

Nullagine Iron Ore Project Diggers and Dealers August 2009

Mike Young Managing Director



# **BC IRON LIMITED**

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# **History of BC Iron**

- BC Iron lists on ASX in December 2006
- Resource drilling identifies DSO at Outcamp May 2007
- MoU for rail and port access with Fortescue Metals Group July 2007
- Drilling to Ore Reserves 2007 through 2009
- ➢ HOA with FMG − JV and rail haulage and port agreement June 2009
- Feasibility Study Complete June 2009
- Capital raising \$22M July 2009
- Production April 2010 Listing to mining in 3 ½ years





# BC IRON - CAPITAL & MANAGEMENT

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**Capital Structure** Number 80.3M Shares Options 5.7M **Fully Diluted Total** 86.0M Market Cap @ \$1.10 **\$88 M Cash on hand** \$23.9 M **Major Shareholders** Number % Total **Consolidated Minerals** 18.2M 23% **Regent Pacific Group** 13% 10.2M Alkane Resources 6% 5.0M TOTAL **42% 33.4**M

Board
<b>Tony Kiernan</b> – Chairman
Mike Young – Managing Director
Garth Higgo – Non-exec Director
Terry Ransted – Non-exec Director
Steven Chadwick – Non-exec Director
Management
Simon Storm – Company Secretary
Blair Duncan – GM Operations
<b>Greg Hudson</b> – Chief Geologist
Paul Vermeulen – Technical Marketing



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# NULLAGINE IRON ORE PROJECT

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Channel iron deposit – Yandi style pisolite

- Direct Shipping, high-quality Sinter Blend Ore
- Infrastructure Rail and Port Haulage with TPI/FMG
- Joint venture with Chichester Metals Pty Ltd (FMG)
- Marketing up to 50% offtake by Tennant Metals Pty Ltd
- Strong interest from Chinese mills for Nullagine Pisolite





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#### **Bonnie Creek CID**

- Reserves of 36 Mt @ 57% Fe
- Resources of 51 Mt DSO @ 57.0% Fe
- $\succ$  High CaFe, low Al<sub>2</sub>O<sub>3</sub> & ultra-low P
- Mesa-style mineralisation

### **Nullagine River & Shaw River CID**

DSO & upgrade CID (~15 Mt)





# JOINT VENTURE & INFRASTRUCTURE

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#### **Nullagine Joint Venture**

- BC Iron & Chichester Metals 50:50 unincorporated JV
- > Up to \$10m contribution each remainder project finance
- BCI manages JV mining, sales, marketing
- > TPI manages rail haulage and port services
- > Price participation on sales over US\$60/t up to 3 Mtpa

#### Infrastructure

> Heavy road haul to railhead at:

Cloud Break 1.5 → 3 Mtpa on completion of haul road Christmas Creek 3 → 5 Mtpa on completion rail expansion



Fortescue ore train – photo by BC Iron





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#### **Project Parameters**

- ➢ 36Mt 57.6% Fe (65% CaFe) Reserves
- Surface mining; in-pit crushing
- ➢ Startup 1.5 Mtpa, Ramp-up 3 → 5 Mtpa
- CapEx A\$43 to start of mining
- OpEx ~\$A43/tonne LOM
- Mine to ship via TPI rail and port
- Ultra-low P, high-quality sinter blend
- Expand capacity through cashflow



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#### June 2009 – Reserves and Resources Statement (100% BC Iron)

Probable Ore Reserves								
Pit	Mt	Fe	CaFe	$SiO_2$	$Al_2O_3$	Р	S	LOI <sub>1000</sub>
Outcamp	19.2	56.8	64.8	3.21	1.92	0.01	0.01	12.2
Warrigal	10.3	57.0	64.5	3.67	2.13	0.02	0.01	11.7
Coongan	6.0	57.0	65.1	2.52	1.82	0.01	0.01	12.4
TOTAL	35.6	56.9	64.7	3.23	1.96	0.02	0.01	12.1

#### **DSO Resource Estimate**

Class	Mt	Fe	CaFe	SiO <sub>2</sub>	$Al_2O_3$	Р	S	LOI <sub>1000</sub>
Measured	1.7	57.0	64.8	3.49	2.15	0.018	0.016	12.0
Indicated	38.6	57.0	64.7	3.15	2.09	0.016	0.011	12.0
Inferred	10.4	57.0	64.8	3.27	2.00	0.013	0.010	12.1
TOTAL	<b>50.</b> 7	57.0	64.8	3.19	<b>2.0</b> 7	0.015	0.011	12.0

• The Ore Reserve is a subset of the Resource Estimate

• CaFe = Fe / (100 - LOI) \* 100

• Rounding errors may occur

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# PILBARA IRON ORE FINES

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Element	Nullagine DSO Reserve	Yandi/Robe DSO	Pilbara Fines DSO
Fe	57	57 - 58.5	58 - 64
Calcined Fe*	65	64	63-65
$SiO_2$	3.2	3 - 6	3 - 4
$Al_2O_3$	1.9	1.4 - 2.7	1.3 - 2.1
Р	<0.02	~0.04	0.05 - 0.09
LOI	12	9-11	3-8
Size -0.15mm	14	5-20	10-30

#### **Direct Shipping Ore – DSO**

- > No beneficiation or upgrade required
- > DSO at or close to accepted specifications
- > Nullagine DSO requires only crushing and screening, and acceptable contaminant levels

















# SEABORNE FINES COMPARISON









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# NULLAGINE PROJECT – Outcamp Prospect





# NULLAGINE PROJECT – Outcamp Prospect

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Shallow "pits" mainly above surrounding plains - mining ore from day 1

>Above water table - lower environmental impact

>Low OpEx - low strip ratio, use of surface miners

# NULLAGINE PROJECT – Mining

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#### **VERMEER TL1255 Terrain Leveller**

- Drill & blast not required
- > Primary crushing not required
- > In pit secondary crushing
- Mine haul trucks not required



VERMEER TL1255 operating at Cloud Break (FMG) – photo by BC Iron





# THE BLAST FURNACE



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# SINTER FEED

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# Sintering

- All iron ore mines produce a *lump* and *fines* but only lump can be used in the blast furnace
- Synthetic lump is made by from *fines* by high temperature agglomeration - *sintering*
- Sintering creates "Made to order lump"
- > Optimal physical properties of the sinter:
  - Strength, Fe content, impurities, reducibility
- Optimal sintering efficiency
  - Productivity, yield, assimilation (how particles melt together)



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# SINTERING QUALITY

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# Why is NIOP ore so good?

# **Chemical advantages**

- Ultra-low Phosphorous (<0.02%)</p>
- > High Calcined Fe (>64%)

# Physical advantages

Ignition hood on sinter strand

- Low ultra-fines improves sintering speed
- Large fines product sizing (9-10 mm) lower crushing costs

Sintering advantages (Results from Shandong University, PRC)

- Sintering efficiency up 10% (Yield increased from 66% up to 77%)
- Productivity up 40% (Increased from 1.05 to 1.48 t/m²/hr)
- Sinter strength improved (Tumble Index up from 64% to 68%)
- Considered a '*First Class*' sinter blend feedstock



# MARKETING

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# **Marketing Offtake**

- Offtake agreement with Tennant Metals
  - 25% Offtake as Principal or Agent at BC's option
  - Mechanisms for increased offtake to 50%
  - Australian company reduced counter party risk
- BC Iron Ore Marketing Strategy
  - Customised sinter blend High Value in Use
  - Ultra-low P, high calcined Fe blend with lower quality ores
  - Develop Long Term Contracts with mills that require our specific product – relationship sales



Hot iron pouring into ladel



# CHINA MARKETING

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# Marketing in China – July 2009

- Market sentiment is positive
- Visited 4 Steel mills and 2 stockists
- Production of 2 Mtpa to 6 Mtpa and expanding
  - Will pay reference price (HI Fines Japanese settlement FY09 – USD0.97 dmtu)
  - Using or have used Yandi pisolite ores
  - Strong understanding of high LOI sinter feed
  - Strong desire for Long Term Contracts
  - Ability to provide presales and/or revolving LoC







# CONCEPTUAL TIMETABLE

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Feasibility Study Complete June 2009  $\succ$ Outcamp-Warrigal Mining Approvals & Agreements 4<sup>th</sup> Qtr 2009  $\geq$ 3<sup>rd</sup> Qtr 2009 Test Pit Bulk Sample  $\succ$ **Construction Commences** 2<sup>nd</sup> Half 2009  $\geq$ Coongan Production Start-up 1.5 Mtpa 1<sup>st</sup> Half 2010  $\succ$ Production Ramp-up 3.0 Mtpa 2<sup>nd</sup> Half 2010  $\geq$ 1H 2009 1H 2010 2H 2010 2H 2009 Approvals Camp TP Construction Plant 1.5 Mtpa 3 Mt



# NULLAGINE IRON ORE PROJECT

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# **BC Iron Limited – path to success**

- > Mining Reserve
- Simple Mining Methods
- Infrastructure
- Market
- Statutory Approvals
- Community Benefit

High-quality sinter, low Al<sub>2</sub>O<sub>3</sub> & ultralow P

Surface miner, low strip ratio, ore at surface

JV with FMG provides infrastructure access

Offtake secure, sought after sinter product

Underway, low risks – environmental/heritage

>200employees, local jobs, State royalties



# **SUPPORTING STATEMENT**

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This release may include forward-looking statements. These forward-looking statements are based on management's expectations and beliefs concerning future events. Forward-looking statements are necessarily subject to risks, uncertainties and other factors, some of which are outside the control of BC Iron Limited, that could cause actual results to differ materially from such statements. BC Iron Limited makes no undertaking to subsequently update or revise the forward-looking statements made in this release to reflect events or circumstances after the date of this release.

The information relating to the terms "iron ore", "exploration target", "direct shipping ore", "conceptual pits" and "upgrade" should not be misunderstood or misconstrued as an estimate of Mineral Resources and Reserves as defined by the JORC Code (2004) and therefore the terms have not been used in this context. It is uncertain if further exploration or feasibility study will result in the determination of a Mineral Resource or Mining Reserve.

The information that relates to the drilling data and geological interpretations is based on information compiled by Michael Young who is a Member of The Australian Institute of Geoscientists and a Director of the Company. The information that relates to the Mineral Resource Estimate has been compiled by Mr Richard Gaze who is a member of the Australasian Institute of Mining and Metallurgy and an employee of Golder Associates. Both Mr Young and Mr Gaze have sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that they are undertaking to qualify as a Competent Persons as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Gaze and Mr Young consent to the inclusion in their names in the matters based on their information in the form and context in which it appears.

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