MONTEZUMA
MINING COMPANY LTD

Butcherbird metallurgical testing update

- **Low cost processing options confirmed**
- **Crushing, screening and scrubbing has the potential to deliver a 33.8% Mn lump product at >31.5mm**
- **Favourable iron manganese ratios**
- **Low deleterious element contamination**
- **Targeting >6.3mm lump product**

Butcherbird (100%)

During the December 2013 quarter Montezuma Mining Company Limited (ASX: MZM) ("Company") completed a 14 hole, HQ sized (63 mm diameter) diamond drilling program totalling 474 metres (BBDD010 to BBDD023), at its 100% owned Butcherbird Manganese Project. The Project is located approximately 120 km south of the township of Newman in Western Australia. Eight manganese deposits have been delineated within Butcherbird with a total inferred resource (JORC 2004) inventory of 119 million tonnes @ 11.6% (i.e. lower cut of 10% Mn) and an additional 55.9 million tonnes @ 9.3% Mn (i.e. within the 8% to 10% Mn range) (Appendix 1).

The purpose of the HQ diamond drilling program was to collect core samples for metallurgical studies to enhance the understanding of the processing route options and more clearly define the ultimate manganese product specification.

Potential beneficiated product specification

The Butcherbird occurrence is unlike other manganese resources as its composed of fairly competent manganiferous mineral bands or lenses in a matrix of weathered shales. Previous test work had indicated that a substantial proportion of the gangue matrix could be rendered to slime by moderate energy input scrubbing.

Based on the test work interpretation and recognition that recovery of manganese units from scrubbed material of particle size smaller than 6.3 mm is impractical or uneconomic (or both) the expected product specification for a greater than 6.3 mm manganese ore lump would be in accordance with Table 1 below:

ABOUT MONTEZUMA MINING

Listed in 2006, Montezuma Mining Company Ltd (ASX: MZM) is a diversified explorer primarily focused on manganese, copper and gold. The Company's primary objective is to achieve returns for shareholders through selected strategic acquisitions and targeted exploration programs. Montezuma Mining has a 100% interest in the Butcherbird Manganese/Copper Project in the Murchison region of Western Australia.

FOR MORE INFORMATION…

Mike Moore
Chief Executive Officer
Phone: +61-8 6315 1400
Email: mmoore@montezuma.com.au

Ronn Bechler
Investor Relations, Market Eye
Phone: +61-400 009 774
Email: ronn.bechler@marketeye.com.au

Company information, ASX announcements, investor presentations, corporate videos and other investor material on the Company's projects can be viewed at www.montezumamining.com.au

Table 1: Expected product specification for > 6.3 mm manganese ore lump

Potential Mn %	% SiO_2	% Al_2O_3	% Fe	Mn/Fe ratio	% P
32.5	23.02	5.77	6.95	4.68	0.054

The test work program was intended to determine the extent gangue could be rejected by scrubbing and also determining the densimetric characteristics of the resultant competent scrubbed lump. The expected outcome was definition of a yield of marketable grade manganese ore and an initial indication of the ore breakage and scrubbing energy requirements for that treatment.

Purpose designed laboratory scrubber

The Company built a laboratory scrubber specifically to perform scrubbing tests on small increments of core sample. The purpose built laboratory scrubber was designed to be used as a conventional lump scrubber and also for measuring scrubbing characteristics of fine ore particles in a charge assisted situation or as an autogenous scrubber.

Densimetric determination method

The density of particles in the following size fractions were measured by individual particle pyknometry (IPP):

- Greater than 31.5 mm
- 16 mm to 31.5 mm
- 8 mm to 16 mm
- 6.3 mm to 8 mm

IPP measures the apparent water saturated density of each particle. The technique provides an accurate measure of the density the particle would exhibit in a water-based media commercial separation process. Particles smaller than 6.3 mm were divided into the following sizes:

- 6.3 mm to 2.36 mm
- 2.36 mm to 1.0 mm
- 1.0 mm to 0.5 mm

The ore reporting to each density fraction of any size fraction was chemically analysed via XRF on fused prills for a complete standard elemental suite appropriate for manganese mineral plus loss on ignition at three different selected temperatures.

Results of greater than 6.3 mm size fractions densimetric interpretation

Table 2 below shows the yield that is potentially achievable from each particle size range of scrubber product. The scrubbed large lump (>31.5 mm) can become manganese concentrate without any further beneficiation. This large lump demonstrated a grade of 33.8 % Mn. This demonstrates the potential for a simple crushing, screening and scrubbing process to deliver approximately a 34% Mn lump product. No fragments of manganiferous minerals from any other (smaller) size fractions demonstrated manganese grades higher than this clean lump product.

The following has been concluded:

- The lump product is substantially free of any surface gangue minerals that could be disengaged by mechanical beneficiation
- The individual large lump are of homogeneous mineralogy to a grain size of less than 6.3 mm

The size fractions 31.5 mm to 16 mm, 16 mm to 8 mm and 8 mm to 6.3 mm can be beneficiated by a high precision densimetric route and would produce individual yields and grades shown in the Table 2.

Table 2: >6.3mm yields

<Particle size mm	>Particle size mm	Individual est. [Mn] %	Individual yield %	Overall yield %	Overall Mn %
	31.5	33.81	100.00	26.74	
31.5	16	31.36	98.70	44.45	
16	8	32.48	91.97	21.56	
8	6.3	28.7786	70.94	3.39	
				96.14	***32.20***

Results of greater than 6.3 mm size fractions densimetric interpretation

Table 3 demonstrates the yield that is potentially achievable from each particle size range of scrubber product less than 6.3 mm. The table shows the overall yield (from plant feed) is small compared to the yield achieved from the coarser scrubbed material. Moreover the estimated grade achievable at the yields tabulated would slightly reduce to total marketable product grade.

Both the beneficiation operating and capital cost escalate rapidly with processing smaller particle sizes. Hence the additional capital and operating costs for little overall yield benefit would not justify processing the minus 6.3 mm component of the scrubber ore.

Table 3: 6.3mm - 0.5mm yields

<Particle size mm	>Particle size mm	Individual est. [Mn] %	Individual yield %	Overall yield %	Overall Mn %
6.3	2.36	29.30	46.13	2.96	
2.36	1	27.24	36.36	1.26	
1	0.5	21.82	41.99	0.87	
				5.09	***27.51***

Minus 0.5 mm scrubber product

The built-up manganese content of the minus 0.5 mm slimes from scrubbing indicates an overall grade of approximately 1.06 % Mn. Any attempt to recover marketable or further process able product from this material would not be economic.

Continuation of metallurgical program

Beneficiation work performed to date has been limited to the upper saprolite ore type and to a single metallurgical test sample. Further work will be conducted on the remaining metallurgical samples obtained from the 14 hole, HQ sized (63 mm diameter) diamond drilling program (BBDD010 to BBDD023).

The Company expects that a test work regime similar to that described for upper saprolite material would be performed for all ore types, with the upper saprolite given priority.

Preconcentration

The only preconcentration route that appears to be applicable to this ore is by instrumental ore sorting. A small number of lump samples have been examined and evaluated for their amenability to X-ray transmission ore sorting. A small “grab” sample has been separated using the ore sorting technique. The inclusion of ore sorting as a preconcentration process has the potential benefit of reducing water consumption and the extent of the required tailings storage facility.

The process route to include ore sorting would be to dry screen primary crushed ore and subject a coarse fraction (say > 30 mm) to the ore sorter treatment. The “accepts” from the sorter and the minus 30 mm screened feed would then feed a scrubbing process based on the major test work to date.

Conclusion

The results gained from this recent round of test work have confirmed the basic processing route required to deliver a clean >6.3 mm manganese product. With a production rate of 0.5 Mt per annum of manganese product the Butcherbird project would utilise conventional open pit mining techniques and have an operational mine life of 20 years with options to expand further resources. The project is located favourably in terms of infrastructure with the Great Northern Highway running through the tenement as well as the Goldfield's Gas Pipeline. The town of Newman located 125 km to the north is a significant industrial and commercial hub for the region and has daily air services to Perth.

The Company is currently targeting consumers who are seeking long term supply of consistent grade manganese product with low deleterious element contamination.

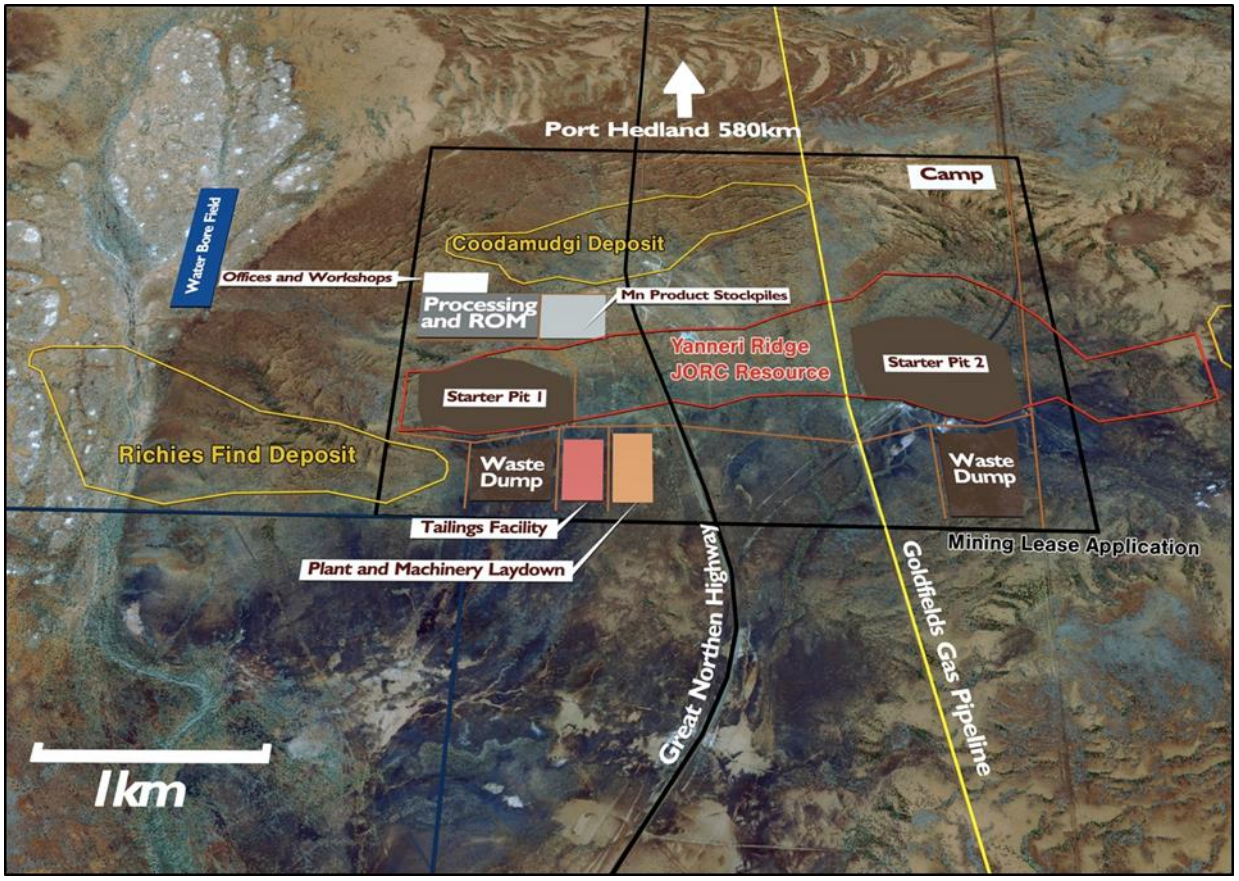

Figure 1. Conceptual mine layout plan showing key infrastructure within the Butcherbird Mining Lease Application surrounded by the Company's exploration tenure.

The Information in this report that relates to exploration results is based on information compiled by Mr Justin Brown, who is a member of the Australian Institute of Mining and Metallurgy. Mr Brown is a geologist who is a full time employee of Montezuma Mining Company Ltd 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 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Brown consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The Information in this report that relates to metallurgical testing results is based on information compiled by Dr Tony Mason, who is a Fellow of the Institute of Materials, Minerals and Mining (FIMMM). Dr Mason is a consulting metallurgist who is a full time employee of Mineral Processors (WA) Pty Ltd 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 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Dr Mason consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

This information was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

Appendix 1: Butcherbird Inferred Resource Estimates (MZM, ASX 7th December 2011)

Classification	Inferred Resource	
Cut-off	10% Mn	
Deposit	Tonnes (Mt)	Mn (%)
Bindi Bindi Hill	8.75	11.09
Budgie Hills	1.03	10.82
Cadgies Flats	0.25	11.08
Coodamudgi	12.9	11.48
Illgararie Ridge	17.0	10.71
Mundawindi	14.2	12.23
Richies Find	16.1	11.56
SUBTOTAL	**70.2**	**11.4**
Yanneri Ridge	*48.8*	*11.8*
GLOBAL TOTAL	***119.0***	***11.6***

Additional Resources estimated with 8% Mn cut for beneficiated product grading under 35% Mn.

Classification	Inferred Resource	
Cut-off	8-10% Mn	
Deposit	Tonnes (Mt)	Mn (%)
Bindi Bindi Hill	5.7	9.2
Budgie Hills	3.5	8.9
Cadgies Flats	0.2	9.1
Coodamudgi	3.6	9.5
Illgararie Ridge	18.5	9.2
Mundawindi	2.1	9.4
Richies Find	6.6	9.4
SUBTOTAL	**40.1**	**9.3**
Yanneri Ridge*	*15.8*	*9.4*
GLOBAL TOTAL	***55.9***	***9.3***