

## Historical Data Review outlines Manganese Potential over McArthur River and Mary Valley Projects in the Northern Territory and Queensland

**Eclipse Metals Limited (ASX: EPM)** is pleased to announce the preliminary open file desktop review for the Mary Valley and McArthur River Manganese Projects situated in Queensland and Northern Territory.

### Highlights

- A total of 32,724 tonnes of ore was mined from the Mary Valley Project (within the two Exploration Permit Mineral areas) with manganese grade ranging from 42% to 51% Mn. Limits of all the deposit are not known either along strike or at depth. Brisbane is the nearest port from the project at approximately 165 rail kilometres.
- Historical assays have also indicated that the Mn, Fe, Si and P levels are all within the direct shipping ore parameters which further support the economic potential of stand-alone mining operations on the Mary Valley Manganese Project. The project covers 150 square kilometres of favourable lithology within the two EPM areas.
- In the West McArthur River Project, electro-magnetic (EM) geophysical surveys have defined 10 EM drill targets over an area of 135 sq km, which are believed to host manganese/base-metal mineralisation. Target areas within the dolomite are interpreted to be analogous to the Woodie Woodie Deposit in Western Australia. All elements required for the formation of dolomite hosted, high grade manganese deposits are present in the area.

**The Mary Valley Manganese Project** is located approximately 14 road kilometres southwest of Gympie Township in Queensland. The project comprises two Exploration Permits (17672 & 17938) with an area of 195.3 km<sup>2</sup> easily accessed from the Brooloo Road from the Gympie Township, only 165 rail kilometres from the port of Brisbane.

A total of 32,724 tonnes of ore was mined from both EPM areas with the manganese grade ranging from 42% to 51% Mn. Limits of all deposits are not known either along strike or at depth. The largest mine on the tenements controlled by Walla Mines Pty Ltd, a subsidiary of the Company in which the group holds an effective interest of 55.61%, was at Amamoor No.1 Manganese Deposit (19,630t @ 51% Mn). Historical assays also indicate that the silica, iron and phosphate levels are all within the direct shipping ore parameters which further support the economic potential for stand-alone mining operations based on the Mary Valley Manganese Project.

### ECLIPSE METALS LTD

Eclipse Metals Limited is an Australian company with a portfolio (over 24,000 km<sup>2</sup>) of quality iron, manganese, gold, uranium and base metal projects in the highly prospective Archaean and Proterozoic metallogenic provinces of the Northern Territory, Queensland and New South Wales of Australia.

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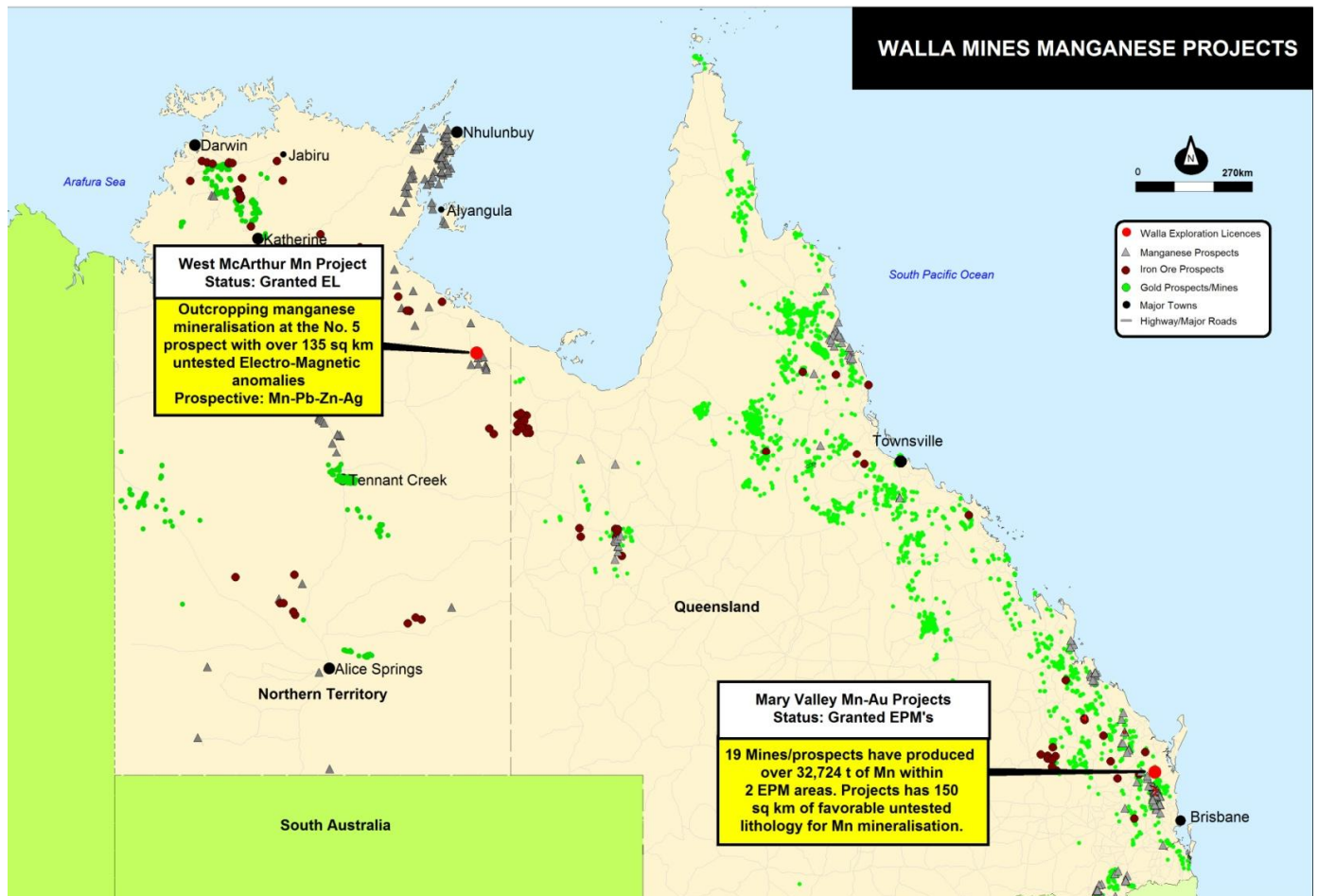


Figure 1: Walla Mines Manganese Project Location Map

Table 1: Summary of manganese production from the Mary Valley Manganese Project area:

Name	EPM	Workings of Mined Areas	Years of Production	Ore Production (tonnes)
Donaldson's Deposit	17672	22.86m long x 9.14m wide x 2.74m deep	1949, 1960	25t @ 46% Mn, 15% silica
Mooloo T.O Prospect	17672	15.24m long x 2.13m wide x	Unknown	42% Mn, 11.6% silica, 5.8% Iron oxide
Mt Mooloo Prospect	17672	Trench 1: 13.71m long, 2.74m deep Trench 2: 15.24m long, 2.13m wide x 1.52m deep	1915	81t @ 50.3% Mn, 1.9% silica, 7.4% Iron oxide
Robert's Prospect	17938	6.40m long x 4.26m wide x 3.04m deep	Unknown	15t @ 38.6% Mn
Dagun Prospect	17672	6.1m long x 2.4m deep	1921, 1949	100t @ 48% Mn, 5% silica
Eel Creek		15.24m long x 2.13m wide	1949, 1951, 1960	234t @ 50% Mn, 6% silica 38t @ 46% Mn, 15% silica
Mt Walli	17672	45.72m long x 3.35m deep	1937-38, 1959	700t @ 48% Mn, 9% silica 20t @ 40% Mn, 20% silica

Name	EPM	Workings of Mined Areas	Years of Production	Ore Production (tonnes)
Amamoor No.2	17938	Unknown	1959-1960	515t@ Unknown
Zachariah Creek		Unknown	1959	16t @ 40% Mn, 10% silica
Skying Creek	17938	152.0m long x 4.57m wide	1960	2,457t @ 45% Mn, 19% silica
Cameron	17672	44.2m long x 3.65m wide x 19.81m deep	1918-19, 1958-1960	8,893t @ 46% Mn, 22% silica
Amamoor No.1	17938	274.0m long x 27.43m wide x 21.33m deep	1920, 1960	19,630t @ 51% Mn, 10% silica

<b>Total</b>	<b>32,724 t of High Grade Mn</b>			
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In 1962, J.H Brooks from the Geological Survey of Queensland undertook a detail review of historical mining activities within the Mary Valley Manganese Belt. Samples from a wide cross section of the Mary Valley deposits were collected and analysed at the Government Chemical Laboratory, Brisbane and X-ray analyses were carried out by the University of Queensland, Department of Mining and Engineering which are set out in the below table.

Location	Grade of Mn	Grade MnO <sub>2</sub>	Grade SiO <sub>2</sub>	Grade FeO <sub>2</sub>	Grade BaO	Mineral present from X-Ray Analysis
Eel Creek	48.96%	66.30%	3.94%	7.15%	1.84	Pyrolusite, minor cryptomelane
Eel Creek	56.10%	82.50%	0.53%	3.77%	1.55	Braunite, hausmanite, cryptomelane
Devels Mount	48.42%		15.69%	1.77%	2.6	Braunite, hausmanite, cryptomelane
Eel Creek from shallow open cut	41.50%	66.50%	26.70%	3.80%	1.8	Massive Mn with some silica and red jasperoid material
Eel Creek	45.20%			1.40%	3	Massive Mn & Mn oxides
Dagun	50.80%	73.40%	5.52%	5.40%	3.83	Pyrolusite, minor cryptomelane
Dagun from pit (4.45m)	52.20%	77.20%	6.80%	6.60%		Selected sample of cellular ore with some soft Mn oxide
Upper Kandanga (Cameron)	49.80%		22.50%	0.85%	0.49	Braunite
Mooloo T.O prospect from shallow trench	47.10%		11.60%	5.80%	1.1	Massive Mn with little hematite and jasper
Mooloo T.O prospect from shallow cuts	54.70%		2.50%	1.50%	0.5	Hard Dense botryoidal ore
Amamoor No.1	56.80%		1.40%	1.40%	1.3	Soft cellular ore, brownish in colour
Amamoor No.1	49.10%		1.60%	0.60%	11.8	Hard Massive ore containing piedmontite crystals – Main Open Cut
Amamoor No.1	39.50%		16.20%	0.90%	3	Hard Massive ore containing piedmontite crystals – Main Open Cut
Amamoor No.1	52.70%		2.60%	0.70%	6.4	Hard Massive ore 184m SSE of cut
Skying Creek (from open cut NE side creek)	50.50%		8.80%			Hard, massive ore
Skying Creek (from open cut NE side creek)	43.50%		23.40%	5.60%	0.5	Hard, massive ore with quartz material
Zachariah Creek	46.70%		18.00%	3.30%	1.3	Hard, massive ore with quartz material



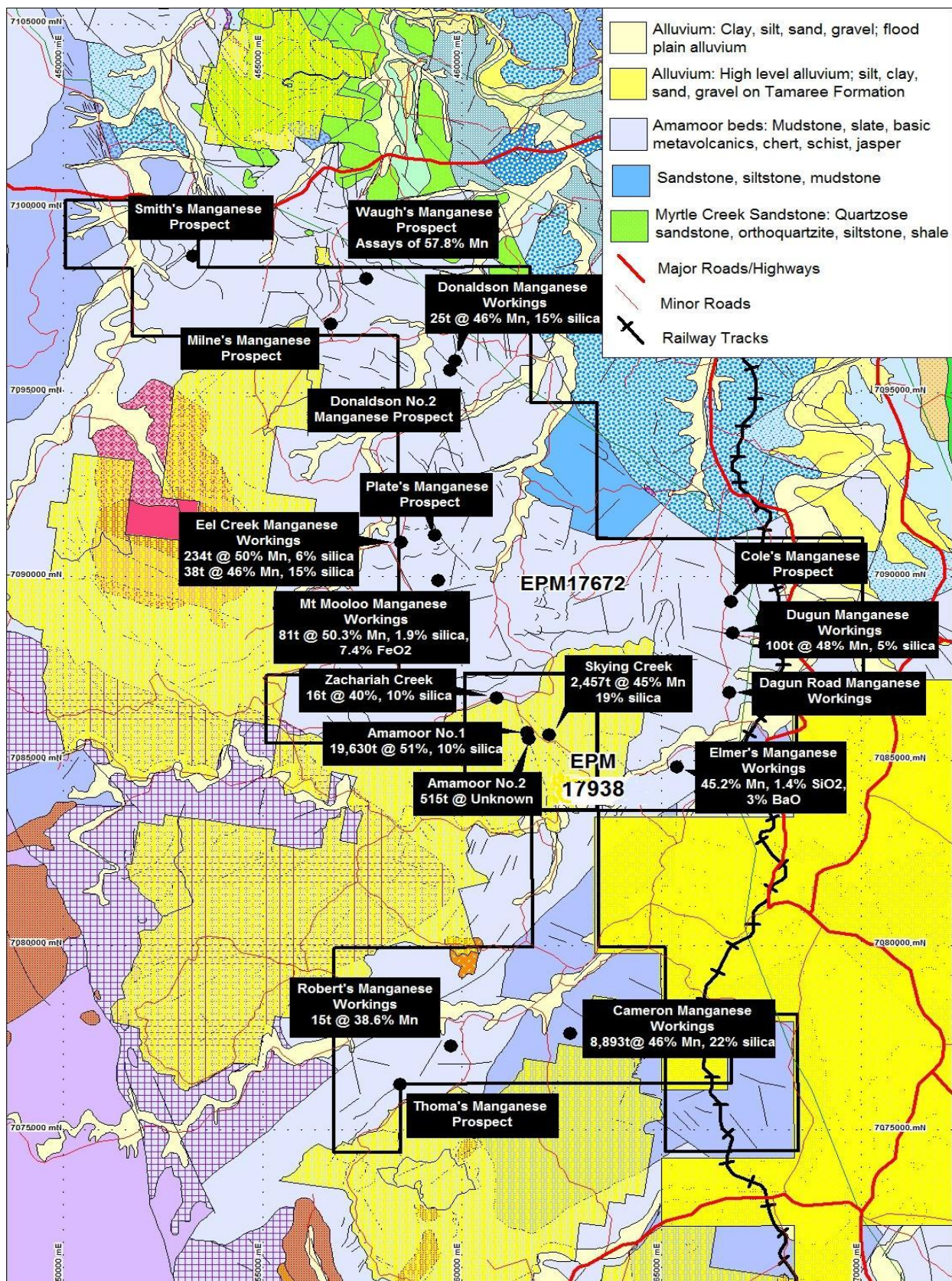


Figure 2: EPM17672 & EPM17938 Regional Geology Map showing the Locations of each Mn Prospect/Mine

In 1992, J. Ostwald completed a research paper relating to the mineralogy and genesis of the braunite deposits of the Mary Valley Manganese Belt. Numerous samples were collected over the Carmon Manganese deposit (EPM17672) and were assayed by using a combination of ICP and XRF techniques results of which are listed below:

Element	Sample 10	Sample 11	Sample 12
SiO <sub>2</sub>	22.61	24.3	25.1
TiO <sub>2</sub>	0.06	0.07	0.1
Al <sub>2</sub> O <sub>3</sub>	1.01	0.86	0.51
<b>MnO<sub>2</sub></b>	<b>65.85</b>	<b>64.05</b>	<b>65.06</b>
Fe <sub>2</sub> O <sub>3</sub>	2.16	2.08	1.92
CaO	6.82	6.62	5.71
MgO	0.05	0.06	0.05
BaO	0.16	0.23	0.02
SrO	0.03	0.06	0.01
Na <sub>2</sub> O	0	0.01	0.01
K <sub>2</sub> O	0.02	0.06	0.03
P <sub>2</sub> O <sub>5</sub>	0.05	0.05	0.06
SO <sub>2</sub>	<0.01	<0.01	<0.01
LOI	0.82	0.56	0.77
<b>Total</b>	<b>99.81</b>	<b>99.21</b>	<b>100.02</b>

Both the primary braunite and the metamorphic braunite contain about 10% SiO<sub>2</sub> in their structure and are thus normal braunite. The microanalysis (wt%) of primary and metamorphic braunite within the Mary Valley Manganese Belt is shown in the following table:

Analysis	Mn <sub>2</sub> O <sub>3</sub>	Fe <sub>2</sub> O <sub>3</sub>	CaO	MgO	K <sub>2</sub> O	SiO <sub>2</sub>	Total
1	89.5	0.1	ND	ND	0.1	8.9	98.6
2	87.0	1.2	ND	ND	0.1	9.1	97.4
3	88.5	0.6	ND	ND	ND	10.1	99.2
4	88.3	2.1	ND	ND	ND	9.8	100.2
5	88.6	0.7	0.7	0.3	ND	9.7	99.7
6	88.6	0.2	ND	ND	0.1	9.9	98.0
7	88.0	0	ND	ND	ND	10.2	99.4
8	87.9	0.7	ND	0.4	ND	10.1	99.2
9	88.7	1.1	0.1	ND	0.1	9.6	100.1
10	89.0	0.7	ND	0.1	0.2	9.9	100.2
11	88.2	0.3	0.7	0.2	ND	0.2	99.4
12	87.9	0.1	0.4	0.3	ND	10.2	98.9
13	87.7	ND	1.1	ND	0.3	10.1	99.2
14	86.1	ND	0.8	ND	0.4	9.8	97.3
15	88.5	ND	0.6	ND	0.3	10.0	99.8
16	89.0	ND	0.7	ND	ND	9.9	99.6
17	88.4	0.2	1.2	0.1	0.4	9.9	100.6
18	87.8	0.1	1.4	ND	0.3	10.2	99.8
19	86.3	ND	0.8	ND	0.6	10.1	97.8
20	88.2	ND	0.4	ND	0.2	10.1	98.9

Analysis 1-10 primary, 11-20 metamorphic. 'Oxide stoichiometry expressed as Mn<sub>2</sub>O<sub>3</sub>, ND Not detected



**The McArthur River project** is located approximately 850 kilometres south east of Darwin in the Northern Territory. The project comprises one Exploration Licence (EL27117) which covers a total area of 629.84 km<sup>2</sup> that is easily accessed from the Carpentaria Highway, 265 kilometres by road from the working port at McArthur River and 210 kilometres from the Borroloola Township.

In 2011, compilation and re-processing of open file airborne electromagnetic (EM) data from BHP was used to target and delineate potential sites of manganese mineralisation. Ten selected target areas of interest totalling 135.14sq km, some containing multiple EM anomalies, may represent massive manganese mineralisation. All these areas are considered to be high priority for ground reconnaissance. It is recommended that the target areas be followed-up initially with ground reconnaissance and rock chip sampling, to determine the sources of the airborne EM anomalies. The results are summarised in the Table 3 and represented on Figure 3 below.

Table 3: Targets outlined by re-processing aerial EM data

Area No	Easting	Northing	Total Area (sq km)	Lithology
1	731600	8133880	37.93	Cenozoic/Undivided Cretaceous Sediments
2	738400	8130300	20.37	Cenozoic Sediments
3	728300	8128900	5.1	Cenozoic Sediments
4	730000	8122600	33.33	Karns Dolomite/Cenozoic Sediments
5	738400	8123300	11.45	Karns Dolomite/Cenozoic Sediments
6	736100	8120000	4.82	Cenozoic Sediments
7	732400	8117200	10.61	Karns Dolomite/Cenozoic Sediments
8	734300	8114500	1.52	Karns Dolomite/Cenozoic Sediments
9	730400	8110200	8.13	Karns Dolomite/Cenozoic Sediments
10	727700	8111100	1.88	Karns Dolomite/Cenozoic Sediments
<b>Total</b>			<b>135.14</b>	

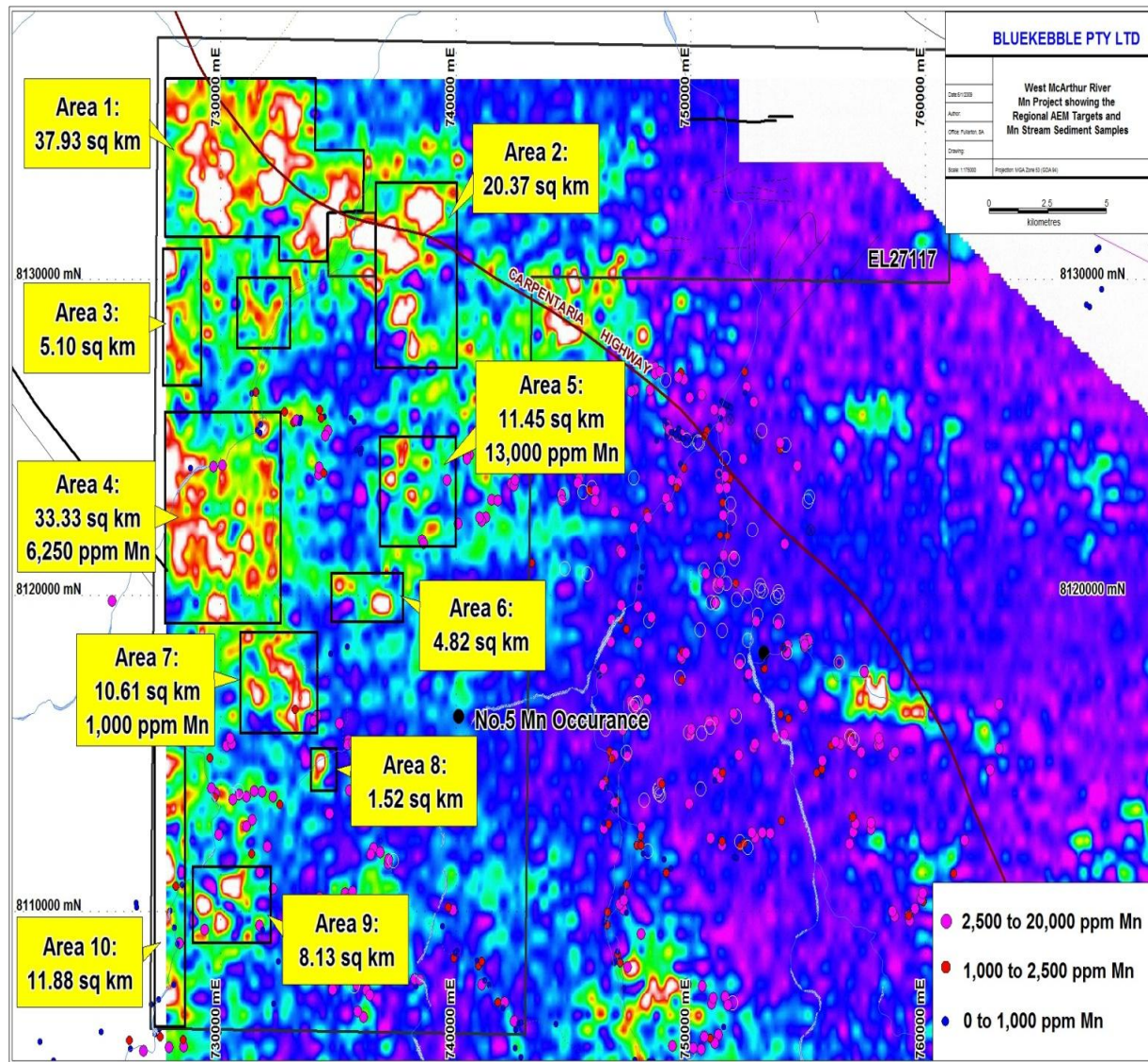


Figure 3: West McArthur River Project – Aerial EM Target location showing Target Areas

**In commenting on these positive results, Rodney Dale, Director and Geological Consultant, of Eclipse Metals Ltd, said:**

“We are greatly encouraged to have received such excellent results from the open file desktop review. This work has demonstrated the manganese prospectivity of both projects, especially in the high grade manganese mining areas within the Mary Valley Project. The Company will now focus on designing and implementing exploration programmes targeting these high grade areas”.

For and on behalf of the Board



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*The information in this report that relates to Exploration Results together with any related assessments and interpretations is based on information compiled by Kastellco Geological Consultancy on behalf of Mr Giles Rodney (Rod) Dale. Mr Dale is a fellow of the Australasian Institute of Mining and Metallurgy. Mr Dale is a Director of the company. Mr Dale has sufficient experience relevant to the styles of mineralisation under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 edition of the "Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Dale consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

## **References**

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