OM (Manganese) Ltd
Renner West Mineral Resource Update Memorandum
November 2012

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Craig Reddell
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OM (Manganese) Ltd
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Dear Craig

RENNER WEST NOVEMBER 2012 RESOURCE UPDATE

1. Summary

Optiro Pty Ltd (Optiro) has completed a mineral resource update for Renner West during November 2012 on behalf of OM (Manganese) Ltd. (OMM). The Renner West deposit is located 70 km northwest of the Bootu Creek mine site, within the siltstone, dolostone and sandstone of the Shillinglaw Formation in the Namerinni Group

The updated resource incorporates two additional drillholes since December 2011. A memorandum has been prepared to supplement the 2011 Mineral Resource prepared by Optiro in December 2011. A global tonnage grade report is provided in Table 1. A tabulations section at the end of this document provides a comparison between the 2011 and 2012 Mineral Resource estimates (Table 3).

Table 1: November 2012 Renner West Mineral Resource - global tonnes and grade by Mn cut-off grade

November 2012 Mineral Resource								
	Cut-off Grade (Mn %)	Tonnes ('000)	Mn %	Fe %	SiO_2 %	Al_2O_3 %	BaO %	P %
Inferred	15	297	21.9	3.6	43.7	7.5	0.2	1.54
	18	261	22.7	3.5	43.0	7.3	0.2	1.60

The resource estimate has been assigned a resource confidence category in accordance with the JORC Code 2004 and proposed 2012 draft amendments. The Mineral Resource has been classified as an Inferred Mineral Resource using drillhole spacing, grade continuity, and geological confidence as criteria. The assignment is based on OMM's current geological understanding of the Renner West deposit. Drill spacing of 40 mN by 20 mE is adequate to allow for the assignment of higher confidence classifications when the geology of the deposit and controls on mineralisation are better understood.

Figure 1: Renner West plan view with drillholes and mineralisation wireframes

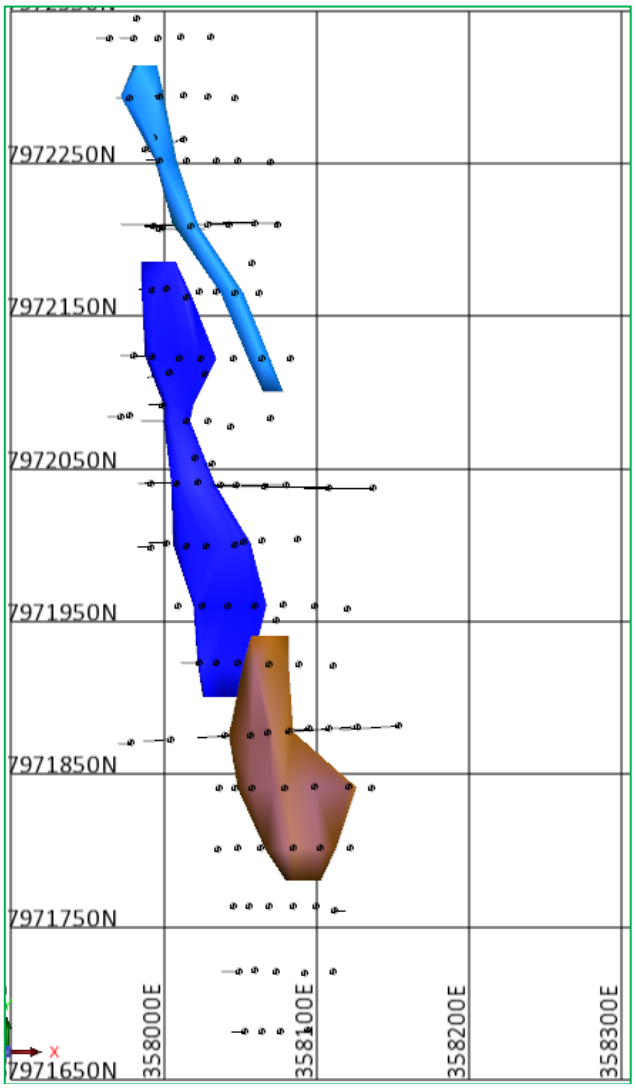
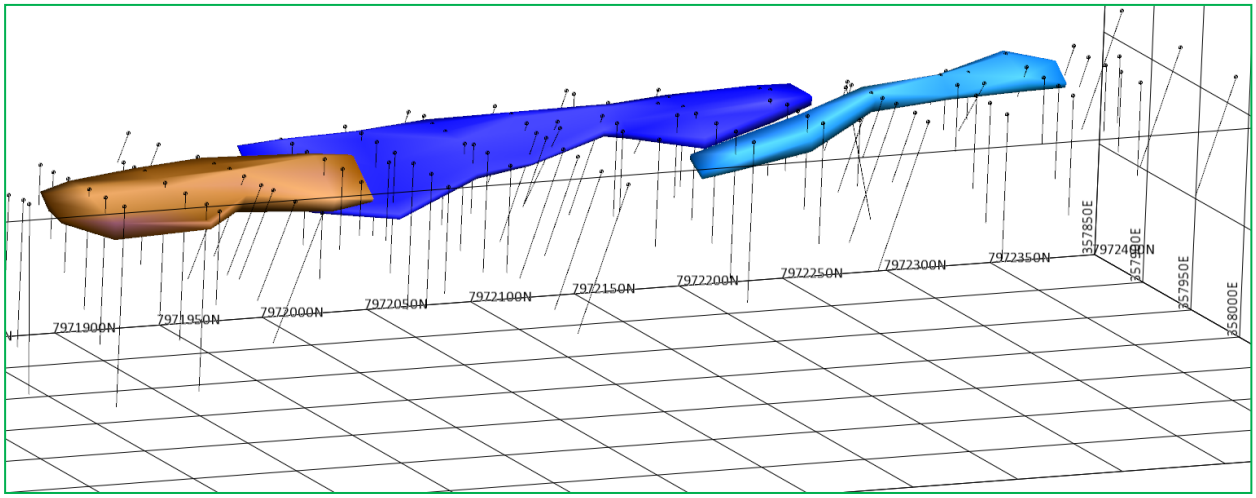


Figure 2: Renner West oblique view looking west-northwest with drillholes and mineralisation wireframes



2. Renner West Deposit Location and Geology

The Renner West deposit is located 70km northwest of the Bootu Creek mine site (Figure 3), within the siltstone, dolostone and sandstone of the Shillinglaw Formation in the Namerinni Group. The deposit style is multiple thin manganese rich seams hosting wider manganese rich near surface breccia nodes (Figure 4). The north-south striking manganiferous horizons dip around 25° to the east. Other manganese accumulations in the Renner Springs project area remain to be delineated.

Figure 3: Renner West deposit location

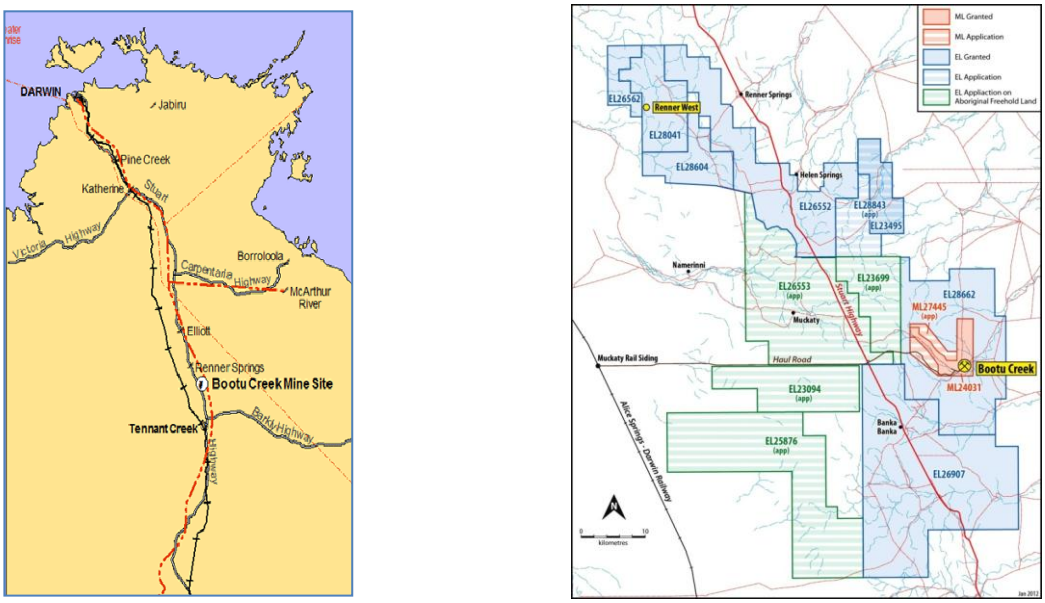
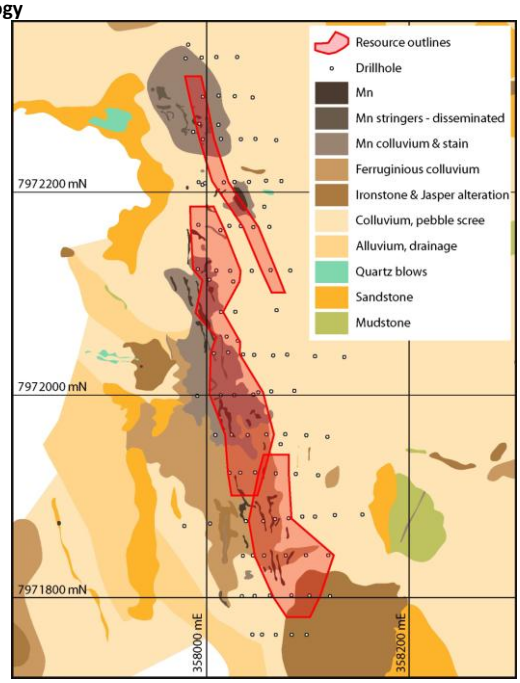


Figure 4: Renner West interpreted geology



3. Data and Estimation

The resource has been drilled to a vertical depth of approximately 100 m and the mineralisation has been modelled from surface to a vertical depth of approximately 30 m.

The estimate is based predominantly on reverse circulation (RC) drilling, with the incorporation of two grade control percussion holes (PC). The drillhole section spacing is approximately 40 m north-south with drillhole spacing of approximately 20 m east-west.

Wireframing of the mineralised domains used cross section interpretations provided by Craig Reddell of OMM. These use a nominal 15% Mn cut-off grade and a minimum downhole length of 3 m to form cross-section string outlines that were triangulated into solid models. Intersecting these with the drillhole database produced intersection tables flagged with resource codes that allowed extraction of 1m composite samples.

Statistical analysis of Mn, Fe, SiO_2, Al_2O_3, P and BaO for the resource composites of each domain revealed grade distributions (variance) consistent with the mean of each element. Optiro considers that no top-cuts were necessary. Variography and estimation parameters were reprised from the 2011 estimate (Optiro, 2011) as the addition of two holes would not change these parameters. The deposit was estimated using the Ordinary Kriging (OK) grade interpolation technique.

The parent cell block dimensions used in the model were 20 mN by 10 mE by 5m mRL, with subcelling used for volume fill.

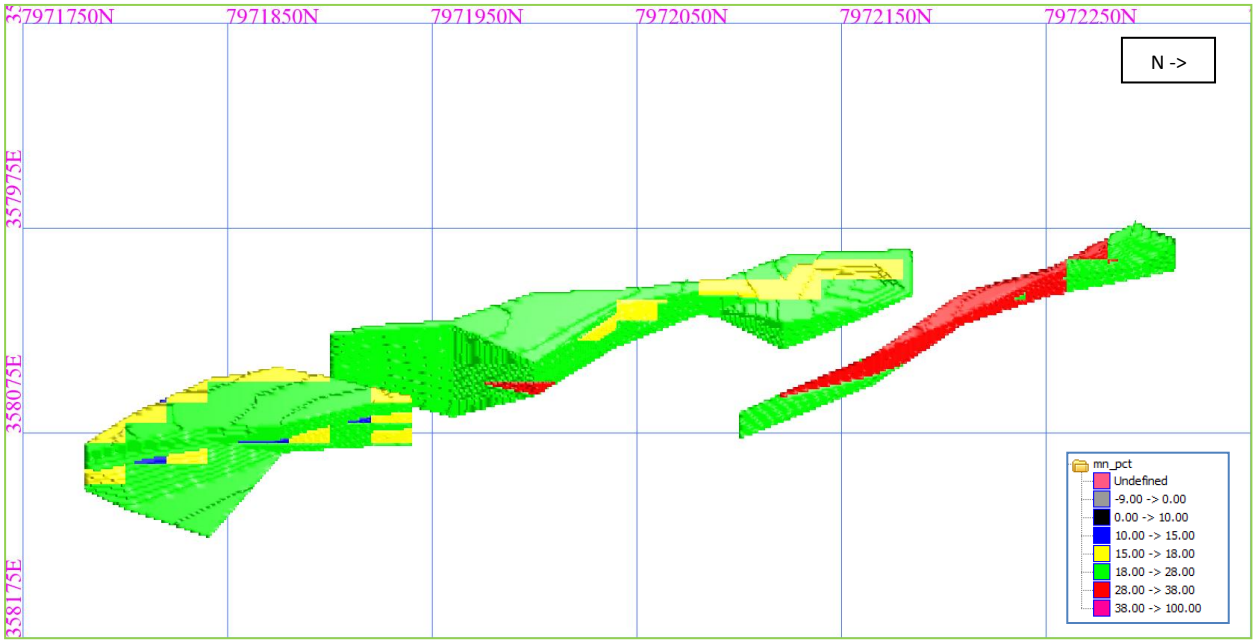
The resource was classified as Inferred Mineral Resources. The Inferred assignment is based on OMM's current geological understanding of the Renner West deposit. Drill spacing of 40 mN by 20 mE is adequate to allow for the future assignment of higher confidence classifications, when the geology of the deposit is better understood.

Features of the resource estimate are as follows.

- The Renner West Mineral Resource extends over a strike length of 170 m. Mineralisation dips to the east north east at dips of 15°. Down-dip extension ranges from 40 m to 60 m.
- Drillholes used in the resource estimate included 34 RC holes and 2 PC holes for a total of 234 m within the resource wireframes.
- Section spacing is 40 m and drillhole spacing is 20 m. Drill azimuths range from vertical drillholes (20 drillholes) to azimuths of between 250° and 270° with dips of 60° (16 drillholes).
- Collar survey methodology has not been provided to Optiro.
- Field sampling methodology has not been provided to Optiro.
- Laboratory sampling methodology has not been provided to Optiro.
- Drillholes have not been downhole surveyed but are generally shallow.
- OMM is accepting Competent Person responsibility for assay QAQC; thus, Optiro has not validated this.
- Logging and sampling methods are considered by Optiro to be of an acceptable standard.
- Samples within the wireframes were composited to 1 m intervals based on analysis of the sample lengths in the database. No residuals were created during the compositing process.

- Grades were estimated into a Surpac block model with parent block dimensions of 20 mN by 10 mE by 5m mRL using subcelling for volume representation (Figure 5).
- Attributes for the following elements: Mn Fe SiO_2 Al_2O_3 P and BaO were estimated into parent model cells using ordinary kriging (OK) interpolation. Estimation was constrained using geological wireframes interpreted by OMM and wireframed by Optiro. Wireframes were based on a nominal manganese cut-off of 15%.
- Estimation parameters were as per the 2011 Mineral Resource Estimate (Optiro, 2011). Optiro derived estimation parameters at the deposit scale and the same variography model was applied to all three domains.
- Hard boundaries between all three domains are assumed.
- Grade estimation used three (3) passes. The first pass used a search radius of 150 m with a minimum of 15 and maximum of 32 samples. The search radius was increased by a factor of 1.5 for the second pass, maintaining all other parameters. With the third pass, the minimum sample number was reduced to 2, maintaining all other parameters.
- The assignment of density values in the model used regression formulae derived from test work by OMM on 366 diamond drill core samples. OMM has derived six separate density regression equations, covering the Bootu Creek field. The detail of this work is listed in the December 2009 Resource and Reserve Summary (Reddell and Laing, 2009). Density for mineralised material is related to manganese grade and was calculated using the formula:
    - Density = 1.88 + 0.028*(Mn%).
    - Waste material was assigned a value of 2.35 gcm^{-1}.
- Final grades were validated by statistical analysis and visual comparison to the input drillhole composite data. Grade trend profiles were used to validate model grades. Trend profiles compare average model grades with input drillhole grades for northing, easting, or elevation slices through the model.

Figure 5: Renner West Block Model plan view showing Mn%



4. Tabulations

Table 2: November 2012 Renner West Mineral Resource - global tonnes and grade by Mn cut-off grade

November 2012 Mineral Resource								
	Cut-off Grade (Mn %)	Tonnes ('000)	Mn %	Fe %	SiO_2 %	Al_2O_3 %	BaO %	P %
Inferred	15	297	21.9	3.6	43.7	7.5	0.2	1.54
	18	**261**	22.7	3.5	43.0	7.3	0.2	1.60

Table 3: 2011 and 2012 Renner West Mineral Resource - tonnes and grade comparison by manganese cut-off and resource category

	Renner West 2011 and 2012 Mineral Resource Comparison								
	Resource category	Cut-off Grade (Mn %)	Tonnes ('000)	Mn%	Fe%	SiO_2%	Al_2O_3%	P%	BaO%
2011	Inferred	15	303	21.9	3.6	44.0	7.5	0.2	1.50
		18	269	22.5	3.6	43.4	7.3	0.2	1.60
2012	Inferred	15	297	21.9	3.6	43.7	7.5	0.2	1.54
		18	261	22.7	3.5	43.0	7.3	0.2	1.60
Difference	Inferred	15	6	-0.04	0.03	0.28	-0.04	0.002	-0.04
		18	8	-0.16	0.06	0.39	-0.02	0.000	0
% Difference	Inferred	15	2.0%	-0.2%	0.8%	0.6%	-0.5%	1.1%	-2.7%
		18	3.0%	-0.7%	1.7%	0.9%	-0.3%	0.0%	0.0%

Yours faithfully

Mark Drabble MAusIMM, B.App.Sci (Geology)

Principal Consultant
OPTIRO

The information in this report which relates to Mineral Resources is based upon information compiled by Mark Drabble, who is a Member of the Australasian Institute of Mining and Metallurgy. Mark Drabble is an employee of Optiro and has sufficient experience which is relevant to the style of mineralisation and type of deposit 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 Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mark Drabble consents to the inclusion in the report of a summary based upon this information in the form and context in which it appears.

5. References

JORC, 2012	The JORC Code Exposure Draft and ASX Consultation Paper - Draft ASX Listing Rules and Guidance Notes.
Optiro, 2011	Renner West Resource Update. Unpublished report to OM Holdings Limited.
Reddell, C. and Laing, M., 2010	Bootu Creek Manganese Project. Resource and Reserve Summary. Unpublished report to OM Holdings Limited.
JORC, 2004	Australasian Code for Reporting of Exploration Results, Mineral Resources, and Ore Reserves, The JORC Code 2004 edition.