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#### FEASIBILITY STUDIES AND MARKET UPDATE

## **HIGHLIGHTS**

- Crosslands and Oakajee Port and Rail ("OPR") have delivered feasibility studies which indicate commercial, technical and operational viability, subject to OPR reaching agreement with potential foundation customers
- The results reflect nearly four years of intensive work and over A\$400 million of expenditure by the respective project teams and mark a major milestone toward project execution
- Crosslands' feasibility study on its Jack Hills Expansion Project ("JHEP") is based on:
  - Average production of 23.4 million wet tonnes per annum ("Mwtpa") for the first 10 years, comprising 22 Mwtpa of high purity iron concentrate products and 1.35 Mwtpa of direct ship products ("DSO"), with a total estimated mine life of 39 years, supplying the key Chinese, Japanese and Korean markets
  - Average operating costs of approximately A\$33.66 per wet tonne ("wt") of product, excluding royalties and before infrastructure charges
  - Capital cost of A\$3.7 billion, inclusive of owners' costs during construction (A\$254 million)
- OPR's feasibility study is based on:
  - Development of an integrated port and rail supply chain with engineered capacity of 45 Mwtpa, with a planned contracted throughput of 42 Mwtpa
  - Average operating costs of A\$5.45/wt of throughput
  - Capital cost of A\$5.94 billion, inclusive of owners' costs during construction (A\$508 million)
  - Direct capital costs (before owners' costs) of A\$5.43 billion, versus A\$5.24 billion for November 2010 Budget and Engineering indicative estimate (before owners' costs)
- Material approvals for both projects are well advanced
- While the Supply Chain Agreement ("SCA") process between OPR and its potential foundation customers is incomplete, Murchison expects that all parties will ultimately reach agreement around commercial arrangements that are required to unlock the value of all of the projects in the region
- The studies assume Project Go Ahead ("PGA") in the March Quarter 2012 with first shipping through Oakajee targeted for 2015. Murchison considers that this schedule is dependent on the timing of completion of SCAs and related milestones
- Murchison continues to review its funding options and opportunities
- Following the release of the feasibility studies, Murchison will continue with a strategic review that was commenced to maximise shareholder value

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Murchison Metals Ltd ("Murchison") is pleased to announce it has received feasibility studies from its 50% owned Crosslands Resources Ltd ("Crosslands") iron ore mining business and OPR infrastructure business in the mid-west region of Western Australia. Murchison's joint venture partner in both businesses is Mitsubishi Development Pty Ltd ("Mitsubishi").

In receiving the studies Trevor Matthews, Chief Operating Officer of Murchison Metals, said: "The delivery of these studies by Crosslands and OPR represents a significant milestone in the ongoing development of the mid-west as a major iron ore producing region, and Murchison looks forward to progressing both projects to the next stage of development. The effort of both joint venture teams is reflected in the high standard of work seen in the studies, and I would like to thank all of those involved."

## Status of the Studies

Crosslands has delivered its feasibility study on the JHEP. The feasibility study has yet to receive formal sign-off from the Board of Crosslands, and remains subject to detailed review by the joint venture participants. The cost estimates included in the feasibility study are based on a P50 level, with a nominal accuracy of between  $\pm$  10% and  $\pm$  15%, and a base date of 31 March 2011.

The JHEP feasibility study has indicated the technical and commercial viability of undertaking the project, subject to the confirmation of the terms of access to infrastructure.

The study outcomes are subject to further review and optimisation work including a value improvement program that will encompass mine planning, and further development and refinement of capital and operating costs. Crosslands has indicated that it is developing a further revision to the feasibility study due for completion during the September Quarter, and is continuing its SCA discussions.

OPR has delivered its feasibility study on the Oakajee Port and Rail infrastructure project, and notes that, at this stage, it has not entered into any binding agreement with respect to the provision of infrastructure services and is working toward finalising the terms of its contractual arrangements with the State Government. The study has yet to receive formal sign-off from the Management Committee of OPR, and remains subject to detailed review by Murchison and Mitsubishi. The cost estimates included in the feasibility study are based on a P50 level with a nominal accuracy of between  $\pm$  10% and  $\pm$ 15%, and a base date of 1 January 2010.

The OPR study has indicated the technical and operational viability of undertaking the infrastructure development, with commercial viability to be demonstrated once OPR is able to finalise the terms of access to infrastructure from its potential foundation customers. OPR will also update the study following value engineering work, and after SCAs have been concluded.

## JHEP Feasibility Study

The JHEP is planned as a large scale, long life, iron ore mine that will produce on average, approximately 23.4 Mwtpa of high purity iron concentrate and DSO products for the first ten years, supplying the key markets of Japan, China and Korea. JHEP plans to produce two primary products, being a sinter feed averaging 64.4% iron (on a dry tonne basis), and a pellet feed averaging 68.5% iron (also on a dry tonne basis). Both products feature low impurities, especially alumina and phosphorous. The current mine plan projects total production of 701 Mwt of concentrates and 13.5 Mwt of DSO over a 39 year project life, based on the mining inventory.

Total capital costs are estimated at A\$3.7 billion, including contingency of A\$335 million, A\$580 million in indirect costs, and owners' costs during construction of A\$254 million. Mine development capital



does not include A\$252 million in current and non-current Run of Mine ("ROM") inventory that will be mined during pre-stripping and stockpiled for processing during the first five years of operation. These costs include A\$411 million associated with mining fleet and equipment.

Annual operating costs (excluding royalties and infrastructure charges) are estimated at approximately A\$33.66/wt, comparable with other large scale concentrate mining developments.

Crosslands plans to export its production through the planned infrastructure of OPR. As a potential foundation customer of OPR, Crosslands is presently negotiating infrastructure access with OPR, which had not been finalised at the time of delivery of the feasibility study.

Further study and optimisation work will be undertaken by Crosslands during the September Quarter which is expected to result in additional benefits to the project.

Crosslands is now progressing key marketing and approvals activities. The feasibility study assumes PGA in the March Quarter 2012 with first shipping through Oakajee targeted for 2015. Murchison considers that this schedule is dependent on the timing of completion of SCAs and other related milestones.

The outcomes of the JHEP feasibility study are discussed in greater detail in Appendix A.

## Oakajee Port & Rail Feasibility Study

The OPR project is planned as an integrated new railway and port located in the upper mid-west region of Western Australia. The development will service regional iron ore miners exporting bulk iron ore products. The initial project configuration is designed to handle 42 Mwtpa at project completion (from a name plate capacity of 45 Mwtpa), and OPR has received indications that future expansions of the facility will likely be required.

The OPR feasibility study estimates the total capital cost of the port and rail infrastructure at A\$5.94 billion inclusive of A\$723 million for port Common Use Infrastructure ("CUI"), contingency of A\$533 million and A\$508 million in owners' costs during construction. The CUI facilities include the breakwater, turning channel and navigation aids. The rail costs also include A\$273 million in rolling stock.

The base capital cost estimate of A\$5.43 billion (before owners' costs), represents a 3.6% increase on the preliminary A\$5.24 billion base capital cost estimate (before owners' costs) indicated in OPR's November 2010 Budget and Engineering Study.

Owners' costs reflect those costs to be borne by the project sponsors and which are required to effect the project, but are not necessarily able to be directly allocated to the project, such as corporate overheads, land acquisition, insurance and so forth.

OPR's average operating costs are estimated at A\$228.8 million per annum, including contingency, or A\$5.45/wt of throughput.

OPR will present the feasibility study to the Western Australian Government, which together with the Federal Government, has jointly committed A\$678 million for construction of CUI at the Oakajee port.



# Supply Chain Agreements

OPR's revenue model will be underpinned by long term, take or pay contracts with potential foundation customers in the form of SCAs. In 2010, OPR executed memoranda of understanding with three potential foundation customers, being Crosslands, Sinosteel Midwest Corporation ("SMC") and Karara Mining. OPR has not yet reached agreement with the potential foundation customers on tariffs and other commercial terms of the SCAs.

On 23 June 2011, SMC announced that it is deferring development of its Weld Range project. However, Murchison notes that SMC has confirmed to OPR that it remains willing to engage in ongoing discussions in relation to the SCAs. To this end, SMC is seeking a revised tariff structure / model and further certainty on scheduling, including the date by which the port and rail infrastructure will be delivered.

Murchison fully supports re-engagement with SMC on this basis with respect to the Weld Range project, and notes the ongoing willingness to engage by all parties – OPR, Crosslands and Karara Mining.

The study assumes PGA in the March Quarter 2012 with first shipping through Oakajee targeted for 2015. Murchison considers that this schedule is dependent on the timing of completion of SCAs and other related milestones.

A more detailed summary of the OPR feasibility study is contained in Appendix B.

# **Funding**

Under the current joint venture agreements with Mitsubishi, notably the Umbrella Financing Agreement ("UFA"), Mitsubishi is responsible for managing the arrangement of debt financing as part of the development funding plan with target gearing ratios of 60% for OPR and 50% for the JHEP. As part of this process, Murchison has been working with Mitsubishi and a syndicate of domestic and international commercial banks, including all four major Australian banks, on the financing strategy since mid 2010.

Mitsubishi is also responsible for providing additional funding support as detailed in Appendix C, including the requirement for Mitsubishi to make a future payment into Crosslands, known as the Residual Contribution, which would be used as the first tranche of equity funding for project development. All additional funding for both projects is to be met by equity contributions from Murchison and Mitsubishi on a 50:50 basis.

The timing of the Residual Contribution is contingent on satisfaction of certain conditions, which are outlined in Appendix C, and is to be determined through negotiations with Mitsubishi at that time. The final quantum of the payment will be based on final bankable feasibility studies as recommended by the chief executive officers of Crosslands and OPR, and there are a number of outstanding factors which may influence the size, or certainty, of the payment being made. Given all of the circumstances, it is not possible for Murchison to give guidance on the likely quantum or timing of the Residual Contribution at this time.

Although there remains significant uncertainty with respect to the potential size of the Residual Contribution, Murchison considers that this payment, on its own, will not be sufficient to cover its anticipated equity required for project development.

On 16 March 2011, Murchison executed a US\$100 million bridging facility with Resource Capital Fund V L.P. (RCF V), to provide the Company with financing flexibility with respect to funding in the lead up to the completion of the studies. To date, Murchison has drawn, and committed to draw a total US\$30.75



million against the facility to fund study progress and for general corporate purposes, leaving remaining availability of US\$69.25 million. The first interest payment under the facility is due on 11 July 2011. Key terms of the facility are detailed in Appendix D.

# **Strategic Review**

In order to meet project funding requirements and realise the inherent value of the JHEP and Oakajee projects, Murchison has been reviewing its funding options in parallel with the progression of the feasibility studies.

Following the release of the feasibility studies, Murchison will be continuing to advance its strategic review to maximise shareholder value.

Murchison has appointed Rothschild and O'Sullivan Partners as its financial advisers as part of this process.

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## **APPENDIX A**

# SUMMARY OF CROSSLANDS FEASIBILITY STUDY FOR THE JACK HILLS EXPANSION PROJECT

## Overview

The Jack Hills iron ore mine is located 380 kilometres north-east of Geraldton. The mine is owned and operated by Crosslands, in which Murchison and Mitsubishi each hold an ownership interest of 50%.

The JHEP feasibility study completed by Crosslands envisages an expansion of production from the Jack Hills mine from the current 1.8 Mwtpa to 23.4 Mwtpa for the first ten years, comprising 22 Mwtpa of high purity iron concentrate products, and a total of 13.5 Mwt of DSO in that time, with a total mine life of 39 years. The Jack Hills Stage 1 mine exported its first shipment of high grade DSO lump and fines from the port of Geraldton in February 2007. Since that time, more than 6 million tonnes of DSO lump and fines have been exported to steel mills in Japan, South Korea and China. Approximately 1.8 million tonnes of DSO lump and fines are trucked to Geraldton for export each year.

The location of the Jack Hills project, relative to the proposed Oakajee port and rail infrastructure and other major projects, is indicated in *Figure 1*:

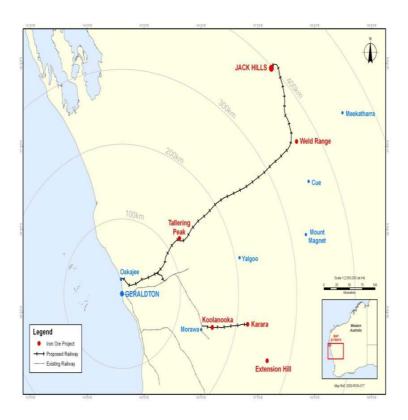


Figure 1 - Location Map Showing Jack Hills

The JHEP feasibility study was managed by Crosslands with the assistance of the Magnetite Joint Venture between leading industry consultants AMEC Minproc, and WorleyParsons. Mineral Resource estimation was undertaken by Crosslands and SRK Consulting.



## Mineral Resource

Jack Hills currently ranks as the largest iron ore resource in the mid-west region. The total Jack Hills Project (comprising the Jack Hills and Brindal deposits) In Situ Mineral Resource is 3,234 Mt @ 32.30% Fe, 67% of which is in the Measured and Indicated JORC categories.

The feasibility study includes a new resource estimate which lifts the Brindal resource to 94% in the JORC Measured and Indicated categories. Extensive infill drilling was conducted to convert the previously reported Inferred Resource.

The Jack Hills deposit estimate reflects the data from drilling completed to the end of April 2010. This drill data base consists of 1,197 holes, 91,788 assays and 15,551 Davis Tube Recovery ("DTR") results. The Brindal deposit estimate reflects the data from drilling completed to the end of April 2011.

The global Jack Hills Project Mineral Resource Estimate is summarized in table 1.

Table 1 - Total In Situ Jack Hills Project Resource Summary

Category	Tonnes (Mt)	Fe (%)	DTR (wt %)
Measured	906	32.4	24.6
Indicated	1,267	32.2	28.1
Inferred	1,061	32.3	27.4
Total	3,234	32.3	26.9

Mineral Resources are reported as five separate components:

- 1. In Situ Banded Iron Formation ("BIF") alternatively referred to as Beneficiation Feed Ore ("BFO"). This is material that would need to undergo beneficiation. The resources are reported at a 22 % Fe cut-off.
- 2. In Situ Massive Iron Mineralisation ("MIM"). Potential Jig feed or BFO ("MIM JIG"). Massive iron mineralisation at a <50 % Fe cut-off that could be processed by a plant.
- 3. In Situ Massive Iron Mineralisation, DSO ("MIM DSO"). This is massive mineralisation reported at a 50 % Fe cut-off and represents material that could reasonably be mined as Direct Shipping material ("DSO"). The non-DSO portion could represent jig feed or material that could be processed by a plant.
- 4. In Situ Detrital Iron Deposits ("DID"). Includes potential BFO, Jig feed canga and colluvium deposits, and are reported at a 22 % Fe cut-off.
- 5. Stage 1 Mine Stockpile Inventory forecast to Stage 1 completion. Mined at cut-off grade of 22 % Fe.

The Jack Hills Resource comprises banded iron formation (BIF-BFO) of 2,870 Mt at 30.7 % Fe, Massive Iron Mineralisation (MIM), Direct Shipping material (MIM-DSO) of 133 Mt at 56.2 % Fe, Massive Iron Mineralisation potential Jig Feed or BFO (MIM-JIG) of 96 Mt at 45.5 % Fe and Detrital Iron Deposits (DID) which includes potential BFO, Jig feed canga or colluvium deposits of 118 Mt at 32.6 % Fe.

The Brindal Resource comprises Banded Iron Formation (BIF-BFO) of 8.3 Mt at 26.8 % Fe, Massive Iron Mineralisation (MIM) Direct Shipping material (MIM-DSO) of 7.9 Mt at 61.6 % Fe and Massive Iron Mineralisation potential Jig Feed or BFO (MIM-JIG) of 0.1 Mt at 47.4 % Fe.



The identified surficial DID resource material is located in an area currently identified for tailings and mine waste disposal and is not considered for feasibility study purposes. Work is currently underway to test the potential economics of mining this material and the subsequent impact on the current planned site configuration. The DID material will either be mined in advance of development of the area or sterilised by the proposed infrastructure.

The Jack Hills and Brindal Deposit Mineral Resource statements are presented in Table 2 and Table 3 respectively.

Table 2 - In Situ Mineral Resource Statement – Jack Hills Deposit

(September 2010, SRK Consulting)

September 2010, SRK Consulting) In Situ Mineral Resource Statement - Jack Hills Deposit <sup>1</sup>					ne it <sup>1</sup>
0	JORC	Cut-off	Dry Tonnes <sup>4</sup>	Fe	DTR <sup>5</sup>
	Category	% Fe	(x 10 <sup>6</sup> )	%	%
			on Formation <sup>2</sup>		78
	iii Oitu		Fe, BFO	(Ві О)	
	Measured	22	834	30.7	23.08
	Indicated	22	1,160	30.5	27.77
	Inferred	22	877	30.9	29.71
Sub Total	All	22	2,871	30.7	27
	In Situ I	Detrital Iron	Deposits (DID	-BFO) <sup>6</sup>	
		>22%	Fe, DID		
	Measured	22	0	О	О
	Indicated	22	0	О	0
	Inferred	22	118	32.6	3.58
Sub Total	All	22	118	32.6	3.58
	In Site	u Massive I	ron Mineralisa	tion <sup>3</sup>	
	0 - 50% Fe,	Potential J	ig feed or BFO	(MIM-JIG)	
	Measured	0 to 50	31	45.6	38.71
	Indicated	0 to 50	35	45.4	36.5
	Inferred	0 to 50	31	45.6	38.61
Sub Total	All	0 to 50	96	45.5	37.87
		>50% Fe, DS	SO (MIM-DSO)		
	Measured	50	38	57.4	47.63
	Indicated	50	61	56.3	34.58
	Inferred	50	34	54.5	42
Sub Total	All	50	133	56.2	40.21
		To	otals		
Total	Measured		902	32.3	24.65
Total	Indicated		1,256	32.2	28.34
Total	Inferred		1,060	32.3	27.46
Total	All		3,218	32.3	27
Mine Stockpiles					
	N4000::::-::		Fe, BFO		
	Measured	22	0	0	0
	Indicated	22	7.65	32.7	20.83
	Inferred	22	0	0	0
			SO (MIM-DSO)		
	Measured	50	0	0	0
	Indicated	50	1.6	55.2	52.7
	Inferred	50	О	О	0

Mineral Resources are based on drilling and assaying completed on 30 April 2010 and mining stockpile inventory forecast to Stage 1 completion.



- 2. Banded Iron Formation (BIF), previously reported as BFO.
- 3. Massive Iron Mineralisation, previously reported as DSO.
- 4. Tonnages are dry metric tonnes. Tonnages have been rounded; hence small differences may be present in the totals.
- 5. DTR = Davis Tube Recovery (grind size, P100 45μ). No DTR data is available for the stockpiles.
- 6. Detrital resources are shallow deposits located on the northwestern side of the Jack Hills ridge. Detrital material is currently accessible, however, this area is being investigated for tailings and mine waste disposal and as such there is some potential that this material will not be available for economic extraction in the future.

Table 3 - In Situ Mineral Resource Statement - Brindal Deposit

(June 2011)

In S	In Situ Mineral Resource Statement - Brindal Deposit <sup>1</sup>				
	JORC	Cut-off	Dry Tonnes <sup>4</sup>	Fe	DTR⁵
	Category	% Fe	(x 10 <sup>6</sup> )	%	%
	In Situ B	anded Iron	Formation <sup>2</sup> (E	BIF-BFO)	
		>22%	Fe, BFO		
	Measured	22	0	0	0
	Indicated	22	8.3	26.78	0.63
	Inferred	22	0	0	0
Sub Total	All	22	8.3	26.78	0.63
	In Sit	u Massive I	ron Mineralisa	ation <sup>3</sup>	
	0 - 50% Fe,	Potential J	ig feed or BFC	(MIM-JIG)	
	Measured	0 to 50	0	0	0
	Indicated	0 to 50	0.1	47.37	1.89
	Inferred	0 to 50	0	0	0
Sub Total	All	0 to 50	0.1	47.37	1.89
	>50% Fe, DSO (MIM-DSO)				
	Measured	50	3.4	62.61	1.18
	Indicated	50	3.5	61.43	2.03
	Inferred	50	1	58.63	0.66
Sub Total	All	50	7.9	61.58	3.6
Totals					
Total	Measured		3.4	62.61	1.18
Total	Indicated		11.9	37.14	1.7
Total	Inferred		1	58.63	0.66
Total	All		16.3	43.77	2.42

- 1. Mineral Resources are based on drilling & assaying completed on 18 April 2011.
- 2. Banded Iron Formation (BIF), previously reported as BFO.
- 3. Massive Iron Mineralisation, previously reported as DSO.
- 4. Tonnages are dry metric tonnes. Tonnages have been rounded; hence small differences may be present in the totals.
- 5. DTR = Davis Tube Recovery (grind size, P100 45μm).

The Jack Hills Mineral Resource remains open along strike and at depth, and there is strong potential to extend the resource as drilling continues over the life of the project. Additional deposits and targets are currently being assessed for inclusion in the feasibility review process and value improvement program that will be undertaken during the September Quarter 2011. Targets include extensions to existing resources which remain open at depth, and an extensive area of prospective stratigraphy extending from the Brindal deposit to Mt Hale, where outcropping MIM and gravity targets have been identified.<sup>1</sup>

<sup>&</sup>lt;sup>1</sup> Refer to Appendix E for Competent Persons statement



The JHEP feasibility study has produced a mining inventory that supports the reported feasibility study production rates and mine life of 39 years. The mining inventory is at a feasibility study level of accuracy and is based on rigorous analysis, detailed studies and ongoing external review which provides confidence in the project estimates. The feasibility study provides a solid foundation for the subsequent estimation of Ore Reserves. Crosslands expects that a sufficient proportion of the mining inventory will be converted into an Ore Reserve to support the proposed production rate and mine life for the JHEP.

## **Capital Costs**

The study estimates the total capital cost for the JHEP at A\$3.7 billion, as follows:

Item	Cost (A\$ million)
Mining Costs and other pre-production	397
Mining fleet	411
Processing plant	885
Product Storage and Handling	93
Utilities	170
Infrastructure	570
Direct capital costs sub-total	2,526
Indirect costs	580
Contingency	335
Owners' costs during construction	254
Total capital costs	3,695

These estimates have been completed to a nominal accuracy of between  $\pm$  10% to  $\pm$  15% and are based on supplier and contractor budget quotes, benchmarked against recent industry experience. These are P50 estimates, and reported in 31 March 2011 dollars. Owners' costs reflect those costs to be borne by the project sponsors and which are required to effect the project, but are not necessarily able to be directly allocated to the project, such as corporate overheads, land acquisition, insurance and so forth.

## **Production Costs**

The study forecasts total average cash operating costs of A\$33.66/wt of concentrate for the first ten financial years of operation, excluding royalties and infrastructure charges. Benchmarking against public data from five other comparable concentrate projects shows the JHEP production costs are in line with industry average for concentrate producers.

Total production costs, including all transport costs, will depend on the outcome of ongoing negotiations with OPR. As a foundation customer of OPR, Crosslands will pay a commercial tariff to utilise OPR's port and rail services, based on JHEP's allocated share of port and rail capacity. However, as a 50% direct owner of OPR, Crosslands will have a 50% attributable share of all net revenue generated by OPR.



Operating Cost Summary by Area			
Area	\$A/t of feed	\$A/t of product (wet)	
Mining	6.25	14.81	
Processing	6.85	16.23	
Support	0.67	1.58	
Corporate	0.44	1.04	
Total	14.21	33.66	

Note: Average moisture content over the life of mine is 8.5% for concentrate products.

Both the tariff Crosslands will pay and its capacity allocation remain subject to the outcome of ongoing negotiations with OPR which are expected to be concluded in the second half of 2011. Until those negotiations are complete, and given the current uncertainty of OPR securing other infrastructure customers, it is not possible to accurately define the expected Net Present Value for the project.

# Mining and Processing

The JHEP mine plan, which has a projected life of 39 years, envisages a high-volume strip mining method utilising large-scale mining fleet at multiple working faces to produce a consistent quality of ore feed for the processing plant, with an average life of mine strip ratio of approximately 0.94:1.

Pre-stripping will involve the movement of approximately 140 Mt (dry) of material, including approximately 40.8 Mt of lower grade BIF ore that will be stockpiled for later processing and 5.6mt of DSO. This BIF and DSO material, with associated waste, is forecast to cost A\$252 million which will be classified as current and non-current Run of Mine ("ROM") inventory. This inventory cost is not included in the mine development capital expenditure.

During steady-state production, approximately 120 Mt (dry) of material will be mined annually, to provide an average of 55 Mt (dry) of material for processing each year.

The JHEP process flowsheet comprises a two module concentration circuit, each with a processing capacity of 27.5 Mtpa (dry), and concentrate production capacity of +10 Mwtpa, to produce an average of 22 Mwtpa of high purity iron ore concentrates for the first ten years of operation.

In addition, the JHEP will produce a total of 13.5 Mwt of DSO lump and fines with an average head grade in excess of 60% Fe over the first ten years, similar to current DSO production from the existing Stage 1 mine, through a separate crushing and screening plant.

According to the current mine plan, approximately 701 Mwt of concentrates and 13.5 Mwt of DSO lump and fines will be produced over the 39 year project life.

The plant design incorporates established equipment and processing technologies used domestically and internationally within the iron ore and other extractive industries.

Each concentrator module will utilise conventional low-intensity magnetic separation to produce a premium magnetite pellet feed concentrate and a gravity / flotation circuit to produce a high quality hematite sinter feed concentrate. Pilot testing of the flowsheet achieved total iron recovery of 74.8%.



A simplified "mine to ship" schematic for the JHEP is depicted in *Figure 2*:

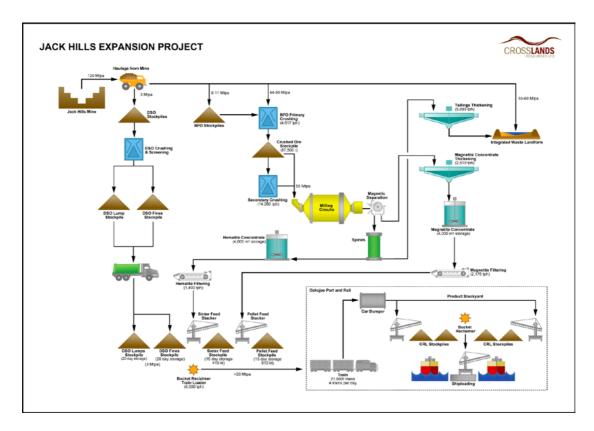


Figure 2 – Mine to Ship Schematic

Pellet feed concentrate, which will account for 70-80 per cent of steady-state output, is expected to average 68.5% Fe, with ultra low alumina (0.03%), low phosphorous (0.004%) and low silica (3%) content. Sinter feed concentrate, primarily hematite, is expected to average 64.4% Fe, with ultra low alumina (0.13%), low phosphorous (0.03%) and medium silica content (4.1%). This ranks JHEP concentrates at the bottom end of the range globally for alumina and phosphorous content. This low alumina and phosphorous content is particularly appealing to coastal Asian steelmakers given the increasing alumina content in Pilbara ores, and the depletion of low-phosphorous Brockman ores from major Pilbara mines.

## Power

The production cost estimates reflect the feasibility study base case option for an Independent Power Producer to build and operate a dedicated 173 megawatt gas-fired power station on site, fed via a gas lateral connected to the Dampier-Bunbury natural gas pipeline. To that end, discussions with major gas suppliers, the owners of the DBNGP and prospective power providers are well advanced.

# **Optimisation and Value Improvement**

The feasibility study outcomes are subject to further review and optimisation work including a value improvement program that will encompass mine planning, development and refinement of capital and operating costs. Crosslands is also developing a further revision of the feasibility study.



# **Expansion**

The plant design and mine development has scope for a potential expansion of concentrate production capacity to +30 Mwtpa with the addition of a third concentrator module. Any such expansion would be subject to a range of factors, including market conditions, customer offtake contracts, funding and owner approvals.

Preparation of a business case for a third module expansion will be considered after the review of the current feasibility study has been concluded.

While the expansion scenario has not been included in the current feasibility study, real estate has been allowed for a third module, the gas and water pipelines have been sized to accommodate a third module, as have all conveyors and stackers.

## **Material Approvals**

The approvals processes for the JHEP are well advanced with respect to key environmental, heritage and associated regulatory permitting.

In April 2011, Crosslands was advised by the Commonwealth Department of Sustainability, Environment, Water, Population and Communities ("SEWPaC") that the JHEP is "not a controlled action" under the Environment Protection and Biodiversity Conservation Act ("EPBC Act"), and that further assessment is not required under the EPBC Act.

Crosslands also anticipates receipt of Part IV state environmental approvals in the September Quarter 2011, and has been advised the Environmental Protection Authority is currently finalising its report to the WA Environment Minister.

Negotiations with Traditional Owners are also well advanced with respect to heritage clearances and Native Title. Conclusion of these matters is anticipated in the September Quarter 2011.



## **APPENDIX B**

#### OAKAJEE PORT AND RAIL INFRASTRUCTURE PROJECT

## Overview

The proposed Oakajee deepwater port is located approximately 25km north of the city of Geraldton. To date more than A\$218 million has been invested by Murchison and Mitsubishi on feasibility and evaluation work for the Oakajee deepwater port and associated 570km heavy haulage northern rail infrastructure.

OPR was named preferred proponent for the Oakajee port development in July 2008, and was subsequently confirmed as the proponent and awarded exclusive rights to develop both the port and northern rail infrastructure on signing a State Development Agreement ("SDA") in March 2009. As the project is considered critical to the expansion of the iron ore industry in the mid-west region of WA, the State and Federal Governments jointly committed A\$678 million for construction of Common Use Infrastructure at the port.

The feasibility study has been managed by OPR and developed by WorleyParsons, according to industry standards. The study cost estimates have been completed to a high level of accuracy of between  $\pm$  10% and  $\pm$  15% and are based on supplier and contractor quotes. Costs reflect P50 estimates in January 2010 dollars. OPR will update the study again following the completion of value engineering work, and after SCAs have been concluded.

## **Capital Costs**

The study forecasts the total capital cost for the infrastructure project at A\$5.94 billion, as follows:

Item	Cost (A\$ million)
Above Rail (including Rolling Stock)	377
Below Rail	2,150
Port PUI Facilities (Private Use)	1,647
Port CUI Facilities (Common Use)	723
Contingency	533
Direct Capital Costs Sub-total	5,430
Owners' costs during construction	508
Total Capital Costs (including owners' costs)	5,938

The base case design provides for an initial engineered port capacity of 45 million wet tonnes per annum, comprising one rail dumper, one reclaimer and shiploader serving two Cape size berths, plus a 37t axle load railway of 570km with 8 trains of up to 180 wagons.

The CUI facilities include the breakwater, turning channel, navigation aids and ancillary facilities such as tug and pilot pens. The 2.5km breakwater is a critical component in the CUI infrastructure, and is necessary to cope with the wave and weather conditions which prevail on the mid-west coastline.



# **Operating Costs**

The study forecasts total average cash operating costs of A\$228.8 million per annum, resulting in a unit average operating cost of A\$5.45 per wet tonne at the proposed initial throughput capacity.

# **Technical and Engineering Design**

Comprehensive technical and engineering work has been completed, and the OPR study confirms that a viable technical solution has been defined.

The design work includes a stable non-reshaping "Icelandic" berm design for the 2.5km breakwater which is needed to cope with the prevailing wind and weather conditions on the mid-west coast.

Similarly, the design of the turning basin and channel has been completed, with vessel handling and under-keel clearance studies underway to confirm the final dredging plan. The concept of the wharf design has been completed, and a mooring analysis study is underway to confirm loadings.

With regard to the landside port facilities, Front End Engineering and Design is underway for the high capacity iron ore materials handling facilities necessary to attain nominal throughput capacity of 45 Mwtpa. The single train unloader and shiploader will be capable of achieving load-in/load-out rates of 9,000t per hour. Dust modelling has also been completed and studies are advanced with respect to materials handling and reclaimer selection.

With respect to the rail development, the rail corridor has been defined and the railway is at the detailed design phase.

## **Expansion**

The initial design reflects requests for capacity from the three proposed foundation customers selected by OPR in March 2010 – Crosslands Resources (owned 50:50 by Murchison and Mitsubishi), Karara Mining Ltd, and Sinosteel Midwest Corporation SMC – following a detailed evaluation process.

OPR also received indicative interest from other prospective miners which would require additional capacity beyond 45 Mwtpa. While expansion scenarios have not been considered in the current study, OPR has undertaken preliminary engineering for incremental expansions of port capacity beyond 45 Mwtpa.

Incremental expansion to about 55 Mwtpa is considered achievable by the addition of a second shiploader and reclaimer. Expansion from 55 Mwtpa to 75 Mwtpa is possible with the addition of a second car dumper, additional stacker, and associated rolling stock and rail track. This has also been subject to engineering design and tested with operational modelling of the logistics chain.

The railway will be a Pilbara style heavy haulage network, with increasing tonnage corresponding to the port developments being possible with expansion in the rolling stock fleet and additional passing loops. At higher tonnage, the railway has been designed to allow longer trains with three locomotives and up to 260 wagons.

## **Material Approvals**

Material regulatory and third party approvals are also expected to be finalised in the second half of the year.



With respect to OPR, the regulatory approvals process for the port and rail projects is well advanced. WA's Environmental Protection Authority recommended approval of both the terrestrial port and rail projects in March 2011, with final Ministerial approval anticipated in the September Quarter 2011. The marine component of the port development already has conditional state environmental approval. Federal environmental approval for the rail development was granted in June 2011, with federal approval of the port marine and port terrestrial components anticipated later in 2011.

Similarly, discussions are progressing with relevant Aboriginal groups to finalise heritage and native title agreements, and negotiations will soon commence regarding land acquisition agreements with 60 affected landholders along the 570km rail corridor to allow construction and commercial operations. OPR has existing land access agreements in place with all affected landholders for rail feasibility works.

#### **Commercial Case**

The OPR study indicates a commercial case for the Oakajee project on the basis that OPR reaches agreement with its potential foundation customers with respect to SCAs.

OPR has not, for the purposes of its feasibility study, yet achieved common ground with the potential foundation customers on tariffs and other commercial terms of the SCAs.

On 23 June 2011, SMC announced that it is deferring development of its Weld Range project. However, Murchison notes that SMC has confirmed to OPR that it remains willing to engage in ongoing discussions in relation to the SCAs. To this end, SMC is seeking a revised tariff structure / model and further certainty on scheduling, including the date by which the port and rail infrastructure will be delivered.

Murchison fully supports re-engagement with SMC on this basis with respect to the Weld Range project, and notes that constructive discussions between OPR, Crosslands and Karara Mining are also continuing.

Murchison considers that agreement on the SCAs remains vital to the development of its projects and, as such, is committed to finding a solution which is acceptable to all parties.

Subject to the successful resolution of the issues identified above, including the need to complete SCAs with the potential foundation customers and Implementation Agreements with the WA Government, the study assumes financial close, PGA and construction are scheduled to occur in the March Quarter of 2012. Murchison considers that this schedule is dependent on the timing of completion of SCAs.



## **APPENDIX C**

#### OVERVIEW OF THE JOINT VENTURE AGREEMENTS WITH MITSUBISHI

On 27 September 2007, Murchison entered in a number of agreements, including a number of funding agreements, with Mitsubishi pursuant to which Mitsubishi acquired a 50% interest in Crosslands. The funding arrangements with Mitsubishi are summarised below:

## **Residual Contribution**

As part of establishing the joint venture, Mitsubishi subscribed for 50% of the shares in Crosslands. The consideration paid at that time was an upfront payment of A\$150 million, with an additional amount (known as the Residual Contribution) payable to Crosslands at the time of effective PGA. Mitsubishi's 50% interest in Crosslands is held in the form of partly paid shares, with these shares to become fully paid when the Residual Contribution is made. The Residual Contribution is to be based on the value of the JHEP calculated under certain assumptions, at the time construction is expected to commence, less the proportionate share of infrastructure costs utilised by JHEP, less half of the initial subscription amount (ie, A\$75million). Because Murchison has an interest in 50% of Crosslands, it will have an economic exposure to 50% of the value of this payment.

Under the terms of the joint venture agreements, the Residual Contribution process commences once the partners agree that the Value Determination Date ("VDD") has been triggered. This requires the following conditions (in summary) to have been satisfied:

- OPR has secured the right to develop the Oakajee port and rail infrastructure for the WA State Government;
- Bankable feasibility studies have been delivered to the shareholders of Crosslands, and the participants in OPR;
- All material Government and third party approvals for the development of the JHEP and the OPR project have been obtained (or if not obtained, conditional only on financial close);
- Written offers (incorporating a detailed credit approved term sheet) have been received from project financiers, providing funding for at least 60% of the forecast development costs of OPR and 50% of the forecast development costs of JHEP;
- Iron ore offtake agreements, and infrastructure agreements acceptable to the project financiers (as part of a security package) have been, or will be, entered into;
- EPCM contractors have been selected for the development of both the JHEP and the OPR project;
   and
- In circumstances where Crosslands must have access to third party infrastructure, then the relevant third party must have committed to the development of the necessary infrastructure, and Crosslands must have reached an agreement with that third party regarding the terms of which Crosslands may use such infrastructure.

Once VDD has been triggered, Murchison and Mitsubishi must negotiate and use their best endeavours to agree the value of JHEP based on the results of bankable feasibility studies. If, within 30 days of the VDD, Murchison and Mitsubishi are unable to reach agreement on the Residual Contribution, an independent expert will be appointed to make a binding determination using a cash flow valuation model that adopts agreed methodology as well as assumptions including consensus commodity prices, typical project based discount rates and operational and capital costs sourced from bankable feasibility studies. If VDD has not occurred by 1 June 2014 or if an external administrator is appointed to Crosslands, the value of the JHEP is to be determined on the best information available, using the agreed valuation methods and adjustment will be applied to account for project certainty.



Whilst the feasibility studies discussed in this release are an important milestone as the projects move through towards the financing and development phases, they are not the bankable feasibility studies used to determine the Residual Contribution. Further work is being undertaken by both Crosslands and OPR, in particular in relation to the SCAs before the standards required for bankability can be met.

## **Umbrella Financing Agreement (UFA)**

Crosslands, Mitsubishi and Murchison are parties to the UFA. Under the terms of the UFA, Mitsubishi is responsible for:

- managing the arranging of limited recourse project financing for JHEP and OPR, according to minimum gearing levels of 60% debt for the infrastructure projects and 50% debt for the JHEP;
- (subject to documentation being agreed and certain other conditions) the provision of up to A\$200
  million in deferred carry financing in the event that Murchison's upfront equity component for the
  projects is not sufficient; and
- (subject to documentation being agreed and certain other conditions) the provision of up to A\$200 million in contingent capital financing which is to cover the contingent capital requirements of external financiers.



## APPENDIX D

## SUMMARY OF KEY TERMS OF RCF FACILITY

**Facility** US\$100,000,000 secured bridge finance facility.

The facility is subject to the satisfaction of customary conditions precedent prior to

drawdown.

Purpose To finance the bankable feasibility studies and development and operational

activities being carried out by Crosslands and OPR, and for general working capital

purposes

**Term** Repayable on the earlier of:

 the date that is 12 months after the date of initial draw down, being 11 April 2012;

 20 business days after the date that Crosslands issues a call to Mitsubishi Development Pty Ltd for the Residual Contribution; and

the date on which an event of default occurs.

The Company may voluntarily prepay all or part of the amount drawn under the facility (plus accrued interest).

Interest

10% per annum on the amount drawn down under the facility, payable quarterly in arrears. The first interest payment is due on 11 July 2011.

Interest payments can be satisfied, at the Company's election, by the issue of Murchison shares provided always that no event of default is occurring and that all necessary shareholder approvals to issue those shares are obtained. The number of shares issued in satisfaction of an interest payment is equivalent to the total amount of the relevant interest payment divided by the 5 day VWAP of the Company's shares (Market Share Price) immediately prior to the time the relevant interest payment becomes payable.

Security

The facility is secured against (amongst other things), the Company's 50% interest Crosslands and the relevant subsidiaries that hold the Company's direct interest in the OPR joint ventures, as well as the Company's interest in the Rocklea project.

**Fees** 

The following fees are payable to RCF under the facility:

- an establishment fee (being the 4,200,000 options having an exercise price of A\$1.73 and expiring on 29 March 2014) which were issued on 29 March 2011.
- a commitment fee of 2% per annum payable quarterly in arrears on the undrawn amount of the facility. Commitment fees can be satisfied, at the Company's election, by the issue of Murchison shares, provided always that no event of default is occurring and that all necessary shareholder approvals to issue those shares are obtained. The number of shares issued in satisfaction of the commitment fee is equivalent to the total amount of the relevant commitment fee divided by the Market Share Price immediately prior to the time the fee is payable.
- a utilisation fee payable in options over ordinary fully paid shares in the capital of the Company, payable quarterly in arrears at a rate of ¼ option per annum on each dollar drawn down under the facility divided by the Market Share Price immediately prior to the relevant draw down. The exercise price for utilisation fee options relating to the initial draw down is A\$1.16 (being a strike price equal to the market price at 17 November 2010), with the exercise price for utilisation



fee options issued in respect to subsequent draw downs equal to the Market Share Price immediately prior to the time of draw down. If shareholder approval is required, but not obtained, for the issue of the utilisation fee options, then RCF is entitled to the 'cash equivalent' of that fee determined by using a Black-Scholes pricing model.

# Board representation

RCF is entitled to nominate one director to the Board for so long as:

- RCF holds more than 5% of the Company's shares (on a fully diluted basis); or
- more than US\$20 million remains outstanding under the facility.

## Other

The facility contains usual undertakings, warranties and events of default for a facility of this nature.

RCF also has the right to cancel the facility, and require repayment of the facility in full. in the event that:

- any person or entity acquires a relevant interest of 30% of shares in the Company; or
- the Company ceases to hold an interest of at least:
  - o 50% of the shares in Crosslands;
  - o a participating interest of 50% in the OPR joint ventures; or
  - 50% of the Jack Hills stage 1 project or the JHEP.



## **APPENDIX E**

## Competent Persons' Statement

The information in this announcement that relates to Exploration Results and geological and mineralogical interpretations of the Mineral Resource estimate of the Jack Hills Deposit is based on information compiled by Mr Roland Bartsch. The information in this announcement that relates to Exploration Results and Mineral Resource estimate of the Brindal Deposit is based on information compiled by Mr Bartsch. Mr Bartsch is a full time employee of Crosslands Resources Ltd and is a Member of the Australasian Institute of Mining & Metallurgy. The information in this announcement that relates to estimation of the Mineral Resources of the Jack Hills Deposit is based on information compiled by Mr Danny Kentwell in his capacity as an employee of SRK Consulting. Mr Kentwell is a Member of the Australasian Institute of Mining & Metallurgy. Mr Bartsch and Mr Kentwell have sufficient experience which is 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 Exploration Results, Mineral Resources and Ore Reserves'. Mr Bartsch and Mr Kentwell consent to the inclusion in the announcement of the matters based on their information in the form and context in which it appears.