

# Australian Site Tour Stainless Steel Materials CSG

Jimmy Wilson President, Stainless Steel Materials

28 October 2008

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Competent Persons for Mineral Resources and Ore Reserves are named in the BHP Billiton Annual Report 2008, which can be viewed at www.bhpbilliton.com. Phil Hopkins (Resource and Reserves), who is a member of AusIMM and full time employee of BHP Billiton and has the required qualifications and experience, verifies that the relevant content of this document is based on and fairly reflects the information in the supporting documentation relating to Resources and Reserves.

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#### Key messages

- Safely run 100% of our assets at 100% capacity, 100% of the time
- Delivering on committed projects
- Options for low cost stable operations
- Sound long run margins
- Substantial resource base
- Superior technology advantages
- Part of BHP Billiton and hence ability to invest countercyclical to nickel market
- Nickel West acquisition is value accretive





#### Agenda

#### Overview of our Business

Stainless Steel Materials Performance

Growth Options

Competitive Advantages



# Stainless Steel Materials in the BHP Billiton portfolio



Underlying EBIT Margin<sup>(a)</sup> (FY2008)

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Notes:

a) EBIT Margin excludes third party trading activities.

#### SSM global footprint



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# Experienced management team



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Note: Stephen Williams reports jointly to Jimmy Wilson, President Stainless Steel Materials and Tommy Schutte, President Marketing



# Focus to deliver value

#### Safely run assets at full potential

- Continuously driving a Zero Harm culture
- Continuous focus on business optimisation and reliable production
- Recruit, develop and retain the right people

#### Deliver current projects

- Ramp-up Ravensthorpe / Yabulu extension
- Nickel West growth projects

#### **Future Growth options**

- Cerro Matoso
- Nickel West
- Indonesia
- Exploration







# Focus on safety





- Key areas of focus
  - Elimination of fatal risks
  - Elimination of catastrophic risks
  - Creating operational stability, key driver to improve safety performance
  - Improving the quality of our Field Leadership process
  - Working with contract partners
  - Nickel exposure reduction



1. Excludes Ravensthorpe.

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# SSM financial performance



Note: FY02 to FY05 shown on the basis of UKEAAP subsequent periods are calculated under IFRS. FY05 include one month of results for Nickel West (June). Subsequent years includes a full year of results from Nickel West.



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# SSM growth options in the pipeline



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#### Exploration focused on tier 1 opportunities



- Brownfields exploration to expand our WA and Colombia production
- Greenfields exploration of Tier 1 opportunities



#### Agenda

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# BHP Billiton ranks as the No. 3 nickel producer



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Source: Company Annual and Production reports. All production figures incorporate third party ore purchases where appropriate.

1 CRU.

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# Resources to fulfil our future growth aspirations



1 Reserves 2007 Annual report; Resources July 2007 Investor presentation.

2,4,5,7 2007 Annual reports.

3 Total; full details available in the BHP Billiton Annual Report 2008

6 2007 Annual report & May 2008 company presentation.



# Our competitive advantages



- Significant expansion options around existing assets
  - Cerro Matoso
  - Nickel West
- Operating know-how across all technologies
  - Both sulphide and laterite smelting and leaching process employed
  - Most recent experience with Ravensthorpe implementation
- Proximity to customers and multi sourcing options



Source: BHP Billiton analysis

# Technology is a critical success factor for the Nickel industry

#### <u>Sulphide Ores</u> – proven "simple" technology, but exploration driven



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- Nickel West acquisition is value accretive







# Australian Site Tour Nickel and stainless steel market review

Stephen Williams

Marketing Director, Stainless Steel Materials

October 2008

# Agenda

#### Demand and substitution

#### Supply

#### Outlook



#### Nickel and stainless steel market review

- Stainless steel consumption is the key driver for nickel demand
- Stainless steel and nickel are cyclical businesses with pronounced stocking and de-stocking cycles
- Stainless steel demand is expected to remain robust over the long term underpinned by urbanisation and industrialisation of China and other developing economies
- Nickel is a responsive market, increasingly influenced by supply



# Stainless steel is the key driver of nickel demand

Nickel Use by Application (CY 2007)



- Nickel improves durability and corrosion resistance of steel
- Two main types of stainless steel:
  - Austenitic or nickel containing (200 and 300 series)
  - Ferritic or non-nickel containing (400 series)
- The top 3 uses of nickel in stainless steel are:
  - Food Processing Equipment
  - Catering
  - Chemical Process Equipment



Source: CRU 2008.

# Emerging markets are driving this global growth



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Source: CRU.

# China's self sufficiency in stainless steel production

#### China Import and Export



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Source: BHP Billiton, CRU, Antaike, Macquaire.

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# Stainless steel is a cyclical business with pronounced stocking and de-stocking cycles

Mining / Refining

Distributors/

End users

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- Global stainless steel production, quarterly 1.
- 2. 1993-2009, y-o-y change %



Source: CRU Analysis.



# The high and volatile prices encouraged substitution



- 300 series stainless steel is durable, weldable and formable and is the workhorse of the stainless steel industry
- We expect the rate of substitution to decline as 'easier' substitution has taken place already





Source: ISSF.

#### Emerging economies will underpin stainless steel over the long term



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# Agenda

#### Demand and substitution

#### Supply

#### Outlook



# LME stocks have risen but remain low in historical terms

#### Number of Weeks of Consumption & LME Stocks (kt)

(Number of weeks consumption)





Source: CRU; BHP Billiton Analysis.

# Nickel pig iron responded as supply source and is now declining

Ore imports by origin (mt)



Source: China Customs.

# Higher cost supply is coming under pressure as the marginal producer is squeezed (>120ktpa announced)

Nickel C1 cost and price (US\$/Ib)



Existing operations suspended:

- Falcondo (11ktpa)
- Ufaley/Rehz (5ktpa)
- Cawse (8ktpa)
- Radio Hill (2ktpa)
- Blair Mine (2ktpa)
- Yulin Wei, Xi'an (8ktpa)
- NPI (20-30ktpa)

#### Projects deferred:

- Murrin Murrin HL (10ktpa)
- Tati Activox Refinery (22ktpa)
- Scholl B2 (3ktpa)
- Bah Phuc (4ktpa) (suspended)
- Windarra (5.5ktpa)
- Nunavik (12ktpa)
- Kylyahti (3ktpa)



Source: Brook Hunt; BHP Billiton analysis.

#### Future supply growth: Disruption a feature of new supply growth?

Expected future production from committed and highly probable nickel developments (kt) Ni



Upcoming projects include:

- Vale (Onça Puma; Goro)
- Xstrata (Koniambo)
- Anglo American (Barro Alto)
- Sherritt/Sumitomo/Korean Consortium (Ambatovy)
- Ramu (CMCC/Jinchuan/Jien/Jisco)



Source: BHP Billiton Analysis

# All major Nickel projects have experienced significant capital cost escalation. Most of them yet to be completed

Nickel Project Capital Intensity

(US\$ / tonne of Nickel)



- Escalation driven by:
- Shortage of skilled workers resulting in cost escalation
- Higher contractor margins
- Shortages in global manufacturing resulting in cost escalation and increased schedule
- Increasing raw material prices

Source: SSM for Ravensthorpe, and public disclosures for other projects. The "?" indicates that the project has not been completed yet.



Original Estimate Latest Public Estimate

# Agenda

#### Demand and substitution

Supply

#### Outlook



# Short term cyclical swings and supply side correction

	2003	2004	2005	2006	2007	2008F	2009F
Global Supply (kt)	1286	1276	1281	1346	1432	1407	1497
% change		(0.9)%	0.4%	5.1%	6.4%	(1.8)%	6.4%
Global Consumption (kt)	1239	1256	1239	1399	1335	1384	1450
% change		1.4%	(1.4)%	12.9%	(4.6)%	3.7%	4.7%
Surplus/(Deficit)	47.5	19.1	41.3	(53.6)	97.2	22.7	47.4

#### World Nickel Supply & Demand Balance

('000 Tonne)



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#### Key messages

- Stainless steel and nickel are cyclical commodities with a strong underlying growth trend
- They are responsive markets as evidenced by the rapid introduction of nickel pig iron and now a supply side correction
- Stainless steel and nickel growth continues to look promising in the long term due to the emerging market effect







# Australian Site Tour Nickel West

Wayne Isaacs Nickel West President and Chief Operating Officer

October 2008

## Agenda

#### Key Messages

Sustainability

**Business Overview** 

Growth Options

![](_page_39_Picture_5.jpeg)

# Key Messages

- Operating assets safely
- Focussing on efficiency and reducing costs
- Exploring to find reserves to support long-life assets
- Assessing next phase of projects

![](_page_40_Picture_5.jpeg)

## Agenda

#### Key Messages

Sustainability

**Business Overview** 

Growth Options

![](_page_41_Picture_5.jpeg)

# Safety and Health – Nickel West

![](_page_42_Figure_1.jpeg)

![](_page_42_Figure_2.jpeg)

- A safety culture driven by
  - Fatality prevention (FRCP)
  - Strong leadership
  - Safe behaviours and equipment
  - Compliance, audit and governance
- Health and fit-for work programs
  - Fatigue management
  - Alcohol and drug testing
  - Atmospheric monitoring
  - Healthy lifestyle promotions

![](_page_42_Picture_13.jpeg)

1. Excludes Ravensthorpe.

# Sustainable environment and community programs

- Sustainability priorities include :
  - Increased indigenous employment
  - Indigenous education and training
  - Community development partnerships
  - Active employee community participation teams
  - Uniform certified environmental programs
  - Understanding our energy footprint

![](_page_43_Picture_8.jpeg)

![](_page_43_Picture_9.jpeg)

# Agenda

#### Key Messages

Sustainability

Business Overview

Growth Options

![](_page_44_Picture_5.jpeg)

#### Nickel West – Operations

- World's third largest producer of nickel-in-concentrate
- Produced 107 kt<sup>1</sup> contained nickel in FY 2008
- Approximately 3,500 employees and operational contractors
- Nickel West's business
  - Mining, concentrating, smelting, and refining
  - A major operation is being ramped-up at Ravensthorpe

![](_page_45_Figure_7.jpeg)

![](_page_45_Picture_8.jpeg)

1. Includes production from Ravensthorpe.

#### Nickel West flowchart

![](_page_46_Figure_1.jpeg)

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# Leinster Mines and Concentrator

#### Mines

- Perseverance underground ore reserves of 11 mt @ 1.85% Ni<sup>1</sup> – life to ~2014
- Satellite operations now in production
  - Cliffs
  - Rocky's Reward

#### Concentrator

- Mill throughput ~3 mtpa
- Recovery of ~85%

#### Production

 40-50 ktpa nickel in concentrate @ ~11.5% Ni grade

![](_page_47_Picture_11.jpeg)

![](_page_47_Figure_12.jpeg)

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1. Total; full details available in the BHP Billiton Annual Report 2008

# Kambalda Nickel Concentrator

#### Concentrator

- Mill throughput >1.6 mtpa
- 35-45 ktpa Ni in concentrate @ ~13% Ni grade
- Output driven by third party resource base
- Partnerships with third party producers to sustain a viable future for Kambalda

![](_page_48_Picture_6.jpeg)

![](_page_48_Figure_7.jpeg)

# Kalgoorlie Nickel Smelter

#### Smelter

- 750 ktpa concentrate throughput capacity
- Furnace re-build June to Sept 2008
  - Completed ahead of schedule
  - Successful ramp-up
  - Improved operational flexibility
  - Positions smelter for next 15 years

![](_page_49_Picture_8.jpeg)

![](_page_49_Picture_9.jpeg)

# Kwinana Nickel Refinery

#### Refinery

- Based on Sherritt-Gordon technology
- Efficient, low cost producer
- Premium briquette product
- Competes with global refineries for matter
- Furnace rebuild an opportunity for KNR shutdown
- Work set up the refinery for four years' operation before the next planned shutdown

#### Production

65-70 ktpa nickel metal
 (95% of product in the form of LME briquettes)

![](_page_50_Picture_10.jpeg)

![](_page_50_Picture_11.jpeg)

![](_page_50_Picture_12.jpeg)

# Historical Nickel West Production

#### Saleable Nickel Production (ktpa)

![](_page_51_Figure_2.jpeg)

![](_page_51_Picture_3.jpeg)

Notes: Nickel intermediates in FY2008 includes production from Ravensthorpe.

# FY2008 Cost Structure

Cash operating cost

(%)

![](_page_52_Figure_3.jpeg)

- Key value drivers
  - Volume
  - Cost reduction
- Excludes RNO (In ramp-up)
- 90% of cost base is in \$AUD (excluding TPP)

![](_page_52_Picture_9.jpeg)

#### Input Cost Pressures

![](_page_53_Figure_1.jpeg)

![](_page_53_Figure_2.jpeg)

![](_page_53_Figure_3.jpeg)

#### Xanthate

![](_page_53_Figure_5.jpeg)

#### Electricity (%) 135 125-115-105-95-FY06 FY07 FY08

Explosives (%) 135 125 115 105 95 FY06 FY07 FY08

![](_page_53_Picture_8.jpeg)

# Agenda

#### Key Messages

Sustainability

**Business Overview** 

#### Growth Options

![](_page_54_Picture_5.jpeg)

#### Delivering on our commitments

#### Status of projects discussed at your last visit

Project	Status		
Cliffs	Operational		
Rocky's Reward II	Operational		
Mount Keith Stage H	Operational		
Smelter Rebuild	Operational		
Ravensthorpe	Ramp Up		
Perseverance Deeps	Definition		
Yakabindie	Under study		

![](_page_55_Picture_3.jpeg)

# Growth options

- Keeping focus on finding and acquiring resources to fill our growing downstream capability
- Prioritising our focus on developing existing resources
- Building on our technology processing advantages
- Our strategy is to
  - Leverage exploration success
  - Capture value of technology advances
  - Plan for growth to cope with long term demand

![](_page_56_Picture_8.jpeg)

# Exploration strategy – building resources

Exploration Spend

(US\$m)

![](_page_57_Figure_3.jpeg)

- Five-year exploration program
- Producing promising results
- Focus on low-risk brownfields targets
  near existing operations
- Currently second full year of program
- Work started on converting to resource
- Program meeting BHP Billiton strategic objectives

![](_page_57_Picture_10.jpeg)

# Leinster Asset Life Extension

#### Perseverance Deeps

- Extension of Leinster beyond 2014
- Follows development of Cliffs and Rocky's Reward
- Feasibility study to be completed 2H FY 2009

![](_page_58_Picture_5.jpeg)

![](_page_58_Picture_6.jpeg)

![](_page_58_Picture_7.jpeg)

# Extension of Kambalda opportunities

#### **Objectives**

- Extended life and output of Kambalda region
- Successful long term partnerships
- Majority of contracts have options to 2019

#### **Current Status and Future Growth**

- Concentrator progressively de-bottlenecked to more than 1.6 mtpa capacity
- Kambalda exploration started July 2008
- Third party producers have enjoyed significant exploration success

![](_page_59_Picture_9.jpeg)

![](_page_59_Picture_10.jpeg)

![](_page_59_Picture_11.jpeg)

#### Conclusion

- Operating assets safely
- Focussing on efficiency and reducing costs
- Exploring to find reserves to support long-life assets
- Assessing next phase of projects

![](_page_60_Picture_5.jpeg)

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