TNG LIMITED

ENIGMA MINING LTD

WALABANBA PROJECT

GROUP ANNUAL REPORT

GR145/10

EL 26848 – 05/03/12 to 04/03/13
EL 27115 – 05/03/12 to 04/03/13
EL 27876 – 05/03/12 to 04/03/13

Tenement/s	EL26848, EL27115, EL27876.	1:250 000 Sheet Name	Mount Peake (SE5305)
Holder	Enigma Mining Ltd	1:100 000 Sheet Name	Anningie (5554), Mount Peake (5454) Conical Hill (5555) Willowra (5455)
Manager	N/A	Datum	GDA94-53
Operator	Enigma Mining Ltd	GDA_E	276032-319124
Commodity	Cu, Au, Ni, Pb, Zn	GDA_N	7565673-7630564
Elements Analysed			
Keywords	HELITEM, field inspection, historical exploration		

Compiled by	C. Wetherley (Administrative Geologist) – cath.wetherley@tngltd.com.au
Reviewed by	K. Grey (Exploration Manager) – kim.grey@tngltd.com.au
Approved	P.E. Burton (Managing Director) – peb@tngltd.com.au

Report Date	April 2013	
Distribution	TNG Limited	(1)
	NT Department of Mines and Energy	(1)

EXECUTIVE SUMMARY

The Walabanba Hills Project is operated by Enigma Mining Ltd, a wholly owned subsidiary of TNG Ltd.

The project comprises three exploration licences (EL26848, EL27117, EL27876), covering an area of approximately 2027 km^2 in the north-central portion of the Paleoproterozoic Arunta Province.

Enigma signed a Heads of Agreement (HOA) with the Australian uranium exploration and project development company, Toro Energy Limited in April 2012. The agreement gives TNG the right to explore for all minerals except uranium within EL 26848, EL 27115, and EL 27876.

Enigma took out the JV agreement with a view to exploration for primary base metal sulphides, nickel and magnetite hosted vanadium-titanium, as found in the Mount Peake Fe-V-Ti deposit to the east. Review of historical geochemistry, drilling and geophysics in the area resulted in a HELITEM survey being undertaken in August 2012.

Twenty target areas were identifed and many were recommended for geochemical surveys, ground EM and potentially drilling follow-up.

A very limited on-ground followup programme was completed in October 2012. A portable NITON was used for sampling and seven samples were sent for multielement laboratory analysis.

A lack of outcrop in the immediate target areas made it impossible to identify a geological source for many of the targets. Many still remain as valid target areas and require either ground EM or drilling to determine the reason for the conductor source being present.

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

1. INTRODUCTION

The Walabanba Hills Project is operated by Enigma Mining Limited (Enigma), a wholly owned subsidiary of TNG Ltd.

The project comprises three exploration licences (EL 26848, EL 27115 and EL 27876; Figure 1). Enigma signed a Heads of Agreement (HOA) with the Australian uranium exploration and project development company, Toro Energy Limited in April 2012. The agreement gives TNG the right to explore for all minerals except uranium within EL 26848, EL 27115, and EL 27876.

Enigma took out the JV agreement with a view to exploration for primary base metal sulphides, nickel and magnetite hosted vanadium-titanium, as found in the Mount Peake Fe-V-Ti deposit to the east. Review of historical geochemistry, drilling and geophysics in the area resulted in a HELITEM survey being undertaken in August 2012 with limited on-ground followup work completed in October 2012.

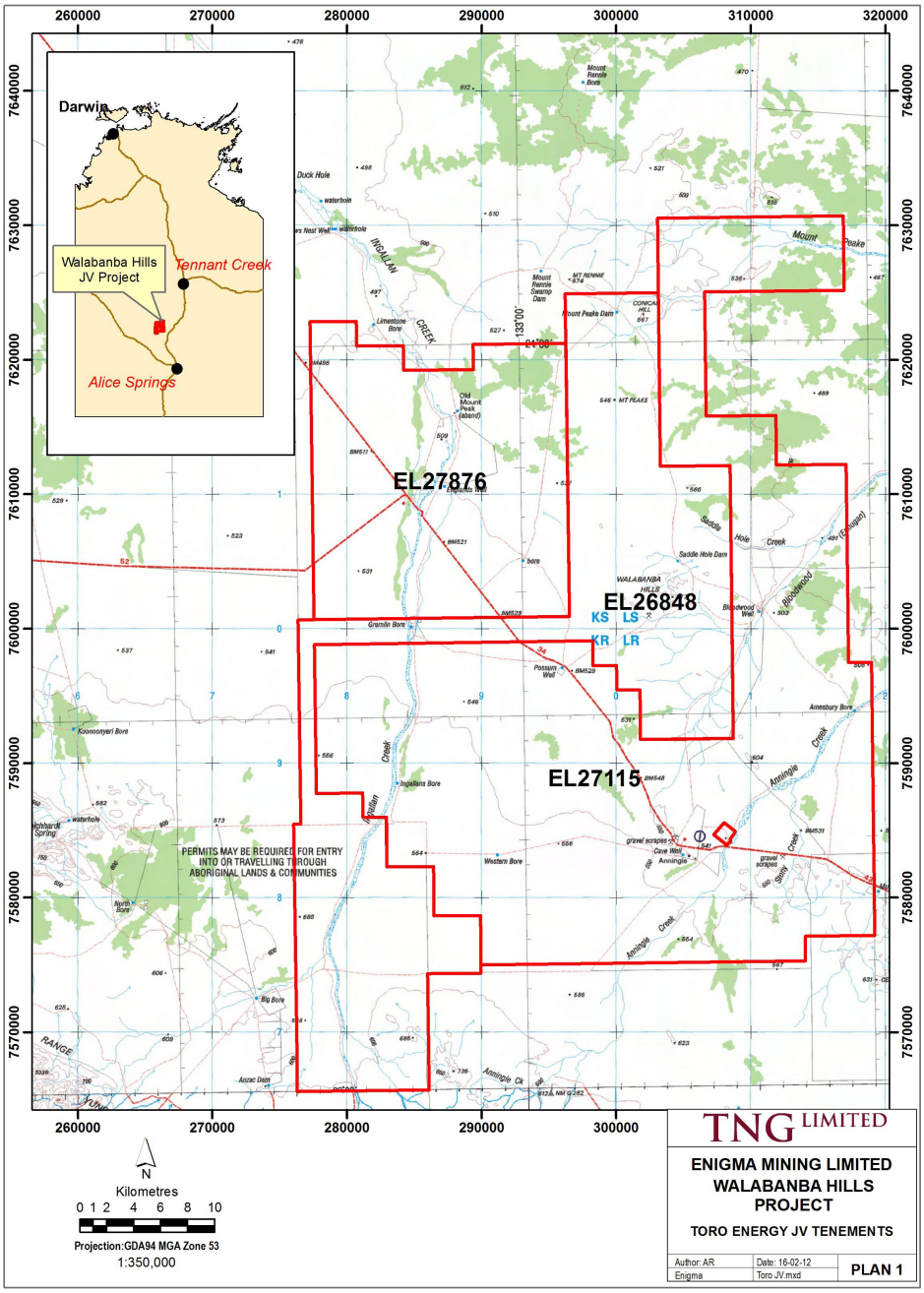

Figure 1: Location of Walabanba Hills project area.

2. LOCATION AND ACCESS

The Walabanba Hills project is located immediately to the west of the Mount Peake project Fe-V-Ti (Figure 1). The tenements are situated on Anningie and Conical Hill stations (referred to as the Anningie Group tenements by Toro Energy excluding EL26704) approximately 250km north-northwest of Alice Springs with good access via the Stuart Highway then unsealed station tracks. The tenement group is on the Mt Peake 1:250,000 map sheet with the majority of the tenement area in the Anningie 1:100,000 extending over the Conical Hill and Mount Peake 1:100,000 sheets.

3. TENURE

The Walabanba project currently comprises three exploration licences (EL 26848, EL 27115 and EL 27876) covering an area of 2027 km^2. The Heads of Agreement, commencing April 2012, provides TNG the right to explore for all minerals except uranium. The area covered by the tenements were previously held by Western Mining Corporation (WMC) in the mid-1990s and Anglo American Corporation, 2003-2004. Details of the licences, as granted to Toro Energy Ltd are provided in Table 1.

Table 1: EL Mount Peake Project tenement details.

TITLE	AREA	GRANT DATE	EXPIRY DATE
EL26848	573	4/03/2009	3/03/2015
EL27115	1070.5	18/09/2009	17/09/2015
EL27876	383.25	2/08/2010	1/08/2016

4. GEOLOGY

The Reynolds Range project lies within the Arunta region of the Northern Territory. Basement is comprised of Palaeoproterozoic to Mesoproterozoic metasedimentary and granitic rocks within the Aileron Province, including the Reynolds Range Group. The granites and orthogneisses are highly-radiogenic within the Reynolds Range, hosting numerous veins and pegmatites with anomalous uranium and thorium. Locally the Aileron Province rocks are overlain by Tertiary to recent clastic sequences, derived from erosion of the radiogenic granites in the Reynolds Range.

Uranium mineralisation is known in the region and is restricted to the Proterozoic Aileron Province and nearby Carboniferous Ngalia Basin. To the southeast uranium occurs in phosphatic and REE-enriched metasomatic pods and veins within the high metamorphic grade Lander Rock beds.

To the east lies the mineralised Mount Peake gabbro, a Ti-V-Fe ore body hosted by a differentiated basic sill with minor ultrabasic layers. The predominant rock type is olivine gabbro with layering defined by variations in plagioclase / olivine+clinopyroxene ratios. Most of the gabbros are massive - typical of many layered intrusions-without discernible layering.

The local geology (Figure 2) comprises sodic granites, gneisses and minor amphibolites, folded metasediments and intruded metabasic rocks. Major northwest shears cut the sequence and are associated with barren quartz intrusions. Two prominent structures run along the Lander River Valley, to the west and along the Salt Creek – Blue Bush Bore Valley. The granite batholiths are interpreted to be shallowly eroded with exposure of their upper levels only, with abundant pegmatite outcrops, typically of quartz-feldspar-muscovite-tourmaline composition. Some very coarse examples occur in association with minor tantalum or tin mineralisation that has in places been mined. The metasediments, comprising meta shales, cherts, siltstone and fine sandstone range in grade from lower

to upper greenschist facies and are common in the Lander valley. Some exhibit quartz sericite alteration. Tertiary to Recent cover comprising laterite derived sands and clays (alluvium and colluvium) , calcrete and ferricrete is common in low lying areas and can be up to 70m thick, however Toro's drilling indicates it is over 200m thick in places.

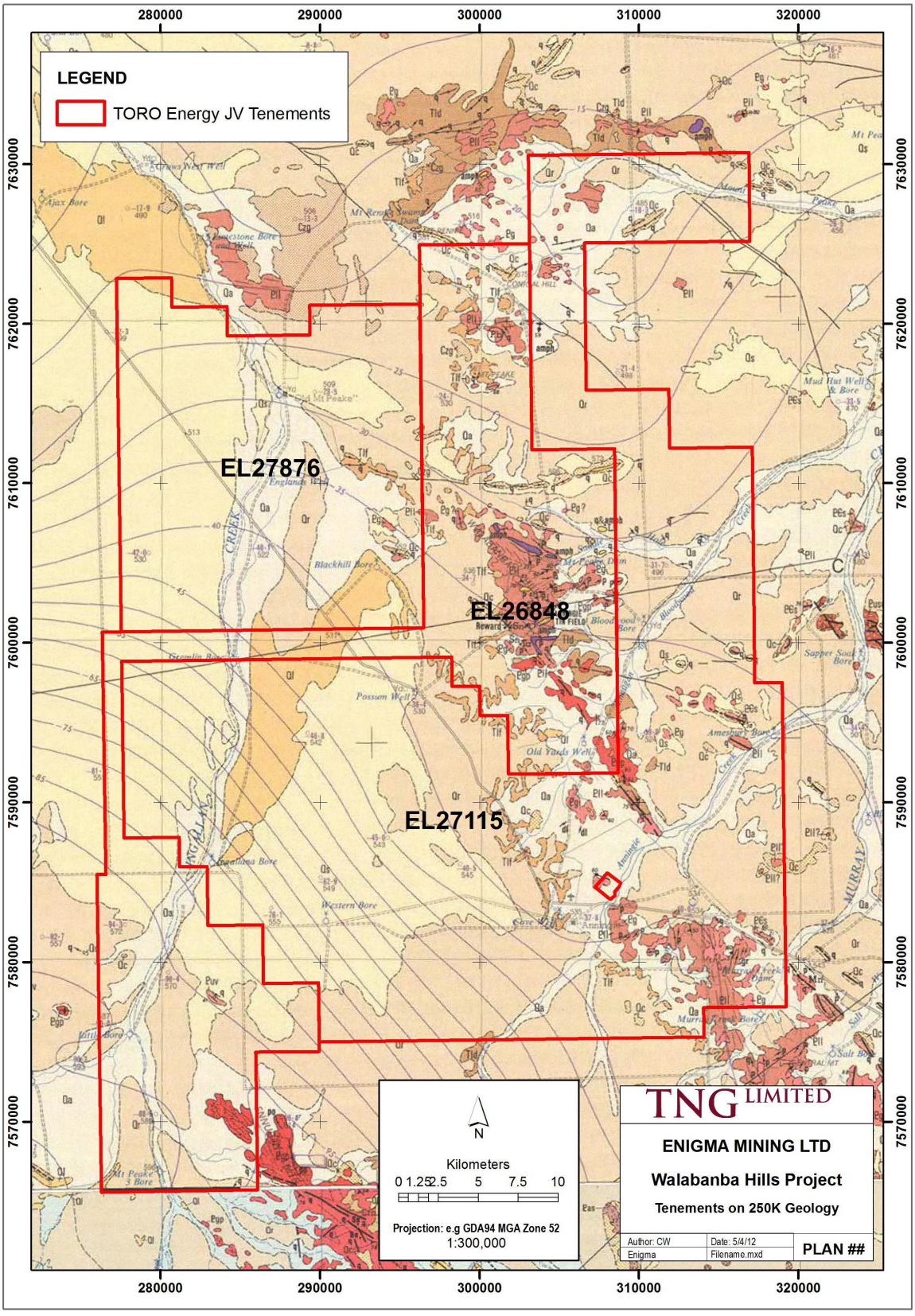

Figure 2: Walabanba Hills tenements on 250K geology.

5. PREVIOUS EXPLORATION

Numerous companies have been exploring in the region over the past 40 years in search of uranium, gold, base metals and diamonds. Within the tenement boundaries most drilling has been carried out in search of gold. Holes tend to be shallow (<10m). Uranium has been extensively explored for in the area but exploration has been restricted to water bore sampling, hard rock and limited near surface calcrete styles of uranium within or proximal to outcropping terrains.

Highlights of the exploration prior to Toro Energy include aeromagnetic surveys over the region, conducted by Anglo American Corporation (Anglo), and focused on magnetic and Electro-Magnetic (EM) anomalies. These surveys identified numerous targets anomalous in nickel, copper and platinum group elements, suggesting the presence of sulphide bearing intrusive rocks. Historical soil sampling and drilling conducted by WMC, Aberfoyle and Anglo American returned highly anomalous nickel and copper results up to 3,581ppm nickel and 2,410ppm copper in shallow drilling over lengths of 20 to 50m above significant but unexplained magnetic anomalies, however these results were never followed up.

Following a desktop review of previous exploration by Toro and their consultant geophysicist an area was set aside for an airborne electromagnetic survey with the aim of identifying conductors within covered basement and palaeochannels. A TEMPEST AEM survey was carried out by Fugro Airborne Surveys Pty Ltd during August 2009 and several targets identified.

During 2010 and 2011 Toro drilled 16 aircore holes totalling 2440m (2 holes for 357m in November 2010 and 14 holes for 2083m in October 2011) within EL 26848 and EL 27115. Samples were assayed for As, Ce, Cu, Mo, Ni, Pb, Se, Th, U and W by ICP-MS at ALS laboratories. No spectacular results were received as part of the programme and Toro decided to pursue JV opportunities over the licence area.

6. TNG EXPLORATION AND ACTIVITIES 2012-2013

6.1 HELITEM Survey

In August 2012 a HELITEM survey was flown by Fugro Airborne Surveys Pty Ltd (Fugro) over several targets within the Walabanba project area and adjoining Mount Peake project area. Five block areas and four individual transects were flown over the Walabanba project licences (Figure 3) for a total of 792 line km at 500 m (Block 1) and 200m (Blocks 2-5 and transects) line spacing.

The survey covered small magnetic anomalies identified by hisotircal EM surveys and anomalous regions identified by historical GEOTEM which is considered substandard compared to modern HELITEM techniques. The full logistics report from Fugro is included as Appendix 1. Geophysical data is included in Appendix 2.

The data was interpreted and 20 target areas (Table 2) identified by Ben Jones from Precision Geophysics. These target areas are discussed below.

Table 2: Location of HELITEM target centres.

Anomaly Number	Easting (GDA94-53)	Northing (GDA94-53)
T1a	300500	7617600
T1b	299500	7619150
T1c	301580	7621675
T1d	309050	7628200
T1j	314325	7581675
T1k	312925	7578425
T1l	312925	7577375
T1m	304925	7585800
T2a	293800	7588300
T2b	297600	7589800
T2c	301000	7588725
T2d	293600	7580125
T3a	286600	7603775
T4a	298200	7607250
T4b	299600	7605625
T4c	299600	7605050
T4d	297600	7604850
T5a	303800	7594575
T5b	304600	7595375
T5c	304000	7595750

6.1.1 Block 1 and Individual Transects

A summary compilation of Block 1 is shown in Figure 4. Three late-time anomalies were identified from the HELITEM data (T1a, T1b and T1c). Each one is associated with a discrete magnetic anomaly, however none are considered high priority as the area has previously been covered by ground EM and no significant anomlaies were detected. Ther is though some polarisation issues with the ground dataset, limiting the effectiveness of the survey. As a results each anomaly required field inspection, in particular T1c which is coincident with a historical lead occurrence.

Target Td1 was identified from a series of short lines flown over historical GEOTEM anomaly G1. It is a mid-late time anomaly with no obvious magnetic signature. A small fixed loop EM survey is recommended to assess the target at depth.

Targets T1j, T1k, T1l and T1m were all identified from a series of short lines flown over discete magnetic anomalies in the southern part of the project area. None are highly rated. T1j is consistent with a track/fenceline and can be discounted. Others are weak early-mid time features either consistent with, or adjacent to magnetic anomalies and field inspection is recommended.

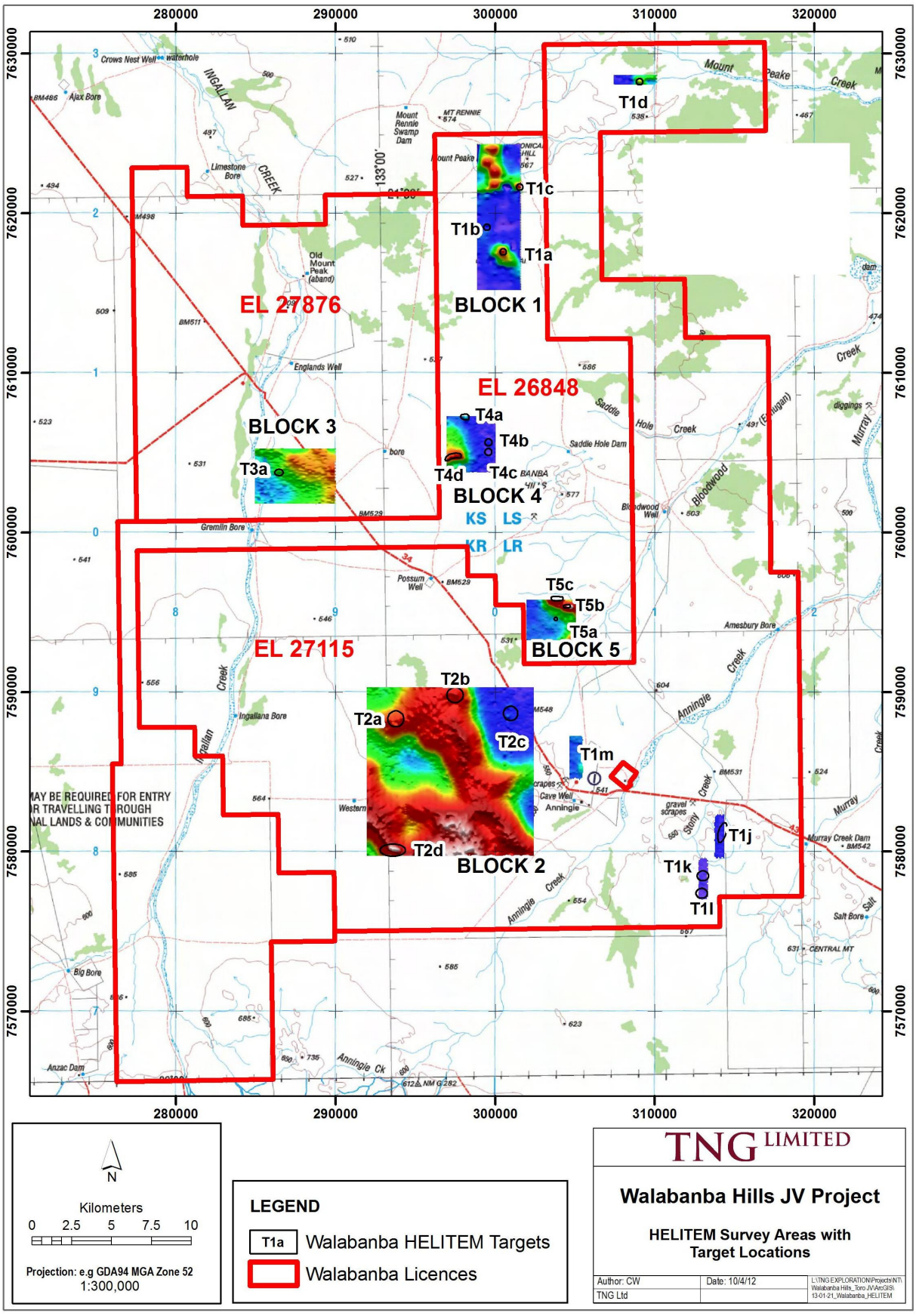

Figure 3: Location of HELITEM survey blocks and transects and interpreted target areas.

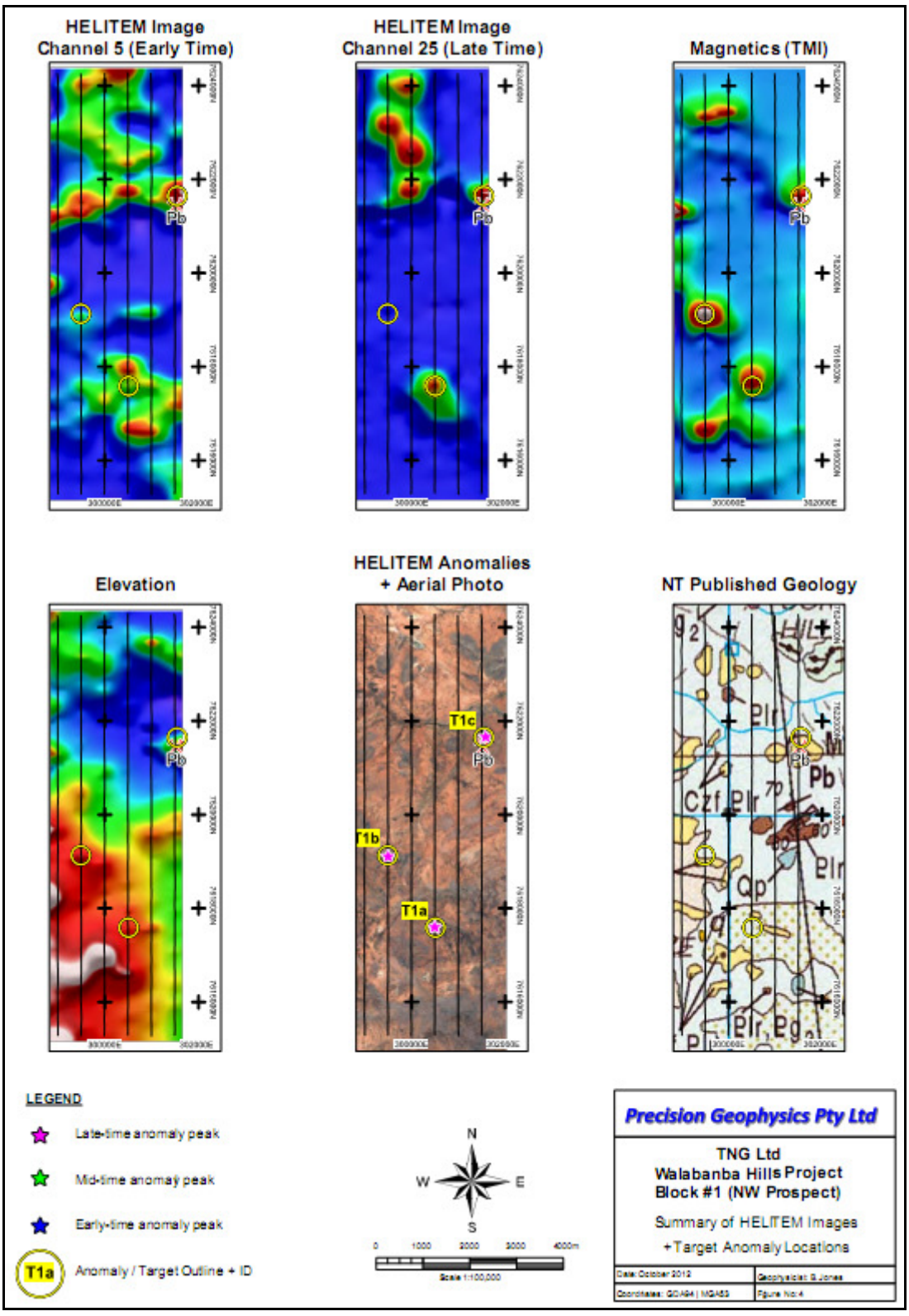

Figure 4: Summary of data from Block 1.

6.1.2 Block 2

This block was the largest part of the HELITEM survey accounting for nearly two-thirds of the ~800 line kilometres. It covered the main magnetic complex in the south-western part of the project area. Although the transported cover is known to be relatively thick previous models of the aeromagnetic data suggested that the depth to fresh rock was in the order of 150-200m.

A summary compilation of Block 2 data is presented in Figure 5. The data is dominated by palaeodrainage type trends in the late time channels, potentially masking the responses due to significant conductors. Although this has somewhat reduced the effectiveness of the survey, most of the HELITEM data has decayed into background/instrumental noise levels and is therefore measuring the response from the base of transported cover. Four late-time targets have been identified from the data which could be related to conductors associated with nickel/copper mineralisation.

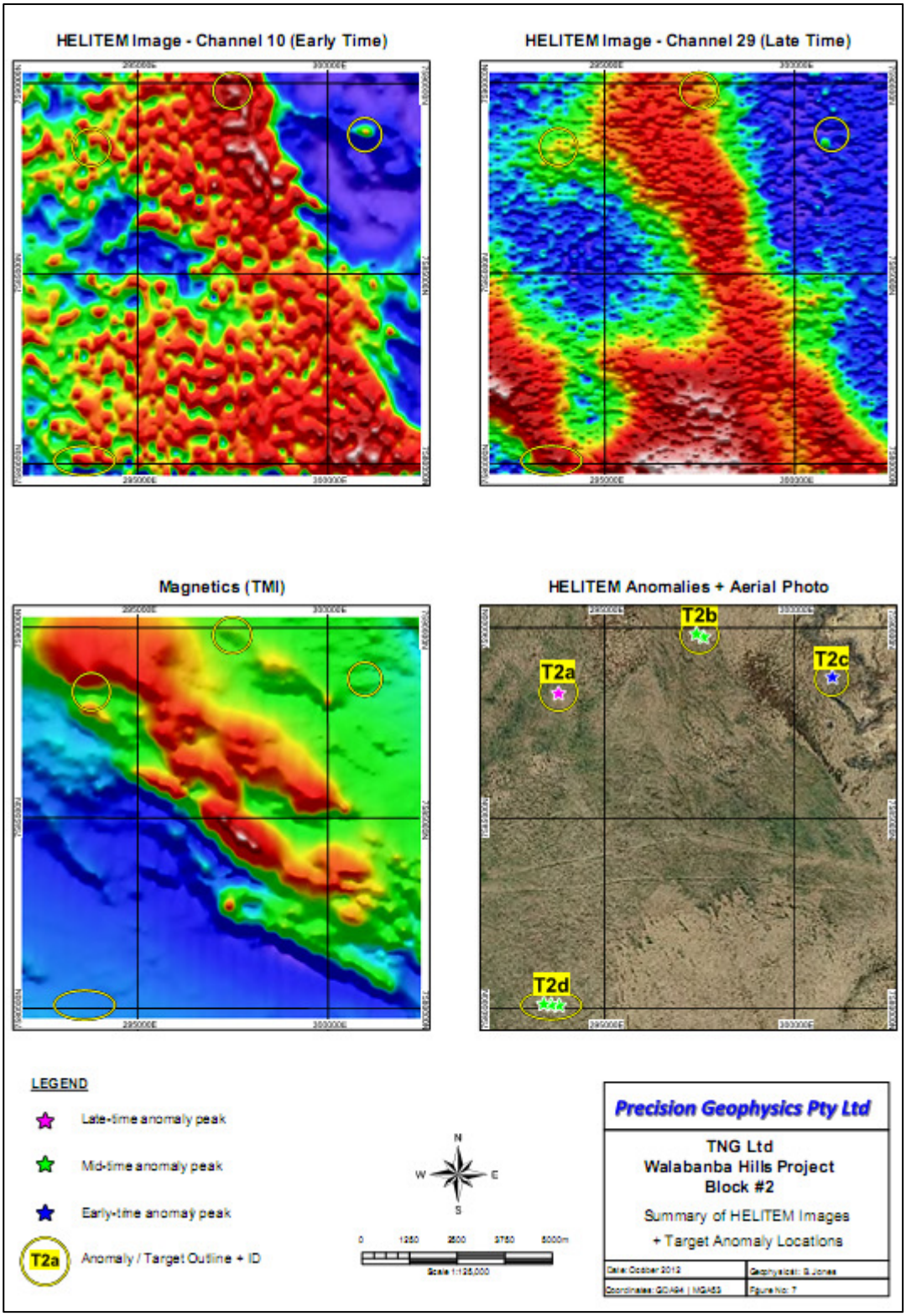

Figure 5: Summary of data from Block 2.

Target T2a is a deep conductor in the north-western corner of the survey block, detached from the main palaeodrainage trend. The resolution of the data is insufficient to be confident a genuine target is present, but it is consistent with a broad magnetic anomaly and it is recommended that a ground EM survey be undertaken to improve the resolution of the data.

Target T2b is a relatively discrete mid-late time anomaly coincident with a weakly magnetic unit. Ground EM follow-up is recommended to resolve the target or drilling with a series of shallow holes may be a better option of the cover sequence is considered relatively thin.

Target T2c is an early-mid time, relatively discrete anomaly, but part of an E-W striking trend. It represents a weakly conductive source so is unlikely to be associated with massive sulphide mineralisation, but a disseminated sulphide system should not be discounted.

Target T2d is a reltively discrete 'hot-spot' within a broader trend. It is located in the south-western corner of the survey block. Field inspection and geochemical surveys are recommended.

6.1.3 Block 3

This survey block was designed to cover two small, distince bullseye anomalies within an unusual cluster of weaker magnetic anomalies. The HELITEM data are summarised in Figure 6. A single target has been identified from the data.

Target T3a is a discrete (400-500m strike length), mid-time anomaly coincident with the western magnetic bullseye. Nothing was detected on the eastern mmagnetic anomaly which looks very similar in terms of size and strength/amplitude. The HELITEM anomaly appears to be relatively shallow and it is recommended for field/geochemical checking and potentially a shallow drillhole to test the coincident EM/magnetic target.

6.1.4 Block 4

This survey block was designed to cover a broad (~2km extent) and moderately strong magnetic zone. The results are summarised in Figure 7. Four main targets were identified from the data.

Target T4a is a late-time anomaly forming beyond the northern limit of the survey. It appears to be a relatively strong conductor but the data is not sufficient to make a full assessment. A ground EM program is recommended over this target.

Target T4b is a sublte, mid-time anomaly adjacent to the main magnetic anomaly. Field inspection is recommended,

Target T4c is a discrete, early time anomaly with no magetic signature. Field inspection is recommended.

Target T4d is a broad zone of mid-time anomalies, trending in an E-W direction. The anomaly is possibly part of a paleodrainage-type trend, rather than a bedrock conductor but field inspection is warranted.

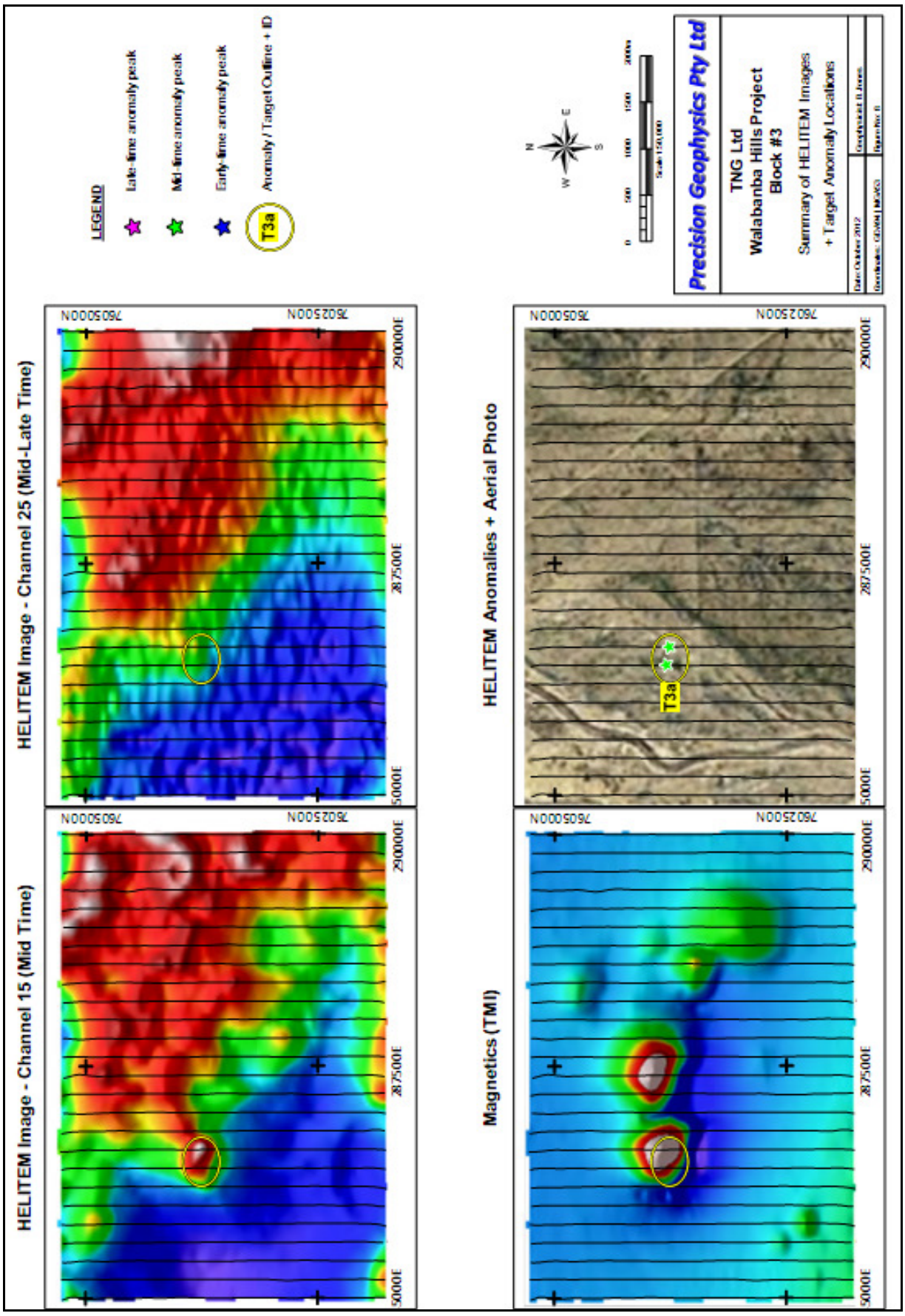

Figure 6: Summary of data from Block 3.

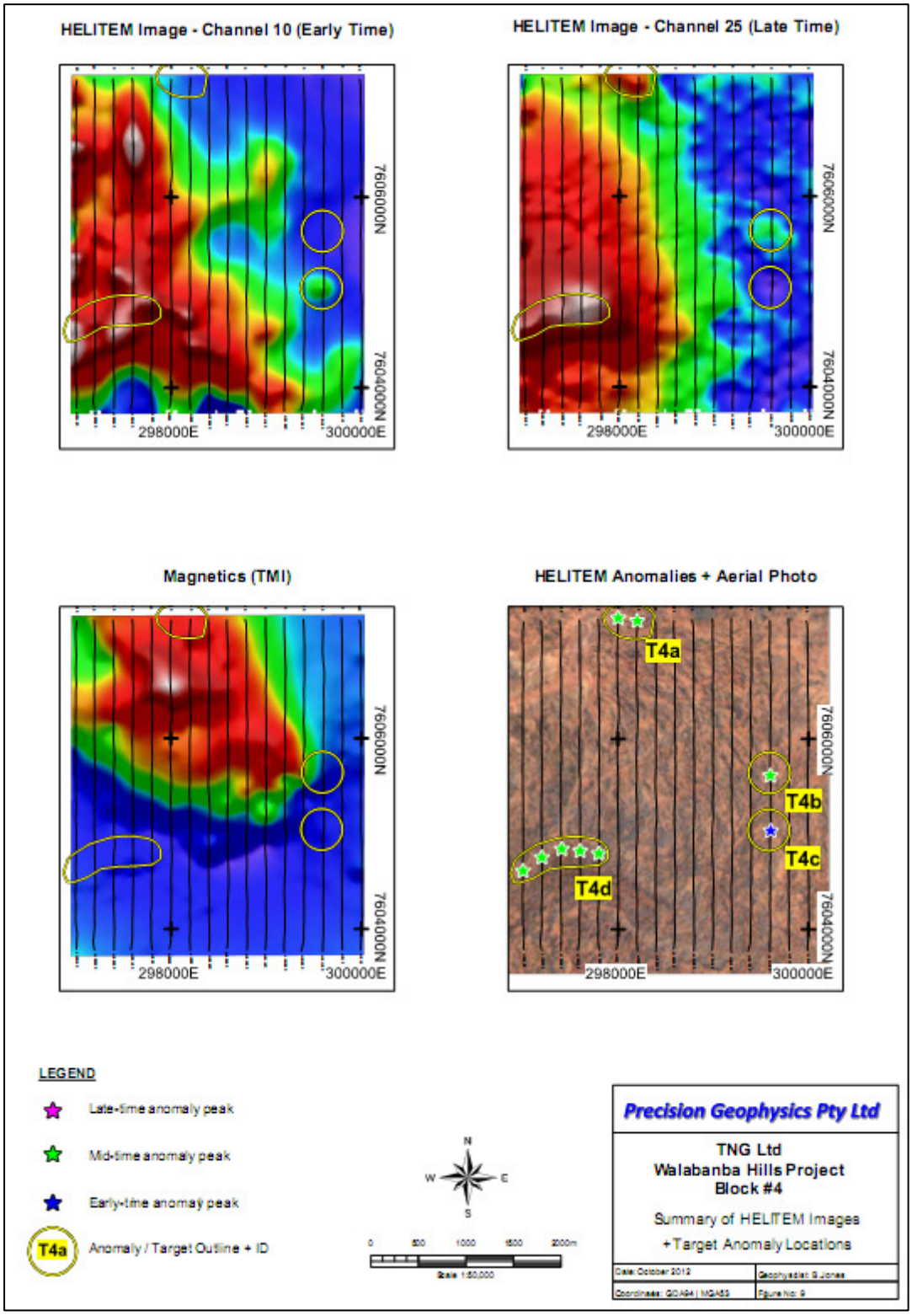

Figure 7: Summary of data from Block 4.

6.1.5 Block 5

This survey block was designed to cover a discrete and moderately strong magnetic bullseye anomaly. The results of the HELITEM are included in Figure 8. Three targets have been identified.

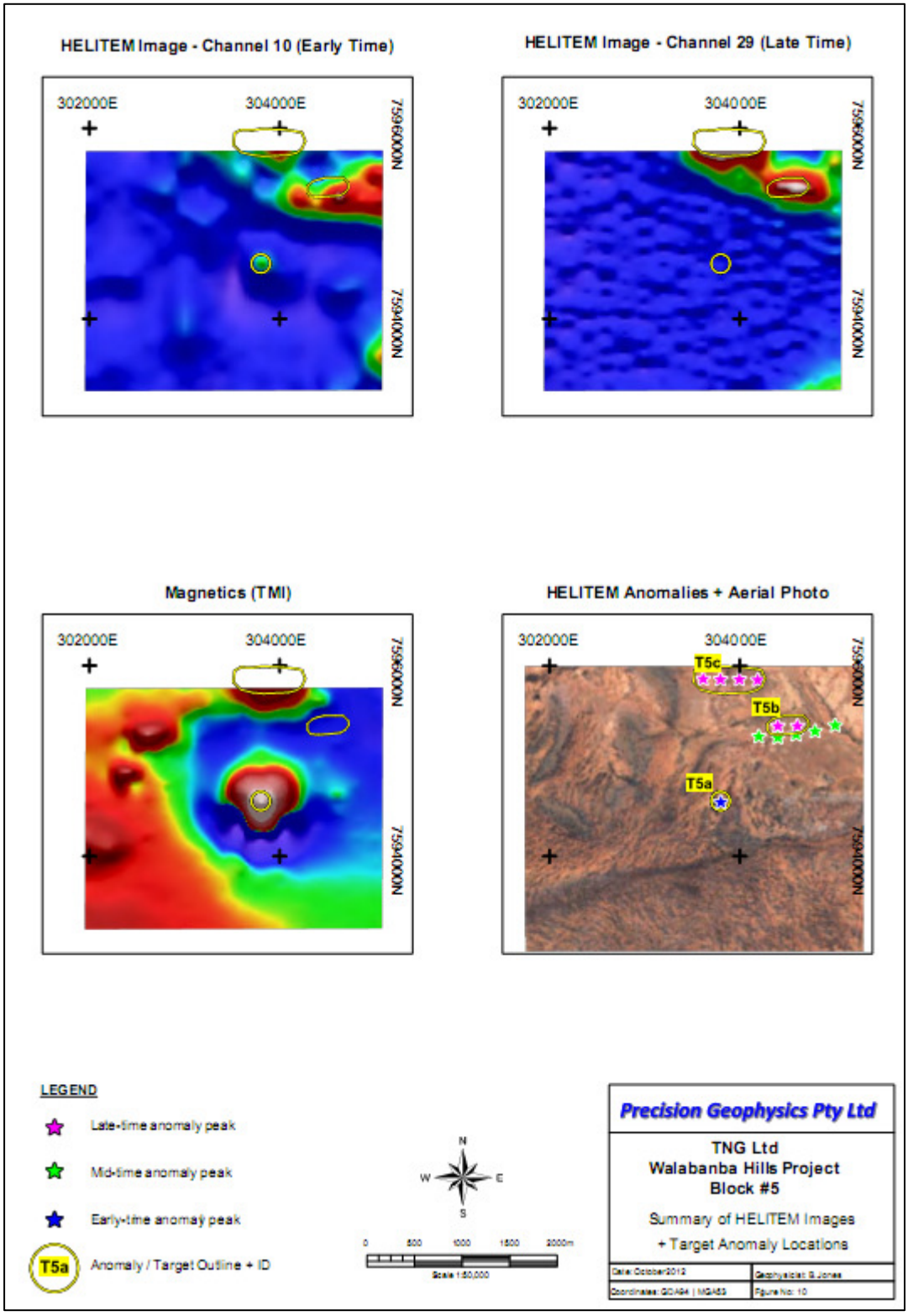

Figure 8: Summary of data from Block 5.

Target T5a is a weak, early-mid time anomaly coincident with the targeted magnetic bullseye. It represents a weakly conductive body, probably caused by disseminated sulphides within the magnetic unit. The anomaly does warrant field inspection.

Target T5b is a late-time anomaly adjacent to a moderately conductive E-W trend. Follow-up ground EM is recommended as the resolution of the HELITEM data is quite poor at this depth.

Target T5c is another late-time anomaly and appears to be associated with a magnetic anomaly. It is forming beyond the northern limit of the survey and cannot be fully assessed. Ground EM is recommended.

The HELITEM surveys over the Walabanba project area have been effective and provided an excellent exploration dataset of a relatively large area. No stand-out targets have been identified but ground EM and field inspection/geochemical surveys are recommended for several target areas.

6.2 Field Assessment of EM Targets

The 2012 field program was focused on ground investigation of the HELITEM targets. Field assessment began with the highest ranked targets taking into account the ranking and nature of each anomaly - the strength/ depth of the conductor and co-incidence with magnetic highs, as well as the location and available access. Where targets were in close proximity ground checks were undertaken on adjacent targets. Fourteen of the twenty targets were visited during the field program with geochemical sampling undertaken by portable NITON XRF (Appendix 3), and mapping of outcrop where possible. Seven samples were sent for multielement analysis (Table 3; Figure 9; Appendix 3). The targets assessed include:

- Block 1 (and transects) - T1a, T1c and T1m,
- Block 2 - T2a–c,
- Block 3 - T3a,
- Block 4 - T4a-d, and
- Block 5 - T5a-c.

Table 3: Description of lateritic samples taken for laboratory analysis.

SAMPLE	Easting GDA94	Northing GDA94	LOCATION	SAMPLE DESCRIPTION
WB10001	303763	7595491	EM Target T5c, 200m south of target centre	Lateritic duricrust, in-situ pisolites (& cutans) and hem/geoth rock fragments
WB10002	303909	7594414	EM Target T5a, 200m east of target centre	Lateritic duricrust, in-situ pisolites (& cutans) and hem/geoth rock fragments
WB10003	301525	7621675	EM Target T1c, all from centre of the target centre and from hill of duricrust outcrop.	Lateritic duricrust, in-situ pisolites (& cutans) and hem/geoth rock fragments
WB10004	301579	7621675	EM Target T1c, all from centre of the target centre and from hill of duricrust outcrop.	Lateritic duricrust, in-situ pisolites (& cutans) and hem/geoth rock fragments
WB10005	301626	7621665	EM Target T1c, all from centre of the target centre and from hill of duricrust outcrop..	Lateritic duricrust, in-situ pisolites (&cutans) and hem/geoth rock fragments
WB10006	301236	7617549	EM Target T1a, 260m west and 50m south of target centre point	Lateritic duricrust, in-situ pisolites (& cutans) and hem/geoth rock fragments
WB10007	297800	7607250	EM Target T4a, 400m west of target centre	Lateritic duricrust, in-situ pisolites (& cutans) and hem/geoth rock fragments

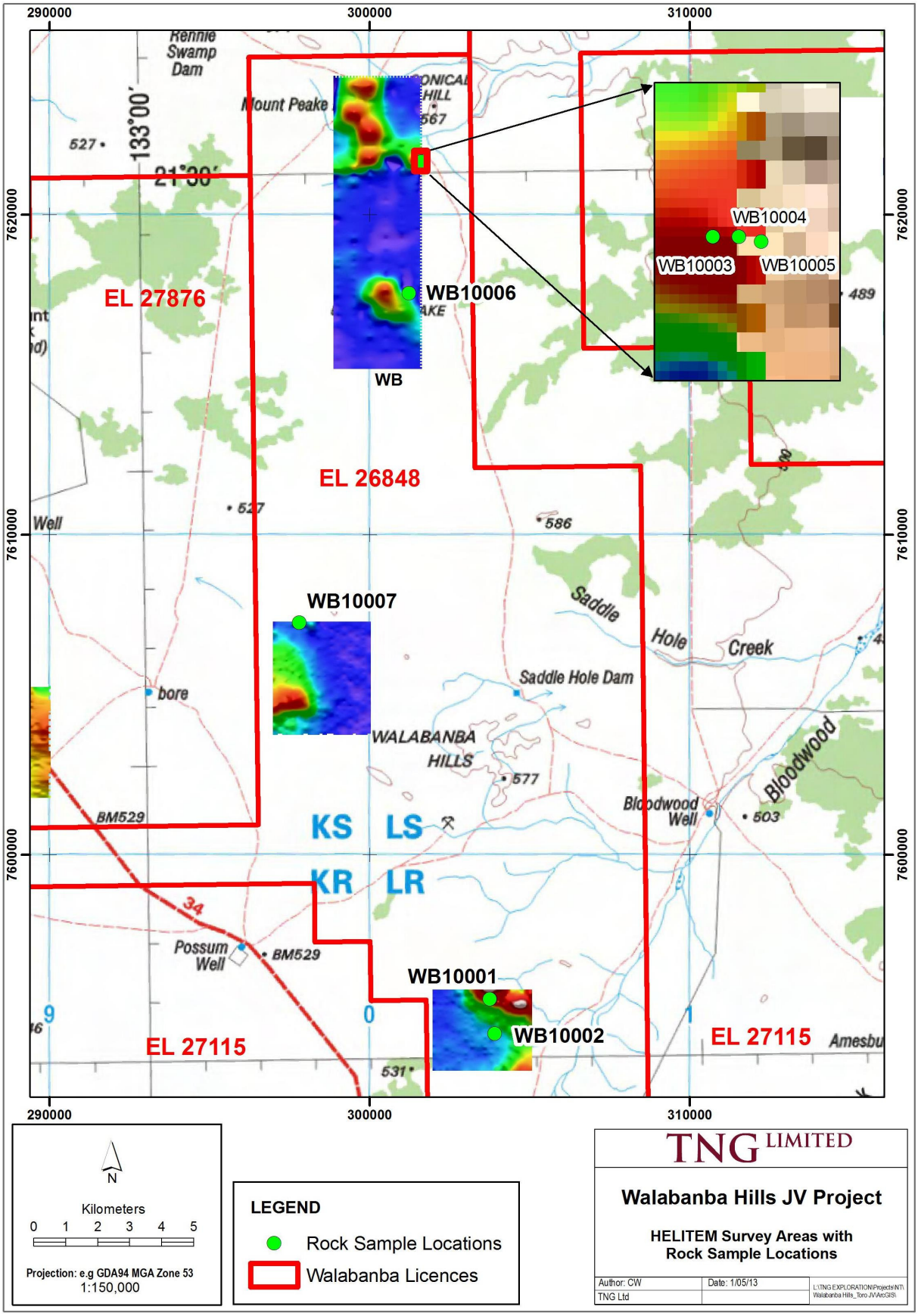

Figure 9: Location of lateritic samples sent for multielement analysis.

6.2.1 Block 1

Target T1a is a mid-late time anomaly also associated with a discrete magnetic anomaly. It has been covered in the ground EM work conducted by Anglo. Site inspection found no outcrop in the immediate vicinity so no geochemical data was collected from the transported cover. A lateritic duricrust rock sample (WB10006) was taken approximately 260m west, 50m south of the target and submitted for multi-element analysis.

Target T1c is a single line, mid-late time anomaly coincident with a discrete magnetic bulls-eye. Ground EM, conducted by Anglo, found no significant anomalies but the target is in close proximity to an historic lead occurrence and a topographical high. Target 1c lies on the north east of a shallow dipping (2-3%) laterite duricrust surface with a distinct erosion scarp and associated breakaway approximately 200m to the south of the target centre. To the north is a vegetated sheetwash plain however the target is located in residual pisolitic lag material, often with cutans. Site investigation showed no evidence of the historical lead occurrence near in the anomaly. Three samples of residual pisolitic lag (WB10003, WB10004 and WB10005) were collected for laboratory analysis.

The single point Target 1m lies on a sheetwash plain with fuchsia/mulga vegetation and minor grey flannel/bluebush. It is all transported material, eliminating surface geochemical sampling, no outcrop for the 400m walked to site. This is a weak, small anomaly it is proposed the site be followed up with ground EM, but a low priority, it may require no further investigation.

6.2.2 Block 2

Ground inspection of Targets 2b and 2c eliminated the use of surface geochemical sampling due to transported cover. Target 2b lies approximately 3km WSW of the main access road and is a vegetated sandy sheetwash/aeolian plain with low bush scrub as well as taller trees that may suggest cover is slightly thicker than that at Block 5, being anything from 1m deep. Target 2c is a few hundred metres south of the main access road and a cattle yard; there is not a cultural explanation for the conductor. The anomaly is located on a flat spinifex plain with tall shrubs (broom and melaluca), it is made up of transported sheetwash/Aeolian cover.

There is no geology or geochemistry to support either of the anomalous geophysics. Target 2c is not coincident with a magnetic conductor and would need further ground geophysics to support drilling. Target 2b, coincident with a weak magnetic anomaly may warrant shallow drilling, but also ground EM to better model a drill target.

6.2.3 Block 3

Target 3a lies on a spinifex sand plain, re-vegetated after being burnt out approximately 1 year ago. It is a transported aeolian plain with no outcrop and perhaps up to 1km to the nearest outcrop or hill. Cover may reach up to 20m deep but hard to quantify. Due to transported cover geochemical sampling would be ineffective therefore no geochemical or geological support for the anomaly. It is recommended, as coincident with good magnetic anomaly, ground EM follow-up is conducted.

6.2.4 Block 4

Target 4a lies in clayey soil sheetwash within moderately closed mulga scrublands draining to the south/southwest. The area surrounding the anomaly was unsuitable for geochemical sampling. To the west the scrub opens out into a sandy plain with low scattered scrubs and abundant quartz lag. Approximately 200m to the west of the anomaly outcrop of lateritic duricrust pavement and associated pisoliths, displaying cutans was observed. One grab sample, WB10007 was taken from in-situ lateritic duricrust ~400m to the west of the anomaly.

Outcrop was also observed approximately 40m further west, in a shallow gully (1m deep by 10-15m wide). Fine, metasandstone-siltstone composed of kaolin-hematite/iron oxide and quartz outcropped over a 5m x 2m area, dipping 70° to the north and striking at 120°.

Approximately 500m to the northeast of Target 4a a quartzite ridge forms the only hill within >2km, the ridge strikes at 170° dipping at 60-70° to the west. The quartzite is observed in outcrop over a width of approximately 20m and reaches 15-20m above the plain. No geochemical samples were taken as the outcrop appears to be pure quartzite.

Approximately 250m to the east of the anomaly the mulga scrub opens out again into open plain with shallow residual soil and sub-cropping granite of various composition. Some coarse, sheared muscovite granite outcropped at 299692E, 7607284N, The fine grained granite displayed alignment of micas striking at 110° dipping at 70° to the south, this was in close proximity to dark, fine grained diorite. Although multiple outcrops were observed around Target 4a none offer a geological or geochemical source for the conductor. It is recommended the target is followed up with a ground based EM survey and possible drilling however due to the lack of a magnetic signature it is relatively low priority.

Both Targets 4b and 4c were accessible from a partially overgrown ENE-WSW running fence line. No outcrop was observed at either target or in the area surrounding them. They lie within moderately thick vegetation on a mulga sheetwash plain of hard packed sandy soil with very little lag. Vegetation banding is visible in the air photo with the area draining WNW to W. No indication of depth of transported cover was observed but it is interpreted to be less than 20m. Due to transported cover no geochemical sampling was performed. It is recommended for ground EM follow up to define a drill target however as with Target 4a the lack of a coincident magnetic signature lowers the priority.

Target 4d lies within thicker mulga scrub and a site visit just to the east of the anomaly (at 297981E, 7605082N) observed thick forest on sandy and clayey silt soil. Banded thickets of vegetation, interpreted from the air photo, indicate sheet flow on a sheetwash plain with alluvial areas and some defined channels. As interpreted by the geophysicist, the conductor is believed to be drainage related.

6.2.5 Block 5

Block 5 was designed to cover a discrete and moderately strong magnetic bulls-eye anomaly.

Geochemical sampling was performed with a handheld portable XRF gun and was conducted at sites 5c and 5a and on outcrop between 5b and 5c. A total of fourteen XRF soil/gravel/rock readings were taken of transported material and along the lateritic duricrust found near Targets 5c and 5a. Two rock chip samples of in-situ lateritic duricrust and pisolites were collected, 200m south of the target centre at T5c (WB10001) and 200m east of the target centre at T5a (WB10002).

Ground inspection immediately over anomaly 5a identified no outcrop or sub-crop to explain the source of the anomaly. The anomaly is located on an open sheetwash plain with a transported pisolith surface. Approximately 100m to the south there is anomalous thick vegetation with tall trees, there does not appear to be any indication for this. 200m to the east of the anomaly is a dome-shaped lateritic duricrust hill. The topography suggests it may dip away to the west, under the sheetwash plain at Target 5a, shallow drilling would therefore be able to sample the underlying lateritic duricrust.

Target 5b was located on a flat sheetwash plain with intermittent transported pisolith gravel. There is no outcrop within the 100m x 200m EM Target area. It is expected to be thin transported cover based on granite outcrop approximately 200m to the northwest.

Target 5c, to the northwest of 5b, is centered upon a large flat with hard, Aeolian/sheetwash transported sandy soil cover, draining to the NE. The plain has <2m of topography within 400m, the nearest visible hill 1km to the NNE. Vegetation consists of low fuchsia/poverty bushes and grass. The transported cover is most like to be thin (<10m but as probably very thin – 0.5-1m) as granite outcrop is found approximately 500m away.

Approximately 100m to the north and 200m to the south of the anomaly are small rises. Both are lateritic duricrust regolith units, and strongly ferruginous with hematite/goethite pisoliths, many with visible cutans, showing they are in-situ. pXRF sampling was conducted along the northern rise. The highest copper was 94.9ppm with the only other notable result, taken on the northern rise, of 737ppm Cr and 3636ppm Sb. The southern rise is wedge shaped with an erosional surface at the northern edge, nearest the anomaly, and gently sloping to the southwest, this may indicate it continuing with the slope direction, underneath the cover, and also that some sort of duricrust may have eroded from the area overlying the anomaly.

The only outcrop in the area was a muscovite granite observed in a creek at approximately 304413mE, 7595484mN. Much of the feldspar within the granite had been weathered to kaolinite clays with some outcrop more ferruginous, possible as a result of scavenging hematite from surrounding iron rich environments. Several pXRF samples were taken on it and it showed some anomalous copper values, reaching 705.9ppm copper. Other significant values include Pb at 211ppm, Sn at 320.8ppm and Sb 410.7ppm.

6.3 Multi-element analysis of Pisolite Samples

Ground reconnaissance was undertaken to map the regolith over the conductor targets identified from the recent HELITEM, in order to provide some geological or geochemical support for the geophysics. In most cases the surface regolith was transported and so no direct support was provided by the geology. Geochemical sampling was undertaken on the nearest residual/erosional regolith units to the conductors position as described above.

6.3.1 Sampling and Analysis

Seven samples were submitted to ALS for multi-element ICP and Fire Assay analysis from reconnaissance work on the Walabanba Hills project.

Samples were from the EM targets T5c (WB10001), T5a (WB10002), T1c (WB100003, 4, 5), T1a (WB10006), and T4a (WB10007). These are summarised in Table 3 with locations in Figure 9.

Sample medium was lateritic duricrust. Outcrop of fresh rock was non-existent over the EM targets visited. Most had sheetwash or aeolian sandplain surface transported regolith over the central portions of the targets. Several visited areas had residual lateritic duricrust outcrops within a few hundred metres of the conductor position and when this was the case this was sampled as duricrust provides a sample medium collecting chalcophile elements broadly from within the weathered zone.

6.3.2 Results

Anomalous results were obtained for copper, iron, vanadium and zinc.

Copper values for samples WB10003, WB10004, and WB10005 (all from EM target T1c) were strongly anomalous with values of: 741ppm, 755ppm, and 808ppm Cu returned. The three laboratory ICP samples are located on the centre of the EM conductor area. While frequently elevated in lateritic duricrust a reasonable background value on mafic

substrate would likely be below 200ppm and an anomalous threshold in this medium perhaps 250ppm Cu. As such these samples indicate a significant anomaly effectively covering the whole of the hill that exposes lateritic duricrust. The hill is all duricrust outcrop with residual pisolitic gravels on top. It is ~500m E-W, and the duricrust surface dips at a few degrees to the north. The conductor position is under the pisolith gravels on the northern low slope of the hill. The consistent grade of copper between the three samples is a result of the sample material being able to spread a broad anomaly within the duricrust.

Copper values obtained from samples WB10006 (144.5ppm Cu, EM target T1a) and WB10007 (213ppm Cu, EM target T4a) were slightly elevated and may be indicative of some modest bedrock anomalism. These areas should have more extensive sampling completed on them to determine the significance of the elevated values. The relationship between the geochemistry and the EM conductor target is also unclear in both of these samples, as the samples were taken some distance from the centre of the EM conductor. Further ground work and maybe ground EM follow-up will hopefully elucidate the relationship there.

All samples had iron values in excess of 30% Fe, with four over 50%. Iron rich duricrust is not an iron mineralisation target due to its small size potential.

Vanadium is elevated in all samples which may be a result of:

- a mafic substrate, and
- the sampling medium physically concentrating residual material that does not weather (in this case the Cr and V rich magnetite from likely mafic intrusive substrate).

Values in excess of 1000ppm V (sample WB10002 at EM target T5a) should be followed up, while samples with greater than 500ppm V are likely to map the mafic bedrock, and more particularly the magnetite bearing gabbros within intrusive rocks similar to those seen at the Mount Peake V-Ti-Fe resource to the east.

Zinc results for samples WB10005 (112ppm Zn at target T1c, and coincident with the best copper result) and WB10005 (193ppm Zn, target T4a) are weakly to moderately anomalous and should be followed up, particularly sample WB10007 as it is the only sample from this area. Both of these areas warrant further ground work to determine the significance of the zinc results.

6.3.3 Discussion

The relationship between this geochemistry and the geophysics (EM conductors from HELITEM) is unclear at this stage as only samples from T1c were from immediately above the target zones. This anomalous geochemistry does however provide some support for the geophysics and so increase the priorities of these particular areas for follow up.

Lateritic duricrust is an ideal surface sampling medium as it is a consistent sample type and the high iron content scavenges chalcophile elements, precious and base metals from over a reasonably large area and throughout the weathered profile – allowing for broad sample spacings while adequately covering large areas of ground. In the Walabanba reconnaissance work completed in October it was noted that there was a reasonable amount of laterite present in the tenement. This is a result of the bedrock having more mafic component (as the Arunta metasediments have little iron and therefore do not develop iron rich regolith units). Given the mafics (and more specifically the mafic/ultramfic intrusives) in the district are a geological target for exploration for V-Ti-Cr-PGE-Ni mineralsation a program of regolith interpretation and laterite sampling is likely to be conducted during 2013.

7. CONCLUSIONS AND RECOMMENDATIONS

Site investigation of the EM Targets identified from the HELITEM survey, for the most part, provide no geological or geochemical evidence for the conductors due to transported cover being present. The anomalies all lie below transported cover of varying thickness that has eliminated the use of ground geochemistry to identify underlying geochemical signatures. A lack of outcrop in the immediate target areas makes it impossible to identify a geological source. The geophysical targets remain valid and require either ground EM or drilling to determine the reason for the conductor source being present.

Lateritic sampling proved an effective method of sampling residual, in-situ duricrust. Cutans confirmed the sampled pisolites were in-situ and representative of the local, underlying geochemistry. A significant copper anomaly was identified at T1c (all three samples >700ppm Cu). This requires further follow-up.