



20 May 2014

WILCHERRY HILL MANGANESE HERCULES
AND PIER DAM
INDEPENDENT TECHNICAL REVIEW

IronClad Mining Limited (IFE : ASX) is pleased to release the results of an independent assessment of the Company's exploration activity at their Wilcherry Hill project and in particular the manganese potential. The report was requested by the Company and completed by ARC Resources Pty Ltd.

IronClad Mining Limited's Managing Director Robert Mencil said *"This independent technical review supports our belief that we have identified significant manganese mineralisation."*

The Hercules Manganese prospect is a Joint Venture with Trafford Resources Limited (TRF : ASX) in which IronClad can earn up to an 80% equity interest and is a part of the massive Hercules iron deposit, approximately 15 kilometres East of the developing Wilcherry Hill iron ore project in South Australia.

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WILCHERRY HILL MANGANESE OCCURRENCE AT HERCULES AND PIER DAM INDEPENDENT TECHNICAL REVIEW

In April 2014 Ironclad Mining Ltd requested Mr Steve Boda of Arc Resources Pty Ltd to complete an independent assessment of their exploration activity at their Wilcherry Hill project and in particular the developing manganese potential. The review was to provide an opinion on the styles and controls of mineralisation at Wilcherry Hill and suggestions as to future directions and exploration targets.

Overview

- Manganese mineralisation at Hercules East and Pier Dam Prospects in the Wilcherry Hill project was sourced from dolomitic sediments and originally appears to be hypogene in origin, with a later supergene overprint.
- This hypogene event may have occurred during the emplacement of the Hiltaba suite at around 1600 – 1585Ma.
- Two holes drilled in 2013, returned **7m @ 20.2%Mn (from 55 – 62m)** and **22m @ 22.1% Mn (from 55 – 77m)** respectively from Hercules East which is at a very preliminary stage of exploration.
- Follow up drilling reported on 28th and 31st January 2014 highlighted significant results of;
 - **12m @ 20.72% Mn (14HCRC001, 59-71m downhole)**
 - **11m @ 29.90% Mn (14HCRC006, 65-76m downhole)**
 - **17m @ 22.40% Mn (14HCRC007, 49 – 66m downhole)**
- The latest drilling confirmed the occurrence of manganese in the Hercules East area and increased the strike extent of mineralisation to 125 metres, centred around drillhole 13HCRC026.
- Aggregate exploration target estimation for additional manganese mineralisation at Hercules and Pier Dam Prospects totals around **7.0 to 9.7 Million tonnes grading 15 – 22% Mn**
- Arc Resources is of the the opinion that the structural orientation of the mineralised zones poses no issues for mining, however in order to improve the mineability and economics of the mineralised zones, several key factors need to be present including uniform mineralisation extending at depth and the presence of multiple mineralised zones.
- Preliminary metallurgical testwork reported on 30 October, 2013 demonstrated the ability to upgrade the manganese mineralisation using simple low cost gravity separation creating a pyrolusite concentrate. Additional work will be required to estimate the comminution, mass balance and recovery of the potential ore and define a cost-effective processing route.

Introduction

Ironclad Mining Ltd (ASX: IFE, Ironclad) listed on the ASX in 2007 and acquired an 80% equity interest in the Wilcherry Hill Iron Ore project from Joint Venture partner Trafford Resources Ltd.

Ironclad continued to progress the project by improving on the then known resource, undertaking detailed geological and mining studies that include metallurgical

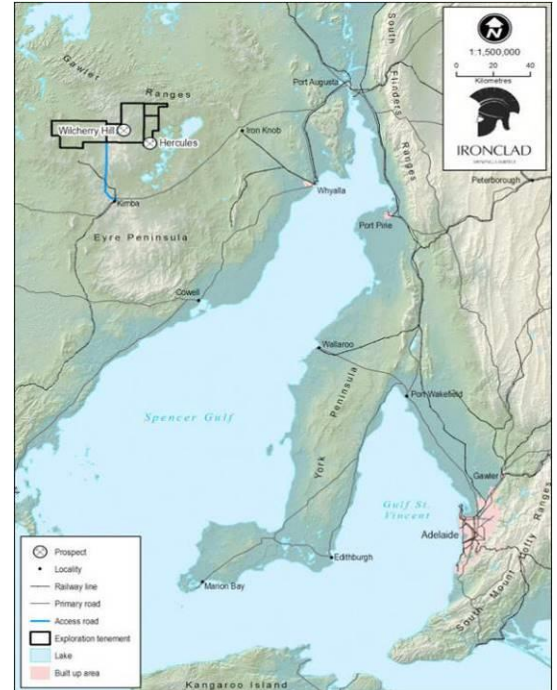


Figure 1. Project Location Map

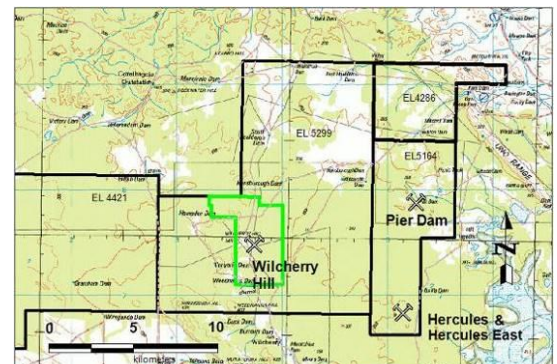


Figure 2. Tenement and Prospect Locations



Figure 3. Massive manganese over BIF at Pier Dam

testwork, environmental and social studies and gaining approvals for required infrastructure.

The Wilcherry Hill Iron Project comprises four exploration tenements and one mining lease covering an area of 976km². A Mineral Resource, previously reported in accordance with the 2004 JORC Code guidelines, totals 26.6Mt @ 40.4% Fe over four deposit areas; Weednanna, Weednanna North, Ultima Dam East and Ultima Dam West all situated within ML6390.

In addition to the iron ore, Ironclad has reported significant manganese intersections from their 2008 and 2013 Hercules Prospect drilling campaign in which a total of 9 holes returned greater than two (2) metre widths at greater than 15% Mn. From this drilling, an initial **JORC compliant Inferred Resource of 215.6 Mt @ 27.7% Fe** for the Hercules Prospect area **was announced on 22 December 2008**. This resource included a component of manganese mineralisation estimated to be 8.9 Mt at **10.1% Mn** and 35.1% Fe.

Follow up exploration on historical reported manganese occurrences has led to significant discoveries of manganese further north of Hercules at the Pier Dam Prospect.

It is the manganese occurrence at the Hercules and the Pier Dam Prospects, that has lead Ironclad to realise the potential of manganese and the positive impact it has on the economics of the project. Ironclad intend on developing and delineating a resource to complement the current iron ore resource.

Tenements

The Wilcherry Hill project comprises four Exploration Licences EL4286, EL 4421, EL 5164, and EL 5299) and one Mining Licence (ML6390). Ironclad has 80% entitlement to the iron ore in the mining lease and from the four other tenements.

Ironclad also has a right to earn up 80% interest in manganese from the four exploration tenements currently joint ventured with partner Trafford Resources.

Geological Summary

Hercules East Manganese Occurrence

Geology in this area is interpreted to be Palaeoproterozoic Middleback Subgroup comprising units of the Lower Middleback Iron Formation (BIF), Katunga Dolomite Formation and their sediment derivatives. The Hercules East manganese occurrence extends for some three kilometres along the eastern side of a BIF ridge. Outcrops of manganese mineralisation composed of pyrolusite as identified at Hercules East represents supergene enrichment. The source of the manganese is interpreted to be the Katunga Dolomite unit.

Preliminary investigations have shown that manganese mineralisation is possibly structurally controlled and is related to steeply down-plunging lineation features in the eastern fold limb of the Hercules area.

Pier Dam Manganese Occurrence

Manganese mineralisation at Pier Dam can be traced intermittently over an eight kilometre strike length that runs the width of EL5164 in a north-westerly direction. .

The Pier Dam manganese is shear-hosted and controlled, with the Warrow Quartzite and possibly Katunga Dolomite Formations as the hosts. Manganese would have been sourced from the Katunga Dolomite through hydrothermal activity and deposited

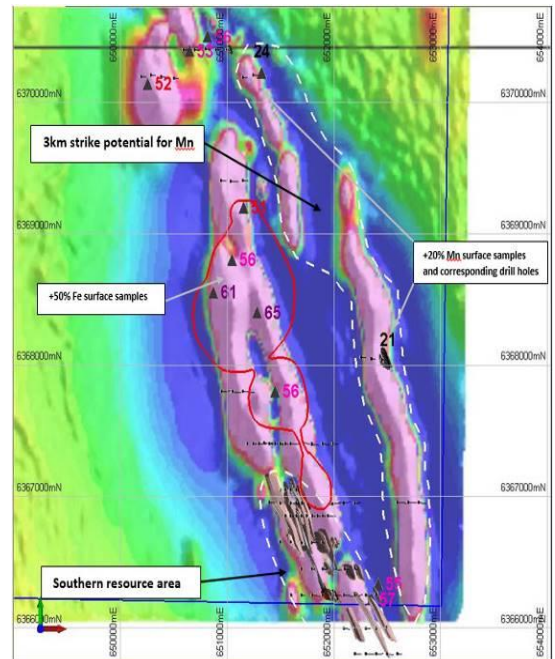


Figure 4. Location of Mn occurrence at Hercules

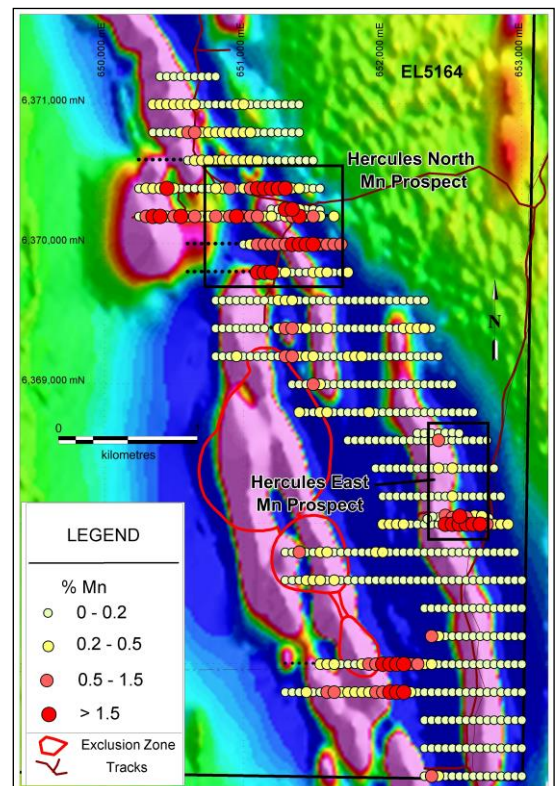


Figure 5. Anomalous Mn in soil lag sampling. (Red outlines indicates Heritage exclusion zone)

within the shear zones either as primary manganese or hydrothermal derivatives such as rhodochrosite (MnCO₃).

Summary of Work Completed

Previous exploration work in the area was undertaken by Esso Ltd, Aberfoyle Ltd, Trafford Resources Ltd. All recorded manganese mineralisation at Hercules and Pier Dam prospects but as their focus was elsewhere, little was made of it until Trafford undertook rock chip sampling over Pier Dam in 2007 and later in 2011.

The surface rock chip sampling by Trafford Resources confirmed a 4km long manganese trend which had first been observed by explorers in the early 1980's. High grade values ranging from 15.5% to 31.4% Mn were obtained in the Trafford program.

Work Completed by Ironclad

Drilling by Ironclad of 64 holes for 8,928 metres and one diamond hole for metallurgical work was completed in 2008 and a maiden JORC inferred resource of 215Mt @ 27.1% Fe, which included 8.8Mt @ 10.1% Mn was released in December 2008, for the Hercules deposit (2008 Dec ASX Release).

In 2013 a second campaign of drilling comprising of 29 holes for 2,366 metres was completed as part of the ongoing exploration, for a total 93 RC holes for 11,294 metres. From these two campaigns, 9 holes were identified (7 holes drilled in 2008 and 2 holes drilled in 2013) that intersected manganese at widths greater than two metres and grades greater than 15% Mn.

In particular, **holes 13HCRC001 and 13HCRC026** drilled in the Hercules East area in 2013, **returned 7m @ 20.2%Mn (from 55 – 62m) and 22m @ 22.1% Mn (from 55 – 77m)** respectively.

A follow up drilling program reported to the ASX on 28 and 31 January 2014 confirmed and highlighted the occurrence of manganese in Hercules East, returning significant results of:

- 12m @ 20.72% Mn (14HCRC001, 59 - 71m downhole)**
- 11m @ 29.90% Mn (14HCRC006, 65 - 76m downhole)**
- 17m @ 22.40% Mn (14HCRC007, 49 - 66m downhole)**

This drilling highlighted the mineralisation over a strike extent of 125 metres. Mineralisation remains open to the east and north of the recent drilling. To the south, mineralisation appears to weaken, but continues and will require additional drilling to investigate.

Soil lag sampling was completed in early 2014 and highlighted additional areas of significant anomalies. Lag had identified previously known occurrences of manganese at Hercules South and East and now identified a new area known as Hercules North. This comprised a 1000 metre long anomaly located approximately two (2) kilometres to the north of the Hercules East Prospect.

Ground magnetics have been completed over the Pier Dam Prospect to be complemented by geological mapping of the area. Manganese appears to be coincident with or proximal to magnetic sources.

Modelling of the magnetic data is in progress and with interpretation from the mapping, will assist in generating drill targets at Pier Dam.

Additional work is currently being planned for May 2014 and beyond.

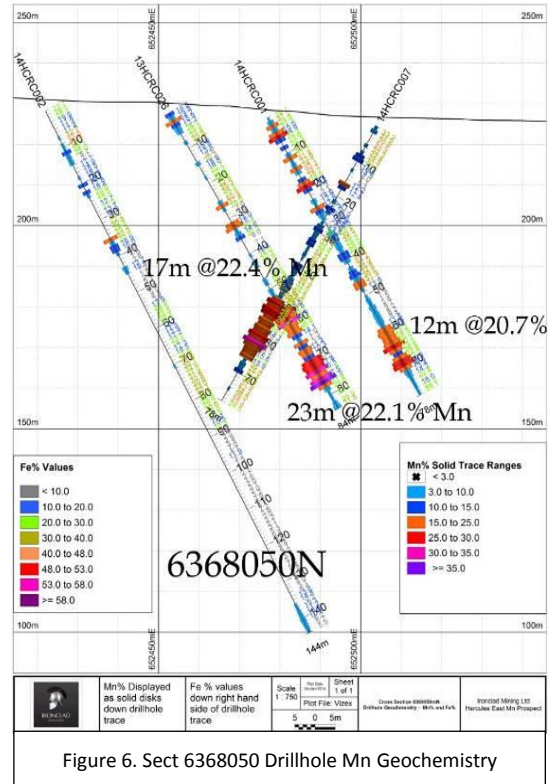


Figure 6. Sect 6368050 Drillhole Mn Geochemistry

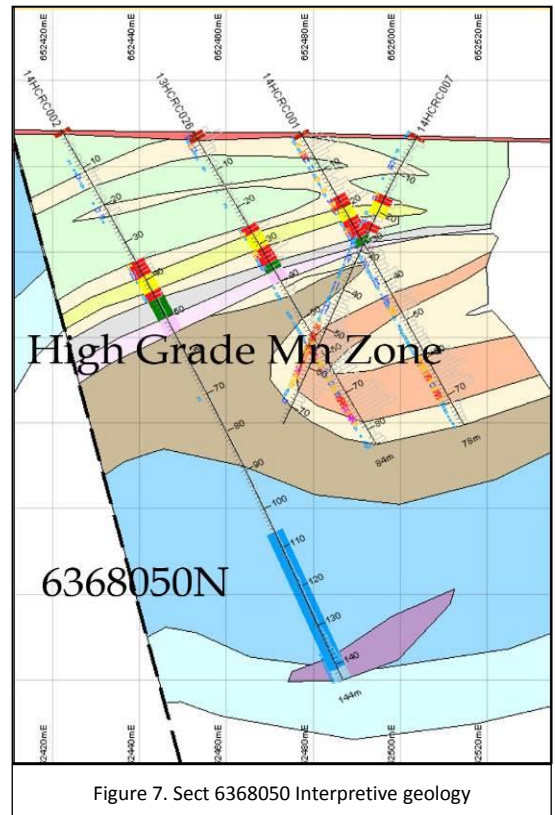


Figure 7. Sect 6368050 Interpretive geology

Analogous Deposit Types

Several styles of manganese mineralisation occurring in Australia with similarities to the Wilcherry Hill Project, are listed below;

Deposit Name	Company	Type	Age (Ma)	Location	Resource (Mt)	Grade	
						%Mn	%Fe
Woodie Woodie	Consolidated Minerals	Hy/Sg	1600-1000	WA	29.9	39.9	6.96
Contact & Contact North	Spitfire Resources	Hy/Sg	1640	WA	11.3	15	-
Sunday Hill	Mesa Minerals	Sm/Sb	2445	WA	4.7	18.4	-
Butcherbird	Montezuma Mining	Sm/Sg	1070-1211	WA	64.7	11.2	11.5
Bootu Creek	OM Holdings	Hy/Sg	1805-1710	NT	32.9	23.0	-

Table 1; Names and styles of other manganese deposits in Australia. Type Code: Hy = Hydrothermal, Sg = supergene, Sm = Sedimentary, Sb = stratabound,

Prospectivity and Occurrence Potential

In addition to the 8.9M tonnes at 10.1% Mn resource already defined, exploration targets have been estimated based on Arc Resources’ technical review, taking into account the geological setting, style of mineralisation, geological wireframes supplied by IFE and exploration results to date.

Hercules East and Pier Dam Prospects are considered capable of hosting manganese mineralised deposits in the order of:

- Hercules East 4.5 to 6.5 Million tonnes grading 11.5 – 18.5% Mn**
- Pier Dam 2.5 to 3.2 Million tonnes grading 18.0 – 25.0% Mn**

For an aggregate exploration target at Hercules and Pier Dam Prospects of approximately;

7.0 to 9.7 Million tonnes grading 15 – 22% Mn

These exploration targets comprise speculative tonnes and grade estimated by assessing the potential extents of known mineralisation as observed in the field and assuming a best guess assumption of length, width and depth extent.

They are not an accurate assessment of the actual metal content in any of the Ironclad tenements but provide an indicative target for the purposes of justifying further exploration. *There is no certainty that this quantum of mineralisation will be found to exist and it is strongly recommended that additional exploration work in accordance with the Guidelines of the JORC Code (2013) be completed and any potential investor seek additional information prior to any investment.*

In addition to the hard rock potential there is significant manganese that occur as eluvium deposits that have formed from the natural degradation of the landscape and concentrating manganese in the upper profile of the regolith. This material is easily accessed and extracted at low cost and would allow Ironclad to begin production of a



Figure 8. Mn in drilling sample from 14HRCRC007



Figure 9. Mineralised intervals from Hole 14HRCRC007

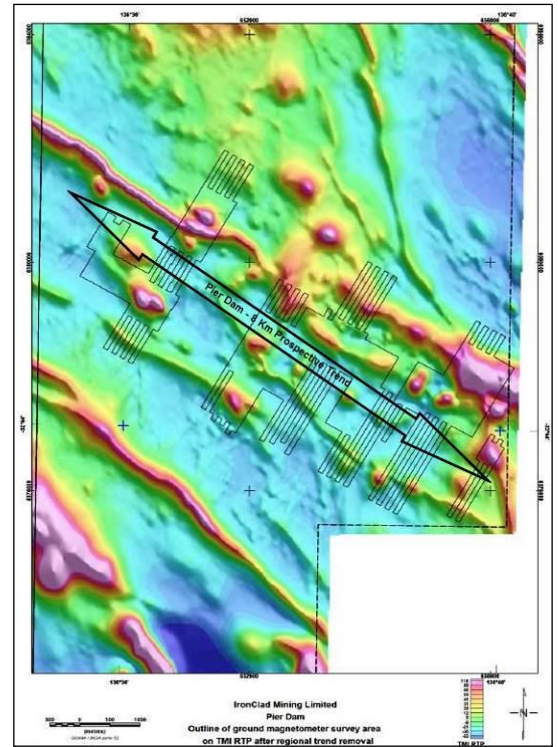


Figure 10. Ground mag and prospective trend; Pier Dam

manganese concentrate and an early phase.

Indigenous Heritage

Before exploration can occur at Pier Dam, the area will require an indigenous heritage survey by the Gawler Ranges People who hold Native Title over the area. IronClad has a Native Title Exploration Agreement (NTEA) with the Gawler Ranges People and a strong working relationship built over many years exploring in the region. Surveys are planned for late May 2014 to allow drilling programs to proceed, while protecting the indigenous heritage of the area.

Exploration Suggestions

As part of the on-going exploration to enhance and develop the manganese, exploration should include, but not limited to:

Hercules:

- Structural and lithological mapping to understand the relationships between the manganese occurrences and the timing of deformations.
- Additional drilling along strike at Hercules East to define the lateral extents of mineralisation and also down-dip to define the plunging extent of mineralisation.
- Follow-up drilling of anomalous lag samples in Hercules North.

Pier Dam:

- Additional mapping of lithology and structure, highlighting areas where concentrations of manganese are occurring. Identify the presence of the source rock for manganese.
- Generating drill targets from geological and geophysical interpretations.
- Assessing the potential of creating an extractable resource from the eluvial manganese material.

Conclusion

Ironclad's most recent drilling campaign had intersected significant manganese in Hercules East. This now adds additional weight to the prospect of discovering significant manganese at Hercules. Work at Pier Dam which previously includes rock chips from Trafford and Ironclad, showed encouraging results and from field observations it can be seen that mineralisation in this area has substantial strike extents along with reasonable widths.

Additional work in this area will enable Ironclad to generate drilling targets and hence add significant manganese to an expanding source.

Ironclad has realised the prospective nature of the manganese and are currently planning the next phase of exploration.

The potential to discover additional occurrences, develop and exploit manganese on the Ironclad tenements is highly feasible. The manganese complements the existing iron ore as well as the current plans to develop the mining and upgrade port infrastructure.

This will allow Ironclad to become a multi-commodity producer and significantly improve the potential economic viability of the project.



Figure 11. Massive pyrolusite supergene overprint on BIF units at Pier Dam



Figure 12. Massive Mn overprinting BIF at Pier Dam



Figure 13. Supergene manganese matrix infill of quartz breccia at Pier Dam

References

“20140326 Board Meeting Geology Contribution” Ironclad Inhouse Powerpoint Presentation.

“Hercules East Mn_Drilling Report 2014_v1.2”, Ironclad Inhouse Report

Various announcements to the ASX by Ironclad Mining Ltd (01/05/14, 30/01/14, 28/01/14, 9/12/13, 30/10/13, 24/10/13, 31/3/13, 22/12/08)

Glossary

Mn = manganese, BIF = Banded Iron Formation, eluvial = eluvium or eluvial deposits are those geological deposits and soils that are derived by in situ weathering or weathering plus gravitational movement or accumulation,



Figure 14. Eluvial deposit of manganese at Pier Dam

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Competent Persons’ Statements

The information in this report that relates to exploration results, data collection and geological interpretation is based on information compiled by Mr Steve Boda BSc (Hons) who is a Member of the Australasian Institute of Geoscientists (AIG). Mr Boda has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that is being undertaken to qualify as a Competent Person as defined in the 2013 edition of the ‘Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves’ (JORC Code). Mr Boda consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.