



**INDEPENDENCE GOLD**

**2002 Annual  
Technical Report**

(Report Number EL9407/2002)

**Musgrave Joint Venture  
EL9407 East Bloods Range  
January 2003**

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[ ] Goldsearch Limited  
[ ] NTDBIRD



## 2002 Annual Technical Report

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### *Summary*

*Following the negotiation and signing of a Deed of Exploration, EL9407 was granted on 13<sup>th</sup> December 2001. Proposed year one work programs were lodged and a Sacred Site and Heritage Clearance Survey was completed by the Central Land Council. Access for exploration was granted to the Joint Venture on the 16th of October 2002.*

*Work undertaken during the reporting period included data compilation, reprocessing of Northern Territory Geological Survey geophysical data and a helicopter reconnaissance visit to the license area.*

*During the reconnaissance visit, brief field inspections of aeromagnetic anomalies were undertaken however no outcropping bedrock was seen, a number of areas of outcropping geology were visited as a familiarisation exercise and a single bulk 20kg lag sample was taken for orientation geochemical studies.*

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## 1 Introduction

Application for EL 9407 was made on 27<sup>th</sup> October 1995 and it was granted to Chiljill Pty Ltd, a 100% owned subsidiary of Goldsearch Limited, on December 13<sup>th</sup> 2001. Independence Gold NL is earning a 51% interest in EL9407 as part of a Joint Venture agreement signed on the 25<sup>th</sup> August 2000.

Independence is manager of exploration on behalf of the Joint Venture.

Upon granting of the tenement a comprehensive report detailing the proposed year one work program was lodged and sacred site clearance was undertaken. Notification of aboriginal heritage exclusion zones and access approval for exploration was received by the Joint Venture on 16<sup>th</sup> of October 2002.

## 2 Location

EL9407 is located approximately 75km east of Kaltukatjara and 120km west northwest of Yulara immediately north of the main road between Yulara and Kaltukatjara **Figure 1**. The lease covers a total area of 1225km<sup>2</sup>; with a total of 105km<sup>2</sup> excluded from exploration due to aboriginal cultural and heritage reasons.

## 3 Regional Geology

Exploration Licence EL9407 covers an area in the central northern part of the Musgrave Block. The Musgrave Block is a high-grade, Mid to Late Proterozoic metamorphic terrane (**Figure 2**). Basement gneisses of igneous and metasedimentary origin were intruded by mafic and ultramafic magmas of the Giles Complex at moderate to deep crustal levels and are now exposed in the southern half of the block. The Giles Complex represents the one of the largest layered mafic/ultramafic intrusive complexes in the world, and is probably associated with a major mantle thermal event beneath the crust that is now Central Australia.

Basement gneissic rocks were also intruded by several suites of granitic rocks derived from both partial melting of crustal material and in some cases fractionation of mantle melts. Several generations of mafic dyke swarms intrude the complex. A sequence of Middle Proterozoic felsic to mafic volcanics and sedimentary rocks and minor granite unconformably overlies and intrudes the metamorphic basement in the southwest and northwest of the complex. In the north (Northern Territory) they consist of the Mt Harris Basalt, Tjuinjanta Formation, Puntitijata Rhyolite and the Bloods Range Beds (Tjauwata Group) and the Hull Granite Suite. In the south and west (Western Australia) the Bentley Supergroup. The upper unit of the Bentley Supergroup is contemporaneous with the lowermost units in the bounding Officer and Amadaus sedimentary basins.

The region has been affected by at least four major metamorphic events and at least seven individual deformation phases have been recognised. The area was greatly affected by at least two major Australian orogenic events, the c1200Ma "Grenvillian" Orogeny and the c550Ma Petermann Ranges Orogeny. Deep seismic surveys suggest that during the Petermann Ranges compressional event the area was subject to "Thick-skinned Tectonics" whereby deep crustal structures offset the entire section of crust and the Moho discontinuity. It is possible that these structures developed along pre-existing, deep-seated and potentially mantle-tapping structures. This compressional event exposed a section through the crust. From deep crustal rocks immediately south of the south-dipping Woodroffe Thrust Zone through intermediate depths to upper crustal volcanics (Bentley Supergroup) in the southwest. The c300Ma Alice Springs Orogeny may have also affected the region.

In the north the Musgrave block is overlain by the intracratonic Amadaus Basin. Late Proterozoic to Palaeozoic basal Amadaus sequences are tectonically intercalated with Musgrave metamorphics in the Petermann Ranges Nappe structure. This structure is

associated with the Petermann Ranges Orogenic event. The basal Amadaus sequences are thought to be equivalent to the Adelaidean sequences of the Adelaide Geosyncline.

The exploration licence subject of this report covers Mid Proterozoic granitic rocks of the Pottoyu Granite Suite (c1190-1140Ma) and Hull Granite Suite (1090-1075Ma), volcanic rocks belonging to the Mt Harris Basalt and Tjuntinanta Formations (c1090-1075Ma) and Late Proterozoic (c1000-820Ma) basal Amadaus sediments of the Petermann Ranges Nappe structure in the Pinyinna Range area. In the Pinyinna Range area the Nappe consists of a steep south-dipping to steep north-dipping, east to southeast-striking zone of younger sediments intercalated with older basement granites. Pinyinna Range is bound to the south by a steep south-dipping thrust, with the range itself thought to represent an isoclinal drag fold associated with this thrust. The Petermann Ranges Nappe was developed during the Petermann Ranges Orogeny (c560-520Ma). The Proterozoic rocks in the lease area are unconformably overlain by the Ordovician Larapinta Group of the Amadaus Basin sequence.

The entire lease area is covered by extensive Aeolian sand dune deposits which obscure the bedrock geology.

### 3.1 Pottoyu Granite

The Pottoyu Granite Suite consists of coarse-grained, foliated, porphyritic, biotite granites. Porphyroblasts consist of K feldspar and are often rounded showing a rapakivi texture. This suite of rocks is typically poorly exposed in the lease area.

### 3.2 Tjuntinanta Formation and Mt Harris Basalt

Dominantly mafic volcanic rocks belonging to the Tjuntinanta Formation and Mt Harris Basalt consist of variably silicified and epidotised amygdaloidal basalts with minor sediments and volcanoclastic rocks.

### 3.3 Hull Granite Suite

Coarsely porphyritic biotite, muscovite, epidote, garnet granites belonging to the Hull Granite suite are mapped in an area 20km south of McNichols Range. These granites may have A-type geochemical characteristics. Geochronology suggests they are essentially synchronous with the major volcanic episode represented by the Mt Harris and Tjuntinanta mafics, and the intrusion of the Giles Complex at lower crustal depths.

### 3.4 Late Proterozoic sediments in the Pinyinna Range Area

In the Pinyinna Range area basal Amadaus sediments occur as a 2 to 5 km wide zone of steep south (overturned) to north-dipping quartz sandstone, schists, phyllites and dolomites, intercalated with mafic volcanic rocks. Intense mylonitisation occurs within the zone. Basal Amadaus units consist of the Kulail Sandstone, Dean Quartzite and the Pinyinna Beds.

The Kulail Sandstone is a red to purple ferruginous, quartz sandstone with abundant trough crossbeds and local heavy mineral horizons. The Dean quartzite is a clean, white crystalline quartz sandstone or quartz muscovite schist. The Pinyinna Beds consist of a sequence of grey to red-brown phyllites, and dolomites with rare tuffaceous beds.

### 3.5 Larapinta group

The rocks of the Ordovician Larapinta Group consist of bioturbated red sandstones with minor siltstone and conglomerate horizons.

## 4 Exploration Targets

The exploration program is focussed on both precious and base metals with the interpreted potential of the region based on two distinct ore deposit models.

#### 4.1 Shear and Lode-hosted Precious Metal Deposits

The interpreted high-level Hull Granite Suite which intrudes a coeval volcanic rift sequence is considered a favourable environment for this style of mineralization.

#### 4.2 Sediment-hosted Stratiform Basemetals

The Neoproterozoic Pinyinna Beds which overly a basalt, red bed sequence which is interpreted as an early rift phase sequence is considered prospective for this style of mineralization.

### 5 Exploration Completed

During the period 13<sup>th</sup> December 2002 to 12<sup>th</sup> of December 2003 work completed by the Joint Venture partners included a desk top study and compilation of all relevant exploration datasets for EL9407. A public domain regional aeromagnetic and radiometric dataset flown by the Northern Territory Geological was reprocessed. Limited orientation geochemical sampling was also undertaken.

#### 5.1 Data Compilation and Targeting

A regional data compilation exercise was undertaken for the area underlain by Musgrave Block geology in both the Northern Territory and South Australia. Where available, previous company and government exploration data and regional geophysical and geological datasets were compiled, following data compilation a preliminary targeting exercise was completed.

A single rock geochemical sample was taken within the bounds of EL9407 by Planet Mining Pty Ltd in December 1965, details of the Planet Mining work programs are recorded in Northern Territory open file reports CR1966/22, CR1966/23, CR1966/24, CR1966/46, CR1967/29, CR1967/30, CR1967/52, CR1968/42, CR1968/43, CR1968/44, CR1968/68, CR1968/43.

Based on regional, publicly available geological and geophysical datasets one high, one moderate and one low priority target which are at least partially covered by EL9407 were generated as part of the preliminary targeting exercise.

#### 5.2 Reprocessing Geophysics

The Petermann airborne geophysical survey completed by Austirex International in 1985 at a flight line spacing of 500m and survey height of 100m was stitched and edge matched into surrounding data, reprocessed and imaged, along with public domain (Geoscience Australia) gravity data. See **Plans 1 to 5**.

#### 5.3 Orientation Sampling

A single 15kg bulk lag sample was taken during a reconnaissance sampling exercise in November 2002. The sample was taken for orientation purposes in an area typical of the general Aeolian dominated regolith characteristics of the license area. The aims of this exercise were to;

- Determine the nature and proportion of the magnetic lag fraction.
- Determine the nature and proportion of the heavy mineral component.
- Determine the relative proportions of several typical grain size fractions in the surface lag.

With the ultimate aim of determining the quantity of material it will be necessary to collect at each sample site during a regional programme and determining the size fraction of samples which it is likely to provide the most meaningful results for a particular area.

**Table 1. Orientation Geochemistry – Sample Location**

Sample ID	Easting	Northing	Datum	Zone
A013744	573022	7248309	GDA	52

**Table 2. Orientation Geochemistry - Weight% by grain size**

mm	-6 +1.2	-1.2 +0.4	-0.4 +0.125	-0.125 +0.075	-0.075	
BSS#	+10	-10 +36	-36 +120	-120 +200	-200	Total
A013744	2	21	43	26	8	100

**Table 3. Orientation Geochemistry – Heavy Mineral Weight%**

	Field Weight Kg	HM Wt%
A013744	15.4	0.9

**Table 4. Mineralogy and yield in grams per 1kg for magnetic fractions expressed in as a 1kg field sample**

		MAGS	g	PARAMAGS	g	NONMAGS	G
A013744	H	Ilm	7	Epi, Ilm	1	Zir	1
	M			Bio, Mus			
	L	Mt, Bio		Hb		Mus, Epi	

Ilm ilmenite; Mt magnetite-titanomagnetite; Amp amphibole; Bio biotite; Mus muscovite; Sph sphene; AlSi aluminosilicates; Epi epidote; Hb hornblende; Leu leucosene; Zir zircon

## 6 Expenditure

Total expenditure for EL9407 for the period was \$40,553 as detailed in **Table 5**.

**Table 5. EL9407 Expenditure**

Personnel	\$13,028
Legal	\$165
Ethnographic/Native Title Costs	\$9,090
Fees/Permit Costs	\$109
Rents	\$3,930
Drafting	\$36
Geophysics	\$1,050
Camp Provisions	\$58
Drafting Supplies	\$840
Travel Costs / Charter	\$5,058
Vehicles	\$382
Tenement Maintenance	\$49
Administration 20%	\$6,758
<b>total</b>	<b>\$40,553</b>

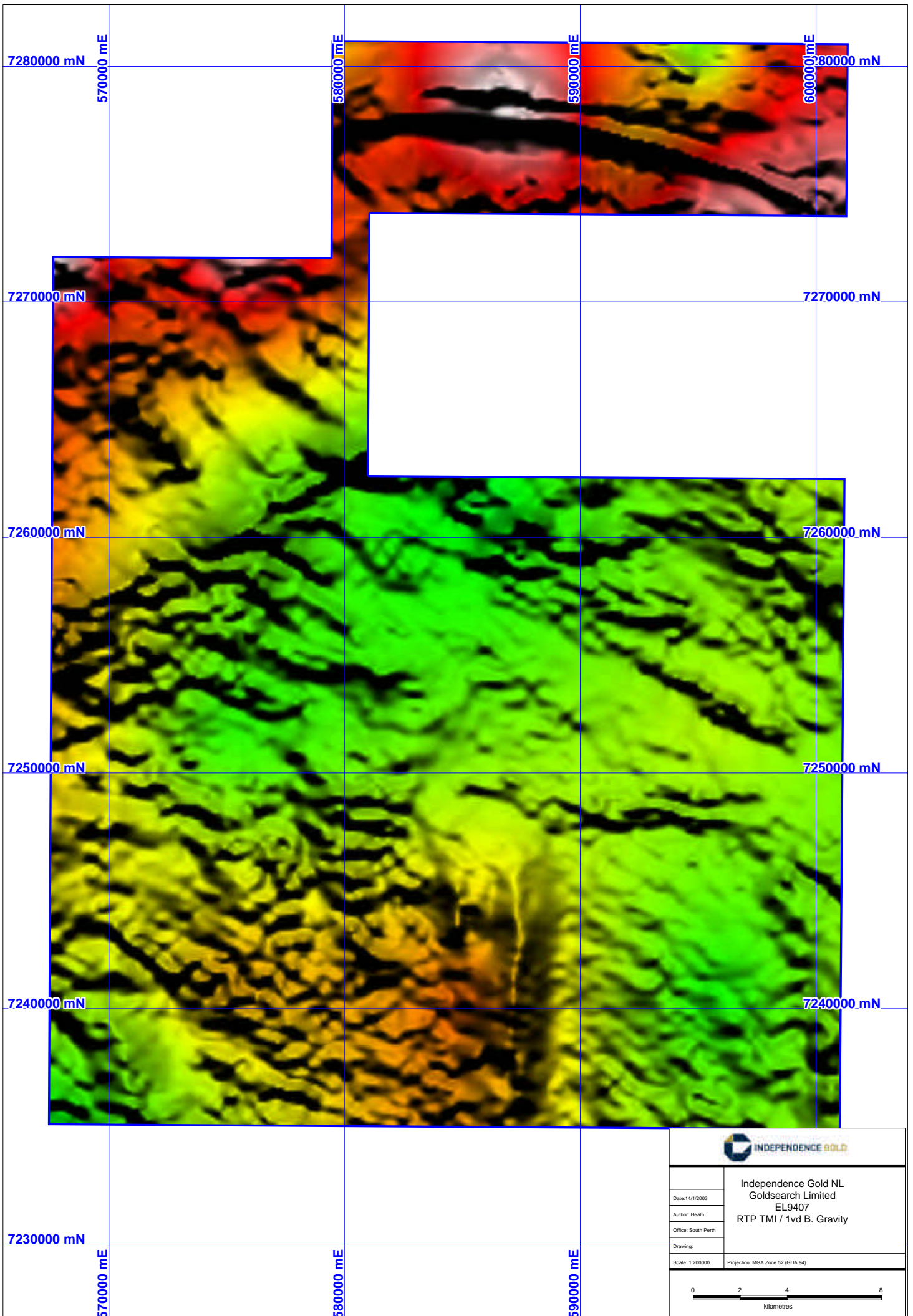


## **7 Forward Work Program**

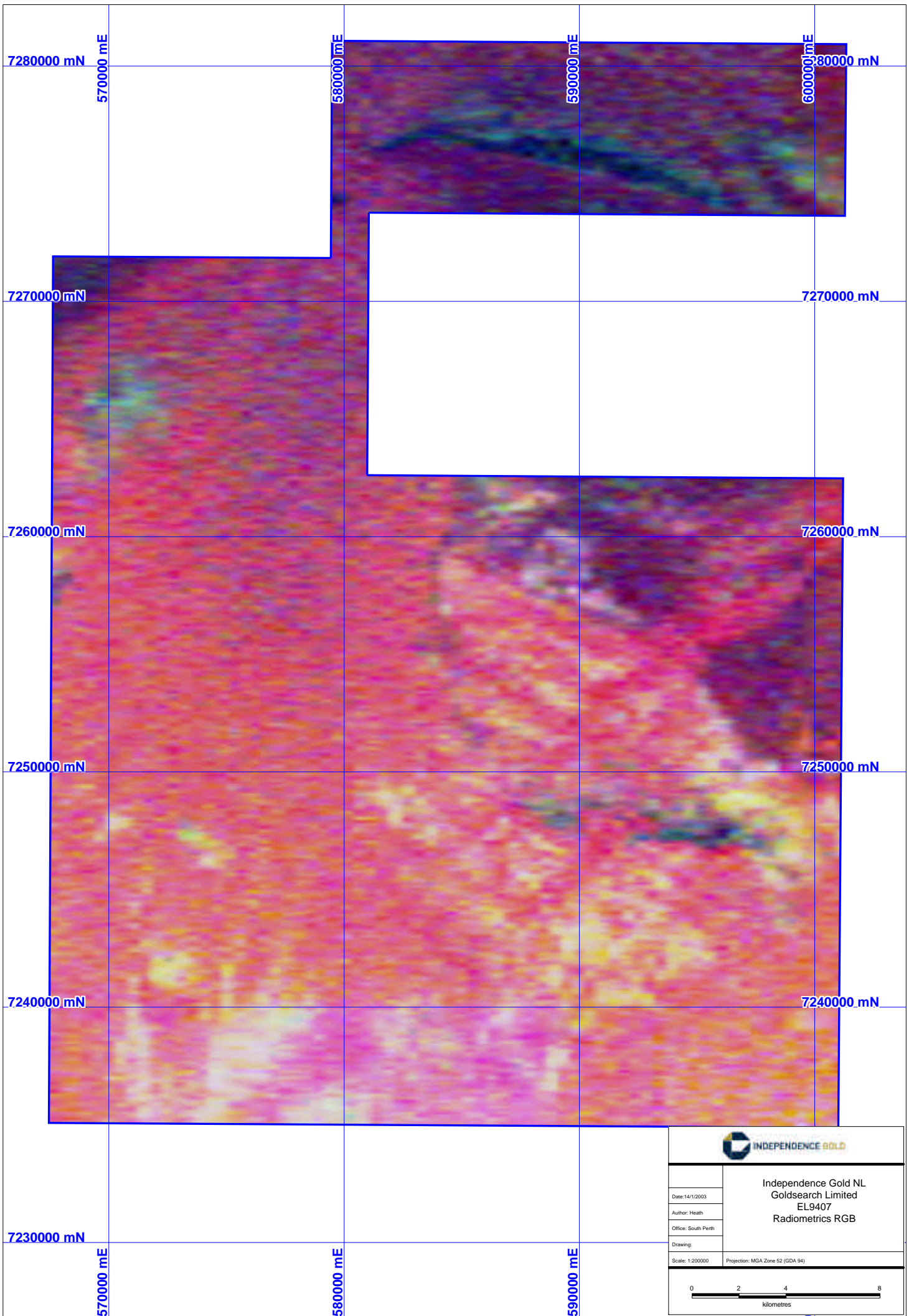
Following final interpretation of orientation geochemical results a regional surface geochemical sampling is proposed for the May-June 2003.

## **Appendix One**

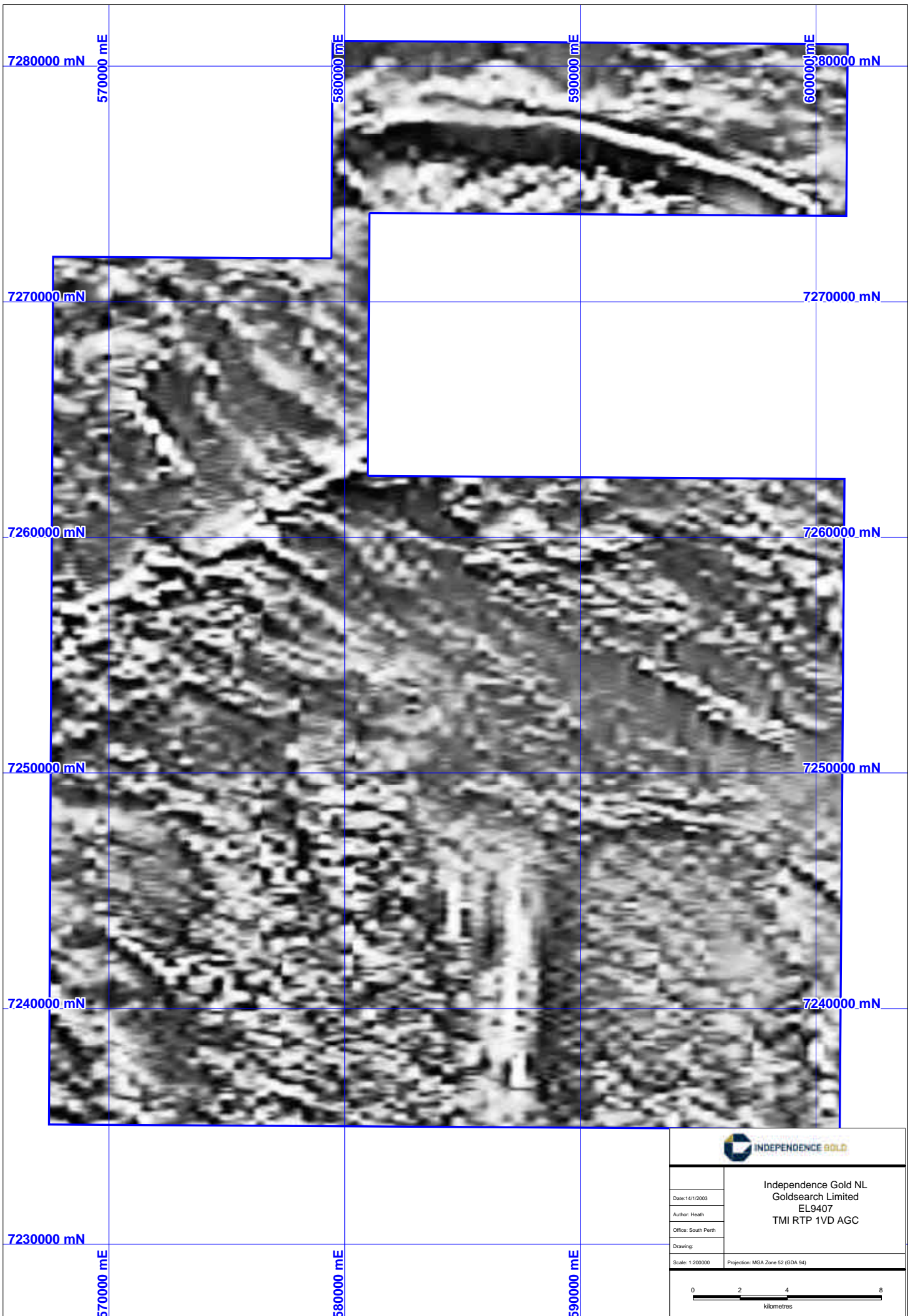
### **Geophysical Plans**



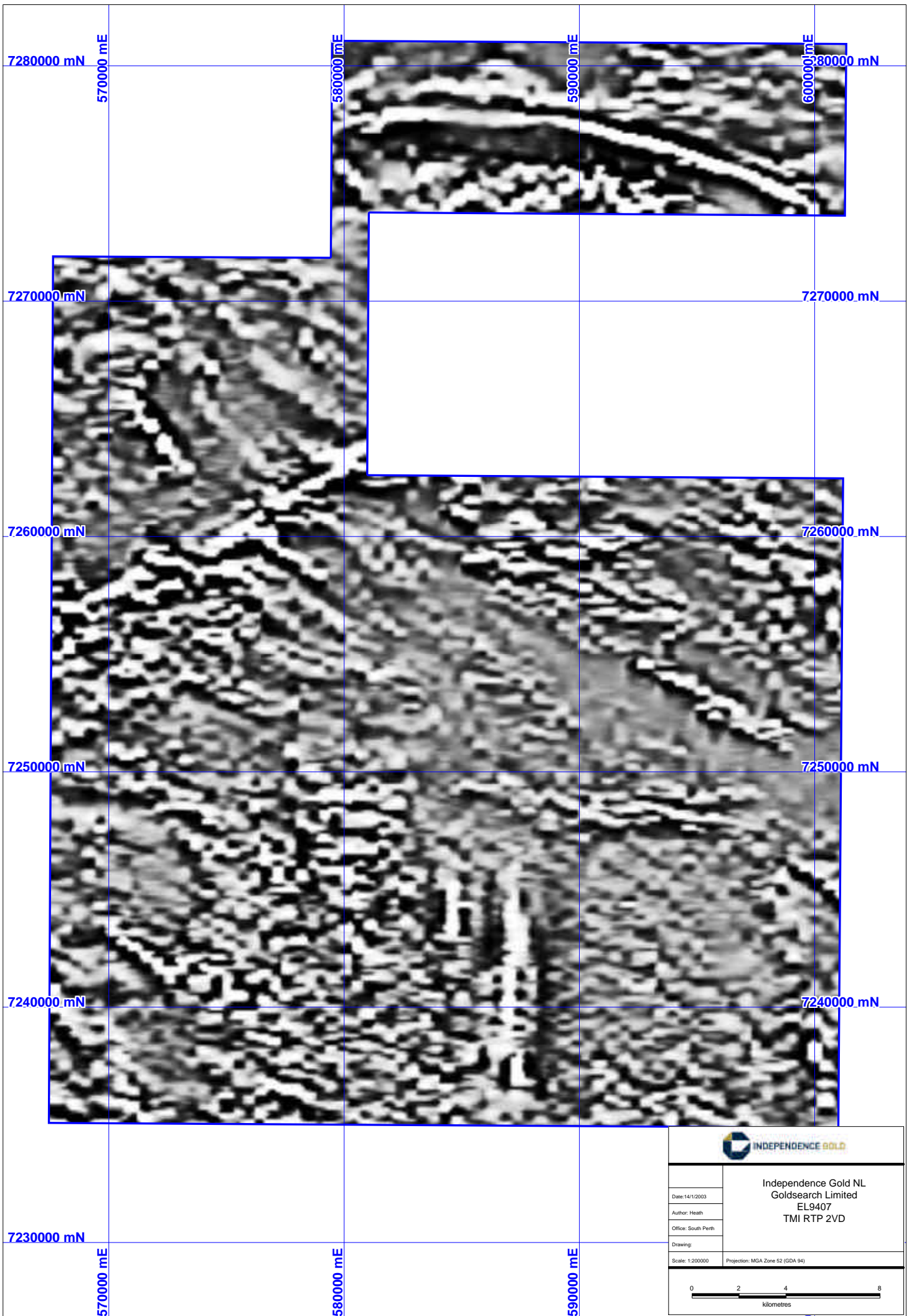
<p>Independence Gold NL Goldsearch Limited EL9407 RTP TMI / 1vd B. Gravity</p>	
Date: 14/1/2003	
Author: Heath	
Office: South Perth	
Drawing:	
Scale: 1:200000	Projection: MGA Zone 52 (GDA 94)
<p>0 2 4 8 kilometres</p>	





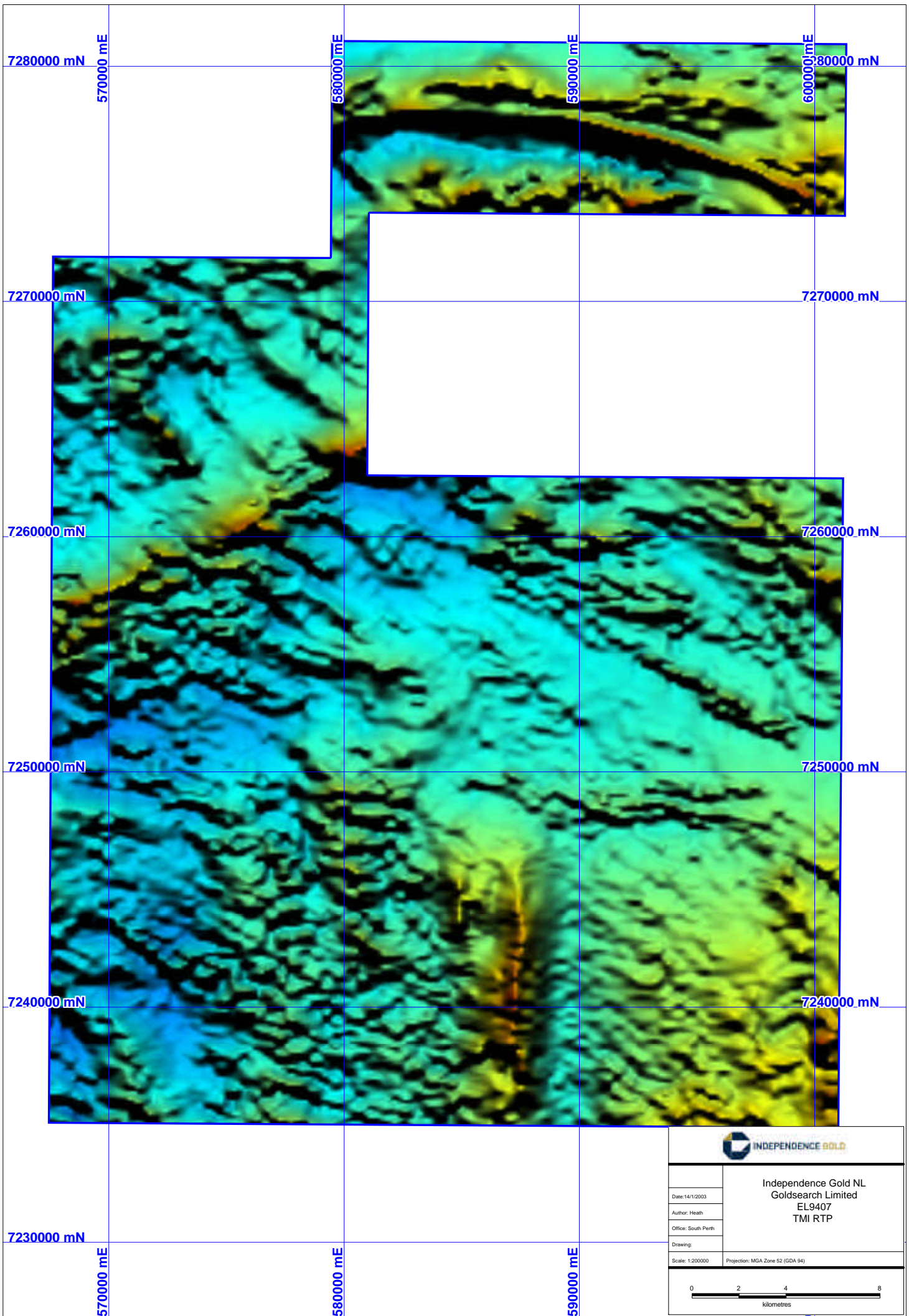


<p>Independence Gold NL Goldsearch Limited EL9407 TMI RTP 1VD AGC</p>	
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