

# **BOWGAN MINERALS LIMITED**

BOMGAN MINERALS LIMITED

## **EXPLORATION LICENCE 24253 NEUTRAL JUNCTION PROJECT**

**SEVENTH ANNUAL REPORT  
FOR THE PERIOD  
7 APRIL 2011 – 6 APRIL 2012**

Barrow Creek, Alcoota  
1:250,000 Map Sheets

Registered titleholder: Mithril Resources Limited

**Operator: Bowgan Minerals Limited (BML)  
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## SUMMARY

The Neutral Junction Project consists of a single exploration licence (EL 24253), located 280 km north of Alice Springs.

Exploration on EL24253 is operated under a joint-venture agreement, between Bowgan Minerals Limited, Mega Hindmarsh Pty Limited and the original tenement manager Mithril Resources Limited. Bowgan Minerals Limited is the current operator of the Neutral Junction Project.

Two exploration models are currently being investigated by Bowgan Minerals Limited on EL24253. The first, aims to explore for unconformity-related uranium at the contact between the Early Proterozoic basement rocks and the overlying sedimentary rocks of the Late Proterozoic Georgina basin sequence and the second, aims to explore for gold and base-metals in association with fault re-activations (Alice Springs orogeny) within the prominent NNW-SSE trending magnetic/structural corridor that continues along the entire strike length of the tenement.

Work completed during this reporting period included; completion of 41.6 line-kilometres of geophysical surveys (G-859) on-ground at the Tara and Railway targets, completion of two ground spectrometer surveys for a total of 673 point-readings, mapping of outcrop, regolith, flora and sampling of outcrop and soils at Adnera Hill targets. A total of 23 rock chip and 30 soil samples were submitted to ALS Chemex during the reporting period. Literature reviews were conducted for geology in the Neutral Junction-Adnera Hill area and a compilation of recent mapping and sampling data was completed, which included presentation of a summary report for spectrometer and mapping programs completed to date at the Adnera Hill prospect.

At Adnera Hill, two surface radiometric anomalies were confirmed by surface surveying with anomalous uranium, thorium and potassium values being determined. Soil and rock chip sampling also determined anomalous gold, silver, base-metals, uranium and thorium values. At Tara, several potential exploration targets were also identified following interpretation of magnetic survey data however incremental weather caused cancellation of a surface radiometric survey aimed to confirm a surface radiometric anomaly in the same target area.

Interpretation of data from the 2011-12 reporting period will continued into the next reporting period, with the aim of designing a first-pass program of drill testing of targets at the Adnera Hill and Railway (NJM008) prospects. Follow-up soil sampling and geological mapping is also proposed for a number of Adnera Hill targets.

Further exploration work involving more detailed geophysical surveying, outcrop and soil sampling are also proposed at the Tara and Target Area 'B' prospects during the 2012-13 reporting period.

## 1. INTRODUCTION

The Neutral Junction Project is located 280 km north of Alice Springs, Northern Territory on the Barrow Creek (SF53-6) and Alcoota (SF53-10) 1:250 000 map sheets (Figure 1). Access to the district is via the Stuart Highway and a network of graded station tracks.

This is the seventh annual tenement report for the Neutral Junction Project, and details all mineral exploration activities undertaken by Bowgan Minerals Limited (BML) during the reporting period on EL 24253.

Exploration work conducted during this reporting period included; completion of 41.6 line-kilometres of geophysical surveys on-ground (via 859 magnetometer) at the Tara (NJM001&2) and Railway (NJM008) target areas, completion of two ground spectrometer surveys for a total of 673 point-readings at the Adnera Hill prospect including; mapping of regolith, flora and outcrop with limited outcrop and soil sampling, submission of 23 rock chip and 30 soil samples to ALS Chemex, which included 3 rock chip samples submitted to Pontifex in Adelaide for detailed petrological examination during the previous reporting period.

Literature reviews were conducted for geology in the Neutral Junction-Adnera Hill area and a compilation of recent mapping and sampling data was completed, which included presentation of a summary report for spectrometer and mapping programs completed at Adnera Hill target to date.

## 2. TENEMENT DETAILS

### 2.1 Tenure

Mithril Resources Limited is the registered titleholder of the exploration licence as detailed in Table 1. The licence lies within the Neutral Junction, Stirling Downs and Mt Skinner Pastoral Leases.

**Table 1:** Neutral Junction project tenement details

Tenement	Name	Tenement Holder	No. of graticular blocks	Date Granted
EL 24253	Neutral Junction	Mithril Resources Limited	454 (1,433 sq km)	7/4/2005

The Neutral Junction Project is operated under a joint-venture agreement, between Bowgan Minerals Limited (BML), MegaHindmarsh Pty Limited (Mega) and the original tenement manager Mithril Resources Limited (Mithril).

BML are the current operators of the Neutral Junction Project under a joint-venture agreement which required the expenditure of \$167,000 by August 2011 to obtain a 33.3% interest, with 33.3% ownership being retained by the original tenement managers Mithril, the other 33.3% being retained by the previous tenement managers Mega Hindmarsh.

This expenditure requirement was met by BML during January 2011, with the joint-venture agreement being ratified during April-May 2011.

## **2.2 Native Title Parties and Aboriginal Heritage**

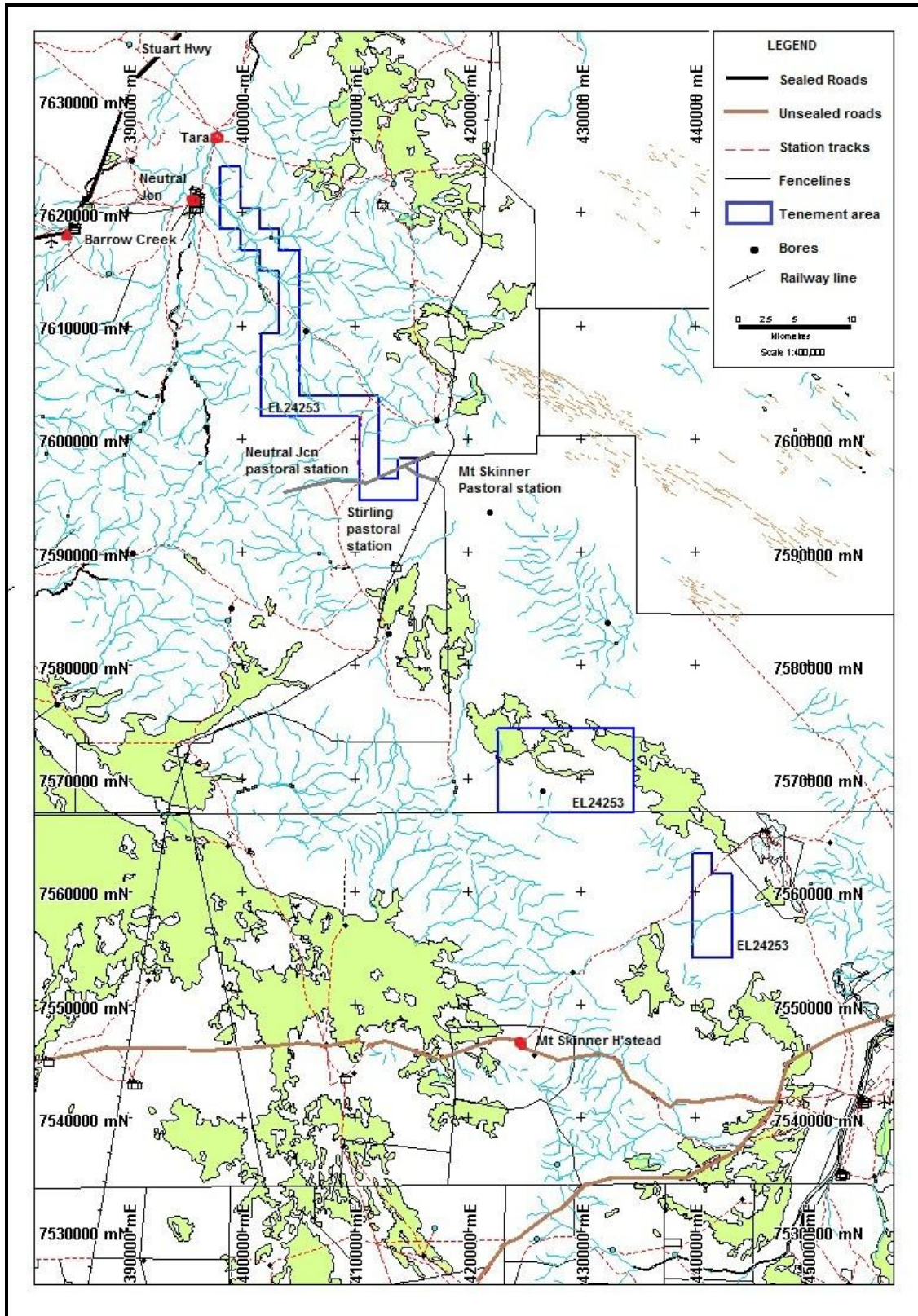
In August 2006, Mega Hindmarsh Pty Limited convened a meeting with Central Lands Council (CLC) representatives and registered native title claimants at Tara Community Hall. Site visits were conducted by local native title representatives and CLC staff (including an anthropologist) and site clearances issued. A number of areas of significance were identified during this visit, combined with sites identified by previous AAPA surveys.

After detailed discussion with native title holders and the CLC, Mega Hindmarsh Pty Limited planned its exploration program so that these sites are avoided. Bowgan Minerals Limited has been, and will continue to conduct its field exploration activities according to this original agreement.

## **2.3 Consultation with Pastoralists**

The station managers at Neutral Junction, Stirling Downs and Mount Skinner pastoral stations were contacted by BML both before commencement and at the conclusion of field exploration programs on EL24253.

All aspects of the program were discussed in detail with management and staff at each pastoral station before commencement of field work and on-going discussions were conducted during the course of, and at the completion of, each field program.



**Figure 1:** EL24253 (Neutral Junction project) within the Barrow Creek-Mount Skinner area. Image shows current tenement holding by BML.



### **3. REGIONAL GEOLOGY**

The Neutral Junction Project consists of a single tenement; EL24253 located at the boundary of the Arunta Inlier to the south and the Tennant Creek Inlier/Davenport Province to the north. The contact between these tectonic blocks constitutes a wide northwest-southeast trending corridor which includes intensely folded and faulted rock types of both provinces (Lennartz, 2006).

The immediate tenement area is covered by flat-lying Neoproterozoic-aged Georgina Basin sediments (Adelaidean Central Mt Stuart Formation) which rest unconformably above steeply inclined and deformed/metamorphosed Palaeoproterozoic-aged metasediments. These rocks exhibit amphibolite-grade metamorphism and occur largely under shallow cover. The metasedimentary package includes the prospective Hatches Creek Group (HCG) which hosts the Home of Bullion mine as well as a number of other potentially economic prospects. Proterozoic-aged granites (radiometrically-anomalous) have intruded along the northwest-southeast structural trend and outcrop in the Barrow Creek area immediately north-west of EL24253 as well as further towards the south-east, in the Adnera Hill and Tomahawk Range areas on Mount Skinner station.

Previous modelling of the depth of the HCG metasediments by the NTGS indicates that a major fault forms the western margin of the Georgina Basin. The depth of the basin sediments in the southern half of the EL24253 increases from less than 100 m to greater than 1 km from west to east over a distance of less than 500 m. This suggests a major crustal discontinuity, which could provide a pathway for migrating mafic magma.

This fault bounds the HCG in the northern half of EL 24253 and further towards the north-west of the tenement the fault approximately coincides with the Strzeleckie nickel sulphide occurrence.

### **4. PREVIOUS EXPLORATION**

Historically, limited prospecting and small-scale mining has been reported in the local area for copper, lead silver, nickel, tin, tantalum, tungsten, molybdenum and mica (NTGS, 1991). The largest mining operation occurred at Home of Bullion mine site where copper ore was extracted (6,100 tonnes officially recorded) between 1923 and 1951.

Aerial surveying (magnetics) was completed by NT Geological Survey on N-S oriented 500 metre line-spacing at 100 metres height during 1981.

Uranium exploration was carried out in the district by Otter Exploration (1977) and C.R.A. Exploration (1978).

In 1977, Otter undertook exploration in the Mt Ida region. Trace amounts of uranium mineralisation (maximum 215 ppm) were discovered in micro-gneisses adjacent to pegmatite bodies in Lower Proterozoic metasediments and intrusive granite bodies.

In 1978, C.R.A.E. recognised the potential for uranium occurrence in the Arunta Complex basement and at the unconformity with the overlying Central Mount Stuart Formation. Magnetic and radiometric surveys were completed with ground follow-up (stream sediment sampling) in the northern portion of EL24253.

Exploration for base metals was conducted by Kennecott Exploration (1966), Department of Mines and Water Resources (1968), Alcoa Australia Ltd. (1983) and Otter Exploration (1989). In 1980, C.R.A.E. collected approximately 20 samples over the area within the northern part of EL 24253. These samples were analysed for base metals however, uranium was not included in the suite.

Previous work for wolfram, tantalum and tin was conducted by BHP Minerals Ltd (early 1980's) and R.B. Mining (1981).

Exploration for diamonds was undertaken by C.R.A.E. in 1977.

#### **4.1 Discussion**

The area is prospective for nickel, copper and cobalt in sulphides hosted by mafic intrusions. Two nickel sulphide occurrences (Prospect D and Strzeleckie) occur to the north-west of EL24253. These occurrences are mapped as being within amphibolites associated with HCG metasediments (Fowler, 2006).

Mafic intrusions have not been located at/near surface by exploration conducted to date within EL24253. However, outcrops of the prospective HCG stratigraphy in association with a major fault provided the basis for follow up of the Prospect D and Strzeleckie nickel sulphide occurrences along strike in the south-east direction.

From a continental scale it is apparent that EL 24253 is on major magnetic and gravity breaks as well as major lineament trends. Prospect D and Strzeleckie also occur on or near the regional magnetic break with prospect D occurring at an inflection point.

Mapped outcrops of HCG with amphibolites are restricted to three areas on the Barrow Creek 1:250,000 Sheet. The prospect D and Strzeleckie occurrences are associated with two of the outcrops with the third outcrop occurring in EL 24253 in the Main Target Zone (denoted as Target Area 'A').

## **5. EXPLORATION BY JOINT-VENTURE PARTNERS**

### **5.1 2005-06 Exploration by Mithril Resources Limited**

In June 2005, geological mapping and reconnaissance geochemical surveying was conducted to explore for nickel associated with any extensions of the HCG, in association with possible mafic intrusions. Geological mapping failed to confirm nickel prospectivity in the area. Outcrops examined within EL24253 did not contain any mafics and HCG units were not identified further to the south in the Springs Range area, as was expected. Gabbroic float was identified in one stream draining an escarpment composed of uplifted Georgina Basin sediments, but the source of the float was not successfully located further upstream. This led to the conclusion that the alluvial gravels incised by the current stream may have been deposited by a stream draining a different area.

The reconnaissance geochemical survey collected 27 samples of magnetic lag fractions, returning the highest nickel value of 67 ppm and highest copper value of 24 ppm. None of the elements assayed show any significant trends, which did not encourage further nickel exploration on EL24253 by Mithril Resources.

Whilst assays were not greatly anomalous, the generally elevated concentrations for elements such as Ni and Cr were indicative of the potential occurrence of mafic lithologies in the areas sampled. Mafic rocks may be present at shallow depth below cover in these areas. Hence, there is a possibility of a uranium occurrence associated with a 'reducing' trap near mafic rock types.

### **5.2 2006-09 Exploration by MegaHindmarsh Pty Limited**

A reconnaissance geological survey was undertaken in August 2006. Following this, geological and geophysical ground surveying was completed in selected exploration areas by Hindmarsh staff between September-November 2006 and in April 2007. Hawke Geophysics Pty Ltd was contracted to review and interpret geophysical data in order to identify anomalies.

The primary mineralisation model considered was for unconformity-related uranium in the proximity of the contact between Palaeoproterozoic HCG metasediments and the younger overlying Neoproterozoic sediments (Stuarts Range group) of the Georgina Basin sequence. Identification of a potential chemical trap, such as a cross cutting dolerite, magnetite-rich intrusive or graphitic shale, was also used as a targeting criteria.

The main target area (Target Area 'A') consisted of a window of HCG, surrounded by an exposed Paleozoic/Neo-Proterozoic unconformity with the overlying Stuarts Range sediments. A detailed program of geological mapping and magnetometer surveying on 400m spacing (N-S lines) was conducted which failed to identify any occurrence of dolerite and/or graphitic shale units within Target Area A. Several magnetically anomalous zones were identified in other

areas by subsequent surveys. These were interpreted to be located 650-800m below surface, precluding further work.

Spectrometer surveying (using the Exploranium GR 320 instrument with a 1.8 litre crystal) identified one area containing anomalous uranium concentration of 12.5ppm eU (402910mE, 7604000mN). This area was later identified as Target Area 'B'. The interpretation of all geological and geophysical data by was completed by geophysical consultant Phillip Hawke.

During 2008, further spectrometer surveying (GR320) was conducted Target Area A and prospective areas on Mt Skinner station interpreted from previous airborne survey (NTGS). In Target Area 'B', scintillometer and magnetometer surveys explored the gamma anomaly (12.5 ppm eU) detected by previous radiometric surveys.

Soil sampling was conducted around an outcrop in Target Area 'A' identified to contain boudinaged texture (steeply-plunging) within isoclinally folded metasediments by previous mapping. Soil and stream sediment sampling was completed in two prospective areas north of the 12.5 ppm eU geophysical anomaly near Target Area 'B'. Geological mapping was conducted in Target Areas 'A & B' and in the Mt Skinner area. Rock samples (highly magnetic pebbles) collected from Target Area B were submitted for petrological examination.

In Target Area 'A' and Mt Skinner, preliminary ground spectrometer surveying failed to identify any significant radiometric anomalies. Geochemical (soil) sampling targeting a small boudinaged outcrop of HCG at Target Area 'A' confirmed the presence of elevated base metal values, but no anomalous uranium or thorium values were identified.

In Target Area 'B', ground spectrometer surveying showed a N-S striking zone of elevated radiometric values over a strike length of 3-4 km. This anomaly was interpreted to be continuous northward from the previous 12.5 ppm eU. Magnetic surveying confirmed the presence of a number of sub-parallel zones containing elevated magnetic response within the northern part of the anomalous zone detected by radiometric surveying. Soil sampling in two areas showed elevated uranium (up to 2.4ppm U) and base metal (15.6ppm Co, 6.6ppm Mo, 20.2ppm Ni, 79ppm V, 21ppm Zn) values within the vicinity of the radiometric/magnetic anomaly.

Geological mapping identified N-S trending thrust faulting, a prominent landscape feature continuous along the western flank of the radiometric anomaly. Petrology of samples of strongly magnetic iron-rich pebbles failed to confirm the presence of primary magnetite, but the strong magnetism was interpreted to be associated with secondary/supergene-style magnetite emplacement (Pontifex, 2007).

## **6. EXPLORATION BY BOWGAN MINERALS LIMITED**

### **6.1 Period 2009–10**

BML commenced exploration field work on EL24253 during February 2010.

A total of 48.6 line kilometres of ground magnetic surveying were completed in 3 target areas; Adnera Hill, Railway and Tara. Surveys confirmed the occurrence of discrete and strongly magnetic targets in all three target areas examined, with follow-up exploration being proposed. A literature review of phosphate potential on EL24253 discounted potential for economic occurrences within the tenement area.

### **6.2 Period 2010–11**

A total of 95.6 line kilometres of ground magnetic surveying (using G-856 magnetometer and base station) were completed at the Adnera Hill, Railway and Tara targets, with geological, regolith and flora mapping being completed concurrently. Selective sampling of outcrop was also conducted. A review of previous exploration work completed to date on EL24253 was conducted with collation, processing and interpretation of the geophysical dataset being completed by contractor Phil Hawke.

#### **6.2.1 Program results (Adnera Hill)**

A total of 22 traverses further tested targets NJM013-016. No additional surveys were conducted to further test targets NJM011-12. Magnetic surveying confirmed several discrete (sub-parallel) magnetic bodies located at depth, which generally conformed to the NNW-SSE regional trend observed with the NTGS data.

At NJM013, highest magnetic contrasts (up to 600nT), were identified on the main magnetic body between traverses 7568700mN to 7568000mN. At NJM014, highest magnetic contrasts (up to 600nT) were identified between traverses 7567700mN to 7567400mN with interpretation identifying a steepening in the magnetic profile towards the south (suggesting the magnetic body is becoming shallower in that direction). At NJM015, highest magnetic contrasts (up to 300nT) were identified around 7568000mN.

#### **6.2.2 Program results (Railway target)**

A total of 19 traverses further tested target NJM008 and 4 traverses further tested target NJM008\_extension.

At NJM008, surveys provided additional magnetic data on the discrete WNW-ESE trending target. Highest magnetic contrasts (around 120nT) were identified between 413400mE and 413000mE. At NJM008\_extension, surveys identified a low magnetic contrast only (around 20-30nT maximum).

### **6.2.3 Program results (Tara targets)**

Two magnetic targets (NJM001-2) were interpreted from regional NTGS data by Phil Hawke (2006). A total of 7 traverses were conducted to further test target NJM002, earlier surveyed by 2 preliminary traverses in February 2010. A heavy rain event caused the early conclusion of the Tara survey program before survey traverses could be conducted at NJM001 however.

At NJM002, surveys identified a discrete magnetic body at depth, which generally conformed to the regional NNW-SSE structural trend as observed on the NTGS regional data. Highest magnetic contrasts (up to 300nT) were identified at the northern-most traverse 7618300mN and between traverses 7617900mN to 7617500mN. In traverse 7618300mN, the magnetic contrast is lower (around 150nT). Here, a discrete magnetic 'spike' (co-incident magnetic high/low) was identified on the eastern flank of the broader magnetic body. In traverse 7617900mN, a similar discrete 'spike' was identified on the western flank of the broader body.

### **6.3 Current reporting period (07 April 2011-06 April 2012)**

Exploration work completed by BML during the current reporting period included;

- 1) completion of 41.6 line kilometres of magnetic surveying (G-859),
- 2) completion of 674 point/autocycle readings by hand-held spectrometer,
- 3) completion of geological (outcrop), regolith and flora mapping,
- 4) submission of 3 petrological samples for examination by Pontifex,
- 5) submission of 23 rock chip samples for analysis by ALS Chemex,
- 6) submission of 30 soil samples for analysis by ALS Chemex,
- 7) collation and interpretation of geophysical data by contractor Phil Hawke,
- 8) interpretation of analytical results from rock chip and soil samples,
- 9) collation of mapping (outcrop, regolith and flora) datasets.

Field exploration locations are presented in Figure 4 (Appendix 1).

#### **6.3.1 Program Summary (magnetometer survey)**

A total of 41.6 line kilometres of magnetic surveying (on-foot) was completed during May 2011 using a G-859 Mineral Mag Portable Cesium Vapour magnetometer (Geometrics Inc.) operated by contract staff from Arnhem Exploration Services. In addition, a G-856AX Proton Magnetometer was operated in base-station mode over the duration of the magnetic surveying program, with an additional G-856AX being held as a standby unit. Surveying was conducted at the Tara (NJM001-2) and Railway (NJM008) targets.

At Tara, traverses were conducted in an east-west direction, with individual traverses conducted at 400m and 200m-line spacing for a distance of more than 8 kilometres along the strike of the NNE-SSW trending magnetic corridor. Limited infill surveying was also conducted to further test the Railway magnetic target. Traverses completed are detailed in Table 5 (Appendix 2). A summary report detailing processing and interpretation by Phil Hawke is presented in Appendix 3.

#### **6.3.2 Program Summary (spectrometer survey)**

A total of 47 point readings (assays) were recorded at the NJM014 target area during May 2011 with an additional 627 point/autocycle readings being recorded at the NJR002-004 target areas during November 2011.

Surveys involved on-ground traverses across each target area, with point readings being conducted at regular intervals using a Fugro RS230 BGO Super-SPEC Handheld Gamma-Ray Spectrometer hired from Fugro Geophysical. Geological (outcrop, regolith and flora) mapping and geochemical sampling was conducted concurrently during the course of survey traverses. Locations of point/autocycle readings from the May and November 2011 programs are presented in Figure 3.

#### *May 2011 (NJM014)*

Maximum uranium values recorded during the May 2011 survey included;

3.06ppmU/10.57ppmTh and 3.16ppmU/12.25ppmTh within the vicinity of NJM014, with 2.67ppmU/15.84ppmTh being detected within an outcrop of Tops member sandstone from outside the target area. Potassium values ranged from 0.7ppm to a maximum value of 2.13ppm.

This surveying program failed to locate anomalous uranium either at surface within NJM014, or along the interpreted unconformity contact at the outcrop-regolith contact at the base of Adnera Hill. The unconformity contact was re-interpreted to be located at greater depth as a consequence (Appendix 5).

*November 2011 (NJR002-004)*

The November 2011 program aimed to confirm and investigate three previously unexamined uranium anomalies; NJR002-4 interpreted from regional radiometric data sourced from previous NTGS airborne surveys (Figure 2).

Maximum uranium values recorded included; 6.2ppmU/25.5ppmTh at anomaly NJR002 and 7.2ppmU/13.9ppmTh at anomaly NJR004. Highest thorium value was 33.4ppmTh at NJR004. Potassium values ranged from 0.5% to a maximum value of 1.8%. A summary of maximum spectrometer assay results respective to target area is presented in Table 2.

**Table 2:** Maximum values for uranium, thorium and potassium respective to target area.

Target Area	Maximum Uranium(ppm)	Maximum Thorium(ppm)	Maximum Potassium(%)
NJR002	6.2ppm	31.9ppm	1.8%
NJR003	3.9ppm	15ppm	1.3%
NJR004	7.2ppm	33.4ppm	1.5%

The surveying program was success in confirming the occurrence of surface radiometric anomalies at targets NJR002&004, but failed to confirm a surface anomaly at the NJR003 target (Appendix 6).

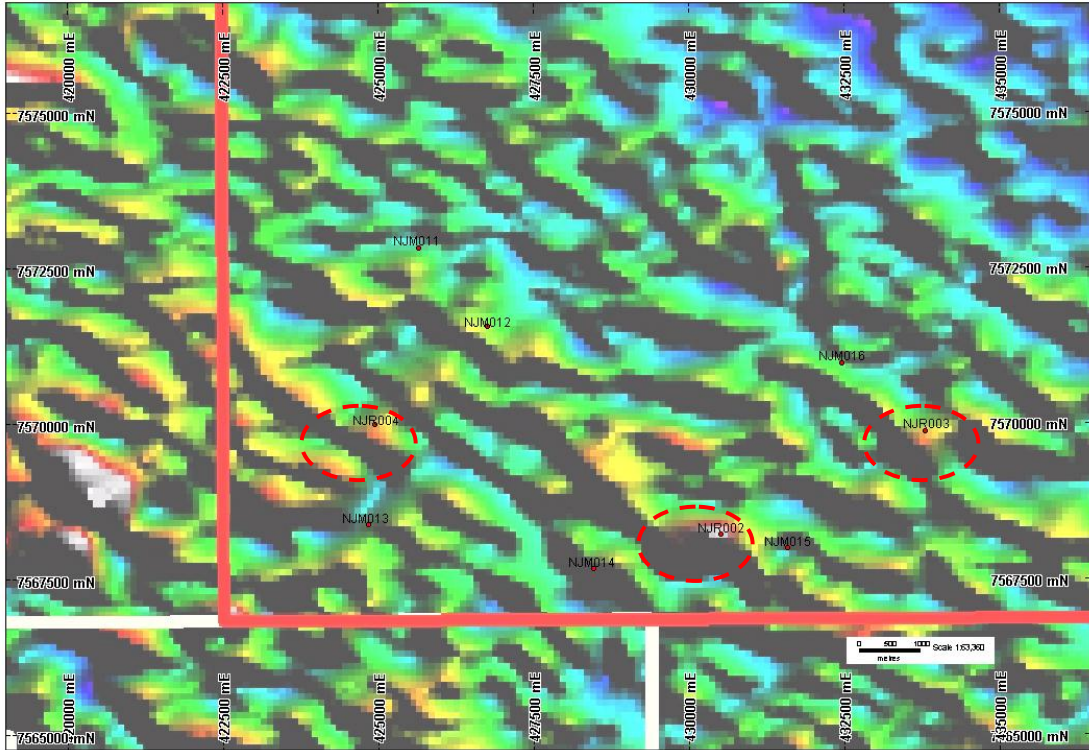
The occurrence of storms and heavy rainfall caused cancellation of the proposed program of spectrometer surveying and geological mapping at the Tara target (NJR001) which was scheduled to follow-on at the conclusion of the Adnera Hill program.

**6.3.3 Program Summary (geological mapping)**

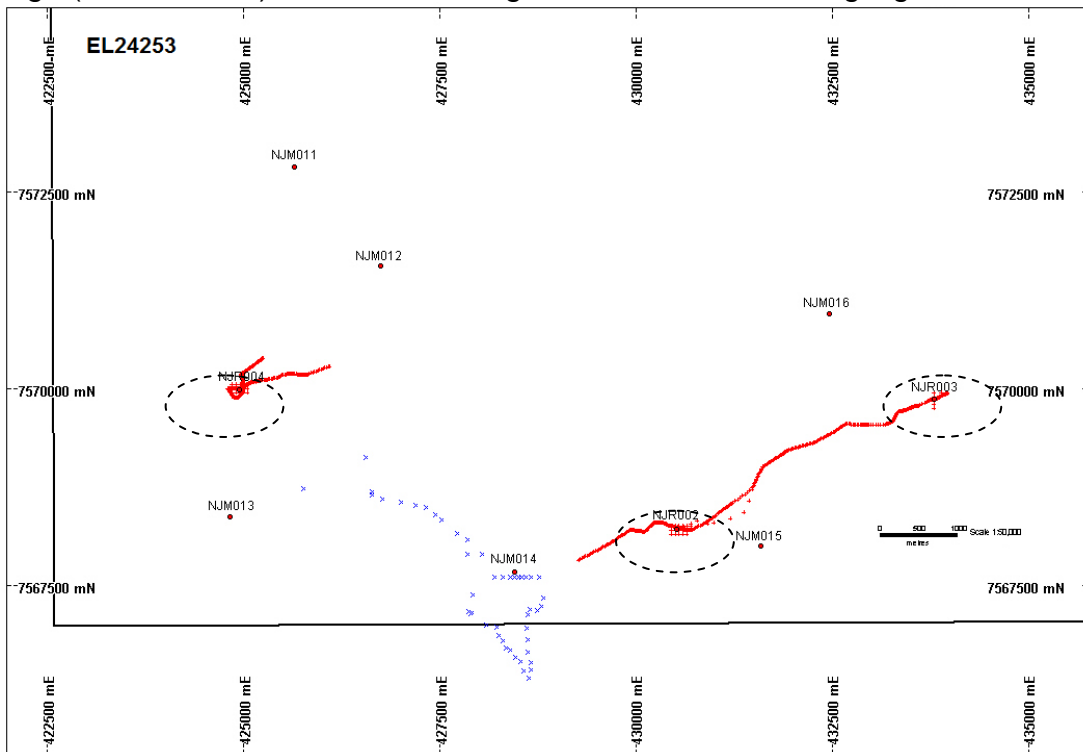
Preliminary geological mapping and outcrop sampling was conducted towards the north of Target Area 'B' to examine the southward extension of the Donkey Creek fault during May 2011.

Detailed geological mapping of outcrop was conducted at the Adnera Hill targets; NJM014 (magnetic target) and NJR002-4 (radiometric targets) during May and November 2011.





**Figure 2:** Location of magnetic and radiometric targets, over regional radiometric image (Hawke 2006). Radiometric targets NJR002-004 are highlighted.



**Figure 3:** Adnera Hill target area, showing spectrometer survey readings conducted during May 2011 (blue crosses) and November 2011 (red points). The radiometric targets NJR002-004 are highlighted.

#### **6.3.4 Program Summary (petrological study)**

Three rock chip samples collected during field mapping programs in the Adnera Hill area were submitted for preparation and petrological examination by Pontifex and associates in Adelaide (Appendix 4).

These samples were postulated as possibly representing outcropping volcanic rocks comprising Early Proterozoic-aged Hatches Creek group units within the Adnera Hill area. Samples were partially weathered, which made lithological identification of hand specimens difficult. The samples were subsequently dispatched to Pontifex to allow for a full petrological examination and classification.

Results of this study determined that all samples represented fine-grained sediments. The probable age of the samples was interpreted to be Neo-Proterozoic and as such, are probably not associated with Early Proterozoic Hatches Creek group units as was earlier postulated (Purvis, 2011).

#### **6.3.5 Program Summary (rock chip sampling)**

A total of 23 rock chips to date were submitted to ALS Chemex in Alice Springs for analysis during this reporting period. This included rock chips collected during previous and current field campaigns conducted at Target Area 'B' and Adnera Hill targets. Maximum assay results for each respective target area are presented in Table 3.

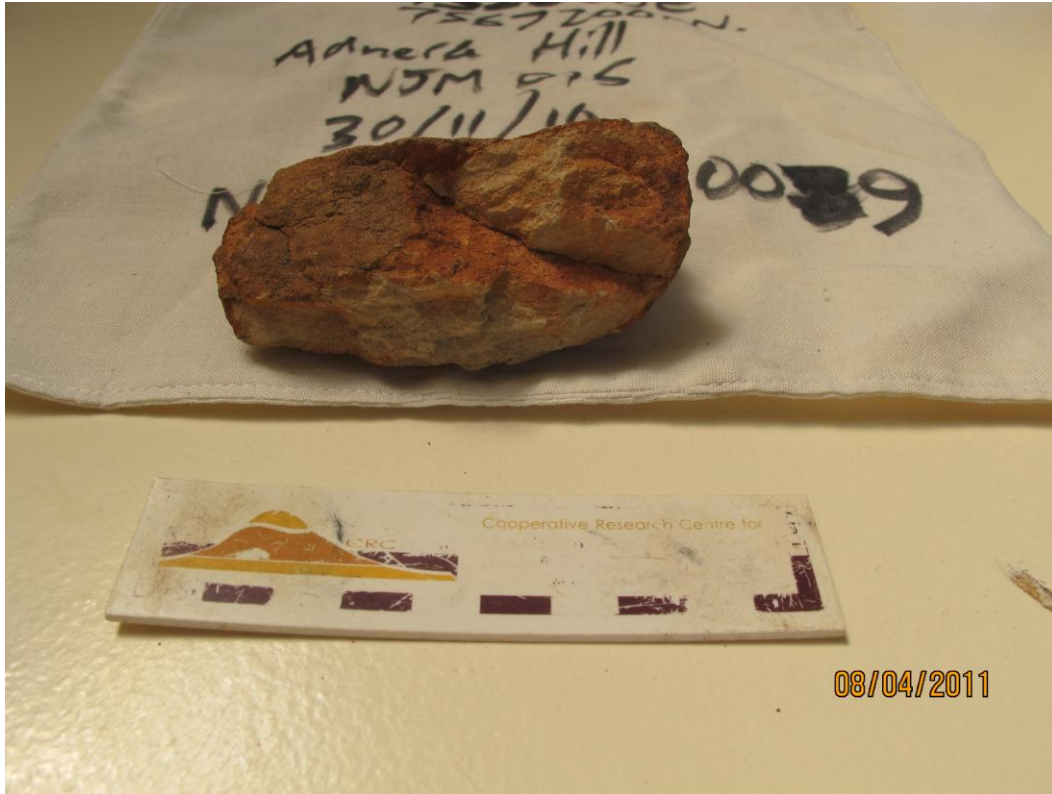
For Target Area 'B', results identify elevated, but not anomalous concentrations of only a few of the 48 elements analysed including; arsenic, uranium, thorium, vanadium and chromium. This exploration target consists of a steeply plunging magnetic feature hosted by sedimentary units that containing more magnetic horizons. Elevated uranium, thorium and vanadium in rock chips suggests a possibility that uranium mineralisation may occur in an unconformity setting at Target Area 'B'.

For Adnera Hill samples, results identify elevated to anomalous results for many of the 48 elements analysed including; precious-metals (Ag), base-metals (As, Co, Cu, M, Ni, Pb, Sn, V, W, Zn), uranium and thorium, as well as a number of other elements (Mn, P, Hf, Li, Ti, Zr). One sample in particular (NJRK\_2010\_009), was determined to be particularly anomalous for uranium (34.2ppm), thorium (124ppm), silver (0.75ppm), hafnium (48.5ppm), titanium (>10%) and zirconium (>500ppm).

This sample was collected from target NJM015 (432060mE 7567200mN, Plate 1-2) and originally interpreted to be a pale coloured/weathered volcanic lithology with a potential association to HCG rocks. Subsequent petrological examination by Pontifex identified this sample as a poorly-sorted sand or sandstone with minor interstitial matrix or cement of possible quartz-anatase-zircon, also scattered detrital rutile/anatase and accessory zircon (Purvis 2011).

**Table 3:** Maximum assay values for soil samples from target area 'B' and Adnera Hill targets.

Element	Target Area		Element	Target Area	
	Target Area 'B' (ppm/%)	Adnera Hill (ppm/%)		Target Area 'B' (ppm/%)	Adnera Hill (ppm/%)
Gold	0.013	0.012	Uranium	4.8	34.2
Silver	0.07	0.75	Thorium	43.7	124
Arsenic	53.4	28.7			
Bismuth	1.49	2.97	Beryllium	2.35	26.2
Cobalt	3.5	69.2	Cadmium	0.02	0.19
Copper	15.7	164.5	Cerium	33.5	45.9
Molybdenum	5.91	11.85	Chromium	719	617
Nickel	16.4	123.5	Caesium	1.44	4.12
Lead	29.1	92	Gallium	33.9	9
Antimony	4.09	7.04	Germanium	0.22	2.25
Tin	19.1	91.9	Hafnium	11.5	48.5
Vanadium	722	245	Indium	0.137	0.225
Tungsten	18	93.8	Lanthanum	25.9	36.1
Zinc	26	480	Lithium	9	70.2
			Niobium	85.8	480
Aluminium	1.82%	2.12%	Rubidium	17.9	43.9
Barium	650	2230	Rhenium	0.003	0.004
Calcium	0.11%	0.37%	Selenium	4	8
Iron	21.2%	>50%	Strontium	31.7	70.1
Potassium	0.3%	0.39%	Tantalum	7.47	29.1
Magnesium	0.06%	0.24%	Tellurium	0.52	0.17
Manganese	167	872	Thallium	0.16	0.26
Sodium	0.02%	0.02%	Yttrium	30.2	125.5
Phosphorus	890	4970	Zirconium	426	>500
Sulfur	0.04%	0.24%			
Titanium	2.61%	>10%			



**Plate 1:** Sample NJRK\_2010\_009, collected from Adnera Hill target NJM015 on 30<sup>th</sup> November 2010 (AMG94 co-ordinates 432060mE 7567200mN).



**Plate 2:** Sample location of NJRK\_2010\_009 (photograph taken April 2012).

The anomalous results for elements such as U, Th, Ag, Ti and Hf are significant, suggesting potential for either a primary source of titanium (evidenced by the zircon and rutile identified in the petrological examination) or that the source outcrop is mineralised.

Results from NJRK\_2010\_009 are extremely encouraging and in combination with elevated to anomalous values observed in other Adnera Hill samples has increased the prospectivity of a number of target areas with follow-up exploration being currently proposed.

### **6.3.6 Program Summary (soil samples)**

A total of 30 soil samples were collected from the NJR002 and NJR004 target areas at Adnera Hill concurrently during the spectrometer program during November 2011 (Table 6, Appendix 7). Surveys conducted on-foot confirmed surface radiometric anomalies at both radiometric targets, which were subsequently sampled on a 50m X 50m grid. Maximum assay values identified from the 30 soils samples collected are presented in Table 4.

At NJR002, anomalous gold (1.575ppm) were identified within one sample (NJS\_2011\_014) which also contained high iron (32.7%). A corresponding decrease (possible depletion) in other oxide elements may suggest that alteration has occurred. Elevated silver (0.12ppm) was also detected in an adjacent sample (NJS\_2011\_015). This target corresponds with a localised change in the magnetic survey profile (small spike/dip) which may suggest that a structure or geological contact has occurred locally which may be mineralised. Geological mapping at surface has detected ironstone, surrounded by quartzites and haematitic sediments.

At NJR004, elevated copper (153.5ppm), molybdenum (1.59ppm), gold (0.177ppm) and silver (0.25ppm) were also identified. Preliminary interpretation of data has identified elevated assays to occur within a discrete zone, which is proximal to the Ooralingie Fault. This regional structure is mapped immediately south-west of NJR004. The fault is mapped locally as dipping steeply towards south-west in quartzite outcrop located at a distance of around 100metres further south of the NJR004 target.

### **6.3.7 Program Summary (processing of mapping data)**

Surface mapping observations including; outcrop, regolith and flora was recorded concurrently since BML commenced exploration field work at EL24253 in 2010.

All mapping data collected to date for exploration field work completed at the Neutral Junction Project was collated and entered onto an excel database during the reporting period in preparation for future geological interpretation work.

**Table 4:** Maximum assay values from 30 soil samples collected from target areas NJR002 and NJR004, Adnera Hill.

Element	Target Area		Element	Target Area	
	NJR002 (ppm/%)	NJR004 (ppm/%)		NJR002 (ppm)	NJR004 (ppm)
Gold	1.575	0.177	Uranium	3	3.6
Silver	0.12	0.25	Thorium	27	21.8
Arsenic	30.8	33.5			
Bismuth	0.58	0.51	Beryllium	3.68	1.73
Cobalt	11.8	5.3	Cadmium	0.05	0.03
Copper	35.5	153.5	Cerium	51	73.4
Molybdenum	0.91	1.59	Chromium	126	104
Nickel	33.4	10.2	Caesium	3.11	3.66
Lead	19.6	14.1	Gallium	18	19.45
Antimony	1.2	1.69	Germanium	1.8	1.19
Tin	3.3	3.3	Hafnium	3	5
Vanadium	271	235	Indium	0.131	0.114
Tungsten	1.9	2.6	Lanthanum	31.4	35.1
Zinc	44	15	Lithium	16.3	12.9
			Niobium	8.1	14.6
Aluminium	4.57%	4.71%	Rubidium	61.8	56.2
Barium	350	210	Rhenium	0.02	0.02
Calcium	0.13%	0.06%	Selenium	2	2
Iron	32.7%	25.7%	Strontium	37.4	29.3
Potassium	0.96%	0.91%	Tantalum	0.65	1.21
Magnesium	0.18%	0.13%	Tellurium	0.18	0.2
Manganese	282	200	Thallium	0.3	0.26
Sodium	0.08%	0.06%	Yttrium	13.9	13.9
Phosphorus	630	770	Zirconium	109.5	177.5
Sulfur	0.01%	0.01%			
Titanium	0.282%	0.475%			

## **7 Work Program for 2012-13 Reporting Period**

Exploration field work is currently scheduled to recommence at EL24253 during the second quarter of 2012. The following exploration field/office work is proposed for the 2012-13 reporting period;

- Follow-up soil sampling and mapping at Adnera Hill targets NJR002 & NJR004,
- Geological mapping, outcrop and soil sampling at Target Area 'B' and Tara targets,
- Infill magnetic surveying at Adnera Hill targets NJM012-016,
- Infill magnetic surveying at Target Area 'B' and Tara targets NJM001-2,
- Spectrometer surveying at Tara target NJR001,
- Presentation of summary reports for rock chip and soil sampling programs/results,
- IP/EM surveying program at Adnera Hill to confirm potential magnetite-rich skarn (target NJM014).

The priority of exploration field programs at the Adnera Hill and Railway target areas of EL24235 during the 2012-13 reporting period will be primarily to assist/finalise the design of a first-pass exploration drilling program.

The priority of exploration field programs at the Target Area 'B' and Tara during the 2012-13 reporting period will be to further understand the geology and exploration potential for both of these parts of EL24253.

## REFERENCES

Coppin, T., (2007). Hindmarsh Resources Ltd. EL 24253 Neutral Junction Project. Second Annual Report for the Period 6 May 2006-5 May 2007. Annual Tenement Report for Mega Hindmarsh Pty Limited. Dated May 2007.

Fowler, A., (2006). Neutral Junction (EL24253) Annual Report for the Year Ending 6th May 2006. Annual Tenement Report for Mithril Resources Ltd. Dated 4/5/06.

Haines, P.W., Bagas. L., Wyche, S., Simons, B., Morris, D.G., (1991). Northern Territory Geological Survey 1:250 000 Geological Map Series. Explanatory Notes Barrow Creek SF53-6. Government Printer of the Northern Territory, 1991.

Lennartz, R., (2006). Hindmarsh Resources Ltd. EL 24253 “Neutral Junction” Previous Exploration - Summary Report March 2006. Unpublished report prepared for Hindmarsh Resources Ltd., by Central Mining and Exploration Services March 2006. Report No. hmr0103/2006.

Pontifex, I.R., (2007). Mineragraphic Petrographic Examination, Four Fe-Rich Pebbles. Pontifex and Associates Report No 9114 on behalf of Hindmarsh Resources Limited. Dated 16<sup>th</sup> July 2007 (unpublished).

Price, G., (2008). MegaHindmarsh Pty Ltd. EL 24253 Neutral Junction Project. Third Annual Report for the Period 7 April 2007-6 April 2008. Annual Tenement Report for Mega Hindmarsh Pty Limited. Dated May 2008.

Price, G., (2009). MegaHindmarsh Pty Ltd. EL 24253 Neutral Junction Project. Fourth Annual Report for the Period 7 April 2008-6 April 2009. Annual Tenement Report for Mega Hindmarsh Pty Limited. Dated May 2009.

Price, G., (2010). Bowgan Minerals Ltd. EL 24253 Neutral Junction Project. Fifth Annual Report for the Period 7 April 2009-6 April 2010. Annual Tenement Report for Bowgan Minerals Limited. Dated May 2010.

Price, G., (2011). Bowgan Minerals Ltd. EL 24253 Neutral Junction Project. Sixth Annual Report for the Period 7 April 2010-6 April 2011. Annual Tenement Report for Bowgan Minerals Limited. Dated April 2011.

Purvis, A.C., (2011). Mineralogical Report No. 9902 on behalf of Bowgan Minerals Limited. Dated May 12th 2011 (unpublished)



APPENDIX 1

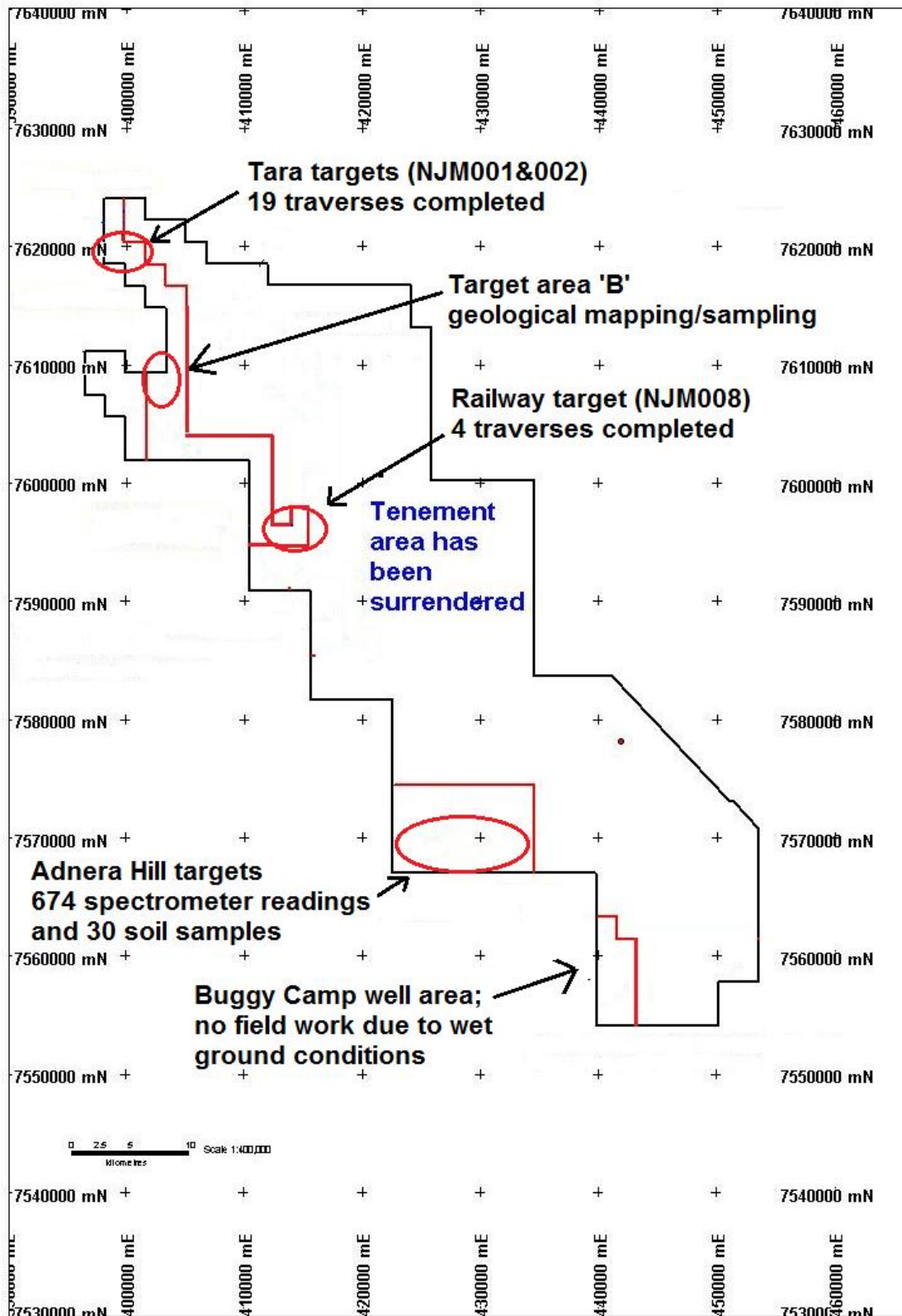


Figure 4: EL24253 showing areas explored during the current reporting period.

**APPENDIX 2****Table 5:** Summary of magnetometer traverses (G-859) completed on EL24253 during May 2011.

Line No.	Date	Area	Easting from	Easting To	Northing From	Northing To	Metres	Details	
1	23/05/11	Tara	398000	399700	7624000		1700		
2	23/05/11	Tara	399800	398000	7623600		1800		
3	23/05/11	Tara	398000	399800	7623200		1800		
4	23/05/11	Tara	399800	398000	7622800		1800		
5	24/05/11	Tara	398000	399800	7622200		1800		
6	24/05/11	Railway		413200	7596500	7595000	1500		
7	24/05/11	Railway		412800	7595000	7596500	1500		
8	24/05/11	Railway		412400	7596500	7595000	1500		
9	24/05/11	Railway		412000	7595000	7596500	1500		
10	25/05/11	Tara	397500	399800	7621300		2300		
11	25/05/11	Tara	399800	398000	7621100		1800		
12	25/05/11	Tara	398000	399800	7620800		1800		
13	25/05/11	Tara	400200	398000	7620400		2200		
14	25/05/11	Tara	398000	400200	7620000		2200		
15	25/05/11	Tara	400400	398000	7619600		2400		
16	26/05/11	Tara	398000	400600	7619200		2600		
17	26/05/11	Tara	399800	401600	7618500		1800		
18	26/05/11	Tara	402000	400200	7618100		1800		
19	26/05/11	Tara	400200	402000	7617700		1800		
20	26/05/11	Tara	402800	401000	7617100		1800		
21	27/05/11	Tara	401600	403000	7616700		1400		
22	27/05/11	Tara	403000	401600	7616300		1400		
23	27/05/11	Tara	401600	403000	7615900		1400		
		<b>TOTAL DISTANCE (METRES) SURVEYED:</b>						<b>41600</b>	
		<b>TOTAL DISTANCE (KILOMETRES) SURVEYED:</b>						<b>41.6</b>	

### APPENDIX 3

**Memorandum To:** Gary Price

**From:** Phil Hawke

**Date:** 26 April 2011

**Re:** Results of ground magnetic surveys collected at Neutral Junction during 2010-11.

---

#### Background

Ground magnetic data were collected in the Neutral Junction project area during several campaigns during 2010 and 2011. These were largely aimed at following up on historical (Hindmarsh Resources) targets and attempt to direct detect trap potential lithologies (e.g. dolerite) for capturing uranium mineralisation.

The regional geology of the project area showing the TMI image results of the three ground magnetic surveys completed in the Neutral Junction project area are shown in Figure 1.

Basement geology in the areas of ground magnetic survey consists almost entirely of Cambrian and Neoproterozoic metasediments of the Georgina Basin; including arenites of the Cambrian Neutral Junction Formation (light purple) and Octy Formation (darker purple) and siltstones and sandstones of the Proterozoic Central Mt Stuart Formation (light browns). These in turn overlie metasediments of the older Hatches Creek Group (grey).

#### Target Areas 1&2

Ground magnetic data were collected by Bowgan Minerals using a Geometrics 859 Cs-vapor magnetometer. A total of 10 lines of data for 19.5 line km were collected in two stage; the first in February 2010 with the remainder being collected in May 2011. Data were generally collected at 0.5 second intervals roughly corresponding to 40cm distance.

Intervals of data were often quite noisy, with a high frequency, large amplitude “chatter” overprinting the response due to deeper magnetic sources. This was attributed to accumulations of near surface maghemite. To reduce this effect the data was first resampled to a 5m station interval and then a non-linear de-spiking filter applied to a de-sampled data. Profiles and grids of the final, resampled and filtered TMI results are shown in Figure 2.

The final ground magnetic data largely reflects the trends seen in the regional aeromagnetics, with the most prominent response represented by a NNW trending high, with a fairly consistent amplitude of approximately 100nT amplitude along its length.

This magnetic marker is located spatially within the upper Central Mt Stuart Formation. While not presented here, simplified modeling of the data suggests a target depth of approximately 250m.

Several minor, cross-cutting fault structures are interpreted from dislocations and direction changes in these magnetic trends (green dashed lines in Figure 2). The orientation of these in relation to the regional structural corridors suggests they may represent riedel-like fault structures. As such they may be viable corridors for intrusives including, possibly, dolerite.

A small isolated magnetic anomaly at 398900mE, 7623600mN (shown by a red circle in Figure 2) is identified as a potential target for intrusives along one of these structures.

### Target 8

A total of 20 lines of ground magnetic data for 29.6 line km were collected during February and December 2010 using a Geometrics 856 proton precession magnetometer. Data were generally collected at a 20m station interval.

In general, the data ground magnetic data compares very well with the regional magnetic responses. However, the ground results do that the response is higher to the east of 412500mE than in the continuation of the anomaly to the east.

The target directly overlies Cambrian metasediments, although the actual source of the anomaly may be located within the underlying Proterozoic stratigraphy.

The weaker response to the west suggests a deeper source to those at the eastern end of the anomaly. This division is probably fault controlled. While the exact location and orientation of this fault is not defined, it is probably located just to the west of line 55.

Forward modeling of the data to constrain the likely geometry of the defined magnetic anomaly was completed using Encom's Modelvision software (Figure 2, bottom). This work suggests the top of the magnetic source is estimated to be at around 250m depth.

The modeled susceptibility of the source was approximately 0.03 ( $3000 \times 10^{-5}$ ) SI units. This represents a source with moderate to high magnetic properties and would be consistent with a gabbroic or doleritic intrusive. Alternatively, this could also be representative of a magnetite-bearing sediment.

Based on the profiles of magnetic response, line 53 is interpreted to represent the shallowest section (and also has the highest intensity response) along this magnetic trend.

*Adnera Hill*

Ground magnetic data in the Adnera Hill area were collected along 29 line for a total of 83.8 line km (Figure 4).

A very good correlation between the ground and airborne magnetic results is apparent. Anomalies in the north and east of the prospect area show a similar character to the Target 1 & 2 and 8 areas, and depth to top of the magnetic source (~250m).

However, the ground magnetic data shows a much stronger and “sharper” magnetic response for the two anomalies in the southwest corner of the prospect area (Targets NJ13 and NJ14), suggesting shallower magnetic sources. These anomalies are located within mapped upper Proterozoic rocks but are located along a major structure (Ooralangie Fault) approximately 5km to the southeast of a granite intrusive.

A forward model through line 67700N (7567800mN, NJ14) is shown in Figure 4 (bottom). The magnetic profile is best fit by a single sub-vertical body, approximately 70m wide with a depth to top of 200m.

The modeled magnetic susceptibility of this body, centred at (428300mE), is high for a dolerite or other mafic intrusive at 0.4 ( $40000 \times 10^{-5}$ ) SI units. Alternatively this body may reflect some kind of (concealed) iron accumulation (c.f. skarn?) within the Proterozoic sediments generated by fluids driven off the granite intrusions.

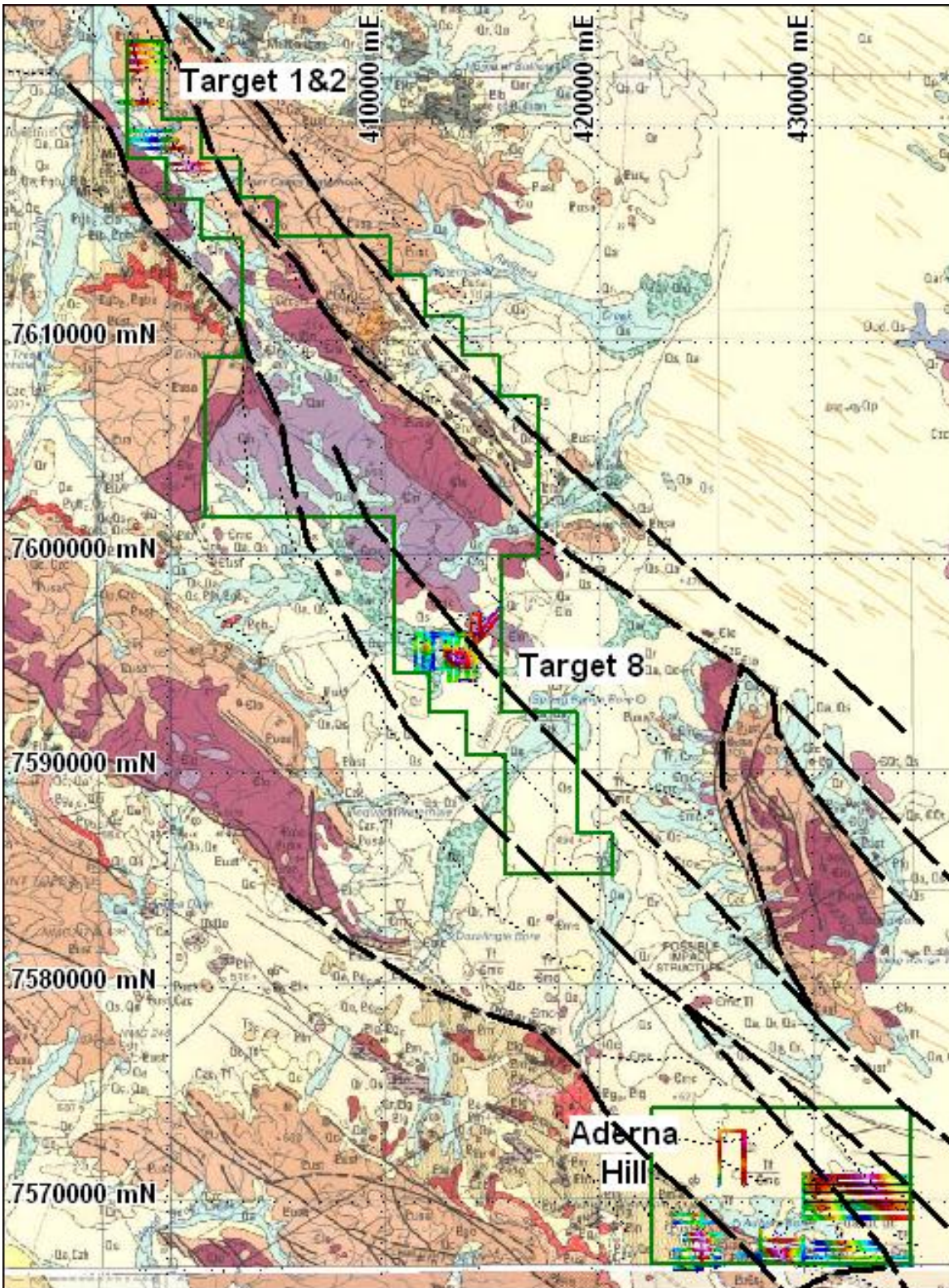
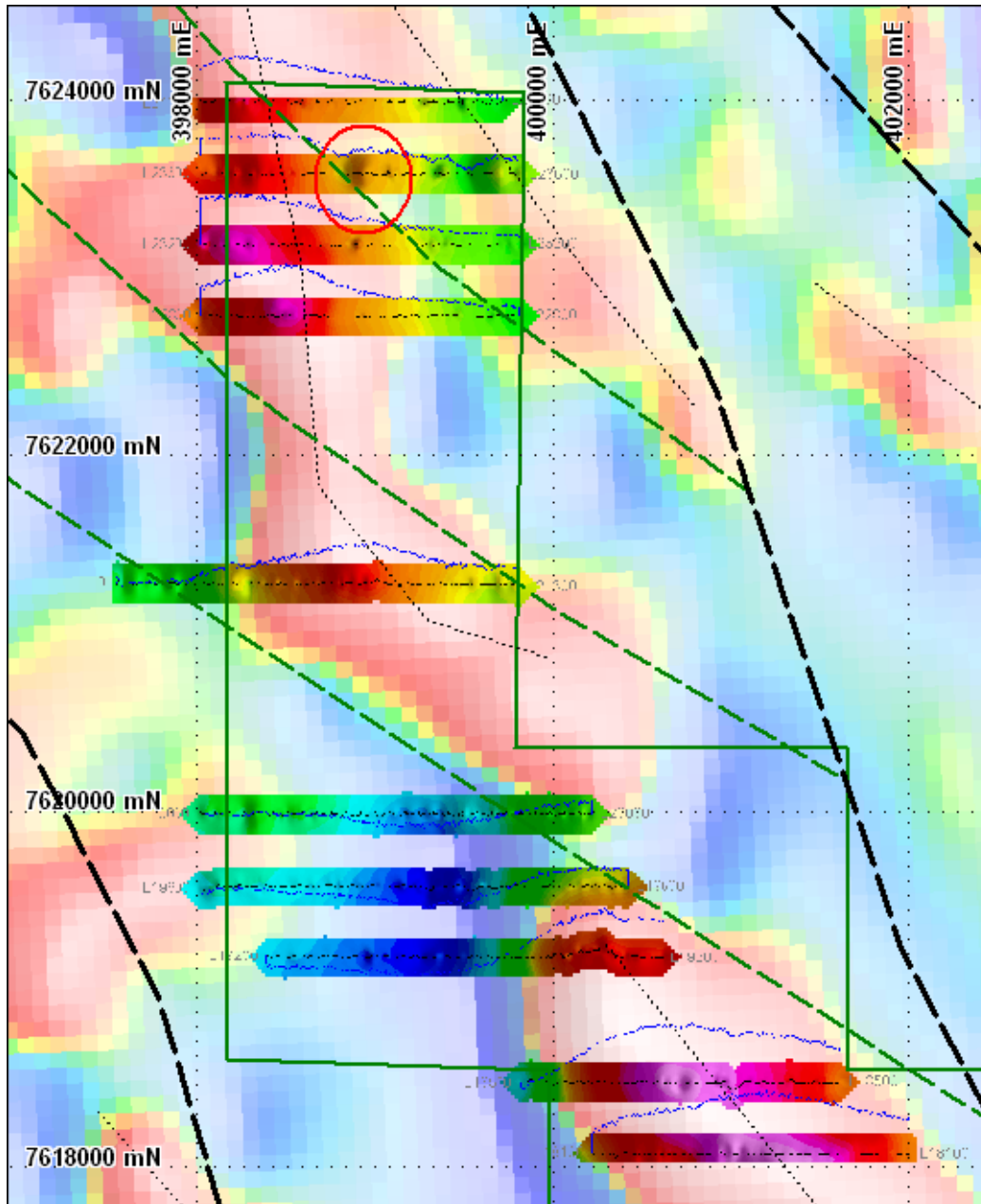


Figure 1: Overview of the regional geology of the Neutral Junction project area showing the locations of local ground magnetic surveys (TMI images). Dotted lines show magnetic trends identified in regional magnetic imagery. Heavy dashed lines reflect regional faults, largely identified in mapping.



**Figure 2: TMI Ground magnetic results in the Target 1 and 2 area overlain on the first vertical derivative image of the regional government aeromagnetic data. Green lines indicate the locations of possible cross cutting faults with potential for dolerite fill.**

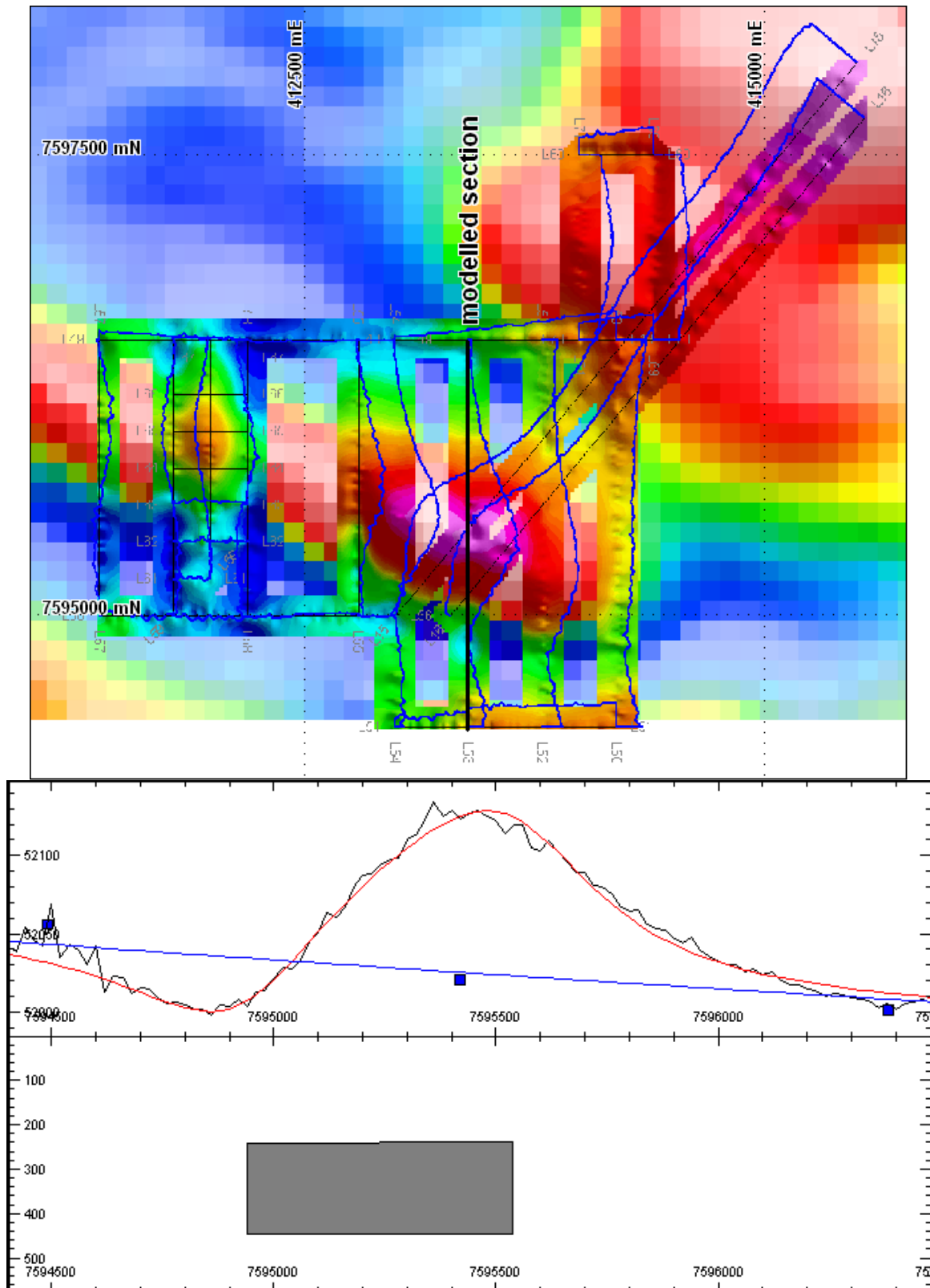


Figure 3: Ground magnetic results for the Target 8 area (top) and results of forward modeling along a section through the centre of the strongest magnetic anomaly (bottom).



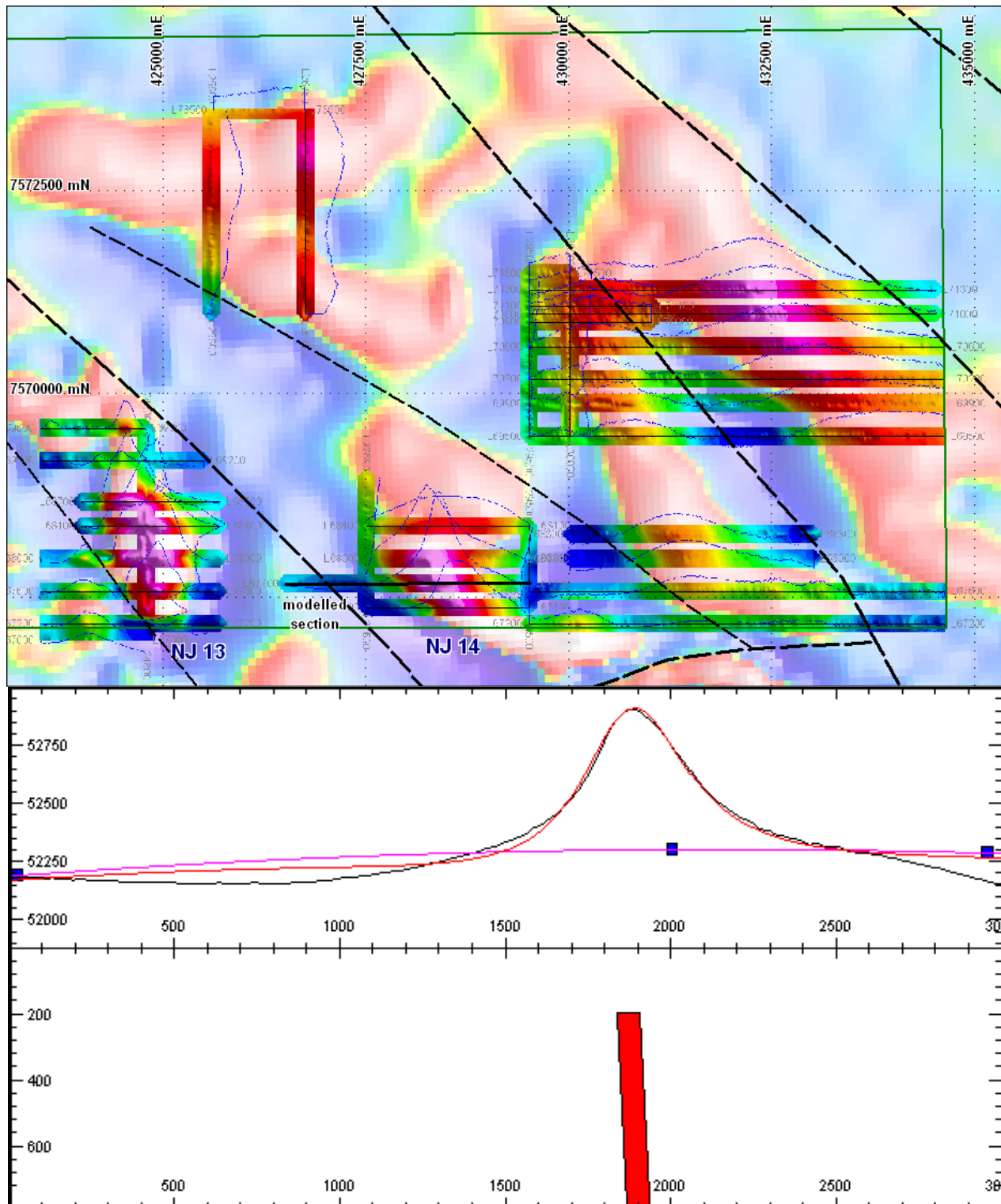


Figure 4: Ground magnetic results for the Aderna Hill prospect area (top) and results of forward modeling of magnetic anomaly NJ 14 (bottom).

**Appendix 4**

**MINERALOGICAL REPORT No. 9902**

*by Alan C. Purvis, PhD*

May 12<sup>th</sup> 2011

**TO :** Gary Price  
Bowgan Minerals Ltd  
Ph 0407 311 268  
<gary\_n\_price@hotmail.com>

**YOUR REFERENCE :** Various emails from Gary Price  
April 7<sup>th</sup> to May 5<sup>th</sup>, 2011

**MATERIAL :** Rock Samples from Bowgan and Neutral  
Junction Projects

**IDENTIFICATION :** NJRK 2010-001, 005, 009  
BRK 2010 #28, 29, 30, 34

**WORK REQUESTED :** Polished thin section preparation,  
description and report.

**SAMPLES & SECTIONS :** Returned to you with this report.

**DIGITAL COPY :** Emailed 12/5/11 to:  
<gary\_n\_price@hotmail.com>



**PONTIFEX & ASSOCIATES PTY. LTD.**

## SUMMARY COMMENTS

This report describes seven polished thin sections of samples from two areas in the Northern Territory, from areas called Neutral Junction and Bowgan Project, numbers as follows:

NJRK 2010-001, 005, 009

BRK 2010 #28, 29, 30, 34

A summary of the petrography follows below, mainly by listing the headers from the individual descriptions. Also 22 photomicrographs are integrated with the descriptions to illustrate various aspects of the petrography.

**The Neutral Junction Project** is reported to be close to Hatches Creek, and is suspected to contain Palaeoproterozoic rocks of the Hatches Creek Group, including volcanics, unconformably overlain by sediments of the Neoproterozoic Central Mount Stuart Member, as at Adnera Hill. The three samples from this area are outcrop samples with significant weathering and/or low temperature hydrothermal alteration. [Possible resources include unconformity related uranium and VMS deposits].

Two of these samples (NJRK2010\_001 and 009) are sediments, with iron and possible manganese oxides in NJRK2010\_001, and apparent quartz-anatase-zircon in NJRK2020\_009. The petrography indicates that these samples are modified by surficial processes rather than low temperature hydrothermal processes. They also seem to lack metamorphic fabrics and may be Neoproterozoic. They are identified as follows:

**NJRK2010\_001:** Limonite-flooded micaceous silty sediment with vuggy goethite-limonite-manganese oxide veins.

**NJRK2010\_009:** Poorly sorted sand or sandstone with minor interstitial matrix or cement of possible quartz-anatase-zircon, also scattered detrital rutile/anatase and accessory zircon.

**The third sample (NJRK2010\_005)** has abundant vein-quartz and interstitial fragments with poor textural preservation, apparently altered to quartz, clays, limonite and leucoxene or quartz-anatase-zircon. The fragments locally contain detrital mica, suggesting fine-grained sediments, but the vein-quartz also contains secondary

muscovite. No volcanic textures were noted, but, as indicated, textural preservation is poor. The header to this description is: Fragments of poorly preserved probable sediment with abundant vein-quartz locally containing muscovite.

**Appendix 5**

**BOWGAN MINERALS LIMITED**  
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**SUMMARY REPORT,  
SPECTROMETER SURVEY PROGRAM  
17<sup>th</sup> May 2011**

**NEUTRAL JUNCTION PROJECT**

**EL24253**

Author: G.Price

Date: 25<sup>th</sup> September 2011

Circulation: Mega Hindmarsh Pty Limited, Mithril Resources Limited.

**Summary**

The Adnera Hill area on EL24253 (Neutral Junction) hosts a number of NNW-SSE and NW-SE trending linear magnetic (NJM011-16) and coincidental radiometric (NRJ002-4) anomalies interpreted from regional geophysical data that have the potential to host uranium mineralisation within the context of an unconformity-style mineralisation model.

A trial program of spectrometer surveying was conducted at Adnera Hill during May 2011 with an aim to locate any potential surface uranium anomalies within one of the magnetic target areas.

A total of 47 individual point readings were recorded at surface using a hand-held spectrometer along a number of traverses conducted within the vicinity of the magnetic target NJM014. Time constraints did not permit surveying of any of the three radiometric targets during this trial.

Maximum uranium values recorded during the survey including; 3.06ppmU (10.57ppmTh) and 3.16ppmU (12.25ppmTh) within the vicinity of NJM014, with 2.67ppmU (15.84ppmTh) being detected within an outcrop of Tops member sandstone from outside the target area. Potassium values ranged from 0.7ppm to a maximum value of 2.13ppm.

Overall, the spectrometer surveying program failed to locate anomalous uranium either at surface within NJM014, or along the interpreted unconformity contact at the outcrop-regolith contact at the base of Adnera Hill. The unconformity contact has been reinterpreted to be located at greater depth as a consequence.

Exploration via surface spectrometer surveying has failed to identify anomalous uranium within the magnetic target area NJM014, but is yet to be confirmed for any of the other magnetic and/or radiometric targets located at Adnera Hill.

**Appendix 6**

**BOWGAN MINERALS LIMITED**  
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**SUMMARY REPORT,**  
**SPECTROMETER SURVEY, MAPPING and**  
**GEOCHEMICAL SAMPLING PROGRAM**

**Adnera Hill (Deep Bore) Prospect**

**18<sup>th</sup>-19<sup>th</sup> November 2011**

**NEUTRAL JUNCTION PROJECT**

**EL24253**

Author: G.Price

Date: 12<sup>th</sup> January 2012

Circulation: Mega Hindmarsh Pty Limited, Mithril Resources Limited.

**Summary**

The Adnera Hill area on EL24253 (Neutral Junction) hosts a number of linear magnetic anomalies (NJM011-16), with coincidental radiometric anomalies (NRJ002-4) interpreted from regional geophysical data that have the potential to host uranium mineralisation within the context of an unconformity-style mineralisation model.

A program of spectrometer surveying, geological mapping and geochemical sampling was conducted at Adnera Hill during 18<sup>th</sup>-19<sup>th</sup> of November 2011 with an aim to confirming three surface uranium anomalies (NJR002-4) interpreted from regional radiometric data.

Maximum uranium values recorded during the survey including; 6.2ppmU (25.5ppmTh) at anomaly NJR002 and 7.2ppmU (13.9ppmTh) at anomaly NJR004. Highest thorium value was 33.4ppmTh at NJR004. Potassium values ranged from 0.5% to a maximum value of 1.8%.

The spectrometer surveying program has successfully confirmed surface radiometric anomalies at targets NJR002 and NJR004, but failed to confirm a surface anomaly at the NJR003 target. Mapping and sampling was conducted at two surface anomalies that correlated with insitu? gravels and outcrop with assay results still outstanding.

Further exploration is strongly recommended for the NJR002 and NJR004 target areas.



**APPENDIX 7****Table 6:** Summary of soil sample locations, Adnera Hill (November 2011)

Sample_ID	Sample_No	Easting	Northing	Target	Date
NJS_2011_001	1	430700	7568250	NJR002	19/11/2011
NJS_2011_002	2	430650	7568250	NJR002	19/11/2011
NJS_2011_003	3	430600	7568250	NJR002	19/11/2011
NJS_2011_004	4	430550	7568250	NJR002	19/11/2011
NJS_2011_005	5	430500	7568250	NJR002	19/11/2011
NJS_2011_006	6	430450	7568250	NJR002	19/11/2011
NJS_2011_007	7	430450	7568200	NJR002	19/11/2011
NJS_2011_008	8	430500	7568200	NJR002	19/11/2011
NJS_2011_009	9	430550	7568200	NJR002	19/11/2011
NJS_2011_010	10	430600	7568200	NJR002	19/11/2011
NJS_2011_011	11	430650	7568200	NJR002	19/11/2011
NJS_2011_012	12	430650	7568150	NJR002	19/11/2011
NJS_2011_013	13	430600	7568150	NJR002	19/11/2011
NJS_2011_014	14	430550	7568150	NJR002	19/11/2011
NJS_2011_015	15	430500	7568150	NJR002	19/11/2011
NJS_2011_016	16	430450	7568150	NJR002	19/11/2011
NJS_2011_017	17	424850	7569950	NJR004	19/11/2011
NJS_2011_018	18	424900	7569950	NJR004	19/11/2011
NJS_2011_019	19	424950	7569950	NJR004	19/11/2011
NJS_2011_020	20	425000	7569950	NJR004	19/11/2011
		425050	7569950	NJR004	19/11/2011
NJS_2011_021	21	425050	7570000	NJR004	19/11/2011
NJS_2011_022	22	425000	7570000	NJR004	19/11/2011
NJS_2011_023	23	424950	7570000	NJR004	19/11/2011
NJS_2011_024	24	424900	7570000	NJR004	19/11/2011
NJS_2011_025	25	424850	7570000	NJR004	19/11/2011
NJS_2011_026	26	424850	7570050	NJR004	19/11/2011
NJS_2011_027	27	424900	7570050	NJR004	19/11/2011
NJS_2011_028	28	424950	7570050	NJR004	19/11/2011
NJS_2011_029	29	425000	7570050	NJR004	19/11/2011
NJS_2011_030	30	425050	7570050	NJR004	19/11/2011