



**brockman**  
**resources.**

## **Brockman Moves to Definitive Feasibility Study Following Completion of Positive Pre-Feasibility Study at Marillana**

*Net Present Value Estimated to Be Up to A\$1.64 billion*

- ▶ **Pre-Feasibility Study confirms the (“Marillana Project”) is financially and technically positive, positioning Brockman to become the most substantial producer amongst the Pilbara’s emerging iron ore miners**
- ▶ **Potential NPV’s in the range from A\$1.39 billion to A\$1.64 billion with accompanying internal rates of return ranging from 19.5% to 25.1% for four alternative Project development options**
- ▶ **Subject to securing port and rail access agreements under state or federal government regimes, production is forecasted to start in Q4 2012 at a nominal rate of up to 17 Mtpa of 58-62% Fe beneficiated product with a minimum mine life of 20 years**
- ▶ **Upfront capital costs estimated to range from A\$705 million to A\$1.35 billion**
- ▶ **Total operating costs estimated to range from A\$31.50 to A\$34.10 a tonne FOB (excluding state royalties)**
- ▶ **Environmental Impact Assessment on schedule with EPA approval of Scoping Document pending**
- ▶ **The Brockman Board has endorsed the Study and approved the decision to proceed to a Definitive Feasibility Study**

Brockman Resources Limited (**ASX: BRM – “Brockman” or “the Company”**) is pleased to announce the positive outcomes of the Pre-Feasibility Study (“PFS”) on its 100%-owned **Marillana Iron Ore Project** in the Pilbara region of Western Australia.

The Pre-Feasibility Study found that the Net Present Value (“NPV”) of the Marillana Project ranges from **A\$1.4 billion to A\$1.64 billion** using an 8% real discount rate, with Internal Rates of Return (“IRR”) ranging from **19.5% to 25.1%** and capital paybacks ranging from **5 to 6 years**.

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Upfront capital costs are forecast to range from **A\$705 million to A\$1.35 billion** depending on different logistical, development and ore transportation options. These are based on a nominal production rate of **17 million tonnes per annum** (“Mtpa”).

The Study reviewed four principal development options for the Marillana Project with varying rail and port infrastructure logistics and construction programs:

- 37.5Mtpa plant feed commencing in 2012 and utilising BHP Billiton rail and NWIOA port infrastructure (base case);
- 37.5Mtpa plant feed commencing in 2012 and utilising TPI rail and NWIOA port infrastructure;
- 37.5Mtpa plant feed commencing in 2012 and utilising TPI rail and TPI port infrastructure; and
- 18.75Mtpa plant feed commencing in 2012, increasing to 37.5Mtpa feed in 2015, utilising BHP Billiton rail and NWIOA port infrastructure.

Total operating costs for the four scenarios reviewed are forecast to range from **A\$31.50 to A\$34.80** a tonne on a Free on Board (“FOB”) basis (excluding state royalties). The capital and operating costs were developed to a plus or minus 25 per cent accuracy and include all direct and indirect costs, EPCM costs, contingency and accuracy provisions.

“The Pre-Feasibility Study shows that the Marillana Project stands to be a financially rewarding project with robust operating margins, strong rates of return and simple mining and processing technologies,” said Brockman’s Managing Director, Wayne Richards.

“The findings of the Study pave the way for the execution of a Definitive Feasibility Study (“DFS”) to get underway later this quarter, putting Brockman firmly on track to become a major iron ore producer within the Pilbara,” he added.

### **Pre-Feasibility Study Overview**

The Pre-Feasibility Study was commenced in December 2008 by Ausenco, as the principle consultant, in consultation with specialist service groups and sub-consultants including:

- |                                     |                      |
|-------------------------------------|----------------------|
| • Geology and Resources             | Coffey Mining        |
| • Mine Scheduling                   | Coffey Mining        |
| • Processing Plant                  | Ausenco              |
| • Rail Infrastructure               | Engenium             |
| • Metallurgy                        | Ammtec/Nagrom/Coffey |
| • Capital Cost Estimate             | Ausenco              |
| • Operating Cost Estimate           | Ausenco              |
| • Financial Analysis                | CS Consulting        |
| • Environmental                     | Ecologia             |
| • Hydrology/Hydrogeology            | Aquaterra            |
| • Land Access/Native Title/Heritage | ACHM/PNTS            |

### **Pre-Feasibility Study Outcomes**

Based on the base case total feed rate of 37.5Mtpa (2 x 18.75Mtpa capacity front-end plants), the Marillana Project will be capable of producing between 17 to 20Mtpa of product (i.e. beneficiated detritals and/or CID fines), depending upon the *modus operandi* of the two processing plants (*hereby known as the processing facility*) and the overall net weight recovery of iron ore fines.

The Study has been initially developed and modelled on the basis of a minimum mine life of 20 years at a nominal production (output) rate of 17Mtpa.

The Marillana Project has assumed an average weight recovery of Run of Mine (“ROM”) feed of 45% and the processing facility has been designed to produce a fines only product.

All operating and capital costs have been modelled on the basis of concurrent mining and processing of both the Channel Iron Deposit (“CID”) and Detrital Ore with initial production from the mine scheduled to commence by late 2012.

## Project Financials

Financial analysis of the four development options was conducted utilising price forecasts for iron ore and currency exchange rates provided by a number of independent international banking and research groups.

For the purposes of conservatism, Brockman adopted a long term iron ore pricing forecast for the Study (*see table below*) well below recently executed benchmark pricing agreements between Rio Tinto and a number of Japanese and Korean steel groups of US\$0.97/dry metric tonne unit (“dmtu”), and significantly below those prices currently being achieved on the international spot market.

The adoption of either 2009 contract or current spot prices would have an extremely positive impact on the valuation range for the Marillana Project, as demonstrated by the table below:

	2013 (Long Term) BRM Forecast	2009 Contract Price	Current Spot Price
Hamersley Fines (USc/dmtu) FOB	81.2	97.0	132.3*
Exchange Rates \$A/\$US	0.75	0.82	0.82
NPV - base case (A\$M)	<b>1,643</b>	<b>2,226</b>	<b>4,573</b>

\*Source – FIS Iron Ore Swap Report – 29 July 2009

Capital costs were developed by Ausenco in accordance with their industry experience and benchmarked against other major iron ore projects currently being undertaken within the Pilbara district. A post-tax real discount rate of 8% has been used in determining the NPV for the Project. The capital cost estimates are in Q2 2009 dollars and are fully inclusive of direct and indirect costs and a 10% contingency.

Total upfront capital investment in the Marillana Project is estimated to be \$997 million (base case), which represents the total direct and indirect costs for the development of the project. This figure includes \$166 million for mine pre-strip, infrastructure and civil works; \$532 million for processing plants, stockyards and support facilities; and \$299 million in indirect costs and contingency

The mining and processing operating cost estimate includes all site-related costs associated with processing of two types of ore from the ROM pad. The operating costs for haulage and shipping of the products via rail infrastructure to stockyard and loading facilities in Port Hedland include a capital payback charge plus the operating costs for rail haulage, unloading and stockpiling, and ship loading. The averages of “life of mine” pre-tax operating costs (excluding depreciation) were utilised in the financial model to calculate the per unit tonne cost on a Free on Board (“FOB”) basis.

## Approvals

The final Environmental Scoping Document has been submitted to the Environmental Protection Authority (“EPA”) and approval is expected shortly. Preparation of the full Environmental Impact Assessment (“EIA”) documentation is well advanced and is expected to be lodged in October, 2009.

Final ethnographic and archaeological heritage surveys are being completed over the mine and infrastructure areas with no restrictions identified to date. The Company expects to finalise a mining agreement with the Nyiyaparli native title claimant group. Once this agreement is signed, the Mining Leases can be granted. A mining agreement with the Martu Idja Banjima people was executed in October last year.

## Resources and Mining

The Pre-Feasibility Study was based on the existing Indicated and Inferred Mineral Resources for the Marillana Project of 1.4 billion tonnes as summarised in Tables 1 and 2. After applying specific Fe (> 40% Fe) and Al<sub>2</sub>O<sub>3</sub> (<7.0%) cut off grades, pit optimisation delivered an initial robust pit(s) containing approximately 723Mt of DSO - CID and beneficiation feed detrital mineralisation. The pit optimisation used conservative 27 degree (south wall) and 37 degree (north wall) overall pit slope angles and resulted in a **Waste: Ore** stripping ratio of **1.4: 1**. Mining was assumed to be performed by conventional truck and shovel open pit mining methods, and a contract mining fleet/operation was valued in the financial model.

**Table 1 – Beneficiation Feed Mineral Resource Summary (Cut-off grade: 40% Fe)**

Marillana Deposit – All Zones	Tonnes (Mt)	Grade (% Fe)
Total Indicated Resources	551	44.6
Total Inferred Resources	773	42.2
<b>TOTAL INDICATED AND INFERRED MINERAL RESOURCES</b>	<b>1325</b>	<b>43.2</b>

**Table 2 – Marillana Project Direct-Shipping Mineral Resource Summary (Cut-off grade: 54% Fe)**

DSO CID Mineralisation – All Zones	Tonnes (Mt)	Fe (%)	Fe-Cal (%)	Al <sub>2</sub> O <sub>3</sub> (%)	SiO <sub>2</sub> (%)	P (%)	LOI (%)
Indicated Mineral Resources	54.2	57.4	63.0	3.6	4.0	0.086	8.91
Inferred Mineral Resources	13.6	56.1	62.8	3.0	4.7	0.133	10.64
<b>TOTAL INDICATED AND INFERRED MINERAL RESOURCES – DSO</b>	<b>67.8</b>	<b>57.1</b>	<b>62.9</b>	<b>3.4</b>	<b>4.1</b>	<b>0.095</b>	<b>9.25</b>

*Fe-Cal represents calcined Fe and is calculated by Brockman using the formula  $Fe(Cal) = Fe\% / ((100-LOI)/100)$*

## Processing

The Pre-Feasibility Study model is based on a nominal 37.5Mtpa processing facility consisting of twin primary crushing stations located along strike at the North West and South Eastern extremities of the proposed initial pits. The crushing stations transfer ore to the beneficiation plants utilising standard gravity separation methodology to yield approximately 17Mtpa of beneficiated iron ore fines product.

The mining schedule identifies that a significant volume of Detrital Ore will be mined before CID can be accessed, resulting in a number of years where only Detrital Ore will be processed. CID production will vary between 2Mtpa and 5Mtpa once the CID mineralisation has been accessed. Detritals and CID will be processed as fines only (-8mm) products, with the CID material being processed on a campaign basis. When either of the beneficiation plants are processing CID Ore, certain sections of the plant will be shut-down, and the recovery rate of the CID will be as high as 100% of the feed rate. For the purpose of the study, a conservative recovery rate of 90% was assumed for all CID feed to the Plant(s).

Inert waste rock and fines generated from mining and processing operations will be placed back in the pit via mine backfilling operations from year seven of the operation. In addition to beneficiated detrital ore, the study has initially been developed on the basis of generating in excess of 40 million tonnes of CID fines from year five of the proposed mining schedule.

Recent laboratory metallurgical beneficiation test work on samples of Marillana detrital iron ore, reflective of the head grades and cut-off parameters incorporated into the project design criteria, produced the following results and specification ranges for iron fines:

**Table 3 - Post-Beneficiation Iron Fines Quality Parameters**

Fe%	SiO <sub>2</sub> %	Al <sub>2</sub> O <sub>3</sub> %	P%	S%	%LOI <sub>1000</sub>
58.3 - 62.1	3.6 - 9.9	2.7 - 3.2	0.05 - 0.09	0.01 - 0.02	2.6 - 3.2

These results are based on heavy liquid separations and tabling results. Further metallurgical work is currently in progress to upgrade the detrital ore resource classification (Inferred/Indicated to Indicated/Measured), verify metallurgical variability across the mineralised zones and establish the final process flow sheet option for use in the definitive pit optimisation and process plant equipment selection.

## Development Schedule

The development of the Marillana Project will be via a conventional mining and processing operation with a nominal production output of up to 17Mtpa over a minimum period of 20 years.

The operating philosophy includes the flexibility of both ROM and stockyard blending. A stacking and reclaiming operation will be utilised to load trains via a dedicated rail loop servicing the stock yard. Beneficiated iron ore will then be transported from the Marillana site to a Port Hedland Port Facility by rail for subsequent ship loading and transport to overseas customers.

The preliminary Project implementation plan has been developed with the key milestones identified as follows:

- Commencement of DFS Q3, 2009
- Completion of DFS Q3, 2010
- Brockman project funding approval Q4, 2010
- Final Public Environmental Review (PER) approval Q4, 2010
- Commence Construction Q1, 2011
- Operations commence Q4, 2012

With first production scheduled for the end of 2012, Brockman is now focused on upgrading the resource classification, verifying metallurgical variability and establishing rail and port infrastructure operating terms and conditions. These activities will be the main focus for the project team over the forthcoming quarters and will support the Definitive Feasibility Study.

## Infrastructure

There are two primary options considered for rail haulage in the Pre-Feasibility Study. These are either the construction of a rail loading loop on the Marillana site connected to BHP Billiton rail infrastructure or the construction of a 110km spur line (including a site rail loop) connected to FMG (TPI) rail infrastructure at a point north of the Chichester ranges and approximately 150km south-west of Port Hedland.

Brockman is actively pursuing access to appropriate rail services. Options being pursued include both above rail access and haulage services.

The technical and cost analysis of these two options supports the potential to transport the Marillana production output via existing third party rail infrastructure to Port Hedland. An estimate of rail haulage operating and capital costs has been included in the project operating costs.

Brockman, as a founding member of the North West Iron Ore Alliance (“NWIOA”), is engaged in the completion of a Pre-feasibility Study for the development of the multi-user iron ore export facilities at South West Creek within the “inner-harbour” of Port Hedland. These two berths within the south west creek have been allocated to the NWIOA (and other iron ore “juniors”) by the Port Hedland Port Authority. The recent NWIOA Scoping Study identified the potential capital cost for the development of the port facilities, including a rail unloading facility, stockyards and shiploading berths. An estimate of the port facility’s capital and operating costs per tonne FOB has been factored into the Marillana project’s operating costs

The development of the port berths and unloading/stockpile facilities will ensure the end-to-end delivery of the ore from the Marillana mine to the ship and complement the growth potential of the Marillana Project and Brockman Resources.

Brockman’s Board has endorsed the results of the PFS and the Company will now proceed with a full Definitive Feasibility Study. Initial scoping and tender preparation will commence later this quarter, ensuring there will be ongoing rapid progress in the development of the Pilbara’s next major iron ore producer. The DFS is expected to be completed in the third quarter of 2010.



**Wayne Richards**  
**Managing Director**

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### **Competent Person's Statement**

*The information in this report that relates to Mineral Resources east of local grid 13000 East based on information compiled by Mr Iain Macfarlane and Mr Alex Virisheff, who are full time employees of Coffey Mining Pty Ltd and are Members of the Australasian Institute of Mining and Metallurgy. Iain Macfarlane and Alex Virisheff have sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as Competent Persons as defined in the 2004 Edition of the "Australasian Code for Reporting of Mineral resources and Reserves". Iain Macfarlane and Alex Virisheff consent to the inclusion in the report of the matters based on the information in the form and context in which it appears.*

*The information in this report that relates to Mineral Resources at North-West Sector and Rockhole Bore (west of local grid 13000 East) is based on information compiled by Mr M Nimmo and Mr A Zhang.*

*Mr M Nimmo, who is a Member of the Australasian Institute of Geoscientists and a full-time employee of Snowden Mining Industry Consultants Pty Ltd, produced the Mineral Resource estimates for the North-West Sector and Rockhole Bore deposits based on the data and geological interpretations provided by Brockman. Mr Nimmo has sufficient experience that is relevant to the style of mineralisation, type of deposit under consideration and to the activity that 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 Resource and Ore Reserves. Mr Nimmo consents to the inclusion in this report of the matters based on his information in the form and context that the information appears.*

*Mr A Zhang, who is a Member of the Australasian Institute of Mining and Metallurgy and a full-time employee of Brockman Resources Limited, provided the geological interpretations and the drillhole data used for the Mineral Resource estimation. Mr Zhang has sufficient experience that is relevant to the style of mineralisation, type of deposit under consideration and to the activity that 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 Resource and Ore Reserves. Mr Zhang consents to the inclusion in this report of the matters based on his information in the form and context that the information appears.*

*The information in this report that relates to mineralisation and exploration results is based on information compiled by Mr Colin Paterson, who is a Member of the Australian Institute of Geoscientists. Mr Paterson is a full time employee of Brockman Resources Ltd and has sufficient experience which is relevant to the style of mineralisation 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". Mr Paterson consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*