NTS 82 G/2 E
LAT. 49° 13' 25" N
LONG. 114° 42' 52" W

GEOLOGICAL AND GEOPHYSICAL REPORT ON THE HOWELL 1-5 & YSOO 1 CLAIMS, HOWELL & TWENTYNINE MILE CREEK, FERNIE, B.C.

Fort Steele Mining Division

For
Goldrea Resources Corp.,
2A 15782 Marine Dr., White Rock, B.C.
V4B 1E6

by

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406-4901 East Sooke Rd., Sooke B.C.
V0S 1N0

Dec. 9, 2002

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1.0 INTRODUCTION

This report was prepared at the request of Goldrea Resources Corp. to describe and evaluate the results of an airborne magnetometer, and K-U-Th radiometric geophysical survey that was flown over a 5 X 10 km area located approximately 40 km. southeast of Fernie, B.C. (in a straight line, approximately 68 km via access roads), within the Fort Steele Mining Division.

Field work was undertaken for the purpose of evaluating economic mineral potential of gold bearing mineral zones situated within the subject property. The airborne survey defined Flathead intrusions and/or related alteration which are interpreted as being coeval with the emplacement of gold bearing hydrothermal solutions.

Field work and compilation report drafting was carried out from Aug. 1 to Sept. 30, 2002. The airborne survey is summarized in Appendix A, Dighem Survey for Goldrea Resources Corp., Howell Property, Fernie, B.C., by Emily Farquhar, Sept., 2002. A discussion of the results and interpretation of data is presented in section 7.0 and 8.0 of this report. This report is based on published and unpublished information and maps, reports and field notes.

A program of core drilling was also carried out by Goldrea in the north portion of the Howell 3 claim. Three diamond drill holes totaled 327.67 m in depth. The 3 drill holes intersected porphyry gold mineralization (summarized in company newsletters listed on the internet website http://www.goldrea.com). As it is not included in the cost statement for assessment work filed, diamond drilling performed by Goldrea on the Howell 3 claim is excluded from this report. For the purpose of reference to this newly discovered gold zone (located near the Western Thrust), Fig. 8-13 shows the location of each drill hole labeled DDH 02H-1, H-2, & H-3 and Appendix B lists a sample summary of each hole.

2.0 LOCATION, ACCESS, PHYSIOGRAPHY

The Howell property is within NTS 82G/2E at latitude 49 13' N, and longitude 114 38' W in the Fort Steele Mining Division. The claims are at the headwaters of Howell and Twentynine Mile Creeks about 40 km southeast of Fernie, B.C. and 10 km west of the Flathead River. Elevations on the property range from 1,490 - 2,400 m. Prominent rock headwalls bound the valley on the south and west (Garret, 2000).

Access to the claims is via Highway 3 from Morrissey, then proceed 60 km southeast along the Morrissey, Lodgepole and Harvey Forest Access Roads. Access is possible via vehicle from June through November, and is seasonal depending on winter logging activity in Dec.-May.

The terrain is best described as one of the complex mountainous topography, rugged mountainous dissected by deeply incised valleys. Overburden cover varies from thin residual soils in the upper slopes to local talus and soil cover at intermediate elevations, to thick glacial till and fluvial gravel cover in the valley.

3.0 PROPERTY STATUS

The Howell 1-5 claims are under option from Placer Dome (CLA) Ltd and Cominco Ltd, each of whom own 50%. Eastfield can earn 100% interest in the property by undertaking $1,000,000 in exploration expenditures by Aug. 31, 2002 and paying $100,000 to each Placer and Cominco by Aug. 31, 2004. A 1.5% net smelter royalty is reserved for each Placer and Cominco of which 0.5% of each can be purchased by Eastfield after a production decision has been made. Certain cash payments to Placer and Cominco are required upon a production decision being made.

The 18 unit YSOO 1 claim is 100% owned by Eastfield, and is not subject to the Placer/Cominco agreement.

Golderea Resources Corp has entered into an agreement with Eastfield whereby Goldrea can earn 55% of the Howell 1-5 and YSOO 1 claims by completing a schedule of fieldwork on the subject property and by completing certain cash and stock payments to Eastfield.

Details of the claims are as follows:

Claim Name	Units	Record No.	Registered Owner	Expiry Date
Howell 1	20	209981	50% Placer Dome, 50% Eastfield	July 14, 2003
Howell 2	20	209982	50% Placer Dome, 50% Eastfield	July 14, 2003
Howell 3	20	209983	50% Placer Dome, 50% Eastfield	July 14, 2003
Howell 4	20	210011	50% Placer Dome, 50% Eastfield	Oct. 31, 2003
Howell 5	8	210012	50% Placer Dome, 50% Eastfield	Oct. 31, 2003
YSOO 1	18	366755	Eastfield Res.	Nov. 24, 2004

4.0 AREA HISTORY

The Elk River valley and the Flathead River valley are the sight of several coal mines (Eagle Mountain, Line Creek, Fording Bridge, Green Hills, Edwin Creek, Bingay Creek, and others) which have generated high quality, high-volatile bituminous coal. These two river valleys have also been explored for oil and gas by Shell and Chevron. The prospective reservoirs include the Flathead Gas Field (estimated resource of 600 bcf).

There are numerous lead-zinc-silver bearing sulphide mineral zones in the area of the Howell property. Figure 7 shows the distribution of Minfile occurrences as small triangles, and the areas south and east of the Howell property and most of these occurrences consist of carbonate-hosted galena-sphalerite mineralization with variable silver and gold values.

The Crowsnest property is located 5-10 km southeast of the Howell claims. This property comprises 181 units (3,025 Ha) which are held 100% by Eastfield Resources and are currently optioned by Goldrea Resources. The Crowsnest property is underlain by a thick sequence of Pennsylvannian and Mississippian carbonate and clastic rocks, of which the Mississippian Rundle Group shows the greatest exposure. Mid-Cretaceous syenite and trachyte intrusions as sills, dykes, and stocks have intruded the sedimentary sequence. These Flathead intrusions are generally propylitically altered in surface exposure and drill core exhibiting silicification, sericitization, pyritization and clay alteration. At surface, alteration is generally limited to marbleization, re-crystallization, and bleaching, while in drill holes skarn and hornfels alteration has been noted.

The Crowsnest property is within a basin and range thrust belt, evident by the abundance of low-angle to moderate angle structures. These structures have been displaced by high angle easterly, northwesterly and northeasterly normal faults related regional Tertiary extension. The low to moderate angle structures are mainly hosted in shaly parts of the carbonate and clastic section.

Trenching on the Crowsnest property in 1999 returned 16.5 m sample width that averaged 8.57 g/t Au (Trench TK-99-1), hosted in syenite, decalcified siltstone and limestone breccia (Garret, 2000). Seven samples from road cuts near Fortress Peak located in the center of the Crowsnest property, consist of boulder and cobble sized float in glacial till dispersed from 1,355-1,810 m elevation, that gave an average assay value of 19.27 g/t Au (Garret, 2000). In an effort to locate the source of these gold bearing boulders, a program of diamond drilling was carried out by Goldrea Res Corp (under option from Eastfield) in Sept.-Oct., 2002. A total of 11 diamond drill holes were located 150-300 m north of Fortress Peak. Preliminary data suggests a northwest strike and moderate to steep dip of mineralization immediately north of Fortress Mountain at 1700-1950 m elevation. Goldrea reports several intersections of gold bearing mineralization encountered which are summarized in newsletters on their internet website http://www.goldrea.com.

5.0 PROPERTY HISTORY AND GEOLOGY

1969-70: N.C.Leanard staked claims and undertook stream sediment sampling.

1971-72: Canarctic Res Ltd outlined numerous Pb/Zn anomalies

1972: Cominco Ltd performs prospecting, mapping, sampling.

1983: Cominco Ltd outlines three extensive zones of anomalous gold/silver.

1984-86: Cominco Ltd outlines a total of five extensive zones of anomalous gold/silver.

1984-86: Dome Exploration defined several new gold and Pb/Zn/Ag anomalies along the southeast extension of the central showings (A Zone).

1987-89: Placer Dome Inc drilled 25 reverse circulation holes, the best hole was HRC-25 which returned 190 ft (57.9 m) of 1.23 g/t Au, hosted in carbonaceous limestone.

1992-93: Phelps Dodge Can Ltd performs mapping, sampling and 6 drill holes totaling 890.9 m, and 5 holes failed to reach target depths.

1998-2000: Eastfield staked the 18 unit YSOO 1 claim and options the Howell 1-5 claims from Placer Ltd and Cominco Ltd. Eastfield carries out exploration on gold targets on the A and E grids. In conjunction with Derek Brown (B.C. Geological Survey Branch) and Robert Cameron (Fox Geological Services Inc), detailed geological mapping indicates the Flathead intrusive suite lies in the phonolite/trachyte field of volcanic rocks. Intrusion breccia bodies occur near the center of the claims (A Zone), and the largest known breccia body covers a 300 X 1000 m area. These intrusion breccias cut strata at acute angles and become semi-concordant at higher elevations. The intrusion breccia bodies contain angular syenite fragments within a feldspar-crystal-rich matrix. Limestone fragments comprise about 15% of the breccia pipe. Peripheral to the breccia is a hematitic weathering, limestone pebble breccia with a carbonate-rich matrix. Adjacent country rock is fractured and locally crackle breccias have developed. Sediment hosted, disseminated gold hosted in the Eastern Outlier at Howell Creek appears to be the most important target of future exploration, but there is also syenite hosted gold breccia, quartz stock work and/or sheeted veins as well as Pb-Zn manto-style mineralization (Brown, 1999).

6.0 2002 FIELDWORK

6.1 METHODS AND PROCEDURES

The airborne survey lines were flown at a bearing of 120 and 310 degrees and the distance covered by the survey totaled 158 km (Fig. 6). The airborne survey was carried out by Fugro Airborne Surveys Corp on the Howell 1-5 and YSOO 1 mineral claims (record numbers 209981, 209982, 209983, 210011, 210012, and 366755 respectively). Details of the survey parameters are given in Appendix A. The data generated by the survey was of good quality (i.e. noise levels within contract specifications).

7.0 DISCUSSION OF RESULTS

Total Field Magnetometer Survey: The dominant feature generated by the magnetometer survey is a 700 X 700 m square shaped high (>56,940 nT) adjacent to a 250 X 1,000 m boomerang shaped low (<56,840 nT) immediately north of the mag high, located in the north portion of YSOO 1 and south portion of Howell 3 (Fig. 8). This area corresponds to the complex interaction of the N and NE trending Howell thrust fault system and the NW trending Twentynine Mile Creek fault zone (Fig. 8). Several Flathead intrusions are mapped in the area of the square-shaped mag high and the boomerang-shaped mag low corresponds to an area of deep overburden with little or no outcrop.

Radiometrics total count (Fig. 9) roughly correlates with the raw potassium cps (Fig. 11) which is largely a function of raw potassium cps are generally in the range of 26-230 cps, whereas raw thorium is 8-38 cps and raw uranium is 11-41 cps (Fig. 11-13). Total counts cps and raw potassium cps increase in value in areas underlain by Cretaceous/Tertiary Flathead intrusive. This can be expected with the relatively elevated amounts of potassium present in the Flathead intrusive complex. Alpha, beta and gamma radiation produced by the disintegration of potassium (and to a lesser extent uranium and thorium) is measured by the radiometric survey. The most significant anomaly outlined in the airborne geophysical survey are six areas ranging from 30-300 meters in width and length, located in the center of Howell 3 and the east edge of Howell 2 claim, within the thrust fault bound Western Thrust (aka Eastern Outlier or A Zone). One of these six raw potassium anomalies occurs in the area of DDH 02 H-1 to H-3 (Fig. 8, Fig.11). The largest of the six raw potassium anomalies occur adjacent to the largest intrusion breccia near the summit of a cone shaped peak exhibiting a radial drainage pattern. This area located 300-1,200 m southwest of DDH 02 H-1 to H-3, represents a high order exploration target which has never been drill tested.

8.0 CONCLUSIONS AND RECOMMENDATIONS

The airborne geophysical survey outlined relatively weak and poorly defined total field magnetic features. The most significant anomalous magnetic peculiarity is a square-shaped high draped by a boomerang-shaped low to the north located near the structurally complex intersection of Twentynine Mile Creek and the Howell thrust fault zone. A small portion of the proposed exploration budget should be directed at this target.

The main focus of follow-up exploration should be directed at the Eastern Outlier (A Zone) within the area bounded by the Inside and Outside Faults of the Western Thrust. Detailed fieldwork should be to explore the area within and adjacent to the known intrusion breccia bodies. Considering the success Goldrea Resources had (DDH 02 H-1 to H-3 sample summary list, see Appendix B) with sediment hosted disseminated gold within and adjacent to diatremes (i.e. a breccia filled volcanic pipe formed by a gaseous explosion), an aggressive attempt should be made to define the nature, extent and quantity of gold bearing mineralization within the A Zone.

Based on the targets outlined in this sampling program, a 2 phase program consisting of preliminary geological mapping, trenching and lithogeochemical sampling followed by a series of diamond drill holes and further detailed geological mapping are proposed to test the depth extension of surface mineralization. Concurrent with diamond drilling, a program of hand trenching, geological mapping and rock chip sampling is required to outline further extensions of known mineral trends adjacent to DDH 02 H-1, and H-3, as well as new zones in the vicinity of the large intrusion breccia body located several hundred meters southwest of DDH 02 H-3 and H-3. A detailed budget of this 2 phase exploration program is described as follows:

PHASE 1: PROPOSED BUDGET FOR HOWELL Au TARGETS:

FIELD CREW- Geologist, 1 geotechnicians, 10 dayS	$	7,000.00
FIELD COSTS-Assays 100		2,200.00
Equipment and Supplies		800.00
Communication		500.00
Food		1,200.00
Transportation		1,400.00
REPORT		700.00
	Total = $	13,800.00

PHASE 2: PROPOSED BUDGET FOR HOWELL Au TARGETS:

FIELD CREW- Geologist, 2 geotechnicians, 1 cook 90 days	$	46,000.00
FIELD COSTS- Core drilling 10,000 feet (3,050 metres)		305,000.00
Assays 700		14,000.00
Equipment and Supplies		4,000.00
Communication		3,000.00
Food		6,500.00
Transportation		3,000.00
REPORT		1,200.00
	Total = $	381,700.00

TOTAL PHASE 1 + 2 = $ 395,500.00

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Brown, D.A., Cameron, R.S., 1999: Sediment Hosted, Disseminated Gold Deposits Related to Alkalic Intrusions in the Howell Creek Structure, SE British Columbia, Min. of Energy & Mines, Geological Fieldwork 1998, Paper 1999-1, p. 179-191.

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Gordy, P.L., 1962: Age of the Howell Creek Intrusives, Journal of Alberta Society of Petroleum Geologists, volume 10, p. 369-372.

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Wilson, M.R., 1988: Geochemistry of Porphyry-Hosted Au-Ag Deposits in the Little Rock Mountains, Montana, Econ. Geol., Vol. 83, No. 7.

CERTIFICATE

I, Andris Kikauka, of Sooke, B.C., hereby certify that;

1. I am a graduate of Brock University, St. Catharines, Ont., with an Honours Bachelor of Science Degree in Geological Sciences, 1980.

2. I am a Fellow in good standing with the Geological Association of Canada.

3. I am registered in the Province of British Columbia as a Professional Geoscientist.

4. I have practiced my profession for eighteen years in precious and base metal exploration in the Cordillera of Western Canada, U.S.A., South America, and for three years in uranium exploration in the Canadian Shield.

5. The information, opinions, and recommendations in this report are based on fieldwork carried out in my presence on the subject property.

6. I have a direct interest in the subject claims and securities of Goldrea Resources Corp. and this report is not intended for the purpose of statement of material facts and/or related public financing.

Andris Kikauka, P. Geo.,

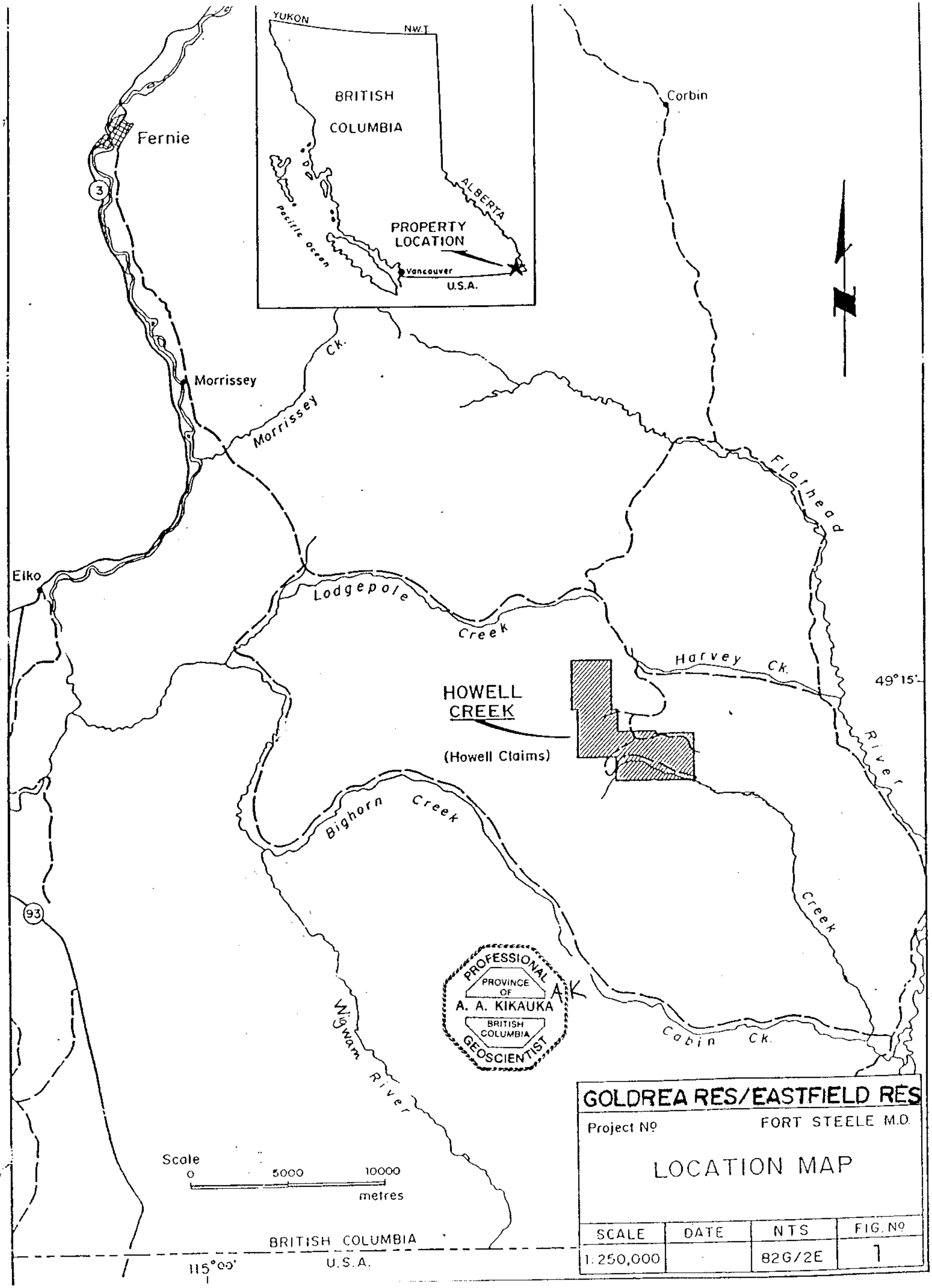
A. Kikauka

Dec. 9, 2002

ITEMIZED COST STATEMENT- HOWELL 1-5, YSOO 1 CLAIM GROUP, AUG., SEPT., 2002. NTS 82 G/2, TRIM 082G027, 017, FORT STEELE M.D.

Airborne geophysical survey and report carried out by Fugro Airborne Surveys Corp from Aug. 6-Sept. 30, 2002 by contract, total cost of survey of 158 line km =	**$ 43,872.00**
Geological and geophysical compilation	**428.00**
Total =	**$ 44,300.00**

LIST OF FIGURES

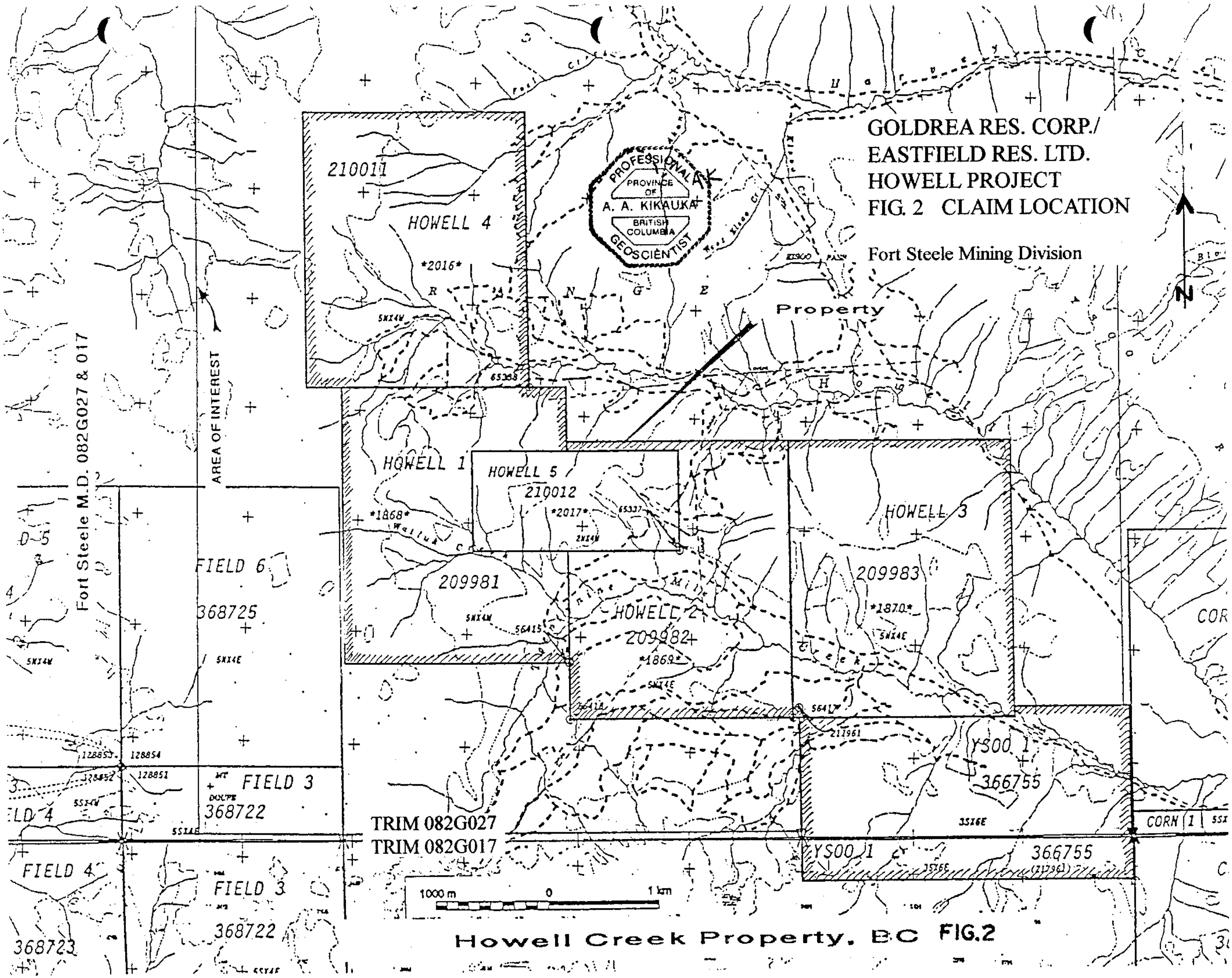


GOLDREA RES/EASTFIELD RES

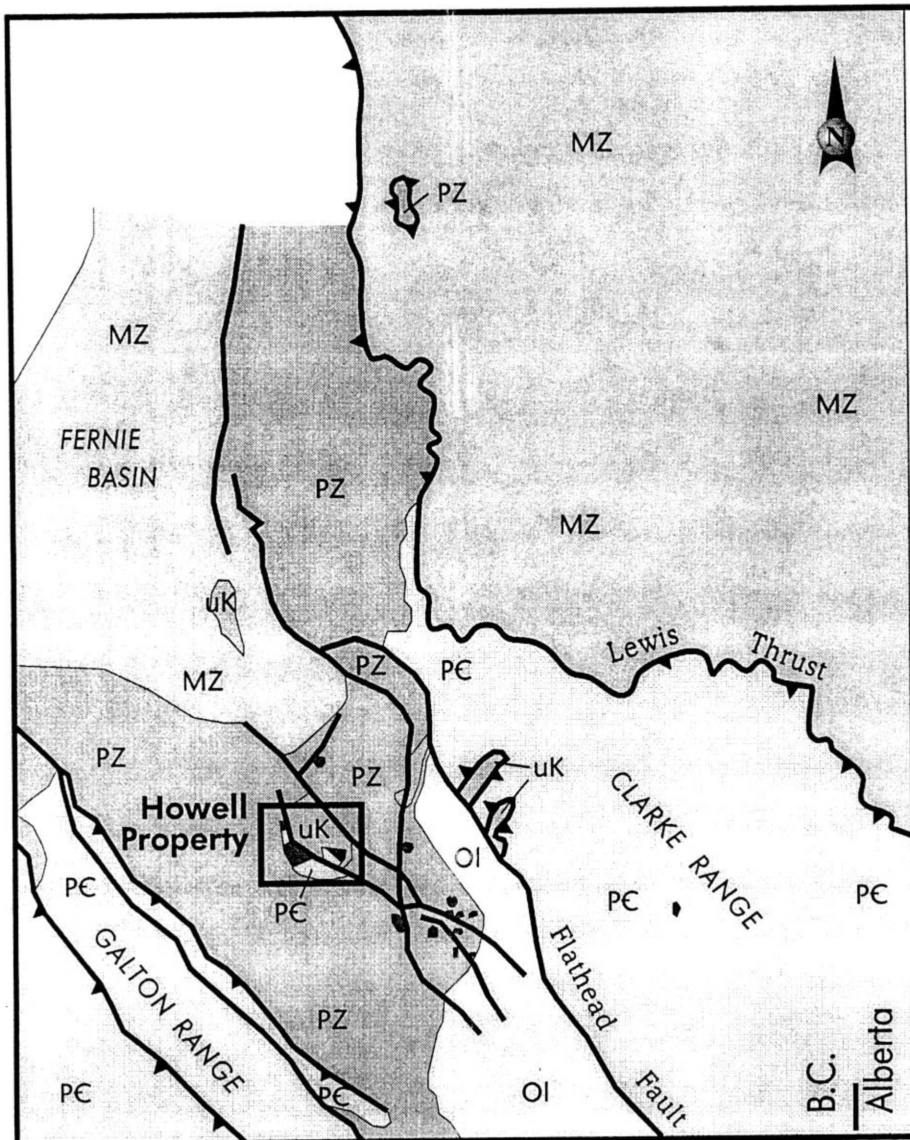
Project Nº FORT STEELE M.D.

LOCATION MAP

SCALE	DATE	NTS	FIG. Nº
1:250,000		82G/2E	1



Howell Creek Property, BC FIG.2



Eastfield Resources Ltd.

Oligocene

Ol — Kishenehn Formation

Upper Cretaceous

uK — Alberta Group

Mesozoic

MZ

Howell intrusives

Paleozoic

PZ

Proterozoic

PC — Purcell group

Thrust fault

Normal fault

20 kilometres

PROFESSIONAL
PROVINCE OF
A. A. KIKAUKA
BRITISH COLUMBIA
GEOSCIENTIST

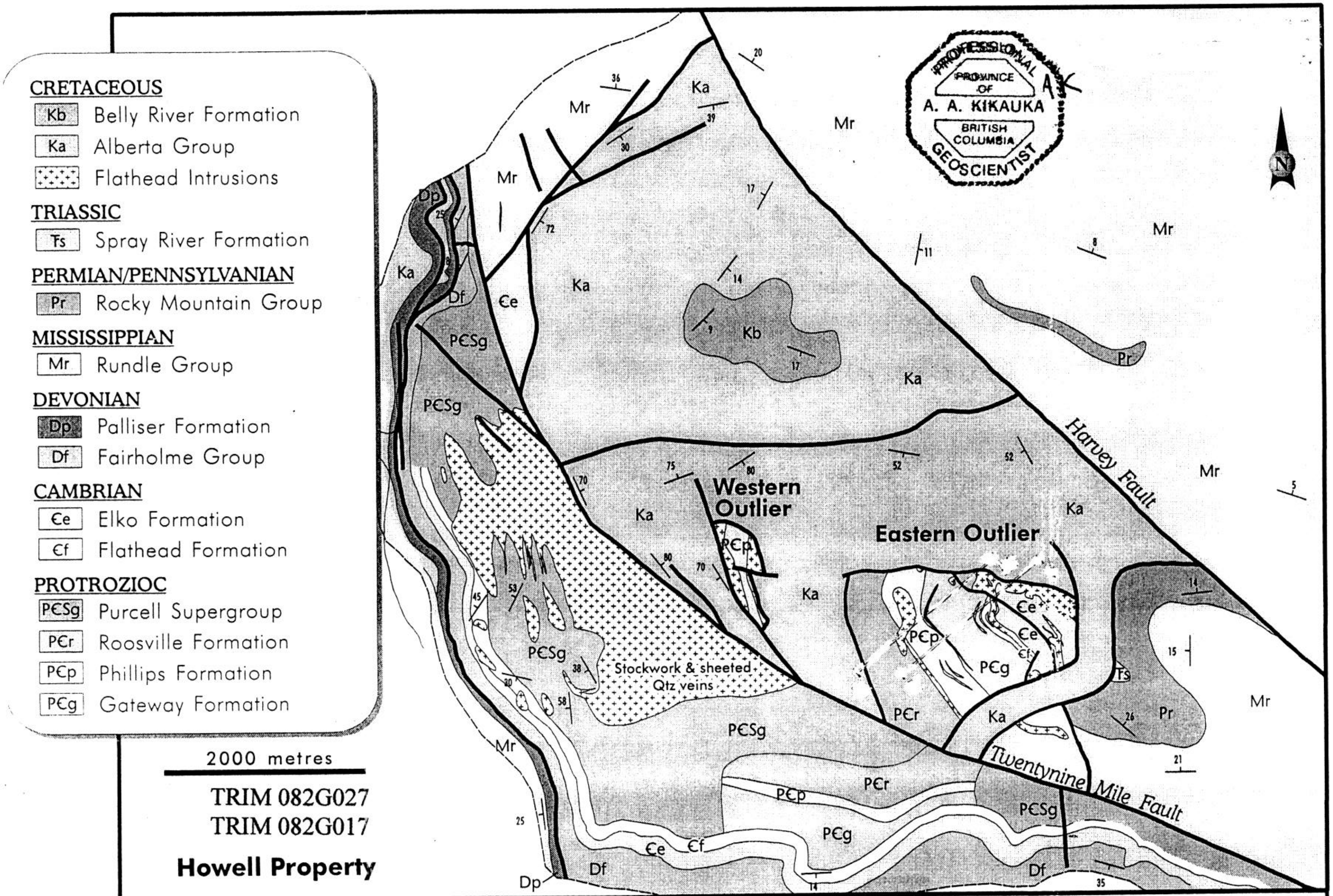
AK

GOLDREA RES. CORP./
EASTFIELD RES. LTD.
HOWELL PROJECT

Scale: as shown
By: glg

FIG. 3 REGIONAL GEOLOGY

Fort Steele Mining Division
NTS 82 G



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GOLDREA RES. CORP./
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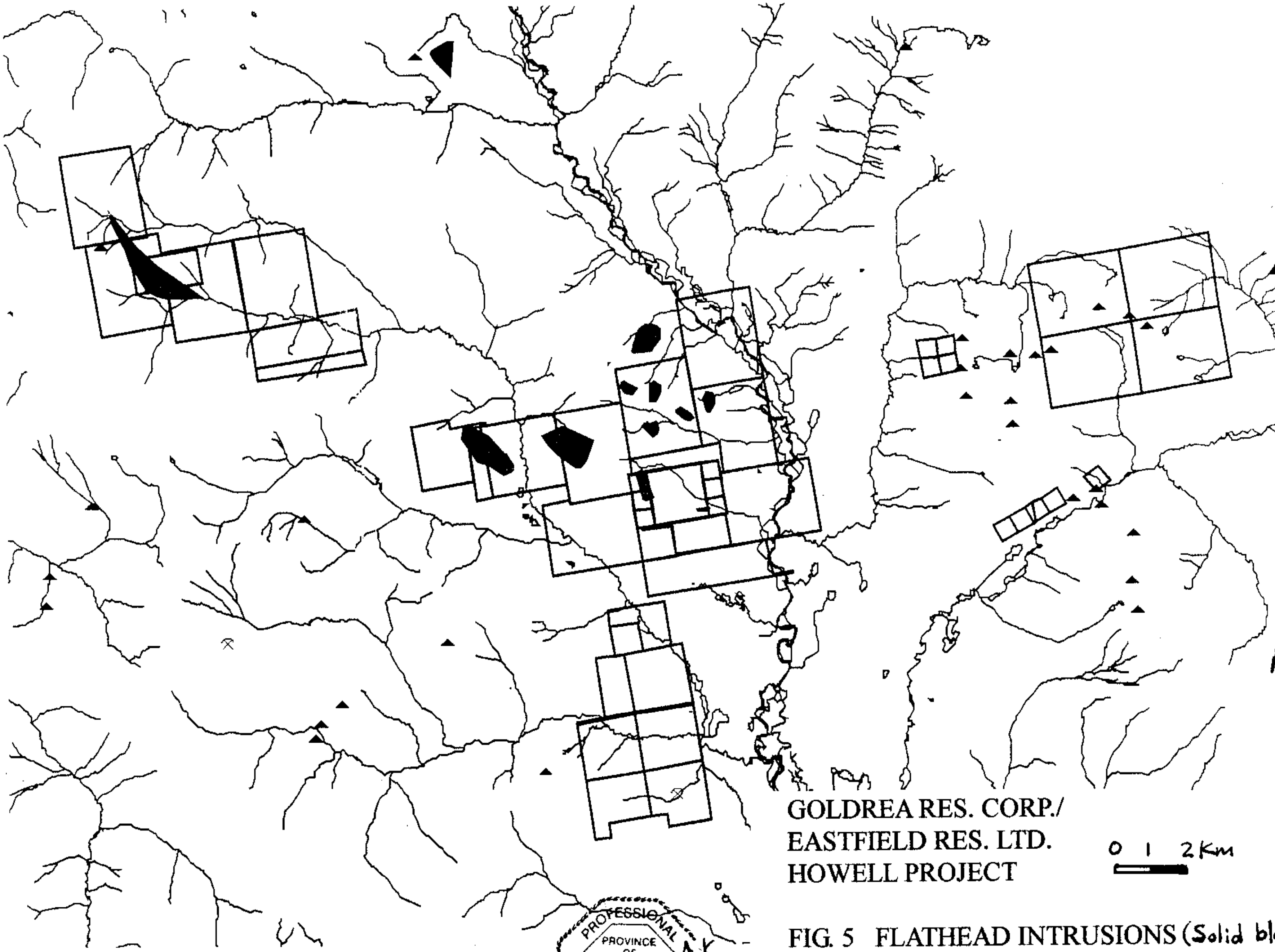
HOWELL PROJECT

FIG. 4 PROPERTY GEOLOGY

Fort Steele Mining Division



GOLDREA RES. CORP./
EASTFIELD RES. LTD.
HOWELL PROJECT

FIG. 5 FLATHEAD INTRUSIONS (Solid black)
Claim map of Flathead River valley showing
Minfile occurrences (as triangles)
Fort Steele Mining Division
NTS 82 G

FROM EASTFIELD RESOURCES

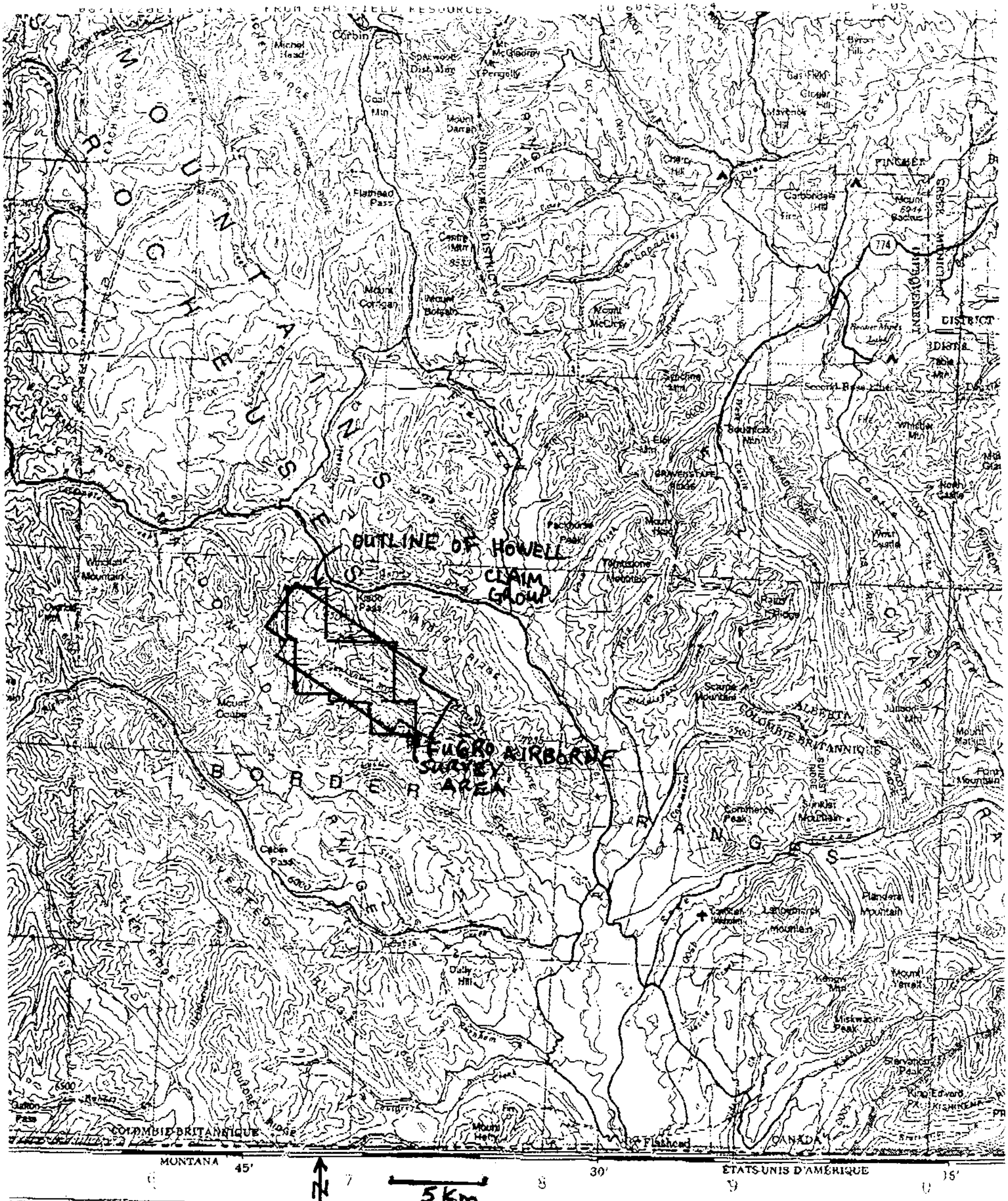


FIG. 6 OUTLINE OF FUGRO AIRBORNE SURVEY
Superimposed on outline of Howell claim group

Scale 1:250,000

Fort Steele Mining Division
NTS 82 G

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GEOSCIENTIST
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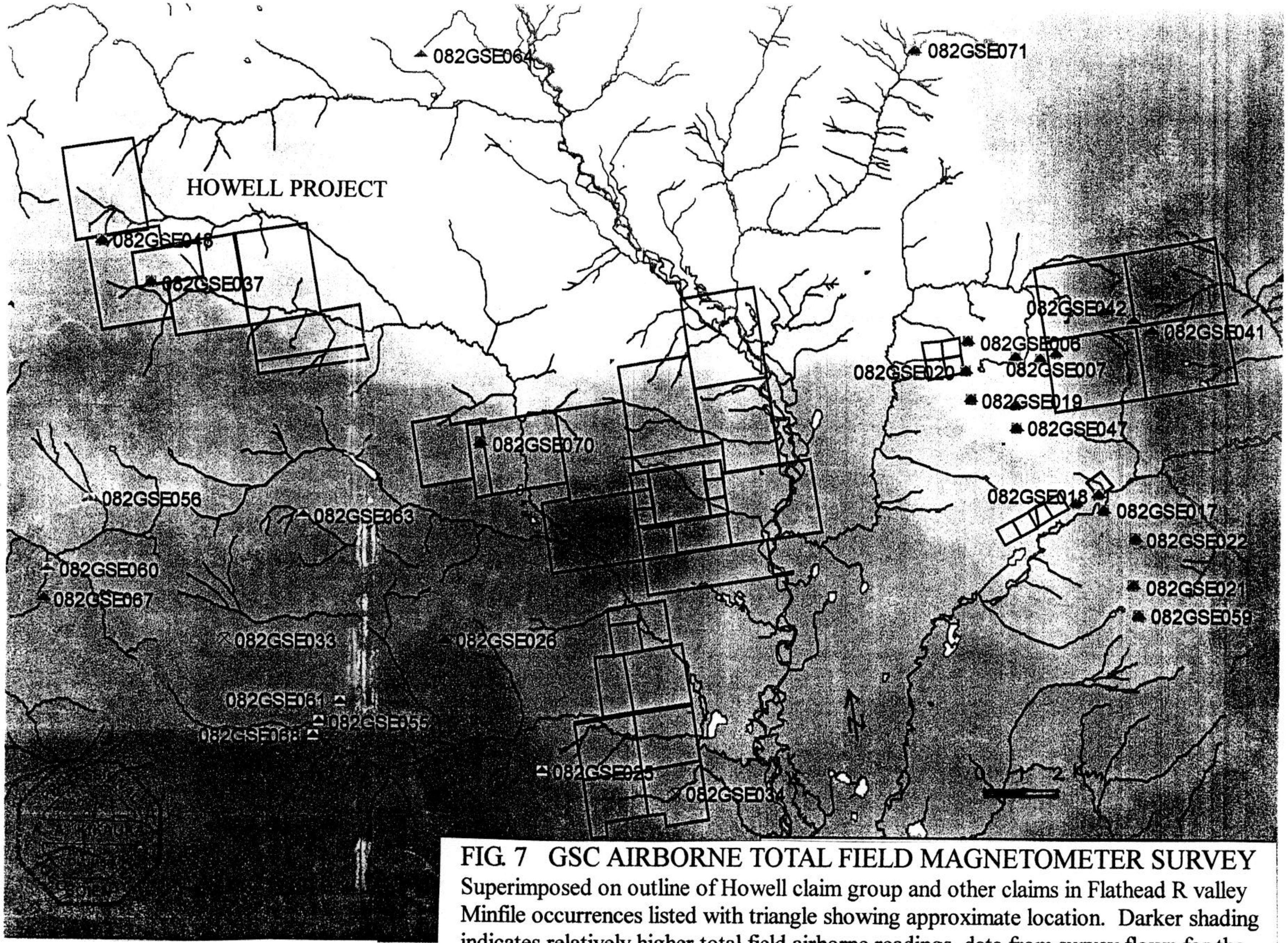


FIG. 7 GSC AIRBORNE TOTAL FIELD MAGNETOMETER SURVEY

Superimposed on outline of Howell claim group and other claims in Flathead R valley Minfile occurrences listed with triangle showing approximate location. Darker shading indicates relatively higher total field airborne readings, data from survey flown for the GSC in 1976.

GOLDREA RES. CORP./
EASTFIELD RES. LTD.
HOWELL PROJECT

Fort Steele Mining Division

Scale as shown NTS 82 G

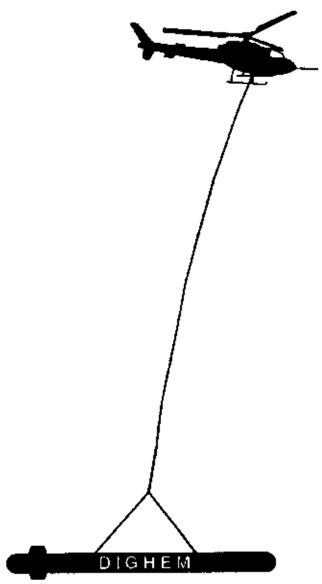
APPENDIX A

FUGRO AIRBORNE SURVEYS

Report #2115

DIGHEM^{V} SURVEY
FOR
GOLDREA RESOURCES CORP.
HOWELL PROPERTY, FERNIE AREA
BRITISH COLUMBIA

NTS 82G/2



Fugro Airborne Surveys Corp.
Mississauga, Ontario

Emily Farquhar
Geophysicist

September, 2002

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Phone: 1 905 812 0212, Fax: 1 905 812 1504

SUMMARY

This report describes the logistics and processing of a Fugro Airborne Surveys airborne geophysical survey carried out for Goldrea Resources Corp., over a single survey block in the Howell Property located in the Fernie area of British Columbia. Total coverage of the survey block amounted to 158 km. The survey was flown on August 6, 2002.

The purpose of the survey was to provide information that could be used to map the geology and structure of the survey area. This was accomplished by using a high sensitivity cesium magnetometer and a 256 channel spectrometer The information from these sensors was processed to produce maps which display the magnetic, and radiometric properties of the survey area. A GPS electronic navigation system ensured accurate positioning of the geophysical data with respect to the base maps. Video recording of the survey terrain allowed for the possibility of visual flight path recovery techniques where necessary. The location of the helicopter can be confirmed where topographic features are identifiable in the video images.

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APPENDICES

1. INTRODUCTION

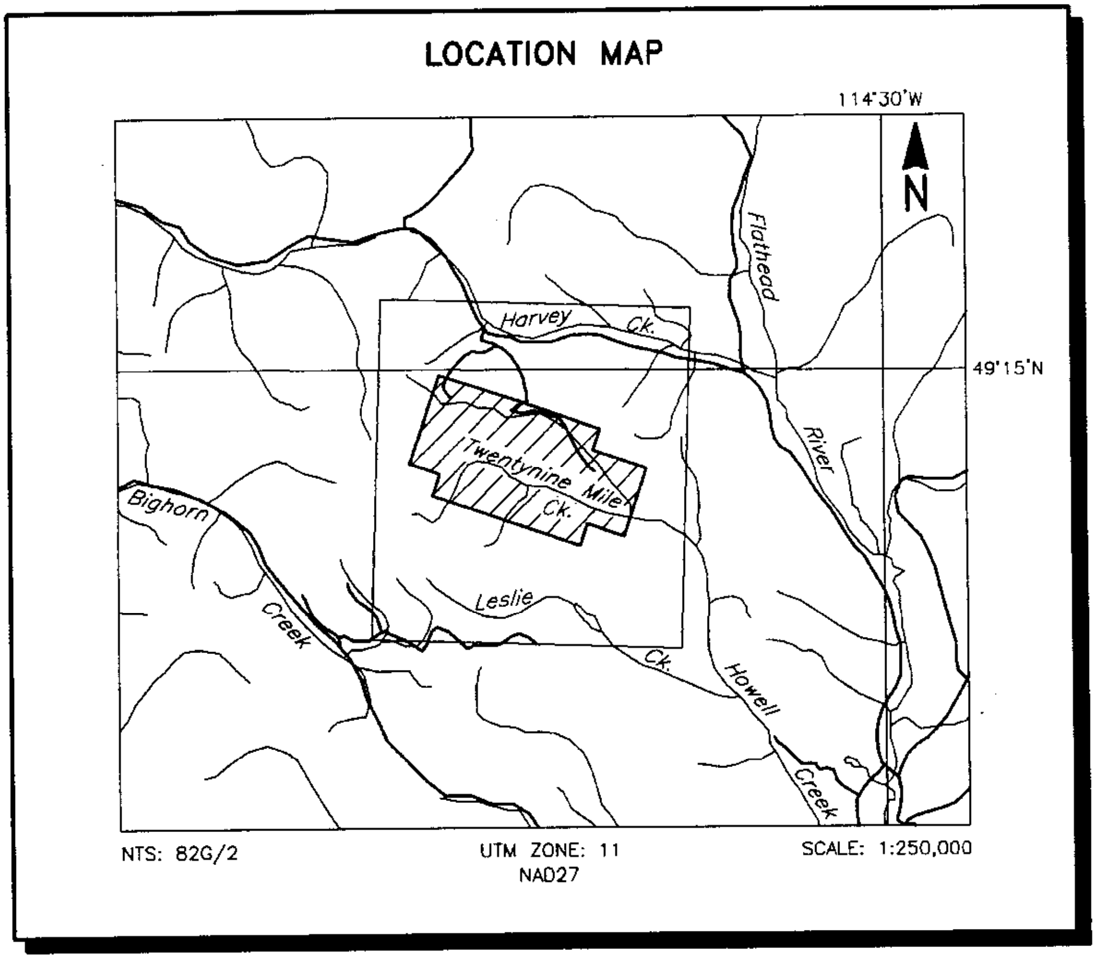
A Fugro Airborne Surveys magnetic/radiometric survey was flown for Goldrea Resources Corp., on August 6, 2002, over a survey block located approximately 50 km southwest of Fernie, B.C. The survey area can be located on NTS map sheet 82G/2 (Figure 1).

Survey coverage consisted of approximately 158 line-km, comprising 150 km on 21 traverse lines and 8.2 km on 2 orthogonal tie lines. Flight lines were flown in an azimuthal direction of 105º/285º with a line separation of 200 metres. Two tie lines were flown northeast/southwest.

The survey employed a magnetometer and a 256 channel spectrometer with ancillary equipment consisting of radar and barometric altimeters, video camera, analog and digital recorders, and an electronic navigation system. The instrumentation was installed in an AS350B2 turbine helicopter (Registration C-GZTA) which was provided by Questral Helicopters Ltd. The helicopter flew at an average airspeed of 65 km/h with a magnetometer sensor height of approximately 30 m. The spectrometer crystal package was housed within the helicopter, at a nominal terrain clearance of 60 m.

Section 2 provides details on the survey equipment, the data channels, their respective sensitivities, and the navigation/flight path recovery procedure.

FIGURE 1


LOCATION MAP
114°30'W
N
49°15'N
Flathead
River
Harvey
Ck.
Twentynine Mile
Ck.
Bighorn
Creek
Leslie
Ck.
Howell
Creek
NTS: 82G/2
UTM ZONE: 11
NAD27
SCALE: 1:250,000

2. SURVEY EQUIPMENT

This section provides a brief description of the geophysical instruments used to acquire the survey data and the calibration procedures employed.

Magnetometer

Model:	FUGRO AM102 processor with Scintrex CS2 sensor
Type:	Optically pumped cesium vapour
Sensitivity:	0.01 nT
Sample rate:	10 per second

The magnetometer sensor is housed in its own bird, 28 m below the helicopter.

Magnetic Base Stations

Model:	Fugro CF-1 with Scintrex CS2
Type:	Digital recording cesium vapour
Sensitivity:	0.01 nT
Sample rate:	0.1 per second

Model:	GEM Systems GEM-19T
Type:	Digital recording Overhauser magnetometer
Sensitivity:	0.1 nT

Sample rate: 1 per second

The CF-1 GPS/Mag base station was located at the Elko airport west of the survey block, at latitude 49º17'07.3712"N,, longitude 115º09'18.5807"W at an elevation of 864.68 m.

A digital recorder was operated in conjunction with the base station magnetometer to record the diurnal variations of the earth's magnetic field. The clock of the base station is synchronized with that of the airborne system to permit subsequent removal of diurnal drift.

Spectrometer

Manufacturer:	Exploranium
Model:	GR-820
Type:	256 Multichannel, Thorium stabilized
Accuracy:	1 count/sec.
Update:	1 integrated sample/sec.

The GR-820 Airborne Spectrometer employs four downward looking crystals (1024 cu.in.) and one upward looking crystal (256 cu.in.). The downward crystal records the radiometric spectrum from 410 KeV to 3 MeV over 256 discrete energy windows, as well as a cosmic ray channel which detects photons with energy levels above 3.0 MeV. From these 256 channels, the standard Total Count, Potassium, Uranium and Thorium channels are extracted. The upward crystal is used to measure and correct for Radon.

The shock-protected Sodium Iodide (Thallium) crystal package is unheated, and is automatically stabilized with respect to the Thorium peak. The GR-820 provides raw or Compton stripped data which has been automatically corrected for gain, base level, ADC offset and dead time.

The system is calibrated before and after each flight using three accurately positioned hand-held sources. Additionally, fixed-site hover tests are carried out to determine if there are any differences in background. This procedure allows corrections to be applied to each survey flight, to eliminate any differences, which might result from changes in temperature or humidity.

Radar Altimeter

Manufacturer:	Honeywell/Sperry
Model:	RT220
Type:	Short pulse modulation, 4.3 GHz
Sensitivity:	0.3 m at 60 m survey height
Sample rate:	2 per second

The radar altimeter measures the vertical distance between the helicopter and the ground. This information can be used in conjunction with the barometric altimeter data to estimate the digital terrain profile.

Barometric Pressure and Temperature Sensors

Model:	DIGHEM D 1300	
Type:	Motorola MPX4115AP analog pressure sensor AD592AN high-impedance remote temperature sensors	
Sensitivity:	Pressure:	150 mV/kPa
	Temperature:	100 mV/°C or 10 mV/°C (selectable)
Sample rate:	10 per second	

The D1300 circuit is used in conjunction with one barometric sensor and up to three temperature sensors. Two sensors (baro and temp) are installed in the EM console in the aircraft, to monitor pressure and internal operating temperatures.

Analog Recorder

Manufacturer:	RMS Instruments
Type:	DGR33 dot-matrix graphics recorder
Resolution:	4x4 dots/mm
Speed:	1.5 mm/sec

The analog profiles are recorded on chart paper in the aircraft during the survey. Table 2-1 lists the geophysical data channels and the vertical scale of each profile.

Table 2-1. The Analog Profiles

Channel Name	Parameter	Scale units/mm	Designation on Digital Profile
ALTR	altimeter (radar)	3 m	ALTBIRD
MAGC	magnetics, coarse	20 nT	MAG50
MAGF	magnetics, fine	2.0 nT	MAG20
1KPA	altimeter (barometric)	30 m	
2TDC	internal (console) temperature	1º C	
3TDC	external temperature	1º C	
TC	total radiometric counts	100 cps	
K	potassium counts	10 cps	
U	uranium counts	10 cps	
TH	thorium counts	10 cps	

Digital Data Acquisition System

Manufacturer:	RMS Instruments
Model:	DGR 33
Recorder:	48 Megabyte Flash Card

The data are stored on a 48 Mb Flash card and are downloaded to the field workstation PC at the survey base for verification, backup and preparation of in-field products.

Video Flight Path Recording System

Type:	Panasonic VHS Colour Video Camera (NTSC)
Model:	AG 2400/WVCD132

Fiducial numbers and raw latitude and longitude are recorded continuously and are displayed on the margin of each image. This procedure ensures accurate correlation of analog and digital data with respect to visible features on the ground.

Navigation (Global Positioning System)

Airborne Receiver

Model:	Ashtech Glonass GG24
Type:	SPS (L1 band), 24-channel, C/A code at 1575.42 MHz, S code at 0.5625 MHz, Real-time differential.
Sensitivity:	-132 dBm, 0.5 second update
Accuracy:	Manufacturer's stated accuracy is better than 10 metres real-time
Recorder:	48 Mb flash card

Base Station

Model:	Ashtech Z-Surveyor
Type:	Dual frequency, 12 channels, full wavelength carrier on L1 and L2
Accuracy:	Manufacturer's stated accuracy for differential corrected GPS is <1 metre

The Ashtech GG24 is a line of sight, satellite navigation system which utilizes time-coded signals from at least four of forty-eight available satellites. Both Russian GLONASS and American NAVSTAR satellite constellations are used to calculate the position and to provide real time guidance to the helicopter.

The Ashtech Z-Surveyor was used as a GPS base station to provide post-survey differential corrections. The Z-Surveyor is a dual-frequency receiver and utilizes time-coded signals from both L1 and L2 bands to provide very accurate positioning capabilities.

The base station raw XYZ data are recorded, thereby permitting post-survey processing for theoretical accuracies of better than 5 metres.

The Ashtech receiver is coupled with a PNAV 2100 navigation system for real-time guidance.

Although the base station receiver is able to calculate its own latitude and longitude, a *higher degree of accuracy can be obtained if the reference unit is established on a known* benchmark or triangulation point. For this survey, both the CF-1/GPS station and the Z-Surveyor GPS base station were located at the Elko airport, with a latitude of 49º17'.07.3712"N,, longitude 115º09'18.5807"W and an elevation of 864.68 m (ellipsoidal). The GPS records data relative to the WGS84 ellipsoid, which is the basis of the revised North American Datum (NAD83). Conversion software is used to transform the WGS84 coordinates to the NAD27 UTM system displayed on the base maps.

Field Workstation

A PC is used at the survey base to verify data quality and completeness. Flight data are transferred to the PC hard drive to permit the creation of a database using a proprietary software package . This process allows the field operators to display both the positional (flight path) and geophysical data on a screen or printer.

3. PRODUCTS AND PROCESSING TECHNIQUES

Table 3-1 lists the maps and products, which have been provided under the terms of the survey agreement. Other products can be prepared from the existing dataset, if requested. These include magnetic enhancements or derivatives, radiometric ratios or ternary plots. Most parameters can be displayed as contours, profiles, or in colour.

Base Maps

Base maps of the survey area have been produced from scanned images of the published 1:50000 scale topographic maps. This provides a relatively accurate, distortion-free base which facilitates correlation of the navigation data to the UTM grid. The digital topographic files were combined with the geophysical data for plotting the final maps. All maps were created using the following parameters:

Projection Description:

Datum:	NAD27 (ALTA,B.C.)		
Ellipsoid:	Clarke 1866		
Projection:	UTM (Zone: 11)		
Central Meridian:	117º W		
False Northing:	0		
False Easting:	500000		
Scale Factor:	0.9996		
WGS84 to Local Conversion:	Molodensky		
Datum Shifts:	DX: 7	DY: -162	DZ: -188

Table 3-1 Survey Products

The geophysical data have been presented on a single map sheet at a scale of 1:20,000.

1. Final Transparent Maps (+3 prints) @ 1:20,000

   Total magnetic field
   Calculated vertical magnetic gradient
   Radiometrics Total Count
   Potassium Counts
   Uranium Counts
   Thorium Counts

2. Colour Maps (2 sets) @ 1:20,000

   Total magnetic field
   Calculated vertical magnetic gradient
   Radiometric - Total Counts
   - Potassium Counts
   - Uranium Counts
   - Thorium Counts

3. Additional products:

   Digital XYZ archive in Geosoft ASCII format (CD-ROM)
   Digital grid archives in Geosoft format (CD-ROM)
   Survey logistics report
   Multi-channel stacked profiles
   Analog chart records
   Flight path video cassette

Note: Other products can be produced from existing survey data, if requested.

Total Magnetic Field

The magnetic data was corrected to produce a final levelled total field product by the application of the following sequence of procedures:

- Data quality check on the raw magnetic data.
- Loading, checking and application of the measured diurnal data.
- Lag correction.

The data quality check was accomplished in the field by applying a fourth difference filter to the raw magnetic data after it had been loaded into the OASIS montaj™ database. Magnetometer noise levels were maintained within stated specifications

The aeromagnetic data were inspected in both grid and profile format. Spikes were removed manually with the aid of the fourth difference calculation and small gaps were interpolated using an Akima spline. The diurnal magnetic data had a base of 56900.00 nT removed, was inspected and filtered, then subtracted from the total field magnetic data. Grids were created and compared to the non-diurnally corrected data to ensure diurnal removal resulted in a better quality of data. The diurnally corrected grids were then contoured and the lag was determined and applied. Calculated Vertical Magnetic Gradient grids were produced to aid in the detection and removal of lag. For this survey the lag was determined to be 1.3 seconds. Once the lag had been removed grids were created and examined to determine if additional leveling was required. Tie line levelling was only used on lines which had two intersections with tie lines. Manual adjustments were applied to any lines that required additional levelling, as indicated by shadowed images of the gridded vertical gradient. After the application of tie-line levelling, a procedure known as microlevelling can be applied. This technique is designed to remove any persistent, low-amplitude component of flight line noise remaining after tie-line levelling. A series of directional filters is applied to the magnetic grid to produce a decorrugation “noise” grid. This grid is then re-sampled back into the database where the resultant “noise” channel is further filtered to remove short wavelength responses that could be due to geologic sources. The amplitude of the “noise” channel is also limited to restrict the effect that the microlevelling might have on strong geologic response. Finally, the “noise” channel is subtracted from the tie-line levelled or diurnally corrected channel created earlier in the processing sequence, resulting in the final levelled channel. The IGRF gradient has not been removed from the corrected total field data.

Calculated Vertical Magnetic Gradient

The diurnally-corrected total magnetic field data are subjected to a processing algorithm which enhances the response of magnetic bodies in the upper 500 m and attenuates the response of deeper bodies. The resulting vertical gradient map provides better definition and resolution of near-surface magnetic units. It also identifies weak magnetic features which may not be evident on the total field map. However, regional magnetic variations and changes in lithology may be better defined on the total magnetic field map.

Radiometrics

All radiometric data reductions performed by Fugro Airborne Surveys rigorously follow the procedures described in the IAEA Technical Report[1].

All processing of radiometric data was undertaken at the natural sampling rate of the spectrometer, i.e., one second. The data were not interpolated to match the fundamental 0.1 second interval of the EM and magnetic data.

The following sections describe each step in the process.

Pre-filtering

The radar altimeter data were processed with a 49-point median filter to remove spikes.

Reduction to Standard Temperature and Pressure

The radar altimeter data were converted to effective height (h_e) in feet using the acquired temperature and pressure data, according to the following formula:

1 Exploranium, I.A.E.A. Report, Airborne Gamma-Ray Spectrometer Surveying, Technical Report No. 323, 1991.

$$h_e = h * \frac{273.15}{T + 273.15} * \frac{P}{1013.25}$$

where: *h* is the observed crystal to ground distance in feet

T is the measured air temperature in degrees Celsius

P is the barometric pressure in millibars

Live Time Correction

The spectrometer, an Exploranium GR-820, uses the notion of "live time" to express the relative period of time the instrument was able to register new pulses per sample interval. This is the opposite of the traditional "dead time", which is an expression of the relative period of time the system was unable to register new pulses per sample interval.

The GR-820 measures the live time electronically, and outputs the value in milliseconds. The live time correction is applied to the total count, potassium, uranium, thorium, upward uranium and cosmic channels. The formula used to apply the correction is as follows:

$$C_{lt} = C_{raw} * \frac{1000.0}{L}$$

where: C_{lt} is the live time corrected channel in counts per second

C_{raw} is the raw channel data in counts per second

L is the live time in milliseconds

Intermediate Filtering

Two parameters were filtered, but not returned to the database:

- Radar altimeter was smoothed with a 5-point Hanning filter (h_{ef}).
- The Cosmic window was smoothed with a 29-point Hanning filter (Cos_f).

Aircraft and Cosmic Background

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

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

where: C_{ac} is the background and cosmic corrected channel

C_{lt} is the live time corrected channel

a_c is the aircraft background for this channel

b_c is the cosmic stripping coefficient for this channel

Cos_f is the filtered Cosmic channel

Radon Background

The determination of calibration constants that enable the stripping of the effects of atmospheric radon from the downward-looking detectors through the use of an upward-looking detector is divided into two parts:

1) Determine the relationship between the upward- and downward-looking detector count rates for radiation originating from the ground.

2) Determine the relationship between the upward- and downward-looking detector count rates for radiation due to atmospheric radon.

The procedures to determine these calibration factors are documented in IAEA Report #323 on airborne gamma-ray surveying. The calibrations for the first part were determined as outlined in the report.

The second part normally requires many over-water measurements where there is no contribution from the ground. From these tests, any change in the downward uranium window due to variations in radon background would be directly related to variations in the upward window and the other downward windows.

The validity of this technique rests on the assumption that the radiation from the ground is essentially constant from flight to flight. Inhomogeneities in the ground, coupled with deviations in the flight path between test runs, add to the inaccuracy of the accumulated results. Variations in flying heights and other environmental factors also contribute to the uncertainty.

Once the survey was complete, the relationships between the counts in the downward uranium window and in the other four windows due to atmospheric radon were determined using linear regression for each of the hover sites. The equations solved for were:

$$u_r = a_u Ur + b_u$$

$$K_r = a_K U_r + b_K$$

$$T_r = a_T U_r + b_T$$

$$I_r = a_I U_r + b_I$$

where: u_r is the radon component in the upward uranium window

K_r, U_r, T_r and I_r are the radon components in the various windows of the downward detectors

the various "a" and "b" coefficients are the required calibration constants

In practice, only the "a" constants were used in the final processing. The "b" constants, which are normally near zero for over-water calibrations, were of no value as they reflected the local distribution of the ground concentrations measured in the five windows.

The thorium, uranium and upward uranium data for each line were copied into temporary arrays, then smoothed with 21, 21 and 51 point Hanning filters to produce Th_f, U_f, and u_f respectively. The radon component in the downward uranium window was then determined using the following formula:

$$U_r = \frac{u_f - a_1 * U_f - a_2 * Th_f + a_2 * b_{Th} - b_u}{a_u - a_1 - a_2 * a_{Th}}$$

where: U_r is the radon component in the downward uranium window

u_f is the filtered upward uranium

U_f is the filtered uranium

Th_f is the filtered thorium

a_1, a_2, a_u and a_{Th} are proportionality factors and

b_u and b_{Th} are constants determined experimentally

The effects of radon in the downward uranium are removed by simply subtracting U_r from U_{ac}. The effects of radon in the total count, potassium, thorium and upward uranium are then removed based upon previously established relationships with U_r. The corrections are applied using the following formula:

$$C_{rc} = C_{ac} - (a_c * U_r + b_c)$$

where: C_{rc} is the radon corrected channel

C_{ac} is the background and cosmic corrected channel

U_r is the radon component in the downward uranium window

a_c is the proportionality factor and

b_c is the constant determined experimentally for this channel

As this survey was flown in only one flight, there was no statistical sample of test line or hover test data that would allow us to determine the radon coefficients to be used for stripping. Gridding of the upward looking uranium channel showed no significant contribution to uranium or total count from radon contamination so the coefficients for radon removal were nulled in the radiometric processing procedure.

Compton Stripping

Following the radon correction, the potassium, uranium and thorium are corrected for spectral overlap. First α, β, and γ the stripping ratios, are modified according to altitude. Then an adjustment factor based on a, the reversed stripping ratio, uranium into thorium, is calculated. (Note: the stripping ratio altitude correction constants are expressed in change per metre. A constant of 0.3048 is required to conform to the internal usage of height in feet):

$$\alpha_h = \alpha + h_{ef} * 0.00049$$

$$\beta_h = \beta + h_{ef} * 0.00065$$

$$\gamma_h = \gamma + h_{ef} * 0.00069$$

where: α, β, γ are the Compton stripping coefficients

α_h,β_h,γ_h are the height corrected Compton stripping coefficients

h_{ef} is the height above ground in metres

The stripping corrections are then carried out using the following formulas:

$$\alpha_r = \frac{1}{1 - a\alpha_h - g\gamma_h + ag\beta_h}$$

$$Th_c = ((1 - g\gamma_h)Th_{rc} - aU_{rc} + agk_{rc}) * \alpha_r$$

$$U_c = (Th_{rc}(g\beta_h - \alpha_h) + U_{rc} - K_{rc}{}^{g}) * \alpha_r$$

$$K_c = (Th_{rc}(a\alpha_h - \beta_h) + U_{rc}(a\beta_h - \gamma h) + K_{rc}(1 - a\alpha_h)) * \alpha_r$$

where: U_c, Th_c and K_c are corrected uranium, thorium and potassium

$\alpha_h, \beta_h, \gamma_h$ are the height corrected Compton stripping coefficients

U_{rc}, Th_{rc} and K_{rc} are radon-corrected uranium, thorium and potassium

α_r is the backscatter correction

a is the reverse stripping ratio U into Th

g is the reverse stripping ratio K into uranium

Attenuation Corrections

The total count, potassium, uranium and thorium data are then corrected to a nominal survey altitude, in this case 60 m (200 ft). This is done according to the equation:

$$C_a = C * e^{\mu(h_{ef} - ho)}$$

where: C_a is the output altitude corrected channel

C is the input channel

μ is the attenuation correction for that channel

h_{ef} is the effective altitude, usually in m

h_0 is the nominal survey altitude used as datum

Adjustments

Manual adjustments can be applied to the data in some parts of the survey area to minimize the effects of any problems which were not completely eliminated by the standard processing. In this survey , no such adjustments were warranted or applied to the data.

Despite the rugged terrain in the survey area, the survey altitude fluctuations are only severe in the very western portion of the survey block. This is unavoidable for safety reasons. The attenuation corrections in such sections are not optimal and may be affected by erroneous altimeter readings in areas of heavy tree cover.

All coefficients used in processing the radiometric data are included in the Radiometric Processing Control Files appended to this report.

Multi-channel Stacked Profiles

Distance-based profiles of the digitally recorded geophysical data are created at an appropriate scale. These profiles also contain the calculated parameters which are used in the interpretation process. These are produced as worksheets prior to interpretation, and are also presented in the final corrected form after interpretation. Table 3-2 shows the parameters and scales for the multi-channel stacked profiles.

Contour, Colour and Shadow Map Displays

The magnetic data are interpolated onto a regular grid using a bi-directional gridding technique with a modified Akima spline for interpolation. The radiometric data was gridded using a minimum curvature gridding technique with a tolerance of 0.01 and interations of 200. The resulting grids are suitable for generating colour and contour maps of excellent quality. The grid cell size is 40 metres, 20% of the line interval.

Table 3-2. Multi-channel Stacked Profiles

Channel Name (Freq)	Observed Parameters	Scale Units/mm
MAG20	total magnetic field (fine)	2 nT
MAG50	total magnetic field (coarse)	20 nT
ALTBIRD	EM sensor height above ground	6 m
TC	*total count*	10 cps
K	Potassium	4 cps
U	Uranium	2 cps
TH	Thorium	2 cps

Colour maps are produced by interpolating the grid down to the pixel size. The parameter is then incremented with respect to specific amplitude ranges to provide colour "contour" maps. Colour maps of the total magnetic field and the total count radiometrics are particularly useful in defining the lithology of the survey area.

Monochromatic shadow maps or images are generated by employing an artificial sun to cast shadows on a surface defined by the geophysical grid. There are many variations in the shadowing technique. These techniques can be applied to total field or enhanced magnetic data, magnetic derivatives, VLF, resistivity, etc. The shadow of the enhanced magnetic parameter is particularly suited for defining geological structures with crisper images and improved resolution. No shadow maps were provided as part of this job.

The total magnetic field data have been presented as contours on the base maps using a contour interval of 2 nT where gradients permit. The maps show the magnetic properties of the rock units underlying the survey area. Individual units can be more clearly identified on the calculated vertical magnetic gradient.

If a specific magnetic intensity can be assigned to the rock type which is believed to host the target mineralization, it may be possible to select areas of higher priority on the basis of the total field magnetic data. This is based on the assumption that the magnetite content of the host rocks will give rise to a limited range of contour values which will permit differentiation of various lithological units.

The total count radiometric data show a range of approximately 100 to 1700 cps and have been presented as contours on the base maps using a contour interval of 10 cps where gradients permit. The individual element grids of K, U and Th are all presented as contours on the base map using a contour interval of 2 cps. The potassium grid shows a range of approximately 10 to 200 cps, whereas the uranium and thorium grids show a range of only 0 to 30 cps.

The effective exploration depth of radiometric methods is usually less than 0.5 m. However, in areas where there is adequate outcrop, radiometric data can be helpful in detecting lithologic units or alteration zones that may not yield distinct magnetic or conductive responses. The radiometric signature of sedimentary rocks in the area will depend on the composition of the rock types from which they originated, but would be expected to yield lower counts than acid to intermediate volcanic units.

Skarn-type gold occurrences can sometimes be detected by their high U/Th ratios. Ratio maps or images, therefore, might provide an additional screening tool that could be used to guide follow-up exploration programs towards the more favourable target areas.

The magnetic and radiometric results, in conjunction with the other geophysical and geologic information can be used to effectively map the geology and structure in the survey area.

A complete assessment and evaluation of the survey data, should be carried out by one or more qualified professionals who have access to, and can provide a meaningful compilation of, all available geophysical, geological and geochemical data.

4. CONCLUSIONS AND RECOMMENDATIONS

This report provides a very brief description of the survey results and describes the equipment, procedures and logistics of the survey in the Fernie area of British Columbia. An helicopterborne magnetic/radiometric survey over the Howell Property has been flown on behalf of Goldaur Resources Corp. . Fugro Airborne Surveys field operations were carried out under the supervision of Nic Venter, Geophysicist. Data processing at the offices of Fugro Airborne Surveys in Mississauga, Ontario was done by Gord Smith, Processing Supervisor, under the supervision of Paul Smith, Interpretation Supervisor.

A total of 158 km including 150 km of traverse line and 8.2 km of tie line data has been flown. Coverage of the survey area is complete.The data is of good quality, with noise levels within contract specifications, and accurately represents the geophysical response of the Earth in the survey area.

The survey results are presented on 1 separate map sheet for each parameter at a scale of 1:20,000. The Geosoft format grids of the total magnetic intensity, calculated vertical magnetic gradient, total count radiometrics, potassium counts, uranium counts, thorium counts have been delivered on CDROM along with Geosoft format ASCII archives of the final processed profile data.

The various maps included with this report display the magnetic and radiometric properties of the survey area. It is recommended that the survey results be reviewed in detail, in conjunction with all available geophysical, geological and geochemical information.

Particular reference should be made to the multi-parameter geophysical data profiles which clearly define the characteristics of the individual anomalies.

The radiometric maps have outlined several highs that could represent areas of outcrop or distinct lithologic units. The calculation of radiometric ratios and ternary images should be considered, in order to determine if the known mineralized zones give rise to distinctive radiometric signatures.

It is also recommended that image processing of existing geophysical data be considered, in order to extract the maximum amount of information from the survey results. Current software and imaging techniques often provide valuable information on structure and lithology, which may not be clearly evident on the contour and colour maps. These techniques can yield images which define subtle, but significant, structural details.

Respectfully submitted,

FUGRO AIRBORNE SURVEYS CORP.

Emily Farquhar
Geophysicist

R2115A

APPENDIX A

LIST OF PERSONNEL

The following personnel were involved in the acquisition, processing, interpretation and presentation of data, relating to a Fugro Airborne Surveys airborne geophysical survey carried out for Goldrea Resources Corp. over their Howell Property survey in the Fernie area, B.C.

Dave Miles	Manager, Helicopter Operations
Troy Will	Supervisor, Helicopter Operations
Michael Senko	Geophysical Operator
Nic Venter	Field Geophysicist
Terry Thompson	Pilot (Questral Helicopters Ltd.)
Doug Naismith	Engineer (Questral Helicopters Ltd.)
Gordon Smith	Data Processing Supervisor
Gordon Smith	Geophysicist/Data Processor
Lyn Vanderstarren	Drafting Supervisor
Susan Pothiah	Word Processing Operator
Albina Tonello	Secretary/Expeditor

The survey consisted of 158 km of coverage, flown on August 6, 2002.

All personnel are employees of Fugro Airborne Surveys, except for the pilot and engineer who are on contract to Questral Helicopters Ltd.

APPENDIX B

BACKGROUND INFORMATION

Magnetics

Total field magnetics provides information on the magnetic properties of the earth materials in the survey area. The information can be used to locate magnetic bodies of direct interest for exploration, and for structural and lithological mapping.

The total field magnetic response reflects the abundance of magnetic material, in the source. Magnetite is the most common magnetic mineral. Other minerals such as ilmenite, pyrrhotite, franklinite, chromite, hematite, arsenopyrite, limonite and pyrite are also magnetic, but to a lesser extent than magnetite on average.

In some geological environments, an EM anomaly with magnetic correlation has a greater likelihood of being produced by sulphides than one which is non-magnetic. However, sulphide ore bodies may be non-magnetic (e.g., the Kidd Creek deposit near Timmins, Canada) as well as magnetic (e.g., the Mattabi deposit near Sturgeon Lake, Canada).

Iron ore deposits will be anomalously magnetic in comparison to surrounding rock due to the concentration of iron minerals such as magnetite, ilmenite and hematite.

Changes in magnetic susceptibility often allow rock units to be differentiated based on the total field magnetic response. Geophysical classifications may differ from geological classifications if various magnetite levels exist within one general geological classification.

Geometric considerations of the source such as shape, dip and depth, inclination of the earth's field and remanent magnetization will complicate such an analysis.

In general, mafic lithologies contain more magnetite and are therefore more magnetic than many sediments which tend to be weakly magnetic. Metamorphism and alteration can also increase or decrease the magnetization of a rock unit.

Textural differences on a total field magnetic contour, colour or shadow map due to the frequency of activity of the magnetic parameter resulting from inhomogeneities in the distribution of magnetite within the rock, may define certain lithologies. For example, near surface volcanics may display highly complex contour patterns with little line-to-line correlation.

Rock units may be differentiated based on the plan shapes of their total field magnetic responses. Mafic intrusive plugs can appear as isolated "bulls-eye" anomalies. Granitic intrusives appear as sub-circular zones, and may have contrasting rings due to contact metamorphism. Generally, granitic terrain will lack a pronounced strike direction, although granite gneiss may display strike.

Linear north-south units are theoretically not well-defined on total field magnetic maps in equatorial regions due to the low inclination of the earth's magnetic field. However, most stratigraphic units will have variations in composition along strike which will cause the units to appear as a series of alternating magnetic highs and lows.

Faults and shear zones may be characterized by alteration which causes destruction of magnetite (e.g., weathering) which produces a contrast with surrounding rock. Structural breaks may be filled by magnetite-rich, fracture filling material as is the case with diabase dikes, or by non-magnetic felsic material.

Faulting can also be identified by patterns in the magnetic total field contours or colours. Faults and dikes tend to appear as lineaments and often have strike lengths of several kilometres. Offsets in narrow, magnetic, stratigraphic trends also delineate structure. Sharp contrasts in magnetic lithologies may arise due to large displacements along strike-slip or dip-slip faults.

Radiometrics

Radioelement concentrations are measures of the abundance of radioactive elements in the rock. The original abundance of the radioelements in any rock can be altered by the subsequent processes of metamorphism and weathering.

Gamma radiation in the range which is measured in the thorium, potassium, uranium and total count windows is strongly attenuated by rock, overburden and water. Almost all of the total radiation measured from rock and overburden originates in the upper .5 metres. Moisture in soil and bodies of water will mask the radioactivity from underlying rock. Weathered rock materials which have been displaced by glacial, water or wind action will not reflect the general composition of the underlying bedrock. Where residual soils exist, they may reflect the composition of underlying rock except where equilibrium does not exist between the original radioelement and the products in its decay series.

Radioelement counts (expressed as counts per second) are the rates of detection of the gamma radiation from specific decaying particles corresponding to products in each radioelements decay series. The radiation source for uranium is bismuth (Bi-214), for thorium it is thallium (Tl-208) and for potassium it is potassium (K-40).

The uranium and thorium radioelement concentrations are dependent on a state of equilibrium between the parent and daughter products in the decay series. Some daughter products in the uranium decay are long lived and could be removed by processes such as leaching. One product in the series, radon (Rn-222), is a gas which can easily escape. Both of these factors can affect the degree to which the calculated uranium concentrations reflect the actual composition of the source rock. Because the daughter products of thorium are relatively short lived, there is more likelihood that the thorium decay series is in equilibrium.

Lithological discrimination can be based on the measured relative concentrations and total, combined, radioactivity of the radioelements. Feldspar and mica contain potassium. Zircon, sphene and apatite are accessory minerals in igneous rocks which are sources of uranium and thorium. Monazite, thorianite, thorite, uraninite and uranothorite are also sources of uranium and thorium which are found in granites and pegmatites.

In general, the abundance of uranium, thorium and potassium in igneous rock increases with acidity. Pegmatites commonly have elevated concentrations of uranium relative to thorium. Sedimentary rocks derived from igneous rocks may have characteristic signatures which are influenced by their parent rocks, but these will have been altered by subsequent weathering and alteration.

Metamorphism and alteration will cause variations in the abundance of certain radioelements relative to each other. For example, alterative processes may cause uranium enrichment to the extent that a rock will be of economic interest. Uranium anomalies are more likely to be economically significant if they consist of an increase in the uranium relative to thorium and potassium, rather than a sympathetic increase in all three radioelements.

Faults can exhibit radioactive highs due to increased permeability which allows radon migration, or as lows due to structural control of drainage and fluvial sediments which attenuate gamma radiation from the underlying rocks. Faults can also be recognized by sharp contrasts in radiometric lithologies due to large strike-slip or dip-slip displacements. Changes in relative radioelement concentrations due to alteration will also define faults.

Similar to magnetics, certain rock types can be identified by their plan shapes if they also produce a radiometric contrast with surrounding rock. For example, granite intrusions will appear as sub-circular bodies, and may display concentric zonations. They will tend to lack a prominent strike direction. Offsets of narrow, continuous, stratigraphic units with contrasting radiometric signatures can identify faulting, and folding of stratigraphic trends will also be apparent.

APPENDIX C

ARCHIVE DESCRIPTION

Geosoft XYZ ARCHIVE SUMMARY

JOB TITLE:

JOB # :2115
TYPE OF SURVEY :MAG,SPECTROMETER
AREA :Howell Property, B.C.
CLIENT :Goldrea Resources Corp.

SURVEY DATA FORMAT:

NUMBER OF DATA FIELDS : 20

#	CHANNAME	TIME	UNITS / DESCRIPTION		<<<|# BYTES	decimals
1	X	0.10	m	easting UTME-NAD27(ZONE-12) :	12	1
2	Y	0.10	m	northing UTMN-NAD27 :	12	1
3	FID	1.00		:	10	1
4	ALTHELIMF	0.10	m	HELI TO EARTH CLEARENCE :	10	2
5	TC	0.10	CPS	RADIOMETRIC TOTAL COUNTS :	8	1
6	K	0.10	CPS	RAD..POTASIIUM COUNTS :	8	1
7	U	0.10	CPS	RAD.. URANIUM COUNTS :	8	1
8	TH	0.10	CPS	RAD.. THORIUM COUNTS :	8	1
9	MAG	0.10	nT	FINAL TOTAL FIELD MAGNETICS	10	2
10	LIVETIME	1.00	CPS	RADIOMETRICS :	10	2
11	COSMIC	1.00	CPS	RADIOMETRICS :	10	2
12	UPU	1.00	CPS	RAD UPWARD URANIUM (corr) :	10	2
13	KPA1	0.10	kP	pressure	10	2
14	ALTB	0.10	m	barometric altimeter	10	2
15	TDC2	0.10	c	temperature	10	2
16	DATE	0.10	YYYYMMMDD	Date Corresponding to Eac	10	0
17	TIME	0.10	seconds		10	1
18	FLT	0.10		FLIGHT NUMBER	8	0
19	ZCORF	0.10	m	GPS ALTITUDE :	8	1
20	DTM_Z	0.10	m	DIGITAL TERRAIN MODEL :	8	1

Enter ouput type - :1)GS(*) ,2)BHP(9999), 3)GP(-9999), 4)arcex
DEFAULT : 1
ENTER SAMPLING/SEC (1 OR 10) : 10

ISSUE DATE :SEP. 16TH , 2002
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CANADA L5N 6A6
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FAX (905) 812-1504

PROGRAM DBARCHIVE - LOCATED ARCHIVE FILE

RECORD LENGTH = 175 175
NUM OF LINES IN DB 57

APPENDIX D

RADIOMETRIC PROCESSING CONTROL FILE

```
DBGR820      APPLY RADIOMETRIC CORRECTIONS                          DBGR820CR.DAT
--------------------------------------------------------------------------------
 A10       ,        --- ignored (40X) ---          =A8, F10, or I10
--------------------------------------------------------------------------------
             type of corrections:(all=1,dt=2,dt+BG+comp=3,DT+BG=4)
             (1 =survey,2=cosmic test,3=alt test,4=HOVER LINES)
IPTYPE                                             =1
--------------------------------------------------------------------------------
             INPUT DATABASE PARAMETER NAMES:
FID        , FID                          DBASE NAME =FID
ALT        , ALTIMETER                    DBASE NAME =ALThelift
LIVE       , LIVE TIME                    DBASE NAME =LIVETIME
TEMP       , TEMPERATURE (OPT.)           DBASE NAME =TDC2
BAR PRESS  , BARO PRESSURE (OPT.)         DBASE NAME =KPA1
RAW_TC     , RAW TOTAL COUNT              DBASE NAME =TCR
RAW_K      , RAW POTASSIUM                DBASE NAME =KR
RAW_U      , RAW URANIUM                  DBASE NAME =UR
RAW_TH     , RAW THORIUM                  DBASE NAME =THR
RAW_UP_U   , RAW URANIUM UP               DBASE NAME =URANUP
COSMIC     , RAW COSMIC TOTAL CTS         DBASE NAME =COSMIC
--------------------------------------------------------------------------------
             OUTPUT DATABASE PARAMETER NAMES:
COR_TC     , COR TOTAL COUNT              DBASE NAME =TC
COR_K      , COR POTASSIUM                DBASE NAME =K
COR_U      , COR URANIUM                  DBASE NAME =U
COR_TH     , COR THORIUM                  DBASE NAME =TH
COR_UPU    , COR URANUP                   DBASE NAME =UPU
CONC_K     , K CONCENTRATION (OPT.)       DBASE NAME =
CONC_U     , U CONCENTRATION (OPT.)       DBASE NAME =
CONC_TH    , TH CONCENTRATION (OPT.)      DBASE NAME =
EXPOSURE   , EXPOSURE RATE (OPT.)         DBASE NAME =
EXPORADR   , EXP-MR/HR(0) OR NADR-NG/HR(1)           =1
--------------------------------------------------------------------------------
TRAP_NEG   , OUTPUT NEGATIVES AS ZERO(YES=1,NO=0) =0
RAWORHG    , INPUT DATA RAW(0) OR NASVD(1)        =0
--------------------------------------------------------------------------------
             HANNING FILTER LENGTH FOR EACH DATABASE PARAMETER (0=NO FILTER):
FILT_ALT   , ALTIMETER                 FILTER LENGTH =5
FILT_TMP   , TEMPERATURE               FILTER LENGTH =0
FILT_PRESS , PRESSURE                  FILTER LENGTH =0
FILT_TC    , RAW TOTAL COUNT           FILTER LENGTH =0
FILT_K     , RAW POTASSIUM             FILTER LENGTH =0
FILT_U     , RAW URANIUM               FILTER LENGTH =0
FILT_TH    , RAW THORIUM               FILTER LENGTH =0
FILT_UPU   , RAW URANIUM UP            FILTER LENGTH =11
FILT_COS   , RAW COSMIC TOTAL CTS      FILTER LENGTH =0
--------------------------------------------------------------------------------
             RADIOMETRIC COEFFICIENTS:
ABCK_TC    , AIRCRAFT BACKGROUND - TOTAL CTS       =220.2882
ABCK_K     , AIRCRAFT BACKGROUND - POTASSIUM       =10.1485
ABCK_U     , AIRCRAFT BACKGROUND - URANIUM         =5.2804
ABCK_TH    , AIRCRAFT BACKGROUND - THORIUM         =5.4395
ABCK_UPU   , AIRCRAFT BACKGROUND - URANIUM UP      =2.7410
CSR_TC     , COSMIC STRIPPING RATIO - TOTAL CTS    =0.4932
CSR_K      , COSMIC STRIPPING RATIO - POTASSIUM    =0.0292
CSR_U      , COSMIC STRIPPING RATIO - URANIUM      =0.0220
CSR_TH     , COSMIC STRIPPING RATIO - THORIUM      =0.0192
CSR_UPU    , COSMIC STRIPPING RATIO - URANIUM UP   =0.0005
RDN_ATC    , RADON - UR IN TC  COEFFICIENT         =0
RDN_BTC    , RADON - UR IN TC  CONSTANT            =0
RDN_AK     , RADON - UR IN K   COEFFICIENT         =0
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RDN_BK      , RADON - UR IN K   CONSTANT          =0
RDN_ATH     , RADON - UR IN TH  COEFFICIENT       =0
RDN_BTH     , RADON - UR IN TH  CONSTANT          =0
RDN_AUPU    , RADON - UR IN UPU COEFFICIENT       =0
RDN_BUPU    , RADON - UR IN UPU CONSTANT          =0
RDN_A1      , RADON - U IN UPU                    =0
RDN_A2      , RADON - TH IN UPU                   =0
ALPHA       , COMPTON TH > U                      =0.2410
BETA        , COMPTON TH > K                      =0.4290
GAMMA       , COMPTON  U > K                      =0.8120
BACKA       , GRASTY BACKSCATTER U > TH  (0.05)   =0.0
BACKB       , GRASTY BACKSCATTER K > TH  (0.0)    =0.0
BACKG       , GRASTY BACKSCATTER K > U   (0.0)    =0.0
ATN_TC      , HEIGHT ATTENUATION OF TC            =0.001628
ATN_K       , HEIGHT ATTENUATION OF K             =0.002168
ATN_U       , HEIGHT ATTENUATION OF U             =0.000972
ATN_TH      , HEIGHT ATTENUATION OF TH            =0.001987
SENS_K      , CPS PER PERCENT POTASSIUM ON GROUND =0.0
SENS_U      , CPS PER PPM URANIUM ON GROUND       =0.0
SENS_TH     , CPS PER PPM THORIUM ON GROUND       =0.0
--------------------------------------------------------------------------------
              GENERAL PARAMETERS:
S_FREQ      , RADIOMETRIC SAMPLES PER SECOND      =1
ALT_OFF     , HEIGHT OF SENSOR ABOVE ALTIMETER (ft)=0
ALT_DTM     , SURVEY HEIGHT DATUM  (ft)           =200
ALT_MAX     , MAXIMUM ALTITUDE  (1000ft)          =1000
--------------------------------------------------------------------------------
              FLIGHT RANGES TO PROCESS, FLIGHTS TO PROCESS, FLIGHTS TO SKIP:
/ flight ranges to process
/ specific flights to process
/ specific flights to skip
--------------------------------------------------------------------------------
              LINE RANGES TO PROCESS, LINES TO PROCESS, LINES TO SKIP:
10000 999999
/ line ranges to process
/ specific lines to process
/ specific lines to skip
```

ALTITUDE ATTENUATION COEFFICIENT CALIBRATION

DATA SUMMARY :

LINE	Avg. Alt. (ft.)	TC (corr.cps)	K (corr.cps)	U (corr.cps)	Th (corr.cps)
50100	103.4	1669.1	193.9	37	45.3
50150	147.8	1539.9	174.8	33.6	41.8
50200	194.1	1423.1	156.6	31.9	38.9
50250	245.4	1303	138.4	29.1	36.4
50300	294.5	1219.3	125.2	28.5	33.3
50350	343.6	1120.9	112.6	26.3	30.7
50400	392.5	1054.9	102.6	24	29.5
50450	440.0	977.32	93.91	23.2	26.7
50500	478.9	931.38	87.77	23.1	26.6
50550	490.5	923.22	86.34	22.2	25.9
50600	522.1	874.7	80.06	21.2	25.3

RESULTS OF LSQ TO $\ln(N) = ALT^*\mu + \ln(N_0)$ RELATION:

TC	$\mu_{TC=}$	-0.001518	$\ln(N_0)_{TC}$	7.56361
K	$\mu_{K=}$	-0.002083	$\ln(N_0)_{K}$	5.46582
U	$\mu_{U=}$	-0.001265	$\ln(N_0)_{U}$	3.71627
Th	$\mu_{Th=}$	-0.001382	$\ln(N_0)_{Th}$	3.93630

GRAPHICAL DISPLAYS OF MEASURED AND FITTED DATA :

ALTITUDE DEPENDENCE: TOTAL COUNT

ALT	ln(N)	FIT
103	7.42	7.41
148	7.34	7.34
194	7.26	7.27
295	7.11	7.12
393	6.96	6.97
479	6.84	6.84
491	6.83	6.82
522	6.77	6.77

Slope -0.001518
Intercept 7.56361

ALTITUDE DEPENDENCE: POTASSIUM

ALT	ln(N)	FIT
103	5.27	5.25
148	5.16	5.16
194	5.05	5.06
295	4.83	4.85
393	4.63	4.65
479	4.47	4.47
491	4.46	4.44
522	4.38	4.38

Slope -0.002083
Intercept 5.46582

ALTITUDE DEPENDENCE: URANIUM

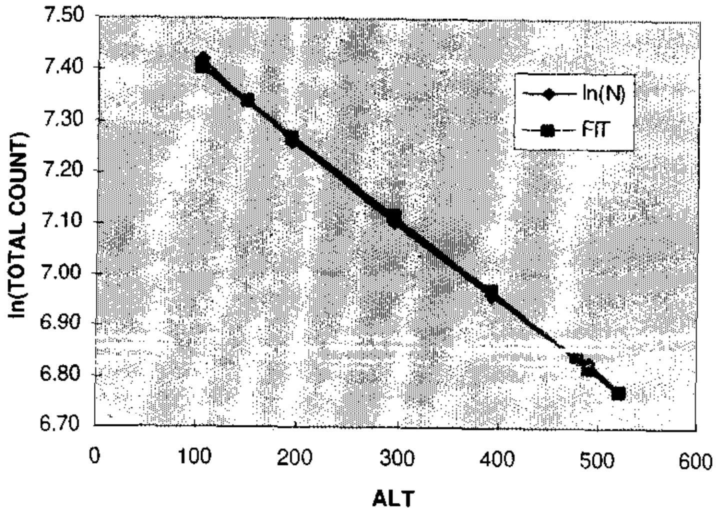
ALT	ln(N)	FIT
103	3.61	3.59
148	3.51	3.53
194	3.46	3.47
295	3.35	3.34
393	3.18	3.22
479	3.14	3.11
491	3.10	3.10
522	3.05	3.06

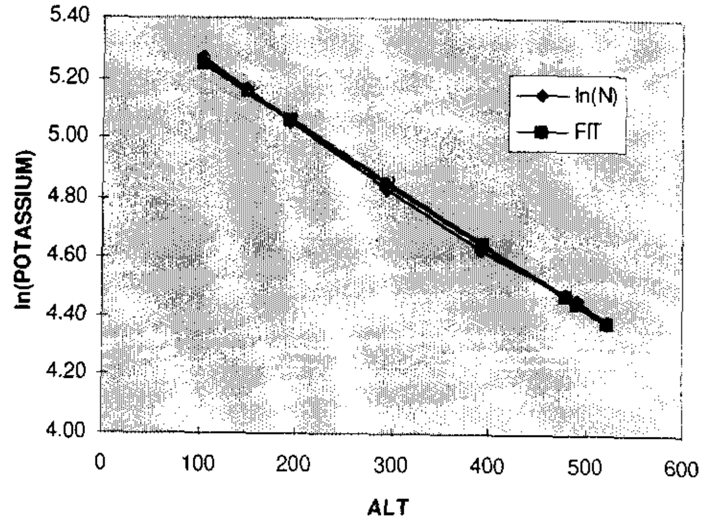
Slope -0.001265
Intercept 3.71627

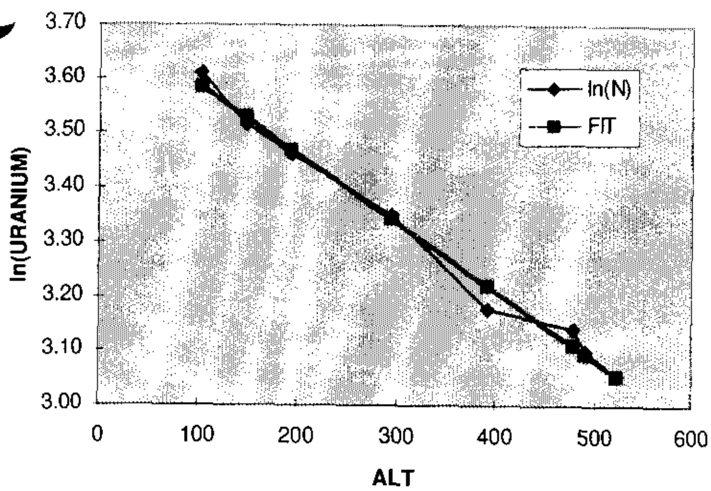
ALTITUDE DEPENDENCE: THORIUM

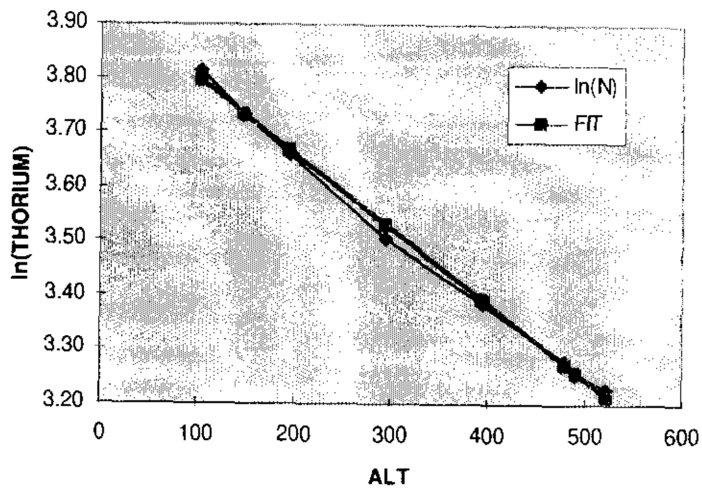
ALT	ln(N)	FIT
103	3.81	3.79
148	3.73	3.73
194	3.66	3.67
295	3.51	3.53
393	3.38	3.39
479	3.28	3.27
491	3.25	3.26
522	3.23	3.21

Slope -0.001382
Intercept 3.93630


7.50
7.40
7.30
7.20
7.10
7.00
6.90
6.80
6.70
ln(TOTAL COUNT)
ln(N)
FIT
0
100
200
300
400
500
600
ALT


5.40
5.20
5.00
4.80
4.60
4.40
4.20
4.00
ln(POTASSIUM)
ln(N)
FIT
0
100
200
300
400
500
600
ALT


3.70
3.60
3.50
3.40
3.30
3.20
3.10
3.00
ln(URANIUM)
ln(N)
FIT
0
100
200
300
400
500
600
ALT


3.90
3.80
3.70
3.60
3.50
3.40
3.30
3.20
ln(THORIUM)
ln(N)
FIT
0
100
200
300
400
500
600
ALT

COSMIC ATTENUATION COEFFICIENT CALIBRATION

DATA SUMMARY : AVERAGED DATA AT INDICATED GPS ELEVATIONS

LINE	GPS ALT (mASL)	TC (cps)	K (cps)	U (cps)	TH (cps)	UPU (cps)	COSMIC (cps)
6000	1903.9	271.3	13.7	8.3	6.3	2.2	127.5
7000	2218.6	285.4	13.8	8.4	7.1	2.4	140.7
7500	2369.1	288.3	15.0	8.3	7.3	2.2	155.1
8000	2518.0	298.2	15.1	9.3	8.6	2.5	169.2
8500	2676.6	308.9	15.3	9.7	9.3	2.9	180.8
9000	2823.9	318.3	16.1	9.1	8.6	2.8	195.8
9500	2981.4	325.8	16.5	9.7	9.8	2.7	218.4
10000	3135.0	334.2	16.8	10.8	9.9	3.0	228.3

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

	COEFFS	
	SLOPE (a_n)	INTERCEPT (b_n)
TC	0.55904	206.11394
K	0.02932	10.14045
U	0.01872	6.00447
Th	0.02038	5.19514
UPU	0.00445	1.89599

TOTAL COUNT COSMIC DEPENDENCE:

Cosmic	Measured	Fit
169.2	298.2	300.7
180.8	308.9	307.2
195.8	318.3	315.6
218.4	325.8	328.2
228.3	334.2	333.8

POTASSIUM COSMIC DEPENDENCE:

Cosmic	Measured	Fit
169.2	15.1	15.1
180.8	15.3	15.4
195.8	16.1	15.9
218.4	16.5	16.5
228.3	16.8	16.8

URANIUM COSMIC DEPENDENCE:

Cosmic	Measured	Fit
169.2	9.3	9.2
180.8	9.7	9.4
195.8	9.1	9.7
218.4	9.7	10.1
228.3	10.8	10.3

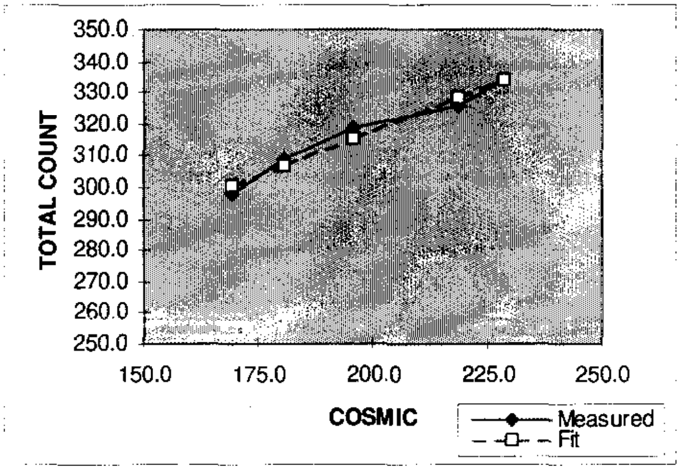
THORIUM COSMIC DEPENDENCE:

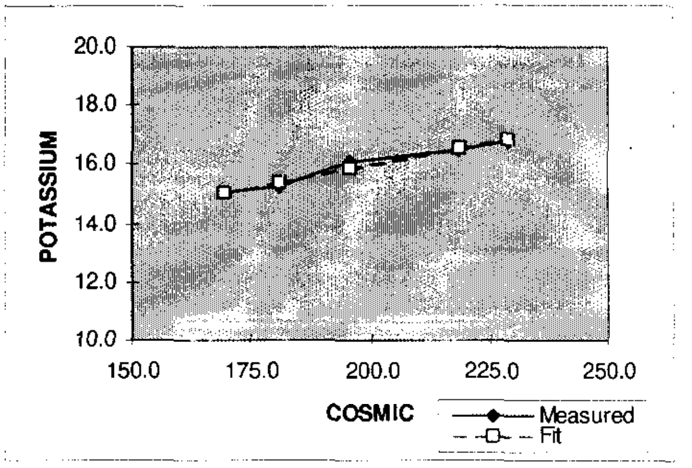
Cosmic	Measured	Fit
169.2	8.6	8.6
180.8	9.3	8.9
195.8	8.6	9.2
218.4	9.8	9.6
228.3	9.9	9.8

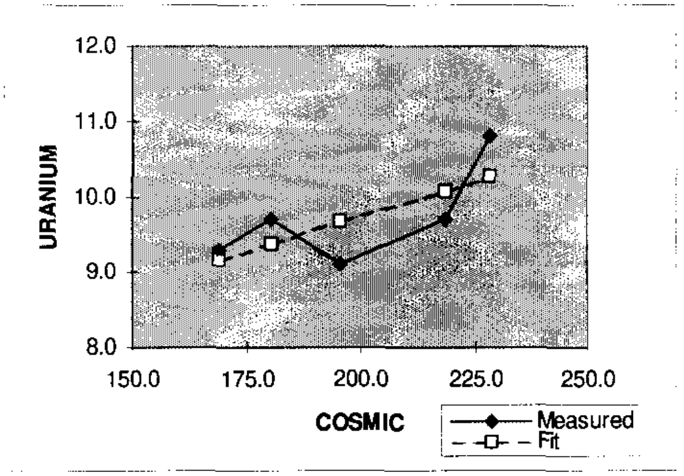
UPWARD LOOKING URANIUM COSMIC DEPENDENCE:

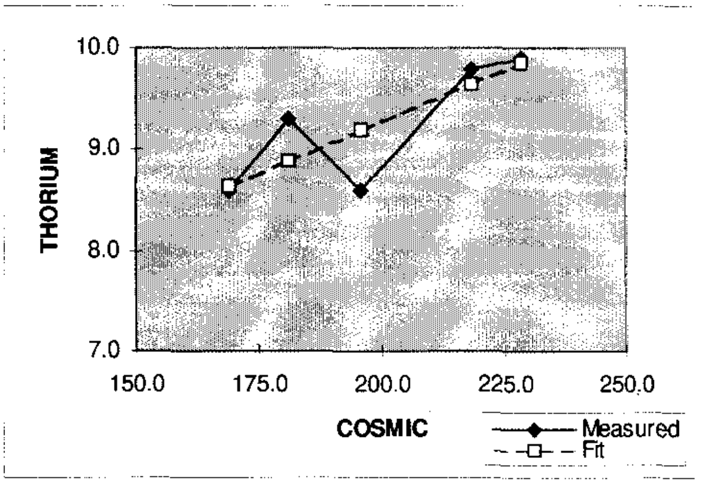
Note: Not deadtime corrected as processed with different circuits.

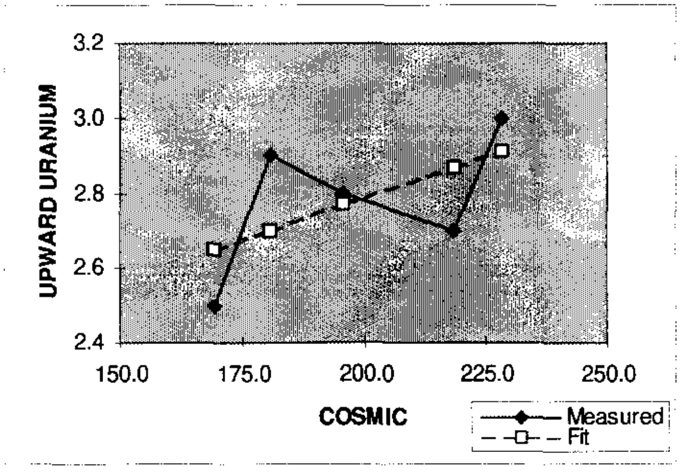
Cosmic	Measured	Fit
169.2	2.5	2.6
180.8	2.9	2.7
195.8	2.8	2.8
218.4	2.7	2.9
228.3	3.0	2.9


TOTAL COUNT
COSMIC
Measured
Fit


POTASSIUM
COSMIC
Measured
Fit


URANIUM
COSMIC
Measured
Fit


THORIUM
COSMIC
Measured
Fit


UPWARD URANIUM
COSMIC
Measured
Fit

APPENDIX B

Sample Summary with Assays

Geo-facts

PROJECT: *howell*

Hole ID: H-02-DDH-1

Sample	From	To	Width	Type	Au ppm	Ag ppm	Cu ppm	As ppm	Sb ppm
178851	3.00	6.00	3.00		0.900	10.80	24	55	5
178852	6.00	9.00	3.00		0.535	6.60	25	40	5
178853	9.00	12.00	3.00		1.140	7.00	48	45	5
178854	12.00	15.00	3.00		1.090	3.20	28	60	5
178855	15.00	18.00	3.00		1.220	4.20	23	45	5
178856	18.00	21.00	3.00		0.620	5.40	18	45	5
178857	21.00	24.00	3.00		0.435	12.40	27	60	5
178858	24.00	27.00	3.00		0.215	1.60	14	35	5
178859	27.00	30.00	3.00		0.340	3.20	18	40	5
178860	30.00	33.00	3.00		0.285	0.40	9	25	5
178861	33.00	36.00	3.00		0.225	0.80	9	55	5
178862	36.00	39.00	3.00		0.100	0.80	15	60	5
178863	39.00	42.00	3.00		0.070	0.60	13	45	5
178864	42.00	45.00	3.00		0.200	1.20	32	80	5
178865	45.00	48.00	3.00		0.255	1.80	18	130	5
178866	48.00	51.00	3.00		0.640	1.80	19	350	5
178867	51.00	54.00	3.00		1.050	4.00	16	990	5
178868	54.00	57.00	3.00		0.590	4.00	19	385	5
178869	57.00	60.00	3.00		0.395	1.80	13	175	5
178870	60.00	63.00	3.00		2.080	6.80	23	235	5
178871	63.00	66.00	3.00		0.335	1.60	30	100	5
178872	66.00	69.00	3.00		1.050	4.00	14	135	5
178873	69.00	72.00	3.00		0.535	2.20	30	175	5
178874	72.00	75.00	3.00		0.265	1.40	21	115	5
178875	75.00	78.00	3.00		0.340	1.40	24	125	5
178876	78.00	81.00	3.00		0.235	1.60	17	170	5
178877	81.00	84.00	3.00		0.183	1.40	26	120	5
178878	84.00	87.00	3.00		1.070	3.20	169	730	5
178879	87.00	90.00	3.00		0.685	1.60	58	520	5
178880	90.00	93.00	3.00		0.380	4.80	188	515	5

Sample Summary with Assays

Geo-facts

PROJECT: *howell*

Hole ID: H-02-DDH-1

Sample	From	To	Width	Type	Au ppm	Ag ppm	Cu ppm	As ppm	Sb ppm
178881	93.00	96.00	3.00		0.550	4.20	96	495	5
178882	96.00	99.00	3.00		0.685	3.40	61	320	5
178883	99.00	102.00	3.00		0.305	3.00	67	170	5
178884	102.00	105.00	3.00		1.030	11.40	86	485	5
178885	105.00	108.00	3.00		0.870	5.40	106	340	5
178886	108.00	111.00	3.00		2.100	21.80	137	430	15
178887	111.00	114.00	3.00		0.530	5.40	64	45	5
178888	114.00	117.00	3.00		0.270	9.00	51	50	5
178889	117.00	120.00	3.00		0.055	1.80	41	20	5
178890	120.00	123.00	3.00		0.160	3.60	168	35	5
178891	123.00	126.00	3.00		0.070	1.80	40	45	5
178892	126.00	129.00	3.00		0.115	2.00	33	50	5
178893	129.00	132.00	3.00		0.290	4.60	48	170	5
178894	132.00	135.00	3.00		0.390	6.40	143	330	5
178895	135.00	138.00	3.00		0.115	3.00	439	55	5
178896	138.00	141.00	3.00		0.100	3.00	49	30	5
178897	141.00	144.00	3.00		0.140	1.60	24	30	5
178898	144.00	147.00	3.00		0.225	1.60	29	30	5
178899	147.00	150.00	3.00		0.295	3.60	26	45	5
178900	150.00	152.40	2.40		0.315	5.60	32	35	5

Sample Summary with Assays

PROJECT: ***howell***

Geo-facts

Hole ID: H-02-DDH-2

Sample	From	To	Width	Type	Au ppm	Ag ppm	Cu ppm	As ppm	Sb ppm
178901	9.50	12.00	2.50		0.065	0.20	15	90	5
178902	12.00	15.00	3.00		0.235	1.40	4	130	10
178903	15.00	18.00	3.00		0.350	2.80	30	230	5
178904	18.00	21.00	3.00		0.335	2.80	11	105	5
178905	21.00	24.00	3.00		0.065	0.40	24	85	5
178906	24.00	27.00	3.00		0.090	0.40	11	65	5
178907	27.00	30.00	3.00		0.030	0.20	6	25	5
178908	30.00	33.00	3.00		0.070	0.20	7	55	5
178909	33.00	36.00	3.00		0.310	1.40	15	180	5
178910	36.00	39.00	3.00		0.035	0.20	6	45	5
178911	39.00	42.00	3.00		0.350	1.00	14	250	5
178912	42.00	45.00	3.00		0.085	0.40	10	85	5
178913	45.00	48.00	3.00		0.095	1.00	19	85	5
178914	48.00	51.00	3.00		0.110	0.40	26	75	5
178915	51.00	54.00	3.00		0.090	0.20	6	80	5
178916	54.00	57.00	3.00		0.110	0.20	5	95	5
178917	57.00	60.00	3.00		0.235	0.60	11	145	5
178918	60.00	63.00	3.00		0.050	0.80	17	60	5
178919	63.00	66.00	3.00		0.070	1.40	12	25	5
178920	66.00	69.00	3.00		0.155	0.80	13	55	5
178921	69.00	72.00	3.00		0.165	1.20	16	70	5
178922	72.00	75.00	3.00		0.260	1.20	13	35	5
178923	75.00	78.00	3.00		0.580	2.40	25	380	5
178924	78.00	81.00	3.00		0.130	0.60	17	75	5
178925	81.00	83.82	2.82		0.070	0.20	8	95	5

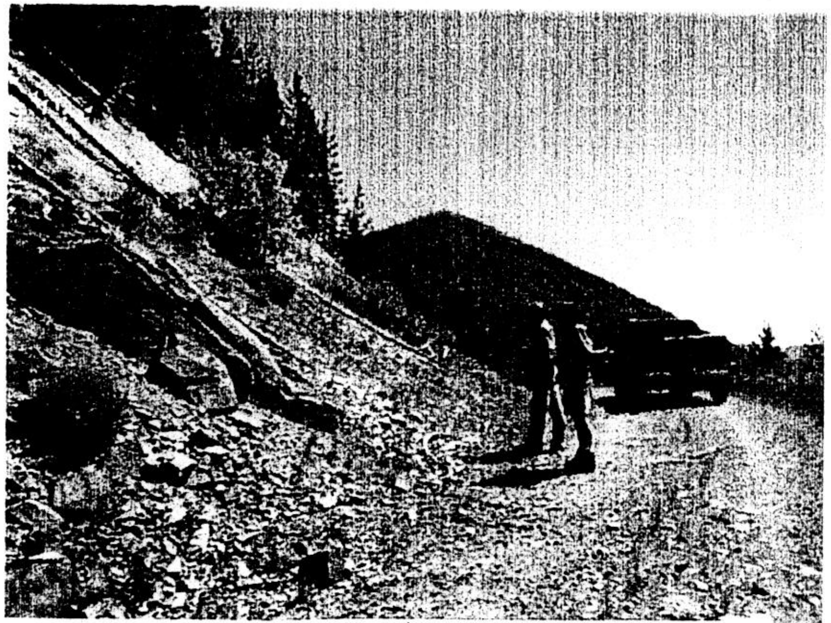
Sample Summary with Assays

PROJECT: *howell*

Geo-facts

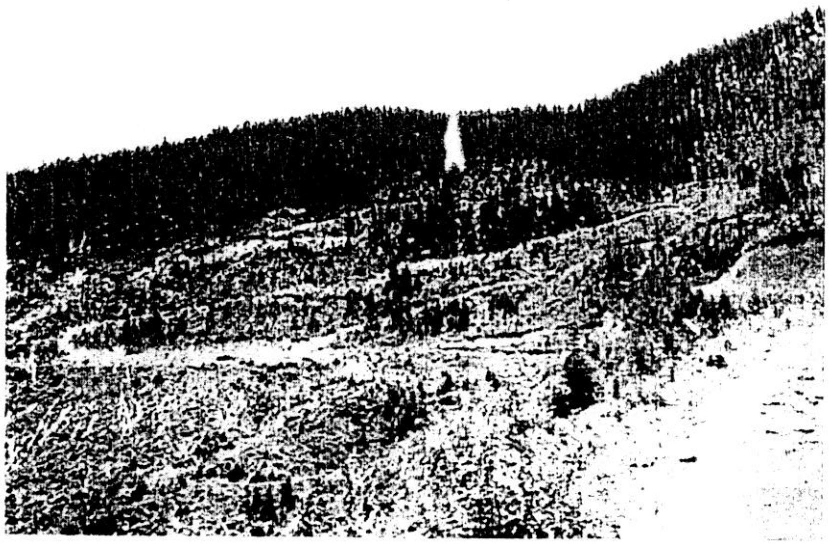
Hole ID: H-02-DDH-3

Sample	From	To	Width	Type	Au ppm	Ag ppm	Cu ppm	As ppm	Sb ppm
178926	2.00	6.00	4.00		0.560	1.80	16	205	5
178927	6.00	9.00	3.00		0.070	0.20	11	100	5
178928	9.00	12.00	3.00		0.205	0.20	9	90	5
178929	12.00	15.00	3.00		0.080	0.20	6	35	5
178930	15.00	18.00	3.00		0.245	0.20	5	110	5
178931	18.00	21.00	3.00		0.175	1.00	14	75	5
178932	21.00	24.00	3.00		0.135	1.20	13	65	5
178933	24.00	27.00	3.00		0.425	1.00	11	30	5
178934	27.00	30.00	3.00		0.920	4.20	29	65	5
178935	30.00	33.00	3.00		0.370	2.00	23	20	5
178936	33.00	36.00	3.00		0.520	2.80	20	50	5
178937	36.00	39.00	3.00		0.590	2.60	20	35	5
178938	39.00	42.00	3.00		1.560	4.40	18	35	5
178939	42.00	45.00	3.00		1.020	3.40	25	30	5
178940	45.00	48.00	3.00		1.260	4.20	18	95	5
178941	48.00	51.00	3.00		1.690	5.40	19	250	5
178942	51.00	54.00	3.00		1.200	5.80	31	270	5
178943	54.00	57.00	3.00		0.645	5.60	25	35	5
178944	57.00	60.00	3.00		0.065	2.60	7	5	5
178945	60.00	63.00	3.00		1.040	7.20	27	380	5
178946	63.00	66.00	3.00		0.835	3.60	13	195	5
178947	66.00	69.00	3.00		0.220	2.40	6	240	5
178948	69.00	72.00	3.00		0.720	3.00	15	270	5
178949	72.00	75.00	3.00		0.980	2.00	10	130	5
178950	75.00	78.00	3.00		1.090	2.20	13	190	5
599325	78.00	81.00	3.00		0.200	1.20	8	105	5
599326	81.00	84.00	3.00		0.075	1.80	7	65	5
599327	84.00	87.00	3.00		0.075	0.60	21	45	5
599328	87.00	91.44	4.44		0.065	0.80	15	90	5

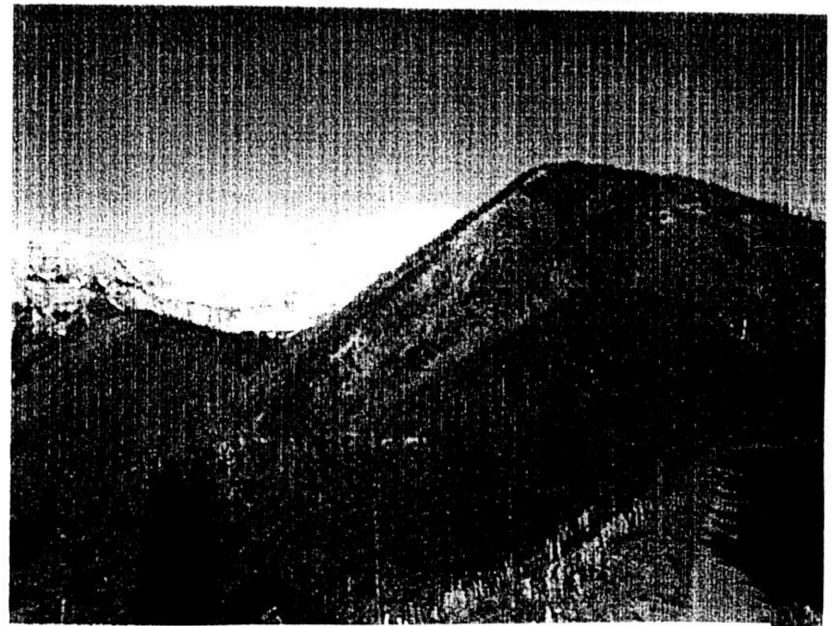


HOWELL 2-3 LOOKING EAST. HOWELL INTRUSIONS, CONSISTING OF CRETACEOUS GABBRO, INTRUSIVE BRECCIA DIATREMES, & SYENITE UNDERLIE PEAK IN BACKGROUND

LOOKING SOUTHEAST HOWELL 3, FROM HOWELL CK., HRC-25 (0-57.9 m. 1.23 g/t Au) IN CENTER OF PHOTO

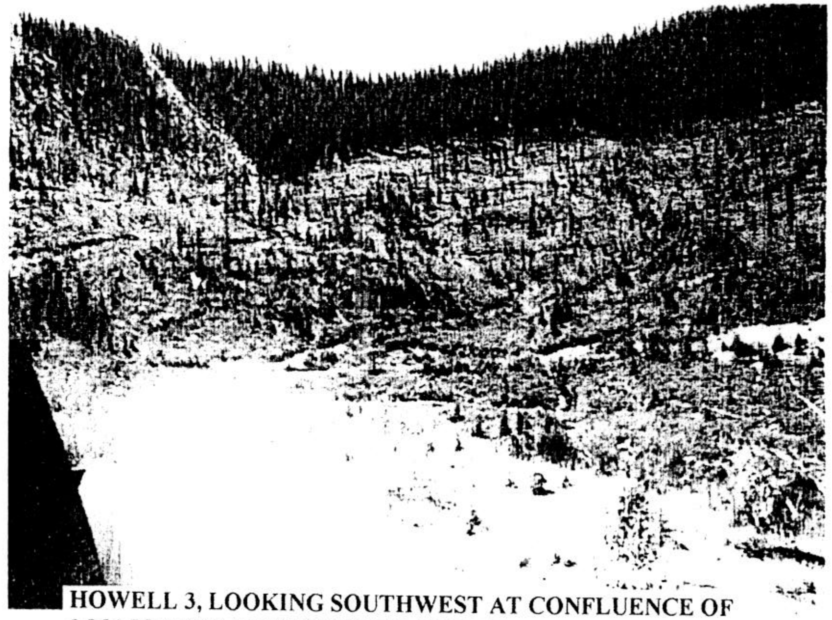


HOWELL 3, LOOKING SOUTHEAST, HRC-25 (0-57.9 m., INTERVAL 57.9 m @ 1.23 g/t Au) IN CENTER OF PHOTO



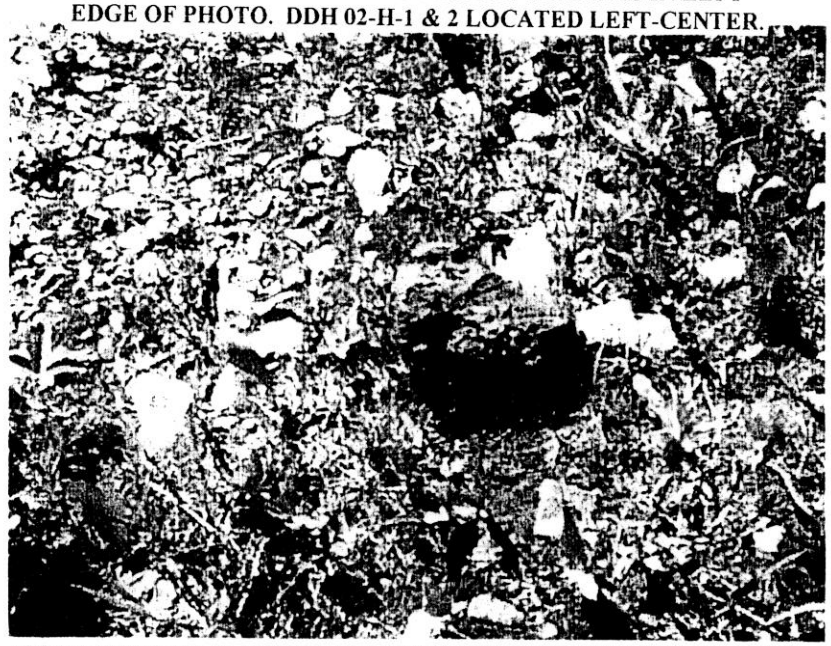
HOWELL 1 & 5 LOOKING WEST-NORTHWEST. DEVONIAN PALLISER FM. IN BACKGROUND, HOWELL INTRUSIONS, UNDERLIE THE PEAK IN THE FOREGROUND

HOWELL 3, LOOKING NORTHWEST ALONG THE AXIS OF A RIDGE TOP AT 1,850 m (6,068 ft.) ELEVATION. HRC-17 COLLAR IS LOCATED ON RIDGE CREST IN FOREGROUND



HOWELL 3, LOOKING SOUTHWEST AT CONFLUENCE OF 2 MAJOR NW & W TRENDING FAULTS. HRC-25 IS IN LEFT EDGE OF PHOTO. DDH 02-H-1 & 2 LOCATED LEFT-CENTER.

HOWELL 3, LOOKING NORTHWEST. THE PROMINENT RIDGE CREST IS HRC-17 WHERE SEVERAL ROCK CHIP SAMPLES RETURNED ASSAY VALUES >1 g/t Au



GOLD-BEARING FLOAT BOULDER OF HIGHLY OXIDIZED QUARTZ-CARBONATE HOSTED DISSEMINATED AND FRACTURE FILL PYRITE MINERALIZATION WITH TRACE As-Sb-Te-W.

SCALE 1 : 20,000

500 0 500 1,000 1,500 METERS

GEOLOGICAL CONTACT	FAULT (normal)
THRUST FAULT (red triangle shows relative hangingwall displacement)	CLAIM LINE
FLATHEAD INTRUSIVE	>240 cps POTASSIUM
MAG TOTAL FIELD >56,940 nT	ACCESS ROAD (magenta)
MAG TOTAL FIELD <56,840 nT	CREEK (blue)

Contours at 20 m intervals, UTM for this map is given using NAD 83 (all 5 airborne maps are NAD 27, to convert NAD 27 to NAD 83 move point 208 m north, & 81 m west), Data source: Placer Dome assessment report 18,629, Eastfield Res. Howell Project Summary, unpublished report, March, 2000. Compilation by: A.Kikauka, December, 2002
SCALE 1:20,000, 5 cm equivalent to 1,000 m

GOLDREA RES. CORP./EASTFIELD RES. LTD.
HOWELL PROJECT
FIG. 8 AIRBORNE TOTAL FIELD MAG, POTASSIUM RADIOMETRICS, LITHOLOGY AND STRUCTURAL GEOLOGY COMPILATION MAP

NTS 82 G/2 & G/7, TRIM 082G017, 082G027 FORT STEELE MINING DIVISION
HOWELL 1-5, & YSOO CLAIMS, HOWELL CREEK, FLATHEAD RIVER, B.C.

CRETACEOUS AND/OR TERTIARY, FLATHEAD INTRUSIVE COMPLEX
- Ki — Syenite, melano-syenite,
- Kib — ib- intrusion breccia

UPPER CRETACEOUS
- Kag — Alberta Group: fissile black shale, siltstone, conglomerate

PERMIAN-PENNSYLVANIAN
- Pr — Rocky Mountain Fm: dolomitic quartz arenite

MISSISSIPPIAN
- Mr — Rundle Group: calcarenitic limestone

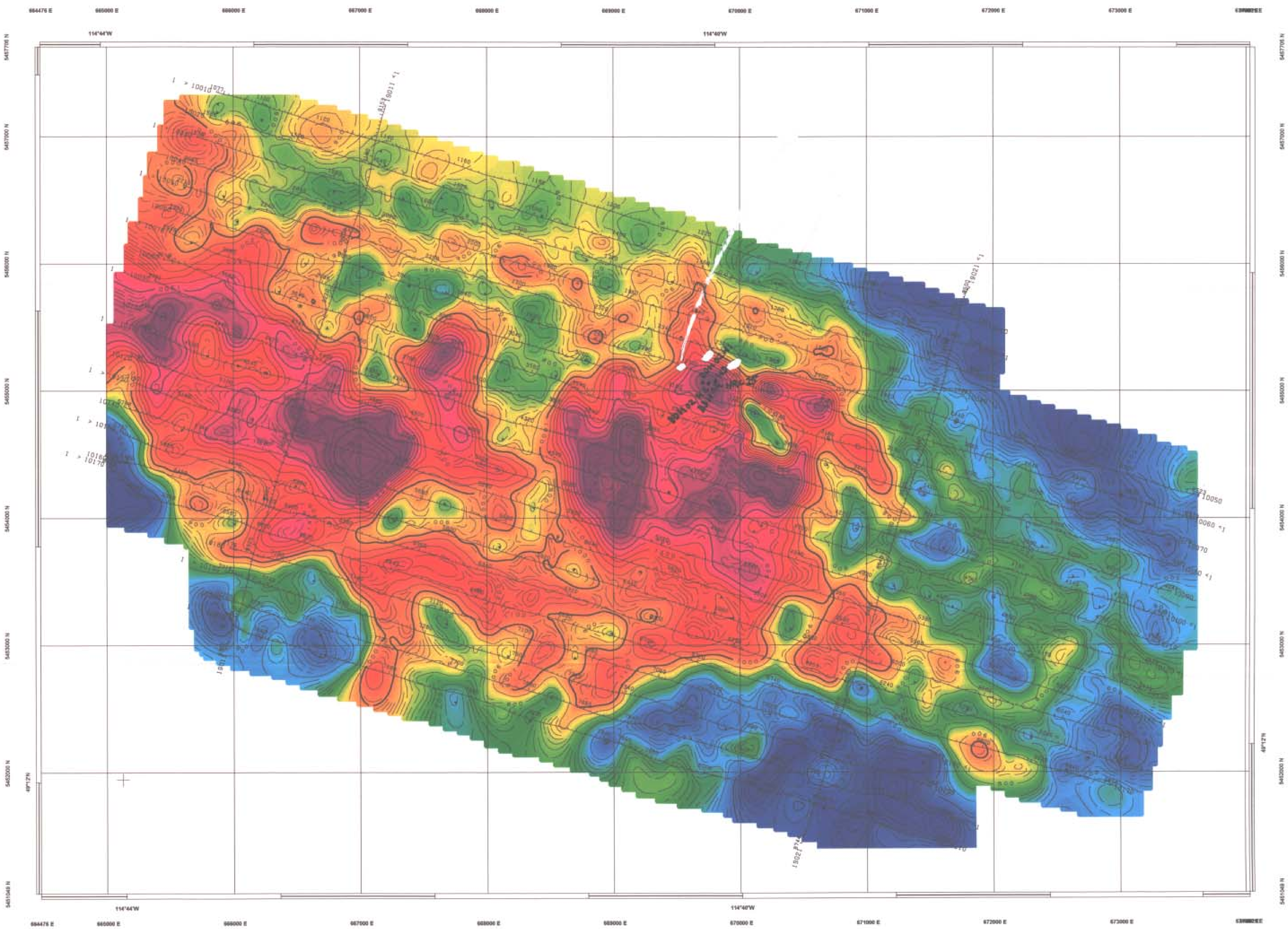
DEVONIAN
- Dp — Palliser Fm: cliff-forming limestone
- Df — Faiholme Fm: dark grey, thinly bedded limestone

CAMBRIAN
- €f — Flathead Fm: yellow quartz arenite, interbedded green shale and limestone near top of section
- €e — Elko Fm: limestone, dolomitic limestone

PROTEROZOIC
- Pk — Kintla Fm.: red and green argillite and quartz arenite

N

PROFESSIONAL GEOSCIENTIST PROVINCE OF BRITISH COLUMBIA A. A. KIKAUKA



raw cps: 1754, 1671, 1602, 1547, 1495, 1449, 1401, 1352, 1306, 1270, 1238, 1207, 1176, 1147, 1118, 1093, 1071, 1051, 1031, 1014, 998, 982, 967, 954, 939, 925, 913, 901, 890, 879, 869, 858, 848, 839, 830, 820, 810, 801, 791, 781, 771, 759, 747, 734, 721, 708, 694, 682, 669, 656, 644, 632, 619, 605, 588, 571, 553, 533, 509, 486, 462, 439, 419

N

PROFESSIONAL GEOSCIENTIST — PROVINCE OF BRITISH COLUMBIA — A. A. KIKAUKA

To: NAD 83 — 81m shift W, 208m shift N
To Convert
FROM: Nad27

Scale 1 : 20000

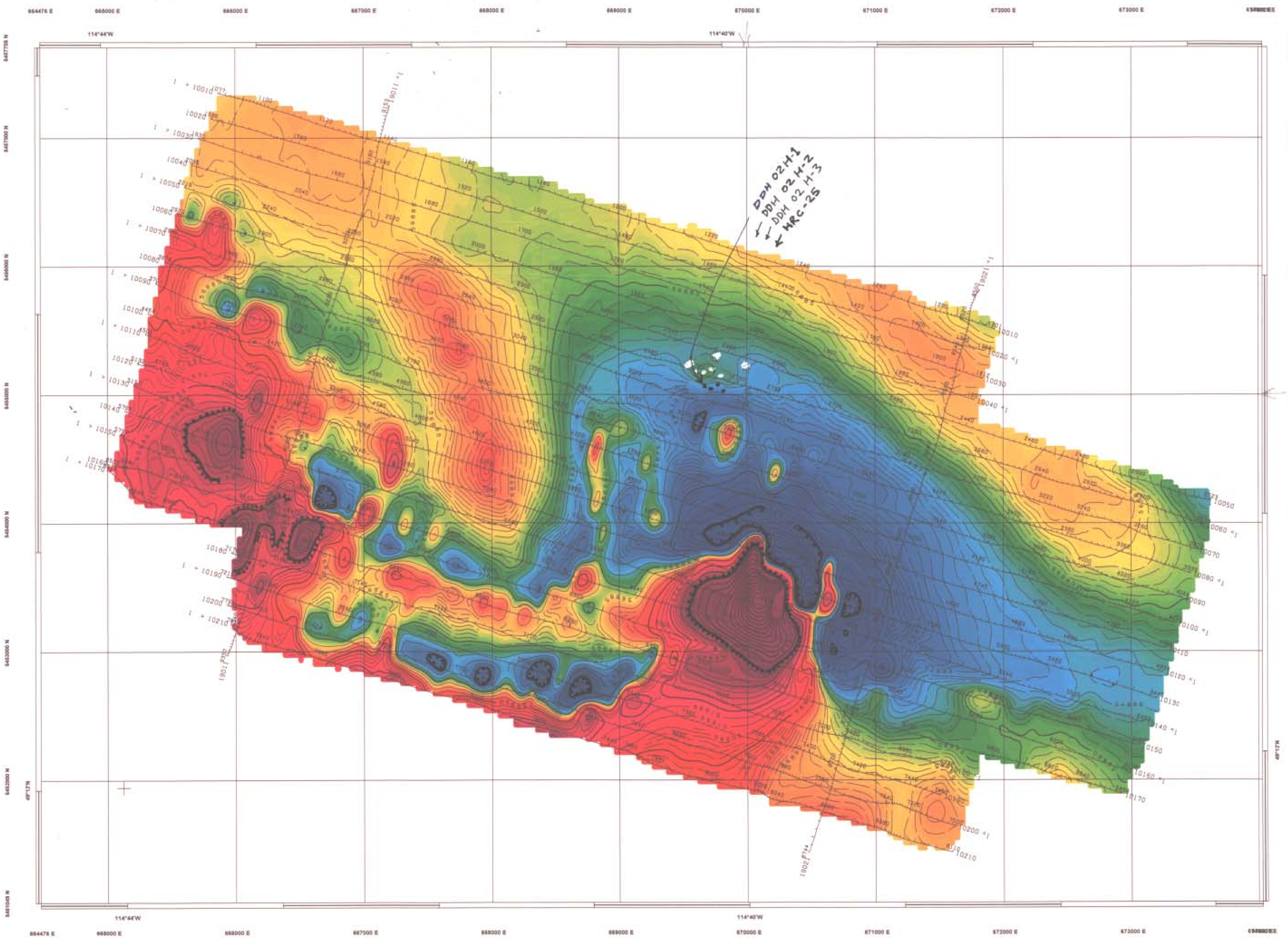
FIG. 9

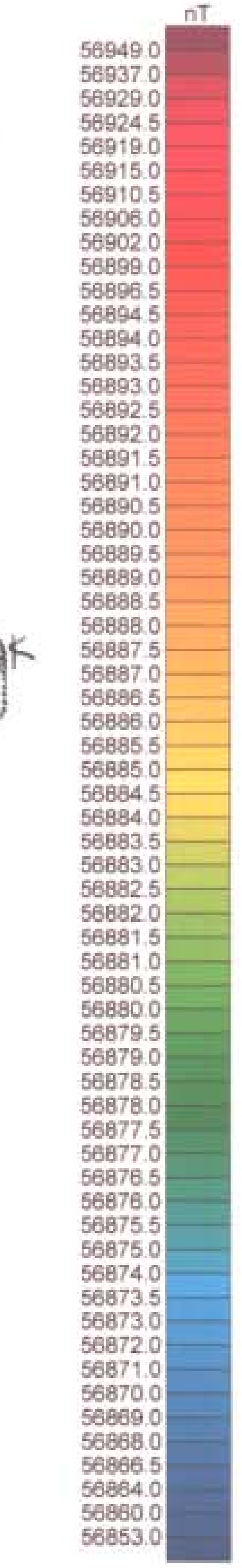
GOLDREA RESOURCES CORP.
HOWELL PROPERTY, B.C.

TOTAL COUNT RADIOMETRICS
(cps)
Contour intervals: 20, 100, 500 cps

FUGRO MAG/RADIOMETRIC	NAD27 (ALTA&BC) UTM Z11N	GEOPHYSICIST : B. ROBINSON
DATE: August, 2002	JOB: 2115	SHEET 1 OF 1 : 1

Fugro Airborne Surveys





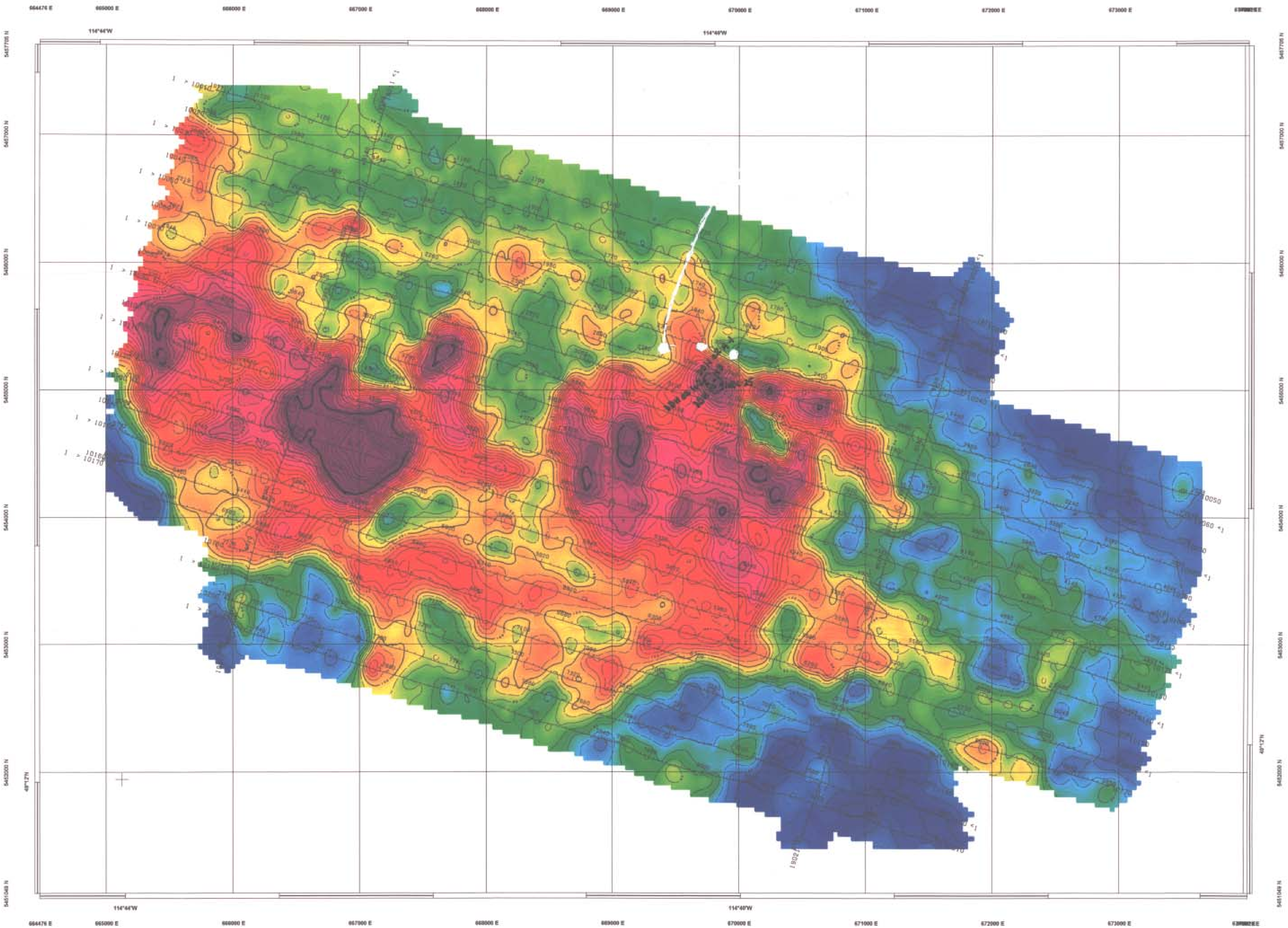
PROFESSIONAL GEOSCIENTIST
PROVINCE OF BRITISH COLUMBIA
A. A. KIKAUKA

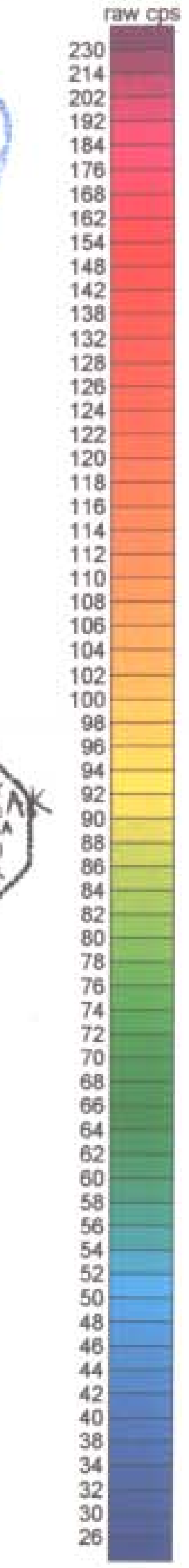
To NAD 83 — 81 m Shift W
To Convert FROM NAD 27 — 208 m shift N

Mag High >56,940 nT
Mag Low <56,840 nT

Scale 1 : 20000

FIG. 10	GOLDREA RESOURCES CORP. HOWELL PROPERTY, B.C.	
TOTAL FIELD MAGNETICS		
Contour intervals 1, 5, 20 nT		(3)
FUGRO MAG/RADIOMETRIC	NAD27 (ALTA&BC) UTM Z11N	GEOPHYSICIST: B. ROBINSON
DATE: August, 2002	JOB: 2118	SHEET 1 OF 1 : 1
Fugro Airborne Surveys		





N

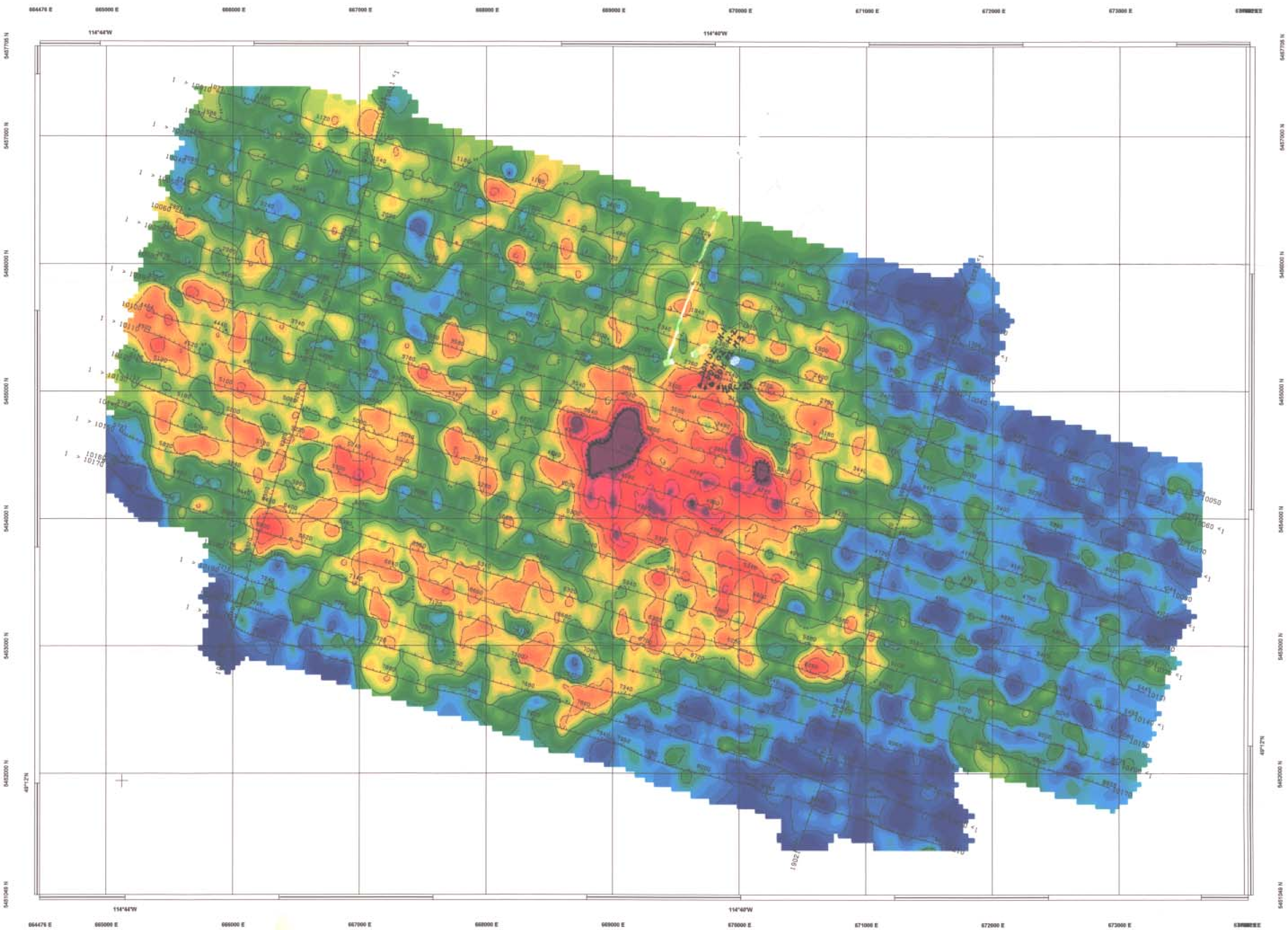
To NAD 83 ← 81 m shift W
To Convert ↑ 208 m shift N
From Nad 27

PROFESSIONAL GEOSCIENTIST
PROVINCE OF BRITISH COLUMBIA
A. A. KIKAUKA

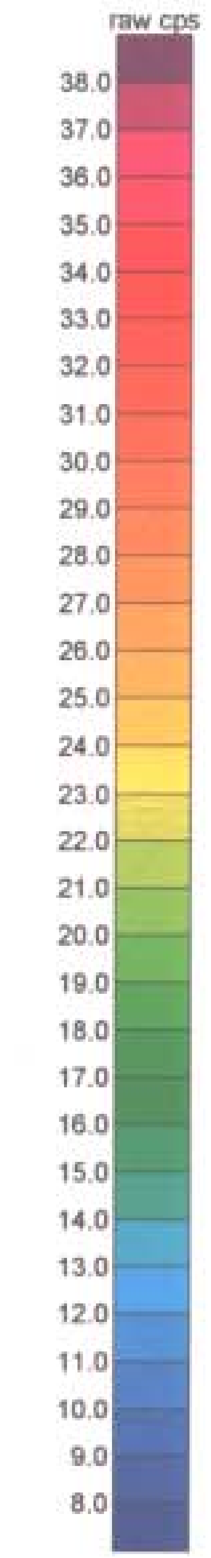
O > 240 cps K

Scale 1 : 20000

FIG. 11	GOLDREA RESOURCES CORP. HOWELL PROPERTY, B.C.	
	RAW POTASSIUM (cps) Contour intervals: 10, 100, 500 cps	(4)
FUGRO MAG/RADIOMETRIC	NAD27 (ALTA&BC) UTM Z11N	GEOPHYSICIST : B. ROBINSON
DATE: August, 2002	JOB: 2115	SHEET 1 OF 1 : 1
	Fugro Airborne Surveys	



N

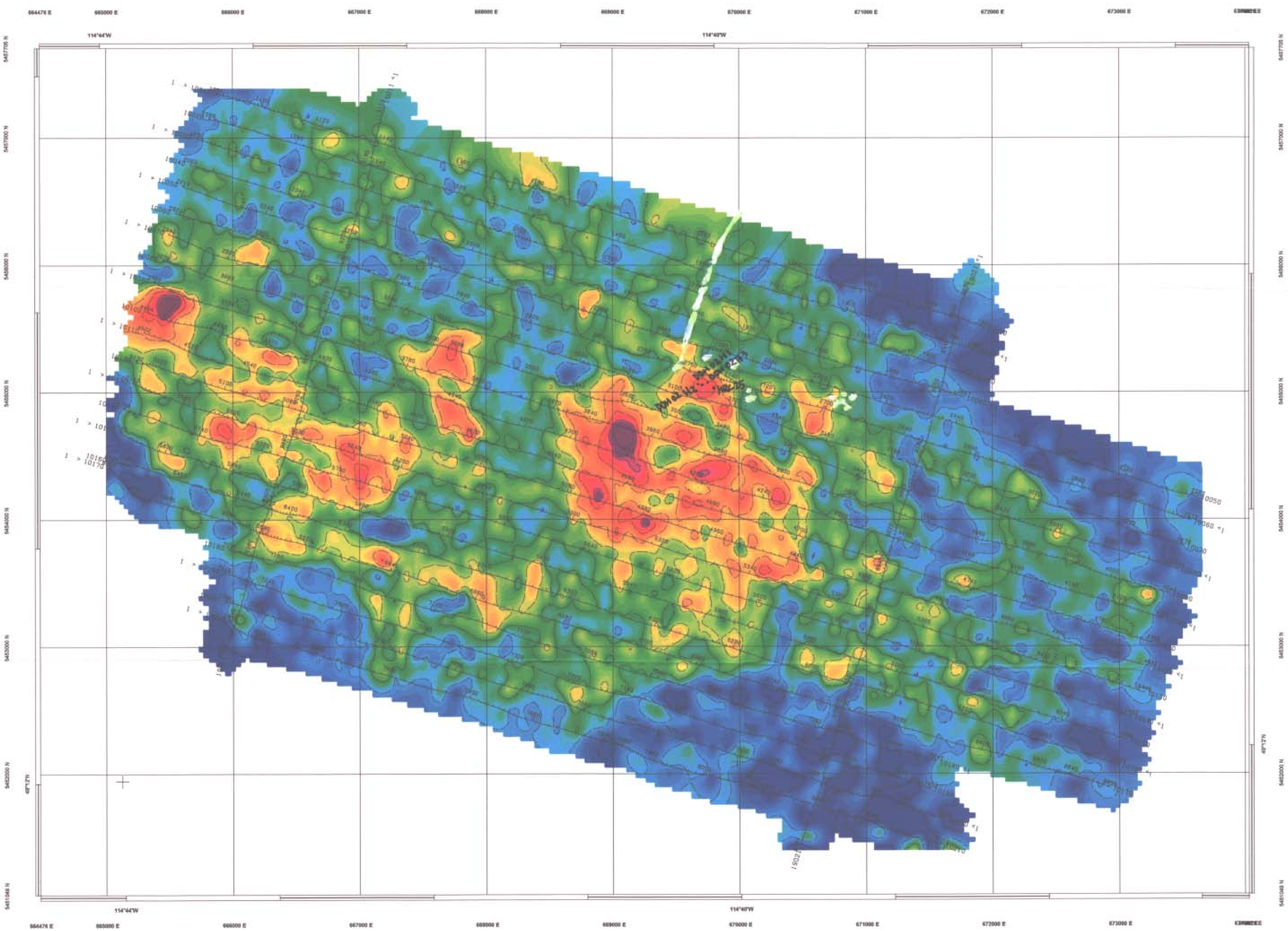


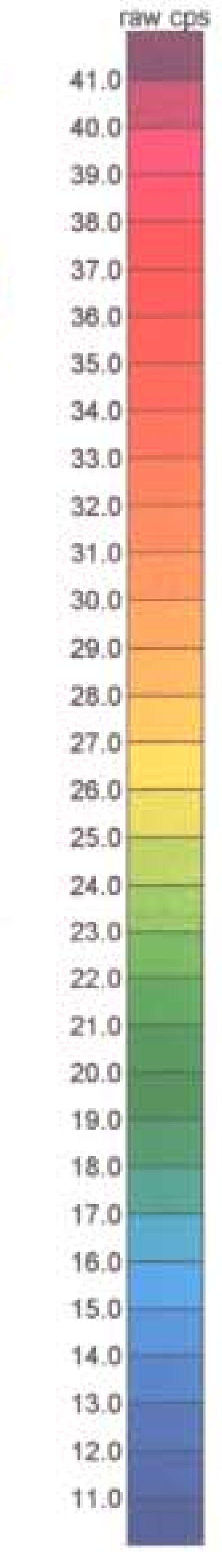
To Convert From Nad 27 To Nad 83: 81m shift W, 208 m shift N

>40.0 cps Th

Scale 1 : 20000

FIG. 12	GOLDREA RESOURCES CORP. HOWELL PROPERTY, B.C.	
RAW THORIUM (cps) Contour intervals: 5, 20, 100 cps		(5)
FUGRO MAG/RADIOMETRIC	NAD27 (ALTA&BC) UTM Z11N	GEOPHYSICIST : B. ROBINSON
DATE: August, 2002	JOB: 2115	SHEET 1 OF 1 : 1
Fugro Airborne Surveys		





PROFESSIONAL
PROVINCE OF BRITISH COLUMBIA
A. A. KIKAUKA
GEOSCIENTIST

Scale 1 : 20000

FIG. 13	GOLDREA RESOURCES CORP. HOWELL PROPERTY, B.C.	
RAW URANIUM (cps) Contour intervals: 5, 20, 100 cps		(b)
FUGRO MAG/RADIOMETRIC	NAD27 (ALTA&BC) UTM Z11N	GEOPHYSICIST : B. ROBINSON
DATE: August, 2002	JOB: 2115	SHEET 1 OF 1 : 1
Fugro Airborne Surveys		