



# HILL END GOLD LIMITED

ACN 072 692 365

Report for March 2013 Quarter

30 April 2013

ASX Code: HEG, HEGOA

## HARGRAVES PROJECT

- Positive results received from the Hargraves Gold Project pre-development studies:
  - 25,000oz/year production
  - \$15m projected capital cost
  - one year payback
  - <\$1,000/ounce total costs
- Progression towards a full feasibility study justified
- Metallurgical test work confirms high gold recovery (85-90%) from coarse grinding (P<sub>80</sub>0.5mm) and simple gravity processing.
- Resource estimate (Inferred) for North Big Nugget Hill deposit of 0.65 Mt at 1.1 g/t gold (containing 24,000 ounces) adds to the existing resource
- Assay results from the last two northernmost drill holes at North Big Nugget Hill have been finalised with best results in HGD68 of 11 m at 1.7 g/t gold from 78 m and 9 m at 1.3 g/t gold from 144 m

## HILL END PROJECT

- Drill targets have been identified following completion of the Mares Nest prospect soil geochemical survey

## WILLANDRA PROJECT

- Initial mapping identifies faults controlling mineralised quartz stockwork and quartz breccia over a strike length of 1.5 kilometres. Further mapping and sampling is planned to identify drill targets

### *About Hill End Gold Limited*

Hill End Gold Limited (ASX:HEG) is a gold explorer with the objective of becoming a mid-tier gold producer based on its two flagship projects at Hill End and Hargraves in an historically gold-rich region in central New South Wales, Australia and with the acquisition of high potential projects. Gold resources defined by the Company currently total 581,000 ounces. The Company's strategy is to increase resources to more than one million ounces in the short term to form a basis for profitable production on a significant scale.

**Hill End Site and Registered Office**  
4 Bowen Street  
Hill End NSW 2850  
Phone +612 6337 8343  
Fax +612 6337 8345

**Sydney Principal Office**  
3 Spring Street  
Sydney NSW 2000  
Phone +612 8249 4416  
Fax +612 8249 4919

**Website:** [www.hillendgold.com.au](http://www.hillendgold.com.au)  
**Email:** [admin@hillendgold.com.au](mailto:admin@hillendgold.com.au)

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## PROJECTS

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### Hargraves Project - EL 6996 (HEG 100%)

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The wholly-owned Hargraves Project is located approximately 30 km south-west of Mudgee in central New South Wales (Figure 1).



Figure 1. Hill End Gold Project locations

### Hargraves Pre-Development Study

During the quarter, work continued to identify development options for the Hargraves deposit.

Results of the pre-development studies for an open pit mining project are positive and additional potential exists to expand near surface resources along strike from existing resources and at satellite prospects.

Pit optimisation studies at a base case gold price of A\$1,450/oz indicate that two open pits, Central and South, would produce 1.2 Mt of ore at 2.9 g/t gold (100,000 oz). Mining at 300,000 tonnes per year provides an average annual production of 25,000 ounces. Waste to ore ratio is approximately 11:1 over the life of mine.

Metallurgical test work confirms that grinding to a relatively coarse grainsize (P<sub>80</sub>0.5 mm) followed by simple gravity treatment provides excellent gold recovery of approximately 85-90% with the grade of gravity tailings less than 0.15 g/t gold.

Process design studies indicate the processing circuit can be built at a very low capital cost using the Company's existing plant and additional used equipment. As neither whole ore flotation nor cyanidation is required, capital costs are significantly reduced and any potential environmental impacts minimised.

Total operating cost is estimated at less than \$1,000/ounce. Capital cost of \$15 million is paid back within the first year of operation.

The positive outcome of the pre-development studies justifies the Company progressing to a Feasibility Study for the project.

A Conceptual Project Development Plan will be presented to the NSW Department of Trade & Investment, Resources & Energy to initiate the process required for obtaining a Mining Lease.

### North Big Nugget Hill: Final drill hole results

During the quarter, assays were received for the last two drill holes in the northernmost part of the North Big Nugget Hill deposit. These intersections are consistent with previously reported results for other more southerly holes and indicate the deposit remains open to the north (Figure 2, Table 1). The best intersections are:

**Table 1 - Assay results for the final two drill holes at North BNH**

| Drill Hole | Easting (MGA) | Northing (MGA) | Dip (°) | True Azimuth (°) | Depth (m) | From (m)     | Intersection (m) | Assay (g/t Au) <sup>1</sup> |                  |
|------------|---------------|----------------|---------|------------------|-----------|--------------|------------------|-----------------------------|------------------|
| HGD67      | 730336        | 6370288        | 60      | 080              | 120.7     | 44.0         | 1.0              | 1.1                         |                  |
|            |               |                |         |                  |           | 61.0         | 1.0              | 1.8                         |                  |
|            |               |                |         |                  |           | 74.0         | 5.0              | 0.6                         |                  |
|            |               |                |         |                  |           | 105.0        | 13.0             | 0.5                         |                  |
|            |               |                |         |                  |           | <i>Incl.</i> | 105.0            | 1.0                         | 1.0              |
|            |               |                |         |                  |           |              | 115.0            | 1.0                         | 3.8              |
|            |               |                |         |                  |           |              | 117.0            | 1.0                         | 0.7              |
| HGD68      | 730315        | 6370232        | 60      | 080              | 171.7     | 3.0          | 1.0              | 1.9                         |                  |
|            |               |                |         |                  |           | 66.0         | 1.0              | 3.3                         |                  |
|            |               |                |         |                  |           | 78.0         | 11.0             | 1.7 <sup>2</sup>            |                  |
|            |               |                |         |                  |           | <i>Incl.</i> | 78.0             | 1.0                         | 0.7              |
|            |               |                |         |                  |           |              | 84.0             | 1.0                         | 2.0              |
|            |               |                |         |                  |           |              | 88.0             | 1.0                         | 15.7             |
|            |               |                |         |                  |           |              | 109.0            | 1.0                         | 0.5              |
|            |               |                |         |                  |           |              | 124.0            | 1.0                         | 1.0              |
|            |               |                |         |                  |           |              | 129.0            | 1.0                         | 0.8              |
|            |               |                |         |                  |           |              | 132.0            | 4.0                         | 1.2              |
|            |               |                |         |                  |           |              | 144.0            | 9.0                         | 1.3 <sup>2</sup> |
|            |               |                |         |                  |           | <i>Incl.</i> | 144.0            | 1.0                         | 1.6              |
|            |               |                |         |                  |           |              | 151.0            | 2.0                         | 4.6              |

<sup>1</sup> Fire Assay (50 g) analysis by SGS Laboratories in Townsville.

Significant results reported for intervals with assays >0.5 g/t gold over 1 metre with a limit of 1 metre internal dilution.

<sup>2</sup> Assays > 0.1 g/t gold with a limit of 2 metres of internal dilution.

Down hole intersection lengths shown. True widths approximately 0.7-0.9 times the down hole length.

### North Big Nugget Hill Resource Estimate

A resource estimate has been completed for the North Big Nugget Hill deposit at Hargraves (Figure 2, Figure 3) which is additional to the existing resource<sup>1</sup>.

<sup>1</sup> Resource estimate for Big Nugget Hill of 2.2 Mt at 3.1 g/t Au for 221,000 ounces contained Au announced on 10 October 2011:

|                     |                      |                             |
|---------------------|----------------------|-----------------------------|
| Indicated Resources | 1.3 Mt at 3.5 g/t Au | 143,000 ounces contained Au |
| Inferred Resources  | 0.9 Mt at 2.6 g/t Au | 78,000 ounces contained Au  |

The new estimate only covers the northernmost 400m of strike tested on the Big Nugget Hill Anticline, to a depth of approximately 150 metres below surface. Two deeper drill holes have allowed interpretation and resource estimation to extend to approximately 200m below surface locally. The deposit remains open down dip and along strike to the north.

The new North BNH resource estimate at 0.5 g/t gold cut-off is:

**Inferred Resources 0.65 Mt at 1.1 g/t Au 24,000 ounces contained Au**

Drill holes included in this estimate totalled 4,113.7 metres of drilling. This comprised 23 diamond drill holes completed during 2012, four diamond drill holes completed by Hill End Gold Limited (HEG) in 2008, as well as three reverse circulation holes and three diamond drill holes completed by previous explorers.

HEG drill holes are HQ3 diameter (61.1 mm). As the holes were drilled, the core was placed in drill trays at the drill site and transferred to a nearby core processing facility at Hargraves where it was logged for geology, alteration, structure and geotechnical data. Core sampling was done by cutting the core longitudinally and sampling one half of the core. The remainder of the core is stored on site at Hargraves. In the case of the 2012 drilling, the core was oriented, which allowed measurement of the orientation of geological and geotechnical features of interest.

HEG samples were analysed for gold by (50 g) fire assay at SGS Laboratories in West Wyalong and SGS Laboratories in Townsville. Confirmatory gold assays were also done by LeachWell at SGS in Townsville (2 – 5 kg sample assay). LeachWell assay results were used in preference to the fire assay for the resource estimate. Standard reference samples and blank samples were submitted to the laboratory with the drill core samples. One standard reference sample and one blank sample were submitted for approximately every 20 drill core samples to check for analytical precision and contamination during sample preparation.

Drill core that does not contain any evidence of quartz vein was not sampled and was assumed to have zero grade.

A geological model for North BNH was constructed from the drill hole geology data that consisted of:

- The axial plane of the BNH anticline which is interpreted to be a fault.
- A number of folded, bedding parallel quartz vein volumes, hosted by fine-grained sandstone and siltstone. These domains were interpreted on both the western and eastern sides of the BNH Anticline (Figure 2) and are the host for the gold mineralisation.

Quartz vein domains were modelled as three-dimensional volumes and the resource estimation is constrained within these volumes. The estimation was done using 0.5 metre composites of the original sample assay data from within the quartz vein modelled volumes. Gold grades were estimated using an inverse distance square (ID<sup>2</sup>) interpolation into 2 x 10 x 5 metre (X, Y, Z) blocks (Figure 3). Where the estimate involved folded veins, a dynamic ID<sup>2</sup> model was used that followed the curvature of the folded domain.

The bulk density of the mineralised material is 2.68 t/m<sup>3</sup> based on fifty samples of quartz vein mineralisation and adjacent wall rock from the Central BNH deposit that were submitted to SGS Laboratories in Townsville for density determination. The rock at North BNH is pervasively oxidised down to approximately 15 metres and partially (fracture) oxidised down to 20-25 metres below surface. Since the quartz vein mineralisation is relatively resistant to oxidation, no allowance for change in density has been made for oxidation or partial oxidation in the resource estimate.

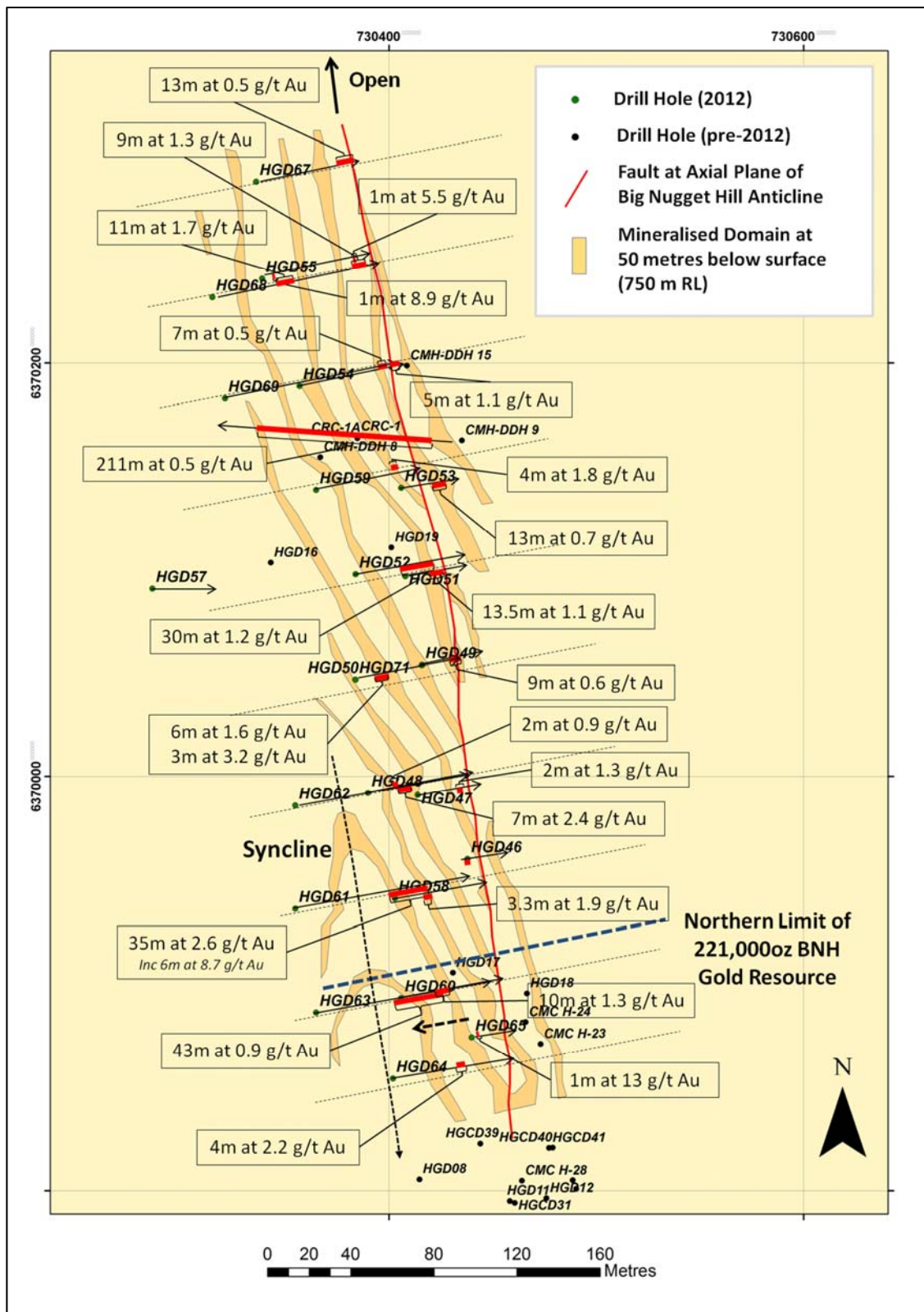


Figure 2. North BNH deposit at Hargraves: Mineralised domains (gold in quartz veins) at 750m RL (approximately 50 metres below surface) and mineralised drill hole intersections.

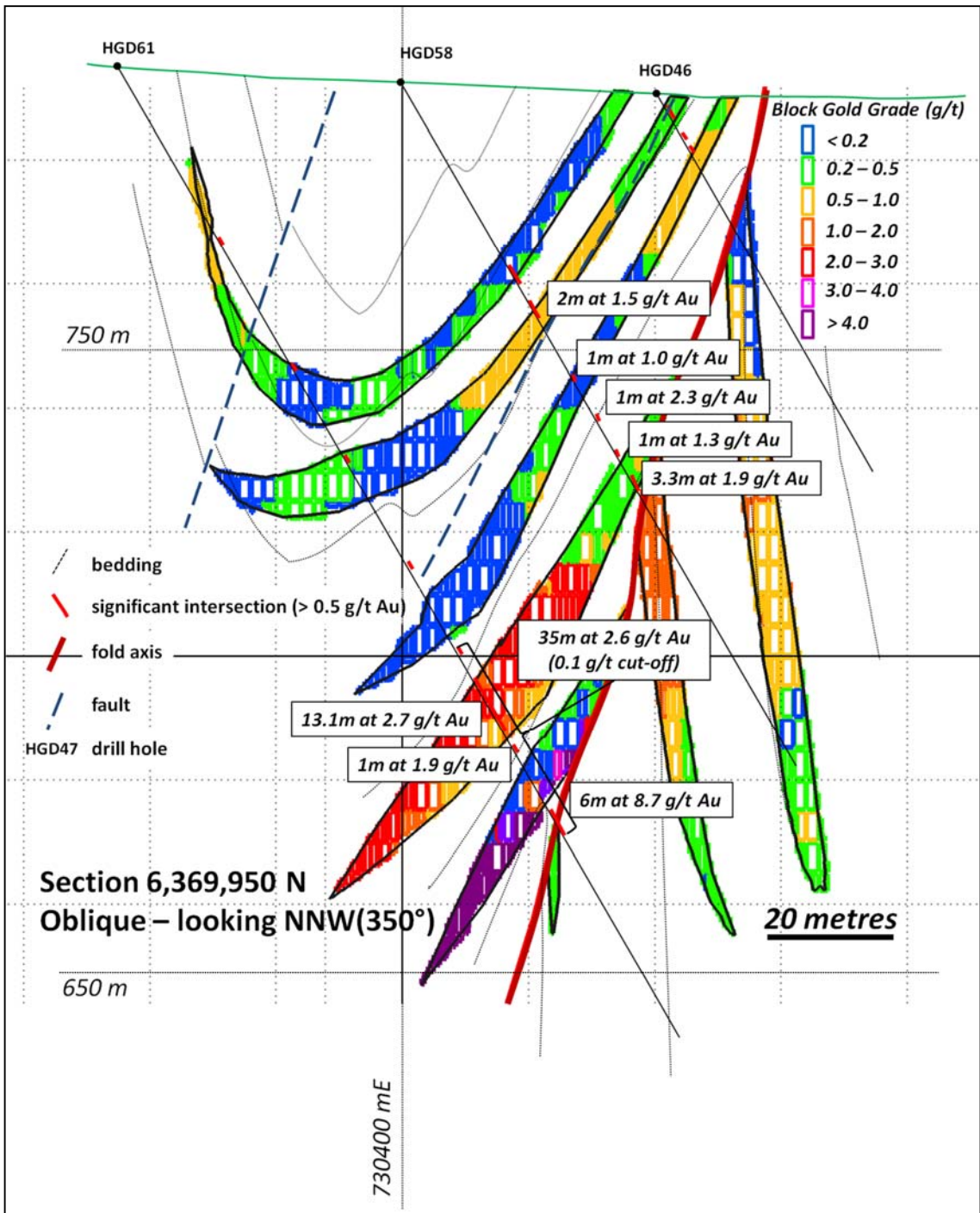


Figure 3. Resource block model grades and drill hole intersections for section 6,369,950 N

The Hill End Project is located approximately 50 km north of Bathurst in central New South Wales. During the quarter, work concentrated on the Mares Nest prospect in the southern part of the Licence (Figure 4).

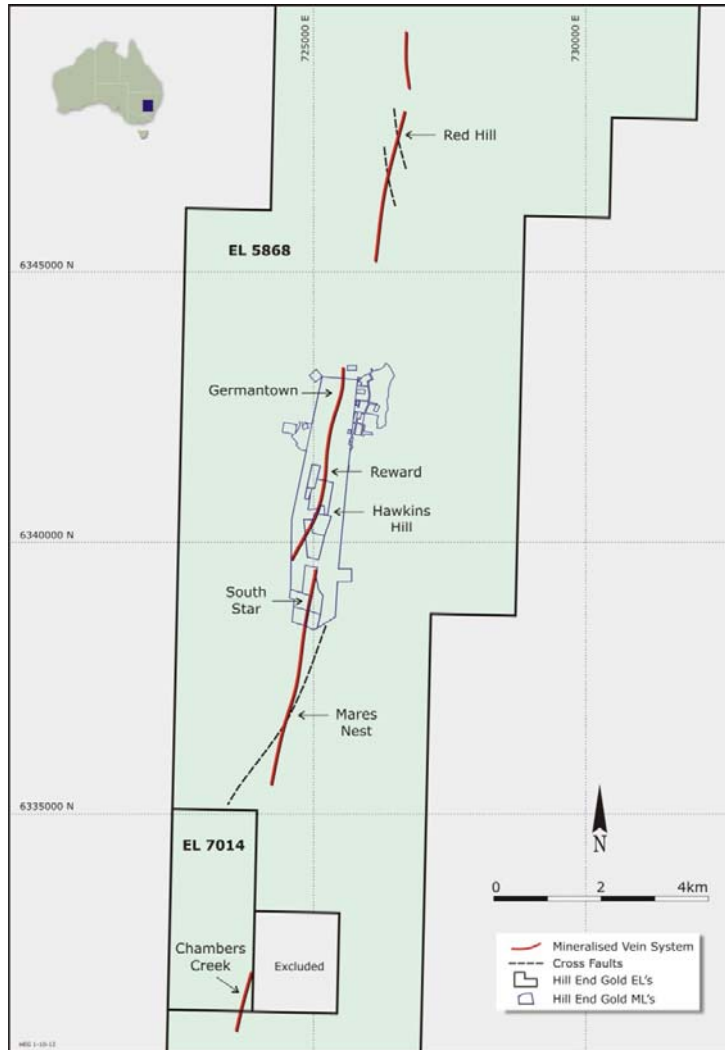


Figure 4. EL5868 prospects surrounding the Hawkins Hill – Reward resource

### Mares Nest

The Mares Nest Prospect is located four kilometres south of the Hawkins Hill - Reward area. The Mares Nest mineralisation has been mapped to extend over a strike of four kilometres and has a width of up to 150m.

Surface (soil) geochemical sampling using a portable XRF analyser was completed during the quarter. The results for zinc in soil are shown in Figure 5. Zinc is used as a pathfinder element for the gold in quartz veins, as the gold is accompanied by the zinc-iron sulphide mineral, sphalerite.

The Mares Nest deposit is similar to the Big Nugget Hill deposit with the better zones of gold mineralisation at Mares Nest occurring along mineralised fault (feeder) structures, particularly where they cross the folds of the Hill End Anticline. The soil geochemical survey outlines a number of mineralised zones along a fault which is located in the centre of a gently south-plunging anticline. The

soil survey has elevated zinc and other trace elements over areas that were targeted by small scale miners from the late 1800s to early 1900s.

The results of the soil survey have been used to design a maiden drill program for the Mares Nest prospect.

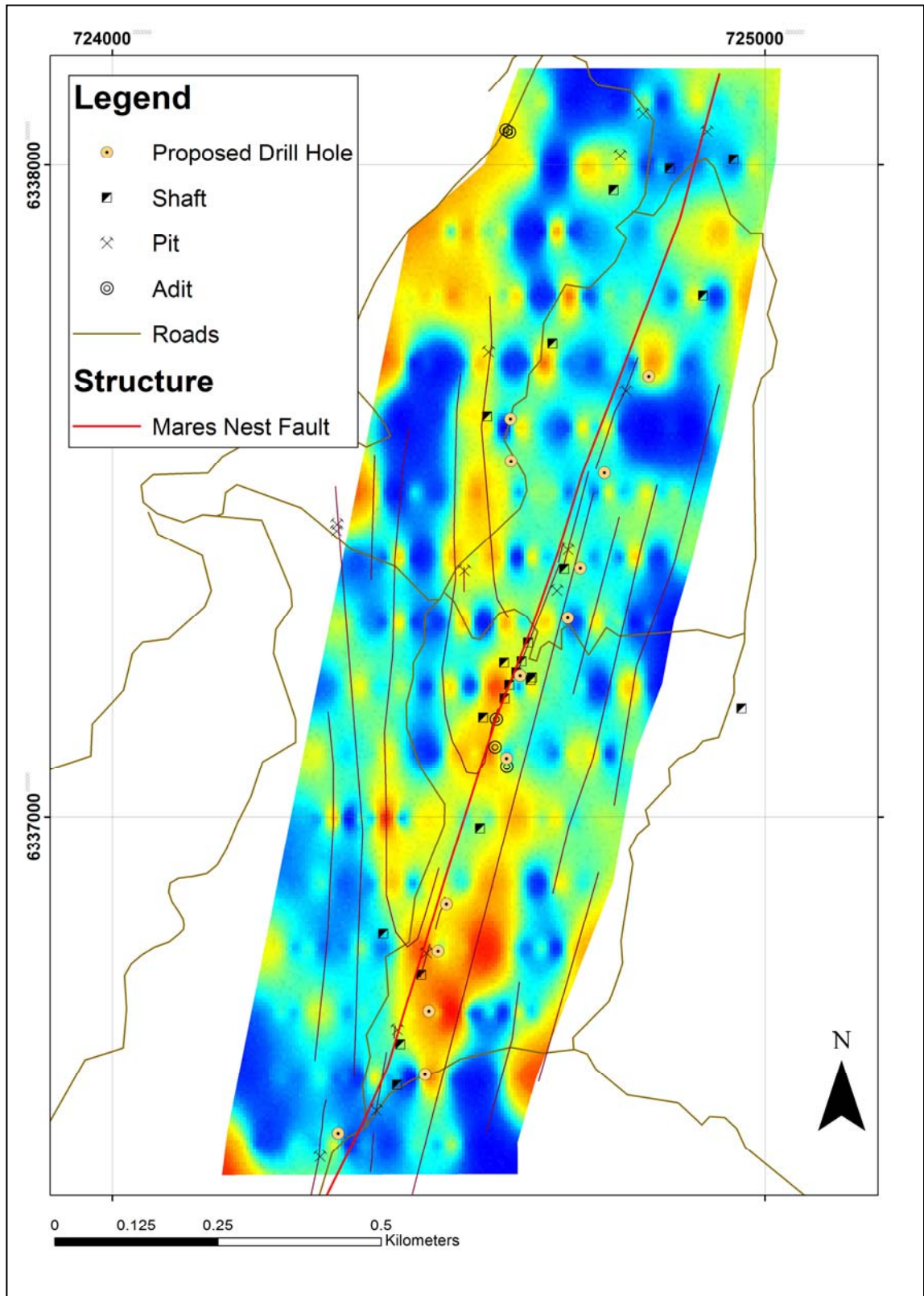


Figure 5. Mares Nest prospect zinc-in-soil results from portable XRF analysis. Zinc is used as a pathfinder element for gold in the veins at Mares Nest.



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## Willandra Project – EL 7967 (HEG 100%)

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Exploration Licence 7967 covers an 86 km<sup>2</sup> area of the eastern Lachlan Fold Belt approximately 40 km east of Hill End (Figure 6) in central New South Wales.

Previous soil geochemical surveys identified a 1.5 km long gold-arsenic anomaly near the contact of Ordovician age Sofala Volcanics. The peak gold-in-soil value of 0.145 g/t gold is supported by rock chip values up to 6.2 g/t gold.

During the quarter, landowner agreements were signed and field mapping was undertaken to understand the controls on gold mineralisation and establish drill targets.

At least two north-south trending fault zones have been mapped which control mineralised stockworks of quartz veins and breccias which are the source of the gold in rock chip samples.

Further work is planned to identify potential drill targets from more detailed surface mapping and rock chip sampling.

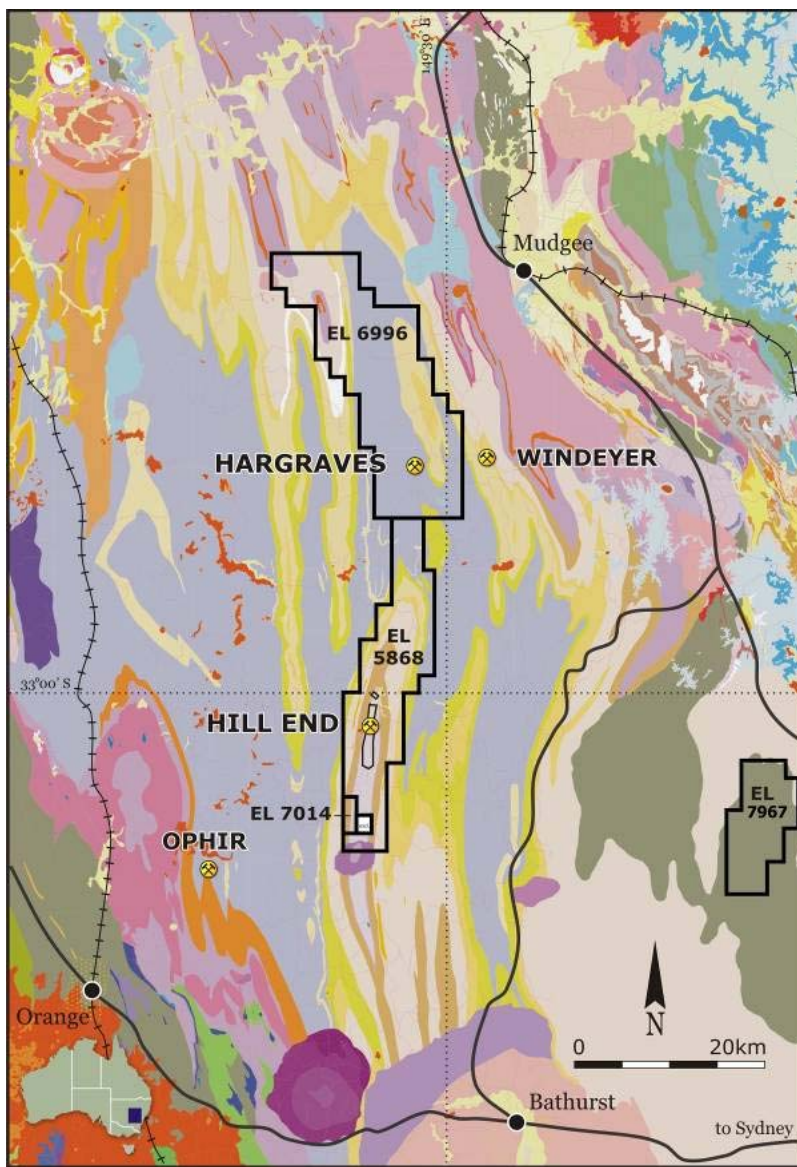


Figure 6. Location of EL 7967

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## Eurongilly Project – EL 7992 (HEG 100%)

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EL 7992 covers 62 km<sup>2</sup> and is located approximately 16 km east of Junee in southern New South Wales. The area is located near a major NW-striking fault (Gilmore Suture) that is associated with a number of significant gold deposits in a belt extending from Adelong to West Wyalong (Figure 7).

No significant work was conducted on the Licence during the quarter. Future work will focus on determining the location of additional drilling at the Kurrajong prospect to establish a maiden resource.

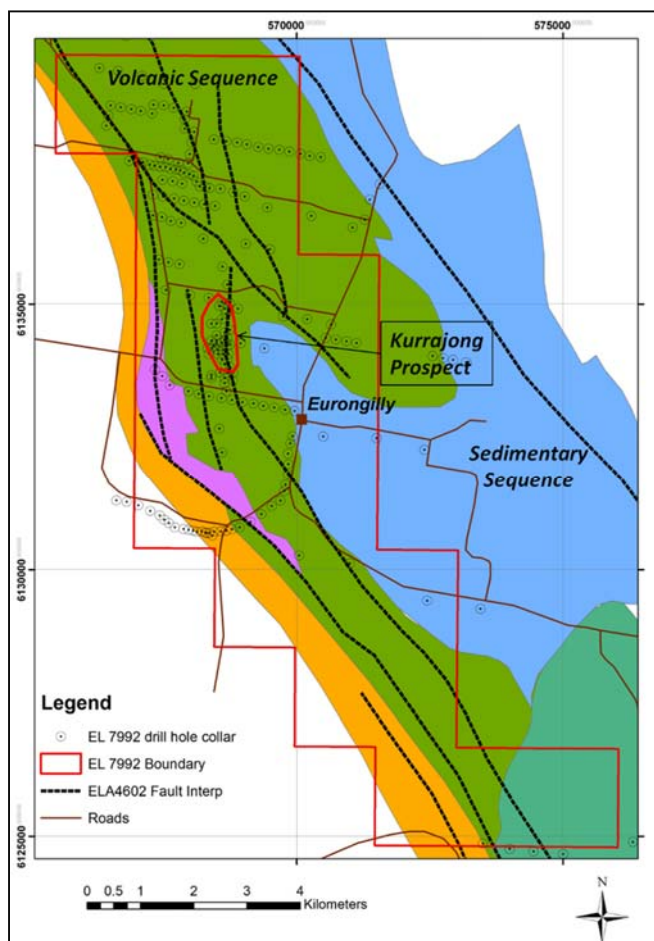


Figure 7. Summary geology plan EL 7992 showing location of previous drill holes

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## Swan Hill Project - EL 7125 Relinquished 10 April 2013

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On 8 April, the Company was advised by the NSW Department of Trade & Investment, Resources & Energy that EL 7125 would not be approved for renewal. A final report on all exploration activities is being prepared for the Department.

Philip Bruce  
Managing Director

### *Competent Persons' Statement*

The information in this report that relates to Reward and Red Hill Mineral Resources is based on information compiled by Mike Quayle and Philip Bruce, for Hargraves Mineral Resources by Philip Bruce and for Exploration results is based on information compiled by Stuart Munroe and Philip Bruce. Mr Quayle is a Member of The Australian Institute of Geoscientists and was a full-time geological employee of HEG. Dr Munroe is a Member of the Australasian Institute of Mining and Metallurgy and Mr Bruce is a Fellow of the Australasian Institute of Mining and Metallurgy and both are full-time employees of HEG. Mr Quayle, Dr Munroe and Mr Bruce have sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (The JORC Code). Mr Quayle, Dr Munroe and Mr Bruce consent to the inclusion of the matters based on their information in the form and context in which it appears.