OM Manganese Ltd

Title holder / operator: OM Manganese Ltd (100%)

Tenement Manager: Australian Mining & Exploration Titles Services (AMETS)

EL28662
Bootu Creek Manganese Project

Annual Technical Report – Year 2
31st October 2012 to 30th October 2013

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Target Commodity: Manganese

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Datum / zone: GDA94 MGAz53
250k mapsheet: Helen Springs SE 53-10
100k mapsheet: Brunchilly 5760

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Abstract

EL28662 surrounds the Bootu Creek Manganese Operation (located on ML24031) and replaced expired licences EL10412, EL22428, EL22940, EL25593 and EL28046.

Year 2 Exploration activity on EL28662 included a ground geophysical survey, RC drilling (15 holes for 801m), aerial photograhy and access track maintenance.

One Gradient Array IP ground geophysical survey was completed over Masai West, extending on to ML24031.

Aerial Photography for Bootu Creek Project (75%) and the surrounding EL28662 (25%), flown by Arometrex on 22nd June 2013.

File Name	File type	Content
EL28662_2013_A	pdf	This report
EL28662_201312_02_collars	txt	Tab delimitated drillhole collar data
EL28662_201312_03_assays	txt	Tab delimitated drillhole assay data
EL28662_201312_04_geol_logs	txt	Tab delimitated drillhole geology data
EL28662_201312_05_DHSurvey	txt	Tab delimitated drillhole downhole survey data
EL28662_201312_06_logging_codes	pdf	Drillhole geology logging codes
Appendix 1 – Masai West GAIP	tif, gdf	GAIP images and data
Appendix 2 – Aerometrex aerial photo survey	ecw	Aerial ortho-photo and DTM
Plate 1 – Aerometrex Photo Image	pdf	Plan of aerial ortho-photo

1 Location and Tenure

1:250,000: SE 53-10 HELEN SPRINGS
1:100,000: 5760 Brunchilly

EL28662 granted 31/10/2011 105 blocks (297.24 Ha)

The south-west corner of EL28662 is located 2km east of Stuart Highway and 120km north of Tennant Creek, predominately within the Banka Banka West Pastoral station. The north and eastern portions of the EL extends into Helen Springs Pastoral station.

EL28662 was granted for a period of four years and consolidates/replaces expired licences EL10412, EL22428, EL22940, EL25593 and EL28046. It entirely encloses the Bootu Creek Manganese Project located on ML24031 and adjacent application for ML27445.

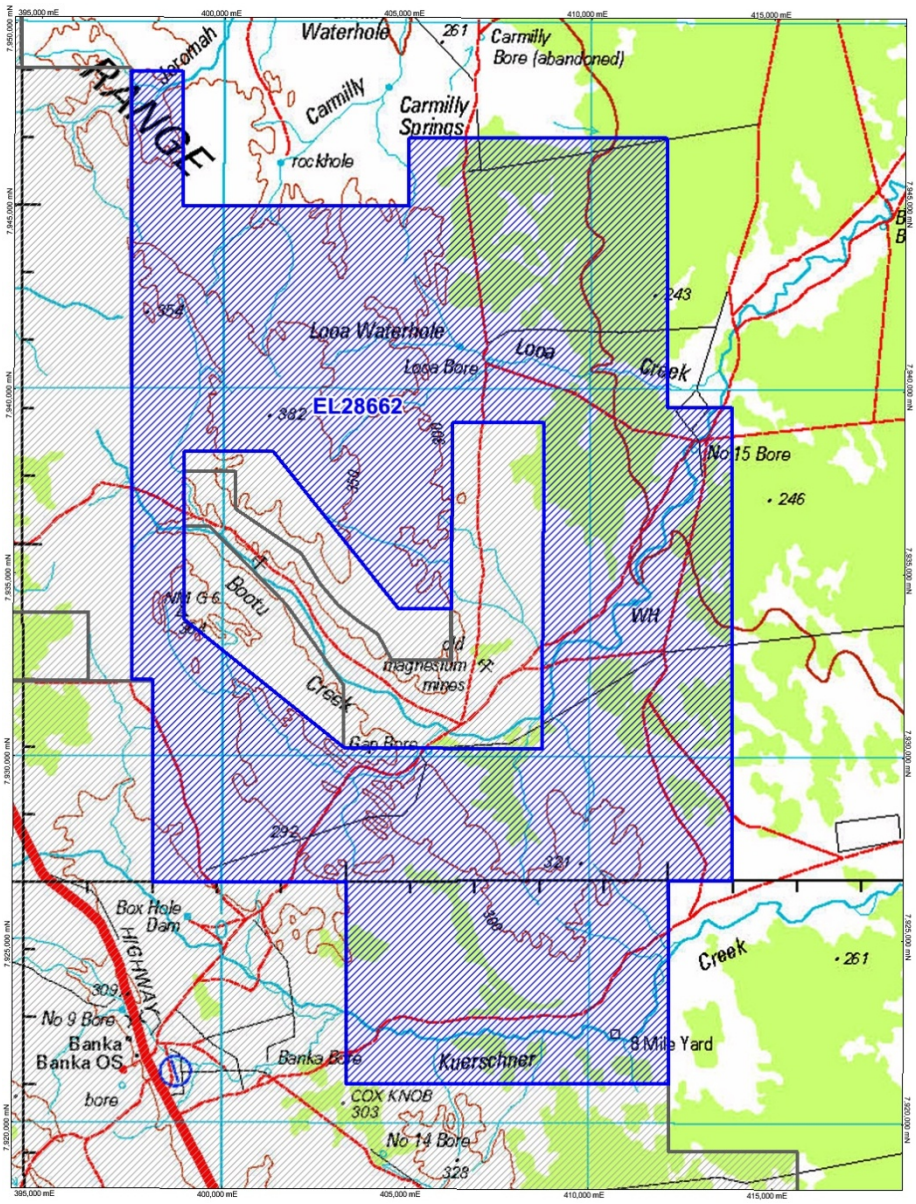

Figure 1. Plan shows location of EL28662 and adjacent OMM tenure.

2 Geology

EL28662 is located largely within the Tomkinson Creek Group in the Ashburton Province of the Tennant Creek Inlier. The favourable manganese bearing horizon is located on the contact between the dolostone and siltstone units of the Attack Creek Formation (Pta) and the overlying sandstone of the Bootu Formation (Ptb).

A number of manganese deposits occur around the eastern and western limbs of the Bootu Syncline, with current economic interest focused on deposits along the both the eastern and western limbs within ML24031. Bedding dips in this area are typically around 30°, with local variations ranging from 15° to 45°.

The principal manganese mineralisation consists of strata-bound layers contained within dolomitic siltstone and medium grained sandstone. There is a marked increase in manganese grade towards the base of the layers. True thickness of the layers is typically 5-8m, but varies from 2m up to 15m.

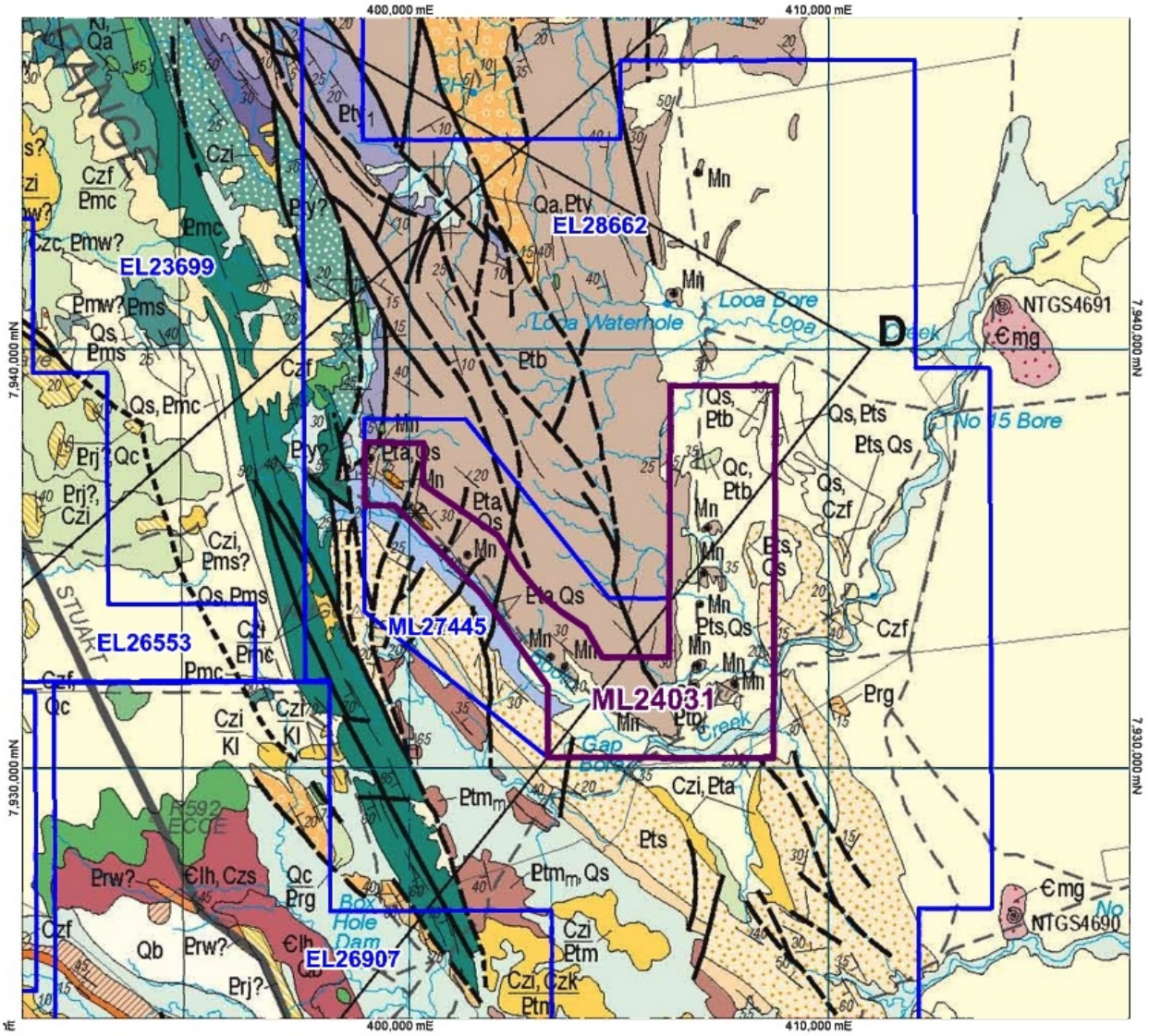

Figure 2. Geology map of EL28662 showing various members of the Tomkinson Creek Group. Geological data is taken from the published Helen Springs 1:250,000 geology map sheet (*Hussey et al, 2001*)

The immediate footwall is formed by altered siltstone and dolomite. The immediate hanging-wall consists of a variable sequence of siltstones and sandstones, usually with hematite and minor manganese mineralisation. The sedimentary sequence generally coarsens upwards.

The mineralised horizon and hanging wall rocks are typically strongly weathered while the dolomitic units which comprise the footwall below the footwall siltstone become fresh within only 5-10 metres of the mineralisation.

A significant portion of EL28662 hosts an elevated platform composed of Bootu Formation sandstone in the northwest quadrant, while the south west comprises rocks of the ridge-forming Short Range Formation and recessive Morphett Creek Formation.

The western side of the licence area extends into a sliver of the younger, overlying Namerinni Formation consisting of sandstone, siltstone and dolomite.
Large areas of the eastern side of the licence are covered by recent aeolian deposits and alluvial deposits derived from the Bootu Creek Formation.

3 Previous Exploration Activity

3.1 Exploration Activity 2001-2004

Work carried out on EL10412 and EL22428 by Bootu Creek Resources Pty Ltd prior to the excision of ML24031 (Sept 2004) comprised -

- Re-evaluation of existing geology, drilling and geophysical data
- Progress of heritage surveys, mining and land access agreements
- Open-hole and RC percussion, and diamond drill programs
- Gravity survey
- Aerial photography and digital terrain modelling
- Hydrological investigations
- Metallurgical test work
- Mineral Resource and Ore Reserve estimation
- Geotechnical and mining studies
- Environmental and logistical studies, culminating in the
- Bootu Creek Manganese Project feasibility study (reported October 2004).

3.2 Exploration Activity 2004-2011

Work carried out on EL10412 and EL22428 by Bootu Creek Resources Pty Ltd and later by OM (Manganese) Ltd for the above period comprised -

- A helicopter borne Hoist-EM survey
- Acquisition and interpretation of Aster multi-spectral data
- Satellite imagery
- RC exploration drill programs
- Combined aeromagnetic/radiometric airborne survey and data processing
- Aerial photography
- Gradient Array IP geophysical ground survey (part Masai NW survey)

For more detail, refer to the EL10412, Bootu Creek Manganese Project - Final Technical Report (Sept 2011).

3.3 Exploration Activity 2011-2012 (Year 1)

Exploration activity undertaken in 2011/2012 reporting period comprised –

- 2 x Gradient Array IP
- 8 RC drill holes (382m)
- Satellite imagery (Worldview-2)
- Access track maintenance

4 2012/2013 Exploration Activity

Exploration activity undertaken in 2011/2012 reporting period include –

- 1 x Gradient Array IP geophysical ground survey
- 15 RC drill holes (801m)
- Aerial Photography and DTM (Aerometrex)
- Access track maintenance

4.1 Ground Geophysics

GPX Surveys Pty Ltd completed one Gradient Array IP (GAIP) survey on EL28662 (and partly on ML24031) during the reporting period, for a combined total of 2.525 line km.

The 2013 surveys were conducted by contractors GPX Surveys Pty Ltd using the following specifications,

Configuration:	Gradient Array
Line Spacing:	50m
Line Direction:	east-west
A space:	25 m
Transmitter:	GDD
Tx current:	variable
Tx frequency:	0.125 Hz
Receiver:	GDD 16
Rx readings:	Minimum 2/stations
Field data:	GDD format files
Processed Data:	AMIRA format

4.1.1 Masai West GAIP survey

This 2013 survey is a 400m westward extension of the 2011 Masai NW - Gradient Array IP survey. A total of 1.275 line km were located on EL28662 and the remaining 1.25 lines km on ML24031.

The close spaced (50m) east west lines were designed to test (and confirmed) a tight fold structure with a NNW axis passing just to the east of the recent survey extent. Manganese mineralisation has been confirmed, at the centre of the chargeability anomaly located on line 7937300N at 399025E, in previous RC drilling.

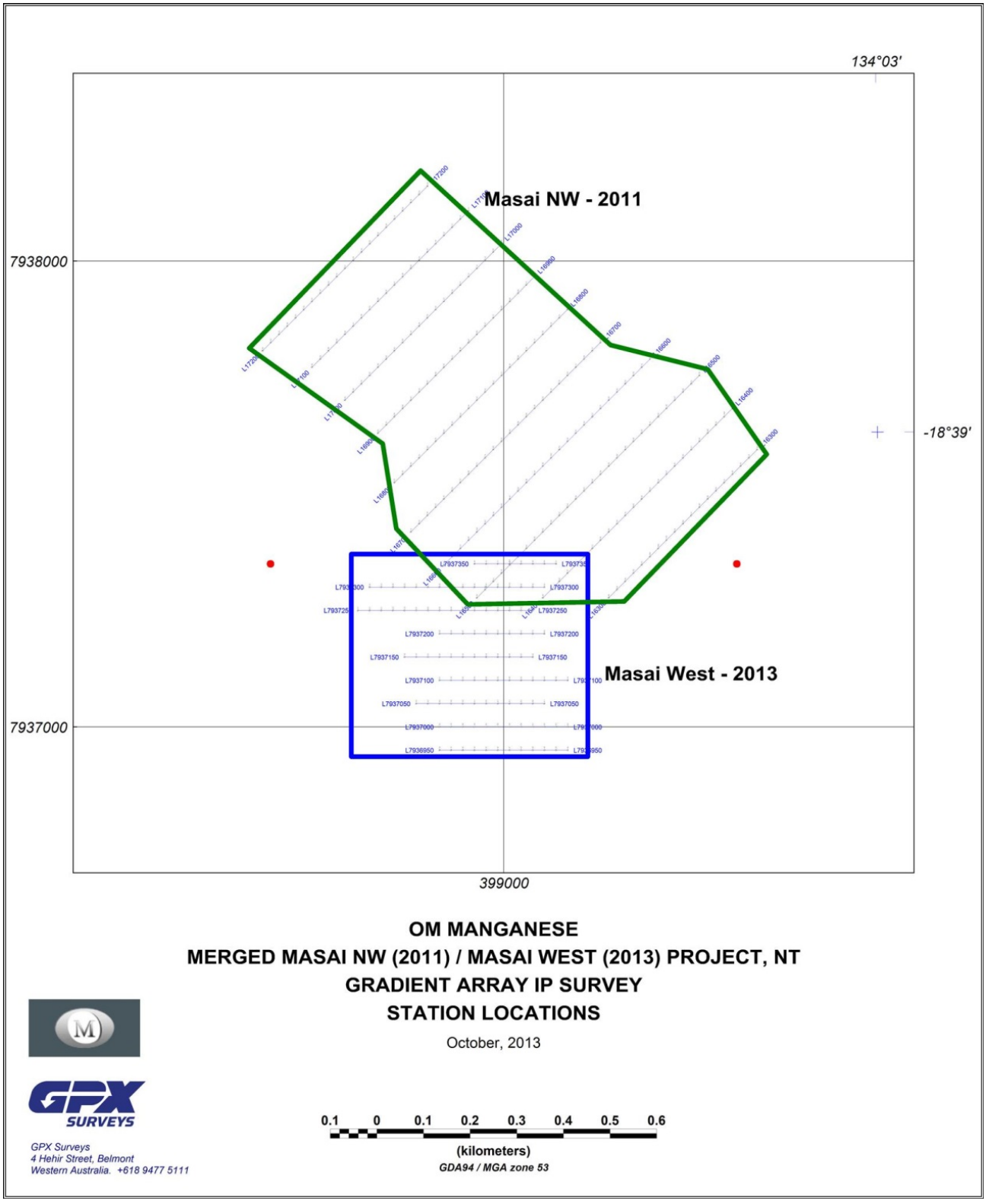

Figure 3. Masai West (blue) and Masai NW (green) GAIP survey extents.

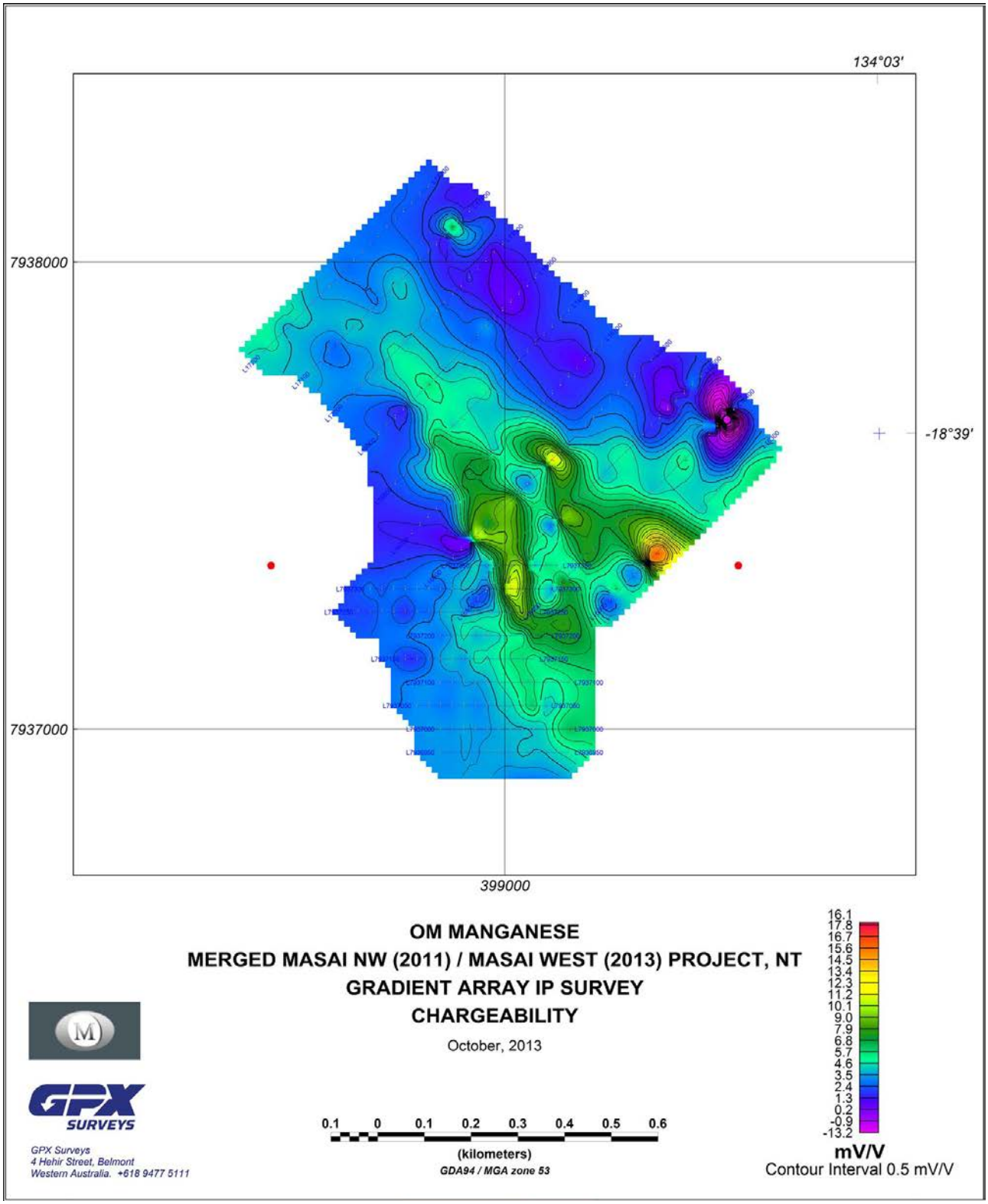

Figure 4. Chargeability Image for merged Masai West & Masai NW surveys

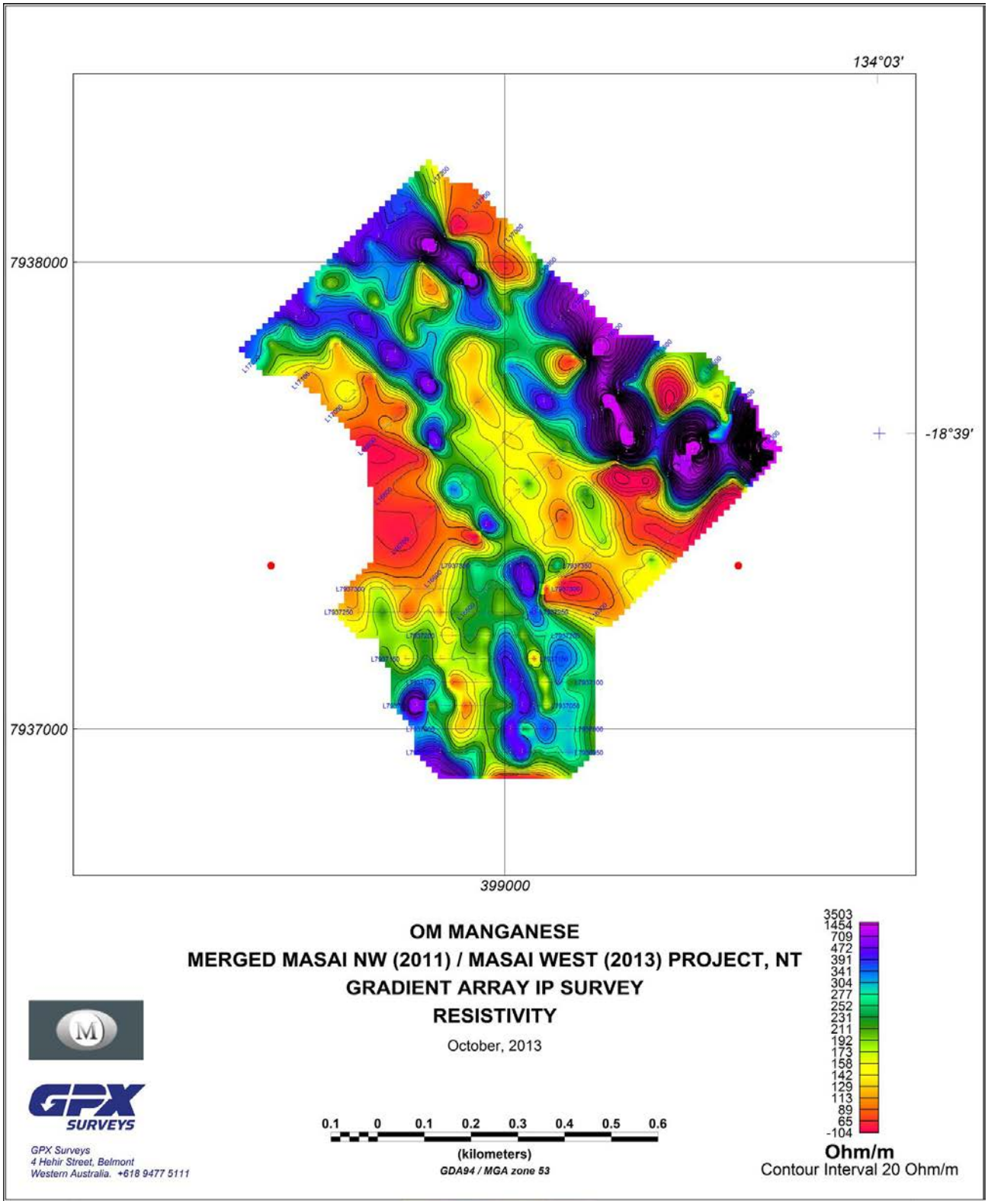

Figure 5. Apparent Resistivity for merged Masai West and Masdai NW surveys

4.2 RC Exploration Drill Programs

A total 15 RC drill holes (801m) were completed on EL28662 during the reporting period.

4.2.1 Looa Bore

The 15 RC drill hole program was designed to test GAIP anomalies identified in the 2012 extended Looa Bore survey.

One hole drilled on 7942500N, to test the peak anomaly on that section, intersected 1m @ 14.1% Mn from a depth of 5m. The remainder of the drill testing of lower order anomalies disappointed with only subgrade or barren intersections returned. These results indicate that Bootu Creek GAIP chargeability anomalies need exceed a threshold value of 9 mV/V.

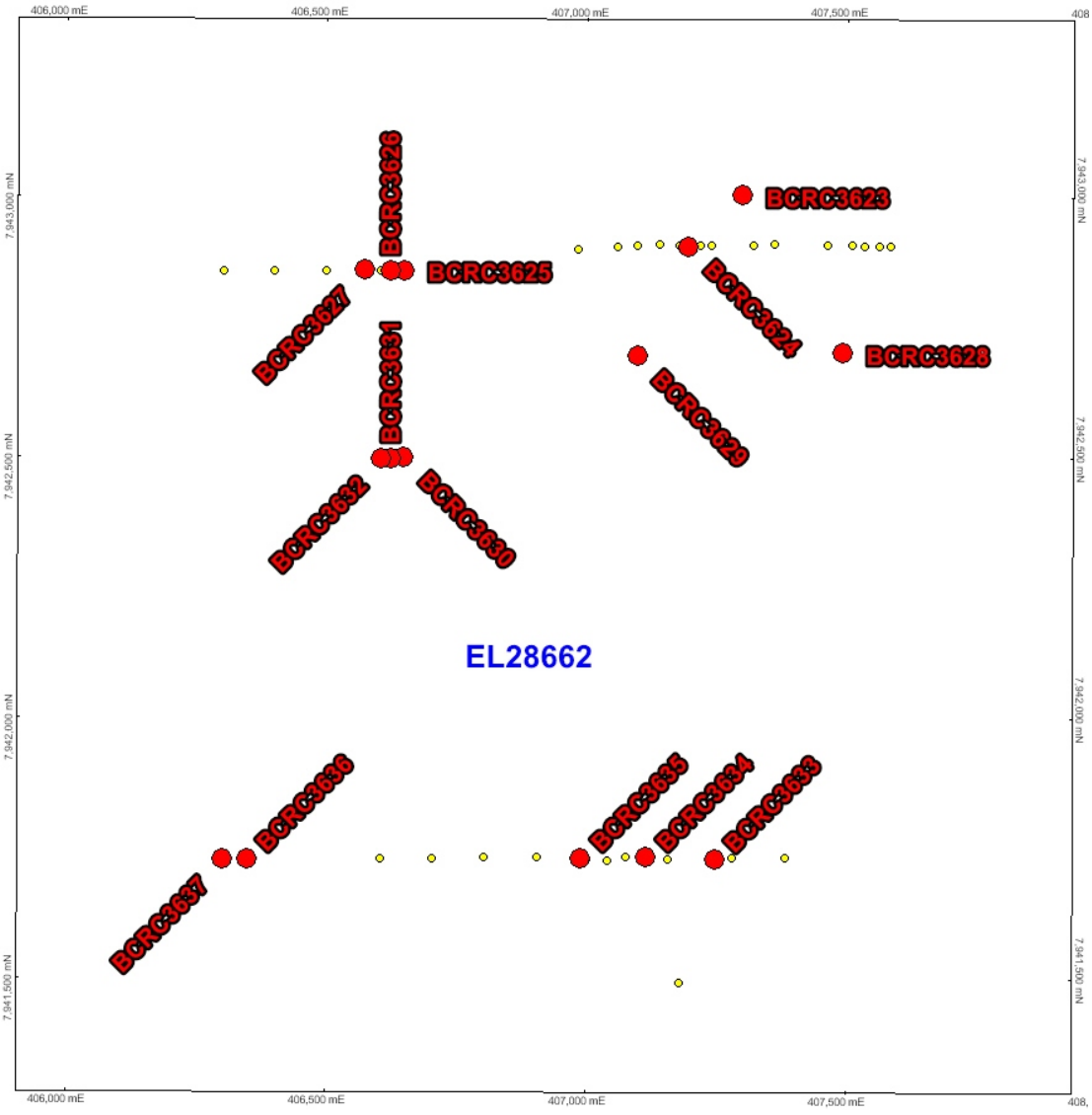

Figure 6. Drill Collar Location Plan for EL28662

4.3 Aerial Photography (Aerometrex)

On 22 June 2013, AEROmetrex Pty Ltd flew aerial photography over the Bootu Creek Manganese Project and part of the surrounding EL28662.

The survey included the capture, orthorectification and DTM gridding.

A total of 685 frames were captured using a Vexcel UltraCam D. These were orthorectified into 1000m x 1000m tiles and a composite mosaic at 10cm resolution. A 5m gridded DTM was also derived using existing surveyed ground control.

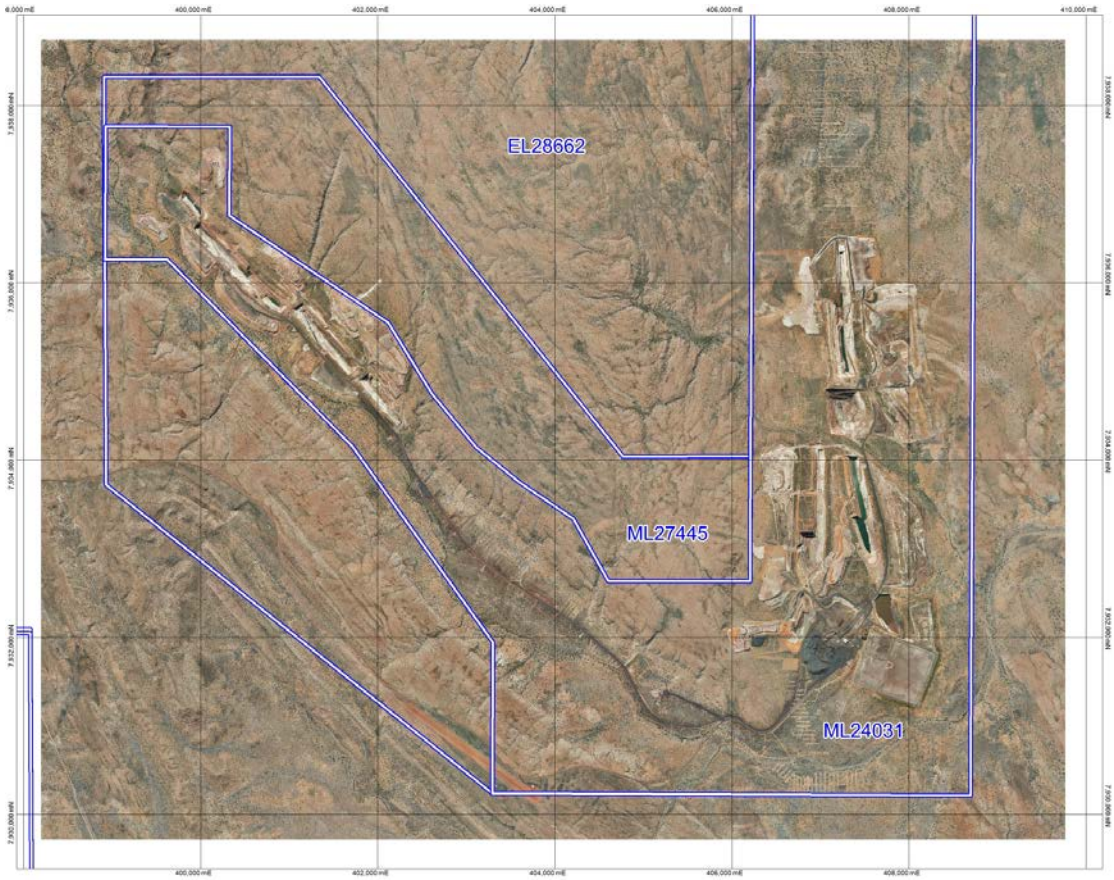

Figure 7. Plan showing the extent of Aerial Photography (Aerometrex) survey

5 Conclusions and Recommendations

The objective of the 2013 exploration program on EL28622 was to identify potential manganese deposits capable of replacing manganese resources being depleted by mining on the adjacent ML24031.

The 2013 strategy was to extend the previous Masai NW GAIP survey to the west, testing an apparent tightly folded and/or faulted structure observed in the recent high definition (15cm pixel) aerial photography, and to drill test 'chargeability' anomalies previously identified in the 2012 extended Looa Bore GAIP survey.

The Masai West GAIP survey has confirmed a tightly folded/faulted structure with the potential to host a north-south striking, west dipping folded extension of the Masai deposit. Recent reconnaissance RC drilling near the western boundary of ML24031 supports this interpretation with best intersections of 7m @ 32.6% Mn (from 30m) and 4m @ 27.4% Mn from 27.4% Mn (from 33m).

The 15 hole RC drill program at Looa Bore, testing the potential northern projection of the Bootu Creek east limb manganese deposits, failed to intersect significant manganese mineralisation and downgrades this prospect potential.

It is recommended that further RC drill testing of the interpreted fold/fault structure identified to the west of the northern extents of the Masai manganese deposit be undertaken in 2014.

6 References

Reddell,C.T., Bailey,M.H., (2011) EL10412 Bootu Creek Manganese Project, Final Technical Report for period 21st September 2001 to 20th September 2011, *OM (Manganese) Ltd*, *unpublished.*

Hussey, K.J., Beier, P.R., Crispe, A.J., Donnellan, N., and Kruse, P.D., (2001) Helen Springs, Northern Territory. 1:250,000 geological map series and explanatory notes, SE53-10 (Second Edition) *Northern Territory Geological Survey*