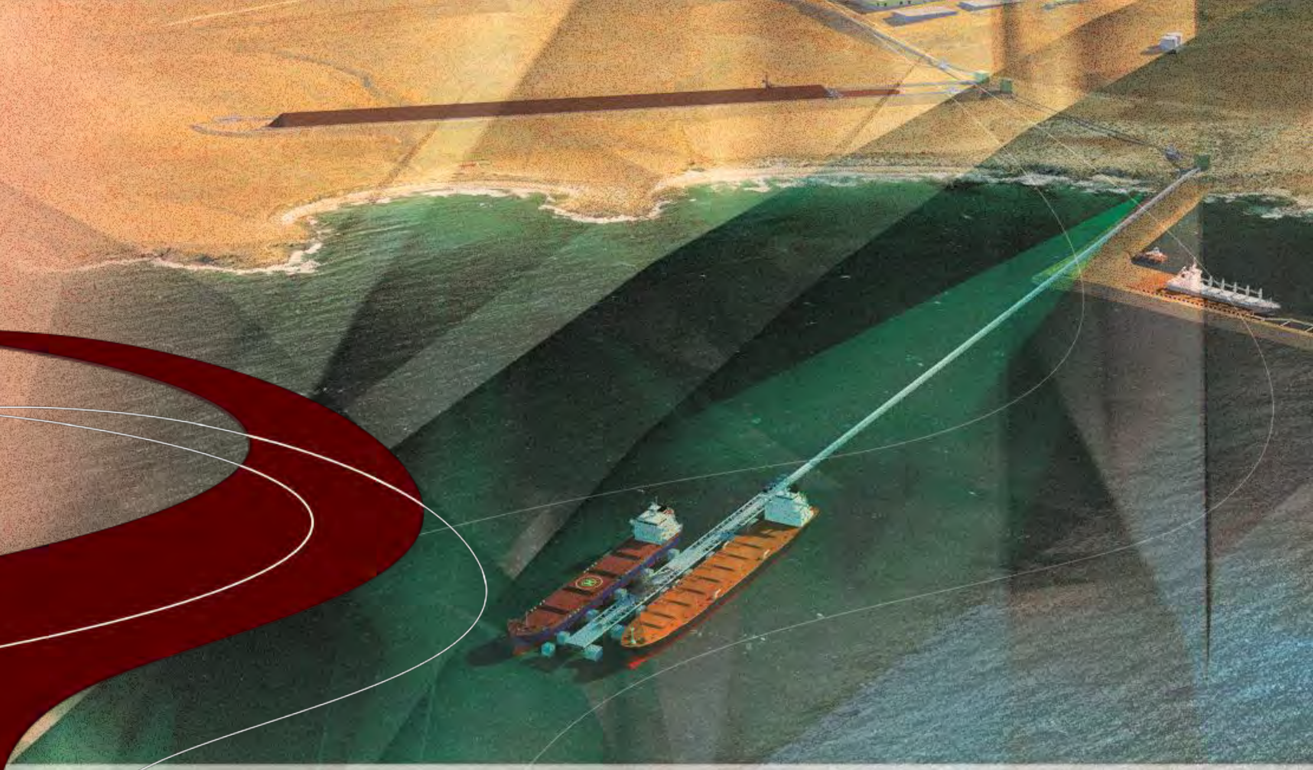
IRON ROAD



Central Eyre Iron Project

Our Technical Journey

October 2014

Cautionary Statements

Forward Looking Statements

This announcement contains certain statements with respect to future matters which may constitute "forward-looking statements". Such statements are only predictions and are subject to inherent risks and uncertainties which could cause actual values, results, performance or outcomes to differ materially from those expressed, implied or projected. Investors are cautioned that such statements are not guarantees of future performance and accordingly not to put undue reliance on forward-looking statements due to the inherent uncertainty therein.

Competent Persons' Statements

The information in this report that relates to the Exploration Target within EL4849 is based on and fairly represents information and supporting documentation compiled by Mr Milo Res, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Res has sufficient experience that is relevant to the style of mineralisation and the type of deposits under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Res at the release date of the Exploration Target was a full time employee of Iron Road Limited and consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information in this report that relates to Mineral Resources estimated for the Boo-Loo prospect is based on and fairly represents information and supporting documentation compiled by Mr Ian MacFarlane, who is a Fellow of the Australasian Institute of Mining and Metallurgy and at the release date of the Mineral Resource statement was a full time employee of Coffey Mining. Mr MacFarlane has sufficient experience relevant to the style of mineralisation and the type of deposits 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 MacFarlane consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Mineral Resources estimated for the Murphy South / Rob Roy (MSRR) prospect is based on and fairly represents information and supporting documentation compiled by Ms Heather Pearce, who is a member of the Australasian Institute of Mining and Metallurgy, and at the time of issue was a full time employee of Iron Road Limited. This estimation was peer reviewed by Dr Isobel Clark, who is a Fellow of the Australasian Institute of Mining and Metallurgy and at the release date of the Resource Statement was contracted by Xstract Mining Consultants. Dr Clark has sufficient experience relevant to the style of mineralisation and the type of deposits under consideration and to the activity which she 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". Dr Clark consents 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 Mine Reserves estimated for Murphy South / Rob Roy (MSRR) is based on and fairly represents information and supporting documentation compiled by Mr Harry Warries, a Fellow of the Australasian Institute of Mining and Metallurgy, and at the release date of the Reserve Statement was a full time employee of Coffey Mining. Mr Warries has sufficient experience relevant to the style of mineralisation and the type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Warries consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Exploration Potential

It is common practice for a company to comment on and discuss its exploration in terms of target size and type. The information in this presentation relating to exploration targets should not be misunderstood or misconstrued as an estimate of Mineral Resources or Ore Reserves. Hence the terms Resource(s) or Reserve(s) have not been used in this context. Any potential quantity and grade is conceptual in nature, since there has been insufficient work completed to define them beyond exploration targets and that it is uncertain if further exploration will result in the determination of a Mineral Resource.

Cautionary Statements

Modelling based upon 25 year mine life, consisting of:

- Initial 17 years using Proven and Probable Mining Reserve of 2,071Mt @ 15.5% iron (200x100m, 100x50m diamond drill spacing).
- Further eight years using 28% Measured, 24% Indicated and 48% Inferred Resources of 1,303Mt @ 15.0% iron (200x100m diamond drill spacing).
- Planning underway for a further drilling campaign to extend mine life beyond 30 years.

Base Case Development Model: Encompasses a 25 year mine life, based on existing Ore Reserves and Mineral Resources, producing 21.5Mt of concentrate per annum following a staged ramp up over 2½ years. Modelling does not include revenues from potential third party users of the infrastructure.

Location	Classification	Base Case Development Model
		Proportion (%)
MSRR	Proven Ore Reserves	62%
MSRR	Probable Ore Reserves	6%
MSRR	Measured Resources	9%
MSRR	Indicated Resources	8%
MSRR / BLD	Inferred Resources [1]	15%

The Reserves, Resources and Exploration Target underpinning the production target have been prepared by a competent person in accordance with the JORC Codes 2012 and 2004 (there being no material changes since the Resources were last reported under the JORC Code 2004):

- [1] There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production target itself will be realised.
- On 26 February 2014, the company announced the results of its definitive feasibility study for the CEIP. All material assumptions underpinning the production target and forecast financial information referred to in the announcement continue to apply and have not materially changed. A copy of that announcement can be obtained from ironroadlimited.com

Summary

This presentation summarises some thought-provoking aspects of our technical journey, challenging the status quo and how these aspects influence the overall design.

Mining

- Understanding the CEIP orebody.
- Transition from owner mining operating traditional truck & shovel, to contract mining managing in-pit crushing & conveying (IPCC).

Ore Beneficiation

- Developing a thorough understanding of the metallurgical behaviour of the CEIP ore.
- Innovative materials handling and the elimination of a conventional tailings storage facility.
- Optimisation and the inclusion of a regrind circuit.

Infrastructure Design Philosophy

- Rotary versus bottom dump rail discharge systems.
- Port facility and high speed ship loading.
- Access and use by third parties.

Protecting the Schedule

- High density, vertically stacked modularisation.
- Parallel process design.
- Wet commissioning off-site in construction yards.

Contents

Introduction

Iron Road is proud after six years and over $125M spend, to present a robust and credible business case for the Central Eyre Iron Project (CEIP).

- ✓ 2008 June – Exploration Licence 3699 acquired and exploratory drilling commenced.
- ✓ 2011 June – Prefeasibility study released.
  - *12.4Mtpa, slurry pipeline, third party port.*
- ✓ 2014 February – Definitive feasibility study findings released.
  - *21.5Mtpa, new rail and port infrastructure.*
- ✓ 2015 February – Positive post-DFS optimised case anticipated.
  - *Operating cost model and financial parameters have been evaluated by a leading industry consultant, including a customer focused review.*
  - *Stage IX drilling programme complete and expected to identify additional tonnage to maintain 25 year mine life at increased production of 24Mtpa of premium iron concentrate.*
  - *IPCC optimisation study underway and expected to deliver new pit shell and lower cost mining schedule that sustains 24Mtpa output over a 25 year mine life.*
  - *Indicative concentrate specifications* @ 24Mtpa, ≥66.5% Fe, ≤3.5% SiO_2, ≤2.0% Al_2O_3, ≤0.005% P, ≤ 0.005% S.*

* see Appendix 1 for full specifications

Introduction – Development Phase Ready

Iron Road is advancing the development of Australia's next major integrated iron supply business on the Eyre Peninsula in South Australia.

The CEIP offers:

- Robust financial metrics for both the DFS and optimised case, with debt service and loan life cover ratios supported at current iron ore prices.
- A manufactured concentrate, producing consistent high quality for life of mine, during a period of forecast declining quality.
- High quality concentrate with advantageous value-in-use characteristics for customers.
- Tangible benefits for local and regional communities.

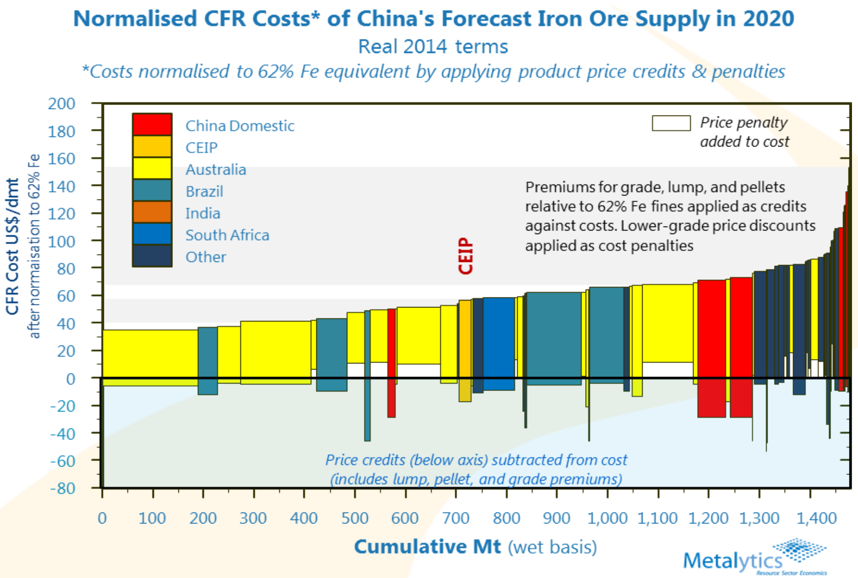
Introduction – The Journey

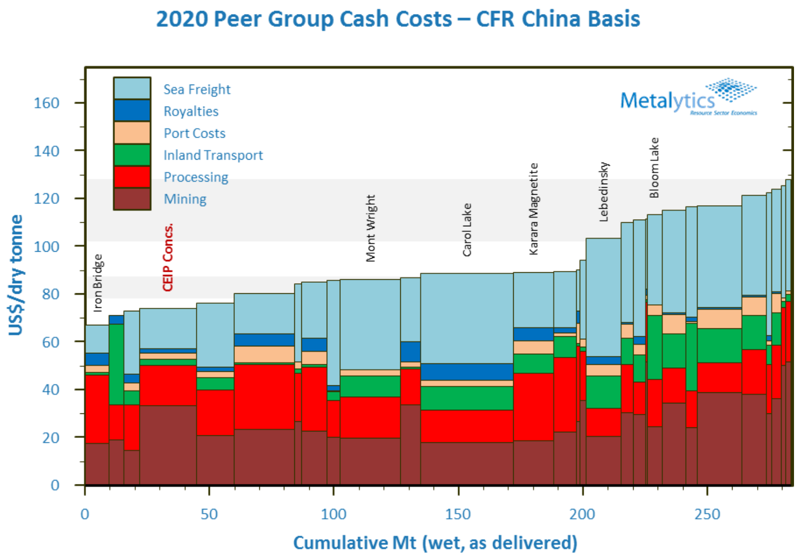
Experience with large magnetite operations in Australia indicates inefficient and problematic processing, leading to high capital and operating cost outcomes and unsatisfactory production levels. The CEIP offers a simple process supported by a very large simplified mine. To achieve this:

- Iron Road has pursued proven, off-the-shelf technologies, applied in innovative ways to provide straightforward solutions.
- Our studies define a 25 year mine life, high quality, low cost operation producing a coarse magnetite concentrate ideally suited to the sinter market and our customers' needs.
- Sound economics enable the project to support world-class infrastructure assets, including rail and a deep water port.

Benchmarking and Comparisons

Benchmarking – The 2020 Market





CEIP is positioned in the second quartile of the normalised cost curve for China's forecast 2020 total iron ore supply of circa 1.5Bt.

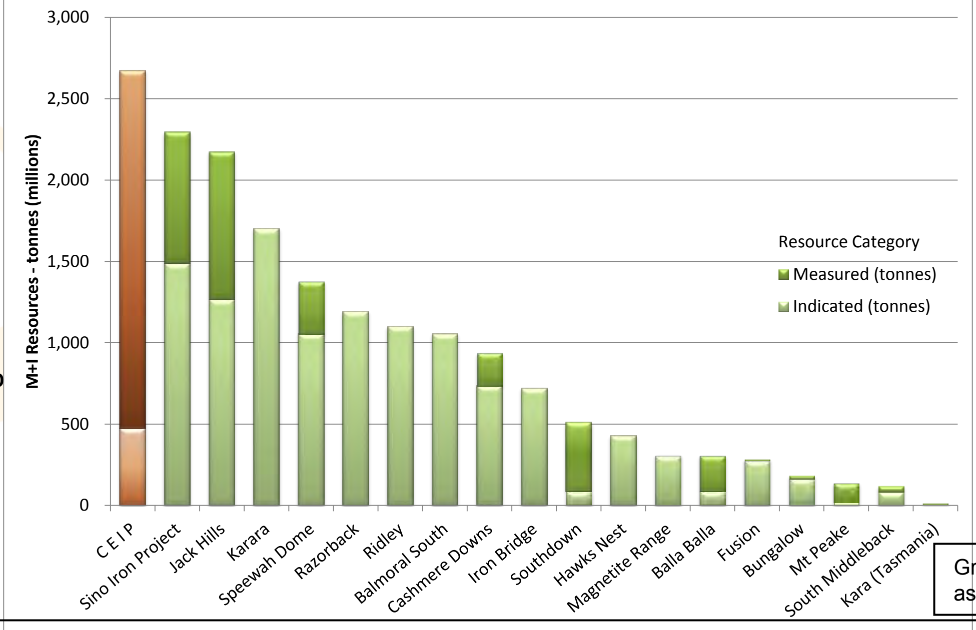
CEIP is positioned in the lowest cost quartile of forecast high quality concentrate producers in 2020 (high Fe, low Al_2O_3, SiO_2, P, S).

Benchmarking – Measured + Indicated Mineral Resource

Largest Measured + Indicated magnetite Mineral Resource in Australia.

Underpins long life operations:

- Mineral Resource
  3.7Bt @ 16% Fe[1]
- Exploration Target of 10-21Bt @ 14-20% iron[2]
- Potential to deliver one billion tonnes of high quality concentrate



Graph correct as at April 2013

1. Full Mineral Resource outlined in Appendix 1.

2. The term "exploration target" should not be misunderstood or misconstrued as an estimate of Mineral Resources and Reserves as defined by the JORC Code (2012), and therefore the terms have not been used in this context. The potential quantity and grade is conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource. It is uncertain if further exploration or feasibility study will result in the determination of a Mineral Resource or Mining Reserve. Refer also to Exploration Target notes in Appendix 3.

Comparison – Transition to Optimised Mining Method

	Traditional Approach *CEIP truck and shovel* *20Mtpa* *Owner operator mining (OOM)*	DFS Base Case *CEIP hybrid IPCC* *21.5Mtpa* *Contract mining, semi-mobile crushers*	Current Optimisation Study *CEIP hybrid IPCC* *24Mtpa* *Contract mining, hybrid double rolls mobile crushers*
Capital cost	US$1,350M	US$480M	Subject of current studies
Operating cost	US$37.30 /dmt	US$28.50 /dmt	
Key assumptions			
• Exchange rate (AUD/USD)	0.85	0.85	0.90
• Delivered diesel price (USD)	0.90	0.90	1.05 ↓
• Electricity (AUD ¢/kWh)	7.44	7.44	6.98* ↑

Notes ↓ *Deceasing influence due to reducing mobile fleet* ↑ *Increasing influence due to IPCC* * 2018 market pricing

Comparison – Transition to Optimised Mining Method

Truck & shovel

IPCC, semi-mobile crushers

IPCC, mobile crushers

Comparison – Optimised Mining Method

	Traditional Approach *CEIP truck and shovel* *20Mtpa* *Owner operator mining (OOM)*	DFS Base Case *CEIP hybrid IPCC* *21.5Mtpa* *Contract mining, semi-mobile crushers*	Current Optimisation Study *CEIP hybrid IPCC* *24Mtpa* *Contract mining, hybrid double rolls mobile crushers*
Number of 797F trucks – 350t capacity	93	32	Subject of current studies
Shovels	7	7	
Mining employees	1150	390	
Impact to surrounding traffic	15 ‘A’ double road trains daily	3 ‘A’ double road trains daily	
Fuel consumption daily	800kL	150kL	
CO_2 Diesel fuel burn – t/y (000’s)	797	149	
CO_2 Electricity – t/y (000’s)	20	265	
CO_2 annual – t/y (000’s)	**817**	**415**	

Comparison – Coarse Versus Fine Grinding

	Scenario 1 *21.5Mtpa pellet feed* *Fine grind* *p80 < -40µm*	Scenario 2 *21.5Mtpa Pellet Feed* *Fine grind* *p80 < -40µm* *with gravity circuit*	DFS *21.5Mtpa Sinter Feed* *Coarse grind* *p80 < -125µm* *with gravity circuit*	Current Optimisation Study *24Mtpa Sinter Feed* *Coarse grind* *p80 < -120µm* *with gravity and regrind circuit**
Power	302MW	261MW	120MW	Subject of current studies
Operating Cost	**US$21.44 /dmt**	**US$18.59 /dmt**	**US$10.94 /dmt**	
Power	*US$11.32 /dmt*	*US$9.05 /dmt*	*US$4.18 /dmt*	
Consumables	*US$6.62 /dmt*	*US$5.61 /dmt*	*US$5.33 /dmt*	
Labour	*US$3.13 /dmt*	*US$3.13 /dmt*	*US$1.10 /dmt*	
Other	*US$0.37 /dmt*	*US$0.80 /dmt*	*US$0.34 /dmt*	
Pelletising (est.)	US$9.60 /dmt	US$9.60 /dmt	-	

* During numerous discussions with potential customers, a preference was expressed for a slightly less coarse, premium iron concentrate with SiO_2 < 3% and Al_2O_3 < 2%. The introduction of a regrind circuit, albeit with higher consumable costs per dmt, meets both customer expectations and premium pricing forecasts.

Note: Harder, finer and more abrasive magnetite ores (e.g. Western Australian Banded Iron Formations) will result in processing costs exceeding both Scenario 1 and Scenario 2 estimates.

Comparison – Waste Handling Optimisation

	**Scenario 1** *Mine waste rock trucking* *Slurry tails circuit, wet coarse tails*	**Scenario 2** *Mine waste rock trucking* *Dry tails stacking*	**DFS** *Conveyed mine waste* *Conveyed dry tails* *Co-located mine waste and tails facility*	**Current Optimisation Study** *Conveyed mine waste* *Conveyed dry tails* *Co-located mine waste and tails facility*
Land Required	Process (tails) 4000 hectares + Mine (waste rock) 2000 hectares	Process (tails) 2000 hectares + Mine (waste rock) 2000 hectares	2000 hectares (combined)	Subject of current studies
Water volume (pa)	45GL	14GL	14GL	
Heavy Moving Equipment (trucks)	CAT 797F Haul Truck x 10 + 11 (coarse tails) + 45 (waste rock)	45 CAT 797F (waste rock)	0	
Power (MW)	35	28	34	
Labour	285	157	32	
Fuel litres day (kL)	186	91	0	
CO_2 Diesel tpa (000's)	355	250	0	
CO_2 Electricity tpa (000's)	116	93	112	
CO_2 Total tpa (000's)	**471**	**343**	**112**	

Comparison – Water Source, Filtering & Recycling

The original studies envisaged supplying water to the process plant by means of a buried 148km long, 1300mm diameter CSCL seawater pipeline from the port. The system would require an intake structure mounted on the jetty, an algaecide dosing facility, pump station and two in line booster pump stations with total pump power drawing approximately 55MW.

The adoption of filtered tailings from the process plant has improved process water recycling, reducing the requirement for 'top up' water. The nett impact is a reduction in water required from 45GL to 14GL per annum. This allowed the DFS to model and cost the development of a borefield to extract water from a saline aquifer only 56kms from the mine site. Study work, supported by a drilling and test programme, indicates that supplying the process plant from this aquifer is feasible over the life of mine, with minimal impact on the aquifer (less than 0.5% draw down over 25 years of operation).

	Scenario 1 *CEIP Seawater Pipeline & TSF 20Mtpa Owner Operator Mining (OOM)*	DFS *CEIP Filtered Tails, contract mining 21.5Mtpa*	Current Optimisation Study *CEIP Filtered Tails, contract mining 24Mtpa*
Water Consumption (pa)	45GL	14GL	Subject of current studies
Source	Seawater	Borefield	Borefield
Pipeline Diameter	Nom. 1300 diameter	Nom. 630 diameter	Nom. 630 diameter
Pipeline Construction	Buried CSCL	Overland HDPE/CS	Overland HDPE/CS
Water Storage	10 days	10 days	Subject of current studies
Capital Cost	US$506M	US$101M	
OPEX Cost (/ct)	US$0.73	US$0.15	

Benchmarking – Ports Loading Magnetite

	Geraldton Berth 7	Cape Preston	Cape Hardy
Vessel type	Panamax 115 DWT	Panamax 115 DWT	Cape Class 220 DWT
Stockpile capacity	400kt	220kt	Min. 660kt
Direct ship loading	Yes	Tranship 18km offshore	Yes
Loading capacity	5,000tph	Tranship 10,000tph Barge loading	10,000tph
Sailing on tide required	Yes	No	No
Berthing	Single	Single	Twin
Available capacity for third parties	No	No	Yes

CEIP Mining

CEIP Large Mining Reserve

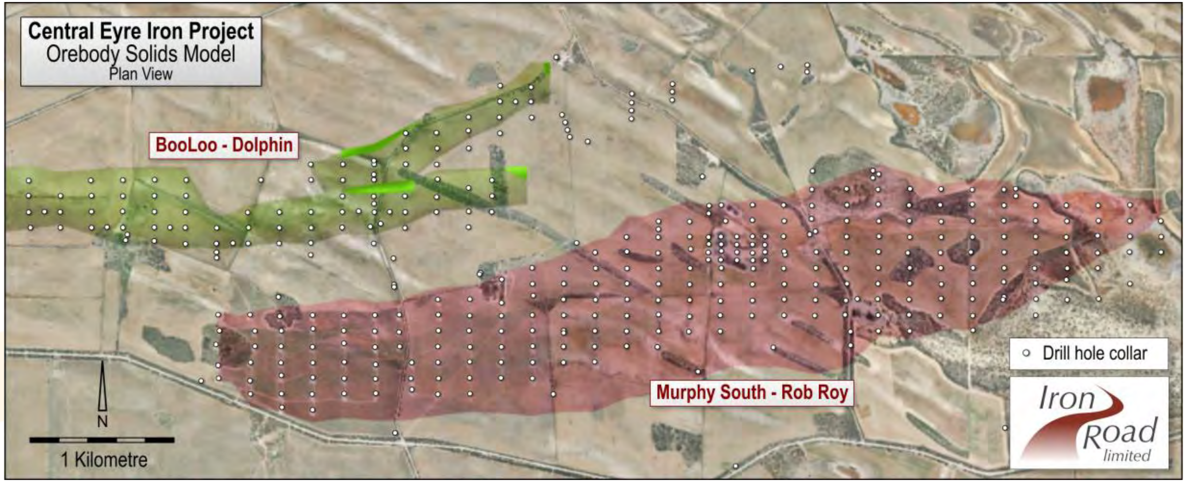
CEIP Global Mineral Reserve			
Location	Classification	Tonnes (Mt)	Fe (%)
Murphy South/Rob Roy	Proved	1,871	15.6
	Probable	200	15.1
Total		2,071	15.5

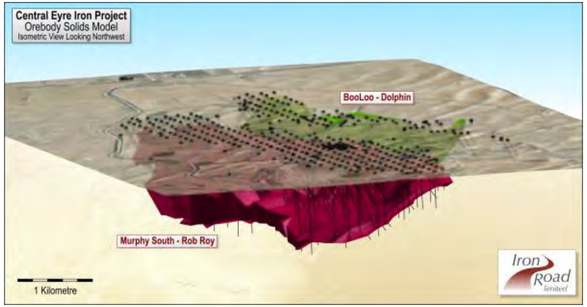
The information in this report that relates to Reserves estimated for Murphy South / Rob Roy (MSRR) is based on and fairly represents information and supporting documentation compiled by Mr Harry Warries, a Fellow of the Australasian Institute of Mining and Metallurgy, and an employee of Coffey Mining. Mr Warries has sufficient experience relevant to the style of mineralisation and the type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Warries consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. See the Company's announcement made 26 February 2014. The Company is not aware of any new information or data which materially affects the information, and all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.

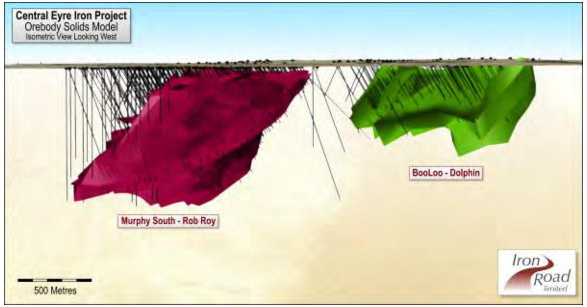
Iron Road Understands the CEIP Orebody

- Over 500 diamond drill holes, 150km of drilling.
- High metamorphic grade, gneissic host rock, results in very coarse-grained mineralisation.
- Over 20,000 Fe% XRF* analyses.
- 7,000 DTR** analyses equates to 34% of total available core tested.
- Mineral Resource Estimate conducted in-house with external peer review; complies with JORC (2004) reporting requirements.

*X-Ray Fluorescence
**Davis Tube Recovery







Large Scale Mining of the Consistent Orebody

- Well understood, uniform orebody.
- Large scale open pit, long life, low strip ratio.
- Coffey Mining studied owner mining utilising conventional truck & shovel, load & haul.
  - Ore Reserve estimated using costs & cash flows based on this scenario – most conservative.
- Competitive enquiries with several contract mining entities supported Iron Road's view that a traditional load & haul operation is sub-optimal.
- IRD Studies have considered two additional mining methods based on IPCC (semi-mobile and mobile crushers) and an optimal contracting strategy.
  - Alternative methods had to be proven and benchmarked against similar operating mines.

Conventional truck and shovel open pit mining operation

Definitive Feasibility Study Scenario – Hybrid-IPCC with Semi-Mobile Crushers

Semi-mobile IPCC selected:

- Ideally suited to CEIP.
- Open pit optimised for electrically powered Hybrid-IPCC.
- Conventional truck & shovel operation for first three years of operation.
- Significantly reduced mining fleet (32 cf 93 Cat 797s).
- Reduced operational manning requirements.
- Significantly lower diesel and consumables.
- Optimised waste rock co-disposal with filtered tailings eliminates the requirement for a dedicated tailings facility.
- Infrastructure and logistical support requirements reduced.
- Savings continue over life of mine.
- Semi-mobile gyratory crusher stations located in pit, moved every two years (14 day relocation).
- Conveyor system reconfigured each quarter (36 hour process).

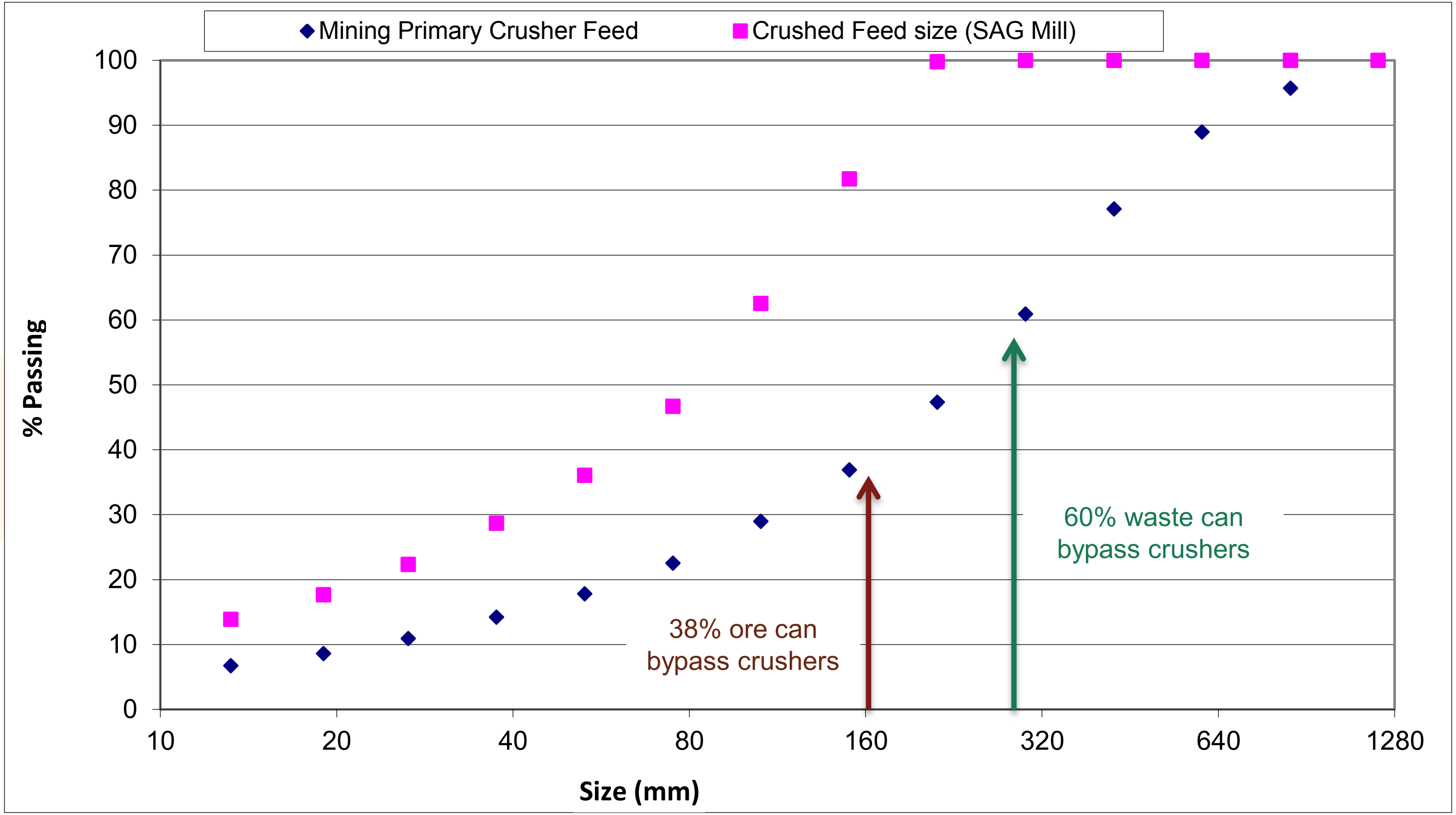
Top: Semi-mobile gyratory crusher station in Sweden, similar to capacity required at CEIP. Above: Transport crawler undertakes conveyor system reconfiguration

Opportunities to Improve Costs

A grizzly prior to the primary crusher reduces the crusher size.

Smaller primary crushers are faster to relocate.

Reduced wear on crusher liners will improve maintenance strategy and reduce down-time.

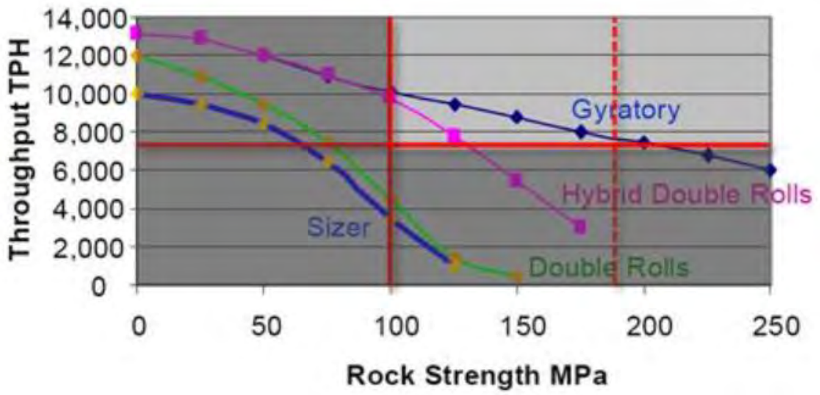


Current Optimisation Study – IPCC with Mobile Crushers

From semi-mobile to mobile crushers

- CEIP average UCS* is 110MPa.
- Hybrid double rolls crushers are applicable to CEIP with pre-grizzly material.
- Average throughput of 4,000tph.

*Uniaxial Compressive Strength



Crusher Selection – Rock Strength vs. Throughput

Advantages

- Shovels or front-end loaders will directly feed mobile crushers.
- No crusher relocations required every two years, crushers advance with shovels.
- Most of the 32 x 360t mobile fleet not required.
- Mining operating personnel reduced by up to 100.
- Down-scaled mining fleet workshop.
- Diesel consumption reduced from 150kL to 30kL per day.
- Fully modularised solution.

Mobile Crushers

Evolution of the Optimised Mining Method

	Traditional Approach *CEIP truck and shovel* *20Mtpa* *Owner operator mining (OOM)*	DFS Base Case *CEIP hybrid IPCC* *21.5Mtpa* *Contract mining,* *semi-mobile crushers*	Current Optimisation Study *CEIP hybrid IPCC* *24Mtpa* *Contract mining,* *hybrid double rolls mobile crushers*
Number of 797F trucks – 350t capacity	93	32	Subject of current studies
Shovels	7	7	
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Impact to surrounding traffic	15 ‘A’ double road trains daily	3 ‘A’ double road trains daily	
Fuel consumption daily	800kL	150kL	
CO_2 Diesel fuel burn – t/y (000’s)	797	149	
CO_2 Electricity – t/y (000’s)	20	265	
CO_2 annual – t/y (000’s)	**817**	**415**	

Transition to a Lower Cost and Optimised Mining Method

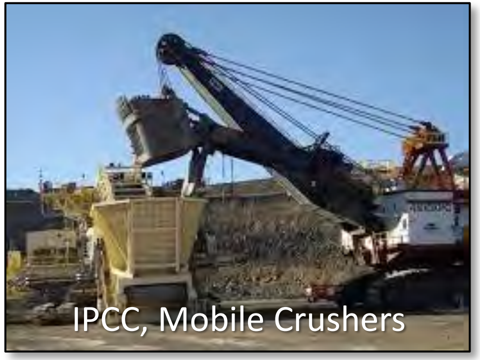
	Traditional Approach *CEIP truck and shovel* *20Mtpa* *Owner operator mining (OOM)*	DFS Base Case *CEIP hybrid IPCC* *21.5Mtpa* *Contract mining, semi-mobile crushers*	Current Optimisation Study *CEIP hybrid IPCC* *24Mtpa* *Contract mining, hybrid double rolls mobile crushers*
Capital cost	US$1,350M	US$480M	Subject of current studies
Operating cost	US$37.30 /dmt	US$28.50 /dmt	


Truck & Shovel

→


IPCC, Semi-mobile Crushers

→


IPCC, Mobile Crushers

Examples of IPCC

Iron Road's Definitive Feasibility Study incorporates IPCC with semi-mobile crushers. Examples of relevant IPCC operations with semi-mobile crushers are:

- Boliden's Aitik Copper Mine in Sweden (shown at right); and
- Tata Steel's Noamundi Magnetite iron ore mine in India.

Current optimisation studies incorporate IPCC with mobile crushers. Examples of relevant operations are:

- Vale's N4E iron ore mine in Brazil; and
- China Coal's Pingshuo coal mine in China.

Boliden's Aitik Copper Mine in Sweden uses semi-mobile crushers

CEIP Beneficiation

Thorough Process Knowledge

Extensive test work programmes encompassing:

- Uniaxial Compressive Strength & Young's Modulus.
- Impact Crushing Work Index.
- SAG Mill circuit comminution test work.
- QemScan Tests.
- Bond Ball Mill Work Index.
- Davis Tube Recovery tests.
- Bond Abrasion Index (Ai).
- High pressure rolls test work.
- Magnetic separation test work.
  - Release analysis, rougher magnetic separation, cleaner magnetic separation.
- Fine screening test work.
- Filtration test work.
- Gravity separation test work.
  - Heavy liquid separation, table tests, rougher spirals, cleaner spirals and scavenger magnetic separation on spiral tails.
- Material property tests.

CEIP concentrate (left) and fine tailings (right)

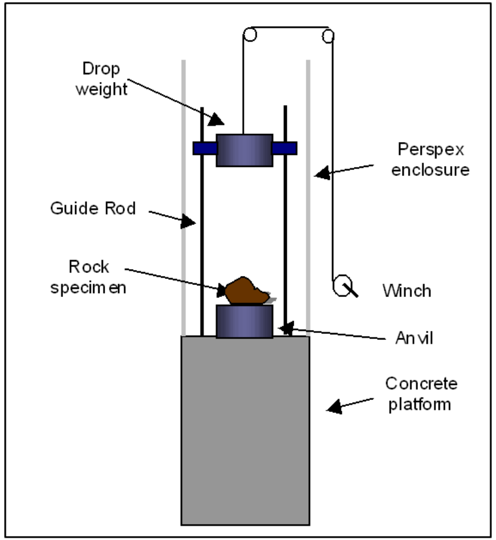
Drop Weight Test

The SMC Test* involved five sets of 20 particles being broken using a JK Drop-Weight tester, each set at a different specific energy level. The breakage products are screened at a sieve size selected to provide a direct measurement of the t10 value.

*The SMC Test is a laboratory comminution test which provides a range of information on the breakage characteristics of rock samples for use in the mining/minerals processing industry.

**The JK Drop Weight Test measures impact breakage parameters to maximise ore characterisation and increase productivity. The ore-specific parameters are used to analyse and/or predict AG/SAG mill performance.

t10 Results on Predicted Ore Hardness



CEIP Ore Hardness consistently ranks around the *medium* category, as opposed to the WA Banded Iron Formation magnetite ores that are ranked as *very hard*.

Derived Values for A*b and t10 at 1 kWh/t

Sample Designation	A*b				t10 @ 1 kWh/t			
	Value	Category	Rank	%	Value	Category	Rank	%
IR 072 : 101.7-125.6m	46.3	medium	1468	48.1%	34.0	medium	1687	55.3%
IR 078A : 176.95-204.6m	49.6	medium	1624	53.3%	35.5	moderately soft	1843	60.4%
IR 080 : 137.7-157.0m	54.1	medium	1809	59.3%	37.6	moderately soft	2052	67.3%
IR 103 : 82.03-103.05m	58.1	moderately soft	1951	64.0%	38.3	moderately soft	2114	69.3%
IR 109 : 205.0-225.0m	52.4	medium	1740	57.1%	37.2	moderately soft	2012	66.0%
IR 110 : 81.0-99.45m	80.6	soft	2418	79.3%	46.0	soft	2519	82.6%
IR 123 : 111.3-133.34m	44.9	medium	1407	46.1%	33.6	medium	1646	54.0%
IR 128 : 97.4-119.4m	39.9	moderately hard	1112	36.5%	30.4	medium	1276	41.8%
IR 147 : 97.23-98.91m	46.8	medium	1496	49.1%	33.9	medium	1677	55.0%
IR 147 : 105.0-105.9m	40.7	moderately hard	1155	37.9%	31.2	medium	1365	44.8%
IR 147 : 114.2-115.1m	44.3	medium	1373	45.0%	34.3	medium	1708	56.0%
IR 147 : 124.0-124.9m	43.1	medium	1309	42.9%	33.1	medium	1596	52.3%
IR 147 : 142.0-143.0m	42.0	medium	1237	40.6%	32.0	medium	1476	48.4%
IR 148 : 100-101m	45.1	medium	1423	46.7%	33.0	medium	1591	52.2%
IR 148 : 116-117m	48.1	medium	1551	50.9%	34.6	medium	1743	57.2%
IR 148 : 166-167m	55.1	moderately soft	1856	60.9%	38.1	moderately soft	2106	69.1%
IR 148 : 208-209m	53.6	medium	1789	58.7%	37.7	moderately soft	2059	67.5%
IR 148 : 224-225m	39.6	moderately hard	1093	35.8%	30.6	medium	1299	42.6%
IR 149 : 110.69-111.60m	86.8	soft	2479	81.3%	47.8	soft	2580	84.6%
IR 149 : 129.04-129.94m	30.7	hard	446	14.6%	24.6	hard	507	16.6%
IR 149 : 142.5-143.5m	35.9	hard	818	26.8%	27.9	moderately hard	931	30.5%
IR 149 : 157.16-158.10m	44.2	medium	1369	44.9%	32.7	medium	1552	50.9%
IR 149 : 183.7-184.6m	53.5	medium	1786	58.6%	38.3	moderately soft	2114	69.3%
IR 150 : 67-68m	68.6	soft	2228	73.1%	45.0	soft	2482	81.4%
IR 150 : 82-83m	52.6	medium	1744	57.2%	37.5	moderately soft	2048	67.2%
IR 150 : 92-93m	59.4	moderately soft	1999	65.6%	40.2	soft	2229	73.1%
IR 150 : 144-145m	45.9	medium	1454	47.7%	34.8	medium	1773	58.2%
IR 150 : 164-165m	52.4	medium	1740	57.1%	38.0	moderately soft	2095	68.7%

Conventional Crushing

Autogenous Grinding

- Historically, the lowest operating cost has been achieved through multistage, fully autogenous grinding with integrated magnetic separation steps between the stages.
- The major benefit of fully autogenous grinding is the elimination of steel grinding media costs.
- The separation of waste between grinding stages progressively reduces the amount of material to be ground.

Recent Alternatives

- Application of more efficient grinding technologies developed in the last 20 years, including high pressure grinding rolls (HPGR) and stirred milling for fine grinding, has provided opportunities to reduce operating costs associated with comminution.

Both technologies are already implemented in some magnetite processing operations, although in a limited capacity. It was recognised during the early stages of the DFS that use of HPGR technology resulted in high maintenance and operating costs.

The CEIP study demonstrates the significant advantages of applying more efficient semi-autogenous grinding technology when dealing with brittle, gneissic host rock of high metamorphic grade.

SAG Milling Benefits

Three-stage crushing and high pressure grinding rolls (HPGR)	Conventional SAG milling
Despite apparent advantages during early DFS work, this scenario became a less favoured option after consideration of maintenance activities, overall power requirements and operational needs	Simple plant layout, less equipment, significantly smaller footprint, overall lower power demand
Recognition of other magnetite processing plant problems dealing with harder ores	Greater ability to manage ore variability through increased charge, greater mill velocity and density control
Large labour force required for operational and maintenance activities (>350 full time employees)	Significant labour efficiencies < 250 full time employees
Sustained operating and capital requirements	Offsite assembly eases schedule risks
Three stage crushing (primary, secondary & tertiary) presents higher risk impacts for steady state conditions – plant stability deteriorates in line with poor utilisation.	Higher flexibility and certainty in operation and grade control through mill stability, with greater system utilisation

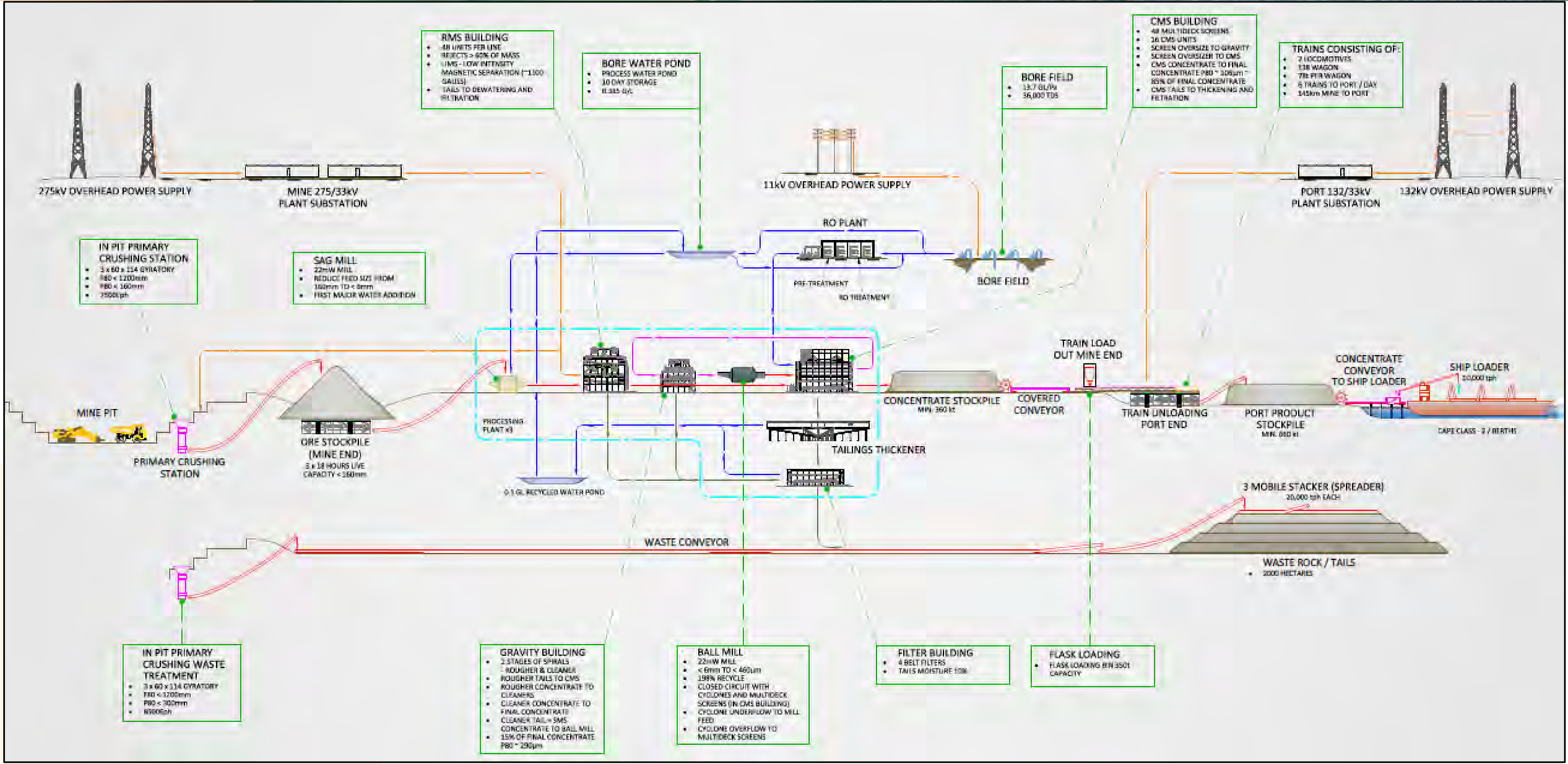
SAG Milling – Capital & Operating Cost Efficiencies

The change from high pressure grinding rolls to semi-autogenous grinding mills eliminates the following equipment:

- One primary crusher 110 x 62 indirect semi-mobile.
- Two overland conveyors 3.5km long.
- Overland system transfer silo.
- Silo reclaim system fitted with six apron feeders.
- Silo reclaim conveyors feeding secondary crusher circuit with three streams.
- Secondary screening circuit fitted with 12 bins, 12 vibrating feeders and 12 screens.
- Secondary crushing circuit fitted with 12 bins, 12 apron feeders and 12 crushers.
- Tertiary crushing building fitted with 12 bins, 12 belt feeders and 12 crushers.
- Tertiary screening building fitted with 15 bins, 15 feeders and 15 screens.
- Twenty-eight plant conveyors (approximately 9km).

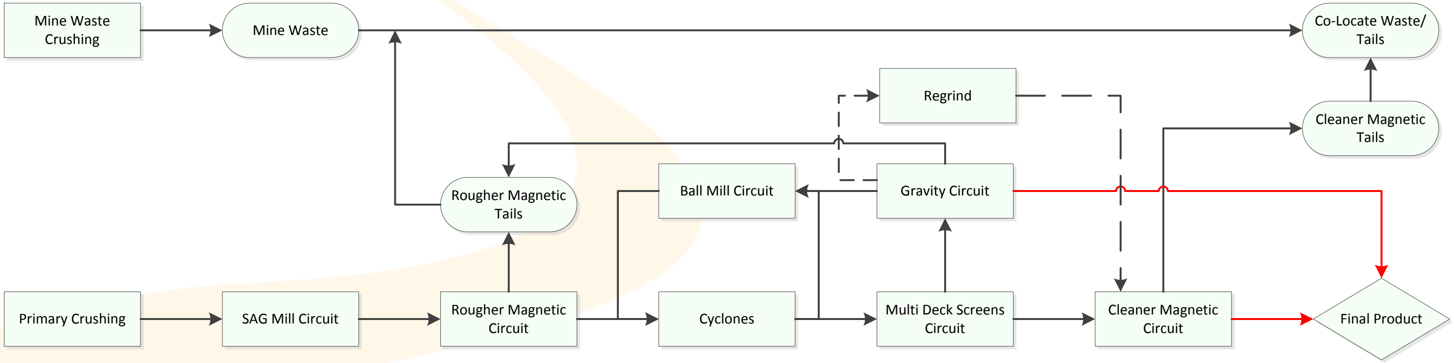
And an overall power reduction of 150MW.

CEIP Schematic (DFS 21.5Mtpa)

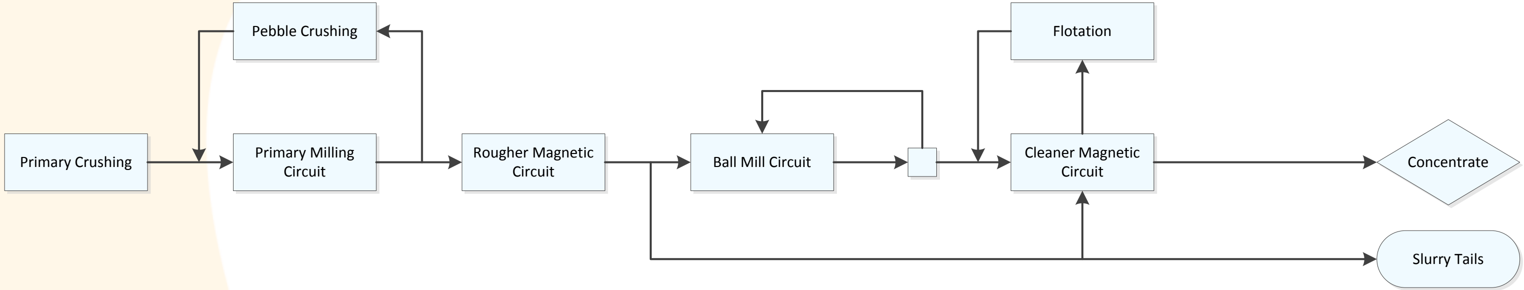


Reliable & Energy Efficient Process Flow

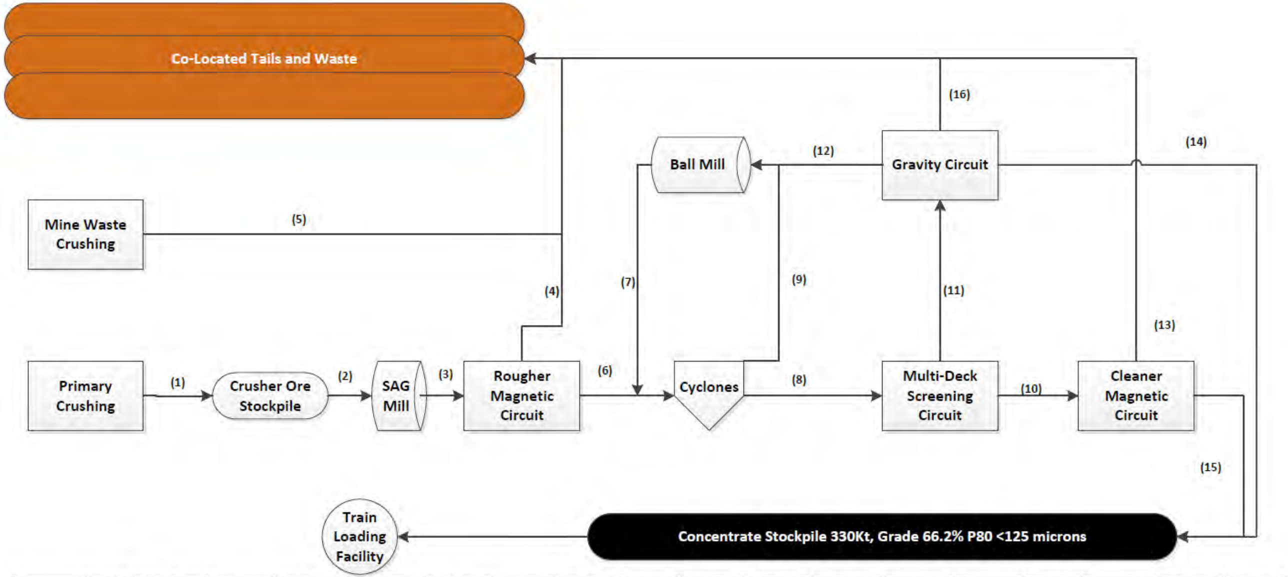
CEIP Magnetite Plant Typical Process Flow Diagram – Comminution Work Index is Reduced as Ball Mill is Reverse Flow



Other Magnetite Plant Typical Process Flow Diagram – Comminution Work Index is Consistent Through the Whole Process



Simplified Mass Balance – DFS 21.5Mtpa Scenario



	Visio fblock flowsheet number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	Description	Primary Crusher Product	Primary Crushed Ore to SAG Mill	SAG Mill Discharge	RMS Non-Mag	Mine waste crushing	RMS Mag	Ball Mill Product	Cyclone Overflow	Cyclone Underflow	Multideck Screen Undersize	Multideck Screen Oversize	Gravity Circuit Recycle	CMS Tails to Thickener	UCC Underflow	CMS Conc to Storage Tank	Gravity Circuit Tails
Mass Flow (All trains)	Total Flow	19244	19099	25096	43733	20709	13085	22146	19650	15652	15827	3823	6494	12839	518	4802	6767
	Solids Flow	18822	18822	18822	11625	19912	7197	14087	8817	12467	5568	3249	1620	3167	388	2401	1241
	Liquids Flow	422	277	6274	32108	796	5888	8059	10833	3185	10259	573	4874	9672	129	2401	5526
Mass Flow (Each train)	Total Flow	6415	6366	8365	14578	6903	4362	7382	6550	5217	5276	1274	2165	4280	173	1601	2256
	Solids Flow	6274	6274	6274	3875	6637	2399	4696	2939	4156	1856	1083	540	1056	129	800	414
	Liquids Flow	141	92	2091	10703	265	1963	2686	3611	1062	3420	191	1625	3224	43	800	1842
Total Volume Flow (All trains)		6673	6524	12203	34489		7759	11801	12882	6746	11373	1509	5054	10298	207	2792	5678
Density	Density	2884	2928	2057	1268	1950	1686	1877	1525	2320	1392	2533	1285	1247	2508	1719	1192
	Solid Density	2995	2995	2995	2836		3293	3380	3361	3342	3359	3364	3701	2781	4631	4627	2793
	Liquid Density	1089	1162	1060	1057	1060	1057	1056	1056	1056	1056	1056	1056	1056	1056	1056	1056
Percent Solids (wt/wt)		97.8	98.6	75.0	26.6		55.0	63.6	44.9	79.7	35.2	85.0	24.9	24.7	75.0	50.0	18.3
Solids	P80 (mm)	160	160.3	3.17	3.17	300.00	3.17	0.461	0.192	2.73	0.101	0.290	0.290	0.101	0.290	0.102	0.291
	Fe Fraction	15.5	15.5	15.5	8.1		27.5	30.8	30.1	29.4	30.0	30.2	41.5	2.7	67.2	66.0	3.9
Liquids	Liquid Vol Flow	388	238.3	5918	30389		5573	7633	10258	3016	9715	543	4617	9159	123	2274	5234
	Salt Concentration	128.3	233	87.7	82.5		82.5	81.5	81.7	81.7	81.7	81.7	81.4	81.6	81.5	81.6	81.4

Influences on Mill Performance

$$\text{P80 (microns)} = \frac{1}{\left(\left(\frac{1}{\sqrt{F80}}\right)+\left(\frac{tph}{10 \cdot Wi \cdot Power}\right)\right)^{0.5}}$$

Variable	Impact / Consequences
F80 = 80% feed size	Crusher performance, slabby material, overdue maintenance, incorrect close side setting, segregation in stockpile
Power = kW at the shaft	Charge levels, mill liner wear, material fill levels, mill speed, material segregation (too coarse draws more power, too fine power deteriorates)
Wi = Work index represented as kWh/t x 1.102	Variability in ore hardness, harder ore requires more power, softer ore creates finer particles
tph= Dry tonnes per hour	Intermediate material surge, inconsistent tph, mill inconsistency

Milling Characteristics

Three actions occur in any mill and the portion of work by each action depends upon the mill type.

1. Impact
   Impacting particles move perpendicular to the plane of contact. Amount of resulting breakage is directly related to the specific energy (energy per unit mass) that the target particle receives.

2. Attrition
   A small particle is trapped between two larger particles. The small particle is subsequently broken in preference to the larger ones.

3. Abrasion
   Abrasion is seen as a surface phenomenon which results when two particles move parallel to their plane of contact. Small pieces of each are broken or torn out of the surface leaving the parent particles largely intact.

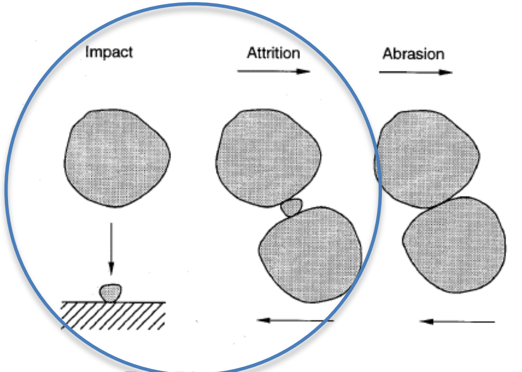
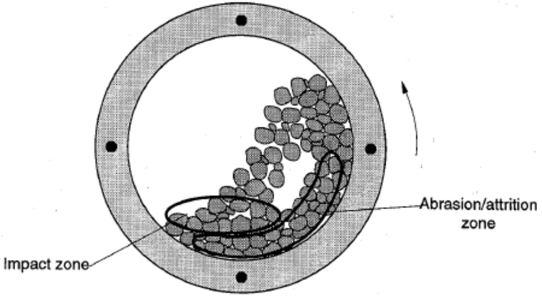
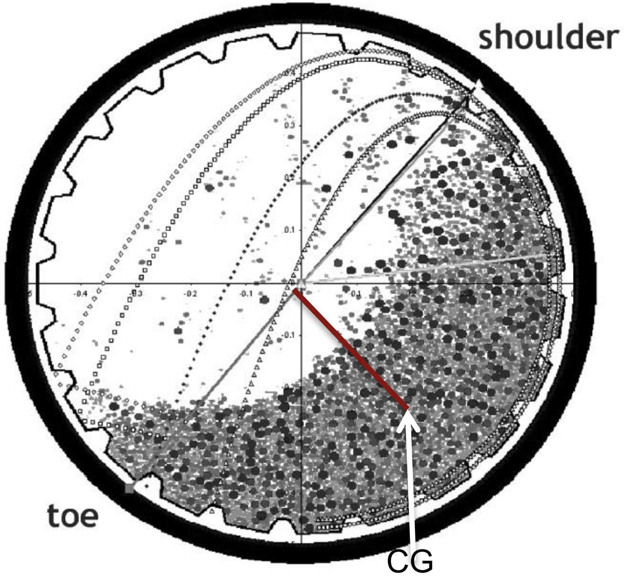


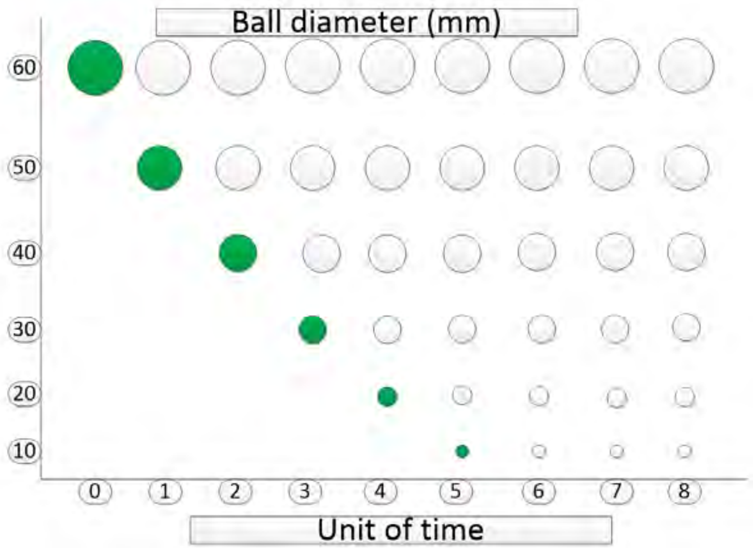
Figure 7.9: Principal breakage mechanisms



Grinding Fundamentals



Ball trajectory model outputs superimposed
on (simplified) DEM model output



Understanding our Ore Abrasion Index

The Bond Abrasion test determines the Abrasion Index (Ai), which is used to determine steel media and liner wear in crushers and milling circuits.

Iron Road carried out numerous Bond Abrasion tests across the orebody to validate the grinding circuit ball and wear material consumption.

An Ai value of 0.44 was incorporated in OPEX calculations, which is higher than the maximum value recorded of 0.39.

A12799 - IRON ROAD "CENTRAL EYRE IRON ORE PROJECT"
BOND ABRASION INDEX - SUMMARY

Sample ID	Abrasion Index (Ai)
IR-80	0.3305
IR-078A	0.3856
IR-80	0.2760
IR-103	0.3142
IR-109	0.3731
IR-110	0.2860
IR-123	0.3650
IR-128	0.3477

AMMTEC Ltd

Grinding Circuit Media Consumption

CEIP grinding media is conservatively estimated, using an Ai value of 0.44, higher than actual test results.

Conservative Cost Assumptions used for OPEX

- SAG Mill media = US$910 /t
- Ball Mill media = US$1,123 /t

Cost Reduction Opportunities

- IRD has recognised prices from China may result in potential operating cost savings for media consumption.

Media Consumption

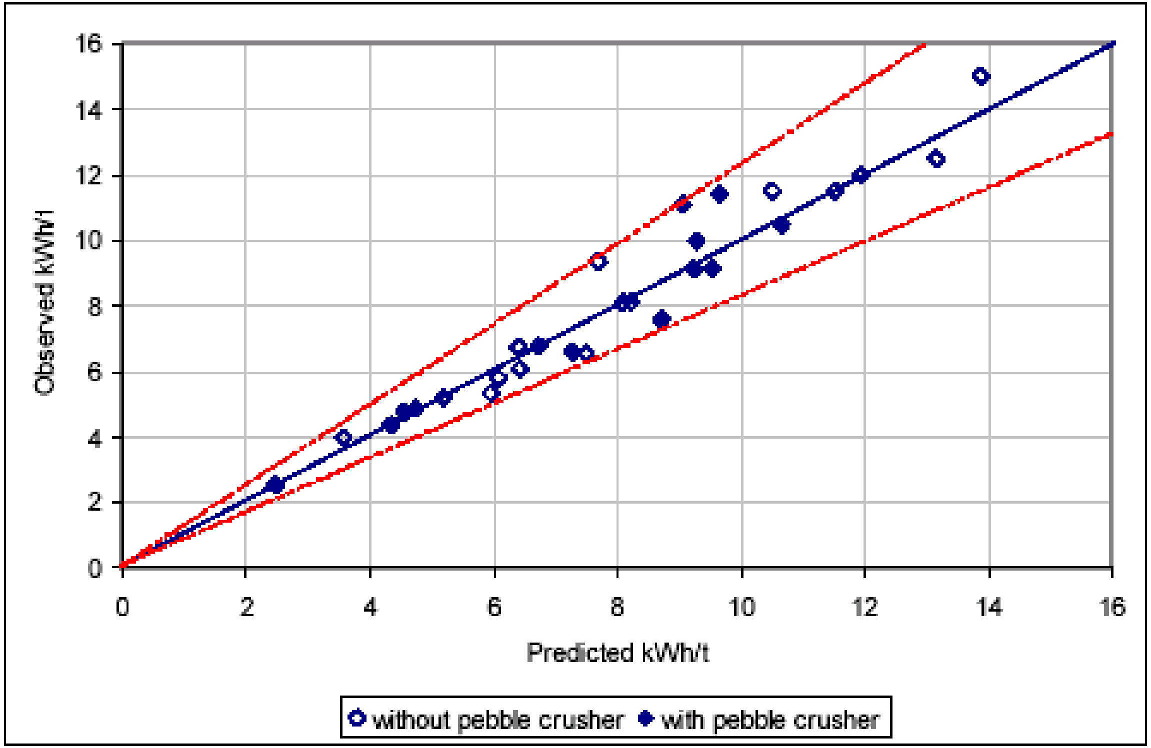
SAG Mill per mill @ 6800 tph, Feed 80% < 160,000 microns			
	Bond Abrasion Index		
BAi	0.38	**0.44**	0.60
Tons/Month Breakage	57	**57**	57
Wear tpa	863	**904**	1006
Overall tpa	920	**962**	1064
Scrap Generation tpa	85	**88**	102
Annual tonnes (three mills)	33,113	**34,618**	38,290
Potential Steel Recovery (three mills) tonnes	32,857	**34,353**	37,983
CEIP SAG Mill Media consumption estimate tpa		**44,310**	

Ball Mill per mill @ 4800 tph, Feed 80% < 3,200 microns			
	Bond Abrasion Index		
BAi	0.38	**0.44**	0.60
Tons/Month Breakage	0	**0**	0
Wear tpa	995	**1042**	1160
Overall tpa	995	**1042**	1160
Scrap Generation tpa	97	**102**	113
Annual Tonnes (three mills)	35,816	**37,523**	41,753
Potential Steel Recovery (three mills) tonnes	32,324	**33,850**	37,684
CEIP Ball Mill Media consumption estimate tpa		**44,673**	

Bond Ball Work Index – Extensive Test Work

CEIP samples have been thoroughly tested to define the energy of the ore.

Design basis of 16.9kWh/t is 12% higher than test results.



SAG Mill Flexibility – Basis of Design

Basis of design – 16.9kWh/t

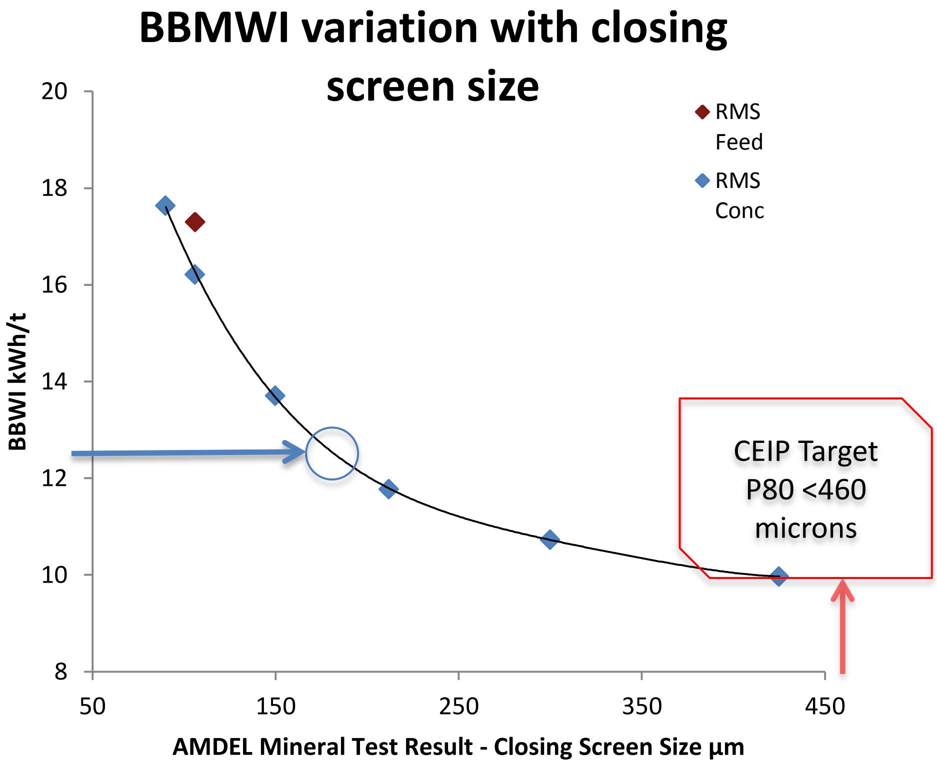
CEIP SAG mills have the ability to sprint production as required and to manage harder or softer material, allowing the ball mill circuit to focus on steady state grade control.

	Work index (kWh/t)	Feed Rate Wet (tph)	Mill Dia (m)	P80 (µm)	Feed Size F80 (µm)	Critical Speed (%)	Ball Load (%)	Total Fill (%)	Mill Power Demand (MW)	Mill Power Installed (MW)
E1	16.9	6350	13.123	3205	160000	0.82	0.1	0.36	17.93	22
E2 (Base)	**16.9**	**6800**	**13.123**	**3203**	**160000**	**0.82**	**0.115**	**0.38**	**19.21**	**22**
E3	16.9	7200	13.123	3202	160000	0.83	0.133	0.38	20.344	22
O1	17.5	6350	13.123	3198	160000	0.82	0.102	0.38	18.59	22
O2	17.5	6800	13.123	3193	160000	0.82	0.13	0.38	19.926	22
O3	17.5	7200	13.123	3230	160000	0.84	0.14	0.38	20.948	22
O4	17.5	6350	13.123	3193	170000	0.81	0.11	0.38	18.699	22
O5	17.5	6800	13.123	3302	170000	0.82	0.124	0.38	19.64	22
O6	17.5	7200	13.123	3260	170000	0.84	0.14	0.38	20.948	22
O7	16.9	6350	13.123	3227	170000	0.81	0.1	0.37	17.948	22
O8	16.9	6800	13.123	3241	170000	0.81	0.12	0.38	19.172	22
O9	16.9	7200	13.123	3197	170000	0.84	0.13	0.38	20.462	22

Conservative Bond Ball Work Index Used

The ball mills are designed with operational and process flexibility in mind, utilising a higher BBWI. Grade may be managed, if/when required, by finer grinding.

	BALL MILL		
	F80 - mm	3.2	Mill Feed tph 4805
	Product P80 Microns	460	
Power MW	Wi	kW/t	**Mill Power Install 22MW**
15.33	10	3.19	Ore has been tested as being much softer than the design value
16.09	10.5	3.35	
16.86	11	3.51	
17.63	11.5	3.67	
18.39	12	3.83	
19.16	**12.5**	**3.99**	**Current Designs**
19.93	13	4.15	Test work has not indicated harder ore in this range
20.69	13.5	4.31	
21.46	14	4.47	



Positive Effects of Coarse Grinding

Pellet Feed *21.5Mtpa* *p80 < -40 microns*	Sinter Feed *24Mtpa* *p80 < -120 microns*
8 x SAG Mills 40 ft x 22MW	3 x SAG Mills 40 ft x 22MW
8 x Ball Mills 24 ft x 22 MW	3 x Ball Mills 24 ft x 22 MW
SAG Mill Balls = 66,000 tpa	SAG Mill Balls = 34,600 tpa
Ball Mill Balls = 91,000 tpa	Ball Mill Balls = 37,500 tpa

More plant and equipment More grinding media More power demand Higher capital and operating costs	Less plant and equipment Less grinding media Less power demand Lower capital and operating costs

Coarse Versus Fine Grinding

	Scenario 1 *21.5Mtpa pellet feed* *Fine grind* *p80 < -40µm*	Scenario 2 *21.5Mtpa Pellet Feed* *Fine grind* *p80 < -40µm* *with gravity circuit*	DFS *21.5Mtpa Sinter Feed* *Coarse grind* *p80 < -125µm* *with gravity circuit*	Current Optimisation Study *24Mtpa Sinter Feed* *Coarse grind* *p80 < -120µm* *with gravity and regrind circuit**
Power	302MW	261MW	120MW	Subject of current studies
Operating Cost	**US$21.44 /dmt**	**US$18.59 /dmt**	**US$10.94 /dmt**	
Power	*US$11.32 /dmt*	*US$9.05 /dmt*	*US$4.18 /dmt*	
Consumables	*US$6.62 /dmt*	*US$5.61 /dmt*	*US$5.33 /dmt*	
Labour	*US$3.13 /dmt*	*US$3.13 /dmt*	*US$1.10 /dmt*	
Other	*US$0.37 /dmt*	*US$0.80 /dmt*	*US$0.34 /dmt*	
Pelletising (est.)	US$9.60 /dmt	US$9.60 /dmt	-	

* During numerous discussions with potential customers, a preference was expressed for a slightly less coarse, premium iron concentrate with SiO_2 < 3% and Al_2O_3 < 2%. The introduction of a regrind circuit, albeit with higher consumable costs per dmt, meets both customer expectations and premium pricing forecasts.

Note: Harder, finer and more abrasive magnetite ores (e.g. Western Australian Banded Iron Formations) will result in processing costs exceeding both Scenario 1 and Scenario 2 estimates.

CEIP Waste & Tailings

Mine Waste & Process Tailings – Favourable Handling Characteristics

CEIP mineralisation is a metamorphic gneiss. The coarse fraction is angular & largely dry. The angular particles stabilise the heap compared to spherical particles of beach sands. The fines from the grinding circuit are also gneissic material of < -6,000μm & 10% moisture. These grains are angular and blended with the coarse waste material as it is dispatched to the dump. The fine material fills the openings between the coarse material, thus further stabilising the heap.

CEIP Waste / Tailings Size Distributions and Volumes

	Product Size	DFS *Concentrate 21.5Mtpa Material movement (Mtpa)*	Optimisation Study *Concentrate 24Mtpa Material movement (Mtpa)*
Mine Waste	p80 <300mm	150	Subject of current studies
Coarse Tailings	p100 <6mm >130μm	81	
Fine Tailings	p100 <130μm	43	

General Composition of Waste/Tailings

Quartz	28-30%	Feldspar	32-39%
Biotite	11-13%	Cordierite	8-10%
Garnet	3-6%	Chlorite	5%

Waste / Tailings Definition

In mining and mineral processing, materials are separated according to their particle size and mineralogy.

The wastes produced fall into two categories

1. Coarse mine waste/rejects; and
2. Fine-grained tailings

Conventionally these two streams are disposed of separately.

Co-disposal involves combining these waste streams

Co-disposal of Tailings with Mining Waste

- ***Tailings***
  - disposed as a slurry
  - high porosity (>40%)
  - water-filled voids
- ***Waste Rock***
  - high porosity (>30%)
  - largely air-filled voids

Typical Waste rock

Co-disposal – filtered tailings filling the voids of the coarse waste

Co-located Waste Rock and Tailings

Typical “Rule of Thumb – Porosities”

	Compacted <50kPa Filtered Tailings	Waste Rock
Particle SG	2.90	2.99
Moisture Content %	10%	5%
Void Ratio	0.5 - 0.8	0.5 - 0.8
Porosity, approx. %	50	30

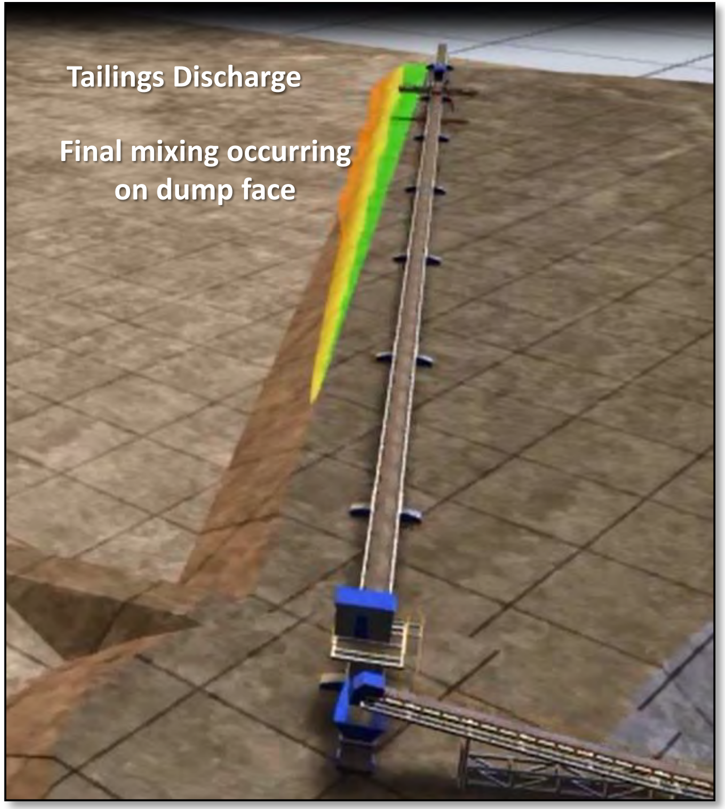
- Porosity – ratio of volume of voids to total volume (100%).
- Void ratio – ratio of volume of voids to volume solids.

The intent is to integrate tailings within the voids of the waste rock.

Co-disposal of Waste Rock and Filtered Tailings

Key Points

- Mine waste and tailings are mixed relatively homogeneously through several conveyor transfer points.
  - Product needs to be nearly dry.
  - Partially mixed before placement through conveyor transfer points.
  - Minimum water added.
- Coarse-fine ratio not critical.
- Spreaders lay down material in a windrow motion providing homogenous layers at the dump face.
- Tailings will fill the voids between the larger waste rock particles.
- Low energy placement.



Co-disposal Benefits

Benefits

- ✓ No surface fleet required for managing waste and tails material.
- ✓ Significantly reduced footprint.
- ✓ Shear strength similar to waste rock with high compaction levels.
- ✓ Permeability similar to tailings.
- ✓ Low oxygen diffusion rates.
- ✓ Improved closure opportunities with rehabilitation carried out progressively during the mine life.
- ✓ Reduced water consumption; water is recovered and recycled in the process plant.
- ✓ No ground water seepage or acid rock drainage concerns.
- ✓ Improved approvals timeline.
- ✓ Better community acceptance.

Tailings Facility Journey

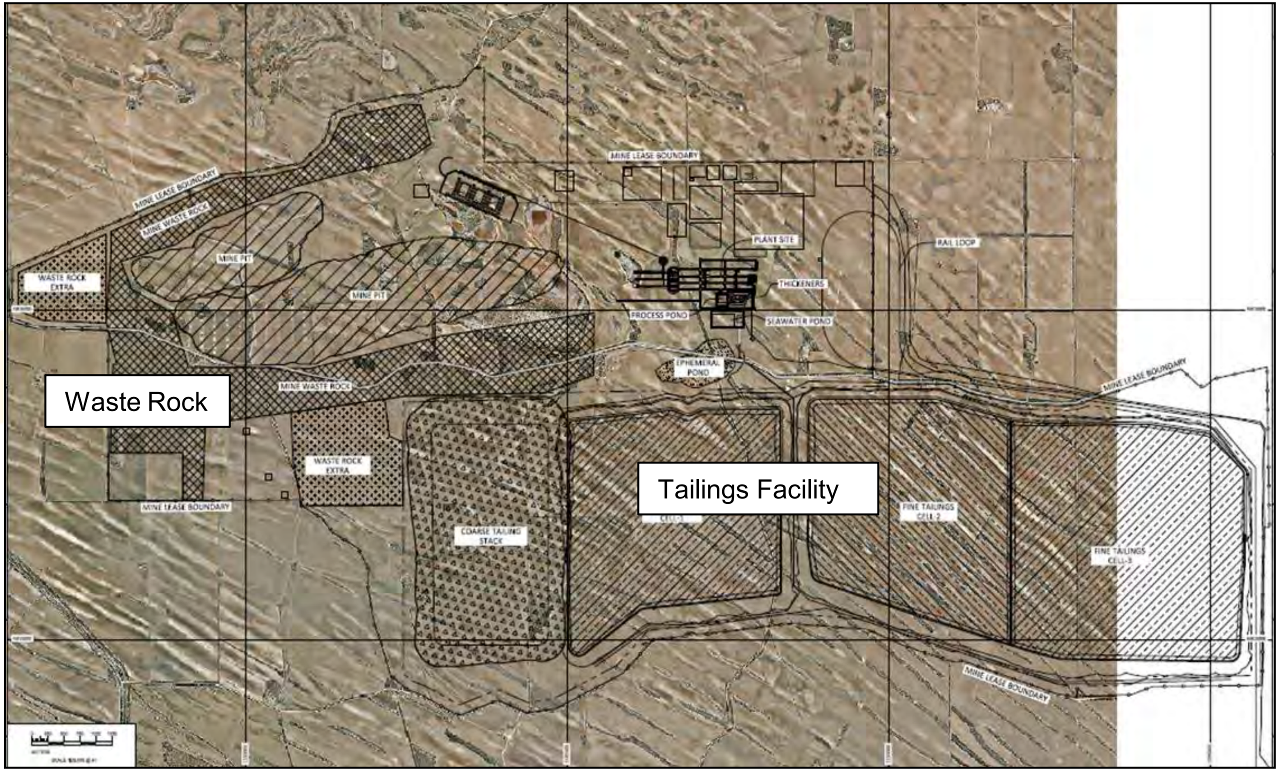
Conventional facility design did not meet IRD's expectations

Fine Tailings

- No recycle water – water demand 45GL/pa.
- 4,000 hectares of land required.
- Complex pumping and piping systems.
- Environmental challenges.

Coarse Tailings Circuit

- 16 heavy mobile plant required for removal, stacking & spreading.
- Large infrastructure to support coarse tailings.



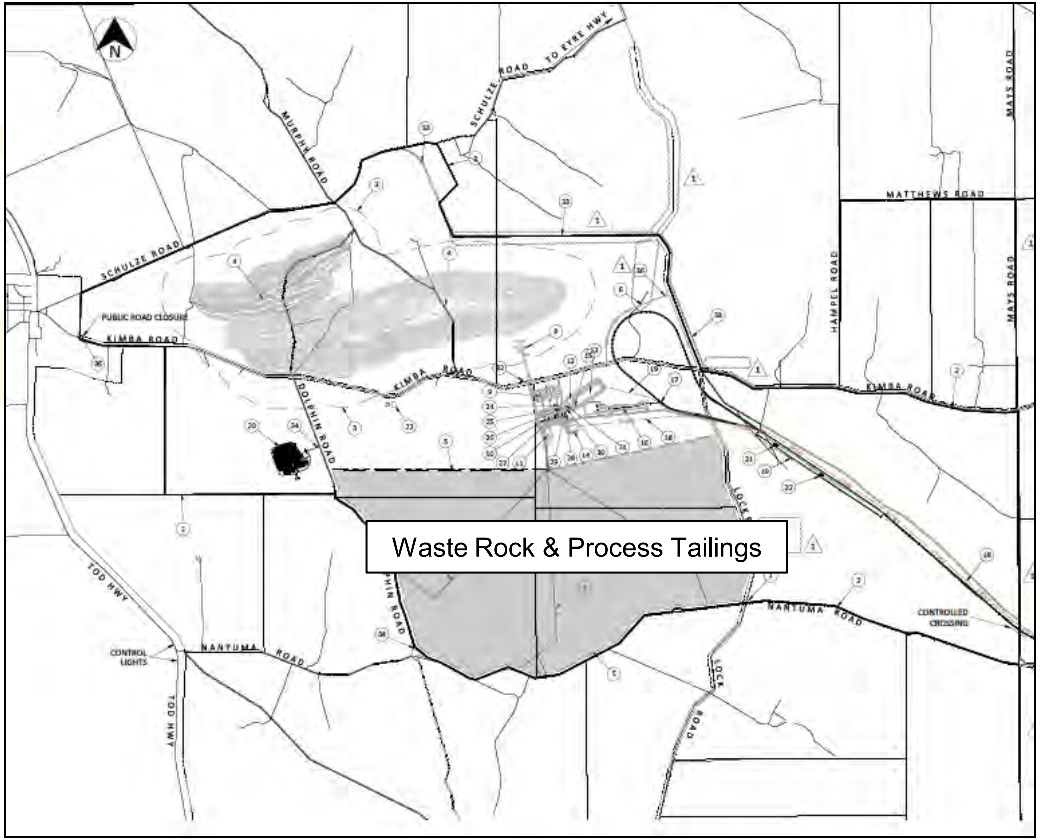
Coarse and fines tailings facility location shown in figure, above

Co-location Waste-Tailings Facility

Current facility design optimised

Waste rock and process tailings combined as shown in figure.

- Process water recycled – water demand reduced from 45GL/pa to 14GL/pa.
- Waste and tailings areas reduced from 6,000 to 2,000 hectares in total.
- Removal of heavy mobile plant fleet to support coarse tails.

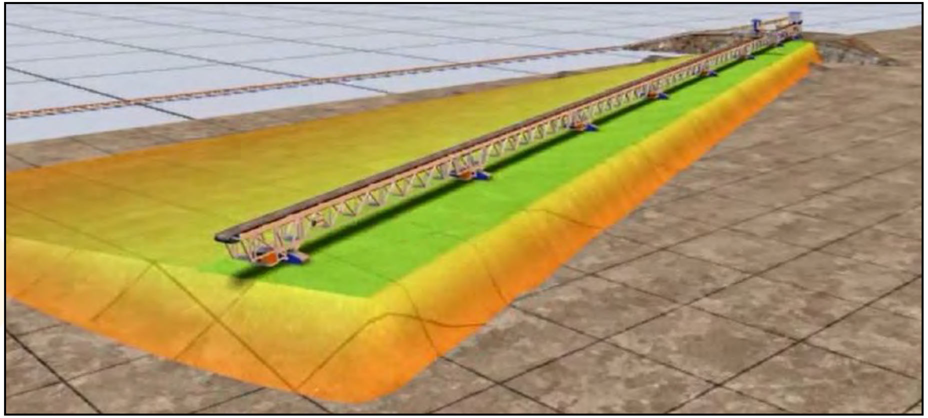


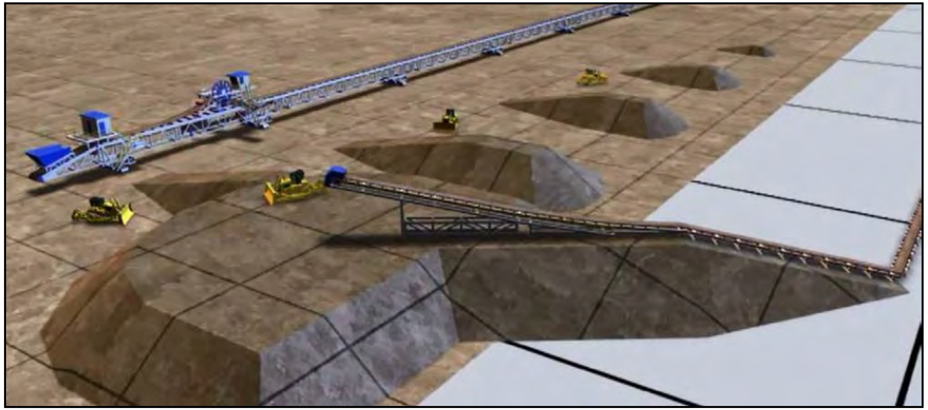
Co-Locate Waste-Tailings – Homogenous Mix

The current tailing strategy will simultaneously deliver several significant environmental benefits.

The geotechnically stable moist waste and tailings (comprising 32-39% feldspar, 28-30% quartz, 11-13% biotite, with the remaining minerals being cordierite, chlorite & garnet), will provide a secure and workable base for the mine's reclamation and revegetation programmes.

The dry condition of the waste and tailings will also make the material simpler to manage. With no water to remove, as would be the case with traditional tailings dams rehabilitation, efficiency of the programmes will be enhanced.





Waste Handling Optimisation – Low Capital and Operating Costs

	Scenario 1 *Mine waste rock trucking* *Slurry tails circuit, wet coarse tails*	Scenario 2 *Mine waste rock trucking* *Dry tails stacking*	DFS *Conveyed mine waste* *Conveyed dry tails* *Co-located mine waste and tails facility*	Current Optimisation Study *Conveyed mine waste* *Conveyed dry tails* *Co-located mine waste and tails facility*
Land Required	Process (tails) 4000 hectares + Mine (waste rock) 2000 hectares	Process (tails) 2000 hectares + Mine (waste rock) 2000 hectares	2000 hectares (combined)	Subject of current studies
Water volumes (pa)	45GL	14GL	14GL	
Heavy Moving Equipment (Trucks)	CAT 797F Haul Truck x 10 + 11 (coarse tails) + 45 (waste rock)	45 CAT 797F (waste rock)	0	
Power (MW)	35	28	34	
Labour	285	157	32	
Fuel litres day (kL)	186	91	0	
CO_2 Diesel tpa (000's)	355	250	0	
CO_2 Electricity tpa (000's)	116	93	112	
CO_2 Total tpa (000's)	**471**	**343**	**112**	

Learning from Karara's Experience

Karara's dry tail stacking system did not meet design requirements.

- Ultra-fine particles resulted in poor filtration, with the moisture level exceeding 20%.
- A Development Application, approved by the WA Government*, allows Karara to build a new short term TSF facility for 12 months while they attempt to resolve the filtration issues.

*Reference:** Government of Western Australia, Department of Environmental Regulation, Letter to Karara Mining Limited, Environmental Protection Act 1986: Works Approval Granted, Ref: 2013/003979, dated 16 January 2014.

	Karara Filtered Tail Stacking	CEIP Filtered Tails Stacking
Product	Filtered tails	Filtered tails and waste rock (blended)
Filter type	Pressure Filters	Belt filters
Moisture target	Approx. <15% (target) actual > 20%	Belt filter target = 10%
Moisture target for blended tails and mine waste	-	Blend material target = 6%
Product size	Filtered tails P100 <200μm, P80 <53μm P50 <20μm	Filtered tails P100 <6000μm P80 <3200μm Waste P80 <300mm
Nº of filters	Unknown	Twelve total, four per circuit, one on standby
Nº of radial stackers	One	Three, system has 50% excess capacity
General note	-	Coarse and fine particles mixed prior to belt filters; 80% coarse tails, 20% fine tails

Water Source, Filtering & Recycling

The original studies proposed supplying water to the process plant by means of a buried 148km long, 1300mm diameter CSCL seawater pipeline from the port. The system would require an intake structure mounted on the jetty, an algaecide dosing facility, pump station and two in line booster pump stations with total pump power drawing approximately 55MW.

The adoption of filtered 'tailings' from the process plant has improved process water recycling, reducing the requirement for 'top up' water. The nett impact is a reduction from 45GL to 14GL per annum of water required. This allowed the DFS to model and cost the development of a borefield to extract water from a saline aquifer only 56kms from the mine site. Study work, supported by a drilling and test programme, indicates that supplying the process plant from this aquifer is feasible over the life of mine, with minimal impact on the aquifer (i.e. less than 0.5% draw down over 25 years of operation).

	Scenario 1 *Seawater pipeline, TSF* *20Mtpa, owner operator mining (OOM)*	DFS *Filtered Tails, contract mining* *21.5Mtpa*	Current Optimisation Study *Filtered tails, contract mining* *24Mtpa*
Water Consumption (pa)	45GL	14GL	Subject of current studies
Source	Seawater	Borefield	Borefield
Pipeline Diameter	Nom. 1300 diameter	Nom. 630 diameter	Nom. 630 diameter
Pipeline Construction	Buried CSCL	Overland HDPE/CS	Overland HDPE/CS
Water Storage	10 days	10 days	
Capital Cost	US$506M	US$101M	Subject of current studies
OPEX Cost (/ct)	US$0.73	US$0.15	

CEIP Rail Facility

Rail Bottom Dump System – Key Benefits

	Scenario 1 *Rotary Tip System*	Preferred Scenario *DFS and Current Study* *Bottom Dump System*
Mine	Wagons difficult to cover, chemical veneering required.	Easily covered wagons, no chemical veneering required.
Port	Wagons are disconnected to smaller consist and transit through loading area. Higher noise levels due to shunting operations, rotary tipping and hydraulic wagon indexer, bleeding of air brakes and higher level of dust control required.	Wagons not disconnected, no shunting noise, low level of dust control required, no reconnection of wagons & pressurising of brakes.
Workshops	Rail workshops located at port.	Rail workshop located at mine with efficiency gains through multi-skilling workforce (process plant & rail equipment maintenance).
Construction	Significant excavation for rotary tip pocket, high level of drill & blast.	Significantly reduced earthworks and construction programme through modular designs.

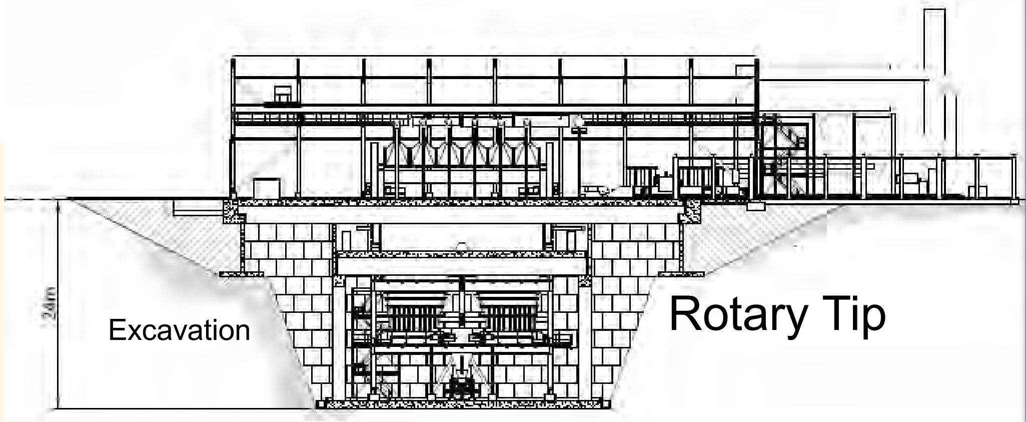
Rotary Tip Versus Bottom Dump

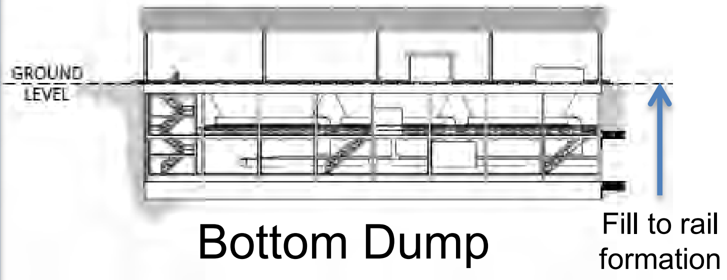
Rotary Tip

- Rotary dump system requires extensive earthworks & reinforced walls.
- Large dust extraction system to control airborne dust.
- Dewatering pumps required for wall seepage.
- Difficult to modularise, constructed in sections.
- Construction programme full three years.

Bottom Dump

- Bottom dump system installed at grade, no excavation.
- Minimal requirements for dust control.
- No dewatering pumping system.
- Fully modularised & stage 3 commissioned offshore.
- Wing wall installed onsite & backfilled.
- Construction programme ~16 weeks.





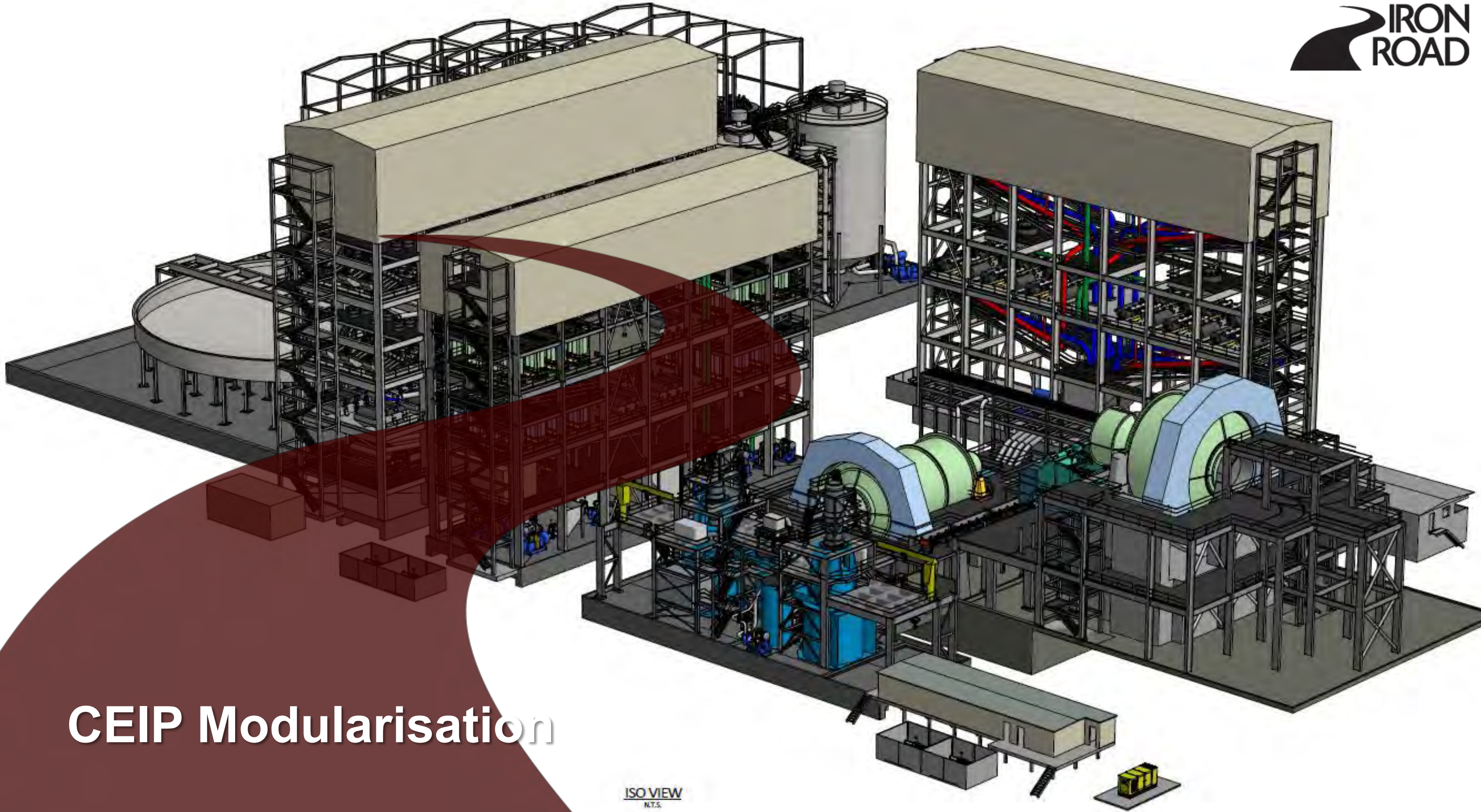
Rail Bottom Dump System – Capital and Operating Cost Advantages

	Scenario 1 *Rotary Tip System*	Preferred Scenario* *DFS and Current Study* *Bottom Dump System*
Wagons	150 wagons x 78 tonnes	145 wagons x 78 tonnes
Locos	Three locos per consist	Two locos per consist
Round trip times	10.6 hours	9.3 hours
Rail grade	~ 0.5 degree	~ 0.5 degree

** Figures for DFS scenario*

- Rotary dump system requires more time to discharge than a bottom dump system, as time is required to disconnect wagons, shunt wagons through the unloading facility, reconnect wagons and bleed brakes.
- An additional locomotive is required for the rotary unloading system to increase train speed to maintain a 12 hour window.
- Bottom dump systems do not require wagons to be uncoupled, increasing the utilisation of the consist and allowing for a reduction of locos.

CEIP Modularisation



Modularisation

Successful logistical planning for remote locations is a direct contributor to the overall success of the project and has a material impact on schedule and cost.

Developing a successful modularisation strategy therefore plays an important role in delivering the project on time and on budget.

Our Approach

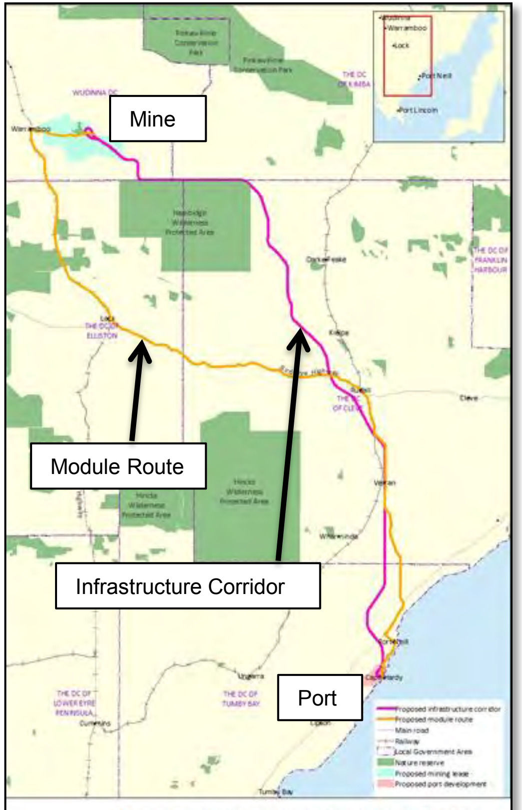
Determined optimum module route from port to mine site.

- Survey and laser scan of entire module route;
- Engaged heavy lift and logistic transport companies;
- Defined module size based on transportation window;
- Designed modules to meet the logistic plan; and
- Plant layout to suit the module designs.

The decision to proceed with the prefabrication, preassembly, modularisation and offsite fabrication (PPMOF) strategy was not been driven primarily by perceived cost benefits.

Some of the major contributing factors include reduced schedule risk, reduced environmental and community impacts during construction, reduced sectional interface issues and the removal of “at risk” construction hours from onsite construction activities.

Consideration was also given to the timing of onsite construction activities and the potential availability of skilled construction workers to support the construction effort.

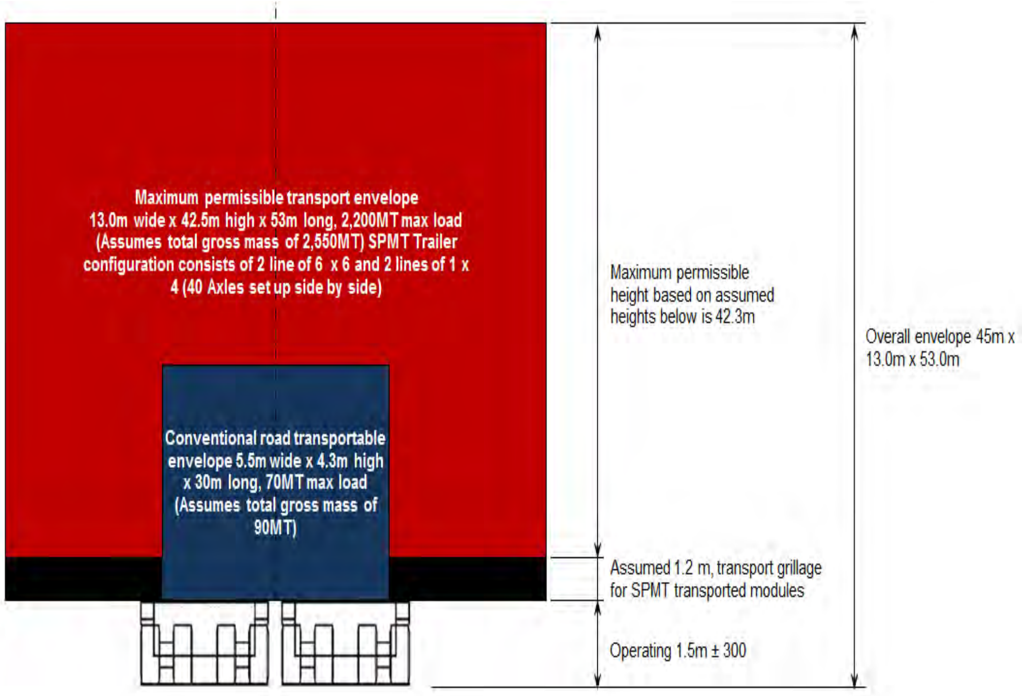


Module Transport Route & Infrastructure Corridor

Define the Transport Strategy – Stage 1

Iron Road identified a number of potential transport routes, drove and inspected each of the alternatives with a view to considering:

- Impact on communities;
- Avoidance of built up areas;
- Vertical and horizontal gradients;
- Class of roads;
- Inline infrastructure such as bridges, culverts and causeways;
- Overhead obstacles, such as power and communications infrastructure;
- Proximity of road furniture and hardware;
- Road shoulders and proximity of easement vegetation; and
- Frequency and size of park-up areas and laybys.



Cross-sectional view of transport envelope

Define the Transport Strategy – Stage 2

Stage 2 of route identification involved the engagement of the Sarens Group to assess preliminary transport and logistics challenges associated with the module dimensions envisaged.

Sarens Group provided potential SPT trailer and SPMT configurations and associated operational constraints in relation to travel speed, maximum grades, maximum mass, wheel and axle loadings, etc.

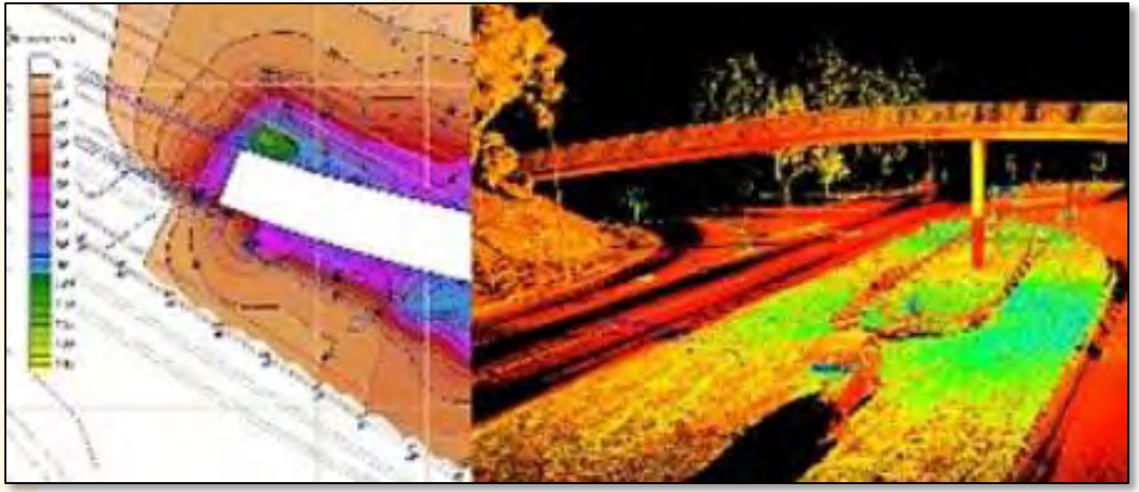
Fugro Spatial Solutions were also engaged to undertake a terrestrial 3D laser scan of the nominated transport route from Iron Road’s port location at Cape Hardy to the proposed mine site.

The road corridor is approximately 200km in length from port to mine. The purpose of the terrestrial 3D laser scan was to provide a detailed survey of the road corridor and to understand any limiting factors that may be an impediment to SPT and SPMT transporters proposed to transport the large modules.

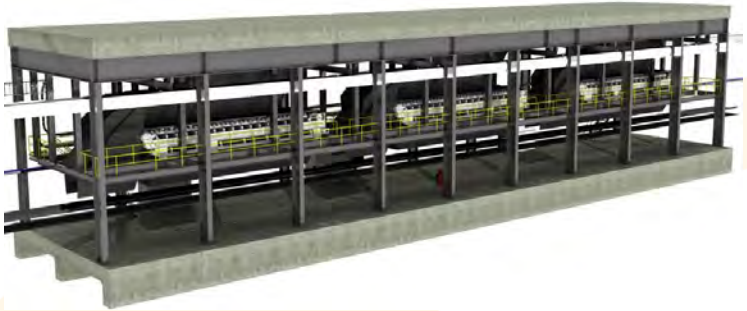
Define the Transport Strategy – Stage 3

Having completed the terrestrial 3D laser scan, Sarens Group undertook a final review to confirm the SPT and SPMT transporter configurations most likely to be used.

A detailed analysis of the digital survey data was undertaken using 12D platforms to identify potential grade (sag and crest) and horizontal turning path issues. On the preferred route, 11 intersections were reviewed and infrastructure improvements and upgrades identified.

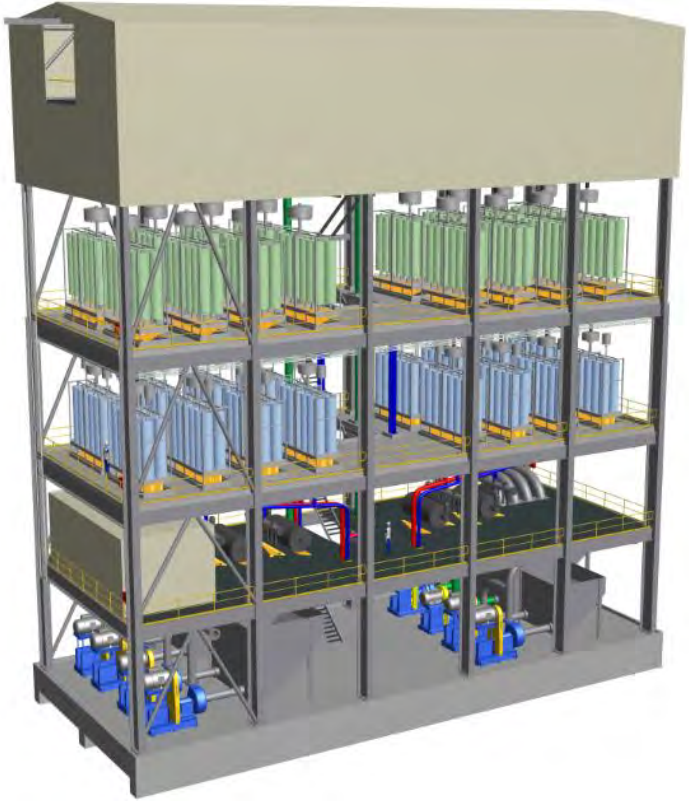


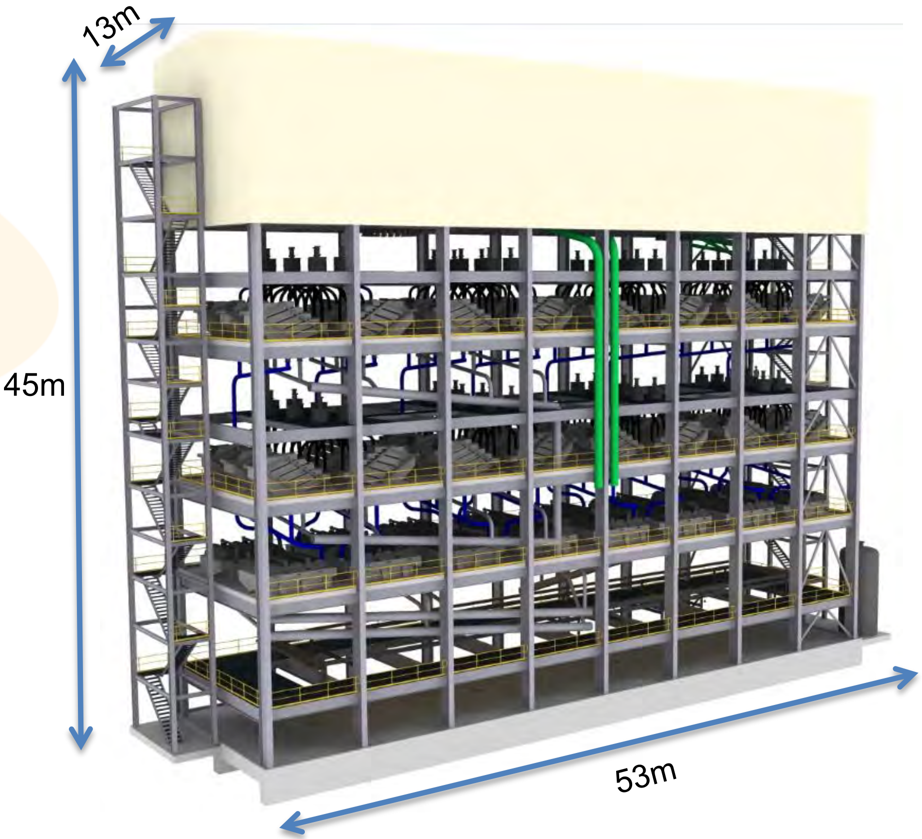
Develop Module Plan



MODULE DESCRIPTION	UNIQUE ID	MODULE TYPE	QTY	LENGTH (M)	WIDTH (M)	HEIGHT (M)	MASS (MT)	PLANT LOC
CONSOLIDATED PROCESS BUILDING MODULE > 500MT	4450CMS001SP1	SPAM	1	53	12.8	42	2,001	TRAIN 1
CONSOLIDATED ROOF, FLOOR &/OR WALL FLAT PACK MODULE > 50MT	4450CMS002PA1	PAM	1	53	12.8	9	86	TRAIN 1
CONSOLIDATED STAIR TOWER &/OR PLATFORM MODULE > 50MT	4450CMS003PA1	PAM	1	3.2	7.5	45	76	TRAIN 1
CONSOLIDATED PROCESS BUILDING MODULE > 500MT	4450CMS001SP2	SPAM	1	53.0	12.8	42	2,001	TRAIN 2
CONSOLIDATED ROOF, FLOOR &/OR WALL FLAT PACK MODULE > 50MT	4450CMS002PA2	PAM	1	53	12.8	9	86	TRAIN 2
CONSOLIDATED STAIR TOWER &/OR PLATFORM MODULE > 50MT	4450CMS003PA2	PAM	1	3.2	7.5	45	76	TRAIN 2
CONSOLIDATED PROCESS BUILDING MODULE > 500MT	4450CMS001SP3	SPAM	1	53	12.8	42	2,001	TRAIN 3
CONSOLIDATED ROOF, FLOOR &/OR WALL FLAT PACK MODULE > 50MT	4450CMS002PA3	PAM	1	53.0	12.8	9	86	TRAIN 3
CONSOLIDATED STAIR TOWER &/OR PLATFORM MODULE > 50MT	4450CMS003PA3	PAM	1	3.2	7.5	45	76	TRAIN 3

Design to Meet the Module Route

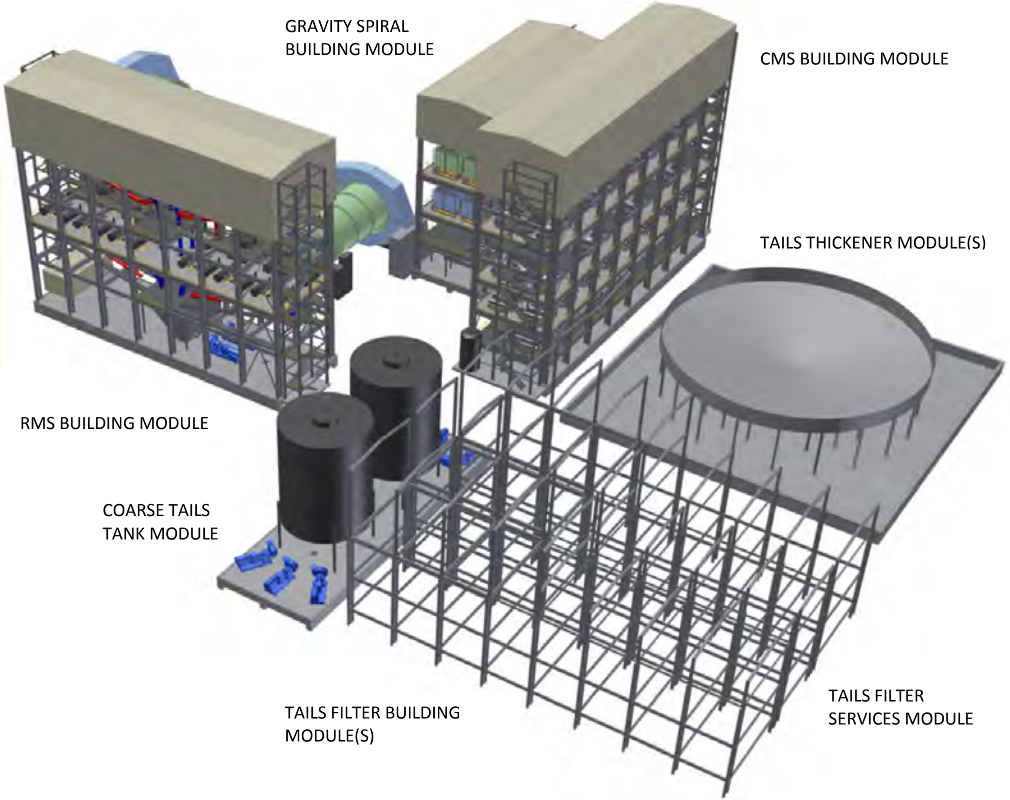




Nested Modules to Meet Plant Designs

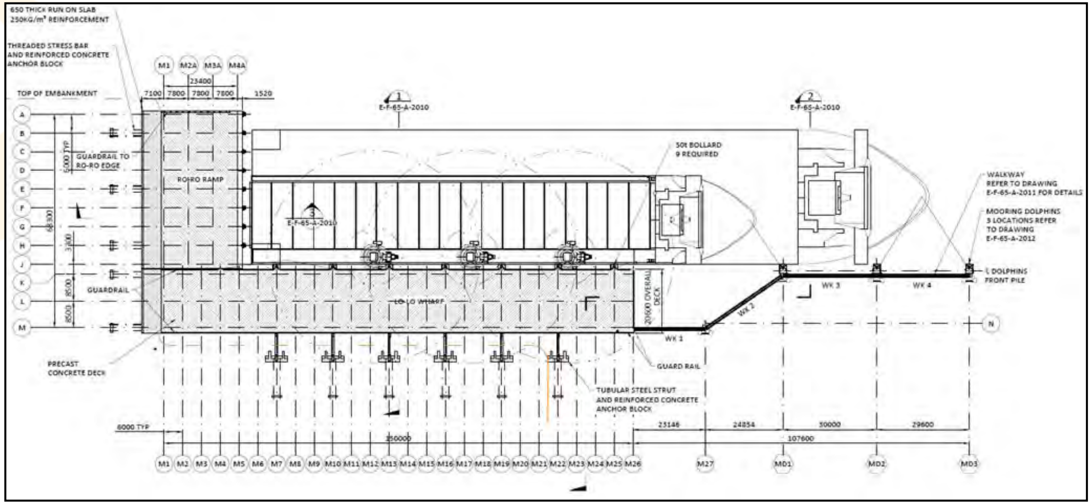
The assured transport envelope to accommodate modules as large as 13m wide, 53m long and 45m in height (from top of carriageway) with a maximum module mass (including grillage and transport steel) of ~2,200Mt.

- Opportunity to 'nest' the process buildings to move away from the disbursed lineal nature of the original plant and facilities layout.
- Reduce the overall pumping requirements by vertically integrating process buildings and employ gravity to move material product through the process.
- Constructability reviews revealed that as the large modules will be installed using SPMT's and a "drive-in" methodology, the construction work space is much reduced from the conventional "stick build" alternative.



Unloading Facility to meet Module Strategy

- Minimum water depth of 9.5m LAT at the RORO* and LOLO** berths.
- Accommodate a range of cargo and special purpose ships.
- LOLO wharf length of 125m by width of 21m and a horizontal clearance envelope from any part of a moored ship to fixed furniture above kerb level of at least 24m.
- RORO stern dock length 48m and edge rebate RL 1.9 CD.
- Wharf fenders and mooring equipment (9 x 50t bollards) as required to secure vessels.
- Maximum RORO ramp and road gradients of not greater than 4%.
- RORO abutment and ramp designed to accommodate a live load of 70KPa UDL.
- The LOLO wharf deck designed for a live load of 70KPa.



*RORO – Roll On Roll Off,

**LOLO – Lift On Lift Off

Wet Commissioning Off Site

Incorporation of all components to facilitate *Stage 3 commissioning* off site:

- An important strategy underpinning the modularisation effort is full dynamic testing of the complete ‘wet end’ process for each of the process trains under load with water. This requires significant front end planning, co-ordination and appropriate resources to deliver this component of the modularisation effort successfully.
- The module yard will be required to commission the modules and inter-connecting service racks, SAG and ball mill discharge sumps and other ‘loose’ wet end process equipment through to Stage 3 commissioning. As a result, the wet end process units will be ready for the introduction of process and/or operational medium.
- The module yard will be required to dimensionally lay out the process plant ‘wet end’ as it will be constructed onsite, including the various reduced level (RL) variances between process buildings where practical to do so.
- Utilising the interconnecting services racks and some purpose built temporary piping, the module yard will be able to construct a closed process circuit specifically for the purposes of supporting the wet end commissioning. Completion of this work should coincide with completion of the Stage 1 commissioning, being the construction verification of the plant.
- Utilising temporary power to the substations within the process buildings and the reticulation of power to the SAG mill and ball mill discharge feed pumps, the system will be fully energised allowing for Stage 2 commissioning. This stage includes I/O testing, loop testing, bump testing / rotational testing of motors, pressure testing and the like.

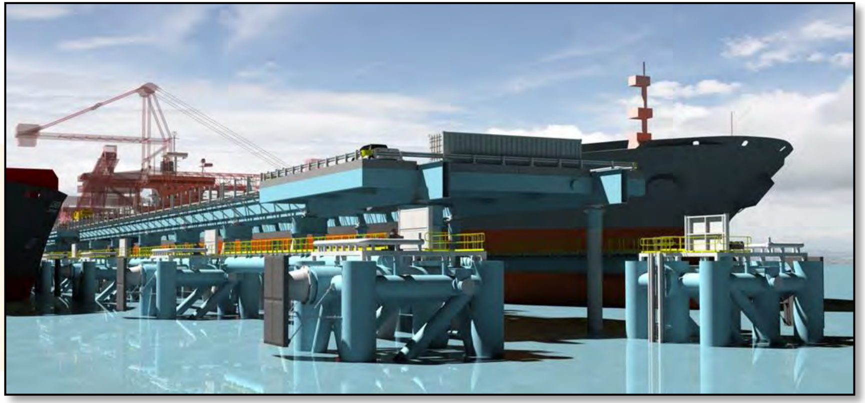
Module Overview Benefits

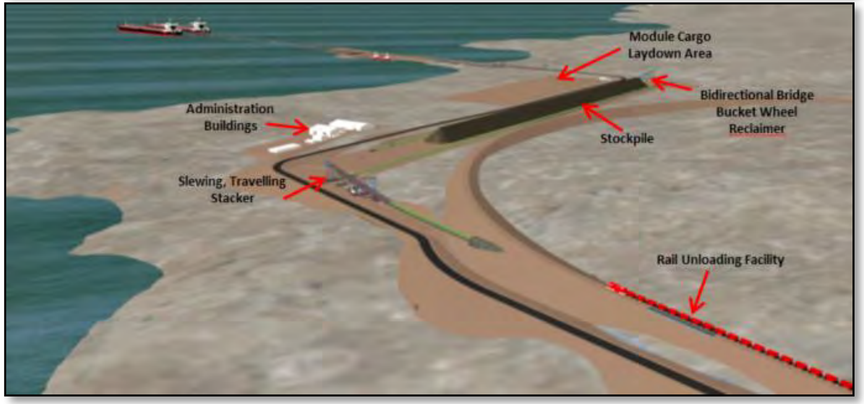
Area	Comments
Schedule	Reduced schedule time Foundations are constructed in parallel with construction of steel structures and assembly of equipment. Project construction time is expected to be reduced by approximately four months. Reduced schedule risk Significantly reduced risk profile associated with schedule and cost. For example, construction issues are easier to rectify in a workshop environment than in the field. Labour and equipment readily available.
Safety	Improved safety risk profile by relocating high risk site construction activities to a lower risk workshop environment.
Labour	Specialised labour easier to source and lower cost in construction yards compared to the project sites.

CEIP Port

CEIP Port Facility – Fact Sheet

- Deep water port facility with 22m draft.
- No dredging or breakwater required.
- Berth for two Capesize vessels, 24/7 in most weather conditions.
- Shiploader capacity 10,000tph.
- Ship loading time of approximately 24 hours.
- 1,100 hectares of land secured, readily supports third party users.





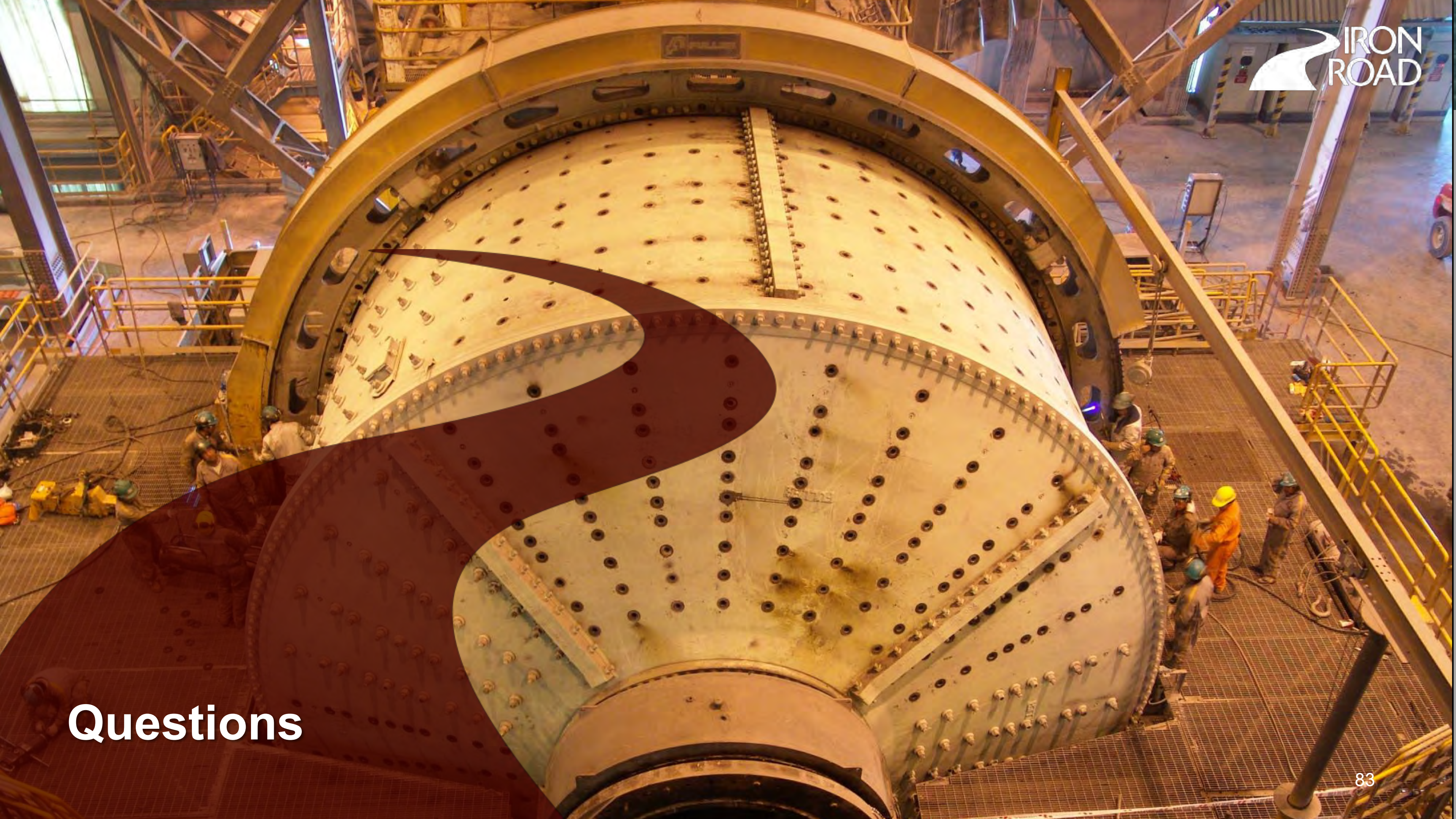
Port Benchmarking – Australia

Port	Berth	Product	Capacity (tph)	Length of Berth (m)	Depth at Berth (m)	Max.Draft of Vessel (m)	Dredging	Sail on Tide
Cape Hardy	***1***	***Magnetite + Third Party Material***	***10,000***	***Twin 408***	***22***	***21***	***No***	***No***
Geraldton	4	Mineral sand,concentrate and Talc	15,000	225	13.4	12.1	Yes	Yes
	5	Iron Ore	5,000	225	13.4	12.1	Yes	Yes
	7	**Karara Mining - Magnetite**	5,000	225	13.4	12.1	Yes	Yes
Port Hedland								
Nelson Point	A	Iron Ore	10,000	658	17.7	18.2	Yes	Yes
	B	Iron Ore	10,000	658	17.3	17.8	Yes	Yes
	C	Iron Ore	12,000	843	18.1	18.6	Yes	Yes
	D	Iron Ore	12,000	843	18.2	18.7	Yes	Yes
Finucane Island	A	Iron Ore	12,000	843	18.2	18.7	Yes	Yes
	B	Iron Ore	12,000	843	18.2	18.7	Yes	Yes
	C	Iron Ore	10,000	220	17.6	18.1	Yes	Yes
	D	Iron Ore	10,000	378	18.2	18.7	Yes	Yes
Anderson Point	AP1	Iron Ore	13,500	396	18.8	19.3	Yes	Yes
	AP2	Iron Ore	13,500	396	18.8	19.3	Yes	Yes
	AP3	Iron Ore	13,500	396	18.6	19.1	Yes	Yes
	AP4	Iron Ore	8,000	414	17.7	18.2	Yes	Yes
Cape Preston		**CITIC - Magnetite**	10,000 Tranship	0	Tranship 18km offshore		No	No

Source: Department of Transport WA - Port Handbook 2013 and Lloyds Port Listing Australia Wide Guide

Ports – Magnetite Loading Comparison

	Geraldton Berth 7	Cape Preston	Cape Hardy
Vessel	Panamax 115 DWT	Panamax 115 DWT	Cape Class 220 DWT
Stockpile capacity	400kt	220kt	Min. 660kt
Direct ship loading	Yes	Tranship 18km offshore	Yes
Loading capacity	5,000tph	Tranship 10,000tph, barge loading	10,000tph
Sailing on tide required	Yes	No	No
Berthing	Single	Single	Twin
Available capacity for third parties	No	No	Yes



Questions

Appendix 1 – CEIP Resource Statement & Indicative Concentrate Specifications

CEIP Global Mineral Resource						
Location	Classification	Tonnes (Mt)	Fe (%)	SiO_2 (%)	Al_2O_3 (%)	P (%)
Murphy South/Rob Roy	Measured	2,222	15.69	53.70	12.84	0.08
	Indicated	474	15.6	53.7	12.8	0.08
	Inferred	667	16	53	12	0.08
Boo Loo	Inferred	328	17	52	12	0.09
Total		3,691	16	53	13	0.08

The Murphy South/Rob Roy mineral resource estimate was carried out following the guidelines of the JORC Code (2004) by Iron Road Limited and peer reviewed by Xstract Mining Consultants (Rob Roy). The Boo Loo mineral resource estimate was carried out following the guidelines of the JORC Code (2004) by Coffey Mining Ltd. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

CEIP Indicative Concentrate Specification – 120 micron (p80)											
Iron (Fe)	SiO_2	Al_2O_3	CaO	MgO	TiO_2	Mn	Na_2O	K_2O	S	P	LOI
>66.5%	<3.5%	<2.0%	0.10%	0.5%	0.3%	0.6%	0.085%	0.125%	<0.005%	<0.005%	-2.6

Appendix 2 – CEIP Reserve Statement

CEIP Global Mineral Reserve			
Location	Classification	Tonnes (Mt)	Fe (%)
Murphy South/Rob Roy	Proved	1,871	15.6
	Probable	200	15.1
Total		2,071	15.5

The information in this report that relates to Reserves estimated for Murphy South / Rob Roy (MSRR) is based on and fairly represents information and supporting documentation compiled by Mr Harry Warries, a Fellow of the Australasian Institute of Mining and Metallurgy, and an employee of Coffey Mining. Mr Warries has sufficient experience relevant to the style of mineralisation and the type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Warries consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. See the Company's announcement made 26 February 2014. The Company is not aware of any new information or data which materially affects the information, and all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.

Appendix 3 – CEIP Exploration Target

The Exploration Target for EL4849 was released by Iron Road Limited (IRD) during late 2013 (ASX Release dated 11 September 2013). This target potential was determined to be 8 to 17Bt in the range 14% to 20% iron* and included Priority 1, 2 and 3 ranked targets.
This estimate has subsequently resulted in an Exploration Target of 10 to 21Bt in the range 14% to 20% iron*. See the Company's announcement made 26 February 2014. The Company is not aware of any new information or data which materially affects the information.

- The term "exploration resource potential" should not be misunderstood or misconstrued as an estimate of Mineral Resources and Reserves as defined by the JORC Code (2012), and therefore the terms have not been used in this context. The potential quantity and grade is conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource. It is uncertain if further exploration or feasibility study will result in the determination of a Mineral Resource or Mining Reserve.

Ranked targets are based on the results of 56 reverse circulation and diamond core holes drilled at various regional targets. The results of the drilling are detailed in an IRD ASX release dated 31 May 2011. The completion of eight stages of drilling, predominately at the Warramboo Project Area has increased the understanding of the magnetite distribution within gneiss units and produced a Global Mineral Resource of 3.7Bt at 16% Iron.

Target	No. Holes	Drilled metres
Collins	8	1,436
Boo Loo East	15	2,246
Ben's Hill	9	2,336
Joshua	3	799
Fairview East	6	1,220
Hambidge	12	5,574
Hambidge North	3	883
TOTAL	56	14,494

EL4849 regional exploratory drilling

Appendix 3 – CEIP Exploration Target (continued)

The potential of the Hambidge Project Area has been further enhanced by the recent completion of inversion modelling of the detailed geophysical survey over Hambidge and immediate surrounds (Hawke, 2014).

A reassessment of the Exploration Target for the Hambidge Prospect has indicated that the mineralisation is wide and deep, increasing the potential depth of the mineralisation to at least 600m. This is consistent with projections from drilling, geophysical inversion modelling and actual depth of mineralisation at the Murphy South prospect.

It is envisaged that, subject to project funding, exploratory and resource definition, drilling will be undertaken at the highest priority targets, notably Boo Loo East, Boo Loo Gap, South Deeps and Hambidge, within the next 24 months. Lower priority targets will be assessed in the future.

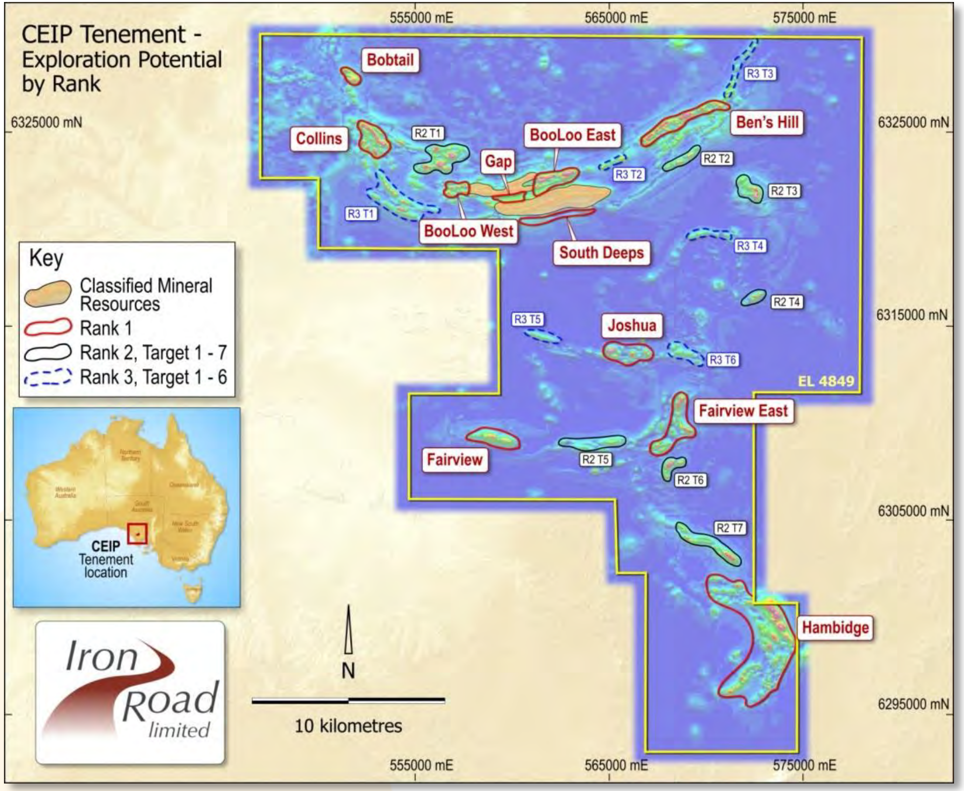
The assumptions used to estimate the conceptual tonnages are:

- The Murphy South - Rob Roy Measured and Indicated Resource yielded 400Mt/km; assuming 50% conversion for geophysical anomalies then an expectation of 200Mt/km was used for ranked targets.
- The mineralisation is projected to between -200m and -600m below the surface.
- An average depth to the fresh rock is 50m.
- The dip of the mineralisation is in a range of -40^{o} to -70^{o}.
- Thicknesses with a true width of 40 – 200m.
- An average density of the fresh rock of 3.1g/cm^2.
- Head Grades range from 14%-20% Fe.

Based on the above assumptions, the interpreted exploration tonnage for the Ranked 1 & 2 targets is 9Bt to 17Bt. These targets account for 57.5km in strike length.

The lower magnetic intensity targets were ranked 3 with a strike length of 15km and suggest a possible tonnage potential of 1Bt to 4Bt.

Appendix 3 – CEIP Exploration Target (continued)



Exploration Target on EL4849 classified by rank

Target Rank	Target ID	Strike (km)	Depth (m)
1	Boo Loo East	3.0	400
1	Gap	1.5	400
1	Hambidge	13.0	600
1	Boo Loo West	1.5	400
1	South Deeps	4.0	600
1	Collins	2.0	300
1	Bobtail	1.5	300
1	Ben's Hill	5.0	300
1	Joshua	2.5	300
1	Fairview	3.0	250
1	Fairview East	3.5	250
Total		40.5	
2	R2T1	3	300
2	R2T2	2	300
2	R2T3	2	300
2	R2T4	2	300
2	R2T5	3	250
2	R2T6	1	250
2	R2T7	4	250
Total		17	
3	R3T1	4	300
3	R3T2	2	300
3	R3T3	3	300
3	R3T4	3	250
3	R3T5	2	250
3	R3T6	2	250
Total		15	

EL4849 Aeromagnetic Targets and strike length