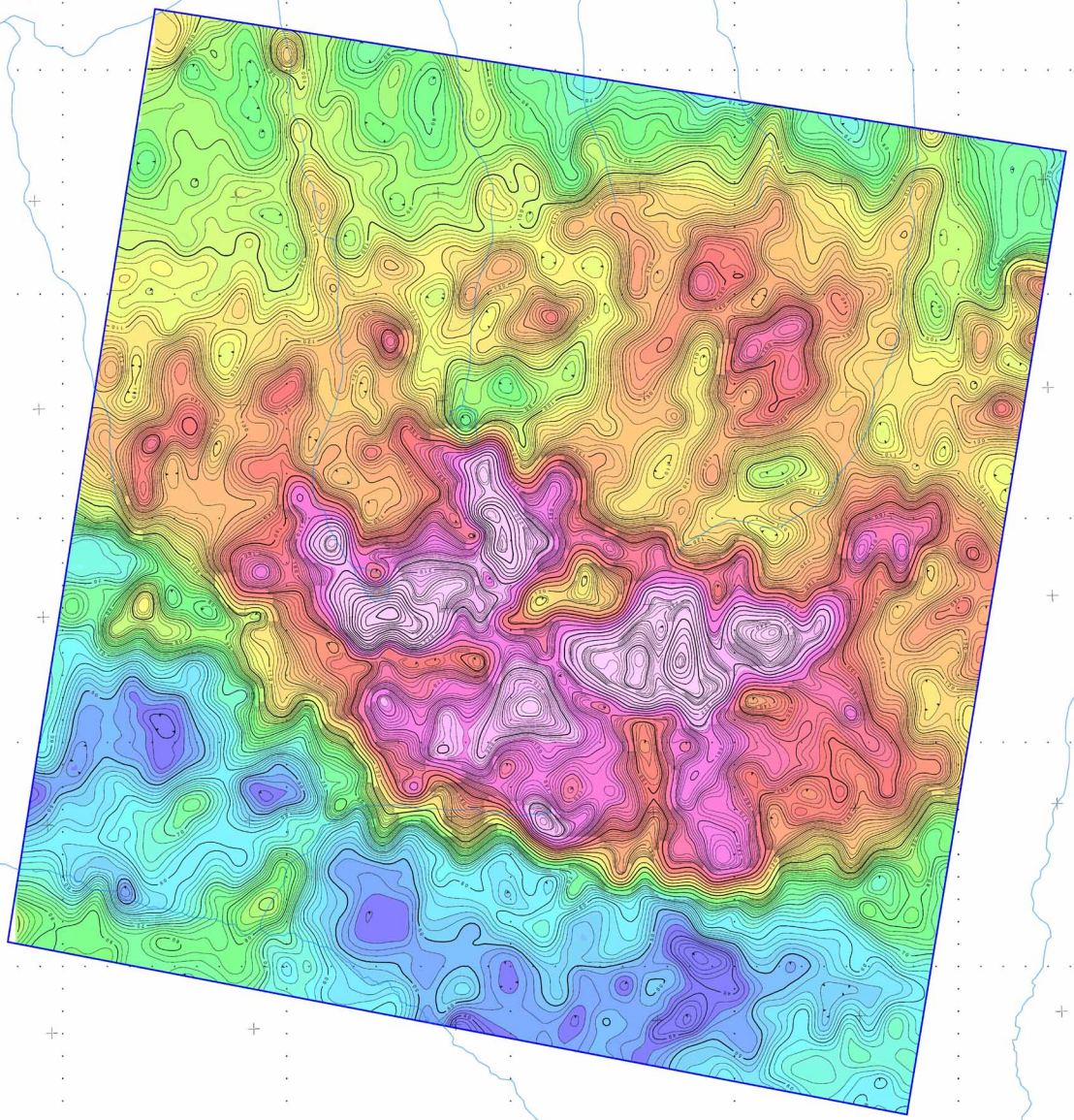
McPHAR

Signet Minerals Inc.

Digital Terrain Model Calculated from Survey Data
Murphy Block

High-resolution Helicopter-borne Gamma Ray Spectrometry Survey
Wernecke Mountains, Yukon Territory

McPhar Geosurveys Ltd.



LEGEND

Helicopters Type: Eurocopter AS-350B2
Helicopter Registration: C-GTNT
Survey Period: August, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 50 (Helicopter)
Traverse Line Spacing: 150 m
Traverse Line Direction: 60º

AIRBORNE GAMMARAY SPECTROMETER:

Pico-Envirotec GRS-410 multi-channel gamma-ray spectrometer with 16.8 liters "downward looking" NaI sensor
Sampling Rate: 1 readings/second
Sensor Height: Nominal 50 m above ground level

DATA ACQUISITION SYSTEM:

Pico-Envirotec AGIS Data Acquisition System

AIRBORNE NAVIGATION SYSTEM:

AGNAV Navigation System
CSI-Wireless DGPSMax Receiver
Pilot steering and navigation computer

Topo Legend

Water Course
Water Body

Contour Legend

2 nGy/h
10 nGy/h
50 nGy/h

310
218
194
186
170
162
154
148
142
138
134
130
128
124
122
120
116
114
110
108
106
102
98
94
92
88
86
82
78
76
72
68
64
62
58
54
50
48
44
31
nGy/h

Scale 1:10000

200 0 200 400 600
metres
NAD83 / UTM zone 8N

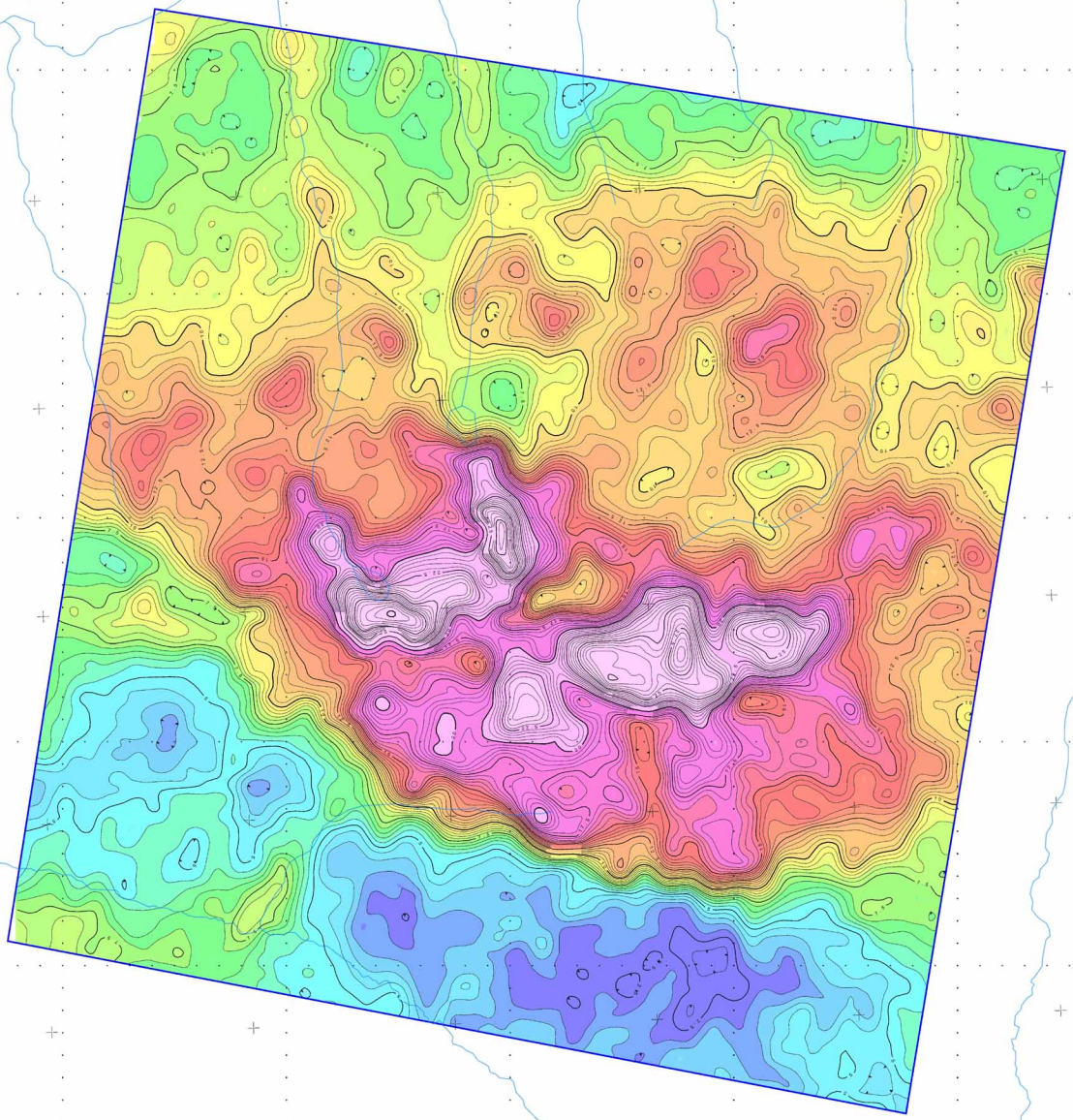
McPHAR

Signet Minerals Inc.

Apparent Dose Rate Calculated from Total Count (TC)
Murphy Block

High-resolution Helicopter-borne Gamma Ray Spectrometry Survey
Wernecke Mountains, Yukon Territory

McPhar Geosurveys Ltd.



LEGEND

Helicopters Type: Eurocopter AS-350B2
Helicopter Registration: C-GTNT
Survey Period: August, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 50 (Helicopter)
Traverse Line Spacing: 150 m
Traverse Line Direction: 60º

AIRBORNE GAMMARAY SPECTROMETER:

Pico-Envirotec GRS-410 multi-channel gamma-ray spectrometer with 16.8 liters "downward looking" NaI sensor
Sampling Rate: 1 readings/second
Sensor Height: Nominal 50 m above ground level

DATA ACQUISITION SYSTEM:

Pico-Envirotec AGIS Data Acquisition System

AIRBORNE NAVIGATION SYSTEM:

AGNAV Navigation System
CSI-Wireless DGPSMax Receiver
Pilot steering and navigation computer

Topo Legend

- Water Course
- Water Body

Contour Legend

- 0.5 ppm eU
- 2.5 ppm eU
- 10 ppm eU

30.1
23.0
20.0
18.0
16.5
15.5
15.0
14.0
13.5
13.0
12.5
12.0
11.5
11.0
10.5
10.0
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
1.8

ppm eU

Scale 1:10000

200 0 200 400 600
metres
NAD83 / UTM zone 8N

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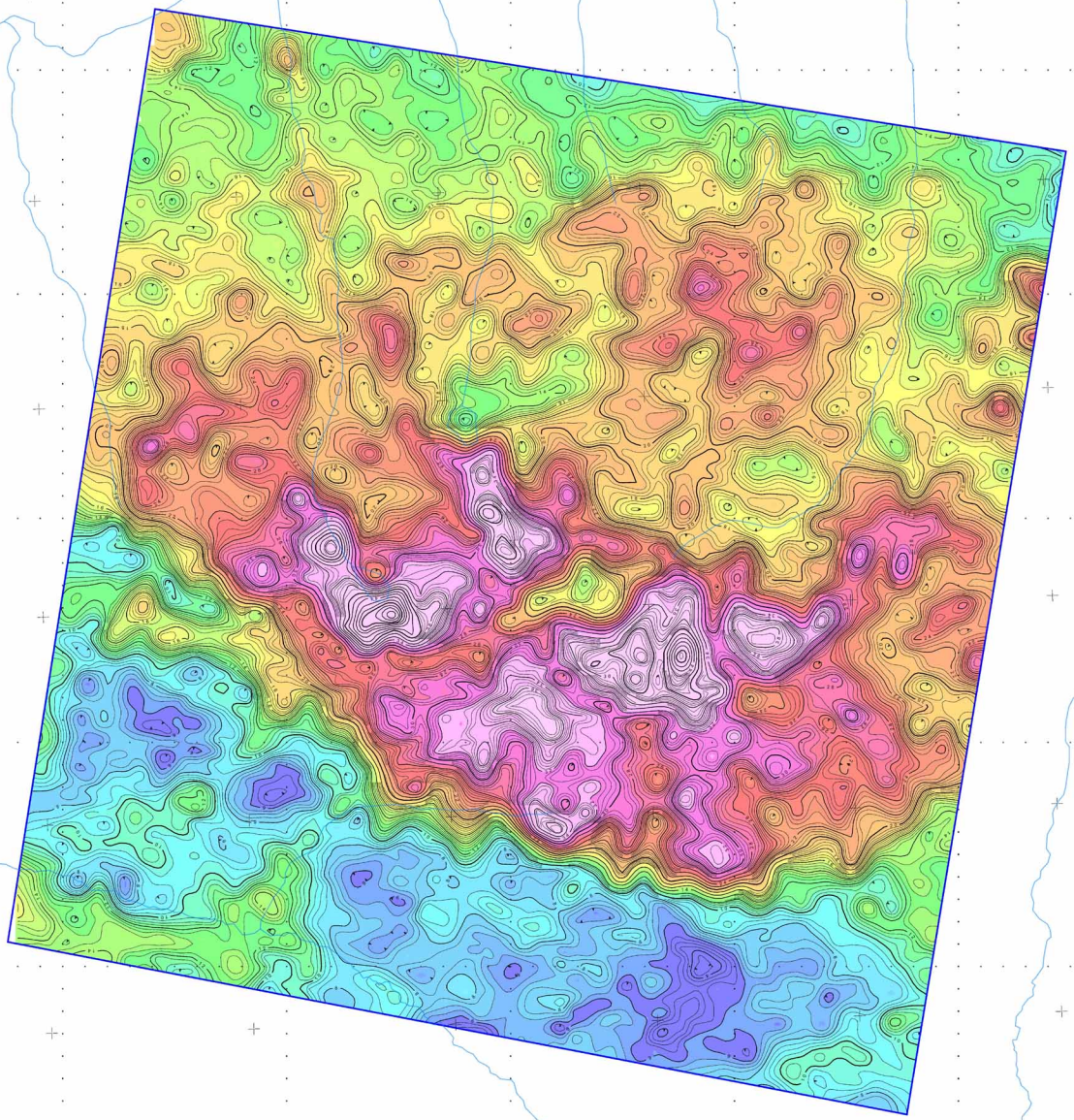
Apparent Concentration of Uranium (U)
Murphy Block

High-resolution Helicopter-borne Gamma Ray Spectrometry Survey
Wernecke Mountains, Yukon Territory

McPhar Geosurveys Ltd.



LEGEND

Helicopters Type: Eurocopter AS-350B2
Helicopter Registration: C-GTNT
Survey Period: August, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 50 (Helicopter)
Traverse Line Spacing: 150 m
Traverse Line Direction: 60º

AIRBORNE GAMMARAY SPECTROMETER:

Pico-Envirotec GRS-410 multi-channel gamma-ray spectrometer with 16.8 liters "downward looking" NaI sensor
Sampling Rate: 1 readings/second
Sensor Height: Nominal 50 m above ground level

DATA ACQUISITION SYSTEM:

Pico-Envirotec AGIS Data Acquisition System

AIRBORNE NAVIGATION SYSTEM:

AGNAV Navigation System
CSI-Wireless DGPSMax Receiver
Pilot steering and navigation computer

Topo Legend

- Water Course
- Water Body

Contour Legend

- 0.5 ppm eTh
- 2 ppm eTh
- 10 ppm eTh

57.4
35.5
32.0
30.0
28.5
27.0
26.0
24.5
24.0
23.0
22.0
21.5
21.0
20.5
19.5
19.0
18.5
18.0
17.5
17.0
16.5
16.0
15.5
15.0
14.5
13.5
13.0
12.5
12.0
11.5
11.0
10.0
9.5
9.0
8.5
8.0
7.0
6.5
6.0
3.0

ppm eTh

Scale 1:10000

200 0 200 400 600
metres
NAD83 / UTM zone 8N

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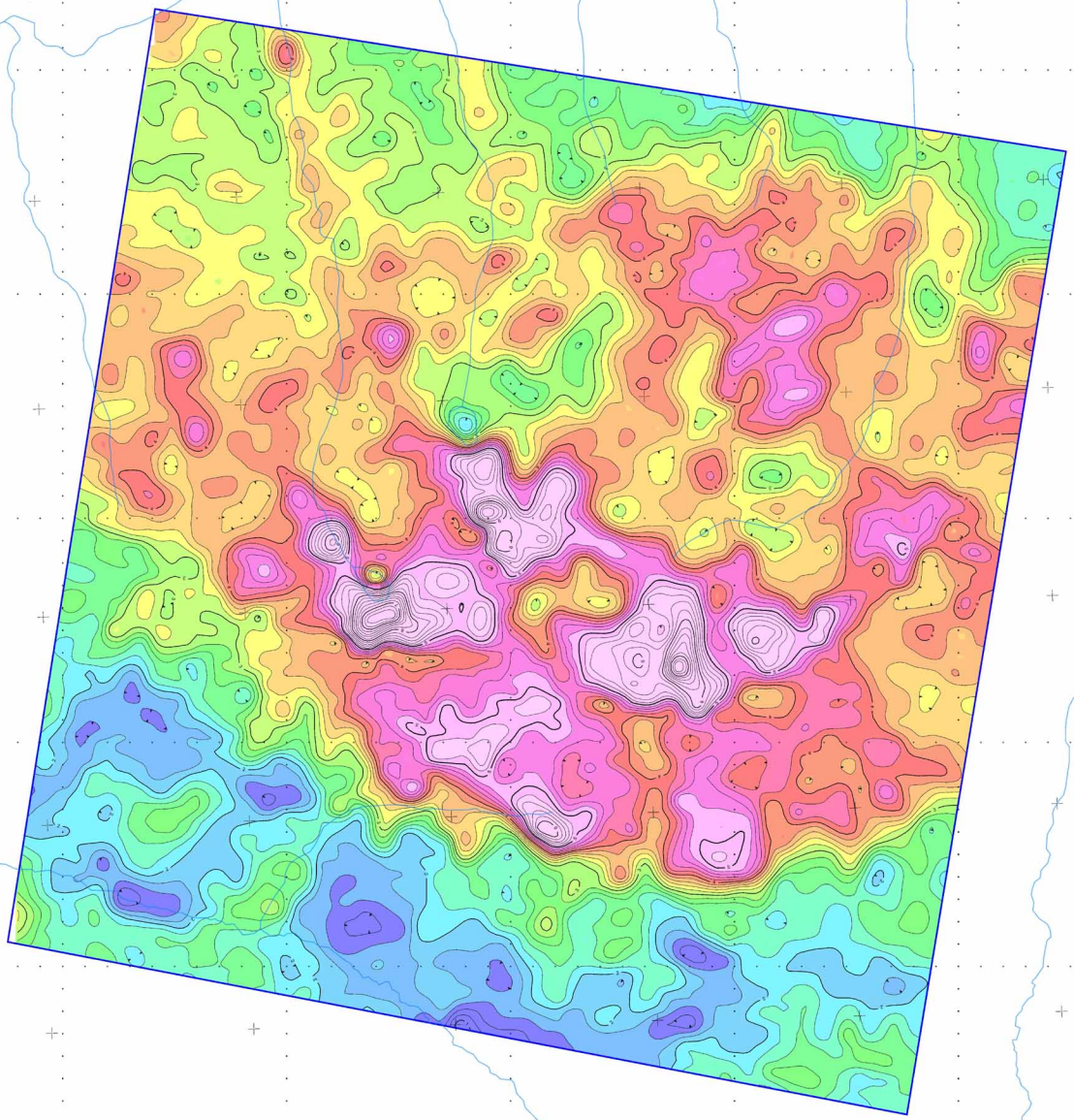
Apparent Concentration of Thorium (Th)
Murphy Block

High-resolution Helicopter-borne Gamma Ray Spectrometry Survey
Wernecke Mountains, Yukon Territory

McPhar Geosurveys Ltd.



LEGEND

Helicopters Type: Eurocopter AS-350B2
Helicopter Registration: C-GTNT
Survey Period: August, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 50 (Helicopter)
Traverse Line Spacing: 150 m
Traverse Line Direction: 60º

AIRBORNE GAMMARAY SPECTROMETER:

Pico-Envirotec GRS-410 multi-channel gamma-ray spectrometer with 16.8 liters "downward looking" NaI sensor
Sampling Rate: 1 readings/second
Sensor Height: Nominal 50 m above ground level

DATA ACQUISITION SYSTEM:

Pico-Envirotec AGIS Data Acquisition System

AIRBORNE NAVIGATION SYSTEM:

AGNAV Navigation System
CSI-Wireless DGPSMax Receiver
Pilot steering and navigation computer

Topo Legend

- Water Course
- Water Body

Contour Legend

- 0.2 %
- 1 %
- 5 %

7.6
5.2
4.8
4.6
4.4
4.2
4.0
3.8
3.6
3.4
3.2
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
0.8
%

Scale 1:10000

200 0 200 400 600
metres
NAD83 / UTM zone 8N

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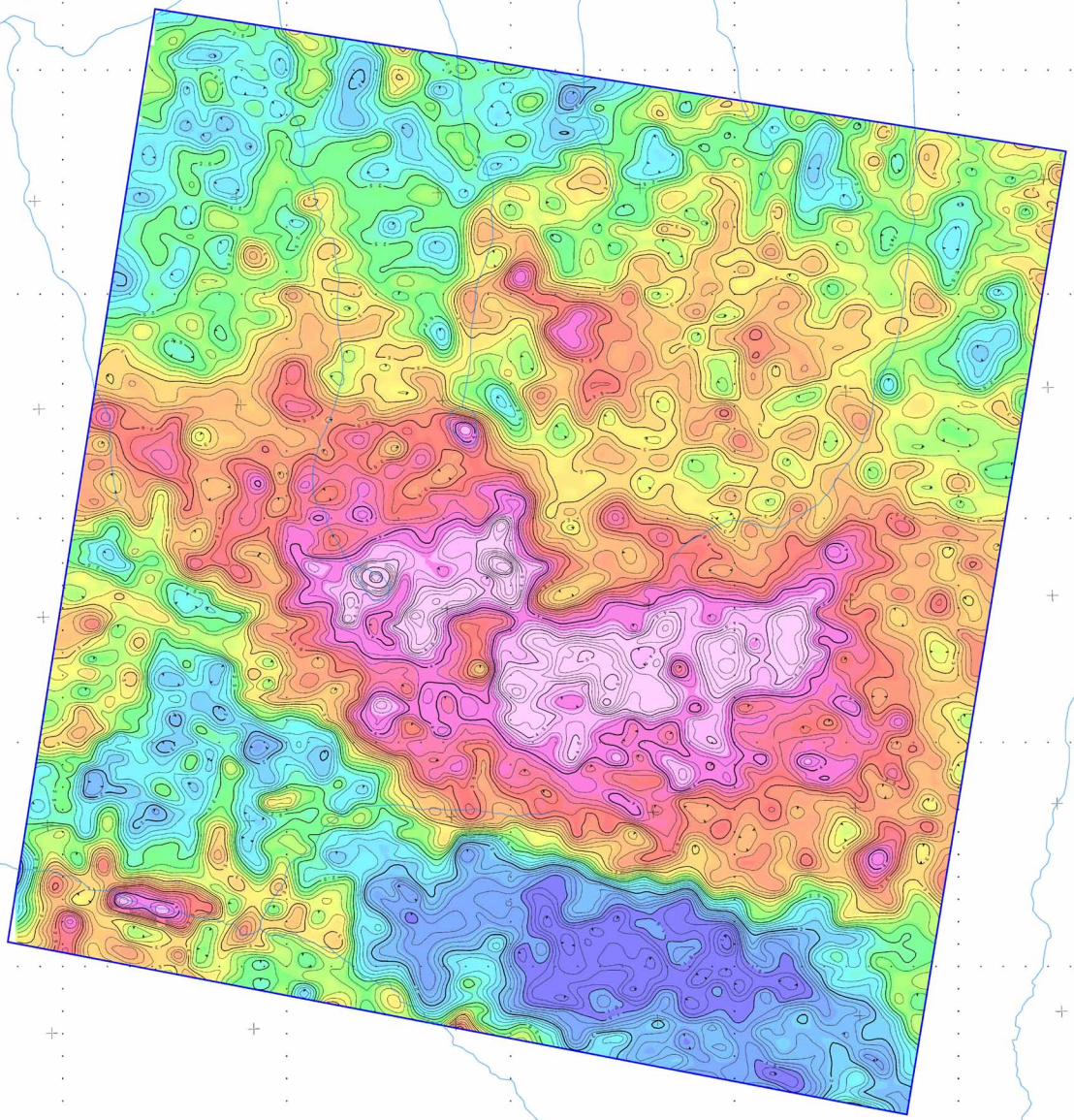
Apparent Concentration of Potassium (K)
Murphy Block

High-resolution Helicopter-borne Gamma Ray Spectrometry Survey
Wernecke Mountains, Yukon Territory

McPhar Geosurveys Ltd.



LEGEND

Helicopters Type: Eurocopter AS-350B2
Helicopter Registration: C-GTNT
Survey Period: August, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 50 (Helicopter)
Traverse Line Spacing: 150 m
Traverse Line Direction: 60º

AIRBORNE GAMMARAY SPECTROMETER:

Pico-Envirotec GRS-410 multi-channel gamma-ray spectrometer with 16.8 liters "downward looking" NaI sensor
Sampling Rate: 1 readings/second
Sensor Height: Nominal 50 m above ground level

DATA ACQUISITION SYSTEM:

Pico-Envirotec AGIS Data Acquisition System

AIRBORNE NAVIGATION SYSTEM:

AGNAV Navigation System
CSI-Wireless DGPSMax Receiver
Pilot steering and navigation computer

Topo Legend

Water Course
Water Body

Contour Legend

0.1
0.5
2

5.89
4.51
4.24
4.03
3.88
3.76
3.65
3.56
3.48
3.41
3.34
3.28
3.23
3.18
3.13
3.08
3.04
2.99
2.95
2.92
2.88
2.83
2.79
2.76
2.72
2.68
2.64
2.59
2.55
2.51
2.47
2.42
2.36
2.29
2.22
2.12
1.96
1.74
1.56
0.91
10^{-4}

Scale 1:10000

200 0 200 400 600
metres
NAD83 / UTM zone 8N

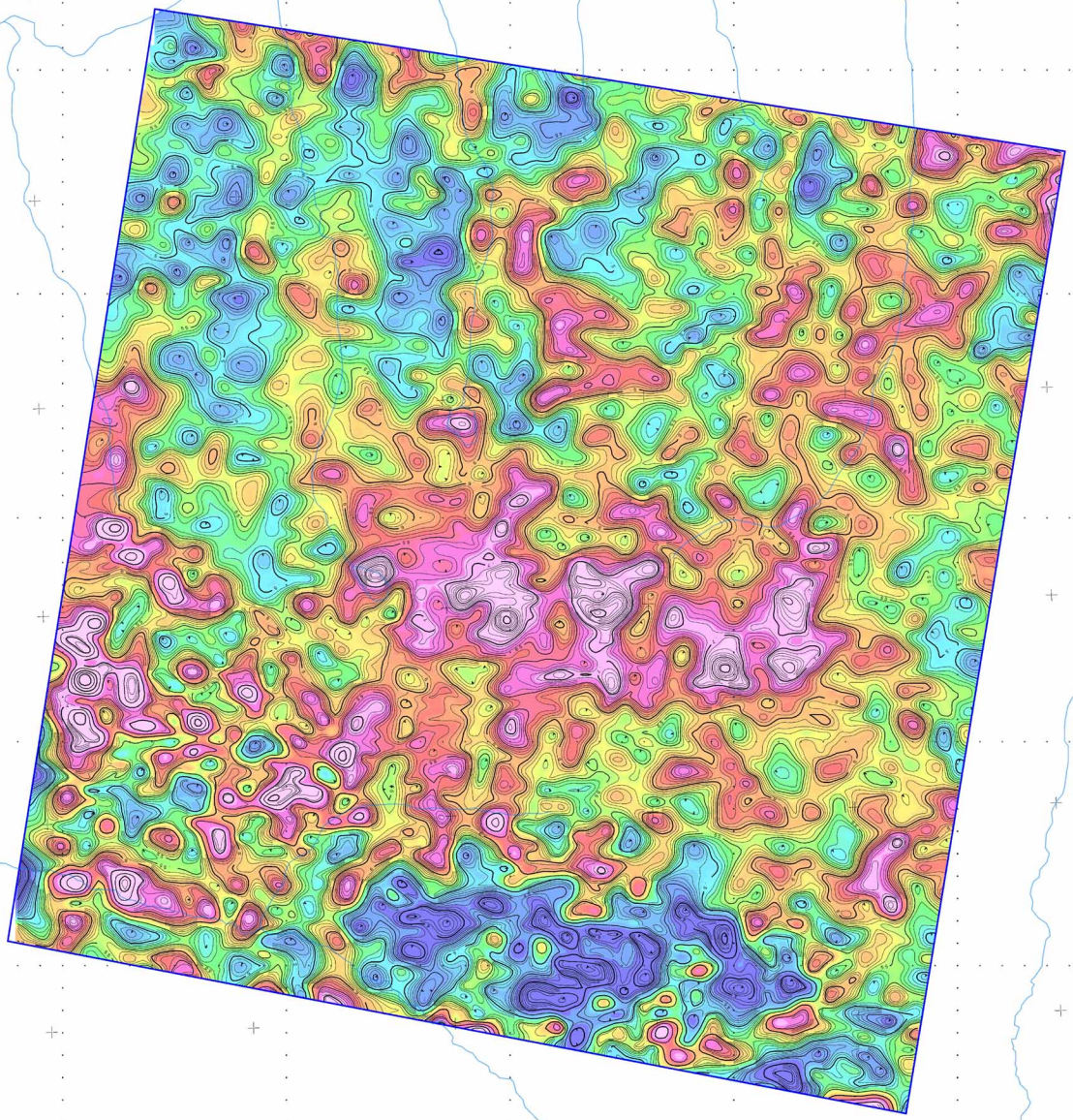
McPHAR

Signet Minerals Inc.

Uranium/Potassium Ratio Map (U/K)
Murphy Block

High-resolution Helicopter-borne Gamma Ray Spectrometry Survey
Wernecke Mountains, Yukon Territory

McPhar Geosurveys Ltd.



LEGEND

Helicopters Type: Eurocopter AS-350B2
Helicopter Registration: C-GTNT
Survey Period: August, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 50 (Helicopter)
Traverse Line Spacing: 150 m
Traverse Line Direction: 60º

AIRBORNE GAMMARAY SPECTROMETER:

Pico-Envirotec GRS-410 multi-channel gamma-ray spectrometer with 16.8 liters "downward looking" NaI sensor
Sampling Rate: 1 readings/second
Sensor Height: Nominal 50 m above ground level

DATA ACQUISITION SYSTEM:

Pico-Envirotec AGIS Data Acquisition System

AIRBORNE NAVIGATION SYSTEM:

AGNAV Navigation System
CSI-Wireless DGPSMax Receiver
Pilot steering and navigation computer

Topo Legend

Water Course
Water Body

Contour Legend

0.01
0.05
0.1

0.99
0.71
0.68
0.66
0.65
0.64
0.63
0.62
0.61
0.60
0.59
0.58
0.57
0.56
0.55
0.54
0.53
0.52
0.51
0.50
0.49
0.48
0.47
0.45
0.42
0.29

Scale 1:10000

200 0 200 400 600
metres
NAD83 / UTM zone 8N

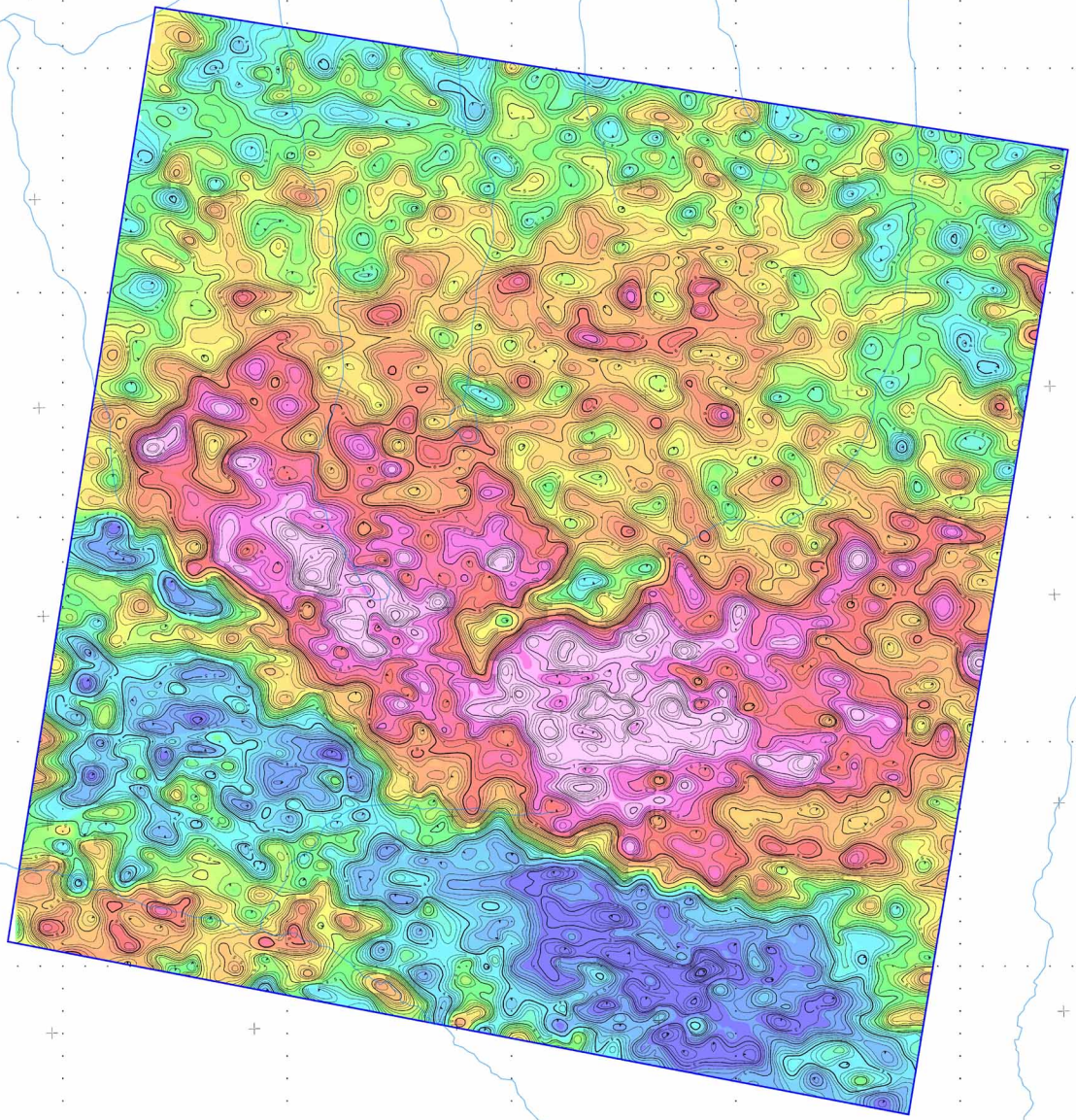
McPHAR

Signet Minerals Inc.

Uranium/Thorium Ratio Map (U/Th)
Murphy Block

High-resolution Helicopter-borne Gamma Ray Spectrometry Survey
Wernecke Mountains, Yukon Territory

McPhar Geosurveys Ltd.



LEGEND

Helicopters Type: Eurocopter AS-350B2
Helicopter Registration: C-GTNT
Survey Period: August, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 50 (Helicopter)
Traverse Line Spacing: 150 m
Traverse Line Direction: 60º

AIRBORNE GAMMARAY SPECTROMETER:

Pico-Envirotec GRS-410 multi-channel gamma-ray spectrometer with 16.8 liters "downward looking" NaI sensor
Sampling Rate: 1 readings/second
Sensor Height: Nominal 50 m above ground level

DATA ACQUISITION SYSTEM:

Pico-Envirotec AGIS Data Acquisition System

AIRBORNE NAVIGATION SYSTEM:

AGNAV Navigation System
CSI-Wireless DGPSMax Receiver
Pilot steering and navigation computer

Topo Legend

Water Course
Water Body

Contour Legend

0.1
0.5
2

8.1 7.0 6.8 6.6 6.4 6.3 6.2 6.1 6.0 5.9 5.8 5.7 5.6 5.5 5.4 5.3 5.2 5.1 5.0 4.9 4.8 4.7 4.6 4.5 4.4 4.3 4.2 4.1 4.0 3.8 3.6 3.4 3.1 1.8

10^{-4}

Scale 1:10000

200 0 200 400 600
metres
NAD83 / UTM zone 8N

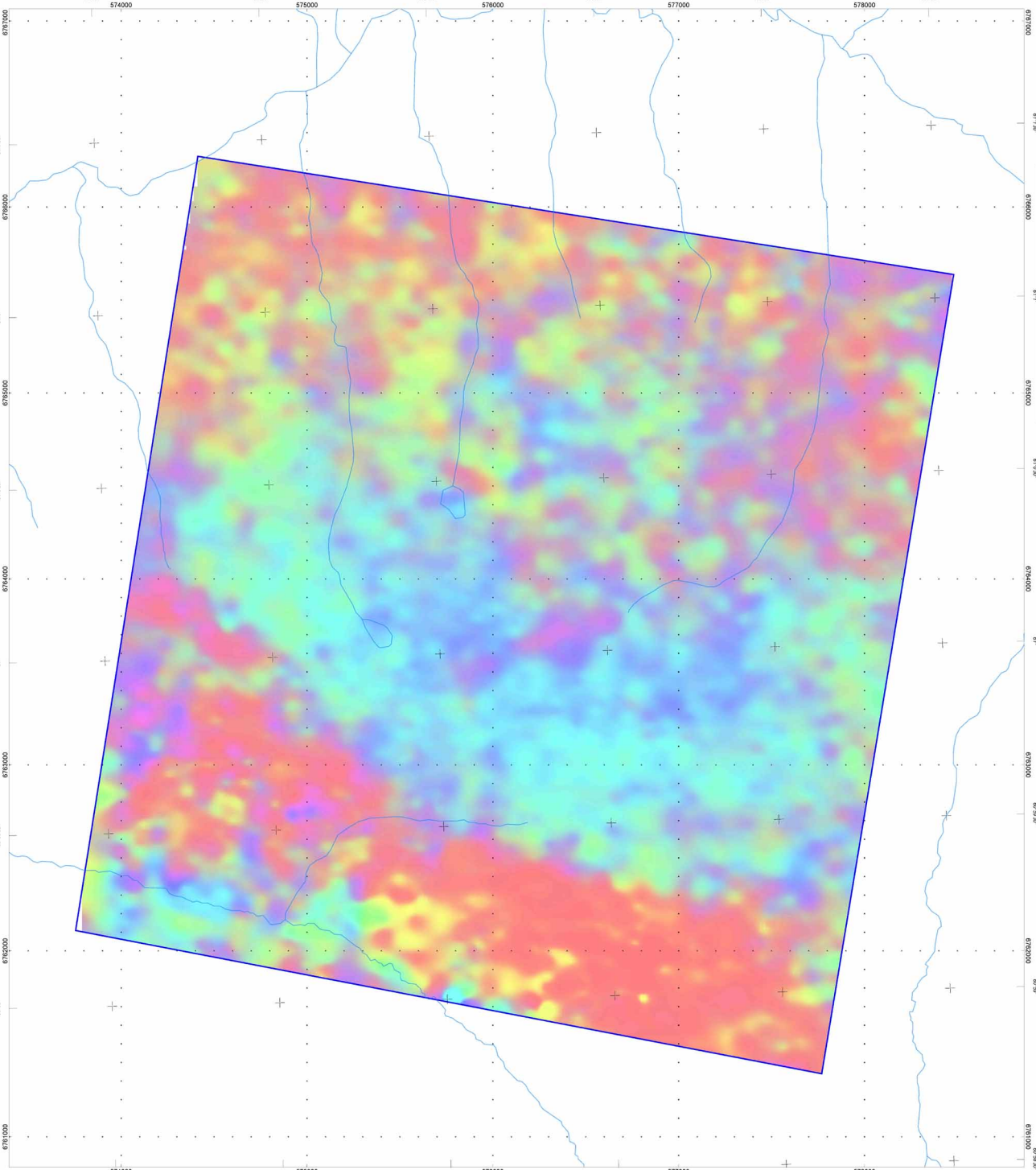
McPHAR

Signet Minerals Inc.

Thorium/Potassium Ratio Map (Th/K)
Murphy Block

High-resolution Helicopter-borne Gamma Ray Spectrometry Survey
Wernecke Mountains, Yukon Territory

McPhar Geosurveys Ltd.



LEGEND

Helicopters Type: Eurocopter AS-350B2
Helicopter Registration: C-GTNT
Survey Period: August, 2006

SURVEY PARAMETERS:

Mean Terrain Clearance: 50 (Helicopter)
Traverse Line Spacing: 150 m
Traverse Line Direction: 60°

AIRBORNE GAMMARAY SPECTROMETER:

Pico-Envirotec GRS-410 multi-channel gamma-ray spectrometer with 16.8 liters "downward looking" NaI sensor
Sampling Rate: 1 readings/second
Sensor Height: Nominal 50 m above ground level

DATA ACQUISITION SYSTEM:

Pico-Envirotec AGIS Data Acquisition System

AIRBORNE NAVIGATION SYSTEM:

AGNAV Navigation System
CSI-Wireless DGPSMax Receiver
Pilot steering and navigation computer

Topo Legend

Water Course

Water Body

K

eTh

eU

Scale 1:10000

200 0 200 400 600
metres
NAD83 / UTM zone 8N

McPHAR

Signet Minerals Inc.

Ternary Radio Element Map
Murphy Block

High-resolution Helicopter-borne Gamma Ray Spectrometry Survey
Wernecke Mountains, Yukon Territory

McPhar Geosurveys Ltd.

POCKET MAPS

-133°36'
576000
576500
-133°35'
577000
61°2'30"
61°1'0"
60°59'50"
6764000
6763500

L0 E
L100 E
L200 E
L300 E
L400 E
L500 E
L600 E
L700 E
L800 E
L900 E
L1000 E
L1100 E
L1200 E
L1300 E

MUR-06-15
MUR-06-14
MUR-06-16
MUR-06-02
MUR-06-01
MUR-06-17
MUR-06-12
MUR-06-13
MUR-06-08
MUR-06-09
MUR-06-10
MUR-06-11
MUR-06-06
MUR-06-05
MUR-06-04
MUR-06-03
MUR-06-07

MU06-03
135.9 m
MU06-01
79.3 m
MU06-02
151.1 m
MU06-04
18 m

MUR-06-09 Sample Location

MU06-04
18 m Drill Hole Location

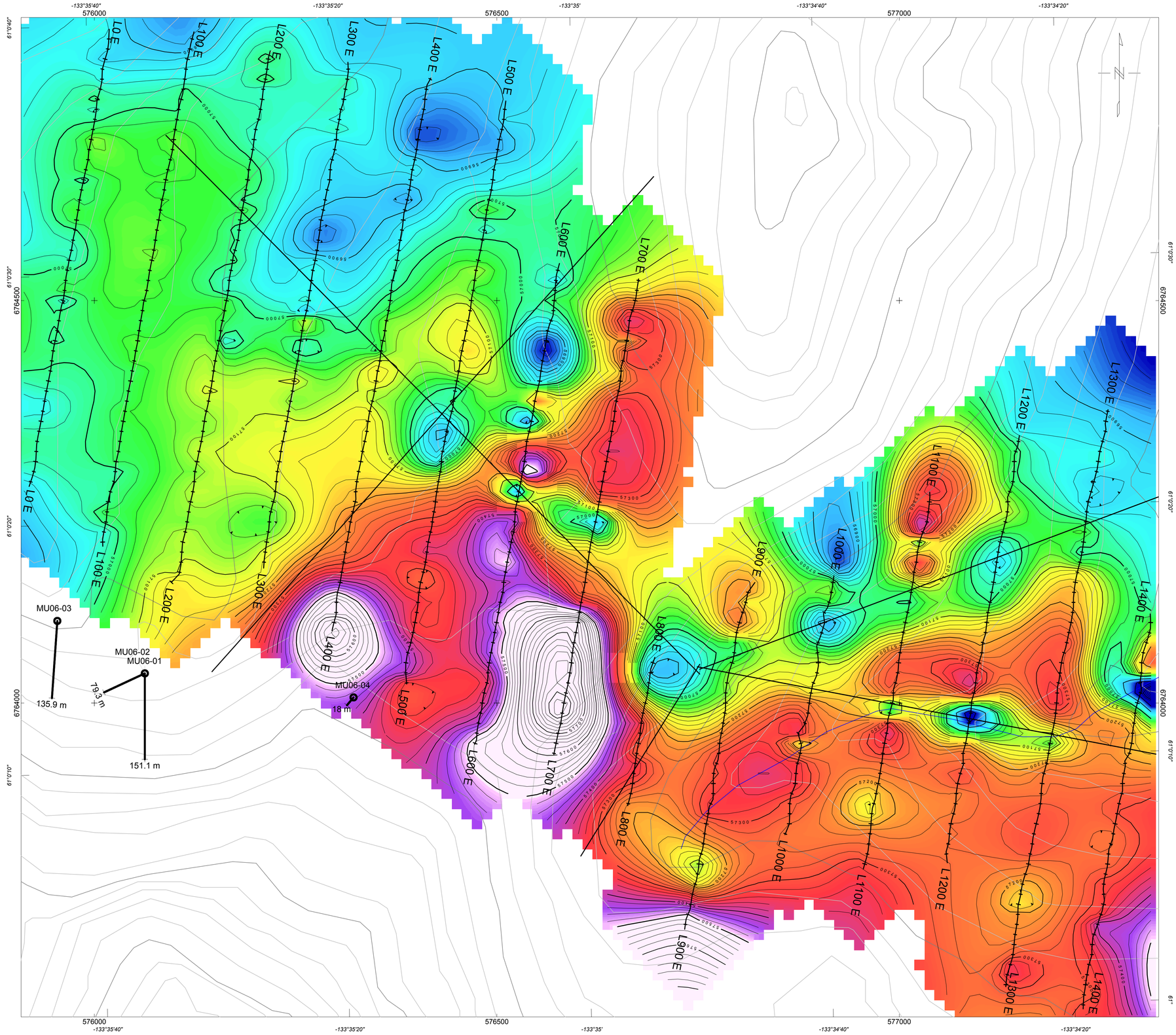
Scale 1:2500
50 0 50 100 150
metres
NAD83 / UTM zone 8N

SIGNET MINERALS INC.

MT. MURPHY PROPERTY
2006 EXPLORATION PROGRAM
Figure 4 - SAMPLE LOCATION MAP

NTS: 105C13 / 105F04
Projection: UTM Zone 8N
Date: January 10 2007
Mining District: Whitehorse
Datum: NAD83
Job: SGN-06-04-YT
Drawn By: Derek Torgerson

AURORA GEOSCIENCES LTD.



LEGEND

TOTAL FIELD MAGNETICS

CONTOUR INTERVALS (nT)

20

100

500

REFERENCE FIELD : 57,000 nT
INSTRUMENT : GEM GSM-19T (GPS)
GRIDDING ALGORITHM : MINIMUM CURVATURE

GRID CELL SIZE : 12.5 m
GRID DESPIKING FILTER
DATA FILE : compiled murphy mag.gdb
OPERATOR : DT & CW
STATION SEPARATION : 12.5 m
LINE-KM SURVEYED THIS SHEET : 6.5 km

57494.5
57483.6
57472.7
57461.7
57450.8
57439.8
57428.9
57418.0
57407.0
57396.1
57385.2
57374.2
57363.3
57352.3
57341.4
57330.5
57319.5
57308.6
57297.7
57286.7
57275.8
57264.8
57253.9
57243.0
57232.0
57221.1
57210.2
57199.2
57188.3
57177.3
57166.4
57155.5
57144.5
57133.6
57122.7
57111.7
57100.8
57089.8
57078.9
57068.0
57057.0
57046.1
57035.2
57024.2
57013.3
57002.3
56991.4
56980.5
56969.5
56958.6
56947.7
56936.7
56925.8
56914.8
56903.9
56893.0
56882.0
56871.1
56860.2
56849.2
56838.3
56827.3
56816.4
56805.5

Magnetics nT

Magnetic Linament Feature

MU06-04
18 m
Drill Hole

Scale 1:2500

50 0 50 100 150

metres

NAD83 / UTM zone 8N

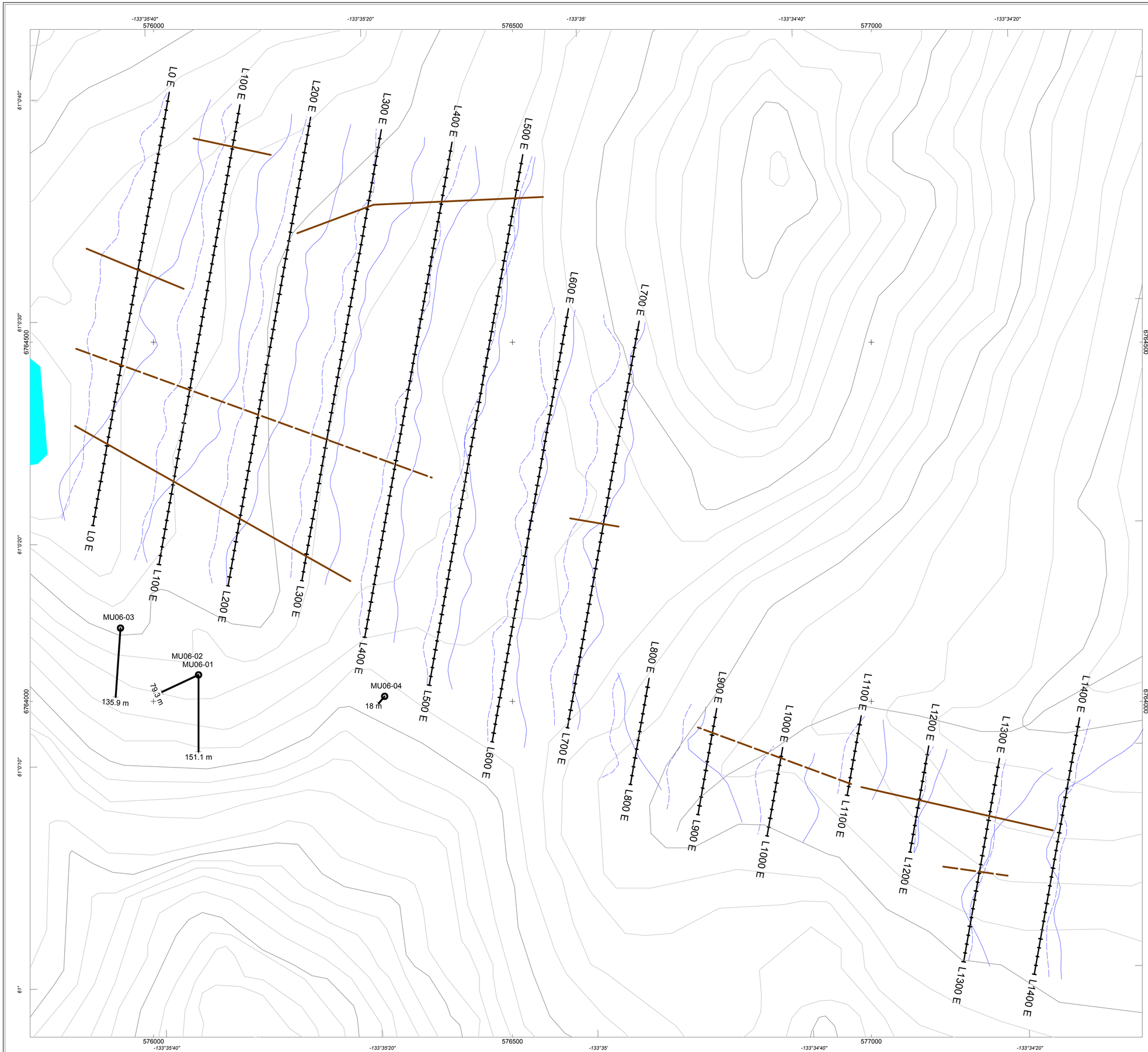
SIGNET MINERALS INC.

MT. MURPHY PROPERTY
2006 EXPLORATION PROGRAM
FIGURE 6 - TOTAL MAGNETIC FIELD MAP

NTS: 105C13 / 105F04
Projection: UTM Zone 8N
Date: January 10 2007
Drawn By: Derek Torgerson

Mining District: Whitehorse
Datum: NAD83
Job: SGN-06-04-YT

AURORA GEOSCIENCES LTD.



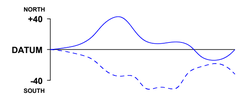
LEGEND

STACKED VLF-EM PROFILES

VLF STATION : NAA Cutler Maine, 24.0 kHz

INSTRUMENT : GEONICS EM-16
PROFILE SCALE : 1 cm = 40%

IN PHASE (NAA) :
QUADRATURE (NAA) :



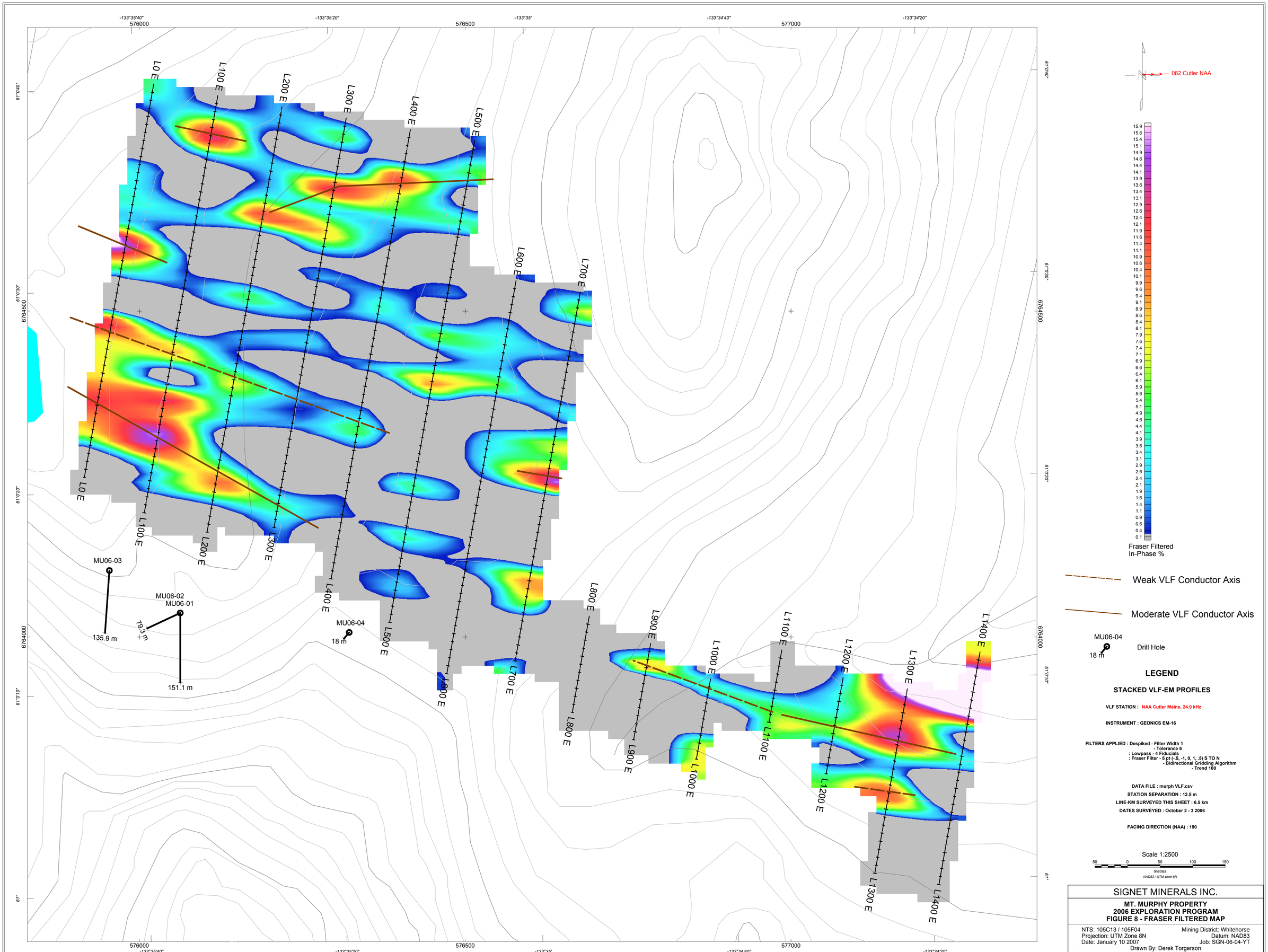
IN-PHASE DATUM : 0%
QUADRATURE DATUM : 0%
DATA FILE : murph VLF.csv
STATION SEPARATION : 12.5 m
LINE-KM SURVEYED THIS SHEET : 6.5 km
DATES SURVEYED : October 2 - 3 2006

FACING DIRECTION (NAA) : 190

Scale 1:2500

50 0 50 100 150
metres
NAD83 / UTM zone 8N

SIGNET MINERALS INC.	
MT. MURPHY PROPERTY **2006 EXPLORATION PROGRAM** **FIGURE 7 - VLF PROFILE MAP**	
NTS: 105C13 / 105F04 Projection: UTM Zone 8N Date: January 10 2007	Mining District: Whitehorse Datum: NAD83 Job: SGN-06-04-YT
Drawn By: Derek Torgerson	
AURORA GEOSCIENCES LTD.	



SIGNET MINERALS INC.

MT. MURPHY PROPERTY
2006 EXPLORATION PROGRAM
FIGURE 8 - FRASER FILTERED MAP

NTS: 105C13 / 105F04 — Mining District: Whitehorse
Projection: UTM Zone 8N — Datum: NAD83
Date: January 10 2007 — Job: SGN-06-04-YT
Drawn By: Derek Torgerson

AURORA GEOSCIENCES LTD.

574500 575250 576000 576750 577500

-133°37' -133°36' -133°35' -133°34'

61°05'

6765000

6764250

6763500

6762750

61°

Airborne Radiometric High Anomaly

Ground Radiometric High Anomaly

Ground Magnetics High Anomaly

Soil U Anomaly

Weak VLF Conductor Axis

Moderate VLF Conductor Axis

Magnetic Linament Feature

Drill Hole Location

Scale 1:5000

100 0 100 200 300

metres

NAD83 / UTM zone 8N

SIGNET MINERALS INC.

MT. MURPHY PROPERTY
2006 EXPLORATION PROGRAM
FIGURE 9 - MT. MURPHY COMPILATION MAP

NTS: 105C13 / 105F04 Mining District: Whitehorse
Projection: UTM Zone 8N Datum: NAD83
Date: January 10 2007 Job: SGN-06-04-YT
Drawn By: Derek Torgerson

AURORA GEOSCIENCES LTD.