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## Quarterly Report to 31<sup>st</sup> December 2012

### Wilcherry Hill Iron Project

#### Mineral Resource Estimate

The results from the successful DSO infill and exploration drilling campaign completed last quarter have been used in revising the Mineral Resource. Updates have been carried out for the principal deposits Weednanna (WDA), Weednanna North (WDN) and Ultima Dam East (UDE).

From a likely DSO perspective, the 55% to 60% grade range together with all higher grade ranges indicates a resource of 2,041,320 tonnes at an average grade of 58.7%Fe. The 50% to 55% grade ranges together with all higher grade ranges indicating a resource of 3,962,931 tonnes at an average grade of 55.6% Fe.

These resources figures will now form the basis for new (DSO) mining optimisation studies including an updated DSO mining reserve.

#### Competent Person Statement

The information in this report that relates to Mineral Resources is based on information compiled by Rindra Le Grange; a Competent Person who is a Member of The Australian Institute of Mining and Metallurgy. Ms Le Grange is a full time employee of Trafford Resources Limited and ASX listed company and major shareholder in Ironclad Mining Ltd. Ms Le Grange has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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". Ms Le Grange consents to the inclusion in the report of the matters based on her information in the form and consent in which it appears.

### EXPLORATION (Trafford Resources JV Tenement)

Ongoing exploration activities were undertaken during the quarter in order to identify additional high grade, low cost iron resources suitable as direct shipping ore (DSO). Additional details can be found in the Company's releases to the ASX dated; 12/12/12, 19/12/12 and 22/01/13.

The Zealous and Black Hill West prospects have previously been identified as prospective for near surface DSO, were drilled during the quarter.

The drilling program comprised 10 reverse circulation (RC) holes for 533m at ZLS and 23 (RC) holes for 1,340m of drilling at BHW.

No mineralisation suitable as DSO was identified at ZLS. Of the 10 holes drilled, 6 intersected goethitic mineralisation. A vertical to steep dip is indicated with a 330° strike orientation. The iron mineralisation intersected has an indicated strike length of 150m with a true width of 15m – 20m. It is open to the North and South and at depth. Further drilling is warranted as a potential target for mineralisation suitable as upgrade via beneficiation processes.

DSO grades were encountered at BHW. Drilling identified a zone of near surface hematite / goethite mineralisation transitioning at depth to more magnetite dominant mineralisation (ASX release 19/12/12 & 21/1/13). The mineralisation style is similar to the skarn style observed at the Wilcherry Hill Iron Project. The mineralised zone is open to the east. Approximate current dimensions are 150 m strike and 60m depth extent. True width varies from 1m up 20m. A Resource estimate is planned for next quarter.

Only one of two adjacent, intense aeromagnetic anomalies at the BHW prospect has been drilled to date (Figure 2). Further drilling is warranted.

The prospects drilled represent 2 out of the 30 targets identified to date as having potential for near surface DSO. Field evaluation of these areas continues.

The high quality aeromagnetic data covering the JV tenement areas will be reviewed and selectively reprocessed to assist in prioritising evaluation of the DSO targets.

### Hercules

The planned 2,500m drilling program at Hercules will commence early in the next quarter. With a strike length of 10 km of prospective stratigraphy the program will test for extensions to the known near surface DSO grade mineralisation that forms part of the Inferred Mineral Resource (194Mt @ 27.1% Fe – ASX Release 22<sup>nd</sup> December 2008).



## **Mining**

Mining consultants, Mining Plus Pty Ltd, were engaged to carry out a number of mining studies in support of the planned mining operation at the Wilcherry Hill Iron Project.

Three (3) bodies of work were completed.

- Geotechnical Engineering Data Review
- Direct Shipping Ore (DSO) Reserve Estimate
- Whittle Optimisations – Mineral Processing Options

## **Geotechnical Review**

Mining Plus was requested to review the existing geotechnical investigation and design work and to provide recommendations on the potential to optimise earlier pit designs.

The preliminary assessment of the existing geotechnical report and data indicated a comprehensive analysis process had been undertaken. The level of geotechnical data collected and interpreted was considered to be good. The data can be carried forward into future design studies.

Further optimisation of the existing mine design parameters will be considered when a decision to commence mining operations is made.

## **DSO Reserve Estimate**

A DSO Reserve estimate was commenced incorporating the current iron ore price outlook and updated project costs. DSO extraction is envisaged as the first stage in developing a sustainable mining operation at Wilcherry Hill.

The additional infill drilling completed last quarter and an updated geological interpretation and Mineral Resource estimate formed the basis for this study.

The study was conducted for the three principal deposits Weednanna, Ultima Dam East and Weednanna North and comprised:

- Review of all information for JORC Reserve reporting requirements.
- Pit optimisation studies include sensitivity and risk analyses using Whittle Four-X
- Pit design alternatives
- High level mining schedules, to ensure mine plans are technically achievable and economically viable. All modifying factors were considered.

Sensitivities were carried out on production rate, price, mining cost, processing cost, selling cost, and pit slope parameters. Three iron (Fe) product grade scenarios were investigated viz.: 60%, 58% and 56%.

## **Whittle Optimisations – Mineral Processing Options**

A number of optimisations, using Whittle Four -X were completed. These optimisations were designed to investigate the optimal path to progress from DSO mining through to mining material requiring beneficiation through either dry magnetic separation (DMS) or gravity separation (GS).

Optimisations scenarios that were investigated as part of this work were:

- 1) DSO, DMS or GS + stockpile.
- 2) DSO or GS + stockpile.
- 3) DSO or DMS + stockpile.

Sensitivities were carried out on production rate, price, mining cost, processing cost and selling cost. Three final Fe product grade scenarios were investigated viz.: 60%, 58% and 56%.

Optimisation will be completed early next quarter. It is intended to select limited number of economically attractive options for detailed pit design and scheduling.

## **Processing**

Design work on the gravity separation plant and associated tailings dam has been put on hold pending further interpretation of drill results and pit designs.

## **Logistics and Infrastructure**

Preliminary design of the revised port facilities at Lucky Bay was completed.

Current survey data was collected at the site of the proposed offshore vessel moorings to allow detail design of moorings for Panamax and Cape size ships. The revolver container transshipping devices were successfully commissioned at Port Adelaide and are ready for use in a planned simulation trial before being placed in service. A full seaborne simulation trial is planned for early in the next quarter.

Fabrication of the powered barge in China is nearing completion with launch scheduled for mid-January. Univan from Hong Kong have been appointed to represent Ironclad and oversee the final inspection, commissioning and sea trials.

Marketing of the tug Demi Maddison and the powered barge is continuing using specialist ship brokers.



**Subsequent events**

Approval for the variation to Development Approval (DA) (for changes to the transshipment points) was received in January 2013.

Drilling commenced at Hercules in mid-January 2013.

**Health, Safety, Environment and Community**

There were no lost time incidents for the quarter. Indigenous heritage clearances were completed for DSO exploration targets at Zealous, Black Hills West and the Hercules deposit. The completion of these clearances allowed exploration to proceed on schedule.

In the September quarter IFE reported that a Development Application (DA) amendment for changes to the location of transshipment points in the Spencer Gulf was submitted in August 2012 sponsored under Section 49 of the South Australian Development Act by SA Government Department of Transport, Energy and Infrastructure (DTEI). This amendment was sought to allow the transshipment points to be located closer to shore reducing barging times and increasing efficiency and capacity of loading.

In September IFE also reported that it was seeking Section 49 sponsorship for the remaining Development Application (DA) amendments covering the addition of the buffer storage facility and changes to the harbour loading facility. Discussions were opened with the Department of Manufacturing, Trade, Resources and Energy (DMITRE) during the quarter to provide alternative Section 49 sponsorship if necessary. At the end of the quarter the issue of sponsorship continued to be unresolved. Discussions with the SA Government are continuing.

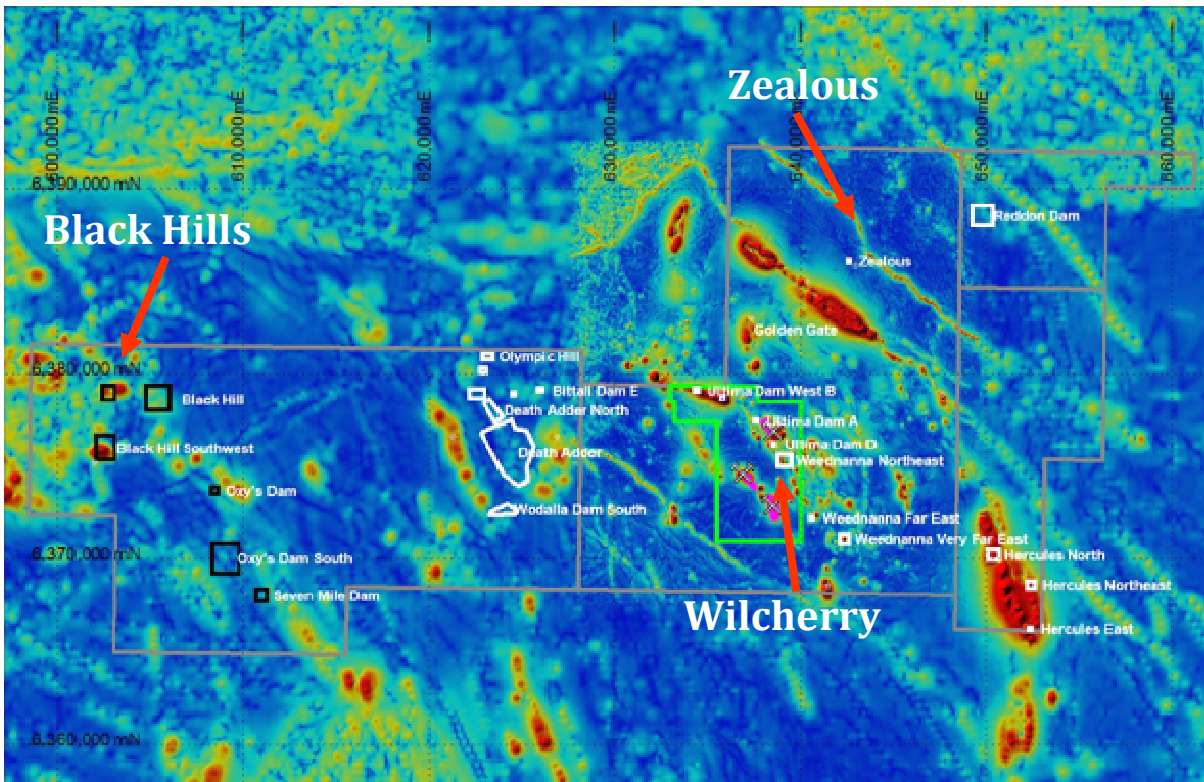
During the quarter, the Company completed extensive air quality and noise modelling studies, and sought senior legal opinion on the proposals qualification for sponsorship under Section 49. This was carried out to inform government and give support to the sponsorship application. Full written support was received from the District Council of Franklin Harbour, the District Council of Kimba and Regional Development Australia Whyalla & Eyre Peninsula.

**Competent Person Statement**

*The information in this announcement that relates to geological results and Mineral Resource estimates is based on information compiled by Chris Mroczek, who is a Member of The Australasian Institute of Mining and Metallurgy and who has more than five years' experience in the field of activity being reported on and is the Chief Geologist of the Company.*

*Mr. Mroczek has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity undertaken 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'. Mr. Mroczek consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

**Figure 1: Locality of Zealous and Black Hills West to Wilcherry Hill**







**Figure 2: Black Hills West Project Area Location and Drill hole Layout**

