

MEMORANDUM

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Cc:	Hamish Paterson Email: hamishp@ozemail.com.au		
From:	Jim Hanneson	Costing:	ELA 23944
Date:	25 November, 2003	Reference:	AMG03/40
Subject:	Gravity and Aeromagnetic Data for the Barkly Prospect, Tennant Ck, NT, Gunson Resources Ltd ELA 23944		

INTRODUCTION

Following the compilation of regional data (Hanneson, 2003), and at the request of Hamish Paterson, I have extracted gravity and aeromagnetic data for the Barkly Prospect. The area is within the eastern two-thirds of Tennant Creek 1:250000 topographic sheet SE53-14. All coordinates are in MGA94, lat/longs are in GDA94, and elevations are in AHD71. All images show Gunson's ELA 23944.

DATA

The gravity data within the area amount to 41 stations from the Northern Territory Open File (2 points from 1963, 22 from 1991, and 17 from 1993) and 30 new stations (100 and 200m spaced stations in southern area or ELA) collected recently by Haines Surveys. Figure 1 presents the gravity station elevations with the locations of the stations indicated by "+" symbols. Figure 2.1 presents the simple Bouguer gravity, reduced using a density of 2.67 gm/cc. Figure 2.2 is a residual gravity image created by smoothing the image in Figure 2.1 and subtracting the smoothed version from the original image.

Aeromagnetic data derives from a 1998 regional survey carried out by Kevron on behalf of AGSO, and it comprises 200m spaced north-south lines at 60m altitude. Figure 3.1 is an image of the TMI based on every third station data point (average reading interval 21m), after removal of the IGRF. The survey was carried out using AMG coordinates which have been converted to MGA94 by adding 127m to all AMG eastings and 169 to all northings, as specified on the AusLig website (www.auslig.gov.au/geodesy/datums).

DISCUSSION

The weak gravity high near 443500E, 7852000N shows no obvious correlation with station elevations and is judged to arise from subsurface dense material rather than through an inappropriate data reduction density. It seems to occur in an embayment in the magnetics (Figure 3a) and within a residual magnetic low (Figure 3b).

REFERENCE

Hanneson, J.E., 2003, Assembly of Regional Gravity and Magnetic Data Sets with inclusion of Haines Oct 2003 Gravity, Tennant Ck, Gunson Resources ELAs 23944 to 23949; Memorandum AMG03/37 to D.N. Harley, 18 November.

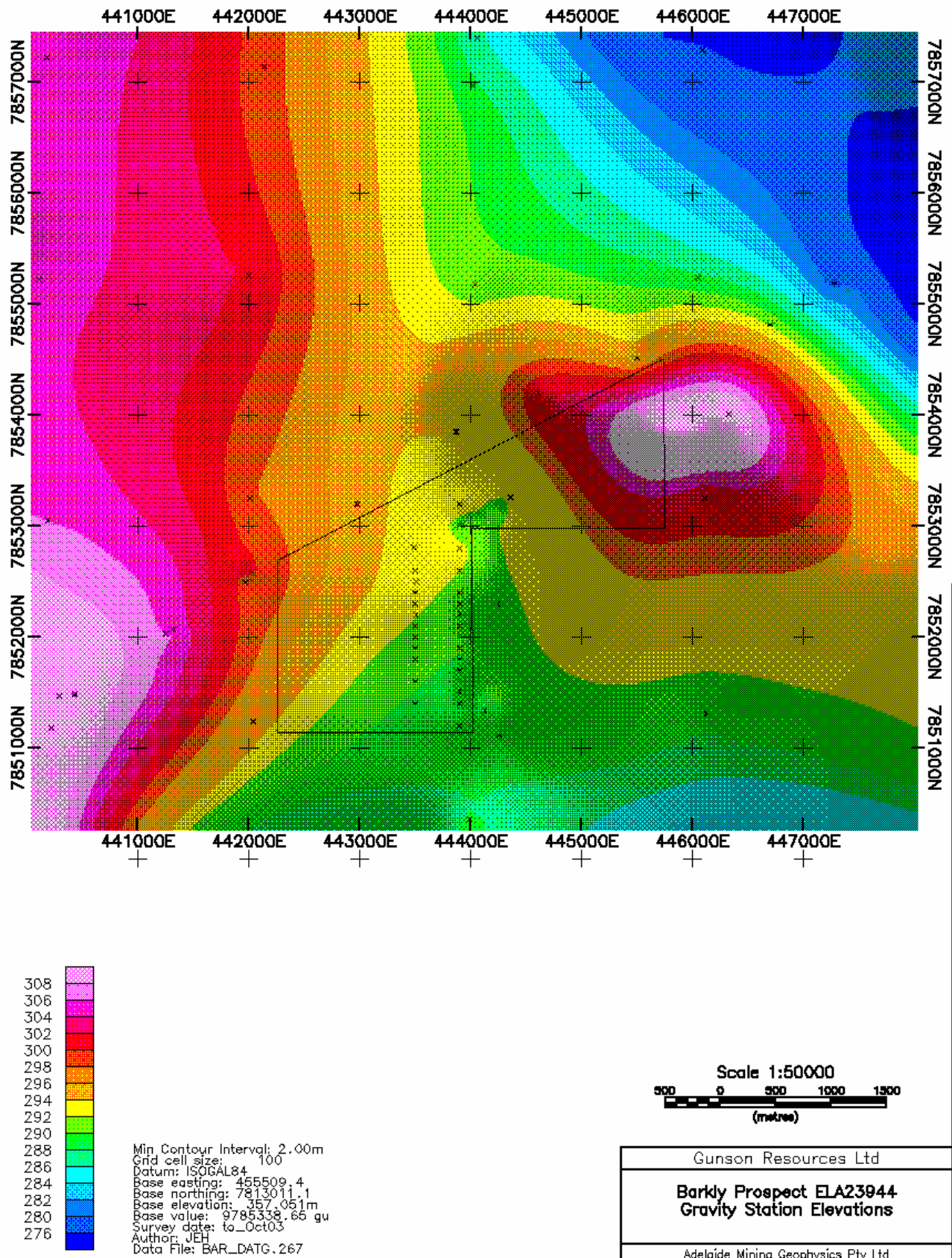


Figure 1

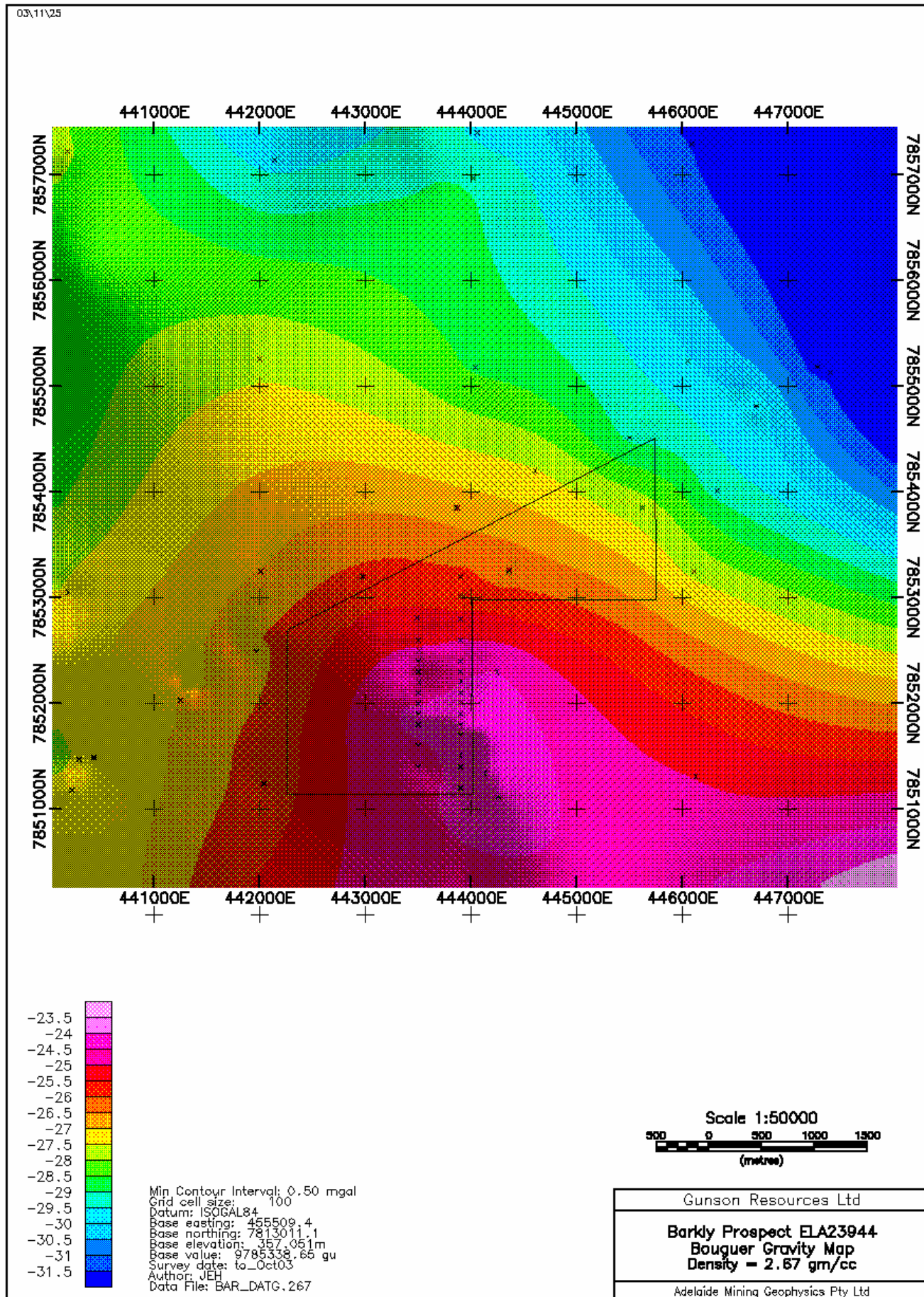


Figure 2a

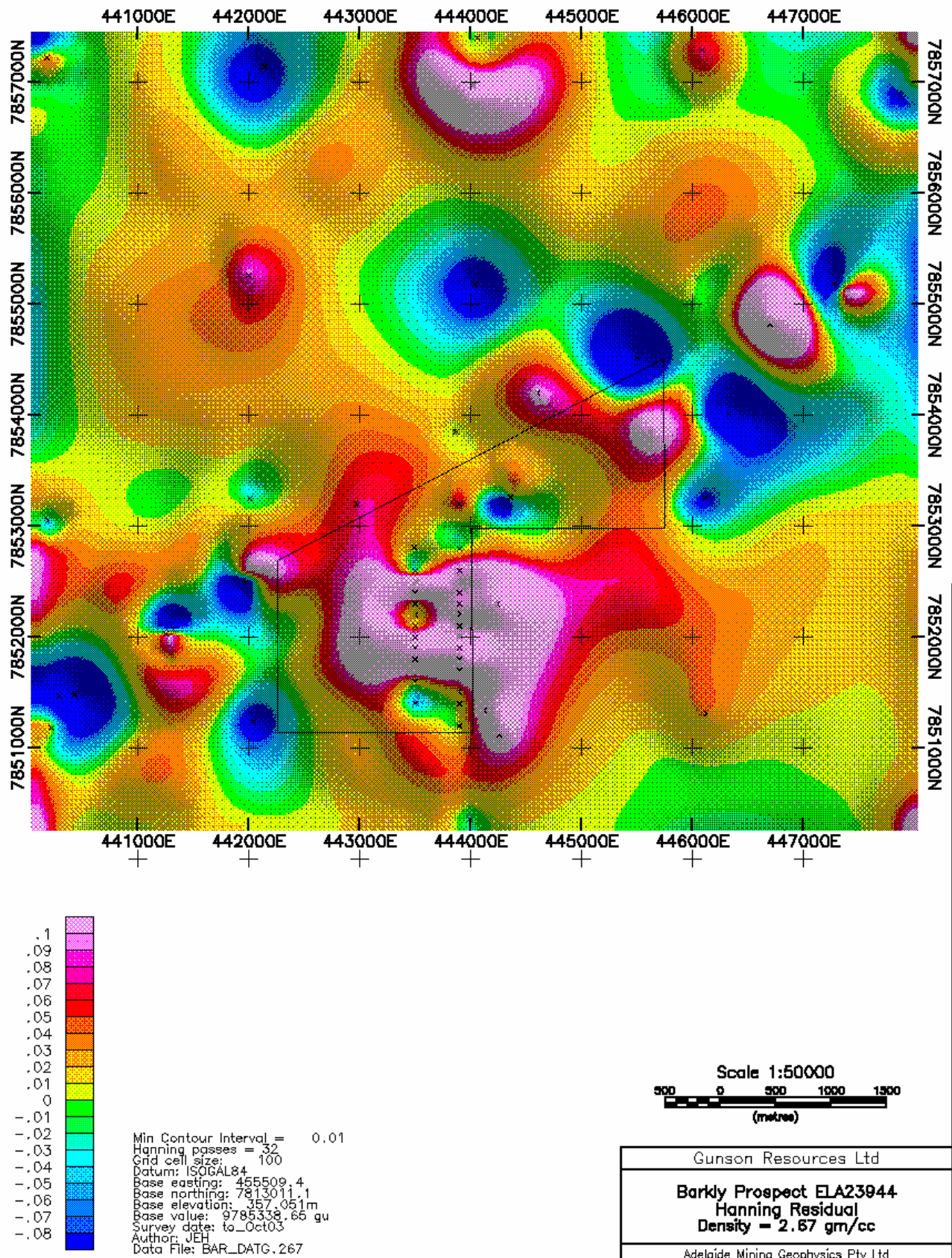


Figure 2b

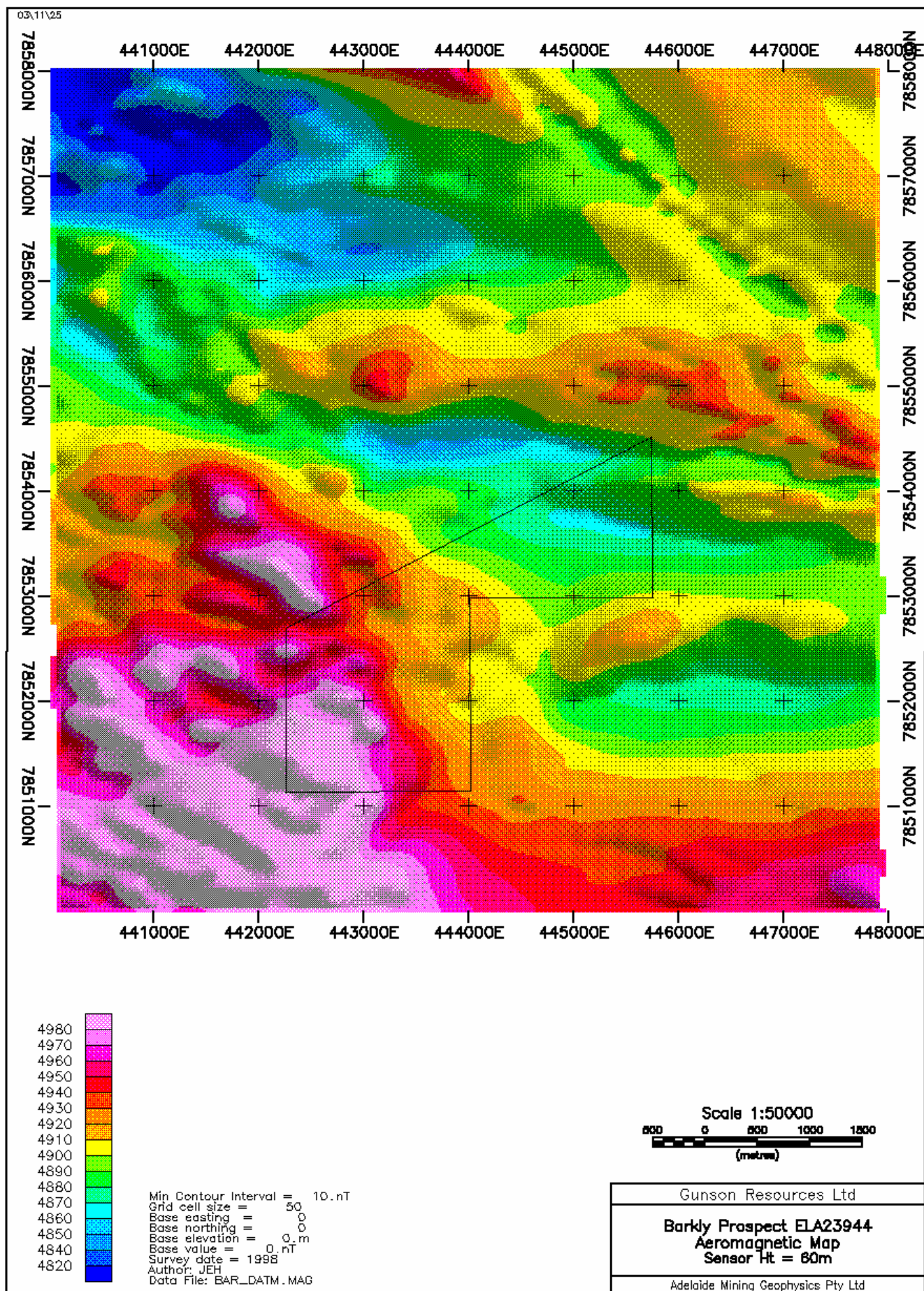


Figure 3a

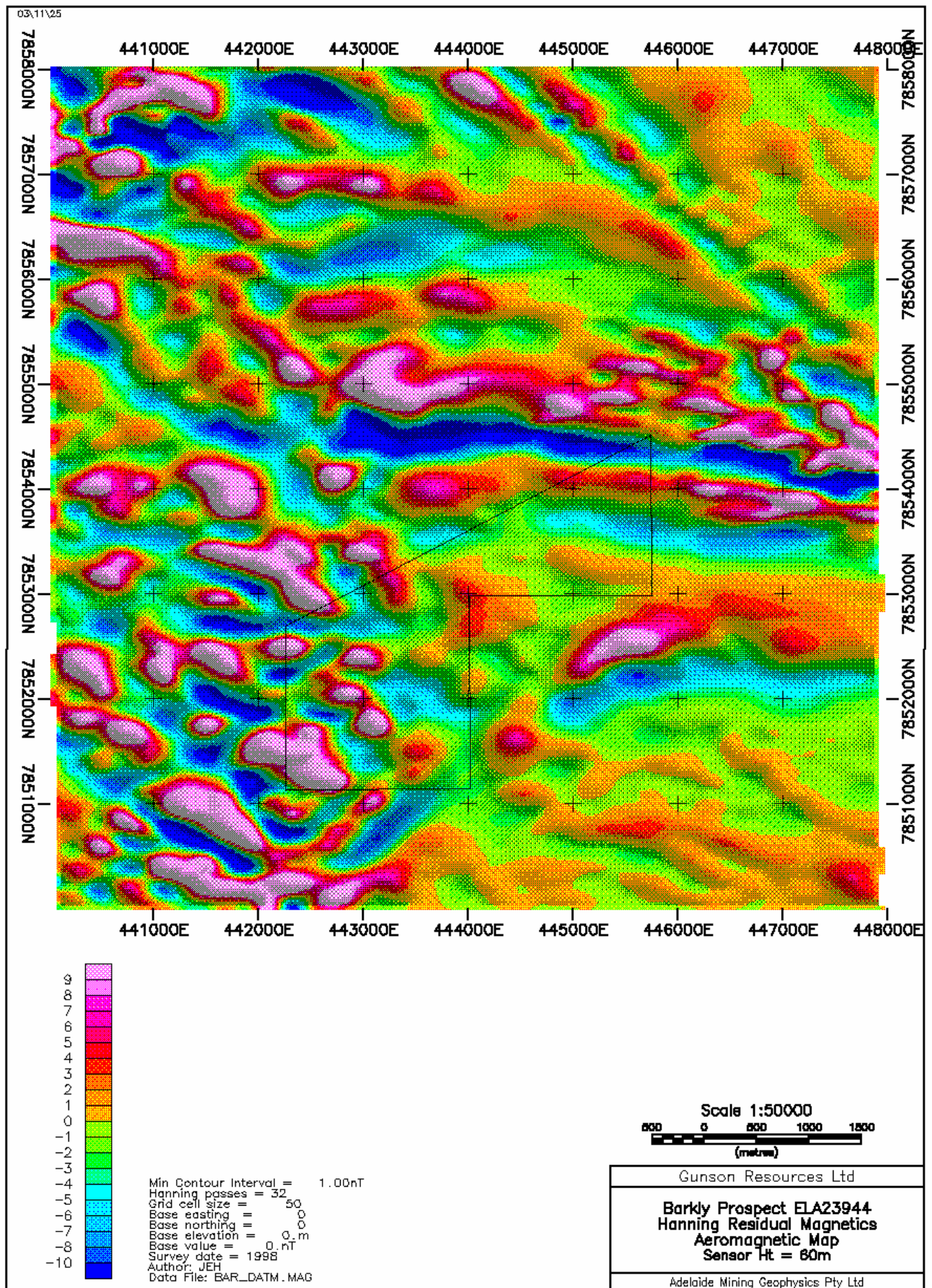


Figure 3b