OM Manganese Ltd

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

Tenement Manager: Australian Mining & Exploration Title Services Pty Ltd (AMETS)

ML24031
Bootu Creek Manganese Project

Annual Exploration Report for period 20th Sept 2017 to 19th Sept 2018

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Target Commodity: Manganese

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100k mapsheet: Brunchilly 5760

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Abstract

Exploration activity during the reporting period included 5 RC drill holes (354m) for resource delineation and infill drilling, testing the down dip extents of Chugga Far North deposit, and 18 RC drill holes (906m) of infill exploration drilling at the Masai NW prospect.

The Bootu Creek Mineral Resources and Ore Reserves was updated, as at 31 December 2017

Contents

Electronic file list

File Name	File type	Content
ML24031_2018_A	pdf	This report
BC_EXP_Database_Import_CFN.xlsx	excel	collar/survey/sample/assay/log
BC_EXP_Database_Import_MNW2.xlxs	excel	collar/survey/sample/assay/log
Geology_Legend_Current_2018.xlxs	excel	Bootu Creek logging legend

1 Introduction

ML 24031 hosts the Bootu Creek Manganese Project, 100% owned by OM (Manganese) Ltd (OMM). The Mineral Lease comprises 15 open pits of varying maturity, initially mined by contract miners, though currently mined by owner operator mining fleet and labour. Several open pits have backfilled or partially backfilled.

The project is located 110km north of Tennant Creek and 17km east of the Stuart Highway. Access to site is via a sealed private haul road, passing beneath the Stuart Highway, which is used to transport the manganese product 60km west to Muckaty rail siding.

All mining operations fall within the boundaries of ML24031, as shown in figure 1, and are located within the Banka Banka West Pastoral Lease. ML24031 granted in September 2004 for a period of 25 years.

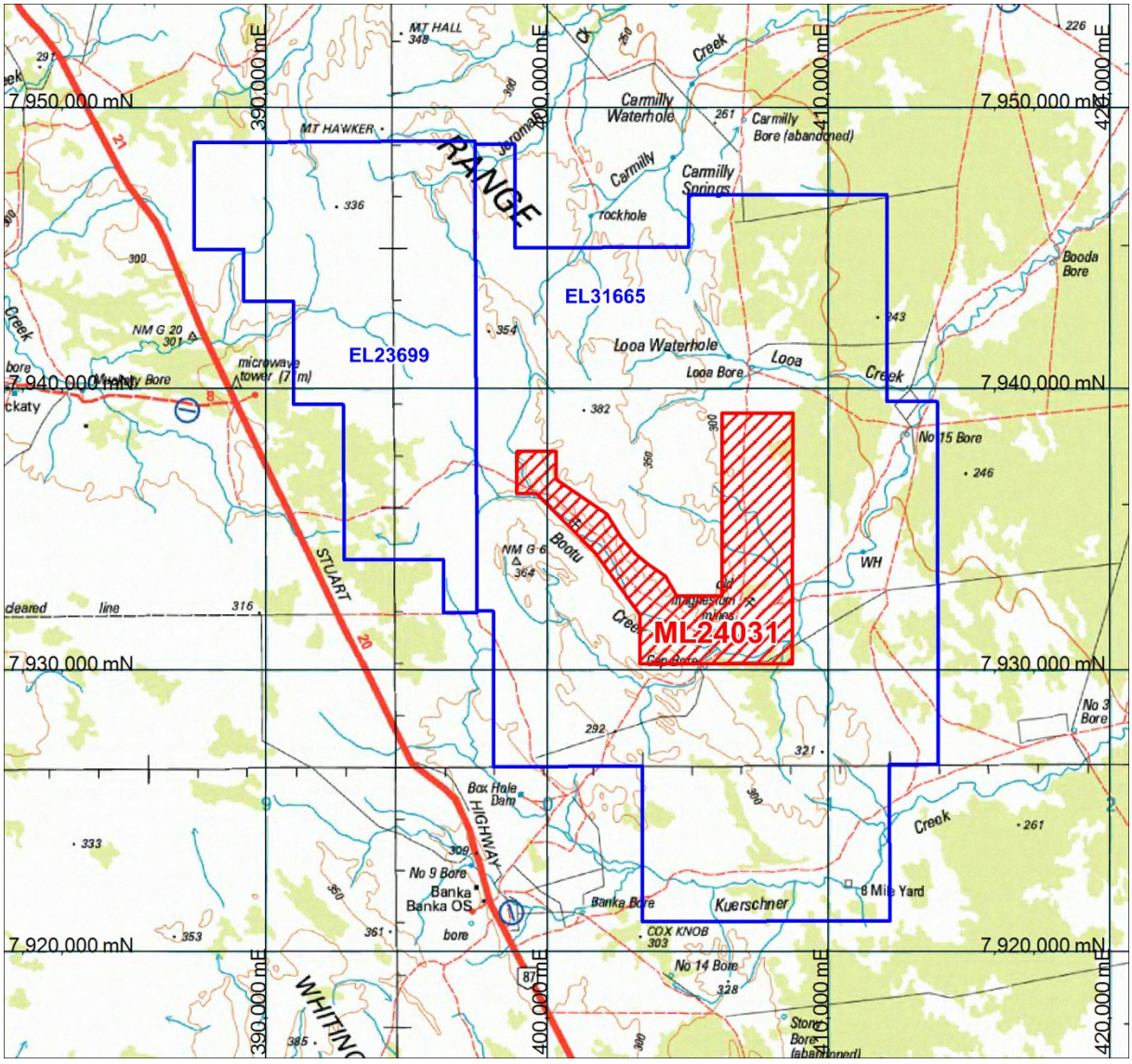

Figure 1. The plan above shows the location of ML24031 in relation to the Stuart Highway and surrounding exploration licences.

2 Geology

The Bootu Creek area forms part of the Ashburton Province of the Tennant Creek Inlier, which consists of Proterozoic platform cover of fluvial to shallow marine sandstone with minor volcanic rocks, siltstone and carbonate rocks of the Tomkinson, Namerinni and Renner groups, in part overlain by Cambrian volcanic and sediments (Hussey et al, 2001). ML24031 is located almost entirely within the Tomkinson Creek Group and is part covered by Cenozoic alluvium, colluvium and aeolian sand.

The favourable horizon for manganese deposits at Bootu Creek occurs on the contact between the underlying dolomite-siltstone of the Attack Creek Formation and the overlying ridge forming sandstone of the Bootu Formation, both of the Tomkinson group. The contact folds around the gentle NNW plunging Bootu Syncline and discontinuously traced for up to 24km.

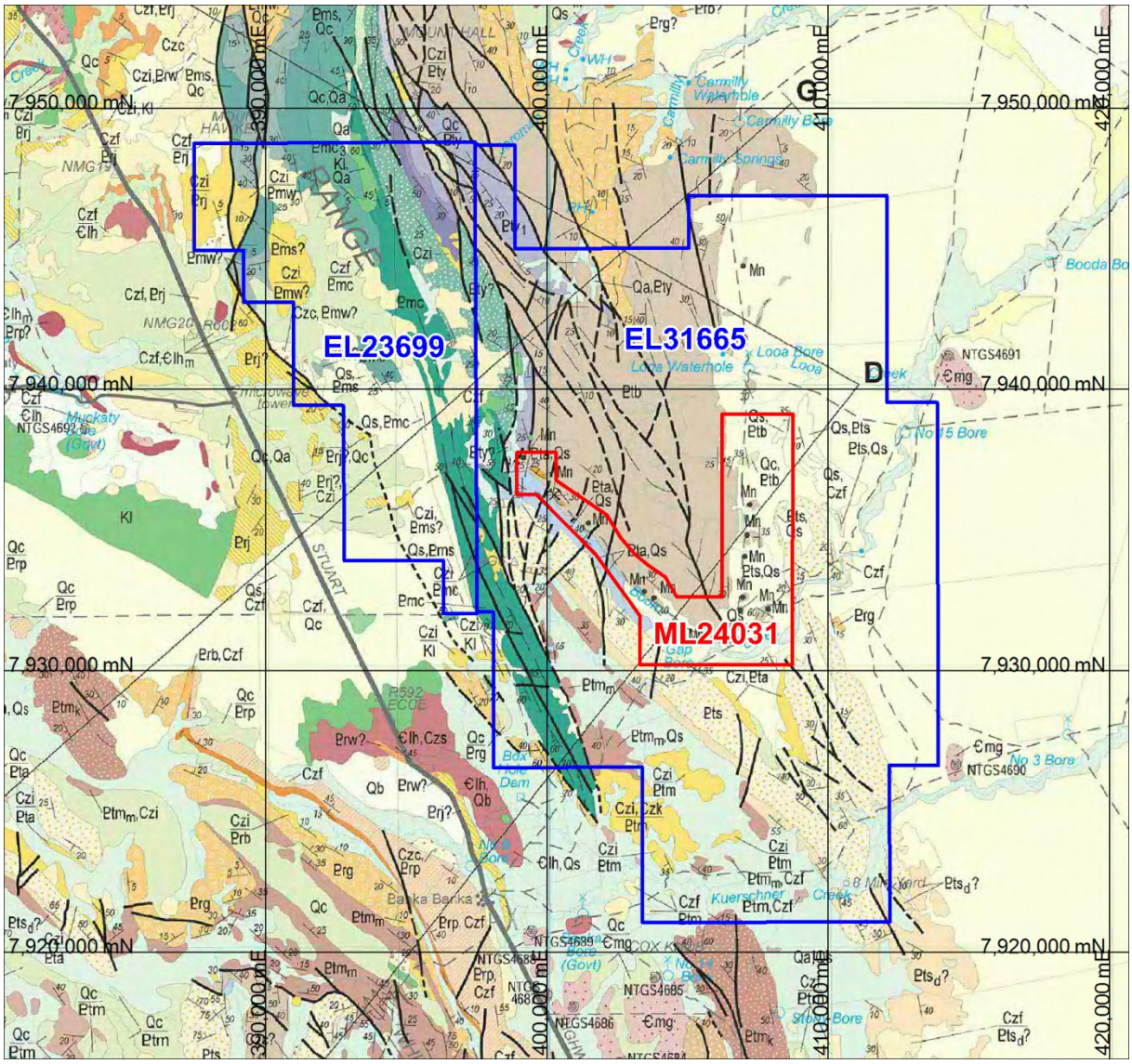

Figure 2. Geological map of ML24031 shows the distribution of the Attack Creek Formation (Pta) in relation to the Bootu Formation (Ptb). Geological data is taken from the Helen Springs 1:250,000 geology map (*Hussey et al, 2001*).

West limb manganese deposit's (Masai, Tourag and Yaka) dip around 30^0 towards the north east, while the deposits on the more structurally complex east limb (Chugga, Gogo, Shekuma, Xhosa and Zulu) dip between 30^0 and 45^0 to the west. The Foldnose deposit dips between 15^0 and 30^o the north and northeast.

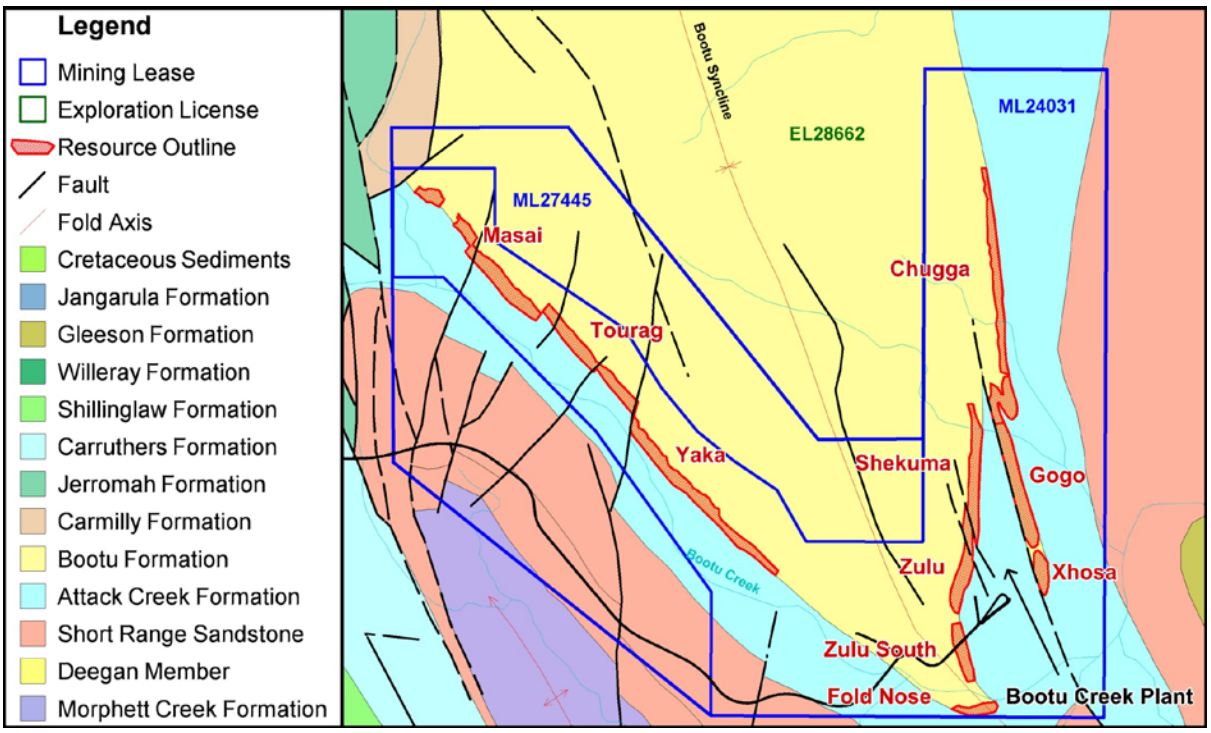

Figure 3. Interpreted Geology plan of the Bootu Creek Project

The manganese mineralisation is supergene altered and located within shallow marine sediments, locally replacing a relic stromatolite texture. The unweathered ore is generally located greater than 90m below surface and consists of Rhodochrosite ($MnCO_3$) and Braunite.

The supergene altered "ore zone" generally overlies a dolomite-siltstone footwall and consists of a high grade, 2-5m wide massive manganese zone (30-50%Mn), overlain by a 2-15m wide heavily disseminated sandstone hangingwall zone (15-30%Mn), and can be overlain by a similar width of lower grade disseminated sandstone (10-15%Mn). Individual deposits, separated by faulting or folding, can persist over a strike length of up to 3 kilometres.

The principal supergene ore minerals are:

Pyrolusite - MnO_2 and varying amounts of quartz, goethite and clay gangue

Cryptomelane - $K(Mn^{2+},Mn^{4+})_8O_{16}(OH)_4$ equivalent to 60%Mn and 5%K , plus minor

Psilomelane - $Ba(Mn^{2+},Mn^{4+})_8O_{16}(OH)_4$ being around 50%Mn and 15%Ba, and

Braunite - $3(Mn_2O_3)$-$(MnSiO_3)$ being around 62%Mn

3 Mineral Resource and Ore Reserve – 31st December 2017

3.1 *Mineral Resource*

The 31 December 2017 Mineral Resource replaces that previously published for 31 December 2014. There was an overall Mineral Resource variance of -10.1Mt between the two dates.

There was 1.91Mt at 22.58% Mn mined (depleted) in 2015, a further 1.59Mt at 21.32% Mn mined (depleted) in 2017, and a net reduction (depletion) of 0.73 Mt in ROM and SPP stocks in 2015 and 2017. Mined production was sourced from the Gogo, Chugga North, Chugga South, Shekuma, Tourag and Yaka pits.

Lower local yield estimation, in conjunction with a lower FOB Darwin price assumption, resulted in the removal of the lower grade and low yielding Foldnose and Zulu South deposits from the Mineral Resource (-1.01Mt). The lower price assumption (-23% from that used in December 2014) and reduced access to several pits due the backfilling or partial backfilling accounted for the remainder of the variance.

All remaining resource models were economically constrained by optimised Whittle 4X pit shells using updated mining, processing and selling costs, sales revenue, geotechnical and plant yield/recovery parameters. Mineral Resources reported at a nominal cut-off grade of 15%Mn.

Table 1: Bootu Creek Manganese - Resource Summary for 31 December 2017

Undiluted	**Measured**		**Indicated**		**Inferred**		**Combined***	
Deposit:	Mt	%Mn	Mt	%Mn	Mt	%Mn	Mt	%Mn
CFN			2.18	22.62			**2.18**	**22.62**
Gogo	0.49	23.00	0.35	23.91			**0.84**	**23.38**
Masai	0.61	23.14	0.89	22.83			**1.49**	**22.95**
Shekuma	0.61	24.89	0.69	25.19			**1.30**	**25.05**
Tourag	0.85	22.76	0.70	21.75			**1.54**	**22.30**
Yaka			0.99	22.23			**0.99**	**22.23**
Renner West					0.28	22.26	**0.28**	**22.26**
Insitu Resource*	**2.55**	**23.40**	**5.80**	**22.87**	**0.28**	**22.26**	**8.63**	**23.00**
ROM Stocks	0.05	19.62					**0.05**	**19.62**
SPP Stocks	1.26	18.48					**1.26**	**18.48**
Total Resource*	**3.86**	**21.74**	**5.80**	**22.87**	**0.28**	**22.26**	**9.94**	**22.41**

* Rounding gives rise to unit discrepancies in this table

Tonnage is rounded to nearest 100,000 tonnes and %Mn grade to one decimal place.

Measured Resources restricted to within 15 metre from pit floors, at 31 December 2017.

Indicated Resources are generally, based on a maximum 25m x 50m spaced drill grid.

Inferred Resources are generally, based on a maximum 50m x 100m spaced drill grid.

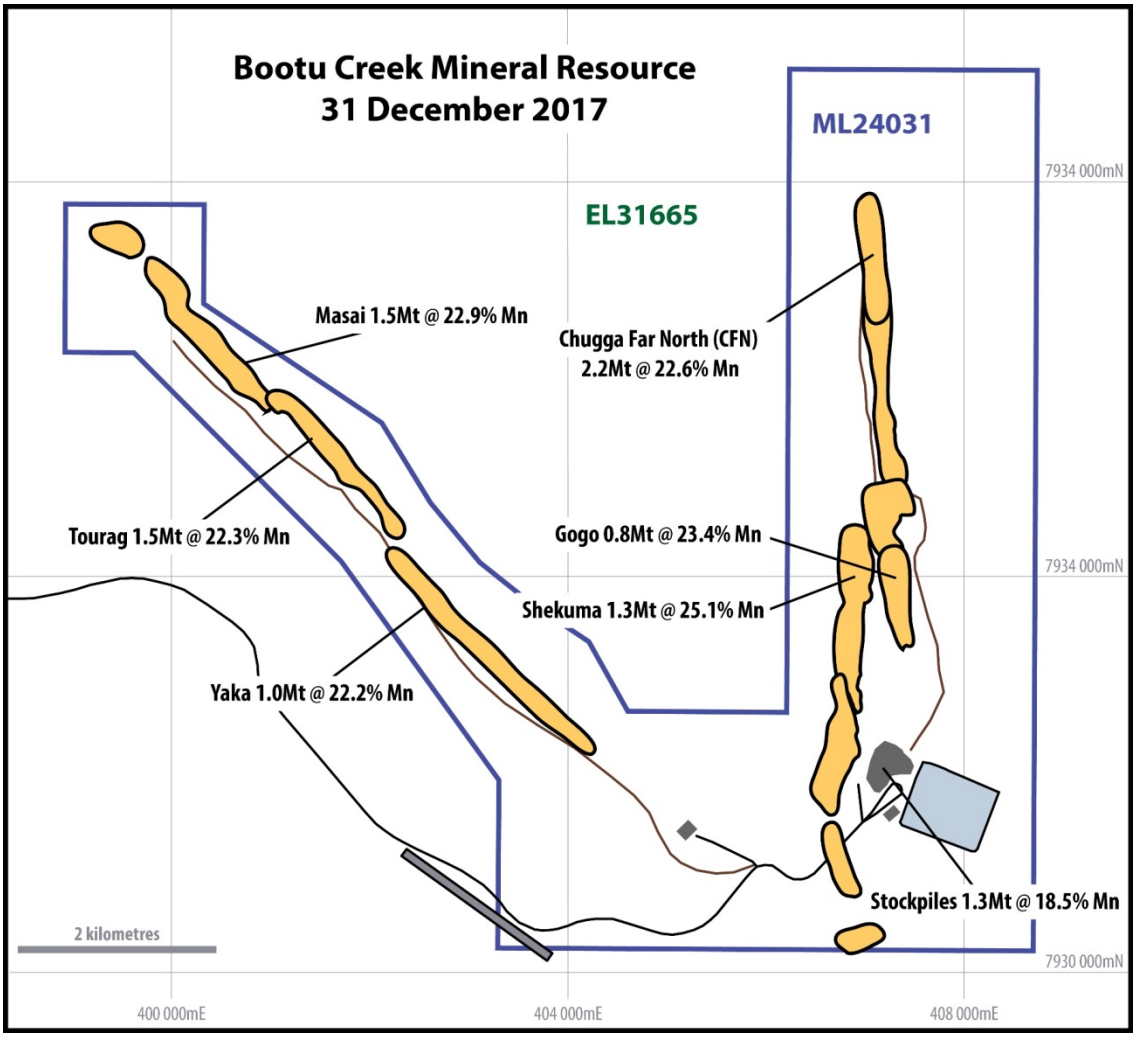

Figure 4. Location plan for Bootu Creek manganese deposits

All deposits listed in the Bootu Creek Mineral Resource table, with the exception of Renner West, are located within ML24031.

3.2 *Ore Reserve*

The 31 December 2017 Ore Reserve replaces that previously published for 31 December 2014.

The 31 December 2017 Ore Reserve is the consolidated total of 10 individual open pit mine designs, derived from optimised pit shells for Measured and Indicated Resources utilising updated mining, processing and sales parameters.

Table 2: Bootu Creek - Ore Reserve Summary at 31 December 2017

Deposit:	Mt	%Mn	Mt	%Mn	Mt	%Mn
CFN			1.42	20.78	**1.42**	**20.78**
Gogo	0.53	20.64	0.23	21.49	**0.76**	**20.90**
Masai	0.53	20.95	0.18	21.57	**0.71**	**21.11**
Shekuma	0.64	22.30	0.63	22.98	**1.28**	**22.64**
Tourag	0.48	20.51	0.77	20.58	**1.24**	**20.55**
Yaka			0.60	20.88	**0.60**	**20.88**
Renner West					**0.00**	**0.00**
Insitu Reserve*	**2.17**	**21.18**	**3.84**	**21.20**	**6.01**	**21.19**
ROM Stocks	0.05	19.62			**0.05**	**19.62**
SPP Stocks	1.26	18.48			**1.26**	**18.48**
Total Resource*	**3.48**	**20.18**	**3.84**	**21.20**	**7.32**	**20.71**

* Rounding gives rise to unit discrepancies in this table

The optimised pit shells were processed using Whittle 4X, and were based on physical and cost parameters determined in the 2018 budget.

The Ore Reserve modelling assumed a Tonnage Dilution Factor of 110% (105% previous) and a Grade Dilution Factor of 90% (86%) supported by reconciliation of the depleted 31 December 2014 Mineral Resource models against the Total Ore Mined production (survey adjusted) for 2015 and 2017.

The Ore Reserve is reported at a 15% Mn grade cut-off with tonnes rounded to the nearest 100,000 and %Mn grade quoted at one decimal place. Rounding gives rise to apparent unit discrepancies for subtotals in the above table.

The Proven Reserve is limited to the Measured Resources contained within Ore Reserve pit designs. Measured Resources are restricted to material within a 15 metre, vertical extent from pit floors at the end of 2014.

The Probable Reserve is limited to Indicated Resources contained within Ore Reserve pit designs.

No Inferred Resources are included in the Ore Reserve estimation.

The Bootu Creek Mineral Resource and Ore Reserve estimate for 31 December 2014 are quoted in accordance with the JORC Code (2012 edition).

4 Previous Exploration Activity

4.1 *Pre-2006/2007 Activity*

Small scale mining on the western side of the syncline at *Muckaty* produced 13 300 t @ 42% Mn between 1955 and 1969 for use as an oxidant in uranium processing at Rum Jungle. Drilling of the eastern limb by BHP Minerals Ltd, within a conductive GEOTEM anomaly, intersected Mn mineralisation to a depth of 75m

Exploration drilling by Bootu Creek Resources commencing in 2000 followed up on the BHP drill intersections. This exploration led to the discovery and definition of several shallow manganese deposits which form the basis for the commencement of the Bootu Creek manganese mining project. Construction of the processing plant and open pit mining commenced in 2005 and processing of ore commenced in April 2006.

A total of 48,490m of exploration drilling had been completed on the area covered by ML24031, prior to the 2006/2007 reporting period, including -

- 2,094 metres of diamond drilling,
- 18,769 metres of open hole percussion, and
- 27,627 metres of reverse circulation percussion drilling

GPX Airborne Pty Ltd flew a helicopter borne Hoist-EM survey over ML24031 and parts of EL10412 and EL22428 in September 2006, totalling 1,525 km.

4.2 *Exploration Activity 2006/2007*

In 2006/2007 work conducted on ML24031 (and the two adjacent exploration licences) included further interpretation of the 2006 helicopter borne Hoist-EM survey and Aster multi-spectral data, updated Ikonos satellite imagery, drill planning and clearing of access tracks and drill sites, and 176 (9,917m) of RC exploration drilling. The 2007 RC drill program was still in progress at the end of that reporting period and continued until late November 2007.

4.3 *Exploration Activity 2007/2008*

Work completed within ML24031 during the 2007/2008 reporting period includes brownfields exploration followed by resource definition with reverse circulation (RC) drilling programs totalling 916 holes for 64,817 metres. Diamond drilling was undertaken for metallurgical test-work sample collection.

Non-intrusive activities included

- updated satellite imagery capture (QuickBird),
- commissioning an airborne geophysical survey to capture aeromagnetic and radiometric data.

4.4 *Exploration Activity 2008/2009*

Exploration activity conducted during the 2008/09 reporting period included

- A 496 hole (38,035m) RC drill program to extend and delineate mineral resources, and to several test brownfield targets.
- A 30 hole (2,055m) diamond program drilled in late 2008. Several holes were drilled into Masai, Yaka, Chugga North and Shekuma deposits to core mineralized material for metallurgical characteristic test work.
- Completion of an aeromagnetic and radiometric geophysical survey flown by GPX
- Aerial photography flown by Survey Graphics Mapping Consultants in preparation for geological mapping

4.5 *Exploration Activity 2009/2010*

Exploration activity conducted during the 2009/10 reporting period included

- A 320 hole (21,526m) RC drill program to extend and delineate mineral resources.
- Geoimage Pty Ltd contracted to provide an ortho-corrected Worldview-2 satellite image for June 2010 covering ML24031 and adjacent Exploration Licences.

4.6 *Exploration Activity 2010/2011*

Exploration activity conducted during the 2010/11 reporting period included

- A 282 hole RC exploration and resource delineation drill program, including the delineation of two new deposits at Zulu South and Fold Nose.
- Gradient Array IP ground geophysical surveys over Chugga North extended, Zulu South and Fold Nose, NW Masai NW and SE Yaka.
- Acquisition of high resolution 'Worldview-2' satellite imagery in June 2011.

4.7 *Exploration Activity 2011/2012*

Exploration activities conducted during the 2011/2012 reporting period included:

- A 129 RC hole exploration and resource delineation drill program, including the resource extension of Fold Nose to the northeast and Chugga North to the north.
- Gradient Array IP ground geophysical surveys covered Shekuma North and extended the previous Chugga North survey area further to the north.
- Acquisition of high resolution 'Worldview-2' satellite imagery in May 2012.

4.8 *Exploration Activity 2012/2013*

Exploration activities conducted during the 2012/2013 reporting period included:

- A 28 RC hole exploration and resource delineation drill program, including a 50m resource extension of Zulu deposit to the south.
- The acquisition of very high resolution aerial photography in June 2013.

4.9 *Exploration Activity 2013/2014*

Exploration activity during the 2013/2104 reporting period was limited a Gradient Array IP infill survey at the Masai NW prospect, extending the existing geophysical survey 400m to the south.

There was no resource delineation or exploration drilling undertaken during the reporting period.

4.10 *Exploration Activity 2014/2015*

Exploration activity during the reporting period was limited to an update of the Bootu Creek Mineral Resource and Ore Reserve as at 31 December 2014, and World View II satellite imagery from July 2015.

4.11 *Exploration Activity 2015/2016*

There was no exploration drilling or activity undertaken during the reporting period. OM Manganese Ltd, placed under 'Administration' from December 2015 through to August 2016, and remained on care and maintenance, pending approval from the DPIR to recommence operations.

4.12 *Exploration Activity 2016/2017*

Exploration activity during the 2016/17 reporting period included 11 RC drill holes (1,230m) for resource delineation and infill drilling, testing the down dip extents of Shekuma and Gogo deposits, and 6 RC drill holes (306m) for infill exploration drilling at the Masai NW prospect, and World View II satellite imagery from June 2017.

5 2017/18 Exploration Activity

Exploration activity during the reporting period included 5 RC drill holes (354m) for resource delineation and infill drilling, testing down dip extents of Chugga Far North deposit, and 18 RC drill holes (906m) of infill exploration drilling at Masai NW prospect.

Chugga Far North (CFN): RC Drilling

Five infill RC holes drilled into Chugga Far North (north end) increased confidence in an area of previous patchy intersections. The assay results confirmed high Mn grades at depth and increase confidence in the ore body model.

Chugga Far North RC Assay Results

BCRC	Northing	Easting	dip/direction	Depth	from	to	m	%Mn	type
3656	7937468	407070	-70/90	54	42	47	5	28.3	HG oxide
3657	7937319	407070	-90	90	74	83	9	24.9	HG oxide
3658	7937367	407082	-90	78	60	68	8	29.1	HG oxide
3659	7937220	407120	-90	54	32	34	2	20.9	oxide
3660	7937219	407087	-90	78	61	71	10	29.3	HG oxide

Masai NW Prospect: RC Drilling

Six vertical RC holes drilled to infill test previous moderate to high-grade intersections. Assay results mixed, but the last two holes intersected high grade, shallow mineralisation and need follow up drilling to evaluate further.

Masai NW Prospect RC Assay Results

BCRC	Northing	Easting	dip/direction	Depth	from	to	m	%Mn	type
3661	7937247	398964	-90	60				barren	
3662	7937277	399006	-90	42	14	17	3	17.8	LG oxide
3663	7937300	398978	-90	30				barren	
3664	7937299	398957	-90	60				barren	
3665	7937324	399013	-90	42				barren	
3666	7937341	398973	-90	60				barren	
3667	7937370	398978	-90	48				barren	
3668	7937437	398993	-90	30	15	21	6	32.2	HG oxide
3669	7937451	399007	-90	30	11	16	5	23.8	HG oxide
3670	7937472	398963	-90	48	34	41	7	25.8	HG oxide
3671	7937490	398975	-90	48	24	27	3	23.8	HG oxide
3672	7937511	398993	-90	42	27	29	2	20.2	oxide
3673	7937528	398944	-90	48	33	38	5	26.4	HG oxide
3674	7937550	398962	-90	48	34	40	6	28.9	HG oxide
3675	7937565	398980	-90	60	50	53	3	20.6	oxide
3676	7937598	398944	-90	66				barren	
3677	7937619	398961	-90	66	58	62	4	15.2	LG oxide
3678	7937636	398978	-90	78				barren	

6 Conclusions and Recommendations

The objective of exploration on ML24031 is to improve confidence in current ore resource models and to replace mineral resources depleted by manganese mining operations.

The 2018 exploration program was limited and focused on improving confidence in the north end of CFN deposit, and to infill and test the extent of previous, high grade, drill intersections at the Masai NW prospect.

Results from the southern Masai NW drill holes (BCRC3661-3667) failed to extend previous intersections in the southern pod, while infill holes (BCRC3668-3675) improved confidence in existing intersections, though (BCRC3676-3678) failed to extend the northern pod to the north.

7 References

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*