CR11630

EPM 14277, "CHAMPNEY BORE"
BHP BILLITON MINERALS EXPLORATION
NORTHWEST QUEENSLAND

SURRENDER AND FINAL REPORT FOR THE TERM 16 MARCH 2005 to 15 MARCH 2009

Data presented in
GDA 94 Datum

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SUMMARY

EPM14277, “Champney Bore”, (“the EPM”) Northwest Queensland. is 100% owned and managed by BHP Billiton Minerals Pty Ltd (BHPB).

This surrender/final Report describes all exploration work carried out by BHPB from the 16/03/2005 until 15/3/2009 within the EPM. The EPM is located approximately 14 km northeast of the Cannington mine in northwestern Queensland. The principle exploration target within this EPM is Broken Hill type (BHt) Pb-Zn-Ag mineralisation (e.g. Broken Hill or Cannington).

Exploration work carried out by BHPB in this time includes:

- Ground magnetic survey
- Airborne magnetic, ground magnetic and FALCON™ gravity data analysis and target generation
- 1 diamond drill hole drilled in 2008, ESD8003

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1. INTRODUCTION

This Relinquishment Report describes exploration work conducted by BHP Billiton Minerals Exploration Pty Ltd (BHPB) on the tenement holding the EPM.

The tenement holding is located approximately 14 km northeast of the Cannington mine-site in Northwest Queensland (**Figure 1**).

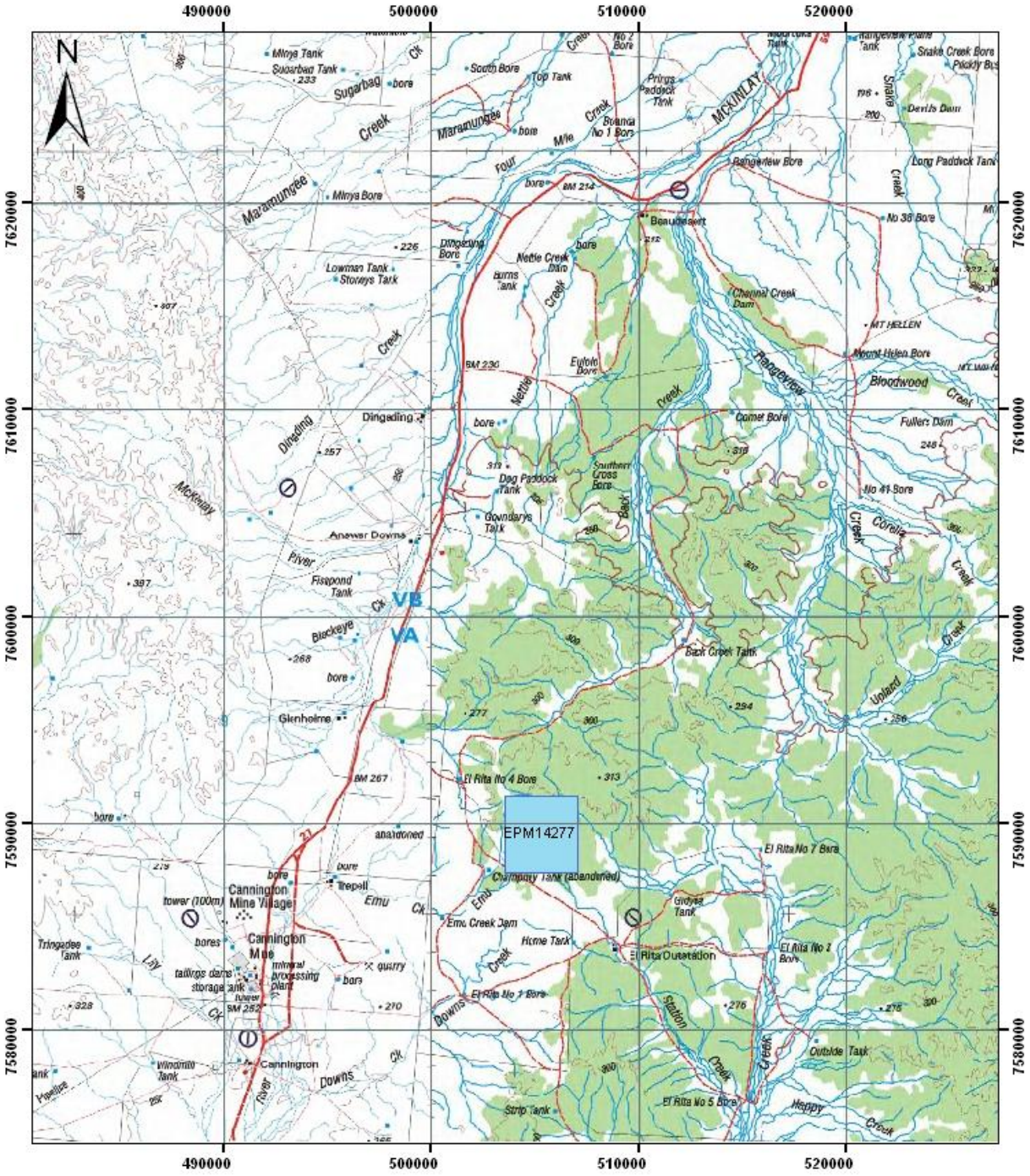
The principle exploration target within this EPM is Proterozoic, Broken Hill type (BHt) Pb - Zn - Ag mineralisation (e.g., Cannington).

2. TENURE

A tenement location map is included as **Figure 1**; tenement and sub-block details are shown in Table 1 below:

Table 1: **Tenement Details**

EPM	Name	No. Sub – Blocks	Grant Date	Expiry Date
14277	Champney Bore	4	16 March 2005	15 March 2009



Date: 17/01/2009	**FIGURE 1** **TENEMENT LOCATION MAP** **EPM 14277** **CHAMPNEY BORE, NW QUEENSLAND**
Author: D. Huisman	
Drawing No. A4 - 012	

3. GEOLOGY

In the Soldiers Cap Project area, the dominant lithologies in the Soldiers Cap Group are meta-siliciclastics which include planar bedded pelitic schists with graded bedding; thin units of cross-bedded immature quartzo-feldspathic meta-arenites and orthoquartzites; and intervals of more abundant interbedded basic volcanics and basic sills with minor carbonaceous schists, calc-silicates and quartzites. Overall there is a distinctive absence of significant carbonate sequences or acid volcanics, and a dominance of immature clastics. Thin horizons of banded iron formation associated with small base-metal showings occur at restricted stratigraphic levels, generally within the Mt Norna Quartzite.

Metamorphic grade in the project area ranges from largely greenschist facies with abundant relict sedimentary textures in the north. However, metamorphic grade increases to the south and southeast towards Cannington, with metamorphic grade reaching to upper amphibolite facies, resulting in widespread sillimanite-K feldspar-bearing schists and migmatitic gneisses.

The differences in metamorphic grade and poor outcrop, complicates clear correlation of these higher grade metamorphic sequences with the previously defined Soldiers Cap Group around Cloncurry. Interpretation of unpublished regional magnetic surveys indicates that the higher metamorphic grade sequences within the Soldiers Cap Group extend for up to 50 kilometres under cover to the east and southeast. Many of the lithostratigraphic units interpreted from the magnetic data, are not well represented in areas of outcrop. The Cannington Deposit occurs within these undercover extensions, and is interpreted to lie within broad litho-magnetic equivalents of the Mt Norna Quartzite of the Soldiers Cap Group. However, given lack of outcrop, complex deformation and high-grade metamorphism, detailed correlations are still uncertain.

Beardsmore et al. (1988) proposed an informal stratigraphic scheme for the Eastern Succession. Higher-grade metamorphics south of Cloncurry were assigned to the Fullarton River Group, overlain by components of the previously defined Soldiers Cap Group, with the two groups included in a newly defined Maronan Supergroup. However, type sections, critical age relationships and contacts have not been formally defined. Host lithologies evident in drilling from the Cannington area, are comparable with units of the proposed Fullarton River Group in this informal terminology. Based on broad litho-stratigraphic and geophysical similarities between the Soldiers Cap Group and the Fullarton River Group, the authors believe they are directly correlatable sequences.

Recent dating of a garnetiferous felsic gneiss from the proposed Fullarton River Group (some 30 km north of Cannington), has given an age of 1677± 9 Ma (Page, 1993), which would imply an age equivalence with Cover Sequence 3.

A range of small Ag-Pb-Zn prospects with Broken Hill-type affinities occur within the outcropping higher-grade metamorphics within the Soldiers Cap Group (Dingo, Maramungee, Fairmile, Black Rock, Pegmont), as well as in under-covered equivalents (Altia, Maronan, Cannington). Interestingly, all of these prospects are hosted within psammite-rich packages that are correlated with the Mt Norna Quartzite.

Table 2 below, compares the lithology and geophysical expressions of the Soldiers Cap Group.

Table 2: Lithostratigraphic and geophysical comparison between the Soldiers Cap Group and Fullarton River Group.

Soldiers Cap Group			**Fullarton River Group**	
Stratigraphic Unit	Lithology	Geophysical Expression	Lithology	Geophysical Expression
Toole Creek Volcanics	Mafic volcanics, mafic sills interbedded with carbonaceous slates/phyllites. Minor BIFs at base	Non-weakly magnetic. Dense packages due to mafics. Regionally extensive formational conductors	Amphibolite intercalated with graphitic schist-gneiss	Non-weakly magnetic, although amphibolite commonly contain post-tectonic albite-magnetite-amphibole alteration. Dense packages due to mafics. Regionally extensive formational conductors
Mt Norna Quartzite	Well bedded. Graded bedding of feldspathic quartzite and wackes with subordinate pelitic mudstones/siltstone. Contains minor-moderate basic sills and thin BIFs	Non magnetic package with short-strike length magnetic units (basic sills and BIFs). Low-moderate density. Non-conductive	Intercalated pelites and psammites. Moderate amphibolite with minor BIFs	Non magnetic package with short-strike length magnetic units (basic sills and BIFs). Low-moderate density. Non-conductive
Llewellyn Creek Formation	Bedded quartz-mica psammite and pelite with graded turbiditic cycles	Non-magnetic. Density is low-moderate. Non-conductive	Pelitic and psammitic gneiss grading into migmatitic quartzo-feldspathic gneiss. Minor amphibolite	Non-magnetic. Density is low-moderate. Non-conductive

Jurassic to Cretaceous cover sediments are present over the EPM. The thickness of the cover sediments is greater than 200m. Basal pebbly sands from a few to 30m thick changed to monotonous mudstones with minor muddy limestone and black organic rich shale 120m or more from the unconformity.

4. EXPLORATION WORK COMPLETED DURING THE PERIOD

4.1 Introduction

Exploration work carried out by BHP Billiton in this time includes:

- Ground magnetic survey
- Airborne magnetic, ground magnetic and FALCON™ gravity data analysis and target generation
- 1 diamond drill hole drilled in 2008, ESD8003

During December 2003 and January 2004, a *FALCON*™ Airborne Gravity Gradiometer (AGG) survey was completed over Strathfield South and Human Ear Area's encompassing the EPM. Density anomalies situated in structurally permissive areas proximal to the contact zone between the Mt Norma Quartzite and the Toole Creek Volcanics of the Soldiers Cap Group were favoured.

4.2 Ground Magnetic Survey

In 2008 BHPB conducted a GPS based ground magnetic survey over EPM14357 and the EPM. As shown in figure 2 below both of these magnetic survey lines cover ground being relinquished by BHP. The ground magnetic survey was an exercise to back up airborne works. Ground magnetic data is attached as appendix 1.

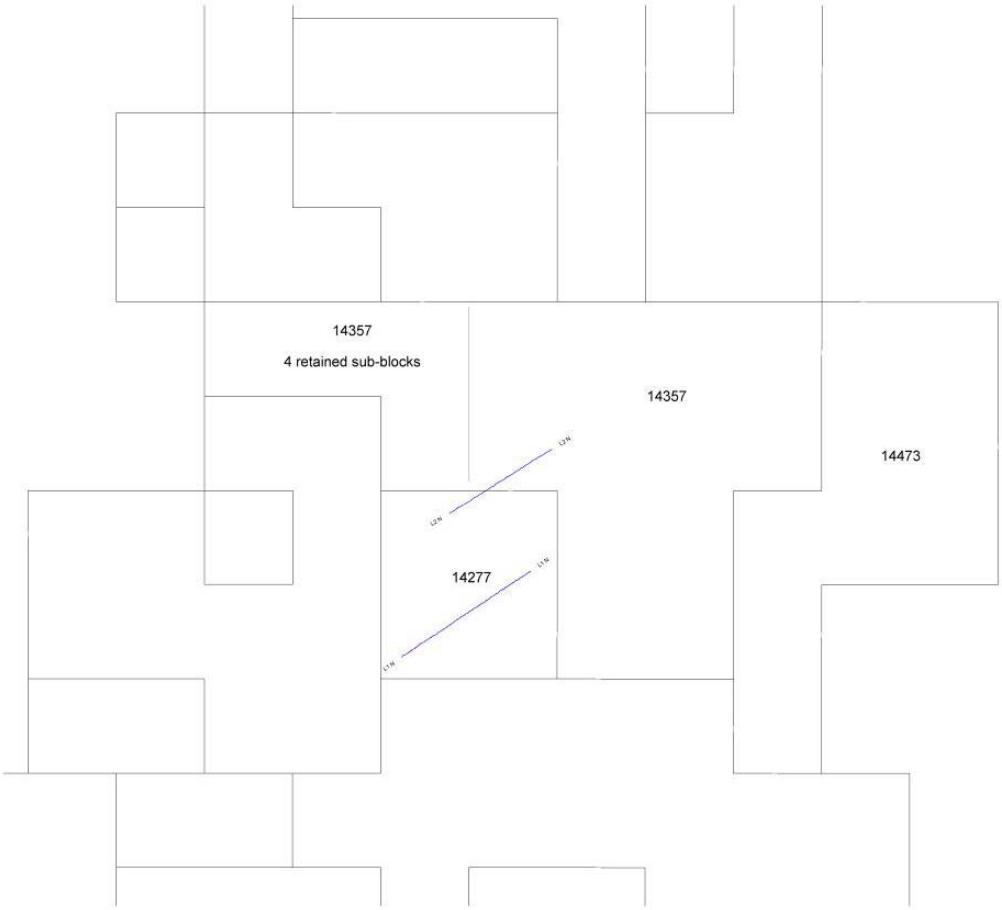


Figure 2: Ground magnetic lines through EPM14277 and EPM14357

4.3 Airborne Magnetic Ground Magnetic and FALCON™ Gravity Data Analysis and Target Generation

Two exploration targets were generated within the existing EPM boundaries, HEF-001 and HEF-002. These targets were identified mainly by magnetic data due to the thickness of cover, rendering the gravity data less significant. HEF-001 has been tested by GSQ_2064 and ESD8003. No drilling has been conducted on the modelled magnetic features identified in HEF-002, see figure 3. This is because the magnetic package identifying HEF-002 possesses similar depth, dip and magnetic intensity as those representing the HEF-001 target and the results from test drilling HEF-001 are not appealing for BHt type mineralisation.

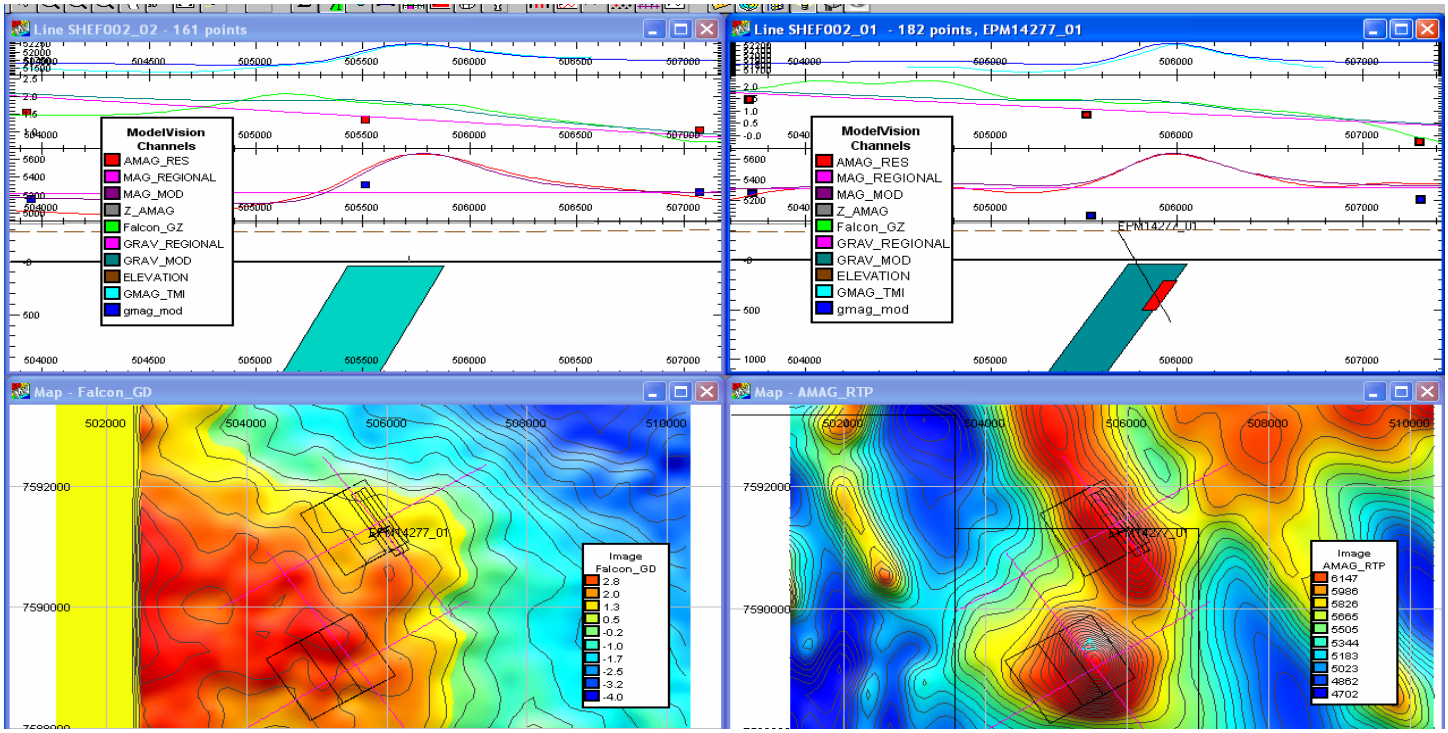
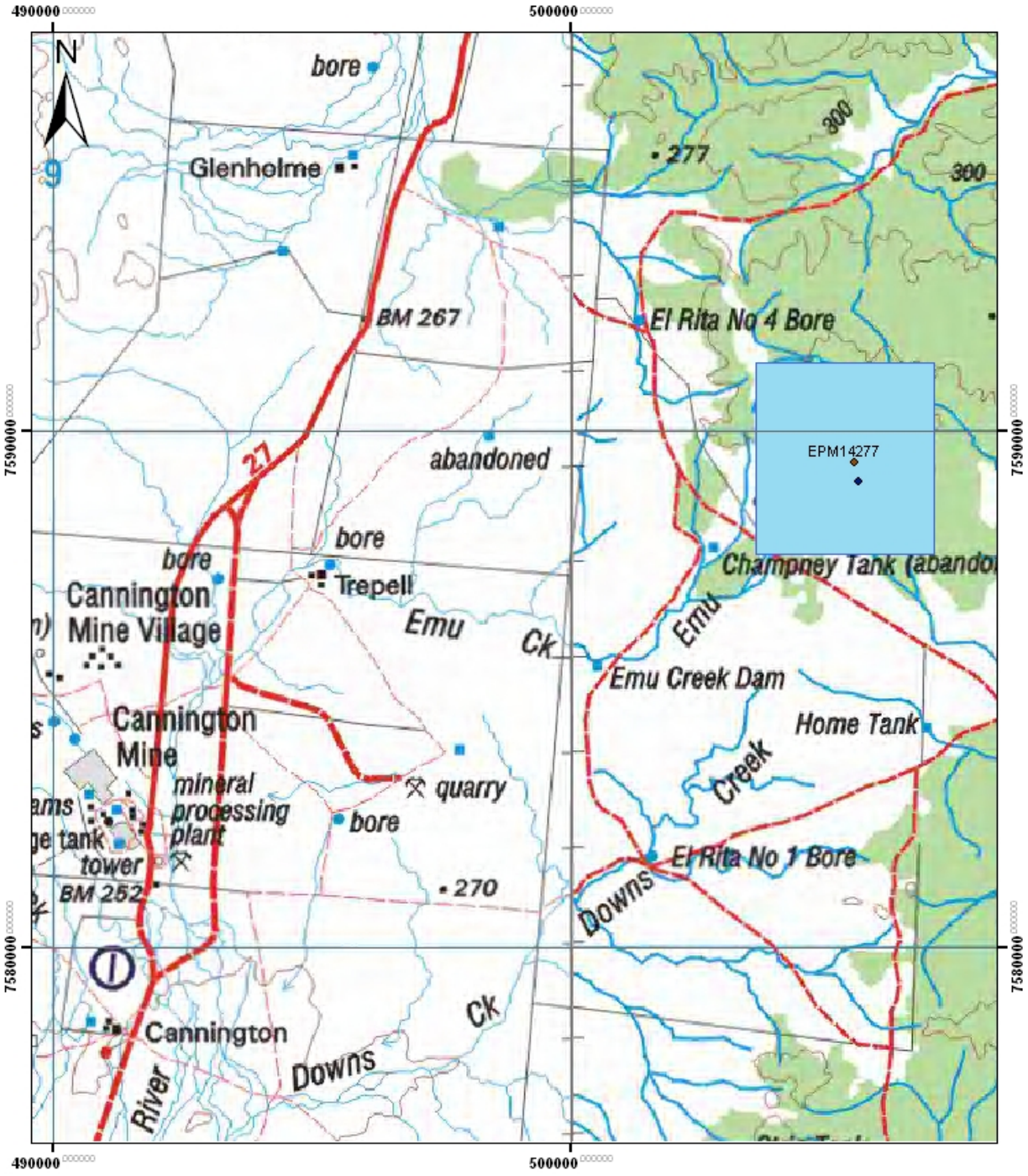


Figure 3: HEF-002 Magnetic Model

4.4 Drilling

Two drill holes have been drilled on the EPM, GSQ_2064 (pre BHP) and ESD8003 (DDH). There were no significant intersections nor was there any significance in the geology in relation to proximity to Ag- Pb- Zn mineralised BHt in either of these drill holes. Refer to appendix 2 for collar, assay, mag sus, lithology and survey data for ESD8003. Figure 4 below shows drill hole locations within the tenement and table 3 summarises ESD8003.



0 1.25 2.5 5 Kilometers

1:100,000

Legend

EPM14277

GSQ_2064

ESD8003

Date: 2/02/2009	**FIGURE 4** **DRILL HOLE LOCATION MAP** **EPM 14277** **CHAMPNEY BORE, NW QUEENSLAND**
Author: D. Huisman **Drawing No. A4 - 021**	

Table 3: ESD8003 Summary.

Hole ID	Tenement	Collar Co – ordinates	Depth (metres)	Geology
ESD8003	EPM14277	505542 E	280.5 – 283.4	Psammite Pelite
		7589016 N	283.4 – 288.9	Breccia
			288.9 – 314.4	Psammite Pelite
			314.4 – 324.2	Basalt
			324.2 – 510.9	Schist

5. CONCLUSION

This surrender Report describes all exploration work carried out by BHPB from the 16/03/2005 until 15/3/2009 within the EPM. The principle exploration target within this EPM is Broken Hill type (BHt) Pb-Zn-Ag mineralisation (e.g. Broken Hill or Cannington).

Exploration work carried out by BHP Billiton in this time includes:

- Ground magnetic survey
- Airborne magnetic, ground magnetic and FALCON™ gravity data analysis and target generation
- 1 diamond drill hole drilled in 2008, ESD8003

Airborne and ground magnetic interpretation along with the FALCON™ gravity survey data identified many key exploration targets over the Strathfield South and Human Ear areas. Two of these targets, HEF-001 and HEF-002 are within the EPM. HEF-001 has been tested with two drill holes, GSQ_2064 and ESD8003 (DDH). Neither of these two drill holes intersected any significant mineralisation nor does the geology give any great confidence to suggest a close by Ag- Pb- Zn of BHT type deposit.

With the magnetics suggesting similar stratigraphy between the two identified target areas BHPB have no more interest in completing any more exploration work within the area encompassed by the EPM. HEF-002 possesses similar depth, dip and magnetic intensity as HEF-001.

Due to the insignificant results found in GSQ_2064 and ESD8003 and the magnetic similarity this target area has to other target areas within the EPM, BHPB recommends no further exploration work to be done over the tenement.

Appendix 1. GPS Based Ground Magnetic Data

Appendix 2. ESD8003 Collar, Survey, Mag Sus, Lithology and Assay Data