

OPEN FILE

RELINQUISHMENT REPORT

EL 8246

MURCHISON RANGE 2 PROJECT

1: 250,000 BONNEY WELL

Licensee:	North Star Resources NL
Operator:	North Star Resources NL
Compiled by:	K Kappelle
Date Submitted:	August 1997
Distribution:	Northern Territory Department of Mines & Energy North Star Resources NL

CR 97 / 535

KKsm0334

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1. **Summary**

The target commodity sought is Tennant Creek style gold-copper mineralisation. A detailed aeromagnetic survey was flown over the tenement area. A number of anomalies were selected for follow up. Each was traversed by 3 north-south sample lines. Bleg samples were assayed for gold only.

2. **Location**

The two licence areas comprising EL 8246 are on the 1: 250,000 Bonney Well sheet on the Kurundi Pastoral lease about 120 km south east of Tennant Creek. Access from Tennant Creek is via the Tennant Creek - Alice Springs highway 84 km south from Tennant Creek to the Kurundi homestead turnoff and then via the tracks and roads shown on the annexed plan.

3. **Exploration Model**

North Star Resources NL (North Star) acquired this tenement and a number of others in the Tennant Creek area, on the premise that the potential host rocks of Tennant Creek style gold-copper mineralisation were more extensive than had previously been considered. This postulate was based on re-interpreted aeromagnetic data over extensive areas of non outcrop. Areas thus identified were re-flown with more detailed aeromagnetic surveys to help identify the presence of the kind of magnetic signature associated with the known Tennant Creek gold-copper deposits. Selected targets were followed up by surface geochemistry.

4. **Geophysics**

A detailed aeromagnetic survey was flown at a height of 50m, line spacing 150m in October-November 1996 by Tesla Airborne Geoscience. The results from the survey are annexed. This plan shows the aeromagnetics anomalies selected for follow up.

5. **Geochemistry**

The aeromagnetic anomalies were soil sampled at 20cm depth, 2 kg-2mm and sent for bleg analysis. The coordinates of the anomalies and sample points are annexed. A description of the sampling and the assay results are also annexed. Soil sampling was carried out by Arnhem Geological and Exploration Services, Tennant Creek, with navigation using a single unit GPS to establish an origin for each grid. Analysis were carried out by Assaycorps laboratories, Tennant Creek, for ppb Au, detection limit, 0.1 ppb precision + 15%.

6. **Conclusion**

The area relinquished is considered to have lower exploration potential than the area retained.

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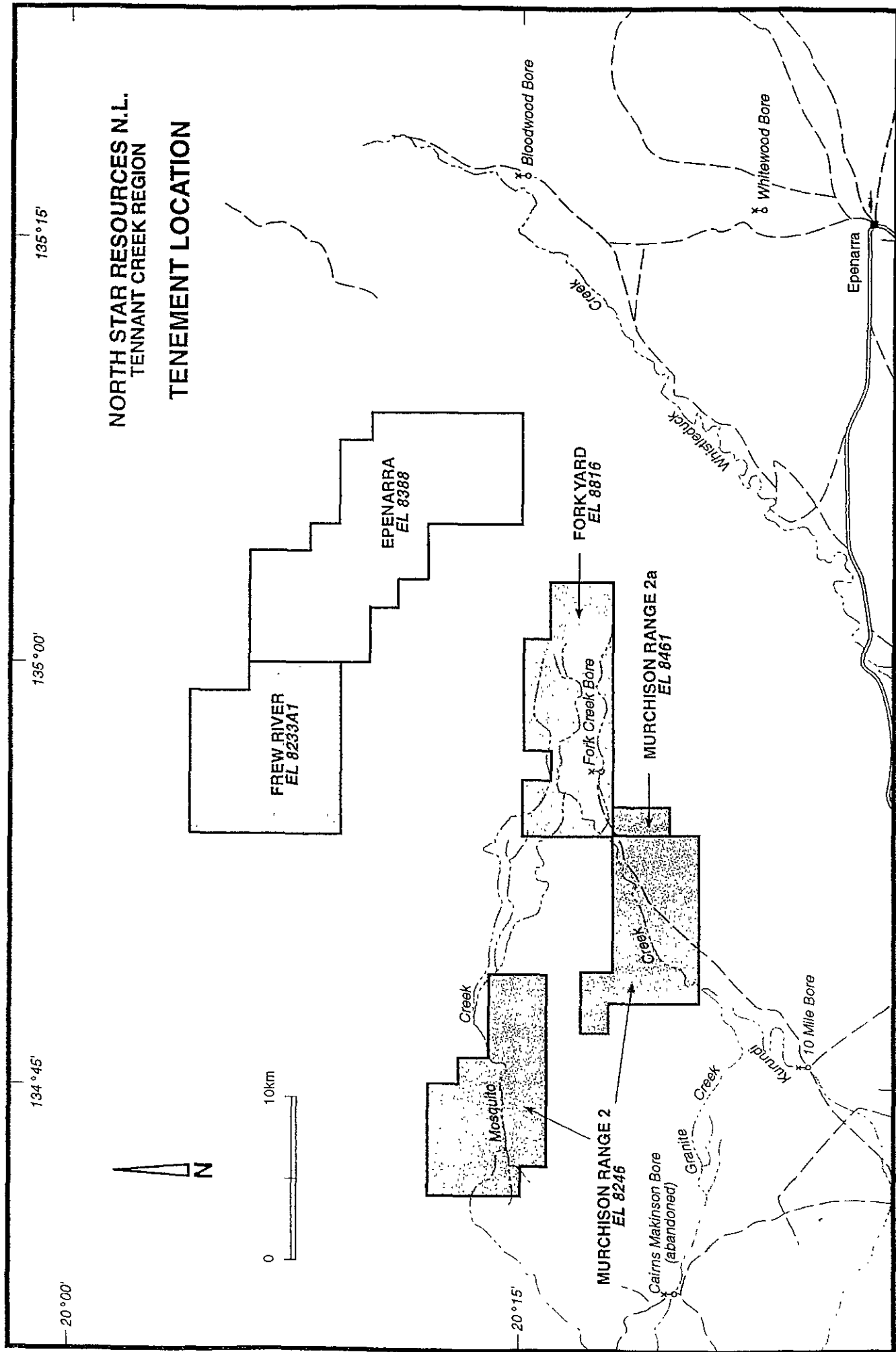
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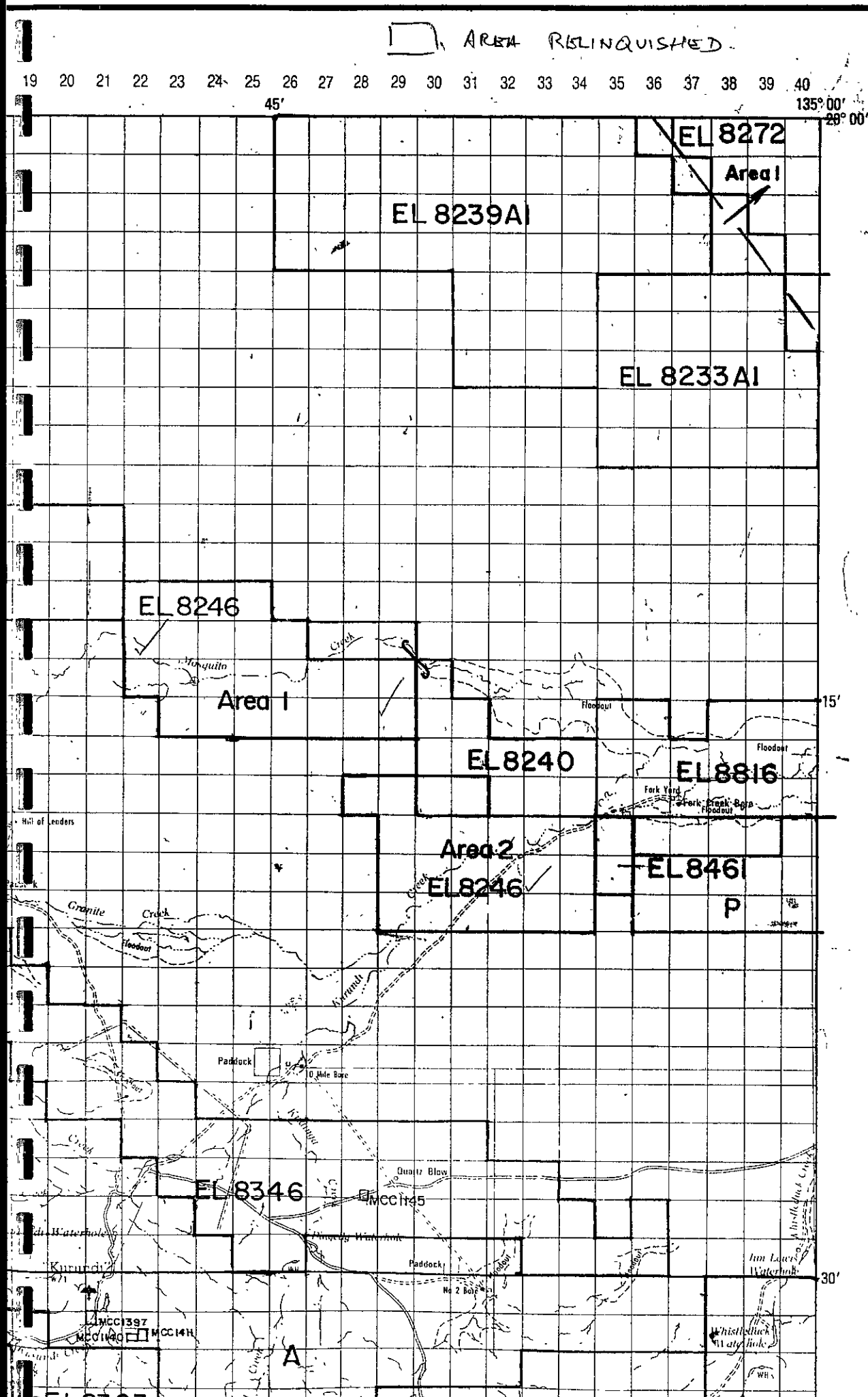
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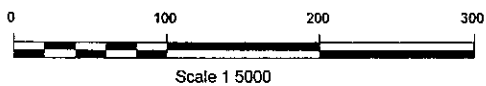
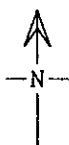
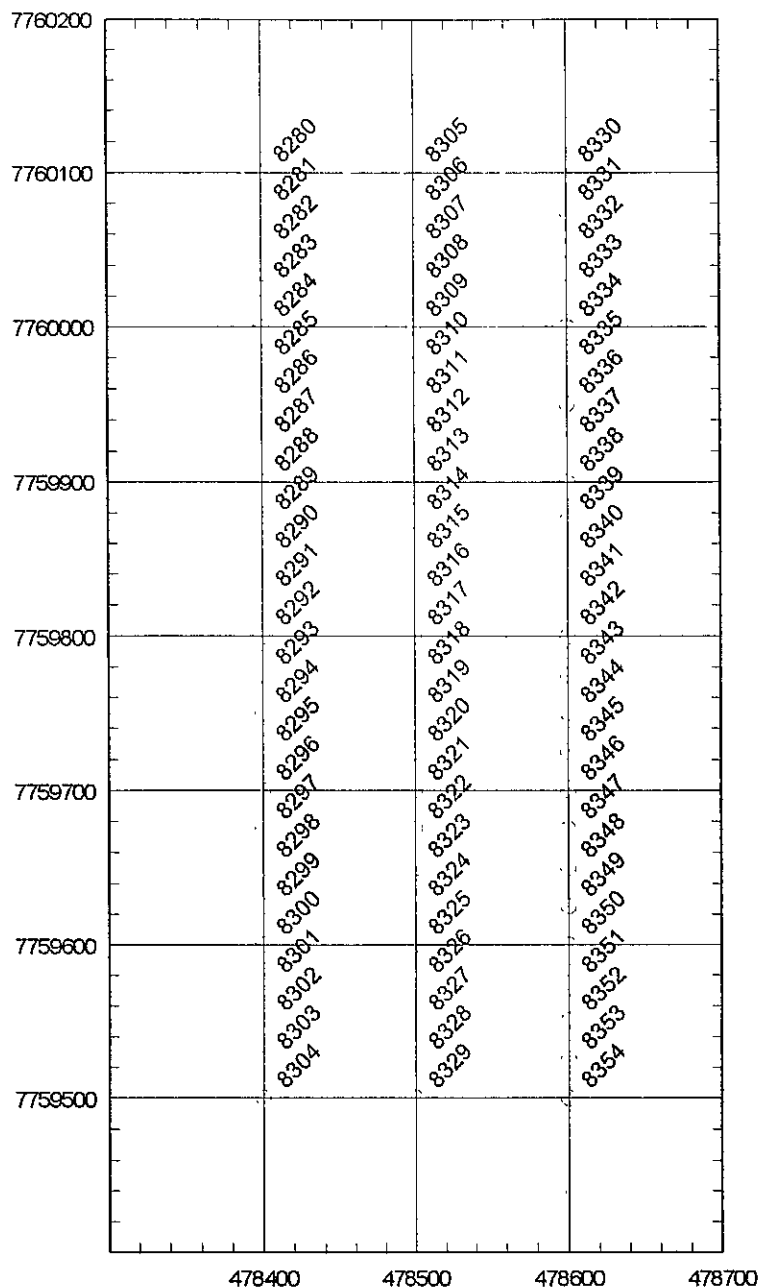
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R.F. 1:250 000
MINING TENURE



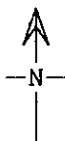
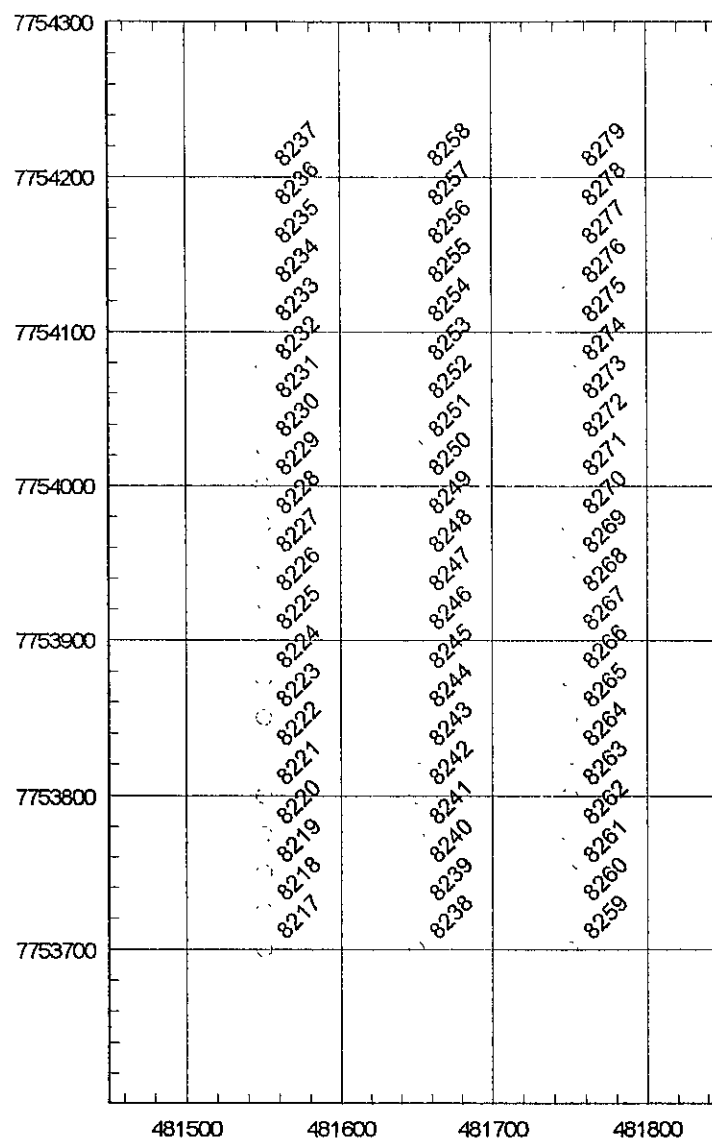


ARNHEM GEOLOGICAL & EXPLORATION SERVICES

MURCHISON RANGE GEOCHEM 1996/7

AREA MT6

GEO	SCALE 1:5000	CLIENT NORTH STAR
DRAWN PM	DATE 28-01-1997	



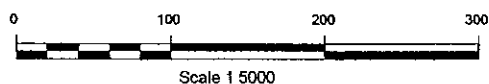
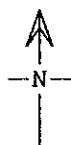
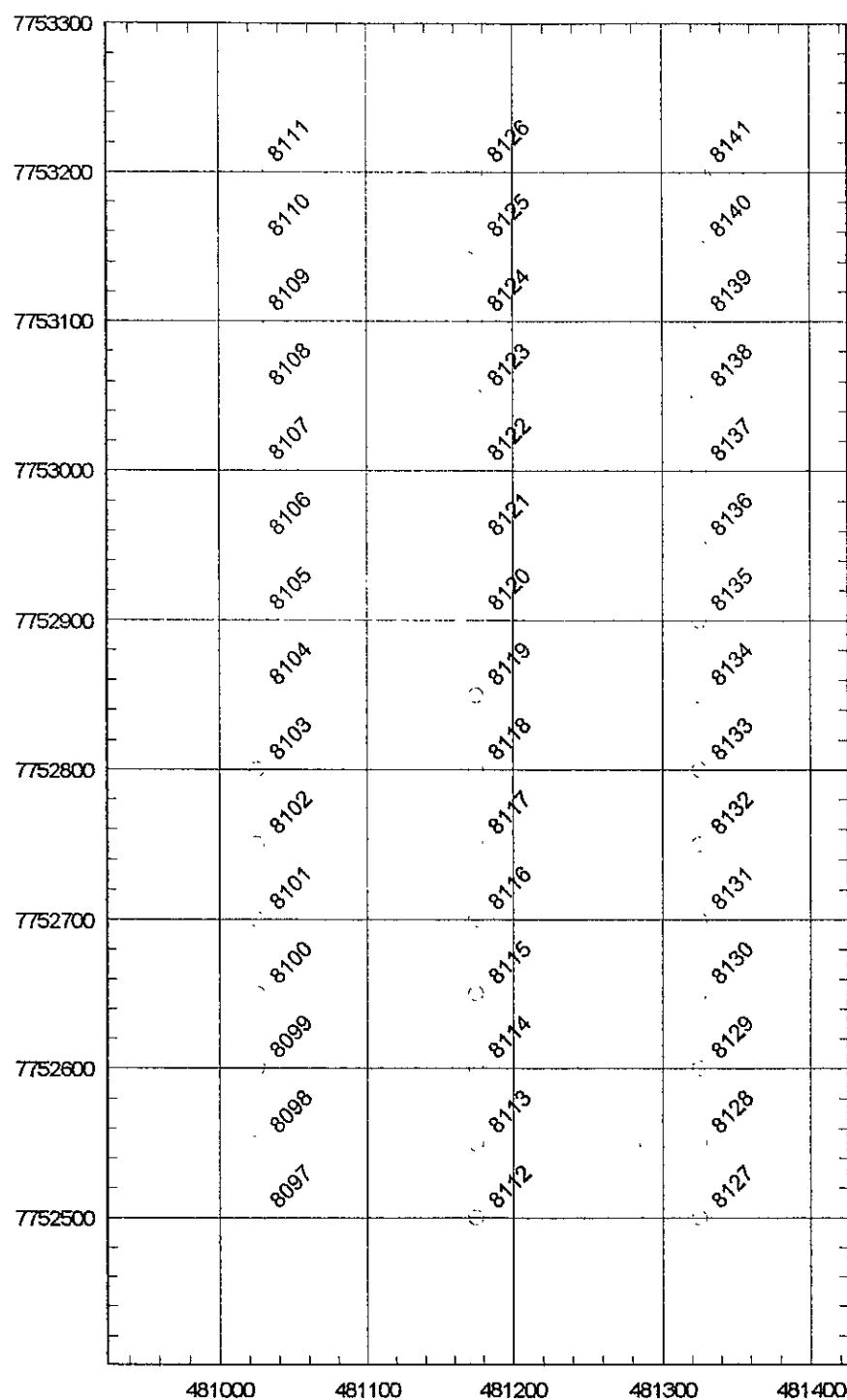
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ARNHEM GEOLOGICAL & EXPLORATION SERVICES

MURCHISON RANGE GEOCHEM 1996/7

AREA MT9

GEO:	SCALE 1:5000	CLIENT: NORTH STAR
DRAWN: PM	DATE: 29-01-1997	

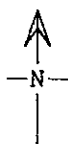
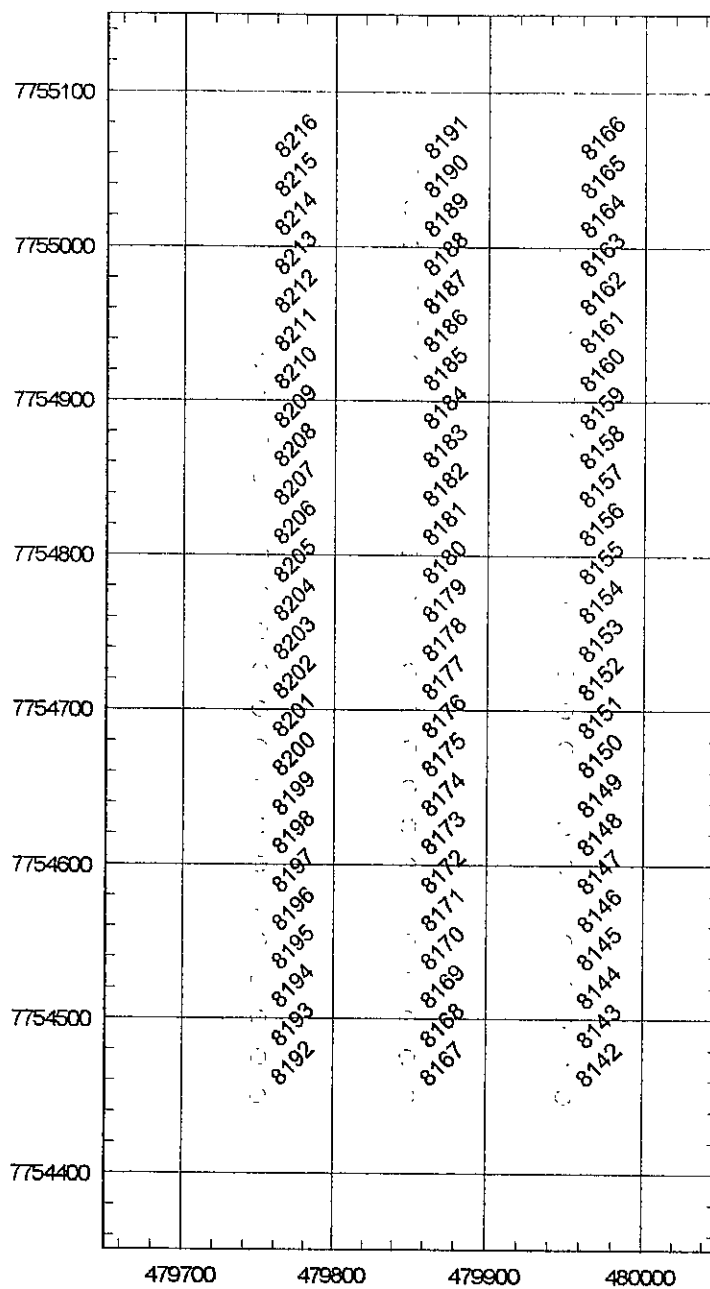


ARNHEM GEOLOGICAL & EXPLORATION SERVICES

MURCHISON RANGE GEOCHEM 1996/7

AREA MT10

GEO:	SCALE 1:5000	CLIENT. NORTH STAR
DRAWN: PM	DATE 29-01-1997	



Scale 1:5000

ARNHEM GEOLOGICAL & EXPLORATION SERVICES

MURCHISON RANGE GEOCHEM 1996/7

AREA MT11

GEO:	SCALE 1:5000	CLIENT: NORTH STAR
DRAWN: PM	DATE 29-01-1997	



ASSAYCORP

ASSAY CODE: AC 34469

Page 2 of 12

Sample	Au (ppb)
8097	0.1
8098	<0.1
8099	0.1
8100	<0.1
8101	0.1
8102	0.2
8103	0.3
8104	0.1
8105	<0.1
8106	0.1
8107	0.2
8108	0.1
8109	0.1
8110	<0.1
8111	0.3
8112	0.4
8113	0.1
8114	<0.1
8115	0.2
8116	0.1
8117	0.1
8118	0.2
8119	<0.1
8120	<0.1
8121	<0.1
Method	BLEG



ASSAYCORP

ASSAY CODE: AC 34469

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Sample	Au (ppb)
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8122	<0.1
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8123	<0.1
------	------

8124	<0.1
------	------

8125	<0.1
------	------

8126	<0.1
------	------

8127	<0.1
------	------

8128	<0.1
------	------

8129	<0.1
------	------

8130	0.1
------	-----

8131	<0.1
------	------

8132	<0.1
------	------

8133	0.2
------	-----

8134	<0.1
------	------

8135	<0.1
------	------

8136	<0.1
------	------

8137	<0.1
------	------

8138	<0.1
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8139	<0.1
------	------

8140	<0.1
------	------

8141	<0.1
------	------

↑ MT10

8142	<0.1
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8143	<0.1
------	------

8144	<0.1
------	------

8145	<0.1
------	------

8146	<0.1
------	------

↓ MT11

Method	BLEG
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ASSAYCORP

ASSAY CODE: AC 34469

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Sample	Au (ppb)	
8147	<0.1	↓ MT II
8148	<0.1	
8149	0.1	
8150	<0.1	
8151	<0.1	
8152	<0.1	
8153	<0.1	
8154	<0.1	
8155	<0.1	
8156	<0.1	
8157	<0.1	
8158	<0.1	
8159	0.1	
8160	0.3	
8161	<0.1	
8162	<0.1	
8163	<0.1	
8164	<0.1	
8165	<0.1	
8166	<0.1	
8167	<0.1	
8168	<0.1	
8169	<0.1	
8170	0.2	
8171	<0.1	
Method	BLEG	



ASSAYCORP

ASSAY CODE: AC 34469

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Sample	Au (ppb)	
8172	<0.1	↓ MT II
8173	<0.1	
8174	<0.1	
8175	<0.1	
8176	<0.1	
8177	<0.1	
8178	<0.1	
8179	<0.1	
8180	<0.1	
8181	<0.1	
8182	<0.1	
8183	<0.1	
8184	<0.1	
8185	<0.1	
8186	<0.1	
8187	<0.1	
8188	<0.1	
8189	<0.1	
8190	<0.1	
8191	<0.1	
8192	<0.1	
8193	<0.1	
8194	<0.1	
8195	<0.1	
8196	<0.1	
Method	BLEG	



ASSAYCORP

ASSAY CODE: AC 34469

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Sample	Au (ppb)	
8197	<0.1	↓ MT 11
8198	<0.1	
8199	<0.1	
8200	<0.1	
8201	<0.1	
8202	<0.1	
8203	<0.1	
8204	<0.1	
8205	<0.1	
8206	<0.1	
8207	<0.1	
8208	0.1	
8209	<0.1	
8210	0.1	
8211	0.1	
8212	0.2	
8213	0.2	
8214	0.1	
8215	0.1	
8216	<0.1	↑ MT 11
8217	0.2	↓ MT 9
8218	0.2	
8219	0.3	
8220	0.4	
8221	0.2	
Method	BLEG	



ASSAYCORP

ASSAY CODE: AC 34469

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Sample	Au (ppb)
8222	0.2
8223	0.1
8224	0.3
8225	0.1
8226	0.3
8227	0.2
8228	0.2
8229	0.3
8230	0.2
8231	0.1
8232	0.1
8233	<0.1
8234	0.1
8235	0.2
8236	0.1
8237	0.1
8238	0.2
8239	0.2
8240	0.2
8241	0.2
8242	0.3
8243	0.1
8244	0.2
8245	0.3
8246	0.1
Method	BLEG



ASSAYCORP

ASSAY CODE: AC 34469

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Sample	Au (ppb)
8247	<0.1
8248	<0.1
8249	<0.1
8250	0.1
8251	0.1
8252	0.2
8253	0.2
8254	0.1
8255	<0.1
8256	0.1
8257	<0.1
8258	0.3
8259	<0.1
8260	<0.1
8261	<0.1
8262	0.1
8263	<0.1
8264	0.1
8265	<0.1
8266	0.1
8267	0.3
8268	0.2
8269	<0.1
8270	<0.1
8271	<0.1
Method	BLEG



ASSAYCORP

ASSAY CODE: AC 34469

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Sample	Au (ppb)	
8272	<0.1	↓ MT9
8273	<0.1	
8274	<0.1	
8275	<0.1	
8276	<0.1	
8277	<0.1	↑ ↓ MT6
8278	<0.1	
8279	0.2	
8280	0.1	
8281	<0.1	
8282	<0.1	
8283	<0.1	
8284	0.1	
8285	<0.1	
8286	<0.1	
8287	<0.1	
8288	<0.1	
8289	<0.1	
8290	<0.1	
8291	<0.1	
8292	<0.1	
8293	<0.1	
8294	<0.1	
8295	<0.1	
8296	<0.1	
Method	BLEG	



ASSAYCORP

ASSAY CODE: AC 34469

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Sample	Au (ppb)	
8297	<0.1	↓ MT6
8298	<0.1	
8299	<0.1	
8300	<0.1	
8301	<0.1	
8302	0.1	
8303	<0.1	
8304	<0.1	
8305	<0.1	
8306	<0.1	
8307	<0.1	
8308	<0.1	
8309	<0.1	
8310	<0.1	
8311	<0.1	
8312	<0.1	
8313	<0.1	
8314	<0.1	
8315	<0.1	
8316	<0.1	
8317	<0.1	
8318	<0.1	
8319	<0.1	
8320	<0.1	
8321	0.1	
Method	BLEG	



ASSAYCORP

ASSAY CODE: AC 34469

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Sample	Au (ppb)	
8322	<0.1	✓ MT6
8323	<0.1	
8324	<0.1	
8325	<0.1	
8326	<0.1	
8327	<0.1	
8328	0.1	
8329	0.1	
8330	<0.1	
8331	0.2	
8332	<0.1	
8333	<0.1	
8334	<0.1	
8335	<0.1	
8336	<0.1	
8337	<0.1	
8338	<0.1	
8339	<0.1	
8340	<0.1	
8341	<0.1	
8342	<0.1	
8343	<0.1	
8344	<0.1	
8345	<0.1	
8346	<0.1	
Method	BLEG	



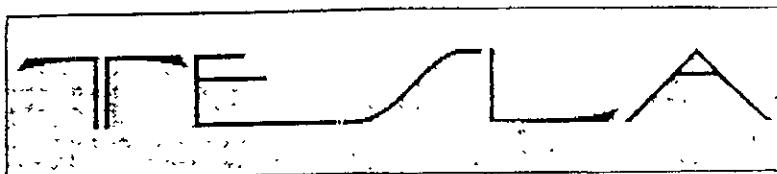
ASSAYCORP

ASSAY CODE: AC 34469

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Sample	Au (ppb)	
8347	<0.1	↓ MYG
8348	0.4	
8349	<0.1	
8350	<0.1	
8351	<0.1	
8352	0.1	
8353	<0.1	
8354	<0.1	
Method	BLEG	

	AREA	EASTING		NORTHING		BASELINE NOTES @ 50m
		FROM	TO	FROM	TO	
	MT1	476300	7762800	7763500	7762800	Flat, open, clay.
		476400	7762800	7763500		
		476500	7762800	7763500		
	MT2	474425	7762800	7763600	7762800	Undulating, siltstone scree.
		474550	7762800	7763600		E/W ridge to the south.
		474675	7762800	7763600		
	MT3	472225	7762750	7763350	7762750	Flat, scrubby.
		472325	7762750	7763350		
		472425	7762750	7763350		
	MT4	468800	7759850	7760350	7759850	Flat, scrubby. Granite o/c
		468875	7759850	7760350		to the south. Central
		468950	7759850	7760350		claypan
	MT5	471775	7759950	7760450	7759950	Flat, scrubby. Compacted
		471875	7759950	7760450		clays and pans.
		471975	7759950	7760450		
	MT6	478400	7759500	7760100	7760100	Undulating, open. Wide E/W
		478500	7759500	7760100		central drainage.
		478600	7759500	7760100		
	MT7	473150	7764550	7765200	7764700	Flat, scrubby. Patches of
		473250	7764550	7765200		siltstone o/c and weathered
		473350	7764550	7765200		granite.
	MT8	474625	7763850	7764550	7764250	Flat, moderate scrub, sand.
		474725	7763850	7764550		
		474825	7763850	7764550		
	MT9	481550	7753700	7754200	7753700	Flat, moderate scrub, sand.
		481650	7753700	7754200		
		481750	7753700	7754200		
	MT10	481025	7752500	7753200	7752500	Flat, moderate scrub, sand.
		481175	7752500	7753200		
		481325	7752500	7753200		
	MT11	479750	7754450	7755050	7754450	Flat, moderate scrub, sand.
		479850	7754450	7755050		Low E/W ridge.
		479950	7754450	7755050		
	FT1	488375	7752600	7753200	7752600	Flat, moderate scrub, sand.
		488475	7752600	7753200		
		488575	7752600	7753200		



AIRBORNE GEOSCIENCE

A.C.N. 009 183 082

REF:RP/SR

October 14, 1996

North Star Resources NL
First Floor
34 Colin Street
WEST PERTH WA 6005

SQ2710

Att: George Sakalidis

Dear George

RE: AIRBORNE GEOPHYSICAL SURVEY
Tennant Creek, Northern Territory

Thank you for inviting us to quote on the above survey as outlined in your fax of 9th October.

Tesla Airborne Geoscience will supply the following equipment to carry out the survey:

Aircraft	:	Cessna 210N
Magnetometer	:	Scintrex Cesium Vapour Magnetometer RMS Automatic Aeromagnetic Digital Compensator (AADC) Cycle Time - 0.1 seconds.
Spectrometer	:	Exploranium GR-820 Self Calibration with 33.6 Litre Crystal Volume mounted side by side in the floor of the aircraft. All crystals are less than three years old. Cycle Time - 1.0 seconds.
Global Positioning System	:	Novatel 12 Channel Receivers in aircraft and base systems. Updating once per second.
Radar Altimeter	:	Bendix King KRA-10A. Recording 10 times per second.

Perth Office: 41 Kishorn Road, Applecross, Western Australia 6153
Telephone 61 9 364 8444 Fax 61 9 364 6575
email: tesla10@wt.com.au

Eastern Office: 3 Fox Close, Kariong, New South Wales 2250
Telephone: 61 043 400 122 Fax 61 043 400 155
email: tesla10@ozemail.com.au



Barometric Pressure : Air Digital Barometer.
Recording at one second intervals.

Temperature : Digitron R500 Temperature Probe.
Recording at one second intervals.

Humidity : Digitron R500 Humidity Sensor.
Recording at one second intervals.

Data Acquisition : TAG-3 486 Based Data Acquisition System synchronised to
System GPS time. Data is recorded to hard disk and backed onto tape
at the completion of each flight for processing.

Base Magnetometers : Two Geometrics G856AX Magnetometers.
Cycle Times - 5.0 seconds.

Radiometric data will be collected but only processed if required.

All equipment is detailed in our "Airborne System Specifications" manual which is available on request.

In-flight navigation and data co-ordination utilises high performance GPS cards with Real Time Differential Corrections via Fugro Surveys Omni Star Link. This combination enables highly accurate close line surveys to be flown.

We have recently taken delivery of new post processing software which produces improved height information resulting in superior digital terrain models.

BASE STATION MONITORS

Tesla Airborne Geoscience will situate two G856 Magnetometers at its base of operations (Tennant Creek). The magnetometers will cycle at five second intervals. They will be located in low gradient areas, and away from man-made influences. This functions as a backup and check of diurnal activity.

A Base 12 Channel GPS will be situated on a known point with data recorded to enable post processing to further refine aircraft positional and height information. Real time corrections will be via Fugro Surveys Omni Star Link.

- Speed Check Profiles in metres per second.
- Radiometric Summed Spectra Plots for each line.
- Thorium Source Check Peak Position and Resolution Plots indicating spectrometer stability.

TIMING

We will be commencing another job in the Northern Territory next week and would be available to fly this job before then.

Preliminary data and quality control plots would be available 10 days after the completion of flying. Final data will be available five days after acceptance of preliminaries.

RATES (*Optional)

1.	Mobilisation	\$ 3,000.00
2.	Data Acquisition	\$ 8.00/km
3.	Standby (weather, diurnal activity, client request)	\$ 1,850.00/day
4.	Data Processing	
	a) Correct and Level Magnetic Data and Write Located and Gridded Data to CD-Rom	\$ 1.30/km
*	b) Correct and Level Radiometric Data and Write Located and Gridded Data to CD-Rom	\$ 1.90/km
*	c) Calculate and Level Digital Terrain Model and Write Located and Gridded Data to CD-Rom	\$ 0.50/km
*	d) Black and White Contours	\$ 220.00/sheet
*	e) Colour Contours	\$ 340.00/sheet
*	f) Images on Laminated Paper	\$ 350.00/image
*	g) Calculation of Vertical Derivatives	\$ 0.10/km/derivative

AREA LINE KILOMETRAGE

EL8388/8816	150 metres	1,960 kilometres
	200 metres	1,500 kilometres
EL8246/8388/8816	150 metres	3,190 kilometres
	200 metres	2,450 kilometres

IN-FIELD PROCESSING AND QUALITY CONTROL

Tesla Airborne Geoscience place high emphasis on quality control and early detection of problems to ensure high quality data acquisition.

To achieve this goal, an extensive range of in-field processing software has been developed to enable rigorous examination of collected data. Calibration and monitoring procedures are strictly followed and documented.

In flight the operator can view profiles of all incoming data at operator selectable scales. Statistics can be produced in flight of completed survey lines.

At the completion of each flight, the data is downloaded to an in-field processing computer. Hard copy statistics are produced for each line of every parameter collected. Line profiles are viewed at every line at operator selectable scales (both vertically and horizontally) to ensure noise parameters are being met. Positional data is post processed and the flight path viewed and zoomed to identify navigation re-flights. AMG positions are also displayed along the line. Hard copy analogues, stacked profile and flight path plots can be produced for on-the-spot decisions.

Located x, y, z data is available at the completion of each days acquisition for inputting into imaging software.

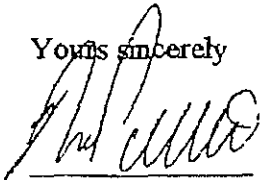
QUALITY ASSURANCE AND SAFETY

Tesla Airborne Geoscience has recently become a Quality Assured Company conforming to ISO Standard 9002 - Certificate Number 648/96. This makes us Australia's only Quality Assured Airborne Survey Company. The following quality control products will be produced:

- Flight Path and Altitude map showing where the altitude envelope is outside of specifications.
- Flight Path and Line Specification map showing where actual flight path deviates from planned flight path.
- Stacked Profile Noise map showing magnetometer noise envelope.
- Diurnal Monitor Plots showing TMI and time derivative of diurnal plotted as a multiplot showing all base stations.

Please do not hesitate to contact me if you have any queries. Your early response would be appreciated to enable planning to commence.

Yours sincerely



Rod Pullin
OPERATIONS MANAGER