



# Carpentaria Exploration Ltd

*We find it. We prove it. We make it possible.*

**New magnetite - high purity with rail and port**

**14<sup>th</sup> China International Steel and Raw Materials Conference**

**Dalian, China 26<sup>th</sup> August 2014**



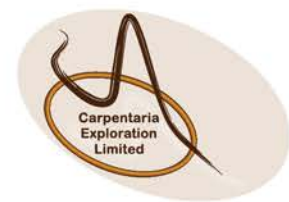
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# Hawsons Iron Project – New Magnetite

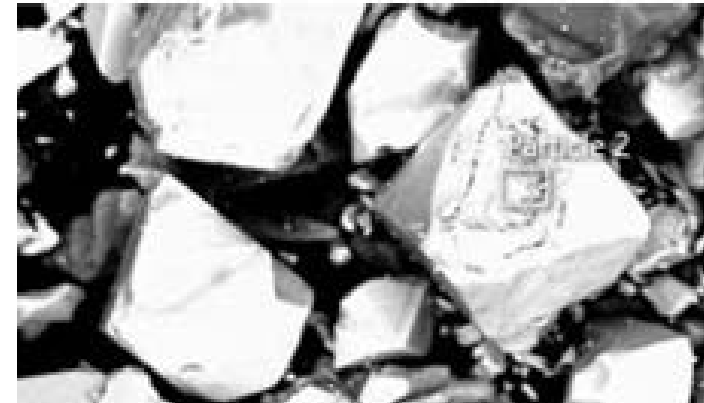


- Different and better than other magnetite
- Very soft siltstone – simple and low cost processing
- Aim to deliver 10-20 Mtpa of best pellet feed for 50 years

Fe %	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	P%	S%
>68.5	3.1-3.3	0.22-0.39	0.004	0.005

*Targeted grades based on test work and Davis Tubes*

- Technical and permitting pathway clear and achievable
  - Existing spare rail and port
  - Target production in 3.5yrs
  - Well advanced known approval process
- Potential returns very attractive at long term price forecasts



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# Company Snapshot



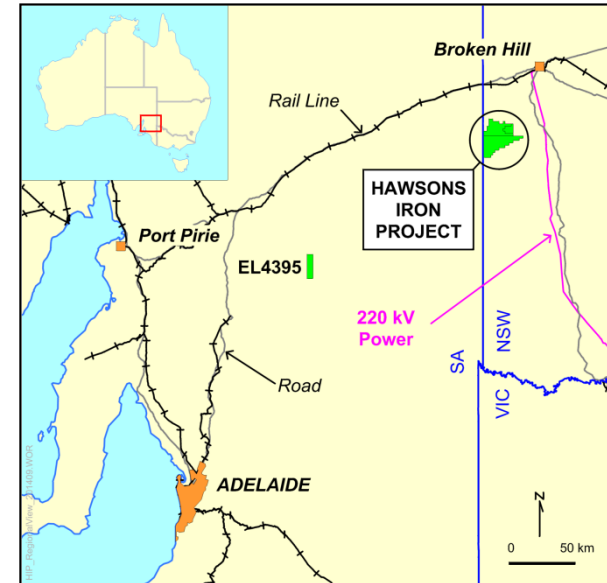
- ASX Listed : CAP
- Major Asset : Hawsons Magnetite Iron Project NSW, Australia.
  - Discovered in 2009
  - Ownership (60% CAP, 40% Pure Metals)

**CASH:** AUD 4.5 million

**QUOTED SECURITIES:** 124 m shares

## Top Shareholders:

Silvergate Capital:	18.2%
Conglin Group:	11.4%
NEFCO:	3.2%
Directors & Management:	5.3%



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# Balanced and Experienced Board and Management



## ***Dr Neil Williams – Chairman***

- 40 years experience
- Australia's Chief Government Geologist 1995 - 2010
- One of Australia's eminent geoscientists



## ***Mr Bob Hair***

- 30yrs experience as a lawyer
- Former General Manager Commercial MIM holdings
- Former CEO of AIM listed Ferrum Crescent



## ***Mr Paul Cholakos***

- 25 yrs experience in resources
- Mining Engineer
- Current Executive General Manager Project Development – Oil Search



## ***Mr Quentin Hill – Managing Director***

- 18 yrs experience in exploration, development and management
- Part of Hawsons discovery team
- Geologist



## ***Ray Koenig - Hawsons Technical Director***

- 45 years experience
- Chief Metallurgist Savage River Magnetite Mines
- Business Group Leader Mining and Metals for GHD
- Magnetite due diligence as a consultant



## ***Mr Bin Cai***

- Conglin Australia representative
- 18 years experience investing in emerging resource companies

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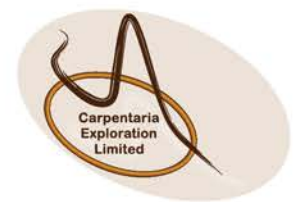
# Hawsons Iron Project Concept



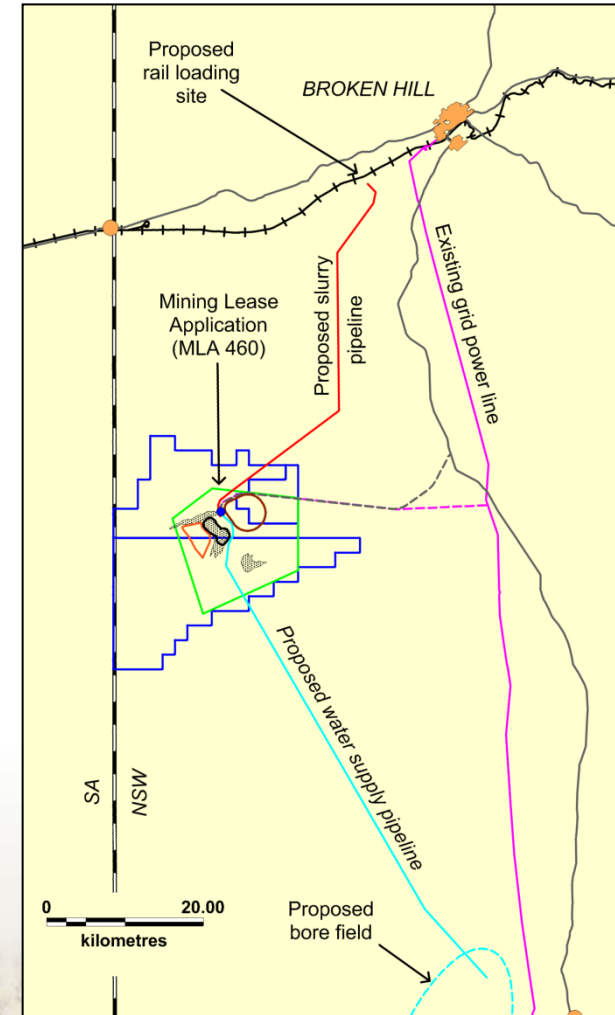
- Deliver 10 million tonnes per year of “best quality” pellet feed magnetite concentrate to end users needing high purity feed
- Exploit very large resource with favourable mining and processing attributes and achieve very low cost production
- Use the existing, high capacity, power, water, rail, and workforce all less than 90km from site and existing port to achieve very competitive low capital and operating costs
- Gain requisite approvals on a timely and favourable basis as the local environment is well understood and Native Title does not apply



# Project Concept –Transport logistics



- Mine to rail head via new slurry – 50km
- Existing open access rail to new stockpile at Port Pirie – 360km
- New stockpile to existing port berths via new conveyor
- Barge transport to 180,000t vessels – 15-30km



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# Targeted CFR China Costs

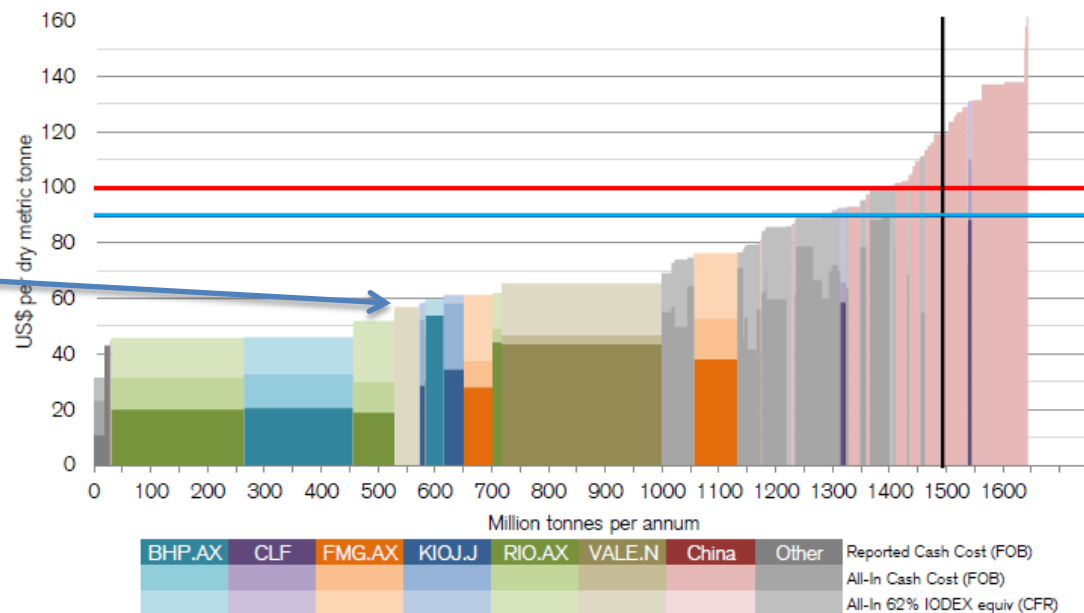


## Position on the cost curve

- Carpentaria is targeting the second quartile of the all in CFR China cost curve indexed to 62% Fe
  - Approx. US\$56
  - Approx. US\$64 (69% basis)
- Withstand price fluctuations

## Exhibit 2: 2016 curve (China: 250mtpa, excl domestic freight)

Blue = CS price fcst, Red = consensus price, Black = demand



Source: Company data, Credit Suisse Securities Research & Analytics and Commodities Research estimates.

Source - After Credit Suisse 21 August 2013

- 1 Reported cash costs are C1 costs
- 2 all-in cash costs include royalties, sustaining capital, corporates costs but not finance costs
- 3 includes a freight adjustment to CFR China and indexed to a 62% product
- 4 exchange rate 0.85USD = 1.00AUD



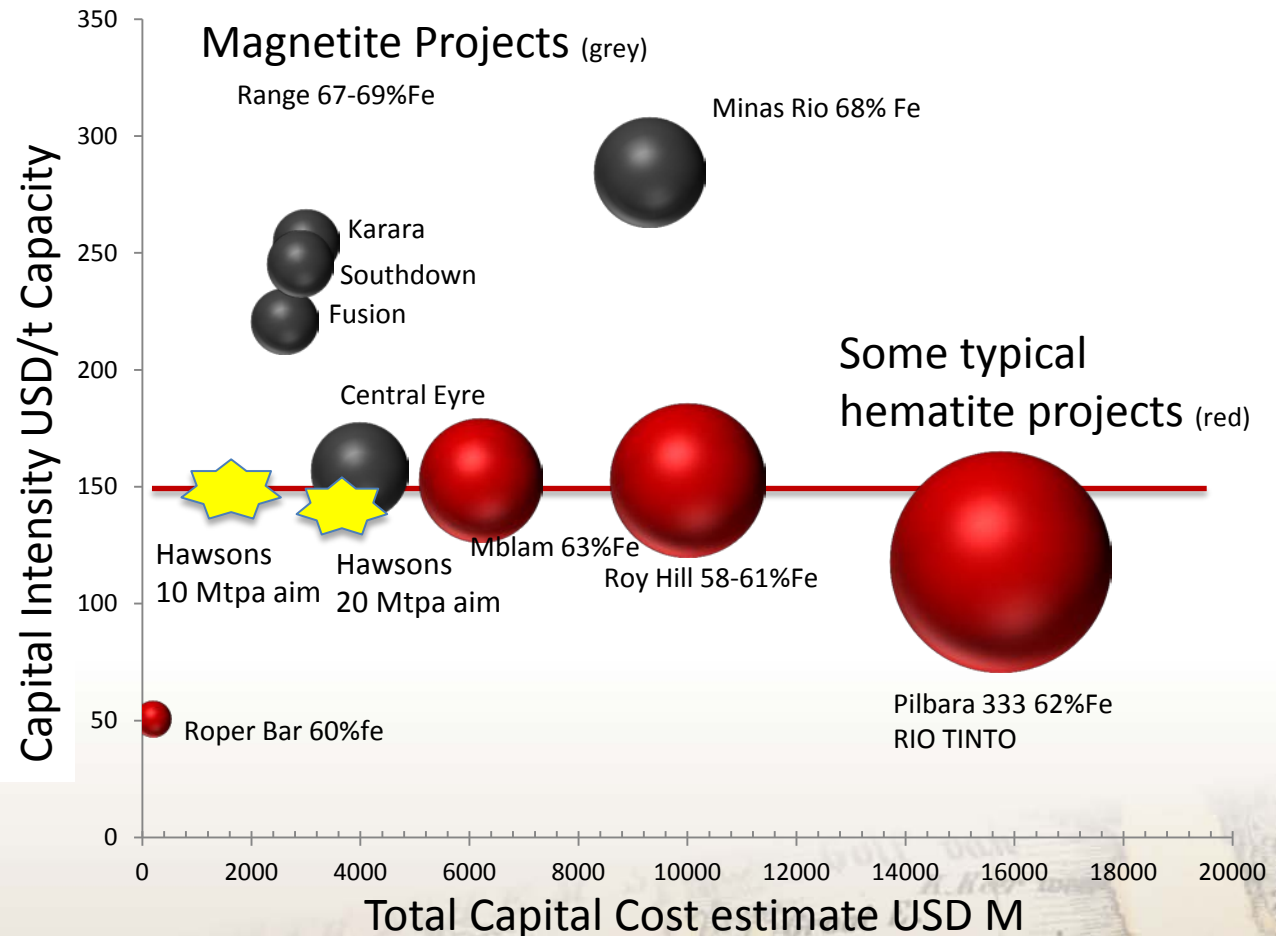
# Capital Intensity – benefits of existing infrastructure



## Low capital intensity

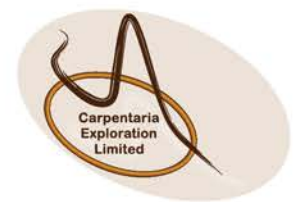
10Mtpa start up case  
utilising existing  
infrastructure targets:

- Low capital cost per tonne of capacity (capital intensity ~\$140-150USD)
- Capital intensity similar to hematite projects
- Lower than comparable magnetite projects
- Low capital service costs



Source - refer Appendix 4

# Its about low costs and high quality !



## Resource

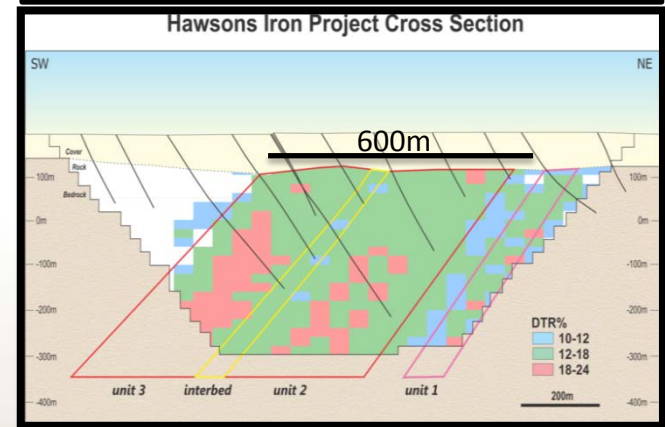
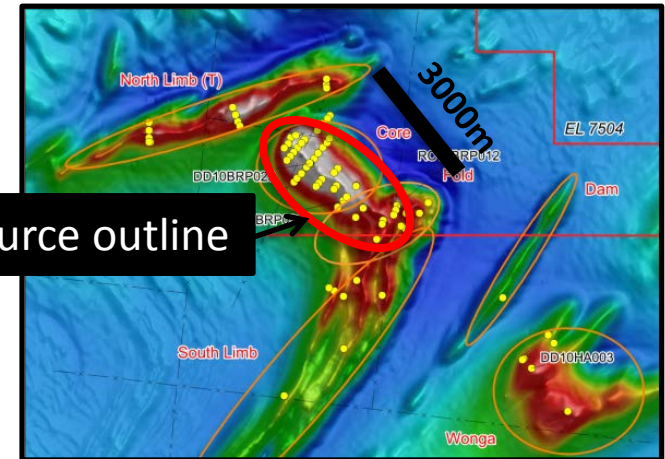
- JORC\* resource 1.8 Billion tonnes at 15% mass recovery for 263Mt of 69.7% Fe, 2.9% SiO<sub>2</sub> concentrate (mine 100t to produce 15t concentrate)

## Mining

- 3000m x 600m ore body – low mining cost
  - bulk mining methods
  - waste : ore 0.3 : 1
  - material movement and mining costs comparable to higher grade projects
- Potential for large resource extensions and long life
- Siltstone rock very soft - easy on mining equipment

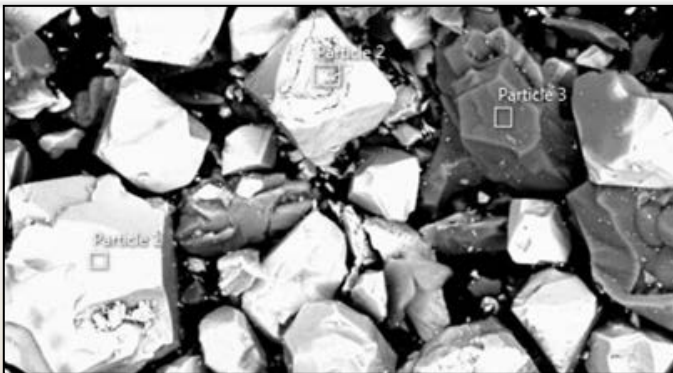
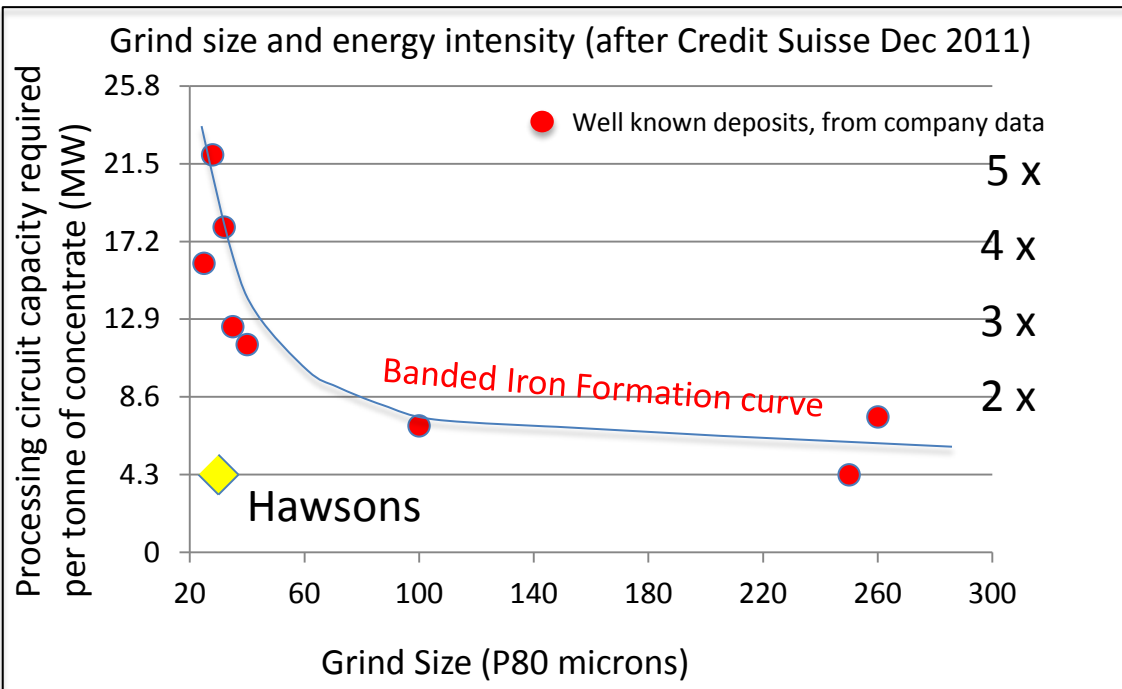


Resource outline



\* Refer Appendix 1

# Siltstone ore is different to typical iron formations



- very different ore - soft
- natural grain size 10-50 microns, don't break the crystals
- ~ one quarter energy use of typical magnetite ores per tonne of concentrate (BWI 6-7)
- produces high purity concentrate
- large processing cost savings up to \$5-15/t concentrate
- Comparatively low technical risk
- Its about costs and quality not head grade

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# Concentrate product - high purity



## Concentrate product likely specifications\*

Fe	>68.5%
SiO <sub>2</sub>	3.1-3.3%
Al <sub>2</sub> O <sub>3</sub>	0.22-0.39%
P	0.004%
S	0.005%
Size	100% passing 38 microns

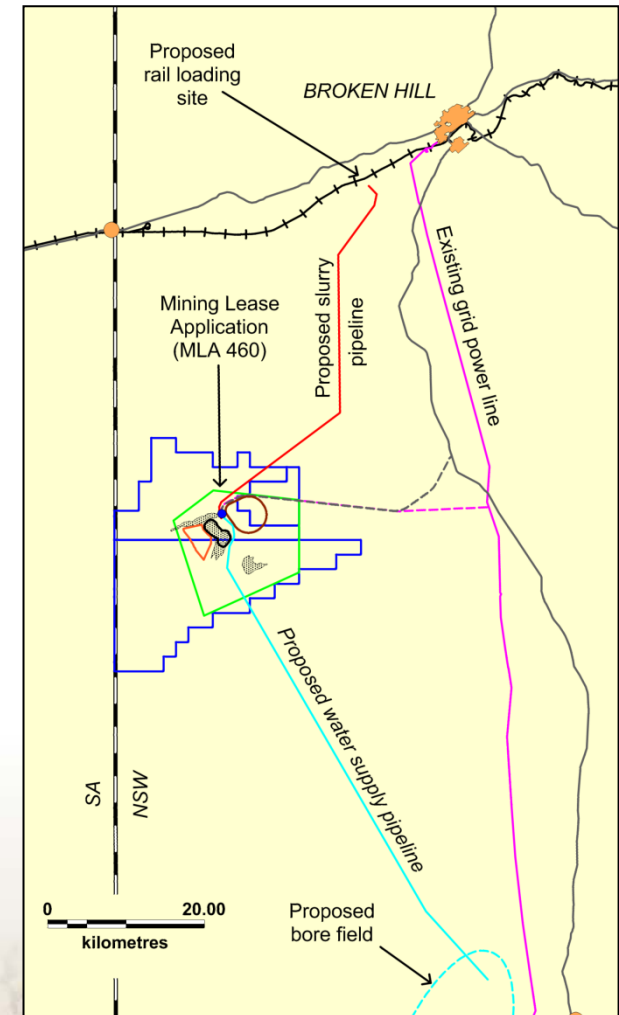


- High purity concentrate – very low impurities
- Good pelletising properties
- Good blending product to reduce impurities
- Increase blast furnace feed grade
  - 10Mt of Hawsons 69% to upgrade 35Mt of 58%Fe to 45Mt of 62%Fe
  - Increase efficiency,
  - Control pollutent emissions,
  - Better quality steel
- Alternative long term, high grade supply source, diversify high grade supply

# Project pathway clear and achievable



- Grid power with spare capacity (220Kv line)
- High yield water source with allocation available
- Existing rail 360km to existing port
  - 13Mtpa spare capacity on rail
  - 3 spare berths for 10-20Mtpa capacity
  - Require conveyors, stockpiles and ship loaders
- Port access secured under a right of first refusal
- Permitting
  - no Native Title
  - Mining lease application lodged
  - Seasonal environmental surveys at mine site completed



# How does Hawsons compare others?



		Hawsons	Others
resource	>250Mt concentrate	✓	most
mining	standard and in pit crush and convey	✓	most
water	does not use sea water	✓	few
processing	one stage of grinding, no regrinding	✓	few
	two stages magnetic separation	✓	few
	No floatation	✓	few
power	low cost grid power available	✓	few
transport	existing open access rail line	✓	few
	existing port access secured	✓	few
permitting	No Native Title	✓	few
	EIS seasonal surveys complete on mine site	✓	few
	Mining Lease Application lodged	✓	some
	Government support-State Significant Development	✓	most
	Stable low risk country	✓	some



# Current and future work



Current program designed to align all project elements

Complete in 2-3 months

Build a platform for further investment

- Additional process test work
- Port - rail - marine prefeasibility study to  $\pm 30$
- Power network capability study  $\pm 15\%$
- Environmental work progressing

Future test work subject to additional funding

- Resource drilling
- Pilot plant test work
- Geotechnical test work
- Significant infrastructure negotiation

Targeted production and approval time frames

- Approval less than two years
- Completion of bankable feasibility study
- Production targeted in 3.5-4yrs



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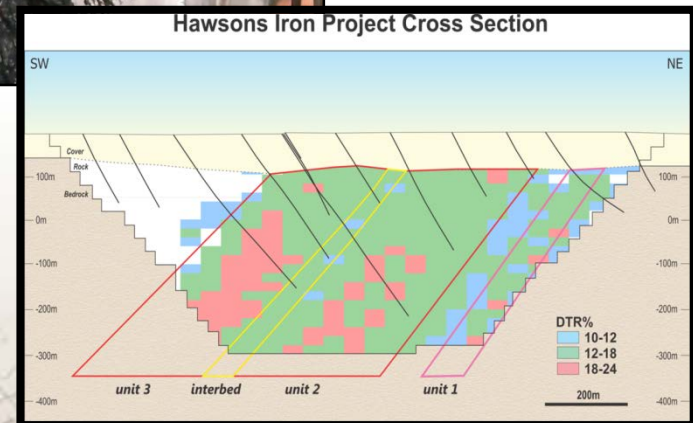
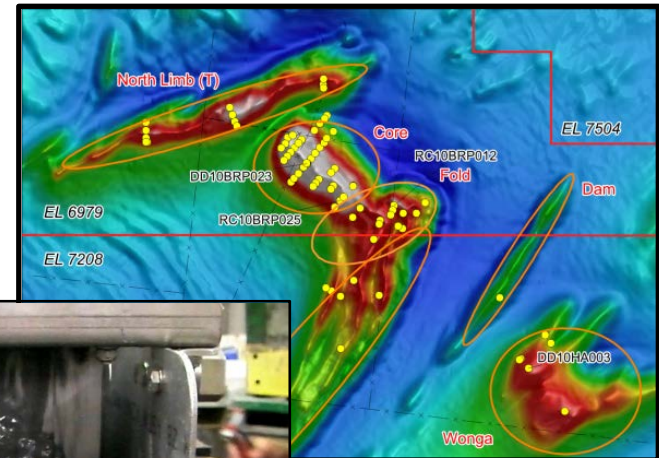
# Summary



Long life and scaleable

High grade product  
consistently delivered

Targeted low operating  
and capital costs



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# Summary



**Key is low costs and product quality**

- High purity concentrate , blending
- Good pelletising
- Competitive costs, potential good returns

**Technical and permitting pathway clear and achievable**

- Favourable ore attributes
- Favourable environmental attributes
- Existing rail, port, power and water infrastructure



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[www.capex.net.au](http://www.capex.net.au)



@CARPEXPLORE

*The information in this presentation that relates to Exploration Results, Exploration Targets and Resources is based on information compiled by Q.S. Hill, who is a member of the Australian Institute of Geoscientists and has had sufficient experience which is relevant to the style of mineralization 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'. Q.S.Hill is an employee of Carpentaria and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

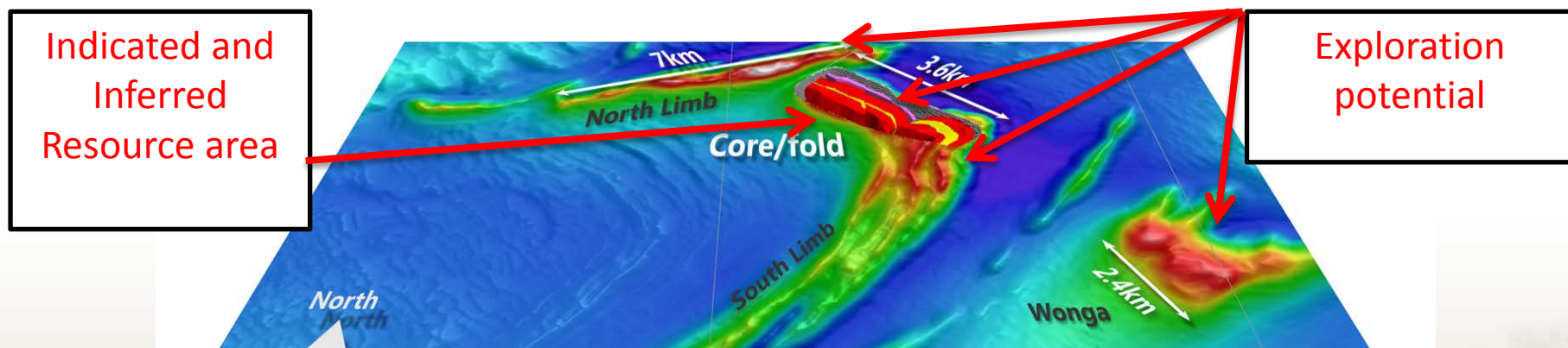


# CARPENTARIA

## APPENDIX 1 – Resources



			Concentrate Grades					
Category	Billion Tonnes	Magnetite DTR%	Fe%	Al <sub>2</sub> O <sub>3</sub> %	P% <sup>1</sup>	SiO <sub>2</sub> %	LOI%	Contained Concentrate Million Tonnes
Inferred	1.554	14.7	69.6	0.20	0.004	2.9	-3.0	228
Indicated	0.215	16.2	69.8	0.20	0.005	2.8	-3.0	35
<b>Total</b>	<b>1.769</b>	<b>14.9</b>	<b>69.7</b>	<b>0.20</b>	<b>0.004</b>	<b>2.9</b>	<b>-3.0</b>	<b>263</b>



Reported under JORC 2012 – no material change since first published 26 March 2014

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# CARPENTARIA

## APPENDIX 2

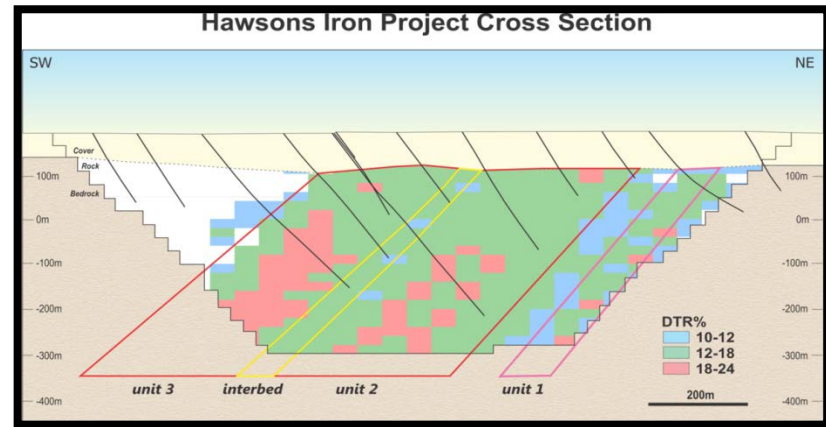


### Mining

- low strip ratio 0.3:1 waste to ore falling to 0.1:1 by year 4
- Low cost bulk mining methods- in pit crush and convey
- 600m mining widths
- UCS 50-90Mpa cf 350Mpa

### Processing

- simple flow sheet
- very low energy
- Don't break the magnetite
- very high grade product
- Bond Work Index 6-7Kwhr/t (cf 18-40)



magnetite

quartz



Photomicrograph of rock

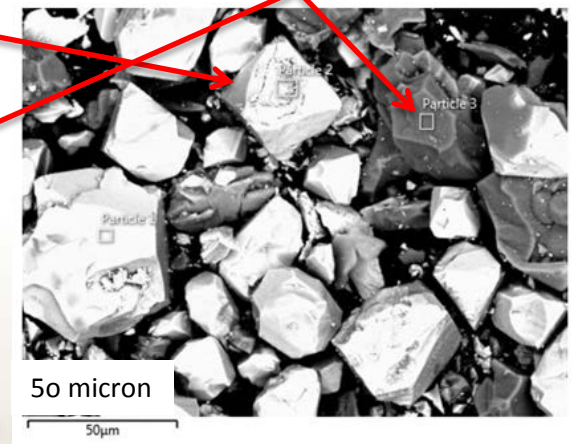
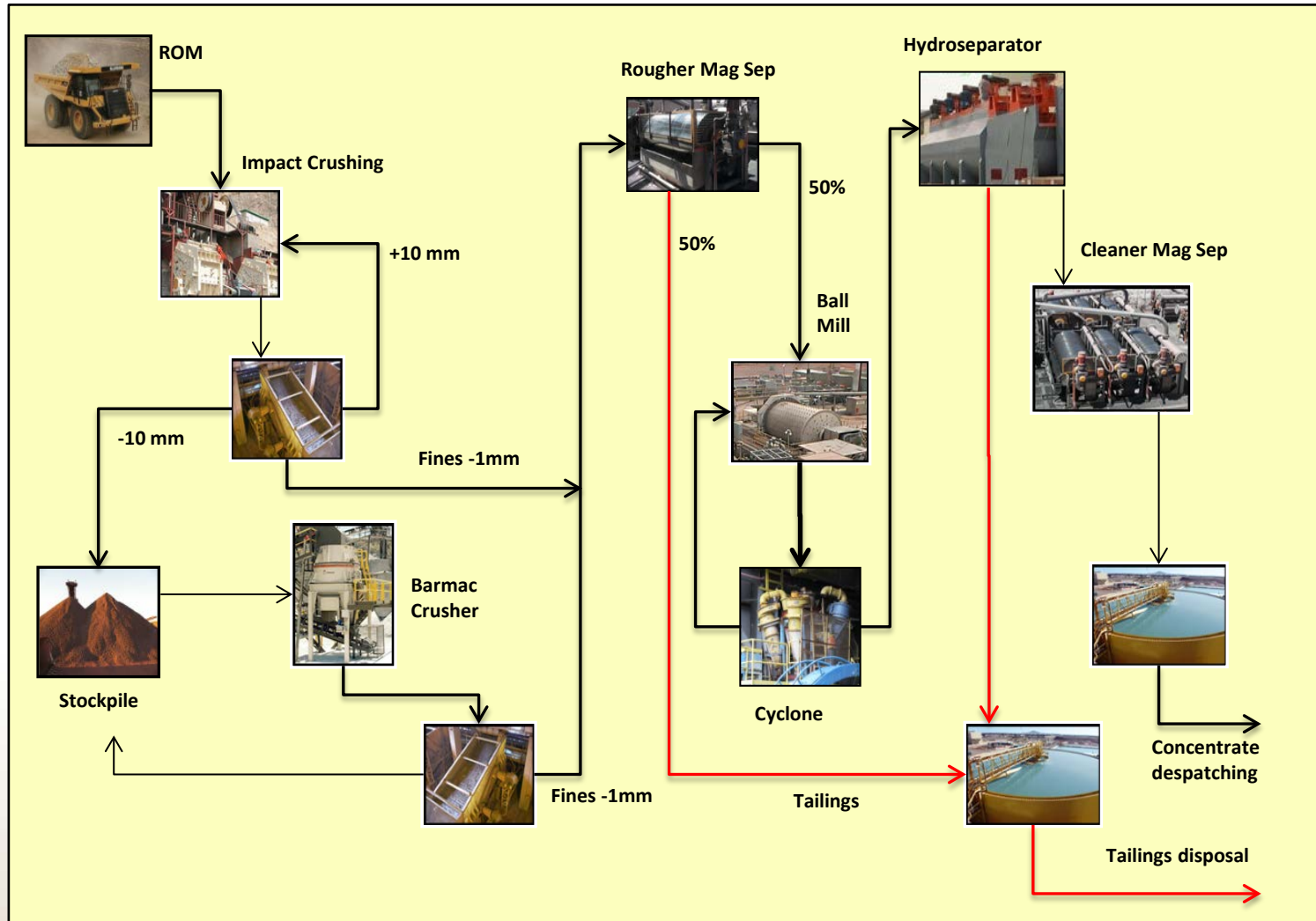


Image of concentrate



# CARPENTARIA EXPLORATION

## APPENDIX 3 – Processing Flow Sheet



# CARPENTARIA EXPLORATION

## APPENDIX 4 – Capital Intensity Chart



Project	Operator	Capex A\$M	Annual M Tonnes	Capex/Tonne A\$M	Product %Fe
Roy Hill <sub>1</sub>	Hancock	[10,000]	55	[180]	[55]
Karara <sub>2</sub>	Karara JV	3000	10	300	68
Central Eyre <sub>3</sub>	Iron Road	2590	12.4	210	67
Fusion <sub>4</sub>	Eyre Iron	2600	10	260	67
Mbalam <sub>5</sub>	Sundance	4700-7830	35	134-224	63
Southdown <sub>6</sub>	Grange	2885	10	289	69
Minas Rio <sub>8</sub>	Anglo	9300	26.5-30	350-310	68
Pilbara 333 <sub>9</sub>	Rio	15740	113	139	62
Roper Bar <sub>11</sub>	West Desert	180	3	60	60

<sup>1</sup> <http://www.royhill.com.au/sites/default/files/Tim%20Treadgold%27s%20article.pdf>

<sup>2</sup> <http://gindpublic.powercreations.com.au/images/gind---iebohvaiti.pdf>

<sup>3</sup> <http://www.ironroadlimited.com.au/images/files/projects/20110614%20Iron%20Road%20-%20CEIP%20Prefeasibility%20.pdf>

<sup>4</sup> <http://centrexmetals.com.au/wp-content/sharelink/20120503-mine-and-port-scoping-study-completed-and-dfs-commenced-87554443598698511.pdf>

<sup>5</sup> <http://www.sundanceresources.com.au/IRM/Company/ShowPage.aspx/PDFs/2675-51552764/PresentationResourcesRisingStars>

<sup>6</sup> [http://www.grangeresources.com.au/clients/grange/downloads/item150/southdown\\_dfs\\_presentation\\_-\\_albany\\_16\\_may\\_2012.pdf](http://www.grangeresources.com.au/clients/grange/downloads/item150/southdown_dfs_presentation_-_albany_16_may_2012.pdf)

<sup>8</sup> <http://www.angloamerican.com/business/ironore/projects.aspx>, <http://www.mining-technology.com/projects/minas-rio-iron-ore-brazil/>

<sup>9</sup> [http://www.riotinto.com/documents/110324\\_New\\_opportunities\\_for\\_industry\\_growth\\_Sam\\_Walsh.pdf](http://www.riotinto.com/documents/110324_New_opportunities_for_industry_growth_Sam_Walsh.pdf)

<sup>11</sup> [ASX550 : Investor Notice of Presentation 20 Sep 2013.pdf](#)

USD/AUD conversion at 0.94