

# Notice of Extraordinary General Meeting and Explanatory Memorandum

Metallica Minerals Limited ACN 076 696 092

---

Date of Meeting: Monday 7 January 2019

Time of Meeting: 11.00am (Brisbane time)

Place of Meeting: HopgoodGanim Lawyers  
Level 7  
Waterfront Place  
1 Eagle St  
Brisbane Qld 4000

# Notice of Extraordinary General Meeting

Notice is given that an Extraordinary General Meeting of Shareholders of Metallica Minerals Limited ACN 076 696 092 (**Company**) will be held at the offices of HopgoodGanim Lawyers, Level 7, Waterfront Place, 1 Eagle Street, Brisbane, Queensland, on Monday 7 January 2019 at 11.00am (Brisbane time).

Terms used in this Notice of Meeting are defined in section 8 of the accompanying Explanatory Memorandum.

The Explanatory Memorandum and the Proxy Form accompanying this Notice of Meeting are incorporated in and comprise part of this Notice of Meeting.

For the purposes of Resolution 1 and Resolution 2, an Independent Expert's Report prepared by BDO Corporate Finance (Qld) Ltd (**BDO or Independent Expert**) is enclosed with this Notice of Meeting in Annexure A. Shareholders are urged to read and consider the Independent Expert's Report prior to making a decision as to how to vote on Resolution 1 and Resolution 2.

A copy of this Notice and Explanatory Memorandum which accompanies this notice has been lodged with the Australian Securities & Investments Commission (**ASIC**).

## Agenda

The agenda for the meeting is as follows:

### Ordinary business

#### 1. Resolution 1: Approval to issue Equity Securities under Listing Rule 7.1

---

To consider and, if thought fit, pass the following ordinary resolution of the Company:

*"That subject to the passing of Resolution 2, for the purpose of Listing Rule 7.1 and for all other purposes, the Company be authorised to issue 315,384,540 Shares to Melior Shareholders (**Melior MLM Shares**) (other than Pala Investments Limited (**Pala**)) and 6,741,416 Options to Melior Optionholders and Melior Warrantheolders (**Melior MLM Options**) representing 134,828,320 Shares once exercised, upon the terms and conditions of the Arrangement Agreement as described in the Explanatory Memorandum."*

#### Voting Exclusion Statement

The Company will disregard any votes cast in favour of this Resolution by or on behalf of:

- (a) a person who is expected to participate in, or who will obtain a material benefit as a result of, the proposed issue to Melior Securityholders (except a benefit solely by reason of being a holder of ordinary securities in the Company); or
- (c) an Associate of a Melior Securityholders.

However, the Company need not disregard a vote if:

- (a) it is cast by a person as a proxy for a person who is entitled to vote, in accordance with the directions in the proxy form; or
- (b) it is cast by the person chairing the meeting as proxy for a person who is entitled to vote, in accordance with the direction on the proxy form to vote as the proxy decides.

#### 2. Resolution 2: Approval to issue Equity Securities under Section 611 (Item 7) of the Corporations Act

---

To consider and, if thought fit, pass the following ordinary resolution of the Company:

# Notice of Extraordinary General Meeting

*"That subject to the passing of Resolution 1, for the purposes of section 611 (item 7) of the Corporations Act and for all other purposes, the Company be authorised to issue 264,214,720 Shares at completion of the Arrangement and 66,825,000 Shares on exercise of the Pala Options to Pala which would result in Pala and the Pala Associated Entities acquiring a Relevant Interest in voting shares where Pala's and the Pala Associated Entities' Voting Power in the Company would increase from below 20% to more than 20%, upon the terms and conditions of the Arrangement Agreement and as described in the Explanatory Memorandum."*

## Notes

For the purpose of section 611 of the Corporations Act, an Independent Expert's Report prepared by the Independent Expert is enclosed with this Notice of Meeting in Annexure A.

## Voting Exclusion Statement

The Company will disregard any votes cast in favour of this Resolution by or on behalf of:

- (a) Pala or the Pala Associated Entities; or
- (c) an Associate of Pala or the Pala Associated Entities.

However, the Company need not disregard a vote if:

- (a) it is cast by a person as a proxy for a person who is entitled to vote, in accordance with the directions in the proxy form; or
- (b) it is cast by the person chairing the meeting as proxy for a person who is entitled to vote, in accordance with the direction on the proxy form to vote as the proxy decides.

## Special business

### 3. Special Resolution 3: Change of Company Name

To consider and, if thought fit, pass the following as a special resolution:

*"That, subject to the passing of Resolution 1 and Resolution 2 and subject to the completion of the Arrangement, the name of the Company be changed to Kalimna Resources Limited."*

## General business

To consider any other business as may be lawfully put forward in accordance with the Constitution.

By order of the board



John Haley  
Company Secretary  
7 December 2018

# Explanatory Memorandum

## 1. Introduction

---

The following information is provided to Shareholders of Metallica Minerals Limited ACN 076 696 092 (**Company**) in connection with the business to be considered at an Extraordinary General Meeting of Shareholders to be held at HopgoodGanim Lawyers, Level 7, Waterfront Place, 1 Eagle Street, Brisbane, Queensland, on Monday 7 January 2019 commencing at 11.00am (Brisbane time).

The Notice of Meeting, which is also enclosed, sets out details of proposals concerning the three Resolutions to be put to Shareholders.

The Directors recommend Shareholders read the accompanying Notice of Meeting and this Explanatory Memorandum in full before making any decision in relation to the Resolutions.

For the purposes of Resolution 2, an Independent Expert's Report prepared by the Independent Expert is enclosed with this Notice of Meeting in Annexure A. Shareholders are urged to read and consider the Independent Expert's Report prior to making a decision as to how to vote on Resolution 2.

Unless otherwise defined, terms used in this Explanatory Memorandum are defined in Section 8.

## 2. The Proposed Transaction

---

### 2.1 Background

As announced to Shareholders and the market on 13 September 2018, the Company has entered into a binding Arrangement Agreement to merge with Melior Resources Inc (TSX-V: MLR) (**Melior**) via a Plan of Arrangement to be approved by the court in British Columbia, Canada (**Proposed Transaction**). A brief summary of the steps involved in completing the Plan of Arrangement is set out in Schedule 3.

Metallica and Melior entered into the Arrangement Agreement pursuant to which Metallica agreed to undertake the Proposed Transaction, subject to various conditions and the obtaining of all necessary approvals.

### 2.2 Melior

The following information about Melior and its business has been prepared by Metallica derived solely from publicly available sources of information published by Melior, and information made available to Metallica by Melior, and unless otherwise indicated below, it has not been independently verified by Metallica. Accordingly, Metallica does not make any representation or warranty, express or implied as to the accuracy or completeness of this information. The information should not be considered comprehensive.

Melior has been focused on the assessing, developing and operating of resource projects. Melior's major asset is the Goondicum Ilmenite and Apatite Mine (**Goondicum**) located at Monto, Queensland. Melior is currently commissioning at Goondicum with production anticipated to ramp up over the next six months and the project becoming cash positive by second quarter 2019.

A recent Preliminary Economic Assessment (Apr 2018) of Goondicum, completed by a leading industry consultant, using their own medium and long term ilmenite price forecasts, generally confirmed the results of the Company's internally prepared feasibility study, projecting Goondicum as being economically attractive with an after tax rate of return of 92% and an NPV<sub>8</sub> of US\$46.4M. This study is based on required pre-production capital expenditure of US\$7.0M over a six month period to yield a 9 year mine life with an average annual production of 160,000 tonnes of ilmenite and 40,000 tonnes of apatite.

# Explanatory Memorandum

## 2.3 Rationale

The rationale for the Proposed Transaction is as follows:

- (a) acquiring an advanced-stage project, Goondicum, that is anticipated to be cash positive in the second quarter of 2019;
- (b) exposure to a new suite of commodities including Ilmenite and Apatite;
- (c) strong board and management team – the merged group will have a highly respected board and management team;
- (d) complementary combination of industrial metals projects including mineral sands and bauxite assets;
- (e) the potential to generate significant value for the shareholders of both companies;
- (f) enhanced market scale and attractiveness to capital market investors; and
- (g) strong combined balance sheet.

## 2.4 Summary of the Proposed Transaction

### (a) Conditions of the Proposed Transaction

In summary, the Proposed Transaction is subject to, amongst other things, the following conditions:

Conditions of the Proposed Transaction	Status of Conditions
Melior obtaining the Court Orders required under the laws of British Columbia to effect the Proposed Transaction.	An interim order from the Supreme Court of British Columbia authorising, among other things, the holding of the meeting of Melior Shareholders to approve the Proposed Transaction, was obtained on 22 October 2018. If the Arrangement receives the requisite approval of Melior Shareholders at the meeting of Melior Shareholders, then a final hearing on the Arrangement will be sought from the Supreme Court of British Columbia on or about 21 December 2018.
Melior Shareholders approving the Proposed Transaction.	Complete - Melior Securityholders approved the Proposed Transaction on 27 November 2018
Melior Shareholders, representing not more than 5% of the outstanding Melior Shares exercising Dissent Rights.	Complete - Melior Securityholders approved the Proposed Transaction on 27 November 2018
Metallica Shareholders approving the above Resolutions and Special Resolution.	Outstanding – this Condition Precedent can only be satisfied at the Meeting.
The absence of any regulatory action.	This condition is live and tested constantly up until completion of the Arrangement. As at the date of this Notice, the restriction contained within

# Explanatory Memorandum

Conditions of the Proposed Transaction	Status of Conditions
	this condition has not been breached
Each of Metallica and Melior complying in all material respects with the provisions of the Arrangement Agreement.	This condition is live and tested constantly up until completion of the Arrangement. As at the date of this Notice, the restriction contained within this condition has not been breached
The absence of any material adverse change to the business, assets, liabilities, financial or operating position, profitability or prospects of either Metallica or Melior.	This condition is live and tested constantly up until completion of the Arrangement. As at the date of this Notice, the restriction contained within this condition has not been breached.
All regulatory approvals or consents required having been received.	This condition is live and tested constantly up until completion of the Arrangement. As at the date of this Notice, the restriction contained within this condition has not been breached.
Reconstitution of Metallica Board (described in Section 2.4(d)).	This condition will occur and take effect on completion of the Arrangement.

The proposed timetable for the Proposed Transaction is set out in Schedule 2.

## (b) Prescribed Securities

The Proposed Transaction involves the purchase of all the Melior Shares, Melior Options and Melior Warrants in exchange for Shares and Options.

Twenty (20) Shares will be offered for each Melior Share (**Exchange Ratio**).

One Option, each exercisable for twenty (20) Shares will be offered for each Melior Option and Melior Warrant. To accurately reflect the Exchange Ratio, the Options issued to Melior Optionholders and Melior Warrantholders will be issued at an exercise price of one twentieth of the existing exercise price payable for each Melior Option or Melior Warrant.

## (c) Effect of the Proposed Transaction on the Company's Capital

Under the Proposed Transaction, the Company will issue a maximum of 579,599,260 Shares to Melior Shareholders and 6,741,416 Options to Melior Optionholders and Melior Warrantholders representing 134,828,320 Shares once exercised. This includes all Shares and Options proposed to be issued under both Resolution 1 and 2.

The replacement Options entitle the Melior Optionholders and Melior Warrantholders to receive 20 Shares for each Option exercised.

Under the Proposed Transaction, the Company will issue the following Options:

# Explanatory Memorandum

Options <sup>4</sup>	Exercise Price	Expiry
<b>To be issued to Existing Melior Optionholders</b>		
741,666 <sup>1</sup>	\$0.64 (\$0.032 per Share)	10 February 2020
125,000 <sup>2</sup>	\$0.86 (\$0.043 per Share)	13 July 2021
1,000,000 <sup>3</sup>	\$1.34 (\$0.067 per Share)	Two years after issue.
<b>To be issued to Existing Melior Warrantholders</b>		
1,326,250 <sup>3</sup>	\$1.12 (\$0.056 per Share)	24 January 2020
298,500 <sup>3</sup>	\$1.12 (\$0.056 per Share)	1 February 2020
3,250,000 <sup>3</sup>	\$1.02 (\$0.051 per Share)	9 August 2020

Notes:

1. Under the Option terms, 425,000 Options will be exercisable on issue. The remaining 316,666 Options will vest on 10 August 2019.
2. A third of the Options will vest on 13 January 2019, a third of the Options will vest on 13 January 2020 and the final third of the Options will vest on 13 January 2021.
3. The Options will be exercisable on issue.
4. Each Option on exercise will result in the issue of 20 Shares.

Following the issue of the Prescribed Securities under the Arrangement Agreement, Metallica will have the following securities on issue (assuming no existing Options are exercised):

	Pre Proposed Transaction	Post Proposed Transaction	Post Proposed Transaction on a fully diluted basis
<b>Shares</b>			
Held by Metallica Shareholders	322,447,408 (100%)	322,447,408 (35.75%)	323,447,408 (31.16%)
Held by Melior Shareholders	N/A	579,599,260 (64.25%)	714,427,580 (68.84%)
<b>Total</b>	<b>322,447,408</b>	<b>902,046,668</b>	<b>1,037,874,988</b>
<b>Options</b>			
Held by Existing Metallica Optionholders	1,000,000	1,000,000	0
Options held by Melior Optionholders and Melior Warrantholders	0	6,741,416 (exercisable over 134,828,320 Shares)	0
<b>Total</b>	<b>1,000,000</b>	<b>142,569,736</b>	<b>0</b>

## (d) Reconstitution of Metallica Board

Under the Arrangement Agreement, the Board of the merged entity will comprise three (3) Metallica Directors and three (3) Melior Directors consisting of:

(A) Metallica:

# Explanatory Memorandum

- (i) Simon Slesarewich - Managing Director;
- (ii) Peter Turnbull - Non-Executive Director;
- (iii) Ian Jacobson - Non-Executive Director;
- (B) Melior:
  - (i) Mark McCauley - Executive Director;
  - (ii) George Lloyd - Non-Executive Chairman; and
  - (iii) Martyn Buttenshaw - Non-Executive Director.

Under the Proposed Transaction, the Proposed Directors will receive Shares and/or Options in exchange for their Melior Shares, Melior Options or Melior Warrants on the same terms as all other Melior Securityholders.

Section 208(1)(a) of the Corporations Act prohibits a public company from giving a financial benefit to a Related Party without the approval of shareholders passed at a general meeting at which no votes are cast in relation to the resolution in respect of any shares held by the Related Party, or by an Associate of the Related Party.

For the purposes of the Corporations Act, a Proposed Director is considered a related party of the Company.

Section 229(3)(e) of the Corporations Act provides that the issue of securities to a Related Party is an example of giving a financial benefit to a Related Party. Chapter 2E of the Corporations Act provides a number of exceptions to the requirement to obtain member approval, including where the financial benefit is given to a Related Party on terms that would be reasonable in the circumstances if the entity and the Related Party were dealing at arm's length as set out in section 210 of the Corporations Act (**Arm's Length Exemption**).

Under the Proposed Transaction, the Proposed Directors will receive the following Shares and Options in the Company:

(C) Mark McCauley

(i) Shares

Mark McCauley's father, Ian McCauley is the sole Director of Belmont Park Investments ACN 109 595 351 (**Belmont Park**) and Belmont Park - Monto Pty Ltd ACN 125 056 386 (**Belmont Entities**). Belmont Entities are Related Parties. Upon completion of the Proposed Transaction, the Belmont Entities will hold a total of 63,754,280 Shares in MLM or 7.06% of the issued Share capital.

Mark McCauley is the director of Sashimi Investments Pty Ltd ACN 117 578 293 (**Sashimi**). Sashimi is a Related Party. Upon completion of the Proposed Transaction, Sashimi will hold 5,344,379 Shares in MLM or 0.59% of the issued Share capital.

(ii) Options

Upon completion of the Proposed Transaction, Mark McCauley will hold 333,333 Options (exercisable for 6,666,660 Shares) with an exercise price of \$0.64 (being \$0.032 per Share).



# Explanatory Memorandum

Belmont Park is an existing Melior Warrantholder. Upon completion of the Proposed Transaction, after Melior Warrants have been exchanged for Options, Belmont Park will hold 500,000 Options (exercisable for 10,000,000 Shares) with an exercise price of \$1.12 (being \$0.056 per Share).

(D) George Lloyd

(i) Options

George Lloyd controls Jojeto Pty Ltd (**Jojeto**), an existing Melior Optionholder.

Upon completion of the Proposed Transaction, Jojeto will hold 125,000 Options (exercisable for 2,500,000 Shares) at an issue price of \$0.86 (being \$0.043 per Share).

(E) Martyn Buttenshaw

(i) Shares

Upon completion of the Proposed Transaction, Martyn Buttenshaw will hold 833,340 Shares in MLM.

While Mr Buttenshaw is an advisor to Pala, he does not control Pala and Pala is not a Related Party of the Company. Details regarding Pala's interests in the Company following completion of the Proposed Transaction are set out in section 4.

(ii) Options

Upon completion of the Proposed Transaction, Martyn Buttenshaw will hold 83,333 Options (exercisable for 1,666,660 Shares) with an exercise price of \$0.64 (being \$0.032 per Share).

## Arm's Length Exemption

The Company has formed the view that the Shares to be issued to the Proposed Directors under the Proposed Transaction fall within the Arm's Length Exemption as the Shares will be issued on the same terms as the other Melior MLM Shares.

The Melior Optionholders consist of the Proposed Directors, current directors of Melior and the Chief Financial Officer of Melior. As such, as the Options will be issued on the same terms, the Company has formed the view that the Options to be issued to Proposed Directors also fall within the Arm's Length Exemption.

The Company therefore does not consider it necessary to seek Shareholder approval for the issue of the Shares and Options to the Proposed Directors under Chapter 2E of the Corporations Act

## 2.5 Further Information

Further information about Melior, including Goondicum, is included in the Independent Expert's Report. Shareholders should read the Independent Expert's Report in full before making a decision in relation to the Resolutions.

# Explanatory Memorandum

## 3. Resolution 1: Approval to issue Equity Securities under Listing Rule 7.1

### 3.1 Issue of Prescribed Securities

Resolution 1 seeks Shareholder authorisation under Listing Rule 7.1 to issue up to 315,384,540 Shares and 6,741,416 Options to Melior Securityholders (together, the **Resolution 1 Securities**). Twenty (20) Shares are offered for each Option held by a Melior Securityholder, therefore, on a fully diluted basis, 134,828,320 Shares will be issued upon exercise of the Options.

Listing Rule 7.1 prohibits a listed company, except in certain cases, from issuing in any 12 month period new Equity Securities equivalent in number to more than 15% of the total number of ordinary securities on issue at the beginning of the twelve month period (**15% Capacity**) without the prior approval of a majority of disinterested shareholders, or the issue otherwise comes within one of the exceptions to Listing Rule 7.1 (**15% Rule**).

As the Company is seeking Shareholder Approval, the issue of the Resolution 1 Securities will not count towards the Company's 15% Capacity under Listing Rule 7.1.

Resolution 1 does not seek approval for the Pala Shares to be issued to Pala on completion of the Arrangement or Pala Option Shares to be issued to Pala on exercise of the Pala Options, as any issue under section 611 (Item 7) of the Corporations Act is an exemption under Listing Rule 7.2 and are therefore subject of a separate resolution. To avoid doubt, the Pala Options form part of the Melior MLM Options which will be approved for the purpose of Listing Rule 7.1 under Resolution 1.

### 3.2 Listing Rule 7.3

For the purposes of ASX Listing Rule 7.3, which prescribed certain information to be contained in the notice of meeting where approval is sought under ASX Listing Rule 7.1, the Company advises as follows:

7.3.1	Maximum number of securities to be issued	315,384,540 Shares 6,741,416 Options which will convert to 134,828,320 Shares on exercise.
7.3.2	Date by which Company will issue the securities	Following shareholder approval, the Company will issue the Prescribed Securities on completion of the Proposed Transaction and in any event, no later than 3 months after the date of the Meeting.
7.3.3	Issue price per security	Shares – Nil. However, Shares will be issued in exchange for Melior shares under the Plan of Arrangement. Options – Nil. However, Options will be issued in exchange for Melior Options and Melior Warrants under the Plan of Arrangement. The exercise prices for the Options are as set out in 2.4(c).
7.3.4	Persons to whom securities are to be issued or basis on which allottees are to be determined	Melior Shareholders Melior Optionholders Melior Warrantholders
7.3.5	Terms of the securities	
	Shares	
	Shares	The Shares will rank pari passu with the existing Shares on issue.
	Options	

# Explanatory Memorandum

	<b>Exercise Price</b>	As set out in 2.4(c).
	<b>Vesting Conditions</b>	The Options will vest upon reaching the Vesting Date.
	<b>Vesting Date</b>	As set out in 2.4(c).
	<b>Expiry Date</b>	As set out in 2.4(c).
	<b>Terms</b>	As set out in Schedule 1.
<b>7.3.6</b>	<b>Intended use of funds raised by the issue</b>	No funds will be raised from the issue of the Prescribed Securities.
<b>7.3.8</b>	<b>Voting exclusion statement</b>	A voting exclusion statement is contained in Resolution 1 of the Notice of Meeting.

## 3.3 Listing Rule 10.11

As discussed in section 2.4(d), the Proposed Directors (or entities controlled by them) will receive Shares and/or Options under the Proposed Transaction in exchange for their Melior Shares, Melior Options or Melior Warrants.

Listing Rule 10.11 requires that an entity must obtain the approval of Shareholders to issue Securities to a Related Party and in doing so must provide the information specified in Listing Rule 10.13, unless an exception applies.

Under Listing Rule 10.12 (Exception 6) it is an exception if the person is a Related Party by reason of the transaction which is the reason for the issue of the Securities and the application to it of section 228(6) of the Corporations Act. It is the view of the Directors that the Proposed Transaction is the reason for the issue of Shares and/or Options to the Proposed Directors and accordingly, Shareholder approval is not required for the purposes of ASX Listing Rule 10.11.

## 3.4 Directors' Recommendation

The Board unanimously recommends voting in favour of Resolution 1.

## 3.5 Resolution required

To be passed, Resolution 1 requires a majority of Shareholders who vote (and are entitled to vote) on the resolution to vote in favour of the resolution.

## 4. Resolution 2 - Shareholder approval under section 611 (Item 7) of the Corporations Act

---

Resolution 2 seeks Shareholder approval under section 611 (Item 7) of the Corporations Act to issue, to Pala, up to 264,214,720 Shares (**Pala Shares**) at completion of the Arrangement and 66,825,000 Option Shares (**Pala Option Shares**) on exercise of the 3,341,250 Options to be issued to Pala on completion of the Arrangement (**Pala Options**), which on a fully diluted basis would result in Pala increasing its Voting Power in the Company to 34.17%.

### 4.1 Listing Rule 7.1 and Listing Rule 10.11

In accordance with Listing Rule 7.2 (Exception 16), an issue of Securities approved for the purposes of section 611 (Item 7) does not require further approval under Listing Rule 7.1. Therefore any Shares issued under Resolution 2 will not count towards the Company's 15% Capacity under Listing Rule 7.1.

# Explanatory Memorandum

## 4.2 Section 611 of the Corporations Act

Section 606 of the Corporations Act prohibits a person from acquiring a Relevant Interest in issued voting shares in a listed company if the acquisition would result in that person's Voting Power in the company increasing from 20% or below to more than 20% or from a starting point that is above 20% and below 90% (**Takeover Prohibition**).

There are certain specified exceptions to the Takeover Prohibition. In particular, under section 611 (Item 7) of the Corporations Act an acquisition will not contravene the Takeover Prohibition if shareholders approve the acquisition by passing a Resolution at a general meeting, where:

- (a) no votes were cast in favour of the Resolution by the person proposing to make the acquisition or their associates; and
- (b) shareholders were given all information known to the acquirer or the company that was material to the decision on how to vote,

### **(Takeover Exception).**

Therefore, the acquisition by Pala of the Pala Shares and Pala Option Shares on exercise of the Pala Options will result in Pala (and the Pala Associated Entities) acquiring a Relevant Interest in issued voting shares of the Company of up to 34.17% which will cause Pala's and each of the Pala Associated Entities' Voting Power in the Company to increase from a starting point that is below 20% to more than 20%.

Accordingly, Resolution 2 seeks approval for the acquisition of a Relevant Interest by Pala (and the Pala Associated Entities) in:

- (a) the Pala Shares; and
  - (b) the Pala Option Shares to be issued on exercise of the Pala Options,
- under section 611 (Item 7) of the Corporations Act.

In accordance with Listing Rule 7.2 (Exception 16), an issue of securities approved for the purposes of section 611 (Item 7) of the Corporations Act does not require further approval under Listing Rule 7.1. Therefore any Pala Shares and Pala Option Shares issued are not included in Resolution 1 and will not count towards the Company's 15% Capacity under Listing Rule 7.1. To avoid doubt, the Pala Options form part of the Melior MLM Options which will be approved for the purpose of Listing Rule 7.1 under Resolution 1.

For the purposes of section 611 (Item 7(b)) of the Corporations Act, the Company advises that:

- (a) **Section 611 (Item 7(b)(i)): The identity of the person proposing to make the acquisition and their associates**

It is proposed that the Pala Shares, Pala Options and Pala Option Shares will be issued to Pala. As at date of this Notice of Meeting the associates (as defined in section 12 of the Corporations Act) of Pala are:

- (1) Pala Group Holdings Limited;
- (2) VFI Holdings AG; and
- (3) Vladimir Iorich.

Pala is a multi-strategy investment company focused on the mining and metals value chain with a strong track record of successful investments and value creation. Pala's team has

# Explanatory Memorandum

extensive experience within the sector and seeks to assist companies in which it has long-term shareholdings by providing strategic advice and innovative solutions in development, production, expansion and turnaround situations. Pala also pursues a range of liquid investment strategies. Pala invests across all geographies and in all mining commodities as well as mining services and consumables.

Further information about Pala can be found on its website at [www.pala.com](http://www.pala.com).

(b) **Section 611 (Item 7(b)(ii)): The maximum extent of the increase in that person's voting power in the company that would result from the acquisition**

Currently, the Pala Entities do not hold Shares in Metallica. It is proposed that 264,214,720 Shares and 3,341,250 Options be issued to Pala. Once exercised, the Options held by Pala will convert to 66,825,000 Shares.

Pala will hold approximately 29.29% of the issued share capital in the Company upon completion of the Arrangement and following the issue of the Pala Shares. The following table sets out the proposed increase in Voting Power of Pala and the Pala Associated Entities on completion of the Proposed Transaction and issue of the Pala Option Shares following exercise of the Pala Options.

	Prior to completion of Arrangement	Completion of Arrangement	Exercise of Pala Options <sup>1</sup>
Relevant Interests in Shares held by Pala Entities	0	264,214,720	331,039,720
Options held by Pala	0	3,341,250 (exercisable for 66,825,000 Shares)	0
Voting Power Pala and the Pala Associated Entities	0%	29.29%	34.17%

Note 1: This is on the assumption no other Shares in the Company are issued following the issue to all Melior shareholders under the Plan of Arrangement and no other Options (other than the Pala Options) are exercised.

(c) **Section 611 (Item 7(b)(iii)): The voting power that the person would have as a result of the acquisition.**

Pala and the Pala Associated Entities' Voting Power upon completion of the Arrangement and on exercise of the Pala Options and issue of the Pala Option Shares is set out in 4.2(b).

(d) **Section 611 (Items 7(b)(iv) and 7(b)(v)): The maximum extent of the increase in the voting power of each of that person's associates that would result from the acquisition and the voting power that each of that person's associates would have as a result of the acquisition.**

The Pala Associated Entities' Voting Power is set out in 4.2(b).

No associates (as that term is defined in section 12 of the Corporations Act) of Pala hold Securities in the Company as at the date of this Notice of Meeting. Therefore, the maximum increase in Voting Power of Pala and its associates as a result of the acquisition is 34.17% (as set out in section 4.2(b) above).

# Explanatory Memorandum

## 4.3 ASIC Regulatory Guide 74: Acquisitions Approved by Members (ASIC RG74)

ASIC RG74 also specifies certain requirements where a Company seeks an acquisition to be exempt under section 611 (Item 7). For the exemption in section 611 item 7 of the Corporations Act to apply, Shareholders must be given all information known to the person proposing to make the acquisition or their associates, or known to the Company, that is material to the decision of how to vote on the resolutions.

In accordance with ASIC RG 74.25, the Company advises that:

### (a) Reasons for the proposed acquisition

The Company's reasons for proceeding with the Proposed Transaction can be summarised as follows:

- (1) a merger of the Company and Melior is, in the directors' view, a low risk proposition as the current major projects of both companies are fully funded with low capital intensity and corresponding high internal rates of return;
- (2) the Company shareholders will benefit from the imminent start of the Goondicum Ilmenite project in November this year;
- (3) the merged entity will benefit from the complementary skills of both companies which are centred around creating shareholder value by focussing on projects that have low capital intensity, are near to production and demonstrate sustainable life-of-mine cashflows;
- (4) the Melior Goondicum Ilmenite project fits with Metallica's strategy of focussing on near-term producing assets with low up-front capex that can deliver strong, sustainable cashflow to shareholders over the life of the project; and
- (5) the Arrangement Agreement contemplates the election of three directors nominated by Melior. The combined experience, technical skills and commercial acumen of the new board will significantly benefit the merged entity when evaluating future growth opportunities.

### (b) When the proposed acquisition is to occur

The issue of the Pala Shares and Pala Options will occur on completion of the Arrangement.

### (c) Material terms of the proposed acquisition

The Arrangement Agreement is subject to the satisfaction of a number of conditions the details and status of which are summarised at 2.4(a).

A copy of the Arrangement Agreement is available at:  
<http://www.metallicaminerals.com.au/wp-content/uploads/2016/09/20180913-Merger-with-Melior.pdf>.

Further details of the transaction are set out in the Independent Expert's Report accompanying this Notice and Explanatory Memorandum.

### (d) Details of any other relevant agreement between the acquirer and the Company that is conditional or depends on members' approval of the proposed acquisition

There are no other agreements in place between Metallica and Pala that are conditional or dependent on members' approval of the proposed acquisition. Pala has, however, entered

# Explanatory Memorandum

into a voting agreement with Metallica under which it agrees to vote its Melior shares in favour of resolution to approve the Plan of Arrangement at the Melior shareholder meeting.

(e) **Acquirer's intentions regarding the future of the target entity if members approve the acquisition**

Pala has informed the Company that its intentions mentioned in this section are based on the facts and information regarding the Company, its business and the general business environment which are known to Pala as at the date of the Notice of Meeting, which is limited to publicly available information. Any future decisions regarding these matters will only be made based on all material information and circumstances at the relevant time. Accordingly, the statements set out below are statements of current intention only which, if circumstances change or new information becomes available in the future, could change accordingly.

Pala has advised the Board that it has no present intention of:

- (1) requesting the Company to change its strategic direction or operational priorities;
- (2) injecting further capital into the Company;
- (3) seeking to change the Company's current employment arrangements; or
- (4) it or its Associates seeking to acquire any of the Company's property, or otherwise redeploying the fixed assets of the Company.

(f) **Intention of the acquirer to significantly change the financial or dividend distribution policies of the entity**

Pala has advised the Board that it has no present intention of seeking to change the financial or dividend distribution policies of the Company.

(g) **The interests that any director has in the acquisition or any relevant agreement disclosed above**

No Director of the Company has any interest in the acquisition or any relevant agreement disclosed above.

(h) **Intended directors if members approve the acquisition**

Melior proposes to nominate and the Board intends to appoint three additional directors under the Arrangement Agreement:

- (1) Martyn Buttenshaw (Proposed Non-Executive Director)

Mr Buttenshaw holds an MBA (with distinction) from the London Business School and a Masters of Engineering (First Class) in Mining Engineering from the Royal School of Mines, Imperial College, and London.

Mr Buttenshaw is currently the Chairman of Melior and an advisor to Pala Investments Limited.

Mr Buttenshaw has over eighteen years of direct mining experience and is a former business development manager for Anglo American plc and a Senior Mining Engineer at Rio Tinto Mineral's borax operations, overseeing all aspects of mine planning at its US and international mining operations. Mr Buttenshaw is a former non-executive director of Sierra Rutile Ltd and has extensive experience advising Sierra Rutile (a former UK listed rutile and ilmenite producer) on strategic mine planning, business improvement and expansion project feasibility studies. Mr Buttenshaw is a former

# Explanatory Memorandum

non-executive director of Asian Mineral Resources and non-executive director of Kasbah Resources.

Mr Buttenshaw is not an Associate of Pala or the Company (or any of their respective Associates). Mr Buttenshaw's interest under the Proposed Transaction is set out in 2.4.

(2) Mark McCauley (Proposed Executive Director)

Mr McCauley completed an Advanced Management Programme at Harvard Business School in 2003, holds an MBA from Bond University in Australia (with Majors in Finance and Accounting) and has a Bachelor of Mining Engineering (Hons.) from the University of Queensland.

Mr McCauley was formerly Managing Director of Belridge Enterprises Pty Ltd, the former owner of the Goondicum Project. Mr McCauley has substantial mining experience and has been involved in the development of several major mining projects in Australia and Argentina, including turnaround and organizational restructuring. Mr McCauley was a Non-Executive Director and Chair of the Audit Committee for Norton Goldfields Limited from September 2007 until June 2010 during which time he was also Managing Director for a nine month period of restructuring. Mr McCauley served as Chief Financial Officer and Company Secretary of Felix Resources Ltd, an ASX listed coal mining company, from October 2003 to February 2007 during which time it went from a market cap of \$35 million to a market cap of over \$1 billion.

Mr McCauley has previously been a director of several AIM and ASX listed mining and exploration companies.

Mr McCauley's interest under the Proposed Transaction is set out in 2.4(d).

(3) George Lloyd (Proposed Non-Executive Chairman)

Mr Lloyd is an experienced corporate finance adviser and has served as a director of a number of listed and unlisted companies in the minerals, energy and engineering services sectors. His board experience includes roles as Chairman, Chairman of the Audit Committee, Chairman of the Takeover Response Committee and Chairman of the Remuneration Committee. He is currently the non-executive Chairman of global engineering services company Ausenco Pty Ltd. Mr Lloyd has also held senior executive roles with a number of Australian resource companies including RGC Limited where he was integrally involved in the merger of that company with Westralian Sands Limited to form Iluka Resources Limited in 1998. Mr Lloyd is based in Sydney, Australia.

Mr Lloyd's interest under the Proposed Transaction is set out in section 2.4(d).

In ASIC RG74, ASIC have indicated what additional information should be provided to Shareholders in these circumstances. Neither the Company nor the Directors are aware of any additional information not set out in this Explanatory Memorandum, or the Independent Expert's Report attached as Annexure A, that would be relevant to Shareholders in deciding how to vote on the Resolutions.

## 4.4 Independent Expert's Report

For shareholder approval sought under item 7 of section 611 of the Corporations Act, ASIC RG 74 requires that Shareholders be provided with an Independent Expert's Report, one of the purposes of which is to consider whether the issue of the Prescribed Securities is fair and reasonable to the Shareholders who are not associated with Melior Securityholders.



# Explanatory Memorandum

The Company has engaged the Independent Expert to provide the Independent Expert's Report.

Shareholders are urged to read and consider the Independent Expert's Report which is set out in **Annexure A** together with the Notice of Meeting prior to making a decision as to how to vote on Resolution 2.

The Independent Expert Report concludes that the issue of the Conversion Shares to Melior Shareholders under the Proposed Transaction is Not Fair but Reasonable to the Shareholders.

## ***Fairness***

In forming the Independent Expert's opinion in relation to the fairness of the Transaction, the Independent Expert has assessed fairness as follows:

- (1) determine the value of a share in the Company on a controlling interest basis prior to the Arrangement;
- (2) determine the value of a share received by shareholders in the Merged Entity on a minority interest basis; and
- (3) compare the value of (1) and (2) to determine if the Arrangement is fair.

In assessing the fairness of the Arrangement, in accordance with RG111, the Independent Expert compared the value of a Share prior to the Arrangement on a controlling interest basis determined in (1) above) with the value of a share in the Merged Entity on a minority basis post the Arrangement (determined in (2) above).

The full assessment of Fairness is set out in section 2.2 of the Independent Expert Report.

## ***Reasonableness***

Under RG111, a transaction is considered reasonable if it is fair. It may also be reasonable, despite not being fair, if after considering other significant factors the interests of the shareholders are reasonably balanced.

In determining whether the Proposed Transaction is reasonable, the Independent Expert has considered the likely advantages and disadvantages associated with issuing the Prescribed Securities.

In determining whether the Proposed Transaction is reasonable, the Independent Expert has considered:

- the likely advantages and disadvantages associated with the Proposed Transaction; and
- alternatives, including the position of Shareholders if the Proposed Transaction does not proceed.

The above is a summary only, for further details of the assessment made by the Independent Expert in determining the fairness and reasonableness of the Proposed Transaction please refer to the Independent Expert's Report in Annexure A.

The full assessment of Reasonableness is set out in section 2.3 of the Independent Expert Report.

## **4.5 Directors' Recommendation**

Each of the Directors recommend that non-associated Shareholders vote in favour of this Resolution as they consider it to be in the best interests of the Company.

# Explanatory Memorandum

## 4.6 Resolution required

To be passed, Resolution 2 requires a majority of Shareholders who vote (and are entitled to vote) on the resolution to vote in favour of the resolution.

## 5. Special Resolution 3: Change of Company Name

---

### 5.1 Reasons for proposed change

Special Resolution 3 seeks approval for the change of the name of the Company to Kalimna Resources Limited.

With the Proposed Transaction marking a significant milestone for the Company, the Board considered it an opportune time to refresh and rebrand the Company, with the proposed new name being an important part of that process.

Pursuant to section 157(1) of the Corporations Act, a special resolution of Shareholders is required to change the name of a company. If Special Resolution 3 is passed, the change of name will take effect from the day on which ASIC alters the details of the Company's registration.

### 5.2 Directors' Recommendation

Each of the Directors recommend that the Shareholders vote in favour of special resolution 3.

### 5.3 Resolution required

To be passed, Resolution 3 requires a 75% majority of Shareholders who vote (and who are entitled to vote) on the resolution to vote in favour of the resolution.

## 6. Voting entitlement

---

For the purposes of determining voting entitlements at the Meeting, shares will be taken to be held by the persons who are registered as holding the Shares at 7.00pm (Sydney Time) on Friday 4 January 2019.

Accordingly, transactions registered after that time will be disregarded in determining entitlements to attend and vote at the Meeting.

## 7. Proxy, representative and voting entitlement instructions

---

### 7.1 Proxies and representatives

Shareholders are entitled to appoint a proxy to attend and vote on their behalf. Where a shareholder is entitled to cast two or more votes at the meeting, they may appoint two proxies. Where more than one proxy is appointed, each proxy may be appointed to represent a specific proportion or number of votes the shareholder may exercise. If the appointment does not specify the proportion or number of votes each proxy may exercise, each proxy may exercise half of the votes. The proxy may, but need not, be a shareholder of the Company.

Shareholders who are a body corporate are able to appoint representatives to attend and vote at the meeting under section 250D of the Corporations Act.

The proxy form must be signed by the shareholder or his/her attorney duly authorised in writing or, if the shareholder is a corporation, in a manner permitted by the Corporations Act.

# Explanatory Memorandum

The proxy form (and the power of attorney or other authority, if any, under which the proxy form is signed) or a copy or facsimile which appears on its face to be an authentic copy of the proxy form (and the power of attorney or other authority) must be **lodged by** any of the following methods:

## **ONLINE**

[www.linkmarketservices.com.au](http://www.linkmarketservices.com.au)

Login to the Link website using the holding details as shown on the Proxy Form. Select 'Voting' and follow the prompts to lodge your vote. To use the online lodgement facility, shareholders will need their "Holder Identifier" (Securityholder Reference Number (SRN) or Holder Identification Number (HIN) as shown on the front of the Proxy Form).

## **BY MAIL**

Metallica Minerals Limited  
C/- Link Market Services Limited  
Locked Bag A14  
Sydney South NSW 1235  
Australia

## **BY FAX**

+61 2 9287 0309

## **BY HAND**

Deliver it to Link Market Services Limited during business hours (Monday to Friday, 9:00am-5:00pm):  
Level 12  
680 George Street  
Sydney NSW 2000

Your completed proxy form (and any necessary supporting documentation) must be lodged online or received by Link Market Services no later than 11.00am (Brisbane time) Saturday 5 January 2019 being 48 hours before the time for holding the meeting, or adjourned meeting as the case may be, at which the individual named in the proxy form proposes to vote.

If a representative of the corporation is to attend the meeting the appropriate "Certificate of Appointment of Corporate Representative" should be produced prior to admission. A form of the certificate may be obtained from the Company's share registry.

A proxy form is attached to this notice.

## **7.2 Signing instructions**

You must sign the proxy form as follows in the spaces provided:

- |                    |  |
|--------------------|--|
| Individual:        | Where the holding is in one name, the holder must sign.  |
| Joint Holding:     | Where the holding is in more than one name, any one of the security holders may sign.  |
| Power of Attorney: | To sign under Power of Attorney, you must have already lodged this document with the registry. If you have not previously lodged this document for notation, please attach a certified photocopy of the Power of Attorney to this form when you return it.       |
| Companies:         | Where the company has a Sole Director who is also the Sole Company Secretary, this form must be signed by that person. If the company (pursuant to section 204A of the Corporations Act) does not have a Company Secretary, a Sole Director can also sign alone. |

# Explanatory Memorandum

Otherwise this form must be signed by a Director jointly with either another Director or a Company Secretary.

Please indicate the office held by signing in the appropriate place.

## 8. Interpretation

---

The following terms used in the Notice of Meeting and the Explanatory Memorandum are defined as follows:

**15% Capacity** means the capacity afforded under Listing Rule 7.1 to issue 15% of the number of fully paid ordinary securities on issue.

**Arrangement** means the arrangement between Melior and the Company under Division 5 of Part 9 of the *Business Corporations Act* (British Columbia) on the terms and subject to the conditions set out in the plan of arrangement, substantially in the form of Appendix "B" to the Arrangement Agreement, subject to any amendments or variations made in accordance with the Arrangement Agreement or plan of arrangement or at the direction of the British Columbia Supreme Court.

**Arrangement Agreement** means the arrangement agreement between the Company and Melior dated 12 September 2018.

**ASIC** means the Australian Securities & Investments Commission.

**Associate** has the meaning given to that term in the ASX Listing Rules.

**ASX** means the ASX Limited.

**Board** means the board of Directors of the Company from time to time.

**Chair** means the person chairing the Meeting.

**Company** or **Metallica** or **MLM** means Metallica Minerals Limited ACN 076 696 092.

**Constitution** means the constitution of the Company from time to time.

**Corporations Act** means the *Corporations Act 2001* (Cth).

**Directors** mean the directors of the Company from time to time.

**Dissent Rights** means Melior Shareholders exercising their rights to have their Melior Shares valued (based on the fair value of those shares) and paid out in accordance with the requirements set forth in Sections 237 to 247 of the Business Corporations Act (British Columbia), as may be modified and supplemented by the Plan of Arrangement or any order of the relevant Court

**Equity Securities** has the meaning given to that term in the Listing Rules.

**Explanatory Memorandum** means the explanatory statement accompanying this Notice.

**Independent Expert** means BDO Corporate Finance (Qld) Ltd ABN 54 010 185 725, Australian Financial Services Licence No. 245513.

**Listing Rules** means the official listing rules of the ASX as amended from time to time.

**Meeting** means the Extraordinary General Meeting as convened by the accompanying Notice of Meeting.

# Explanatory Memorandum

**Melior** means Melior Resources Inc, a corporation existing under *Business Corporations Act* (British Columbia).

**Melior MLM Options** means the Options to be issued to Melior Optionholders and Melior Warrantholders.

**Melior MLM Shares** means the Shares to be issued to Melior Shareholders.

**Melior Optionholder** means a holder of Melior Options as at the date of completion of the Arrangement.

**Melior Options** means the options held by Melior Optionholders.

**Melior Securities** means collectively Melior Shares, Melior Options and Melior Warrants

**Melior Securityholder** means a holder of Melior Securities or any Melior Security.

**Melior Shareholder** means a holder of Melior Shares as at the date of completion of the Arrangement.

**Melior Shares** means the shares held by Melior Shareholders.

**Melior Warrantholder** means a holder of Melior Warrants as at the date of completion of the Arrangement.

**Melior Warrants** means the warrants held by Melior Warrantholders.

**Merged Entity** means the merged entity formed post the Arrangement.

**Notice of Meeting** or **Notice** means the notice of meeting giving notice to shareholders of the Meeting, accompanying this Explanatory Memorandum.

**Option** means an option to acquire a Share.

**Pala** means Pala Investments Limited.

**Pala Associated Entities** means Pala Group Holdings Limited, VFI Holdings AG and Vladimir Iorich.

**Pala Option Shares** means 66,825,000 Shares to be issued on exercise of the Pala Options.

**Pala Options** means 3,341,250 Options to be issued to Pala at completion of the Arrangement.

**Pala Shares** means 264,214,720 Shares to be issued to Pala at completion of the Arrangement.

**Prescribed Securities** means the Shares and Options to be issued to Melior Optionholders, Melior Shareholders and Melior Warrantholders.

**Proposed Directors** means Mark McCauley, Martyn Buttenshaw and George Lloyd.

**Related Party** has the meaning given to that term in section 228 of the Corporations Act.

**Relevant Interest** has the meaning given to that term in the Corporations Act.

**Resolutions** means the resolutions set out in the Notice of Meeting.

**RG111** means Regulatory Guide 111: Content of Expert Report issued by ASIC.

**Securities** has the meaning in section 92(1) of the Corporations Act.

# Explanatory Memorandum

**Shareholder** means a shareholder of the Company.

**Share** means fully paid ordinary shares in the Company from time to time.

**Special Resolution** means a resolution:

- (a) of which notice has been given as set out in paragraph 249L(1)(c) of the Corporations Act; and
- (b) that has been passed by at least 75% of the votes cast by members entitled to vote on the resolution.

**Voting Power** has the meaning given to that term in the Corporations Act.

Any inquiries in relation to the Resolutions or the Explanatory Memorandum should be directed to John Haley (Company Secretary): Ph: 07 3249 3000.

# Explanatory Memorandum

## Schedule 1 Melior MLM Option Terms

2. The Melior MLM Options shall be issued in exchange for 1,866,666 Options and 4,874,750 Warrants (**Original Melior Securities**) pursuant to the Plan of Arrangement.
3. Each Melior MLM Option shall be exercisable for twenty (20) Metallica Shares.
4. The exercise price of each Melior MLM Option is set out in Table 1 (**Exercise Price**).

**Table 1 - Melior MLM Options**

Options	Exercise Price	Expiry Date	Note
<b>Existing Melior Options</b>			
741,666	\$0.64 (\$0.032 per Share)	10 February 2020	1
125,000	\$0.86 (\$0.043 per Share)	13 July 2021	2
1,000,000	\$1.34 (\$0.067 per Share)	Two years after issue	3
<b>Existing Melior Warrants</b>			
1,326,250	\$1.12 (\$0.056 per Share)	24 January 2020	3
298,500	\$1.12 (\$0.056 per Share)	1 February 2020	3
3,250,000	\$1.02 (\$0.051 per Share)	9 August 2020	3

Note 1: The Options shall vest and be capable of exercise as to:

- (1) 425,000 Options - exercisable on issue; and
- (2) 316,666 Options - exercisable on 10 August 2019.

Note 2: The Options shall vest and be capable of exercise as to:

- (3) One third - exercisable on 13 January 2019;
- (4) One third - exercisable on 13 January 2020; and
- (5) One third - exercisable on 13 January 2021.

Note 3: The Options will be exercisable on issue.

5. The Options will expire on the date as set out in Table 1 (**Expiry Date**) unless earlier exercised.
6. 4,116,666 of the Options will not be transferable in whole or in part and may not be exercised by any other person.
7. 2,624,750 of the Options will be transferable.

# Explanatory Memorandum

8. The Options may be exercised at any time wholly or in part by delivering a duly completed form of notice of exercise together with payment for the Exercise Price per Option to the Company at any time on or after the date of issue of the Options and on or before the Expiry Date. Payment may be made as directed by the Company from time to time, which may include by cheque, electronic funds transfer or other methods.
9. The number of Options that may be exercised at one time must be not less than 250, unless the Option holder holds less than 250 options in which case all options must be exercised at one time.
10. Upon the valid exercise of the Options and payment of the Exercise Price, the Company will issue twenty (20) fully paid ordinary shares (per Melior MLM Option exercised) ranking pari passu with the then issued ordinary shares.
11. Option holders do not have any right to participate in new issues of securities in the Company made to shareholders generally. The Company will, where required pursuant to the ASX Listing Rules, provide Option holders with notice prior to the books record date (to determine entitlements to any new issue of securities made to shareholders generally) to exercise the Options, in accordance with the requirements of the Listing Rules.
12. Option holders do not participate in any dividends unless the Options are exercised and the resultant shares of the Company are issued prior to the record date to determine entitlements to the dividend.
13. In the event of any reorganisation (including consolidation, subdivision, reduction or return) of the issued capital of the Company:
  - (a) the number of Options, the Exercise Price of the Options, or both will be reorganised (as appropriate) in a manner consistent with the ASX Listing Rules as applicable at the time of reorganisation, but with the intention that such reorganisation will not result in any benefits being conferred on the holders of the Options which are not conferred on shareholders; and
  - (b) subject to the provisions with respect to rounding of entitlements as sanctioned by a meeting of shareholders approving a reorganisation of capital, in all other respects the terms for the exercise of the Options will remain unchanged.
14. If there is a pro rata issue (except a bonus issue), the Exercise Price of an Option may be reduced according to the following formula:
$$O^n = O - \frac{E [P - (S + D)]}{N + 1}$$
Where:

$O^n$	=	the new exercise price of the Option;
$O$	=	the old exercise price of the Option;
$E$	=	the number of underlying securities into which one Option is exercisable;
$P$	=	the volume weighted average market price per security of the underlying securities during the five trading days ending on the day before the ex-right date or the ex-entitlements date;
$S$	=	the subscription price for a security under the pro rata issue;
$D$	=	dividend due but not yet paid on the existing underlying securities (except those to be issued under the pro rata issue); and
$N$	=	the number of securities with rights or entitlements that must be held to receive a right to one new security.
15. If there is a bonus issue to the holders of shares in the Company, the number of shares over which the Option is exercisable may be increased by the number of shares which the Option holder would have received if the Option had been exercised before the record date for the bonus issue.



# Explanatory Memorandum

16. The terms of the Options shall only be changed if holders (whose votes are not to be disregarded) of ordinary shares in the Company approve of such a change. However, unless all necessary waivers of the ASX Listing Rules are obtained, the terms of the Options shall not be changed to reduce the Exercise Price, increase the number of Options or change any period for exercise of the Options.
17. The Company does not intend to apply for listing of the Options on the ASX.
18. The Company shall apply for listing of the resultant shares of the Company issued upon exercise of any Option.
19. Subject to the foregoing terms and any requirements necessary to conform with the Listing Rules, the Options issued in exchange for Melior Options and Melior Warrants shall otherwise have the terms and conditions of the Melior Options and Melior Warrants for which they were exchanged and continue to be governed by the agreement, certificate and/or Melior stock option plan, as applicable, governing the Melior Options and Melior Warrants.

# Explanatory Memorandum

## Schedule 2 Proposed Timetable

---

Item	Proposed Date
Obtain interim Order of British Columbia Court to proceed with Arrangement, approve mailing of Melior Shareholder materials for special meeting	22 October 2018
Melior Shareholder Meeting Date	27 November 2018
Re-attend British Columbia Supreme Court for final Court Order approving the Arrangement	21 December 2018
Metallica Meeting Date	7 January 2019

# Explanatory Memorandum

## Schedule 3 Plan of Arrangement Process

---

1. A plan of arrangement under the *Business Corporations Act (British Columbia)* (**BCBC Act**) (**Plan**) is a Court approved, multi-step transaction often used to effect a merger or corporate restructure. This is similar to an Australian scheme of arrangement under Part 5.1 of the Corporations Act (**Scheme**).
2. The central element of a Scheme is the supervisory influence of the Court in ensuring that the Scheme has been carried out in good faith and that it is fair and reasonable. A Plan carries the same central element which is effected through Court appearances and a mandatory shareholders' meeting.
3. Although not mandatory, the parties to a Plan often make a first Court appearance to request an interim order to approve certain procedural aspects of the arrangement.
4. The interim order will detail the procedure to obtain shareholder or securityholder approval. The interim order will also stipulate:
  - (a) the method in which a special meeting of the shareholders or securityholders will be called and held (including matters such as the form of proxy solicitation materials and disclosure documents to be sent to shareholders or other securityholders, and the record date for establishing shareholders or securityholders entitled to vote on the proposed transaction and the applicable notice periods);
  - (b) the persons entitled to vote at the meeting;
  - (c) the requisite approval thresholds required to approve the arrangement; and
  - (d) any dissent and appraisal rights granted to shareholders.
5. Following the interim order of the Court, the parties must call a shareholders' meeting to approve the arrangement provided in the interim order. Along with providing the ordinary notice of the shareholders' meeting, the company must also include a statement setting out the matters required by section 290 of the BCBC Act (**Information Circular**).
6. The Information Circular must explain the effect of the arrangement, any material interests of the directors of the companies and the effect of the arrangement on those interests. An Information Circular is similar to a scheme booklet in respect of a Scheme as it is required to contain an explanation of the arrangement in sufficient detail to permit the relevant person to form a reasoned judgment concerning the matter.
7. At the shareholders meeting the arrangement is put to a vote.
8. At the second mandatory Court appearance, after the company holds its shareholders' meeting and has the required level of shareholder approval, the Court is asked to issue a final order approving the plan of arrangement. When determining whether to issue the final order and approve the arrangement, the Court will have to consider:
  - (a) has the application been put forward in good faith; and
  - (b) is the arrangement "fair and reasonable".
9. In determining whether to grant the requested order, the Court will consider whether the plan is "fair" to the shareholders. As is the case in Australia, when proposing a Plan, it has become customary for an applicant corporation to obtain a "fairness opinion" from a financial firm (generally provided by investment banks) to confirm that what shareholders are receiving under the arrangement is fair from a financial standpoint.

# Explanatory Memorandum

10. The Court may approve the arrangement as proposed or as amended by the Court. The Plan will then become effective once the documents required by the Plan, which include the final order, have been filed with the Registrar of Companies under the BCBC Act.
11. In order to ensure that the Court can properly assess a transaction's fairness, under both Canadian and Australian respective arrangements, objectors or dissenting shareholders are entitled to appear and present evidence at the final Court hearing.



**METALLICA MINERALS LTD**  
ACN 076 696 092

NAME AND ADDRESS

---

---

---

---

---

## LODGE YOUR VOTE



**ONLINE**  
[www.linkmarketservices.com.au](http://www.linkmarketservices.com.au)



**BY MAIL**  
Metallica Mineral Limited  
C/- Link Market Services Limited  
Locked Bag A14  
Sydney South NSW 1235 Australia



**BY FAX**  
+61 2 9287 0309



**BY HAND**  
Link Market Services Limited  
Level 12, 680 George Street, Sydney NSW 2000



**ALL ENQUIRIES TO**  
Telephone: +61 1300 554 474

SRN/HIN

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

## PROXY FORM

I/We being a member(s) of Metallica Mineral Limited and entitled to attend and vote hereby appoint:

### APPOINT A PROXY

☐

**the Chairman of the Meeting (mark box)**

**OR** if you are **NOT** appointing the Chairman of the Meeting as your proxy, please write the name of the person or body corporate you are appointing as your proxy

or failing the person or body corporate named, or if no person or body corporate is named, the Chairman of the Meeting, as my/our proxy to act on my/our behalf (including to vote in accordance with the following directions or, if no directions have been given and to the extent permitted by the law, as the proxy sees fit) at the General Meeting of the Company to be held at **11:00am on Monday, 7 January 2019 at HopgoodGanim Lawyers, Level 7, Waterfront Place, 1 Eagle Street, Brisbane, Queensland** (the **Meeting**) and at any postponement or adjournment of the Meeting.

**The Chairman of the Meeting intends to vote undirected proxies in favour of each item of business.**

STEP 1

### VOTING DIRECTIONS

Proxies will only be valid and accepted by the Company if they are signed and received no later than 48 hours before the Meeting. Please read the voting instructions overleaf before marking any boxes with an ☒.

#### Resolutions

For Against Abstain\*

1 Approval to issue Equity Securities under Listing Rule 7.1

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

2 Approval to issue Equity Securities under Section 611 (Item 7) of the Corporations Act

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

3 Change of Company Name

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------



\* If you mark the Abstain box for a particular Item, you are directing your proxy not to vote on your behalf on a show of hands or on a poll and your votes will not be counted in computing the required majority on a poll.

STEP 2

### SIGNATURE OF SHAREHOLDERS – THIS MUST BE COMPLETED

Shareholder 1 (Individual)

Joint Shareholder 2 (Individual)

Joint Shareholder 3 (Individual)

Sole Director and Sole Company Secretary

Director/Company Secretary (Delete one)

Director

This form should be signed by the shareholder. If a joint holding, either shareholder may sign. If signed by the shareholder's attorney, the power of attorney must have been previously noted by the registry or a certified copy attached to this form. If executed by a company, the form must be executed in accordance with the company's constitution and the *Corporations Act 2001* (Cth).

STEP 3

MLM PRX1802A



## HOW TO COMPLETE THIS SHAREHOLDER PROXY FORM

### YOUR NAME AND ADDRESS

This is your name and address as it appears on the Company's share register. If this information is incorrect, please make the correction on the form. Shareholders sponsored by a broker should advise their broker of any changes. **Please note: you cannot change ownership of your shares using this form.**

### APPOINTMENT OF PROXY

If you wish to appoint the Chairman of the Meeting as your proxy, mark the box in Step 1. If you wish to appoint someone other than the Chairman of the Meeting as your proxy, please write the name of that individual or body corporate in Step 1. A proxy need not be a shareholder of the Company.

### DEFAULT TO CHAIRMAN OF THE MEETING

Any directed proxies that are not voted on a poll at the Meeting will default to the Chairman of the Meeting, who is required to vote those proxies as directed. Any undirected proxies that default to the Chairman of the Meeting will be voted according to the instructions set out in this Proxy Form.

### VOTES ON ITEMS OF BUSINESS – PROXY APPOINTMENT

You may direct your proxy how to vote by placing a mark in one of the boxes opposite each item of business. All your shares will be voted in accordance with such a direction unless you indicate only a portion of voting rights are to be voted on any item by inserting the percentage or number of shares you wish to vote in the appropriate box or boxes. If you do not mark any of the boxes on the items of business, your proxy may vote as he or she chooses. If you mark more than one box on an item your vote on that item will be invalid.

### APPOINTMENT OF A SECOND PROXY

You are entitled to appoint up to two persons as proxies to attend the Meeting and vote on a poll. If you wish to appoint a second proxy, an additional Proxy Form may be obtained by telephoning the Company's share registry or you may copy this form and return them both together.

To appoint a second proxy you must:

- (a) on each of the first Proxy Form and the second Proxy Form state the percentage of your voting rights or number of shares applicable to that form. If the appointments do not specify the percentage or number of votes that each proxy may exercise, each proxy may exercise half your votes. Fractions of votes will be disregarded; and
- (b) return both forms together.

### SIGNING INSTRUCTIONS

You must sign this form as follows in the spaces provided:

**Individual:** where the holding is in one name, the holder must sign.

**Joint Holding:** where the holding is in more than one name, either shareholder may sign.

**Power of Attorney:** to sign under Power of Attorney, you must lodge the Power of Attorney with the registry. If you have not previously lodged this document for notation, please attach a certified photocopy of the Power of Attorney to this form when you return it.

**Companies:** where the company has a Sole Director who is also the Sole Company Secretary, this form must be signed by that person. If the company (pursuant to section 204A of the *Corporations Act 2001*) does not have a Company Secretary, a Sole Director can also sign alone. Otherwise this form must be signed by a Director jointly with either another Director or a Company Secretary. Please indicate the office held by signing in the appropriate place.

### CORPORATE REPRESENTATIVES

If a representative of the corporation is to attend the Meeting the appropriate "Certificate of Appointment of Corporate Representative" must be produced prior to admission in accordance with the Notice of Meeting. A form of the certificate may be obtained from the Company's share registry or online at [www.linkmarketservices.com.au](http://www.linkmarketservices.com.au).

### LODGEMENT OF A PROXY FORM

This Proxy Form (and any Power of Attorney under which it is signed) must be received at an address given below by **11:00am on Saturday, 5 January 2019**, being not later than 48 hours before the commencement of the Meeting. Any Proxy Form received after that time will not be valid for the scheduled Meeting.

Proxy Forms may be lodged using the reply paid envelope or:



#### ONLINE

[www.linkmarketservices.com.au](http://www.linkmarketservices.com.au)

Login to the Link website using the holding details as shown on the Proxy Form. Select 'Voting' and follow the prompts to lodge your vote. To use the online lodgement facility, shareholders will need their "Holder Identifier" (Securityholder Reference Number (SRN) or Holder Identification Number (HIN) as shown on the front of the Proxy Form).



#### BY MAIL

Metallica Minerals Limited  
C/- Link Market Services Limited  
Locked Bag A14  
Sydney South NSW 1235  
Australia



#### BY FAX

+61 2 9287 0309



#### BY HAND

delivering it to Link Market Services Limited\*  
Level 12  
680 George Street  
Sydney NSW 2000

\* During business hours (Monday to Friday, 9:00am–5:00pm)

**IF YOU WOULD LIKE TO ATTEND AND VOTE AT THE GENERAL MEETING, PLEASE BRING THIS FORM WITH YOU.  
THIS WILL ASSIST IN REGISTERING YOUR ATTENDANCE.**

# Annexure

## **Annexure A Independent Expert's Report**



## **METALLICA MINERALS LIMITED**

Independent Expert's Report and Financial Services Guide

21 NOVEMBER 2018



## FINANCIAL SERVICES GUIDE

Dated: 21 November 2018

The Financial Services Guide ('FSG') is provided to comply with the legal requirements imposed by the Corporations Act 2001 and includes important information regarding the general financial product advice contained in this report ('this Report'). The FSG also includes general information about BDO Corporate Finance (QLD) Ltd ABN 54 010 185 725, Australian Financial Services Licence No. 245513 ('BDOCF' or 'we', 'us' or 'our'), including the financial services we are authorised to provide, our remuneration and our dispute resolution.

BDOCF holds an Australian Financial Services Licence to provide the following services:

- a) Financial product advice in relation to deposit and payment products (limited to basic deposit products and deposit products other than basic deposit products), securities, derivatives, managed investment schemes, superannuation, and government debentures, stocks and bonds; and
- b) Arranging to deal in financial products mentioned in a) above, with the exception of derivatives.

### *General Financial Product Advice*

This Report sets out what is described as general financial product advice. This Report does not consider personal objectives, individual financial position or needs and therefore does not represent personal financial product advice. Consequently, any person using this Report must consider their own objectives, financial situation and needs. They may wish to obtain professional advice to assist in this assessment.

### *The Assignment*

BDOCF has been engaged to provide general financial product advice in the form of a report in relation to a financial product. Specifically, BDOCF has been engaged to provide an independent expert's report to the shareholders of Metallica Minerals Limited ('Metallica' or 'the Company') in relation to the potential merger between Metallica and Melior Resources Inc. ('Melior') by way of a court-approved Plan of Arrangement ('the Arrangement').

Further details of the Arrangement are set out in Section 4.0. The scope of this Report is set out in detail in Section 3.3. This Report provides an opinion on whether or not the Arrangement is 'fair and reasonable' and has been prepared to provide information to the Metallica shareholders to assist them to make an informed decision on whether to vote in favour of or against the Arrangement. Other important information relating to this Report is set out in more detail in Section 3.0.

This Report cannot be relied upon for any purpose other than the purpose mentioned above and cannot be relied upon by any person or entity other than those mentioned above, unless we have provided our express consent in writing to do so. A shareholder's decision to vote in favour of or against the Arrangement is likely to be influenced by their particular circumstances, for example, their taxation considerations and risk profile. Each shareholder should obtain their own professional advice in relation to their own circumstances.

### *Fees, commissions and other benefits we may receive*

We charge a fee for providing reports. The fees are negotiated with the party who engages us to provide a report. We estimate the fee for the preparation of this Report will be approximately \$130,000 plus GST. Fees are usually charged as a fixed amount or on an hourly basis depending on the terms of the agreement with the engaging party. Our fees for this Report are not contingent on the outcome of the Arrangement or the opinion expressed in this Report.

Except for the fees referred to above, neither BDOCF, nor any of its directors, employees or related entities, receive any pecuniary benefit or other benefit, directly or indirectly, for or in connection with the provision of this Report.

Directors of BDOCF may receive a share in the profits of BDO Group Holdings (QLD) Pty Ltd, a parent entity of BDOCF. All directors and employees of BDO Group Holdings (QLD) Pty Ltd and its subsidiaries (including BDOCF) are entitled to receive a salary. Where a director of BDOCF is a shareholder of BDO Group Holdings (QLD) Pty Ltd, the person is entitled to share in the profits of BDO Group Holdings (QLD) Pty Ltd.

### *Associations and relationships*

From time to time BDOCF or its related entities may provide professional services to issuers of financial products in the ordinary course of its business. These services may include audit, tax and business advisory services. BDO Audit Pty Ltd is currently engaged as the auditor of Metallica. BDO (QLD) Pty Ltd has provided independent tax advice to Metallica in the past two years. BDOCF has not provided any professional services to Metallica in the last two years.

The signatories to this Report do not hold any shares in Metallica and no such shares have ever been held by the signatories.

To prepare our reports, including this Report, we may use researched information provided by research facilities to which we subscribe or which are publicly available. Reference has been made to the sources of information in this Report, where applicable. Research fees are not included in the fee details provided in this Report.

### *Complaints*

We are members of the Australian Financial Complaints Authority. Any complaint about our service should be in writing and sent to BDO Corporate Finance (QLD) Ltd, GPO Box 457, Brisbane QLD 4001.

We will endeavour to resolve the complaint quickly and fairly. If the complaint cannot be satisfactorily resolved within 45 days of written notification, there is a right to lodge a complaint with the Australian Financial Complaints Authority. They can be contacted on 1800 931 678. This service is provided free of charge.

If the complaint involves ethical conduct, a complaint may be lodged in writing with Chartered Accountants Australia and New Zealand, Queensland Branch, GPO Box 2054, Brisbane QLD 4001. The Australian Securities and Investment Commission ('ASIC') also has an Infoline on 1300 300 630 which can be used to make a complaint and obtain information about investor rights.

### *Compensation Arrangements*

BDOCF and its related entities hold Professional Indemnity insurance for the purpose of compensating retail clients for loss or damage suffered because of breaches of relevant obligations by BDOCF or its representatives under Chapter 7 of the Corporations Act 2001. These arrangements and the level of cover held by BDOCF satisfy the requirements of section 912B of the Corporations Act 2001.

### *Contact Details*

BDO Corporate Finance (QLD) Ltd

Location Address:	Postal Address:
Level 10 12 Creek Street BRISBANE QLD 4000	GPO Box 457 BRISBANE QLD 4001
Phone: (07) 3237 5999	Email: cf.brisbane@bdo.com.au
Fax: (07) 3221 9227	

# CONTENTS

Financial Services Guide	i
Glossary	v
<b>PART I: ASSESSMENT OF THE PROPOSED TRANSACTION</b>	<b>1</b>
<b>1.0 Introduction</b>	<b>1</b>
<b>2.0 Assessment of the Arrangement</b>	<b>2</b>
2.1 Basis of Evaluation	2
2.2 Assessment of Fairness	2
2.3 Assessment of Reasonableness	4
2.4 Our Opinion	9
<b>3.0 Important Information</b>	<b>10</b>
3.1 Read this Report, and Other Documentation, in Full	10
3.2 Shareholders' Individual Circumstances	10
3.3 Scope	10
3.4 Purpose of this Report	11
3.5 Current Market Conditions	12
3.6 Reliance on Information	12
3.7 Glossary	13
3.8 Sources of Information	13
3.9 APES 225 <i>Valuation Services</i>	14
3.10 Forecast Information	14
3.11 Qualifications	14
<b>PART II: INFORMATION SUPPORTING OUR OPINION ON THE PROPOSED TRANSACTION</b>	<b>15</b>
<b>4.0 Overview of the Arrangement</b>	<b>15</b>
4.1 Summary of the Arrangement	15
4.2 Key Conditions of the Arrangement	16
4.3 The Dissent Procedures	16
4.4 Strategic Rationale for the Arrangement	16
4.5 Melior's Loans Under the Arrangement	17
<b>5.0 Background of Metallica</b>	<b>19</b>
5.1 Overview of Metallica	19
5.2 Metallica Corporate Structure	20
5.3 Equity Structure of Metallica	20
5.4 Share Performance of Metallica	21
5.5 Historical Financial Information of Metallica	24
<b>6.0 Overview of Melior</b>	<b>28</b>
6.1 Company Overview	28
6.2 Melior's Corporate Structure	28
6.3 Equity Structure of Melior	29
6.4 Share Performance of Melior	30
6.5 Historical Financial Information of Melior	32
<b>7.0 Common Valuation Methodologies</b>	<b>36</b>
7.1 Discounted Cash Flows ('DCF')	36
7.2 Capitalisation of Maintainable Earnings ('CME')	36
7.3 Asset Based Valuation ('ABV')	36
7.4 Market Based Valuation ('MBV')	37
7.5 Industry Based Metrics (Comparable Analysis)	37

---

## **8.0 Valuation of Metallica Prior to the Arrangement 38**

---

8.1	Our Valuation Approach for Metallica	38
8.2	DCF Valuation of UBP	38
8.3	Value of Metallica's Other Assets and Liabilities	42
8.4	Asset Based Value for Metallica	44
8.5	MBV of Metallica	44
8.6	Value Adopted per Metallica Share	45

## **9.0 Valuation of the Merged Entity 46**

---

9.1	Our Valuation Approach for the Merged Entity	46
9.2	DCF Valuation of the Goondicum Project	46
9.3	Value of Melior's Other Assets and Liabilities	50
9.4	Asset Based Value for Melior	50
9.5	Asset Based Value for Metallica Adopted for the Merged Entity	51
9.6	Asset Based Value for the Merged Entity	51
9.7	MBV of the Merged Entity	52
9.8	Value Adopted per Merged Entity Share	53

## **10.0 Industry Overview 54**

---

10.1	Bauxite Mining	54
10.2	Mineral Sands Mining	55

## **Appendix A: Control Premium Analysis 57**

## **Appendix B: Technical Specialist Report 58**

---

## GLOSSARY

Reference	Definition
15% Threshold	The threshold whereby ASX Listing Rule 7.1 prohibits a listed entity, except in certain circumstances, from issuing more than 15% of its total number of outstanding ordinary securities as new equity securities within a 12-month period
A\$ or \$	Australian dollars
ABV	Asset-based valuation
AIP	African Ilmenite Price
AMC	AMC Consultants Pty Ltd
AMC Assumptions, the	The assumptions adopted by AMC in the DCF valuations of the UBP and the Goondicum Project including operating costs, capital costs and physical volume assumptions
AMC Report, the	The independent technical report completed by AMC dated 19 November 2018
APES 225	Accounting Professional and Ethical Standard for Valuation Services issued by the Accounting Professional and Ethical Standards Board Limited
Arrangement, the	The arrangement set out in the Arrangement Agreement between Melior and Metallica
Arrangement Agreement, the	The arrangement agreement dated on 12 September 2018 between Melior and Metallica
ASIC	Australian Securities and Investment Commission
ASX	Australian Securities Exchange
BCBCA	British Corporation Act (British Columbia)
BDO Persons	BDOCF, BDO (QLD) Pty Ltd or any of its partners, directors, agents or associates
BDOCF	BDO Corporate Finance (QLD) Ltd
C\$	Canadian dollars
CME	Capitalisation of Maintainable Earnings
CM Group Report, the	The bauxite price forecast report provided by CM Group to Metallica, dated November 2018
Company, the	Metallica Minerals Limited
Corporations Act, the	The Corporations Act 2001
Court, the	The Supreme Court of British Columbia
CSIRO	Commonwealth Scientific Institute and Research Organisation
DCF	Discounted cash flow
Dissent Procedures, the	The dissent procedures set forth in Sections 242 to 247 of the BCBCA, required to be followed by a Melior shareholder to exercise the right of receiving fair value for Melior shares
Directors, the	The directors of the Company
DSO	Direct shipping ore
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortisation
EGM	The extraordinary general meeting for the Metallica shareholders to be held on or about 21 December 2018
Exchange Ratio, the	The share exchange ratio under the Arrangement of twenty Metallica shares for every one Melior share
Final Order, the	The final order by the Court pursuant to subsection 291 of the BCBCA
FSG	Financial Services Guide
FY	The financial year or 12-month period ended on 30 June
Goondicum Project, the	Melior's Goondicum ilmenite project
GPEA	The preliminary economic assessment on the Goondicum Project, completed by TZ Minerals International Pty Ltd in April 2018

Reference	Definition
Hainan Wensheng	Hainan Wensheng High-Tech Materials Co Ltd
Hainan Wensheng Loan, the	The loan entered into between Melior and Hainan Wensheng dated 3 April 2018 repaid based on the production profile of ilmenite from the Goondicum Project
HMS	Heavy mineral sands
HY	Half year to the date ended on 31 December
Interim Order, the	The interim order issued by the Court in relation to the Arrangement providing for the calling and holding of the Melior Meeting
JV	Joint venture
Management, the	The management of Metallica and its advisers and/or Melior and its advisers
MBV	Market-based valuation
Melior	Melior Resources Inc.
Melior Meeting, the	The Melior meeting called in relation to the Arrangement as provided by the Interim Order
Merged Entity, the	The Merged Entity formed post the Arrangement between Metallica and Melior
Metallica	Metallica Minerals Limited
Metallica Replacement Options	Issue of Metallica options for outstanding Melior options per the terms of the Arrangement Agreement and at the Exchange Ratio
Metallica Replacement Warrants	Issue of Metallica warrants for outstanding Melior warrants per the terms of the Arrangement Agreement and at the Exchange Ratio
Mt	Million tonnes
mtpa	Million tonnes per annum
Notice of Meeting	Notice of Extraordinary General Meeting and Explanatory Memorandum prepared for the EGM dated on or about 21 December 2018
Oresome Australia	Oresome Australia Pty Ltd
Ozore	Ozore Resources Pty Ltd, Metallica's 50% JV partner via the wholly-owned subsidiary Oresome Bauxite Pty Ltd
Pala	Pala Investments Limited
Pala Loan, the	The loan from Pala to Melior as stipulated in the Pala Loan Agreement
Pala Loan Agreement, the	The loan agreement between Melior and Pala and dated 9 August 2018
Regulations, the	The Corporation Regulations 2001
Report, this	This independent expert's report prepared by BDOCF and dated 21 November 2018
RG 111	Regulatory Guide 111: Content of Expert Report, issued by ASIC
RGs	Regulatory guides published by ASIC
SCONI Contingent Payment, the	The \$5 million contingent payment as part of the sale of the SCONI Project by Metallica to Australian Mines Limited on 6 September 2017
SCONI Project, the	Metallica's SCONI scandium, cobalt and nickel project which was sold to Australian Mines Limited on 6 September 2017
Shareholders	The holders of fully paid ordinary shares in the Metallica
STSM	Screening transitional stockpiled material
SEDAR	The System for Electronic Document Analysis and Retrieval, which is a filing system developed for the Canadian Securities Administrators in providing access to public securities' documents and disclosures
TSXV	TSX (Toronto Stock Exchange) Venture Exchange
UBP, the	Metallica's Urquhart Bauxite Project

Reference	Definition
UBP Study, the	The pre-feasibility study completed by IMC Mining Pty Ltd in September 2018
VWAP	Volume weighted average price
WACC	Weighted average cost of capital
We, us, our	BDO Corporate Finance (QLD) Ltd

## PART I: ASSESSMENT OF THE PROPOSED TRANSACTION

The Shareholders  
C/- The Non-associated Directors  
Metallica Minerals Limited  
Corner Lytton Road and Stafford Street  
East Brisbane QLD 4169

21 November 2018

Dear Shareholders,

### 1.0 Introduction

BDO Corporate Finance (QLD) Ltd ('BDOCF', 'we', 'us' or 'our') has been engaged to provide an independent expert's report ('this Report') to the shareholders ('Shareholders') of Metallica Minerals Limited ('Metallica' or 'the Company') (ASX: MLM) in relation to a potential merger with TSX Venture Exchange ('TSXV') listed Melior Resources Inc. ('Melior') (TSXV:MLR) by way of a Canadian court-approved Plan of Arrangement ('the Arrangement') as set out in the arrangement agreement dated on 12 September 2018 between Melior and Metallica ('the Arrangement Agreement').

As part of the arrangement, Metallica will:

- ▶ Acquire all outstanding common shares of Melior in exchange for Metallica ordinary shares at an exchange ratio of twenty Metallica shares for every one Melior share ('the Exchange Ratio');
- ▶ Pay fair value for Melior shares to the Melior shareholders electing to receive cash for their Melior shares under the dissent procedures as defined in the Arrangement Agreement ('the Dissent Procedures');
- ▶ Issue Metallica options for outstanding Melior options in the same Exchange Ratio as per the terms of the Arrangement Agreement (each, a 'Metallica Replacement Option'); and
- ▶ Issue a common share purchase warrant in Metallica for each Melior warrant outstanding in the same Exchange Ratio as per the terms of the Arrangement Agreement (each, a 'Metallica Replacement Warrant').

A more detailed description of the Arrangement is set out in Section 4 of this Report.

If the Arrangement proceeds, Pala Investments Limited ('Pala'), Melior's largest shareholder, will hold a relevant interest in the merged entity post the Arrangement ('the Merged Entity') of approximately 29%. This could increase to approximately 34% in the event that Pala exercised all options it is proposed to be issued in the Merged Entity and assuming no other options in the Merged Entity are exercised. Under the Corporations Act 2001, ('the Corporations Act') transactions involving the issue or transferring of securities where an acquirer's interest moves from below to above 20% will ordinarily be prevented unless one of the exemptions set out in Section 611 of the Corporation Act is met. Item 7 of Section 611 states that an acquisition is exempt from the regulations of Section 606 if the acquisition proposal is approved by a requisite majority of shareholders not associated with the person making the proposal or their associates by passing a resolution at a general meeting.

This Report has been commissioned by the directors' of Metallica ('the Directors') to provide information to Shareholders for voting on the Arrangement. Shareholders may vote in favour of or against the Arrangement at the extraordinary general meeting to be held on or about 21 December 2018 ('the EGM').

In this Report we provide our opinion on whether the Arrangement is fair and reasonable to Shareholders. The scope and purpose of this Report are detailed in Sections 3.3 and 3.4 respectively.

This Report, including Part I, Part II and the appendices including the technical report completed by AMC Consultants Pty Ltd, should be read in full along with all other documentation provided to Shareholders including the Notice of Meeting prepared by Metallica for the EGM dated on or about 21 December 2018 ('the Notice of Meeting').



## 2.0 Assessment of the Arrangement

This section is set out as follows:

- ▶ Section 2.1 sets out the methodology for our assessment of the Arrangement;
- ▶ Section 2.2 sets out our assessment of the fairness of the Arrangement;
- ▶ Section 2.3 sets out our assessment of the reasonableness of the Arrangement; and
- ▶ Section 2.4 provides our assessment of whether the Arrangement is Fair and Reasonable to Shareholders.

### 2.1 Basis of Evaluation

ASIC have issued Regulatory Guide 111: Content of Expert Reports ('RG 111'), which provides guidance in relation to independent expert's reports. RG 111 relates to the provision of independent expert's reports in a range of circumstances, including those where the expert is required to provide an opinion in relation to a takeover transaction. RG 111 states that the independent expert's report should explain the particulars of how the transaction was examined and evaluated as well as the results of the examination and evaluation.

The Arrangement involves a merger between Metallica and Melior whereby all outstanding Melior shares may be exchanged at the Exchange Ratio of 20 Metallica shares for every Melior share. RG 111 specifically differentiates between control and non-control transactions in providing guidance on the type of analysis to complete. Where a control transaction is otherwise prohibited under s606 of the Corporations Act and may be approved under item 7 of s611, the transaction should be analysed as if it was a takeover bid under Chapter 6 of the Corporations Act. RG 111 states that the independent expert should have regard to whether the transaction is 'fair' and 'reasonable' to shareholders.

Under RG 111, an offer will be considered 'fair' if the value of the consideration to be received by the shareholders is equal to or greater than the value of the shares that are the subject of the offer. To assess whether an offer is 'reasonable', an expert should examine other significant factors to which shareholders may give consideration prior to accepting or approving the offer. This includes comparing the likely advantages and disadvantages if the offer is approved with the position of the shareholders if the offer is not approved.

We have assessed the fairness and reasonableness of the Arrangement in Sections 2.2 and 2.3 below.

### 2.2 Assessment of Fairness

#### 2.2.1 Basis of Assessment

RG 111 states that a transaction is fair if the value of the offer price or consideration is equal to or greater than the value of the securities subject to the offer. This comparison should be made assuming a knowledgeable and willing, but not anxious, buyer and a knowledgeable and willing, but not anxious, seller acting at arm's length. When considering the value of the securities subject to an offer in a control transaction the expert should consider this value inclusive of a control premium and assume a 100% ownership interest.

In our view, it is appropriate to assess the fairness of the Arrangement to Shareholders, in accordance with RG 111, as follows:

- a) Determine the value of a share in Metallica on a controlling interest basis prior to the Arrangement;
- b) Determine the value of the share received by Shareholders in the Merged Entity on a minority interest basis; and
- c) Compare the value of a) above with the value of b) to determine if the Arrangement is Fair.

In accordance with the requirements of RG 111, the Arrangement can be considered 'fair' to Shareholders if the consideration offered (i.e. a share in the Merged Entity, calculated in b) above on a minority basis) is equal to or greater than the value of a Metallica share (determined in a) above on a controlling basis).

#### 2.2.2 Value of a Metallica Share Prior to the Arrangement

In our view, for the purposes of the analysis set out in this Report, it is appropriate to adopt a value in the range of \$0.030 to \$0.049 per Metallica share prior to the Arrangement on a controlling interest basis. In forming this view, we adopted an asset based valuation methodology, including a discounted cash flow valuation of Metallica's key asset, the Urquhart Bauxite Project, as our primary valuation methodology and a market based valuation as a secondary cross-check methodology.

We note that the valuation range provided for Metallica is relatively wide. We are of the view that this is appropriate in the circumstances as Metallica's key asset, the UBP, has uncertainties surrounding its start date and is a lower margin project. We also note that the SCONI Contingent Payment has a binary outcome of payment and non-payment (albeit that the timing of the payment, if any, is unknown) and adds to the spread in our valuation range.

Our valuation of Metallica prior to the Arrangement is set out in Section 8 of this Report.

### 2.2.3 Value of the Consideration Offered Under the Arrangement

For the purpose of assessing the fairness of the Arrangement in accordance with RG 111, in our opinion, it is appropriate to have reference to the value of a share in the Merged Entity (on a minority interest basis), as this is what Shareholders will ultimately receive under the Arrangement.

To calculate the value of a share in the Merged Entity, on a minority interest basis, we have:

- Calculated the value of Metallica on a controlling interest basis (on the same basis as Section 2.2.2);
- Calculated the value of Melior on a controlling interest basis. Similarly, to Metallica, we adopted an asset based valuation methodology, including a discounted cash flow valuation of Melior's key asset, the Goondicum Project;
- Considered and valuation adjustments for the Merged Entity relative to the stand alone values of Metallica and Melior;
- Adjusted for a minority discount; and
- Compared our asset based valuation against a market based valuation adopting the trading value of shares in Metallica and Melior.

Using the above methodology, we calculated a value for a share in the Merged Entity, on a minority interest basis of between \$0.021 to \$0.040 per Merged Entity share.

We note that the valuation range provided for the Merged Entity is relatively wide. We are of the view that this is appropriate in the circumstances given the spread in the Metallica value, outlined above, and the level of debt within Melior and its near term project status. Debt serves to increase equity valuation ranges as smaller changes in asset values (i.e. the Goondicum Project) are amplified when a static debt value deducted.

Our valuation of a share in the Merged Entity post the Arrangement is set out in Section 9 of this Report.

### 2.2.4 Assessment of the Fairness of the Arrangement

In order to assess the fairness of the Arrangement, in accordance with RG 111, it is appropriate to compare the value of a Metallica share prior to the Arrangement on a controlling interest basis with the value of a share in the Merged Entity on a minority basis post the Arrangement.

Table 2.1 below summarises our assessment of the fairness of the Arrangement.

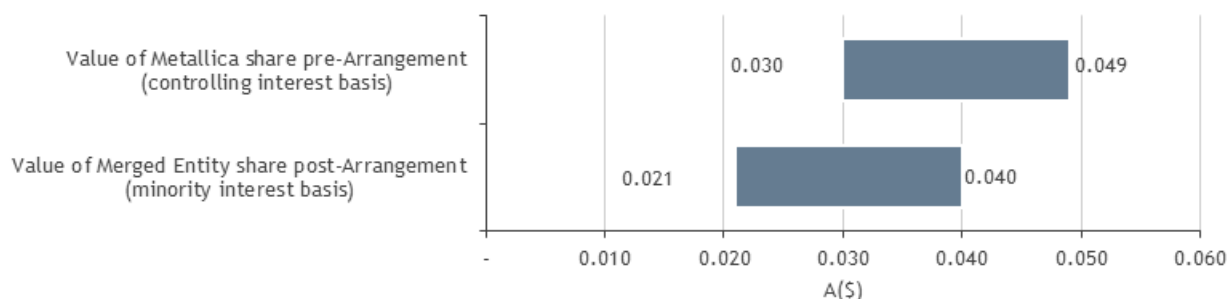
**Table 2.1: Assessment of the Fairness of the Arrangement**

	Low	High
Value of a Metallica Share prior to the Arrangement - controlling interest	\$0.030	\$0.049
Value of a share in the Merged Entity post the Arrangement - minority interest	\$0.021	\$0.040

Source: BDOCF Analysis

Figure 2.1 summarises our assessment of the fairness of the Arrangement, setting out a graphical comparison of our valuation of a Metallica share prior to the Arrangement on a controlling interest basis and our valuation of a share in the Merged Entity on a minority basis, as offered to Shareholders under the Arrangement.

Figure 2.1: Fairness of the Arrangement



Source: BDOCF analysis

After considering the information summarised above and set out in detail in the balance of this Report, it is our view that the Arrangement is **Not Fair** to Shareholders as at the date of this Report.

## 2.3 Assessment of Reasonableness

### 2.3.1 Basis of Assessment

Under RG 111, a transaction is considered reasonable if it is fair. It may also be reasonable, despite not being fair, if after considering other significant factors the interests of the shareholders are reasonably balanced.

In addition to our fairness assessment set out in Section 2.2 above, to assess whether the Arrangement is ‘reasonable’ we consider it appropriate to examine other significant factors to which Shareholders may give consideration prior to forming a view on whether to vote in favour of or against the Arrangement. This includes comparing the likely advantages and disadvantages of approving the Arrangement with the position of a Shareholder if the Arrangement is not approved, as well as a consideration of other significant factors.

Our assessment of the reasonableness of the Arrangement is set out as follows:

- ▶ Section 2.3.2 sets out the potential advantages and disadvantages of the Arrangement to Shareholders;
- ▶ Section 2.3.3 sets out the position of Shareholders if the Arrangement is not implemented; and
- ▶ Section 2.3.4 provides our opinion on the reasonableness of the Arrangement to Shareholders.

### 2.3.2 Potential Advantages and Disadvantages of the Arrangement

Table 2.2 below outlines the potential advantages of the Arrangement to Shareholders.

Table 2.2: Potential Advantages of the Arrangement

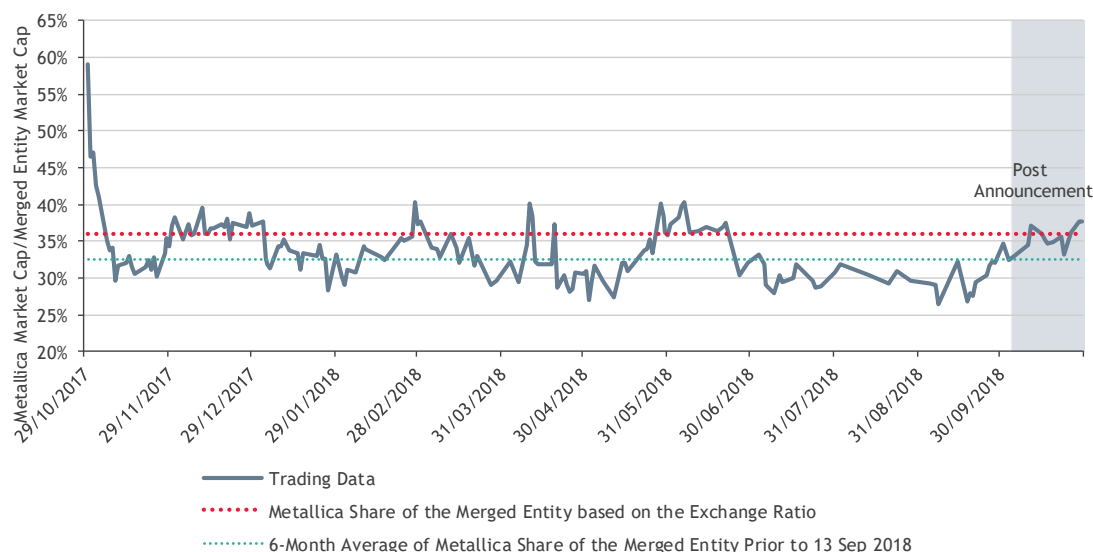
Advantage	Explanation
The percentage of the Merged Entity received by Metallica Shareholders under the Exchange Ratio is higher than the percentages shares implied by recent volume weighted average share prices	<p>Under the Arrangement, at the Exchange Ratio, Shareholders will receive an interest of approximately 36% of the Merged Entity (assuming no options and warrants are exercised). We have compared the relative values of Metallica and Melior as implied by their market capitalisations, illustrated in Figure 2.2 below.</p> <p>We note that the Exchange Ratio is higher than the value share implied by volume weighted average trading prices of Metallica and Melior above the three, six and twelve-month value to:</p> <ul style="list-style-type: none"> <li>▶ 31 October 2018 of approximately 12%, 10% and 7% respectively; and</li> <li>▶ The date of the Arrangement announcement (13 September 2018) of approximately 15%, 11% and 7% respectively.</li> </ul>
Metallica’s share of the Merged Entity under the Arrangement approximates the valuation percentages implied by our calculated asset based values for Metallica and Melior, ignoring capitalised overheads.	<p>Under the Arrangement, at the Exchange Ratio, Shareholders will receive an interest of approximately 36% of the Merged Entity (assuming no options and warrants are exercised). We have compared the range of our relative asset based values of Metallica and Melior which we have calculated, as illustrated in Figure 2.3 below.</p> <p>The ratio of values according to the asset based values of the two entities, ignoring capitalised overheads for both entities, implies a value percentage lower than that received by Metallica shareholders under the Arrangement at the Exchange Ratio (i.e. our asset based values indicate Metallica shareholders receive a greater share in the Merged Entity under the Arrangement than would be calculated adopting the asset values of both entities, excluding overheads).</p> <p>Under the Arrangement, ignoring capitalised overhead adjustments for both entities, the implied percentage of Metallica share of the Merged Entity is approximately 4.9% higher at the low range and 6.2% higher for the high range than our calculated percentage share of Metallica’s asset values of the Merged Entity).</p>

Advantage	Explanation
The valuation ranges have a high degree of overlap when minority values are compared.	Our calculated values for a Metallica share and a Merged Entity share have a greater overlap where our assumed control premium of 20% is removed from the Metallica values adopted in Section 2.2 and shown in Figure 2.1. This is shown in Figure 2.4 below.
Strategic acquisition of a complimentary business with a project that has commenced	<p>The Arrangement represents a strategic acquisition which will allow Shareholders to gain exposure to Goondicum Project which has, at the date of this Report, just started production. This provides Shareholders with diversification and potential upside (and risks) to an additional project.</p> <p>The Goondicum Project commenced production in November 2018 and is forecasted to be cash flow positive in the second quarter of 2019. Through this Arrangement, the cash flows generated from the Goondicum Project have the potential to enable Metallica to become cash flow positive within a shorter period of time relative to the progress of its current assets.</p>
Metallica does not currently have sufficient scale to absorb the overheads required to support itself as a listed company	<p>We note that Metallica has a small market capitalisation relative to its annual expenditure on overheads. The Arrangement will assist to consolidate overheads and spread the required overheads over a larger asset base.</p> <p>If we were to include in our valuation Metallica's existing corporate costs for the full life of the Urquhart Bauxite Project prior to the Arrangement, the value of Metallica calculated would be materially lower.</p> <p>Should the Arrangement not proceed, the Directors have advised that a return of capital to Shareholders is not contemplated. It is likely that a significant percentage of the current cash balance of Metallica would be used to fund overheads if the Arrangement did not proceed, as well as for further development of the Urquhart Bauxite Project.</p>
Larger market scale as the Merged Entity	Through the Merged Entity, Shareholders will be part of a larger company (relative to Metallica standalone). The opportunities for the Merged Entity to attract investment support and to raise future capital either from its more diversified shareholder register or external parties is enhanced and may be potentially completed at a lower cost.
Strategic Investor and Funder	If the Arrangement was to proceed, Pala will hold approximately 29% interest in the Merged Entity (or more if it exercises warrants it holds). This will further align the interest of Pala as a cornerstone investor with that of the Merged Entity (Shareholders should refer to Metallica's Merger Presentation dated 13 November 2018 on the ASX for more information on Pala). This may provide the market and other potential investors with additional confidence in the Merged Entity.
Synergies and cost savings with Melior through the Arrangement	Metallica and Melior both operate in the resources industry and require some shared business and operational inputs. Through the Arrangement, the Merged Entity will potentially realise and benefit from synergies between Metallica and Melior in terms of cost savings, more efficient use of resources and complementary skills. Particularly, under the Arrangement, the Merged Entity will consist of three directors from each of Metallica and Melior allowing shareholders of the Merged Entity to benefit from a broader board and management team.
The Arrangement is completed with scrip consideration	The Arrangement enables the acquisition of Melior to be completed using Metallica shares (assuming that cash is not required for the Dissent Procedures) and does not require a capital raising by Metallica for the Arrangement to proceed.
A superior proposal has not emerged	The Directors of Metallica are of the view that the Arrangement represents a beneficial outcome for Shareholders and they have instructed us that as at the date of this Report, Metallica has not received a superior proposal.

Source: BDOCF analysis

Figure 2.2 shows the market capitalisation of Metallica as a percentage of the combined market capitalisations of Metallica and Melior. The red line shows the proportion of the Merged Entity attributable to Metallica Shareholders as defined by the Exchange Ratio under the Arrangement.

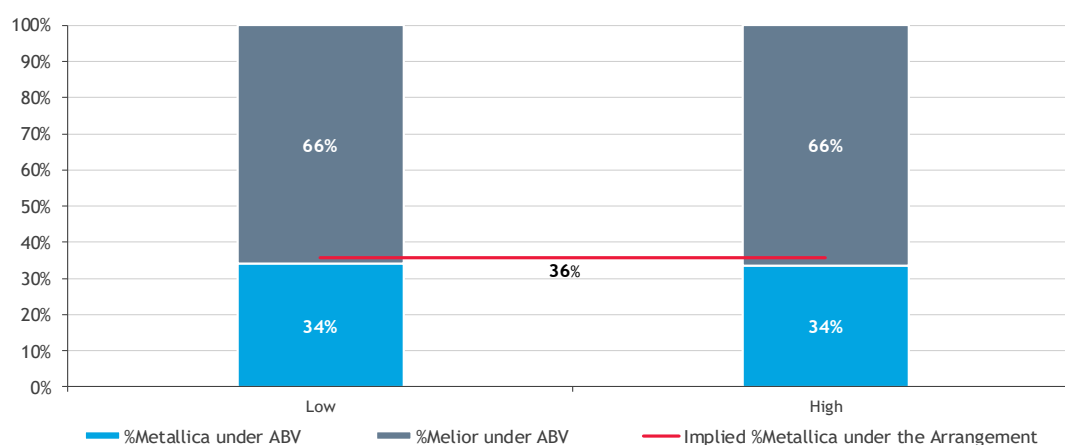
**Figure 2.2: Percentage of Metallica Market Capitalisation Historically Relative to Metallica and Melior Total Market Capitalisation vs Percentage Share of Metallica Shareholding in the Merged Entity (last 12 months)**



Source: Capital IQ and BDOCF analysis

Figure 2.3 outlines the asset based value of Metallica as a percentage of the combined asset based value we have calculated for Metallica and Melior. The red line shows the proportion of the Merged Entity attributable to Metallica Shareholders as defined by the Exchange Ratio under the Arrangement, ignoring capitalised overhead adjustments to both Metallica and the Merged Entity.

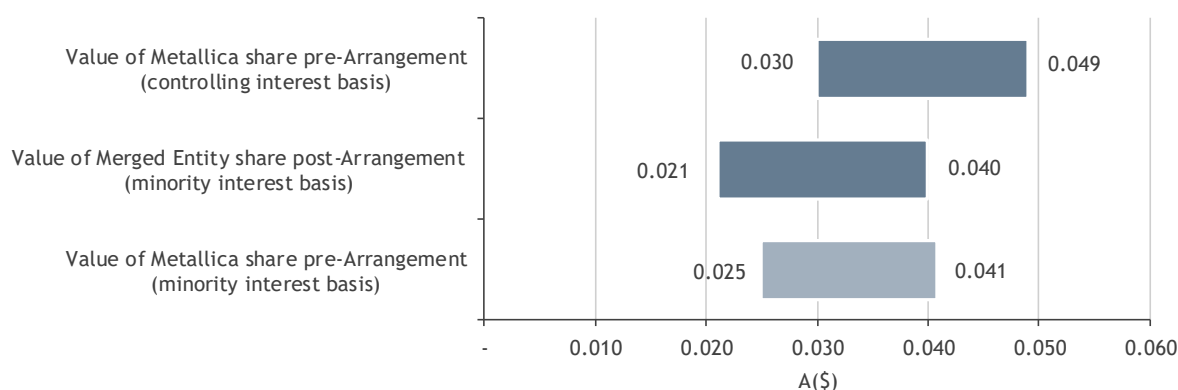
**Figure 2.3: Percentage of Metallica Calculated Asset Value and Melior Asset Value vs Percentage Share of Merged Entity attributable to the Metallica Shareholders under the Arrangement, ignoring capitalised overhead adjustments**



Source: Capital IQ and BDOCF analysis

1 Note: The above graph does not incorporate the impact of dilution from warrants and options on issue. However, we do not view the impact of these as material to Figure 2.2.

**Figure 2.4: Valuation Ranges of the Arrangement Assuming Minority Interest Basis for Metallica Pre-Arrangement**



Source: BDOCF analysis

Table 2.3 below outlines the potential disadvantages of the Arrangement to Shareholders.

**Table 2.3: Potential Disadvantages of the Arrangement**

Disadvantage	Explanation
Dilution of Shareholders	<p>Prior to the Arrangement, Shareholders collectively owned 100% of Metallica shares. If the Arrangement is implemented, the maximum ownership interest in the Merged Entity Shareholders can collectively hold is 36%, which represents a minority interest.</p> <p>Shareholders collectively may prefer to retain a 100% interest in Metallica rather than a minority interest in the Merged Entity.</p> <p>In particular, Shareholders are currently predominately exposed to the Urquhart Bauxite Project. Post the Arrangement, Shareholders would see their exposure to the Urquhart Bauxite Project diluted and their exposure to the Goondicum Project increased.</p>
Shareholder with a major holding in the Merged Entity and Shareholder concentration	<p>Metallica must obtain in excess of 50% of votes from its shareholders to pass an ordinary resolution. In order to pass a special resolution, Metallica is required to obtain votes from 75% or more of its shareholders.</p> <p>Post the Arrangement, Pala will hold an approximate 29% interest in the Merged Entity (or more if it exercises warrants it holds). Any special resolutions will require Pala's approval as Pala can unilaterally block special resolutions. It may also be possible for a smaller number of shareholders to pass an ordinary (or special) resolution, or block an ordinary resolution as a consequence of the shareholder with such a large holding within the Merged Entity.</p> <p>It should be noted that the shareholding of Melior is relatively concentrated (see Section 6.3.1) and if a sufficient number of these shareholders were to vote in the same manner, they may control the activities of the Merged Entity.</p>
Additional risk exposures	<p>Along with the benefits, Shareholders will also be exposed to the risks of Melior post the Arrangement, relative to the risks they are currently exposed to as shareholders in Metallica. The changed factors include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>▶ Less collective control as minority shareholders in the Merged Entity;</li> <li>▶ Increased debt (refer below);</li> <li>▶ Risks associated with the development and operation of the Goondicum Project, including realised recovery rates. If expected recovery rates are not realised as anticipated by Metallica and Melior, the Goondicum Project may become uneconomical (refer to Section 9.2.4);</li> <li>▶ Exposure to risks associated with ilmenite and apatite pricing. There are prices at which ilmenite prices have traded in the past that may result in the Goondicum Project being uneconomical (refer to Section 9.2.4).</li> </ul> <p>Notwithstanding the above, it should be noted that the Urquhart Bauxite Project also has significant risk factors and may not proceed if certain historical bauxite prices were to be forecast and/or persist over time.</p>

Disadvantage	Explanation
Increased debt of the Merged Entity as a consequence of significant interest bearing debts of Melior.	<p>While Metallica has no interest bearing debt, Melior has material debts. The Pala Loan (currently drawn to approximately US\$15.1 million or A\$20.5 million post the second tranche drawdown in November 2018) and the Hainan Wensheng Loan (currently drawn to approximately US\$2.5 million or A\$3.5 million) are material liabilities. The Merged Entity is not expected by Management to generate positive cash flow until the second quarter of 2019 and in the meantime these debts will likely increase. The Pala Loan is provided by the same group that holds a significant amount of equity in Melior, and this group will hold 29% of the equity in the Merged Entity (or more if it exercises warrants it holds) post the Arrangement.</p>
	<p>We note that there are debt covenants associated with the Pala Loan, as detailed in Section 4.5.1. We understand the start-up of the plant as at the date of this Report is progressing as budgeted and November production results are expected to exceed budget. We have also performed high level sensitivity analysis on the Pala Loan covenants, and are comfortable that there is a reasonable prospect that covenants will not be breached. Notwithstanding, there is no guarantee these covenants will be met and there is not an insignificant risk that the Pala Loan covenants will be breached.</p>
	<p>Should the Goondicum Project not proceed as anticipated (e.g. with lower volumes and/or recovery rates and/or plant availability), or prices for its products decline relative to current expectations, covenant breaches may occur.</p> <p>We have set out below selected sensitivity estimates which would need to be exceeded, based on the same assumptions adopted for our valuation of Melior in Section 9, for there to be a breach of the covenants:</p> <ul style="list-style-type: none"> <li>▶ A sustained decrease in the ilmenite price of approximately 10% for a period of time sufficient to impact the covenants;</li> <li>▶ A sustained absolute decrease in ilmenite recovery of approximately 7% for a period of time sufficient to impact the covenants;</li> <li>▶ A sustained increase in operating expenditure of approximately 9% for a period of time sufficient to impact the covenants; and</li> <li>▶ A sustained increase in exchange rates of approximately 11% for a period of time sufficient to impact the covenants.</li> </ul> <p>Each of the above mentioned movements in key variables would need to occur for a period of time sufficient to impact compliance with the Pala Loan covenants in the relevant period. Our sensitivity analysis indicates that there is a higher risk of covenant breaches in the short term and during the ramp up phase of the Goondicum Project relative to later periods of operation.</p> <p>Each sensitivity is calculated in isolation and these are not the only variables which could lead to a breach of covenants.</p> <p>The Merged Entity may be able to mitigate issues presented by breaches through negotiating with Pala or other means. We note Pala have provided waivers to historical breaches and loan terms, and we are instructed by Melior management that Pala have demonstrated their willingness to accommodate reasonable requests in this regard. Pala may continue to provide waivers in relation to any future covenant breaches, however there is no guarantee that Pala will be accommodating.</p> <p>Notwithstanding this, in the event that the breach cannot be easily resolved, the Merged Entity could mitigate or remedy this by raising capital and/or taking other measures which may have negative consequences for Shareholders (including further dilution).</p>
Metallica cash may be required for the Goondicum Project	<p>Unless current covenant arrangements are renegotiated and/or capital is otherwise raised by the Merged Entity, to satisfy current working capital covenants for the Pala Loan in Melior, the Goondicum Project will require some or all of Metallica's cash balance. In these circumstances, some or all of the cash balance currently held by Metallica will not be available for other activities.</p>
There is a potential for a significant number of Metallica shares to be sold on the open market	<p>If the Arrangement proceeds, approximately 580 million Metallica shares will be issued. If the holders of these shares elect to sell some (or all) of them on the open market, then this may place downward pressure on the share trading price of Metallica if an increased supply of Metallica shares sufficiently outweighs the demand for Metallica shares.</p>

Source: BDOCF analysis



### 2.3.3 Position of Shareholders if the Arrangement is Not Implemented

Table 2.4 below outlines the possible position of Shareholders in the event that the Arrangement is not implemented. We note that the Arrangement may not proceed for a number of reasons including, but not limited to, the conditions precedent to the Arrangement not being satisfied (refer to Section 4.2 of this Report).

**Table 2.4: Position of Shareholders if the Arrangement is Not Implemented**

Position of Shareholders	Explanation
Continued shareholding in Metallica	If the Arrangement is not implemented, Shareholders will collectively continue to hold all the shares in Metallica. Shareholders will continue to be exposed to the risks and opportunities associated with the ownership of Metallica shares.
Metallica will continue to look for other acquisitions	If the Arrangement does not proceed, the Directors of Metallica have advised us that the Company will continue to progress its current assets and seek other acquisition opportunities in an attempt to expand the Company over time.
Share trading price may be materially different to recent share trading prices .	If the Arrangement does not proceed, the price of Metallica shares may materially change relative to recent trading prices and the change in price may be negative.
Metallica will continue to fund its overheads as a listed company in amounts that are disproportionate to the value of its assets.	Metallica has large overheads relative to the value of its assets. The Company will continue to incur these overheads if the Arrangement is not approved and its cash balance will reduce accordingly. Further, even if the Urquhart Bauxite Project proceeds, significant cash flows (relative to the size of the project) will be used for overheads in Metallica's current structure. Metallica has advised that they have been assessing opportunities for complementary asset acquisitions for many years and they have not been able to identify and progress viable alternate acquisitions in that time. Based on recent development to date, it seems that there is little near term prospect for Metallica to gain the scale which is appropriate to support its overhead structure.
Non-recoverable costs	Metallica will incur costs in relation to the Arrangement irrespective of whether or not the Arrangement is implemented. Metallica will not be able to recover the costs that it has incurred in relation to the Arrangement in the event that the Arrangement is not approved and/or implemented. In addition to its own costs, Metallica may be required to pay a break fee of up to \$300,000 to Melior under certain circumstances, which are set out in the Arrangement Agreement.

Source: BDOCF analysis

### 2.3.4 Assessment of the Reasonableness of the Arrangement

In our opinion, after considering the advantages, disadvantages and other considerations set out in this Report, it is our view that, in the absence of any other information or a superior proposal, the Arrangement is **Reasonable** to Shareholders as at the date of this Report.

## 2.4 Our Opinion

Under RG 111, the Arrangement is considered to be 'reasonable' if it is 'fair'. It may also be possible to conclude that the Arrangement is 'reasonable' if there are sufficient valid reasons for the approval, notwithstanding that the Arrangement may not be 'fair' to the shareholders.

In our opinion, in the absence of any other information or a superior offer, the Arrangement is **Not Fair but Reasonable** to Shareholders as at the date of this Report.

Shareholders must have regard to the information set out in the balance of this Report, including the appendices, which sets out the technical report we have relied upon for our opinion, and the Important Information set out in Section 3, before deciding whether to vote in favour of or against the Arrangement.



### 3.0 Important Information

#### 3.1 Read this Report, and Other Documentation, in Full

This Report, including Part I and Part II and the appendices (including the Technical Specialist's Report completed by AMC Consultants Pty Ltd) should be read in full to obtain a comprehensive understanding of the purpose, scope, basis of evaluation, limitations, information relied upon, analysis, assumptions underpinning our work and our findings.

Other information provided to Shareholders in conjunction with this Report should also be read in full, including the Notice of Meeting.

#### 3.2 Shareholders' Individual Circumstances

Our analysis has been completed and our conclusions expressed at an aggregate level having regard to Shareholders as a whole. BDOCF has not considered the impact of the Arrangement on the particular circumstances of individual Shareholders. Individual Shareholders may place a different emphasis on certain elements of the Arrangement relative to the emphasis placed in this Report. Accordingly, individual Shareholders may reach different conclusions as to whether or not the Arrangement is fair and reasonable, and in their best interests, in their individual circumstances.

The decision of an individual Shareholder to vote in favour of or against the Arrangement is likely to be influenced by their particular circumstances and accordingly, Shareholders are advised to consider their own circumstances and seek their own independent advice.

Voting in favour of or against the Arrangement is a matter for individual Shareholders based on their expectations as to the expected value and future prospects and market conditions together with their particular circumstances, including risk profile, liquidity preference, portfolio strategy and tax position. Shareholders should carefully consider all information provided to them. Shareholders who are in doubt as to the action they should take in relation to the Arrangement should consult their professional adviser.

With respect to taxation implications of the Arrangement, it is strongly recommended that Shareholders obtain their own taxation advice, tailored to their own particular circumstances.

#### 3.3 Scope

In this Report we provide our opinion on whether the Arrangement is fair and reasonable to Shareholders.

This Report has been prepared at the request of the Directors for the sole benefit of Shareholders entitled to vote, to assist them in their decision to vote in favour of or against the Arrangement. This Report is to accompany the Notice of Meeting to be sent to Shareholders to consider the Arrangement and was not prepared for any other purpose. Accordingly, this Report and the information contained herein may not be relied upon by anyone other than the Directors and Shareholders without our written consent. We accept no responsibility to any person other than the Directors and Shareholders in relation to this Report.

This Report should not be used for any other purpose and we do not accept any responsibility for its use outside this purpose. Except in accordance with the stated purpose, no extract, quote or copy of this Report, in whole or in part, should be reproduced without our written consent, as to the form and context in which it may appear.

We have consented to the inclusion of this Report with the Notice of Meeting. Apart from this Report, we are not responsible for the contents of the Notice of Meeting or any other document associated with the Arrangement. We acknowledge that this Report may be lodged with regulatory authorities to obtain the relevant approvals prior to it being made available to Shareholders.

The scope of procedures we have undertaken has been limited to those procedures required in order to form our opinion. Our procedures did not include verification work nor, constitute an audit or assurance engagement in accordance with Australian Auditing and Assurance Standards. In preparing this Report we considered the necessary legal requirements and guidance of the Corporations Act, ASIC regulatory guides and commercial practice.

In forming our opinion, we have made certain assumptions and outline these in this Report including:

- ▶ We have performed our analysis on the basis that the conditions precedent (set out in Article 5 of the Arrangement Agreement) to the Arrangement are/will be satisfied;
- ▶ That matters such as title to all relevant assets, compliance with laws and regulations and contracts in place are in good standing, and will remain so, and that there are no material legal proceedings, other than as publicly disclosed;
- ▶ All information which is material to a Shareholders' decision on the Arrangement has been provided and is complete, accurate and fairly presented in all material respects;
- ▶ ASX announcements and other publicly available information relied on by us is accurate, complete and not misleading;

- ▶ If the Arrangement is implemented, that it will be implemented in accordance with the stated terms;
- ▶ The legal mechanism to implement the Arrangement is correct and effective;
- ▶ There are no undue changes to the terms and conditions of the Arrangement or complex issues unknown to us; and
- ▶ Other assumptions, as outlined in this Report.

In this Report we have not provided any taxation, legal or other advice of a similar nature in relation to the Arrangement. We understand other advisers have provided advice on those matters to Metallica in relation to the Arrangement.

Metallica has acknowledged that the Company's engagement of BDOCF is as an independent contractor and not in any other capacity including a fiduciary capacity.

The statements and opinions contained in this Report are given in good faith and are based upon our consideration and assessment of information provided by the Board, executives and management of all the entities.

### 3.4 Purpose of this Report

An independent expert, in certain circumstances, must be appointed to meet the requirements set out in the Corporations Act, the Corporation Regulations 2001 ('the Regulations'), the regulatory guides ('RGs') published by the Australian Securities and Investments Commission ('ASIC') and in some cases the listing requirements of the relevant exchanges. These requirements have been set out in Sections 3.4.1 and 3.4.2 below.

#### 3.4.1 Requirements of the Corporations Acts

Section 606 of the Corporations Act states that, subject to the exceptions set out in Section 611, a 'relevant interest' in issued voting shares in a listed company cannot be increased from 20% or below to more than 20%, or increasing from a starting point that is above 20% and below 90%. Broadly, a 'relevant interest' is defined as an interest giving the holder the power to control the right to vote or dispose of shares.

If the Arrangement is approved and implemented, Pala will be issued 264,214,720 ordinary Metallica shares and 66,825,000 Metallica options. Following the Arrangement, Pala's relevant interest in the Merged Entity will increase from below 20% to more than 20%. In these circumstances, an exemption from Section 606 must therefore be sought under Item 7 of Section 611 of the Corporations Act.

Item 7 of Section 611 allows a party to gain a relevant interest in shares of a public company that would otherwise be prohibited under Section 606 of the Corporations Act if the Arrangement is approved in advance by a resolution passed at a general meeting of the company, and:

- ▶ No votes are cast in favour of the resolution by any party who is associated with the party acquiring the shares, or by the party acquiring the shares; and
- ▶ There was full disclosure of all information known by both the party proposing to make the acquisition, their associates and the company in relation to the transaction which was material to a decision on how to vote on the resolution.

Regulatory Guide 74 'Acquisitions agreed to by Shareholders' states that the obligation to supply shareholders with all material information can be satisfied by the non-associated directors of Metallica by either:

- ▶ Undertaking a detailed examination of the Arrangement themselves if they consider that they have sufficient expertise; or
- ▶ Commissioning an independent expert's report.

We have been requested to prepare this independent expert's report to provide additional information to Shareholders to assist them to form a view on whether to vote in favour of or against the Arrangement.

#### 3.4.2 Listing Requirements

##### ASX Listing Rule 7.1

ASX Listing Rule 7.1 prohibits a listed entity, except in certain circumstances, from issuing more than 15% of its total number of outstanding ordinary security as new equity securities within a 12-month period ('the 15% Threshold'). The issue will require prior approval from the majority of the entity's disinterested shareholders or fall under one of the exceptions to ASX Listing Rule 7.1. As part of the Arrangement, Metallica will be issuing Metallica shares in exchange for Melior shares in excess of the 15% Threshold and will require shareholder's approval.

#### ASX Listing Rule 10.11

ASX Listing Rule 10.11 requires that an entity must obtain shareholder's approval to issue securities to a related party unless the issue falls under the exceptions set out in ASX Listing Rule 10.12. If the Arrangement proceeds, Martyn Buttenshaw, the managing director of Pala will become a non-executive director of the Merged Entity. Pala will qualify as a related party to Metallica and the issue of securities to Pala will require Shareholder approval in accordance with ASX Listing Rule 10.11.

This Report has been prepared to assist Shareholders vote on the Arrangement in accordance with the requirements of ASX Listing Rules 7.1 and 10.11.

#### 3.4.2 ASIC Regulatory Guide 74

ASIC RG 74: *Acquisitions approved by members* state that certain material information should be disclosed to an entity's shareholders where the entity is seeking exemption to Section 606 of the Corporation Act through Item 7 of Section 611. In particular, the analysis of the proposed acquisition in compliance with RG 111, either in the form of an independent expert report or a detailed directors' report, should be provided to the company's shareholders, in order to satisfy the obligation to disclose all material information on how to vote on the item 7 resolution.

This Report has been prepared to assist Directors to comply with the requirements of ASIC RG 74.

### 3.5 Current Market Conditions

Our opinion and the analysis set out in this Report is based on economic, market and other conditions prevailing at the date of this Report. Such conditions can change significantly over relatively short periods of time and may have a material impact on the results presented in this Report and result in any valuation or other opinion becoming quickly outdated and in need of revision.

In circumstances where we become aware of and believe that a change in these conditions, prior to the EGM, results in a material statement in this Report becoming misleading, deceptive or resulting in a material change in valuation, we will provide supplementary disclosure to Metallica. BDOCF is not responsible for updating this Report following the EGM or in the event that a change in prevailing circumstance does not meet the above conditions.

We note the value of projects in this Report may change materially in short periods of time with changes in commodity prices and as milestones in development are met or missed (among other variables). It will be important for Metallica to keep Shareholders abreast of developments that impact Metallica and Melior and their developments.

### 3.6 Reliance on Information

Metallica recognises and confirms that, in preparing this Report, except to the extent to which it is unreasonable to do so, BDOCF, BDO (QLD) Pty Ltd or any of the partners, directors, agents or associates (together 'BDO Persons'), will be using and relying on publicly available information and on data, material and other information furnished to BDO Persons by Metallica, its management, and other parties, and may assume and rely upon the accuracy and completeness of, and is not assuming any responsibility for independent verification of, such publicly available information and the other information so furnished.

Unless the information we are provided suggests the contrary, we have assumed that the information provided was reliable, complete and not misleading, and material facts were not withheld. The information provided was evaluated through analysis, inquiry and review for the purpose of forming an opinion as to whether or not the Arrangement is fair and reasonable.

We do not warrant that our inquiries have identified or verified all of the matters which an audit, extensive examination or due diligence investigation might disclose. In any event, an opinion as to whether a corporate transaction is fair and reasonable is in the nature of an overall opinion rather than an audit or detailed investigation.

It is understood that the accounting information provided to us was prepared in accordance with generally accepted accounting principles.

Where we relied on the views and judgement of management the information was evaluated through analysis and inquiry to the extent practical. Where we have relied on publicly available information, we have considered the source of the information and completed our own analysis to assist us to determine the reliability of the information we have relied on. However, in many cases, the information we have relied on is often not capable of external verification or validation and on that basis we provide no opinion or assurance on the information.

The Directors represent and warrant to us, for the purpose of this Report, that all information and documents furnished by Metallica (either by management directly or through advisors) in connection or for use in the preparation of this Report do not contain any untrue statements of a material fact or omit to state a material fact necessary in order to make the statements therein. We have received representations from the Directors in relation to the completeness and accuracy of the information provided to us for the purpose of this Report.

The Directors of Melior have represented and warrant to us, for the purpose of this Report, that all information and documents furnished by Melior (either by management directly or through advisors) in connection or for use in the preparation of this Report do not contain any untrue statements of a material fact or omit to state a material fact necessary in order to make the statements therein. We have received representations from the Directors of Melior in relation to the completeness and accuracy of the information provided to us for the purpose of this Report.

Under the terms of our engagement, Metallica has agreed to indemnify BDO Persons against any claim, liability, loss or expense, costs or damage, arising out of reliance on any information or documentation provided, which is false or misleading or omits any material particulars, or arising from failure to supply relevant documentation or information.

We also note that this Report refers to and places reliance on the technical report completed by AMC Consultants Pty Ltd ('AMC'), attached at Appendix B. While we have made enquiries of AMC to critically analyse their work and consider their independence and competence, we are not responsible for their report or its content.

### 3.7 Glossary

Capitalised terms used in this Report have the meanings set out in the glossary. A glossary of terms used throughout this Report is set out immediately following the Table of Contents at the start of this Report.

All dollar ('\$') references in this Report are in Australian dollars unless otherwise stated.

### 3.8 Sources of Information

This Report has been prepared using information obtained from sources including the following:

- ▶ Metallica annual report for the year ended 30 June 2016, 2017 and 2018;
- ▶ Melior annual report for the year ended 30 June 2016, 2017 and 2018;
- ▶ Metallica management financial balances as at 31 October 2018;
- ▶ Melior management financial balances as at 31 October 2018;
- ▶ Metallica ASX announcements;
- ▶ Melior SEDAR announcements;
- ▶ Metallica Notice of Meeting for the EGM dated on or about 21 December 2018;
- ▶ Arrangement Agreement dated 12 September 2018;
- ▶ Draft Court Document dated 15 October 2018;
- ▶ The Goondicum Preliminary Economic Assessment dated April 2018;
- ▶ Urquhart Bauxite Pre-Feasibility Study dated September 2018;
- ▶ The DCF models provided by Metallica and Melior and reviewed by AMC;
- ▶ The AMC Technical Specialist's Report dated 19 November 2018 ('the AMC Report');
- ▶ Capital IQ;
- ▶ IBISWorld;
- ▶ Consensus Economics;
- ▶ Various transaction documents provided by the management of Metallica, Melior and their advisors;
- ▶ Other research publications and publicly available data as sourced throughout this Report; and
- ▶ Discussions and other correspondence with Metallica, management and their advisers.

### 3.9 APES 225 Valuation Services

This assignment is a Valuation Engagement as defined by Accounting Professional & Ethical Standards Board professional standard APES 225 *Valuation Services* ('APES 225'). A Valuation Engagement is defined by APES 225 as 'an Engagement or Assignment to perform a Valuation and provide a Valuation Report where the Valuer is free to employ the Valuation Approaches, Valuation Methods, and Valuation Procedures that a reasonable and informed third party would perform taking into consideration all the specific facts and circumstances of the Engagement or Assignment available to the Valuer at that time.'

This Valuation Engagement has been undertaken in accordance with the requirements set out in APES 225.

### 3.10 Forecast Information

Any forecast financial information referred to in this Report has originated from the Company's and Melior's management ('Management') and adopted by the Directors in order to provide us with a guide to the potential financial performance of Metallica and/or Melior. Notwithstanding, in certain circumstances we have adjusted the forecast assumptions provided by Management for use in our valuation work. Forecasts we have adopted for our valuation work will not be the same for the forecasts provided by Management.

There is also a considerable degree of subjective judgement involved in preparing forecasts since they relate to event(s) and transaction(s) that have not yet occurred and may not occur. Actual results are likely to be different from the forecast financial information since anticipated event(s) or transaction(s) frequently do not occur as expected and the variation between actual results and those forecast may be material.

Forecasts are based relate to future event(s) and/or transaction(s) expected to occur and actions that Management expect to take and are also subject to uncertainties and contingencies, which are often outside the control of Metallica and/or Melior. Evidence may be available to support assumptions on which the forecast is based however such evidence is generally future-oriented and therefore speculative in nature.

BDOCF cannot and does not provide any assurance that any forecast is representative of results or outcomes that will actually be achieved. While we have considered the forecast information to the extent we considered necessary to complete the analysis set out in this Report, we have not been engaged to provide any form of assurance conclusion on any forecast information set out in this Report. We disclaim any assumption of responsibility for any reliance on this Report, or on any forecast to which it relates, for any purpose other than that for which it was prepared. We have assumed, and relied on representations from certain members of Management, that all material information concerning the prospects and proposed operations of Metallica and Melior have been disclosed to us and that the information provided to us for the purpose of our work is true, complete and accurate in all respects. We have no reason to believe that those representations are false.

### 3.11 Qualifications

BDOCF has extensive experience in the provision of corporate finance advice, including takeovers, valuations and acquisitions. BDOCF holds an Australian Financial Services Licence issued by ASIC for preparing expert reports pursuant to the Listing Rules of the ASX and the Corporations Act.

BDOCF and its related parties in Australia have a wide range of experience in transactions involving the advising, auditing or expert reporting on companies that have operations domestically and in foreign jurisdictions. BDO in Queensland and in Australia is a national association of separate partnerships and entities and is a member of the international BDO network of individual firms.

Scott Birkett and Steven Sorbello have prepared this Report with the assistance of staff members. Mr Birkett, BBsMn/BCom and CFA, and Mr Sorbello, BCom/LLB, CA, are directors of BDOCF. Both Mr Birkett and Mr Sorbello have extensive experience in corporate advice and the provision of valuation and professional services to a diverse range of clients, including large private, public and listed companies, financial institutions and professional organisations. Mr Birkett and Mr Sorbello are considered to have the appropriate experience and professional qualifications to provide the advice offered within this Report.

**BDO Corporate Finance (QLD) Ltd**



**Scott Birkett**  
Director



**Steven Sorbello**  
Director

## PART II: INFORMATION SUPPORTING OUR OPINION ON THE PROPOSED TRANSACTION

### 4.0 Overview of the Arrangement

This section sets out an overview of the Arrangement and is structured as follows:

- ▶ Section 4.1 provides a brief description of the Arrangement;
- ▶ Section 4.2 summarises the conditions precedent which, if not waived, must be satisfied prior to implementation of the Arrangement; and
- ▶ Section 4.3 details the Directors strategic rationale for the Arrangement.

This section is a summary only and should not be treated as a complete description of the Arrangement. Shareholders should refer to the Arrangement Agreement and the Notice of Meeting for detailed and additional information relating to the Arrangement.

#### 4.1 Summary of the Arrangement

On 13 September 2018, Metallica announced on the Australian Securities Exchange ('ASX') that it had entered into the Arrangement Agreement dated 12 September 2018 with Melior by way of a court-approved Plan of Arrangement as stipulated in the Arrangement Agreement. As part of the Arrangement, Metallica will:

- ▶ Acquire all outstanding common shares of Melior in exchange for Metallica ordinary shares at the Exchange Ratio of twenty Metallica shares for every one Melior share;
- ▶ Pay fair value for Melior shares to the Melior shareholders electing to receive cash for their Melior shares under the Dissent Procedures defined in the Arrangement Agreement;
- ▶ Issue Metallica Replacement Options for outstanding Melior options in the same Exchange Ratio as per the terms of the Arrangement Agreement; and
- ▶ Issue a Metallica Replacement Warrant in Metallica for each Melior warrant outstanding in the same Exchange Ratio as per the terms of the Arrangement Agreement.

Post the Arrangement, Melior shareholders will hold approximately 64% of the Merged Entity and Metallica shareholders will hold approximately 36% of the Merged Entity (assuming no purchase of shares under the Dissent Procedures) excluding the impact of options and warrants being exercised. On completion of the Arrangement, the Merged Entity will remain listed on the ASX and Melior will be de-listed from the TSXV. We understand from Metallica Management that post the Arrangement, the Merged Entity will have to file its accounts to the Canadian SEDAR reporting system, but these accounts will have already been prepared and audited for Australian reporting purposes.

In addition to the matters set out above, other components to the Arrangement include:

- ▶ **Changes to the board of Directors:** the board of Directors of the Merged Entity shall consist of six directors appointed as follows:
  - Three from the current Metallica board - Peter Turnbull, Simon Slesarewich and Ian Jacobson; and
  - Three from Melior - Mark McCauley, Martyn Buttenshaw and George Lloyd;
- ▶ **Name change:** the name of the Merged Entity will be changed to a name agreed to by Metallica and Melior; and
- ▶ **Management change:** Metallica will enter into employment agreements with any Melior management and staff whose employment shall continue with the Merged Entity following the completion of the Arrangement. The executive management of the Merged Entity shall consist of:
  - Simon Slesarewich, as Managing Director;
  - Mark McCauley, as Executive Director; and
  - Jonathan Mattiske, as Chief Financial Officer.

The Arrangement will be subject to both Australian and Canadian regulatory approvals as well as the conditions precedents (refer to Section 4.2). For more information regarding the Arrangement, Shareholders should refer to the Arrangement Agreement in Metallica's ASX announcement on 13 September 2018 and the information provided in the Notice of Meeting.



## 4.2 Key Conditions of the Arrangement

This section sets out key conditions precedent and other matters relevant to the Arrangement. We recommend that Shareholders consider all requirements of the Arrangement set out in the Arrangement Agreement.

Key conditions precedent that must be satisfied (or waived) in order for the Arrangement to be implemented include:

- ▶ An interim order to be issued by the Supreme Court of British Columbia ('the Court') in relation to the Arrangement ('the Interim Order') providing for (among other things), the calling and holding of a Melior meeting ('the Melior Meeting');
- ▶ The Arrangement to be approved at the Melior Meeting by the Melior shareholders in accordance with the provision of the British Corporations Act (British Columbia) ('BCBCA') and the Interim Order;
- ▶ The Arrangement to be approved by the Metallica shareholders at the EGM in accordance with the provision of the Corporation Act and the requirements of any applicable regulatory authority including the rules and policies of the ASX;
- ▶ The granting of a final order by the Court ('the Final Order') pursuant to subsection 291 of the BCBCA approving the Arrangement;
- ▶ Holders of not more than 5% of the issued and outstanding Melior shares exercise their dissent rights under the Dissent Procedures;
- ▶ The ASX shall conditionally approving the listing thereon, of the Metallica shares to be issued as part of the Arrangement; and
- ▶ An Independent Expert's Report to Metallica shareholders concluding that the Arrangement is reasonable.

## 4.3 The Dissent Procedures

Melior shareholders may exercise Dissent Procedures (as defined in the Arrangement Agreement) with respect to Melior shares in relation to the Arrangement, whereby Melior Shareholders are ultimately entitled to be paid fair value for their Melior shares. We understand that the fair value of the Melior shares will be determined by the Court (or an arbitrator or independent expert as ordered by the Court), unless Melior and the dissenting Melior shareholders are able to agree on a 'fair value'.

We have been advised by the Directors that dissenting shareholders will be required to fund their own legal costs to exercise the Dissent Procedures. It is the Directors' view that due to the highly concentrated nature of the Melior share register and the fact that this provision is rarely taken up in Canada, there is unlikely to be any Melior shareholders exercising the Dissent Procedures.

## 4.4 Strategic Rationale for the Arrangement

We are instructed that the Directors view on the strategic rationale for the Arrangement include:

- ▶ Metallica shareholders will gain exposure to a portfolio of complementary mineral sands projects within Queensland. The Melior portfolio is led by the Goondicum Ilmenite Project ('the Goondicum Project'), which Melior indicate is fully funded and has an off-take agreement in place for the majority of the product produced by the project. The Directors believe that the recently commenced Goondicum Project is a value accretive opportunity to Metallica shareholders;
- ▶ The Goondicum Project is forecasted to be cash flow positive in the second quarter of CY2019. The cash flows generated by the Goondicum Project have the potential to enable Metallica to realise further value from its other assets and joint-ventures;
- ▶ The Arrangement will enable the Merged Entity to benefit from larger market scale and diversification. This includes an enhanced capital market profile, more diversified shareholder register and an overall stronger combined balance sheet;
- ▶ Both Metallica and Melior are Brisbane based and the Merged Entity will benefit from synergies including cost savings, complimentary skills and more efficient utilisation of resources; and
- ▶ Shareholders of the Merged Entity will benefit from a strengthened board and management team which will consist of three directors from each of Metallica and Melior. Highly capable employees from Metallica and Melior will also be retained to drive operational efficiencies.

The boards of both Metallica and Melior have announced that they unanimously recommend the Arrangement and that both boards intend to vote in favour of all resolutions put to respective shareholders. Melior has entered into binding agreements representing approximately 80% of Melior shares to vote in favour of the Arrangement.

## 4.5 Melior's Loans Under the Arrangement

### 4.5.1 Loan from Pala

On 9 August 2018, Melior entered a loan agreement with Pala ('the Pala Loan Agreement') which consolidated its two existing loan facilities into a single facility for a total principal amount of US\$13.75 million ('the Pala Loan'). The Pala Loan has a 24-month maturity date and also provides for the cancellation of the equity conversion option under the old facilities. The Pala Loan is to be paid in two tranches as follows:

- ▶ Tranche 1: US\$11.75 million (less arrangement fees of 2%, original issue discount of 5% and legal fees to Pala). Tranche 1 must be repaid within two years of the date it was first advanced (being 9 August 2018 for a maturity date of 8 August 2020) unless an extension is agreed; and
- ▶ Tranche 2: US\$2 million (less arrangement fees of 3%, original issue discount of 7% and legal fees to Pala).

The Pala Loan attracts interest of 14% per annum that may be capitalised. In addition, the Pala Loan may be extended by one year at the election of Melior. However, such an extension will incur a fee of 2% of the outstanding principal balance at that time.

In broad terms, if Melior takes out further loans or makes a material asset disposal, proceeds must be applied against the Pala Loan. The Pala Loan Agreement also requires that 70% of any excess cash flow from Melior must be applied against the loan.

Prepayments may be made on the Pala Loan in amounts of US\$1 million (or as otherwise agreed). However, prepayments of the loan attract a 'Prepayment Premium' of nine months' interest or the time left to maturity of the loan (whichever is less). Payment of the interest relating to the relevant prepayment must be made at the same time.

The Pala Loan has the following financial covenants:

- ▶ Net Debt to earnings before interest, tax, depreciation and amortisation ('EBITDA') cannot exceed 3 to 1 for the quarter ending 30 September 2019. The net debt to EBITDA ratio covenant is then applied quarterly thereafter and cannot exceed 3, 2.5 and 2 for the next three subsequent quarters and 1.5 for each subsequent quarter thereafter. For any periods where the prior 12 months would precede 1 July 2019, the covenant shall be measured by annualising the relevant period on a pro rata basis;
- ▶ A monthly current asset surplus above current liabilities of AUD 1 million. This covenant does not commence until 31 January 2019; and
- ▶ EBITDA to Interest Expense ratio of no less than 1 to 1, measured at the quarter ending 30 June 2019, and 2 to 1 for each subsequent quarter thereafter.

For completeness we note that production must begin from the Goondicum Project within 30 weeks of the date of advance of Tranche 1 (being the end of February 2019) or this will also result in a default. However, we understand production has already begun from the Goondicum Project.

We also understand that there are other covenants relating to changes in the nature of Melior's business and the disposal of a material Melior asset which will be theoretically breached if the Arrangement proceeds. We understand that Melior has sought and received approval from Pala relating to the Arrangement. Pala has waived all covenant breaches relating to business changes as a result of the Arrangement proceeding.

For more information, relating to the Pala Loan, refer to Melior's SEDAR announcement dated 24 August 2018.

We are instructed that the Pala Loan will not be secured against the existing Metallica assets if the Arrangement proceeds.

### 4.5.2 Loan from Hainan Wensheng High-Tech Materials Co Ltd ('Hainan Wensheng')

Melior completed and executed a US\$5 million secured loan deed dated 3 April 2018 with Hainan Wensheng ('the Hainan Wensheng Loan'), a large Chinese producer of zircon, ilmenite and rutile products. The Wensheng loan value drawn down occurs in two instalments, as follows:

- ▶ Tranche 1: US\$2.5 million has been advanced on 30 June 2018; and
- ▶ Tranche 2: US\$2.5 million to be provided once 5,000 tonnes of ilmenite has been produced at the Goondicum Project.

The term of the loan is six years from the date of first drawdown (i.e. to 30 June 2024) and will be repaid during the term of an off-take agreement entitling Hainan Wensheng to purchase 600,000 tonnes of ilmenite from the Goondicum Project over a six-year period. The repayments are made based on the tonnes produced and are made at a rate of \$9.26 per tonne, post the first 60,000 tonnes (i.e. repayments are made on 540,000 tonnes) of offtake ilmenite sold or 12 months after Tranche 2 is drawn down (whichever comes first).

The Hainan Wensheng Loan is subordinated to the Pala Loan and payments are suspended if the Pala Loan is in arrears.



The Hainan Wensheng offtake price for ilmenite is based on a base price determined with reference to an African Ilmenite Price ('AIP') (being the average of Kwale and Moma sulphate ilmenite CIF to China), with a premium added to reflect expected quality differences between African Ilmenite and the Goondicum product.

Discounts to determine the offtake price relative to the base price are calculated at percentages between 5% and 12.5%, depending on the level of prevailing base price. Below a certain price threshold, the discount accrues rather than being applied until prices rise again above another threshold. Notwithstanding, any remaining amount remains due at the conclusion of the six-year period.

The pricing mechanism is to be reviewed by the parties each two years in good faith.

Hainan Wensheng will be entitled to purchase 120,000 tonnes per annum, though Melior can elect to sell greater volumes to Hainan Wensheng at its discretion.

If Melior cannot supply ilmenite at the rate of 60,000 tonnes in years 1 or 6 or 120,000 tonnes in years 2 to 5, the loan may be called to a maximum amount of US \$1 million per annum. Any outstanding amount at the conclusion of the six-year term is due and payable at that time.

We understand from Management, that Melior does not require consent from Hainan Wensheng regarding the Arrangement and the Hainan Wensheng Loan is not impacted by the Arrangement proceeding. We understand, for completeness, that Hainan Wensheng has been briefed by Melior and provided details of the Arrangement.

## 5.0 Background of Metallica

This section is set out as follows:

- ▶ Section 5.1 sets out an overview of Metallica;
- ▶ Section 5.2 sets out an overview of the corporate structure of Metallica;
- ▶ Section 5.3 sets out an overview of the equity structure of Metallica;
- ▶ Section 5.4 sets out a summary of Metallica share trading data; and
- ▶ Section 5.5 sets out a summary of the historical financial information of Metallica.

### 5.1 Overview of Metallica

Metallica is an Australian developer and explorer of minerals across Queensland including bauxite, zircon-rutile, silica sands and graphite. Metallica was founded in 1997 and first listed on the ASX in November 2004 with the ticker code 'MLM'.

Metallica's leading project, the Urquhart Bauxite Project ('UBP') (refer to Section 5.1.1) is expected to begin development and operations in the near term. The UBP has been Metallica's focus in recent years, as they concentrated efforts transitioning from a minerals exploration focussed company, to becoming a sustainable and profitable bauxite miner.

Metallica's projects and tenements are further discussed below. Shareholders should refer to the AMC Technical Specialist's Report (attached as Appendix B) for more detailed discussion in relation to Metallica's projects and joint ventures.

#### 5.1.1 Urquhart Bauxite Project (ML 100044, ML 100049)

The UBP is a 50% joint venture ('JV') with Ozore Resources Pty Ltd ('Ozore') and Metallica's wholly-owned subsidiary Oresome Australia Pty Ltd ('Oresome Australia'), with the mining lease held by Oresome Bauxite Pty Ltd, a wholly-owned subsidiary of Oresome Australia. Located 5km southwest of Weipa on the west coast of Queensland's Cape York Peninsula the tenements cover an area of approximately 1,400 hectares. This region in the Cape York Peninsula is world-renowned for its extensive deposits of high-quality, export grade pisolitic bauxite.

A resource estimate updated and reported in November 2016 in accordance with the 2012 JORC Code for the UBP indicated a total mineral resource of 9.5 million tonnes ('Mt'), of which 6.9Mt are measured and indicated. An additional 8.5Mt of lower grade bauxite mineral resource has also been identified for potential beneficiation. Metallica's recent pre-feasibility study of the UBP in September 2018 estimated production to begin in April 2019 with a target production rate of 1.5 million tonnes per annum ('mtpa').

#### 5.1.2 Urquhart Point Heavy Mineral Sands ('HMS') Project (EPM 15268, ML 20669, ML 20737)

The Urquhart Point HMS Project is located adjacent to the UBP and is 3km southwest of Weipa. The project is a 50% JV between Ozore and Oresome Australia Pty Ltd. The JV envisages a basic dry mining and wet processing operation using standard gravity HMS separation to produce a heavy zircon-rutile mineral concentrate.

A modularised HMS processing plant, purpose built in South Africa for the project was delivered in December 2015. However, due to the prices of HMS and the opportunities of the higher value UBP, the plant has been placed into storage.

#### 5.1.3 Cape Flattery Silica Sands Project (EPM 25734)

The wholly-owned Cape Flattery Silica Sands Project is located approximately 200km north of Cairns in North Queensland. Preliminary studies have confirmed the presence of high purity silica sands of silica oxide percentages ranging from 96.9% and 99.6%. Metallica has identified three potential target areas which form the basis for an exploration target developed by Metallica of 20 to 100 Mt. Metallica is currently investigating potential opportunities to access and utilise the existing infrastructure there.

#### 5.1.4 Cape York Project

Metallica through its wholly-owned subsidiary Oresome along with its JV partner Ozore Australia Pty Ltd holds an exploration tenement portfolio of prospective HMS and bauxite zones. The 12 tenements are located in the Western Cape York bauxite province and far North Queensland region in broad proximity of Weipa. Exploration work for the Cape York Project has been placed on hold with a focus on the UBP.

#### 5.1.5 Esmeralda Graphite Project (EPM 25779, EPM 25806, EPM 25807)

The Esmeralda Graphite Project is located near Croydon in North Queensland. Held by Metallica's wholly-owned subsidiary, Touchstone Resources Pty Ltd, the tenements of the Esmeralda Graphite Project cover an area of approximately 376 kilometers squared. A drilling program on the project commenced in October 2015, confirming high purity carbon content minerals were present. Metallica intends to progressively continue exploration work on these tenements whilst focusing on the UBP.

### 5.1.6 Fairview Limestone Project (EPM 25728, EPM 25756)

The Fairview tenements in the project are held under Metallica's wholly-owned subsidiary Phoenix Lime Pty Ltd and are located west of Gladstone. Exploration permits for six sub-blocks are held covering an area of approximately 19.7km<sup>2</sup>.

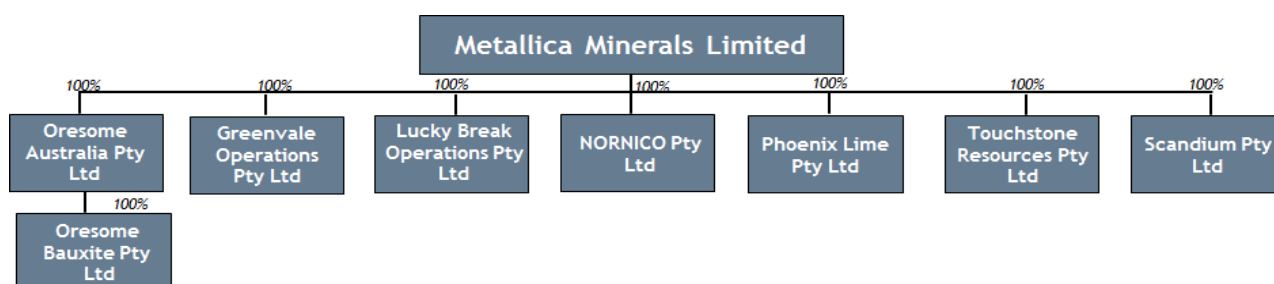
### 5.1.7 Wagina Bauxite Project

In addition to the aforementioned projects, Metallica is also exploring the proposition of the Wagina Bauxite Project in the Solomon Islands. The Wagina Bauxite Project is wholly contained on a granted mining lease (ML 01/2016) covering an area of approximately 48 kilometers squared. The project is currently 75% owned by South West Pacific Bauxite (HK) Ltd ('SWPB'). As announced on ASX on 30 April 2018, Metallica has entered into a secured loan agreement with SWPB in exchange for Metallica being granted a right to carry out exclusive due diligence on Wagina.

## 5.2 Metallica Corporate Structure

Figure 5.1 below highlights the corporate structure for Metallica. Metallica has eight wholly-owned subsidiaries which have been established to hold Metallica's various tenements and/or form JVs with external parties regarding these tenements.

Figure 5.1: Metallica Corporate Structure



Source: Metallica Management

The tenements held in each of the subsidiaries are as follows:

- ▶ Oresome Australia Pty Ltd - JV with Ozore for the UBP and HMS tenements (owns 50% interest in these tenements);
- ▶ Oresome Bauxite Pty Ltd - holds the UBP mining lease;
- ▶ Phoenix Lime Pty Ltd - holds the Fairview Limestone Project tenements;
- ▶ Touchstone Resources Pty Ltd - holds the Esmeralda Graphite Project tenements;
- ▶ Greenvale Operations Pty Ltd, NORNICO Pty Ltd and Scandium Pty Ltd previously held various tenements related to the SCONI Project; and
- ▶ Lucky Break Operations Pty Ltd was an entity setup to capitalise on Metallica's Lucky Break Nickel project however the project has since been sold to Metals Finance Limited in 2013.

## 5.3 Equity Structure of Metallica

### 5.3.1 Ordinary Shares

The top 10 ordinary shareholders of Metallica as at 18 September 2018 are set out in Table 5.1 below. These figures do not consider changes in shareholding arising from the Arrangement.

Table 5.1: Metallica's Top 10 Shareholders

Shareholders	Number of Shares	Percentage Holding
1 Jien Mining Pty Ltd	40,099,678	12.44%
2 Plan-1 Pty Ltd	14,923,023	4.63%
3 J P Morgan Nominees Australia	5,971,925	1.85%
4 Bondline Limited	4,910,966	1.52%
5 Mr Paul Dostal	4,500,000	1.40%
6 Corowa Nominees Pty Ltd	4,380,098	1.36%
7 BNP Paribas Nominees Pty Ltd	3,728,132	1.16%
8 Mrs Carolyn Dow	3,500,000	1.09%
9 MBM Corporation Pty Ltd	3,200,000	0.99%
10 Latsod Pty Ltd	3,000,000	0.93%
Other	234,233,586	72.64%
<b>Total</b>	<b>322,447,408</b>	<b>100.00%</b>

Source: Metallica shareholder register as at 18 September 2018 provided by Metallica Management

Having regard to the information set out in Table 5.1 above, we note:

- ▶ As at 18 September 2018, Metallica has 322,447,408 fully paid ordinary shares outstanding, of which the top ten shareholders hold 27.4%;
- ▶ The Company's largest shareholder, Jien Mining Pty Ltd, is a subsidiary of the Jilin group, China's second largest nickel producer; and
- ▶ The concentration of larger shareholders in Metallica is low, with 72% of the shareholding outside the top 10 shareholders.

### 5.3.2 Options on Issue

Metallica has 1,000,000 unlisted options on issue, with an exercise price of \$0.60, expiring 3 months after production commences at Kokomo (one of the pits of the SCONI Project sold to Australian Mines Limited (ASX: AUZ) in December 2017). Based on Metallica's recent share trading prices (refer to Section 5.4.1) the options are significantly 'out-of-the-money' and we understand that there is significant uncertainty with the development of the SCONI Project. Notwithstanding this, the options are long dated, such that they will be on issue until (or if) the SCONI Project proceeds.

We understand from Metallica Management, that a significant amount of capital is required for the development of the SCONI Project. From AUZ's ASX announcements, we understand that AUZ has recently completed its bankable feasibility study for SCONI, which is targeted to begin construction in 2019, and is currently seeking funding for the SCONI Project, with a due diligence phase currently underway with the Northern Australia Infrastructure Facility ('NAIF') for potential funding of the project. There is no certainty on whether an agreement will be reached between the parties.

### 5.3.3 Performance Rights

Long-term share-based incentives have been made available to Metallica's executives upon meeting performance hurdles within a certain period. These performance rights have a nil exercise price, and the hurdles applicable to any performance period as agreed with the eligible Metallica executives. Table 5.2 outlines the Metallica performance rights outstanding as at 13 September 2018.

**Table 5.2: Metallica's Outstanding Performance Rights**

Securities	Number Outstanding	Expiry date
Metallica Rights	4,000,000	12 July 2019 - exercisable on commencement of production at the UBP
	3,000,000	12 July 2019 - board discretion
	2,000,000	12 July 2019 - CEO continuous employment
	2,000,000	12 July 2019 - exercisable on successful completion of a prescribed transaction
<b>Total</b>	<b>11,000,000</b>	

Source: The Arrangement Agreement

## 5.4 Share Performance of Metallica

### 5.4.1 Share Price Performance

Figure 5.2 displays the daily volume weighted average price ('VWAP') and daily volume of Metallica shares traded on the ASX over the period 1 November 2017 to 31 October 2018.

**Figure 5.2: Daily VWAP and Volume of Metallica Shares Traded from 1 November 2017 to 31 October 2018**



Source: Capital IQ as at 2 November 2018

Over the period graphed in Figure 5.2 above, Metallica's daily VWAP displays a period low of \$0.029 on 19 September 2018 and a period high of \$0.059 on 3 January 2018.

In addition to the share price and volume data of Metallica shown above, we have also provided additional information in Table 5.3 below to assist readers to understand the possible reasons for the movement in Metallica's share price over the period analysed. The selected ASX announcement references in Table 5.3 below correspond to those displayed in Figure 5.2 above.

**Table 5.3: Selected Metallica ASX Announcements from 1 November 2017 to 31 October 2018**

Date	Announcement
02/11/2017	Metallica announced that its mining lease grant for the Urquhart Bauxite Mine had been delayed due to the Queensland State Government calling an election. Operations and production commencement could be delayed until March/April 2018.
04/12/2017	Metallica announced amendments to the SCONI Sale and Purchase Agreement resulting in Metallica receiving an additional \$1 million in consideration for the remaining conditions precedent being waived/deleted.
08/12/2017	Metallica announced that the SCONI Sale and Purchase Agreement has been completed with Australian Mines Limited (AUZ), with Metallica receiving \$4.5 million cash up-front and \$1.5 million in AUZ shares, which will be issued by 30 June 2018 at the latest.
03/01/2018	Metallica announced it had reached a significant milestone regarding the UBP by being granted a mining lease from the Queensland State Government.
18/04/2018	Metallica announced its maiden sampling program at its Cape Flattery Silica Sands project had confirmed the presence of high purity silica sands.
30/04/2018	Metallica announced their secured loan agreement with South West Pacific Bauxite in exchange for the option to carry out exclusive due-diligence on Wagina Bauxite Project ahead of a potential transaction.
10/05/2018	Metallica released their investor presentation, highlighting the \$10.2 million funding available from cash and standby credit facilities, as well as the proceeds from the SCONI Project.
02/07/2018	Metallica had advised that the due-diligence on the Wagina project was looking positive, with no material concerns discovered thus far, and discussions with Wagina residents beginning.
13/09/2018	Metallica Minerals advised shareholders it had entered into a binding Arrangement Agreement to merge with Melior Resources Inc. via a Plan of Arrangement
21/09/2018	Metallica released Melior's announcement of the positive update on the progress at the Goondicum Mine Project. It was announced that the project remains on schedule and budget, with expected production beginning in November 2018.
15/10/2018	Metallica announced it had received a notice under section 249D of the Corporation Act which seeks to convene a general meeting of the Company for the purpose of removing all of Metallica's directors.
22/10/2018	Metallica announced that the notice received as announced on 15 October 2018 on the ASX is an invalid notice and a meeting of the Company will not be called for the purpose of the notice.
26/10/2018	Metallica has received a notice under Section 203D of the Corporation Act which seeks to convene a general meeting of the Company for the purpose of removing all of Metallica's directors and appointing new directors including Mr Theo Psaros, Mr Scott Waddell and Mr Andrew Gillies.

Source: Metallica ASX Announcements from 1 November 2017 to 31 October 2018

In Table 5.4 below we have set out Metallica's VWAP for the 1 week, 1 month, 3 months, 6 months, 9 months and 12 months prior to 13 September 2018 and 31 October 2018.

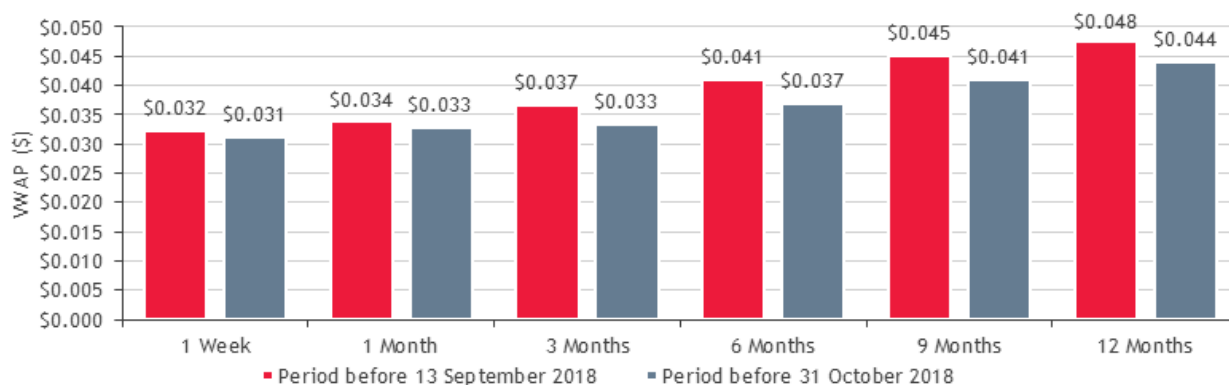
**Table 5.4: Metallica's VWAP for Specified Periods Prior to 13 September 2018 and 31 October 2018**

Period before 13 September 2018	VWAP (AUD)	Period before 31 October 2018	VWAP (AUD)
1 Week	\$0.032	1 Week	\$0.031
1 Month	\$0.034	1 Month	\$0.033
3 Months	\$0.037	3 Months	\$0.033
6 Months	\$0.041	6 Months	\$0.037
9 Months	\$0.045	9 Months	\$0.041
12 Months	\$0.048	12 Months	\$0.044

Source: Capital IQ as at 2 November 2018

The information presented in Table 5.4 is shown graphically in Figure 5.3 below.

Figure 5.3: Metallica's VWAP for Specified Periods Prior to 13 September 2018 and 31 October 2018



Source: Capital IQ as at 2 November 2018

#### 5.4.2 Share Liquidity

The rate at which equity instruments are traded is generally referred to as the 'liquidity' of the equity instruments. Changes in liquidity may impact the trading price of equity instruments, particularly depending on the number of equity instruments required to be bought and/or sold and the time period over which the equity instrument holder needs to buy and/or sell those equity instruments. Depending on the circumstances, a movement in market price may or may not represent a shift in value of either the equity instruments or a shift in value of the company to which the equity instruments relate as a whole.

Table 5.5 summarises the monthly liquidity of Metallica shares from 1 November 2017 to 31 October 2018. Liquidity has been summarised by considering the following:

- ▶ Volume of Metallica share trades per month;
- ▶ Value of total trades in Metallica shares per month;
- ▶ Number of Metallica shares traded per month as a percentage of total Metallica shares outstanding at the end of the month; and
- ▶ Volume weighted average price per month.

Table 5.5: Liquidity of Metallica shares on the ASX

Month	Volume	Value (\$)	Shares Outstanding	Turnover	Monthly VWAP
October 2018	7,694,970	253,850	322,447,410	2.39%	\$0.033
September 2018	11,620,900	365,520	322,447,410	3.60%	\$0.031
August 2018	4,954,610	174,410	322,447,410	1.54%	\$0.035
July 2018	6,205,590	226,850	322,447,410	1.92%	\$0.037
June 2018	10,769,320	440,180	322,447,410	3.34%	\$0.041
May 2018	5,174,040	220,960	322,447,410	1.60%	\$0.043
April 2018	10,834,870	519,650	322,447,410	3.36%	\$0.048
March 2018	9,069,810	435,670	322,447,410	2.81%	\$0.048
February 2018	10,381,130	528,300	322,447,410	3.22%	\$0.051
January 2018	16,602,660	894,640	322,447,410	5.15%	\$0.054
December 2017	8,345,680	463,110	322,447,410	2.59%	\$0.055
November 2017	23,407,990	1,154,940	322,447,410	7.26%	\$0.049
<b>Total</b>	<b>125,061,570</b>	<b>5,678,080</b>	<b>322,447,410</b>	<b>38.79%</b>	<b>\$0.045</b>

Source: Capital IQ as at 2 November 2018

Assuming a weighted average number of 322,447,410 shares on issue over the period, approximately 38.79% of the total shares on issue were traded over the period 1 November 2017 to 31 October 2018. In our view, this indicates that Metallica shares display a moderate level of liquidity.

## 5.5 Historical Financial Information of Metallica

This section sets out the historical financial information of Metallica. As this Report contains only summarised historical financial information, we recommend that any user of this Report read and understand the additional notes and financial information contained in Metallica's annual reports, including the full statements of profit or loss and other comprehensive income, statements of financial position and statements of cash flows.

Metallica's financial statements have been audited by BDO Audit Pty Ltd. BDOCF has not performed any audit or review of any type on the historical financial information of Metallica and we make no statement as to the accuracy of the information provided. However, we have no reason to believe that any of the information provided is false or misleading.

### 5.5.1 Statements of Profit or Loss and Other Comprehensive Income

Table 5.6 summarises the statement of comprehensive income of Metallica for the 12 month periods ('FY') ended 30 June 2016, 2017 and 2018.

**Table 5.6 Metallica's Summarised Statements of Comprehensive Income**

	12 Months Ended 30-June-16 Audited (\$)	12 Months Ended 30-June-17 Audited (\$)	12 Months Ended 30-June-18 Audited (\$)
Revenue	323,565	134,381	200,713
Other income	1,025,904	398,020	6,000,000
<b>Total income</b>	<b>1,349,469</b>	<b>532,401</b>	<b>6,200,713</b>
<b>Expenses</b>			
Advertising and promotional costs	(21,770)	(73,922)	(103,712)
Raw materials and consumables used	(30,139)	(170)	-
Rental expenses	(191,500)	(194,596)	(195,830)
Employee benefits expense	(1,136,571)	(824,489)	(1,067,687)
Exploration costs	(377,835)	(370,374)	(342,537)
Depreciation and amortisation expenses	(4,626)	(31,855)	(4,543)
Impairment of property, plant and equipment	(295,512)	(950,481)	-
Impairment of mining assets	(173,023)	-	-
Impairment of loan	-	-	(186,017)
Listing fees and share register expenses	(56,991)	(100,151)	(91,506)
Impairment of exploration and evaluation expenditure	(3,962,311)	-	(103,123)
Legal fees	(135,695)	(74,422)	(143,717)
Marketing	-	-	(144,117)
Project generation	-	-	(241,387)
Airfares and conferences	(77,748)	(94,987)	(140,287)
Professional fees	(117,413)	(146,865)	(98,718)
Other expenses	(512,009)	(227,844)	(141,421)
Finance costs	(3,657)	(1,366)	(554)
<b>Total expenses</b>	<b>(7,096,800)</b>	<b>(3,091,522)</b>	<b>(3,005,156)</b>
<b>Total comprehensive income/ (loss)</b>	<b>(5,747,331)</b>	<b>(2,559,121)</b>	<b>3,195,557</b>

Source: Metallica FY2017 and FY2018 Annual Reports

With reference to Table 5.6 above, we note the following:

- ▶ Metallica's revenue primarily relates to interest revenue and royalties received from one of the Company's limestone deposits;
- ▶ Metallica's other income for the observed periods relate to:
  - FY2016 - Gain on sale for Metallica's limestone projects;
  - FY2017 - Income received on entering into the SCONI Project farm-in agreement of \$250,000;
  - FY2018 - The sale of the SCONI Project, of which \$4.5 million in cash was received as part of the tranche one payments and another \$1.5 million in shares in Australian Mining Ltd (ASX: AUZ) was received;



- ▶ Employee benefit expenses are a major expense for Metallica, with a portion of the expense linked to performance rights. We understand that the increase in employee expense between FY2017 and FY2018 is as a result of increased volatility of Metallica's shares leading to a greater value in the performance rights;
- ▶ Metallica has incurred various impairment expenses over the observed periods including:
  - \$3.96 million in FY2016 of impairments to exploration and evaluation expenditure related to the SCONI Project as a result of a combination of factors including significant reductions in the relevant commodity prices;
  - \$295,512 in FY2016 and \$950,481 in FY2017 of impairments which were primarily driven by impairments in capital works in progress of the jointly held assets in the Oresome Australia Pty Ltd JV;
  - In FY2018, \$186,017 impairment of a loan advanced to South West Pacific Bauxite (HK) Ltd in relation to the Wagina Project as the Wagina Project was not acquired by the sign-off date, and there is no certainty of completing acquisition or recovering the loan if the acquisition doesn't proceed; and
- ▶ Total comprehensive income for the year in FY2018 was positive for the first time in the observed periods driven by the sale of the SCONI Project. FY2016 recorded a greater loss for the year than FY2017 as a result of one-off impairment costs related to the SCONI Project.

### 5.5.2 Statements of Financial Position

Table 5.7 summarises Metallica's statements of financial position as at 30 June 2016, 2017 and 2018.

**Table 5.7: Summarised Metallica's Statements of Financial Position**

	As at 30-Jun-16 Audited (\$)	As at 30-Jun-17 Audited (\$)	As at 30-Jun-18 Audited (\$)
<b>Assets</b>			
<b>Current assets</b>			
Cash and cash equivalents	1,530,184	3,737,143	6,113,196
Trade and other receivables	63,869	91,258	47,821
Current tax receivable	300,000	-	-
Held to maturity investments	757,064	-	-
Other current assets	37,029	-	1,650,000
<b>Total current assets</b>	<b>2,688,146</b>	<b>3,828,401</b>	<b>7,811,017</b>
<b>Non-current assets</b>			
Property, plant and equipment	1,993,651	1,011,315	1,057,258
Exploration and evaluation	296,290	957,648	1,459,500
Other non-current assets	297,125	290,277	141,316
<b>Total non-current assets</b>	<b>2,587,066</b>	<b>2,259,240</b>	<b>2,658,074</b>
<b>Total assets</b>	<b>5,275,212</b>	<b>6,087,641</b>	<b>10,469,091</b>
<b>Liabilities</b>			
<b>Current liabilities</b>			
Trade and other payables	302,768	158,801	326,082
Employee benefits	35,144	102,498	117,954
<b>Total current liabilities</b>	<b>337,912</b>	<b>261,299</b>	<b>444,036</b>
<b>Non-current liabilities</b>			
Employee benefits	43,727	-	-
<b>Total non-current liabilities</b>	<b>43,727</b>	<b>-</b>	<b>-</b>
<b>Total liabilities</b>	<b>381,639</b>	<b>261,299</b>	<b>444,036</b>
<b>Net assets</b>	<b>4,893,573</b>	<b>5,826,342</b>	<b>10,025,055</b>
Issued Capital	32,205,513	35,650,900	36,422,427
Reserves	8,046,733	8,093,236	8,324,865
Accumulated losses	(35,358,673)	(37,917,794)	(34,722,237)
<b>Total capital and reserves</b>	<b>4,893,573</b>	<b>5,826,342</b>	<b>10,025,055</b>

Source: Metallica FY2017 and FY2018 Annual Reports

With reference to Table 5.7 above, we note the following:

- ▶ Total current assets have significantly increased at 30 June 2018 relative to previous periods. This increase is driven by the sale of the SCONI Project which resulted in \$4.5 million increase in cash and \$1.5 million in AUZ shares valued at the 30-day VWAP as at 30 June 2018;



- ▶ Property, plant and equipment consists largely of capital works in progress which relates to Metallica's share in the jointly held assets in the Oresome Australia Pty Ltd JV, including the impaired value of the HMS plant current in storage;
- ▶ Total non-current assets have remained broadly in line with historical figures. In FY2017, the impairment of capital works resulted in a decrease in the value of Metallica's property, plant and equipment. The exploration and evaluation account has increased across all observed periods as a result of additional exploration expenses being capitalised with the progression of Metallica's tenements;
- ▶ Metallica has no interest bearing debt, with liabilities consisting of trade and other payables, and employee benefits as at 30 June 2018; and
- ▶ Metallica's net assets have grown across all observed periods and is in part due to the sale of the SCONI Project and the additional exploration work carried out over the period being capitalised.

### 5.5.3 Statements of Cash Flows

Table 5.8 summarises Metallica's statement of cash flows for the 12 month periods ended 30 June 2016, 2017 and 2018.

**Table 5.8: Metallica's Summarised Statements of Cash Flows**

	12 Months Ended 30-June-16 Audited (\$)	12 Months Ended 30-June-17 Audited (\$)	12 Months Ended 30-June-18 Audited (\$)
<b>Cash flows from operating activities</b>			
Receipts from customers (inclusive of GST)	601,267	216,342	165,870
Payments to suppliers and employees (inclusive of GST)	(2,656,935)	(2,228,709)	(2,446,328)
Interest received	12,709	60,251	78,280
Interest and other finance costs paid	(3,657)	(1,366)	(554)
<b>Net cash generated from/(used in) operating activities</b>	<b>(2,046,616)</b>	<b>(1,953,482)</b>	<b>(2,202,732)</b>
<b>Cash flow from investing activities</b>			
Net cash inflow on reduction of interest in joint operation & additional capital introduced	675,000	17,500	(225)
Loans advanced to other parties	-	-	(186,017)
Payments for property, plant and equipment	(642,041)	-	(50,486)
Payments for mining development assets	(184,546)	-	-
Payments for exploration and evaluation	(430,224)	(811,653)	(604,975)
Held-to-maturity investments	(506,407)	757,064	-
Proceeds from disposal of property, plant and equipment, and exploration assets	1,601,061	20,000	-
Proceeds from entering into SCONI farm-in agreement	-	275,000	-
Proceeds from disposal of SCONI Project	-	-	4,500,000
Receipts for security deposits	21,150	6,848	148,961
Receipt of Research and Development tax offset	-	450,295	-
<b>Net cash from /(used in) investing activities</b>	<b>533,993</b>	<b>715,054</b>	<b>3,807,258</b>
<b>Cash flows from financing activities</b>			
Proceeds from issue of shares	1,821,140	3,510,901	853,103
Share issue transaction costs	(219,088)	(65,514)	(81,576)
<b>Net cash generated from financing activities</b>	<b>1,602,052</b>	<b>3,445,387</b>	<b>771,527</b>
Net (decrease)/increase in cash and cash equivalent	89,429	2,206,959	2,376,053
Cash and cash equivalents at the beginning of year	1,440,755	1,530,184	3,737,143
<b>Cash and cash equivalents at the end of the financial year</b>	<b>1,530,184</b>	<b>3,737,143</b>	<b>6,113,196</b>

Source: Metallica Annual Report FY2017 and FY2018

With reference to Table 5.8 above, we note the following:

- ▶ Net cash flows from operating activities for Metallica has been negative and broadly in line across all observed periods. This is not unusual for an exploration company, with cash largely used in payments to suppliers and employees in the case of operating activities;
- ▶ Net cash flows from investing activities have increased since FY2016, notably the cash inflows for Metallica include:
  - \$1.6 million in FY2016 from the proceeds of the sale of limestone projects;
  - \$675,000 cash inflow in FY2016 representing Metallica's share of the additional cash contributions received by the joint operations from Ozore;
  - In FY2017 the \$757,064 cash inflow relates to the maturity of a term deposit and \$450,295 in the receipt of a research and development tax offset;
  - \$4.5 million in FY2018 from the receipt of tranche 1 of the SCONI Project sale;
- ▶ Major cash outflows for Metallica within investing activities relate to the purchases of property plant and equipment and costs relating to exploration activities which are capitalised;
- ▶ Metallica's financing activities have generated positive cash flows for the funding of its operating activities. Key financing activities include:
  - In FY2016, Metallica raised approximately \$1.8 million after completion of a rights issue at 3 cents per share;
  - In FY2017, Metallica completed a rights issue at 5.2 cents per share and raising approximately \$3.3 million;
  - In FY2018, Metallica raised \$853,103 after the exercise of its listed options at an exercise price of 4.2 cents per share; and
- ▶ Metallica's cash and cash equivalents have increased in each year between FY2016 and FY2018, largely driven by the rights issue in FY2017 and the sale of the SCONI Project in FY2018.

## 6.0 Overview of Melior

This section is set out as follows:

- ▶ Section 6.1 sets out an overview of Melior;
- ▶ Section 6.2 sets out an overview of the corporate structure of Melior;
- ▶ Section 6.3 sets out an overview of the equity structure of Melior;
- ▶ Section 6.4 sets out a summary of Melior share trading data; and
- ▶ Section 6.5 sets out a summary of Melior's financial information.

### 6.1 Company Overview

Melior Resources is a Canadian listed company focusing on the exploration and development of minerals in Queensland including ilmenite and apatite. Melior was originally established in 1995 under the name Coalcorp Mining, before rebranding in 2011. The company is listed on the TSXV under the ticker code 'MLR'.

#### 6.1.1 Goondicum Project (ML 80044)<sup>1</sup>

Melior's major asset is the Goondicum ilmenite and apatite mine located 30km due east of Monto in Queensland. The Goondicum Project comprises 518 hectares and represents approximately 20% of the area in the Goondicum Crater. The remaining area of the Goondicum Crater is currently under a mining development lease application that was lodged in June 2017.

The Goondicum Project was acquired by Melior from Belridge Enterprises in 2014, after the mine operated from September 2012 to June 2013. Production was ceased due to uneconomic production rates. After acquisition of the Goondicum Project, Melior upgraded the feed preparation plant significantly and resumed production. The mine however was later placed on care and maintenance in August 2015 due to poor market conditions. During operations in 2015 for four months, the operation produced approximately 20,000 tonnes of ilmenite and 2,500 tonnes of apatite.

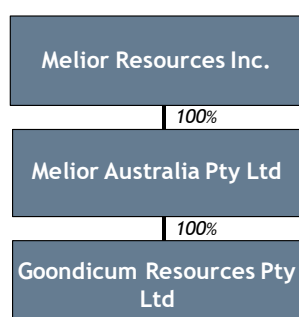
#### 6.1.2 Browne Metallurgical Process

Melior owns the intellectual property rights to the Browne metallurgical process, which conducts a low temperature separation of iron from titanium dioxide using ilmenite feedstock. From benchtop studies, these temperatures can be as low as 1,300°C compared to conventional slagging processes that require temperatures in excess of 1,600°C. If the process is commercialised, it will have the potential to reduce capital expenditure, energy consumption and operational complexity of ilmenite processing. Melior has engaged the Commonwealth Scientific and Industrial Research Organisation ('CSIRO') to assist in advancing the Browne processing technology, with an aim to transition the process into a pilot plant scale.

### 6.2 Melior's Corporate Structure

Figure 6.1 below highlights the corporate structure for Melior.

**Figure 6.1: Melior's Corporate Structure**



Source: Melior Management

Regarding Figure 6.1 above, we note:

- ▶ Melior Resources Inc. is an entity incorporated and residing in Canada (and is anticipated to migrate its incorporation to Australia);
- ▶ Melior Australia Pty Ltd is an Australian holding company with its only asset being the shareholding in Goondicum Resources Pty Ltd; and
- ▶ Goondicum Resources Pty Ltd is incorporated in Australia and holds all assets related to the Goondicum Project.

<sup>1</sup> H&S Consultants Pty Ltd, (April 2018), *Preliminary Economic Assessment -Goondicum*

## 6.3 Equity Structure of Melior

### 6.3.1 Ordinary Shares

The major shareholders of Melior as at 30 June 2018 are set out in Table 6.1 below. These figures do not consider changes in shareholding arising from the Arrangement.

**Table 6.1: Melior's Major Shareholders**

	Shareholders	# of Shares	Percentage Holding
1	Pala Investments	13,210,736	45.59%
2	Takota Asset Management	3,585,055	12.37%
3	Belmont Park - Monto Pty Ltd	1,854,381	
	Belmont Park Investments Pty	500,000	11.00%
	Belmont Park Investments Pty Ltd	833,333	
4	Buderim Panorama Pty Ltd.	125,000	
	Panorama Ridge - Monto Pty Ltd	1,854,381	9.71%
	Panorama Ridge Pty Ltd.	833,333	
5	Sashimi Investments Pty Ltd	100,033	
	Sashimi Investments Pty Ltd.	166,666	0.92%
6	Other	5,917,045	20.42%
	<b>Total</b>	<b>28,979,963</b>	<b>100.00%</b>

Source: Melior Management at 5 October 2018

Having regard to the information set out in Table 6.1 above, we note:

- ▶ As at 5 October 2018, Melior has 28,979,963 fully paid ordinary shares outstanding;
- ▶ Pala, Melior's largest shareholder holds a 45.59% interest in Melior. Melior's five largest shareholders hold a combined interest of approximately 80% within Melior;
- ▶ The ultimate owner of the Belmont Park entities is Mr Ian McCauley;
- ▶ The ultimate owner of the Panorama entities is Mr John Rawlins; and
- ▶ The ultimate owner of the Sashimi Investments entities is Mr Mark McCauley.

### 6.3.2 Options on Issue

Melior currently has 1,866,666 options outstanding with expiration dates given below (options are quoted on a post-consolidated basis of Melior's shares as announced on SEDAR<sup>2</sup> 15 June 2018):

- ▶ 741,666 outstanding options to Melior's non-executive directors with an exercise price of C\$0.60 per share expiring on 10 February 2020;
- ▶ 125,000 options are allocated to Mr. George Lloyd (non-executive director) with an exercise price of C\$0.80 expiring on 13 July 2021; and
- ▶ 1,000,000 options will be issued as compensation to the financial advisors in relation to the completion of the merger under the Arrangement. The options have an exercise price of \$1.25 and expire two years after the date of issue.

### 6.3.3 Warrants

Table 6.2 provides an outline of the Melior warrants outstanding. Melior currently has a total of 4,874,750 warrants<sup>3</sup> outstanding.

**Table 6.2: Warrants Currently Outstanding in Melior**

Securities	Number Outstanding	Expiry date	Exercise Price
	1,326,250	25 January 2020	C\$1.05
Melior Warrants	298,500	1 February 2020	C\$1.05
	3,250,000	August 9 2020	C\$0.95
<b>Total</b>	<b>4,874,750</b>		

Source: The Arrangement Agreement

<sup>2</sup> The System for Electronic Document Analysis and Retrieval is a filing system developed for the Canadian Securities Administrators in providing access to public securities' documents and disclosures.

<sup>3</sup> The warrants are essentially structured in the same way as the options.

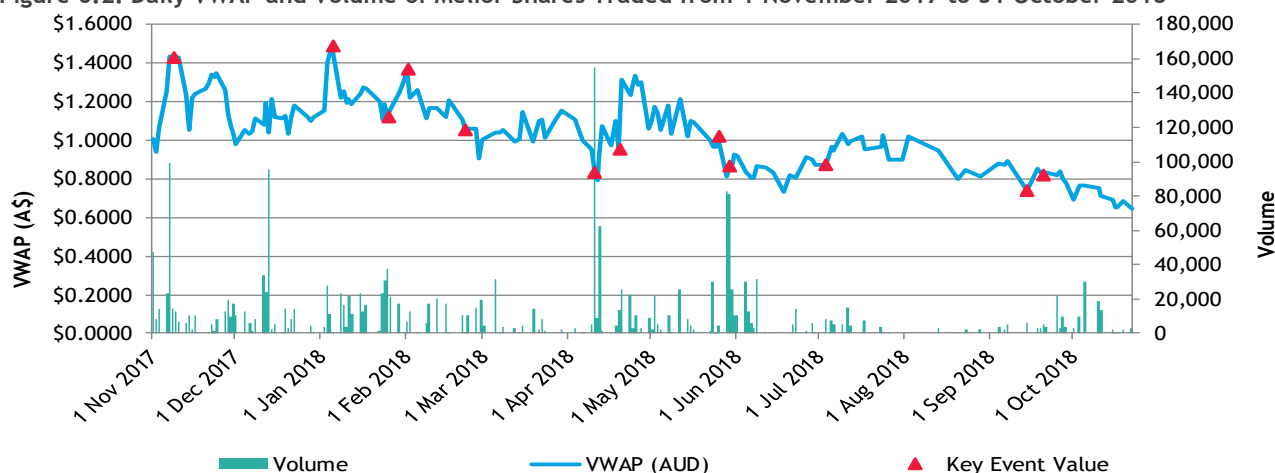
## 6.4 Share Performance of Melior

### 6.4.1 Share Price Performance

Figure 6.2 displays the daily volume average price ('VWAP') and daily volume of Melior shares traded on the TSXV over the period 1 November 2017 to 31 October 2018.

All values in Section 6.4 are converted to Australian Dollars based on the daily spot prices from Capital IQ. Further, all values are on a post consolidation basis following the share consolidation on 15 June 2018.

**Figure 6.2: Daily VWAP and Volume of Melior Shares Traded from 1 November 2017 to 31 October 2018**



Source: Capital IQ as at 2 November 2018

Over the period graphed in Figure 6.2 above, Melior's daily VWAP displays a period low of \$0.627 on 29 October 2018 and a period high of \$1.489 on 5 January 2018.

In addition to the share price and volume data of Melior shown above, we have also provided additional information in Table 6.3 below to assist readers to understand the possible reasons for the movement in Melior's share price over the period analysed. The selected ASX announcement references in Table 6.3 below correspond to those displayed in Figure 6.2 above.

**Table 6.3: Selected Melior ASX Announcements from 1 November 2017 to 31 October 2018**

Date	Announcement
08/11/2017	Melior announced that its wholly-owned subsidiary Goondicum Resources Pty Ltd has signed an off-take agreement to supply apatite fertilizer to SOFT Agriculture Pty Ltd, an organic agri-products manufacturer.
05/01/2018	Melior announced its intention to complete a non-brokered private placement offering for up to 62,500,000 units at a price of C\$0.08 per unit (or C\$0.80 post consolidation) for a raising of up to C\$5 million proceeds. Where each unit will be comprising of one Melior share and a warrant with an exercise price of C\$0.105 (or C\$1.05 post consolidation).
25/01/2018	Melior announced updates on its financing facilities, including a C\$1,063,000 raising from the first tranche of its non-brokered private placement; the signing of a US\$5 million loan and 600,000 tonne ilmenite offtake agreement; and the continued availability of US\$5.25 million from Pala Investments.
01/02/2018	Melior announced the completion of the second and final tranche of its private placement, raising gross proceeds of C\$238,800.
22/02/2018	Melior announced the engagement with the CSIRO, through its subsidiary, to assist in advancing Melior's innovative Browne processing technology.
10/04/2018	Melior announced the completion and execution of the previously announced US\$5 million loan arrangement with Hainan Wensheng High Tech Minerals Co. Ltd.
19/04/2018	Melior announced the proposed restart of the Goondicum Project.
25/05/2018	Melior announced the approval of a share consolidation of ordinary shares by the board of directors at a ratio of 10 pre-consolidation common shares for 1 post-consolidation common share.
29/05/2018	Melior released interim financials and provided a progress update in relation to the Goondicum Project.
03/07/2018	Melior issued notice of a meeting date for all shareholders regarding the proposed listing Australia. Melior announced it intends to list its shares on the ASX whilst also remaining listed on the TSXV. We understand this expectation of staying listed in Canada was superseded in the Arrangement and the Merged Entity is now not expected to be listed in Canada.
12/09/2018	Melior advised shareholders it had entered into a binding arrangement agreement with ASX listed Metallica Minerals, whereby Metallica will acquire Melior at an exchange ratio of 20 Metallica shares for every one Melior share.
20/09/2018	Melior's announced that the Goondicum project remains on schedule and budget, with expected production beginning in November 2018.

Source: Melior TSX Announcements from SEDAR for the periods between 1 November 2017 to 31 October 2018

In Table 6.4 below we have set out Melior's VWAP for the 1 week, 1 month, 3 months, 6 months, 9 months and 12 months prior to 12 September 2018, being the date Melior publicly announced the Agreement and 31 October 2018.

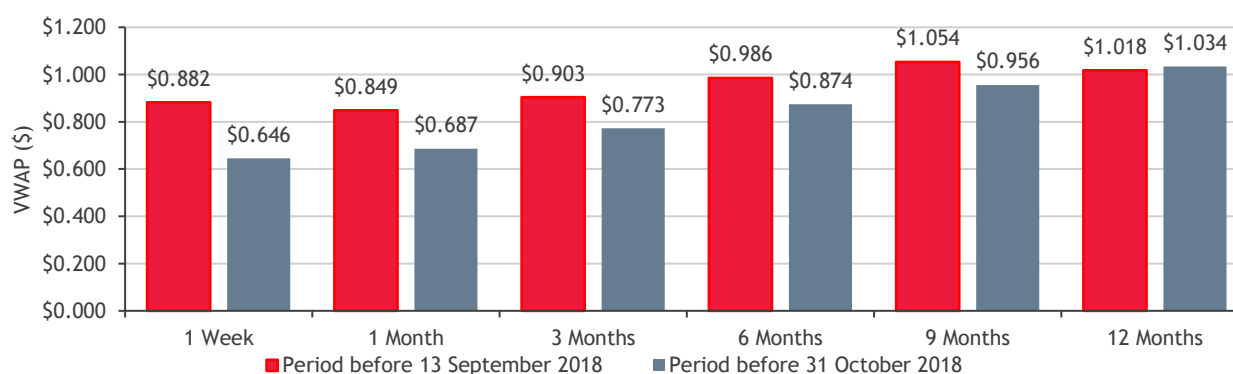
**Table 6.4: Melior's VWAP for Specified Periods Prior to 12 September 2018 and 31 October 2018**

Period before 12 September 2018	VWAP (AUD)	Period before 31 October 2018	VWAP (AUD)
1 Week	\$0.882	1 Week	\$0.646
1 Month	\$0.849	1 Month	\$0.687
3 Months	\$0.903	3 Months	\$0.773
6 Months	\$0.986	6 Months	\$0.874
9 Months	\$1.054	9 Months	\$0.956
12 Months	\$1.018	12 Months	\$1.034

Source: Capital IQ as at 2 November 2018

The information presented in Table 6.4 is shown graphically in Figure 6.3 below.

**Figure 6.3: Melior's VWAP for Specified Periods Prior to 12 September 2018 and 31 October 2018**



Source: Capital IQ as at 2 November 2018

#### 6.4.2 Share Liquidity

Table 6.5 summarises the monthly liquidity of Melior shares from 1 November 2017 to 31 October 2018.

**Table 6.5: Liquidity of Melior Shares on the TSXV**

Month	Volume	Value (AUD)	Shares Outstanding	Turnover	Monthly VWAP (AUD)
October 2018	109,940	78,400	28,979,980	0.38%	\$0.713
September 2018	71,410	59,380	28,979,980	0.25%	\$0.832
August 2018	7,600	6,820	28,979,980	0.03%	\$0.897
July 2018	59,830	57,550	28,979,980	0.21%	\$0.962
June 2018	124,250	105,180	28,979,980	0.43%	\$0.847
May 2018	318,280	297,730	28,979,980	1.10%	\$0.935
April 2018	330,130	319,720	28,979,980	1.14%	\$0.968
March 2018	75,950	82,980	28,963,950	0.26%	\$1.093
February 2018	135,970	154,390	28,584,860	0.48%	\$1.135
January 2018	302,600	378,340	27,356,700	1.11%	\$1.250
December 2017	245,510	280,300	27,146,890	0.90%	\$1.142
November 2017	330,080	410,390	25,432,610	1.30%	\$1.243
<b>Total</b>	<b>2,111,550</b>	<b>2,231,180</b>	<b>28,170,580</b>	<b>7.50%</b>	<b>\$1.057</b>

Source: Capital IQ as at 2 November 2018

Assuming a weighted average number of 28,170,580 Melior shares on issue over the period, approximately 7.50% of the total shares on issue were traded over the period 1 November 2017 to 21 October 2018. In our view, this indicates that Melior shares display a low level of liquidity.

This may, in part, be explained by the concentrated shareholdings in Melior, detailed in Section 6.3.1.

## 6.5 Historical Financial Information of Melior

This section sets out the historical information of Melior. As this Report contains only summarized historical financial information, we recommend that any user of this Report read and understand the additional notes and financial information contained in Melior's annual reports, including the full statements of profit or loss and other comprehensive income, statements of financial position and statements of cash flows.

Melior's financial statements have been audited by MNP LLP. BDOCF has not performed any audit or review of any type on the historical financial information of Melior and we make no statement as to the accuracy of the information provided. However, we have no reason to believe that any of the information provided is false or misleading.

Melior's accounts are prepared in accordance with International Financial Reporting Standards, as are Metallica's.

### 6.5.1 Statements of Profit or Loss and Other Comprehensive Income

Table 6.6 summarises Melior's statement of comprehensive income for the 12 month periods ended 30 June 2016, 2017 and 2018.

**Table 6.6: Melior's Summarised Statements of Comprehensive Income**

	12 Months Ended 30-Jun-16 Audited (CAD'000)	12 Months Ended 30-Jun-17 Audited (CAD'000)	12 Months Ended 30-Jun-18 Audited (CAD'000)
<b>Administrative Expenses</b>			
Office and administration	(2,328)	(2,767)	(3,587)
Depreciation	(1,255)	(653)	(594)
Accretion	(28)	(29)	(29)
<b>Loss before other income, (expenses)</b>	<b>(3,611)</b>	<b>(3,449)</b>	<b>(4,210)</b>
Net interest expense	(376)	(429)	(22)
Impairment of plant & equipment and mineral properties	(10,615)	-	-
Impairment of investment in Asian Mineral Resources Limited	(4,256)	-	(944)
Litigation expense	(800)	(46)	-
Share-based payments	-	(217)	(190)
Gain on sale of property, plant and equipment	50	9	171
Accretion convertible note	-	-	(942)
Rehabilitation	-	-	(784)
Research and development incentive	-	-	224
Foreign exchange gain/(loss)	(26)	6	(17)
<b>Total expenses</b>	<b>(16,023)</b>	<b>(677)</b>	<b>(2,504)</b>
<b>Net loss for the year</b>	<b>(19,634)</b>	<b>(4,126)</b>	<b>(6,714)</b>
Reclassification of unrealized loss on available-for-sale assets	4,256	-	-
Foreign currency translation adjustment	720	293	(273)
Unrealized (loss) gain on available-for-sale financial assets	(1,182)	-	-
<b>Total comprehensive loss</b>	<b>(15,840)</b>	<b>(3,833)</b>	<b>(6,987)</b>

Source: Melior FY2017 and FY2018 Annual Reports

With reference to Table 6.6, we note the following:

- ▶ Melior is a pre-revenue exploration company and has not recorded any earnings since FY2016. However, with production at the Goondicum Project expected to start in November 2018, Melior may begin realising revenue from its assets in the 2019 financial year;
- ▶ Office and administration expense is a large expense for Melior and mainly consists of salaries, professional fees and office administration expenses;
- ▶ Depreciation relates to the Goondicum Project;
- ▶ The C\$10.6 million impairment expense relates to impairment charges on Melior's Goondicum Project following the suspension of its operations due to unfavorable movements in the ilmenite market;



- ▶ Following its investment in Asian Mineral Resources Limited on 29 June 2012, Melior has fully impaired the investment in FY2018. The impairment arose due to the prolonged decline in value of the equity investment. The expense of C\$4.3 million recorded in FY2016 is a result of recording the loss from accumulated other comprehensive losses to net income.
- ▶ The litigation expense in FY2016 relates to collection of advisory fees and the case is now settled; and
- ▶ The accretion convertible note expense in FY2018 relates to the accretion charges for the Pala convertible note which was convertible at the option of Pala at any time after 6 July 2017 and up to July 2022. This instrument has since been cancelled in exchange for the issue of the Pala Loan (detailed in Section 4.5.1).

## 6.5.2 Statements of Financial Positions

Table 6.7 summarises Melior's statements of financial position as at 30 June 2016, 2017 and 2018.

**Table 6.7: Melior's Summarised Statements of Financial Position**

	As at 30-Jun-16 Audited (CAD'000)	As at 30-Jun-17 Audited (CAD'000)	As at 30-Jun-18 Audited (CAD'000)
<b>Assets</b>			
<b>Current assets</b>			
Cash and cash equivalents	466	138	1,720
Trade and other receivables	-	-	133
Inventory	80	58	56
Other current assets	156	82	159
<b>Total current assets</b>	<b>702</b>	<b>278</b>	<b>2,068</b>
<b>Non-current assets</b>			
Property, plant and equipment	5,200	4,707	5,291
Mineral properties	4,800	4,948	4,831
Investments in Asian Mineral Resource Limited	945	945	-
Other non-current assets	1,438	1,482	1,531
<b>Total non-current assets</b>	<b>12,383</b>	<b>12,082</b>	<b>11,653</b>
<b>Total assets</b>	<b>13,085</b>	<b>12,360</b>	<b>13,721</b>
<b>Liabilities</b>			
<b>Current Liabilities</b>			
Trade and other payables	1,910	1,651	2,036
Current portion of obligation under finance leases	27	9	1
Loan payable	3,182	4,549	5,257
<b>Total current liabilities</b>	<b>5,119</b>	<b>6,209</b>	<b>7,294</b>
<b>Non-current liabilities</b>			
Long-term portion of finance leases	-	1	-
Unearned revenue	-	-	3,286
Provisions	-	-	36
Decommissioning liability	853	908	1,510
<b>Total non-current liabilities</b>	<b>853</b>	<b>909</b>	<b>4,832</b>
<b>Total liabilities</b>	<b>5,972</b>	<b>7,118</b>	<b>12,126</b>
<b>Net assets</b>	<b>7,113</b>	<b>5,242</b>	<b>1,595</b>
<b>Shareholder's equity</b>			
Share capital	381,027	382,773	383,600
Contributed surplus	159,058	159,274	161,787
Accumulated other comprehensive loss	(253)	40	(233)
Deficit	(532,719)	(536,845)	(543,559)
<b>Total shareholder's equity</b>	<b>7,113</b>	<b>5,242</b>	<b>1,595</b>

Source: Melior FY2017 and FY2018 Annual Reports



With reference to Table 6.7, we note the following:

- ▶ Melior's total assets have increased since FY2017 in part due to higher cash levels in FY2018 and the purchase of property, plant and equipment related to the Goondicum Project. This increase in Melior's total assets is however offset by the full impairment of its investment in Asian Mineral Resource Limited of C\$0.945 million;
- ▶ The cash held by Melior is approximately 98% held in AUD;
- ▶ Melior's total liabilities increased significantly to approximately C\$12.1 million in FY2018 and consists of:
  - Approximately C\$5.3 million from the loan provided by Pala (refer to Section 4.5.1);
  - Approximately C\$3.3 million was received in accordance with its six-year ilmenite streaming agreement with Hainan Wensheng;
  - Approximately C\$2 million in payables mainly relating to the Goondicum Project, which relates to trade payables, employee related liabilities and royalties payable relating to 2013 operations;
  - C\$1.5 million in decommissioning liabilities relating to provision for reclamation liabilities for the Goondicum Project; and
- ▶ Melior's net assets have decreased across all observed periods as a result of the higher growth in liabilities relative to assets.

### 6.5.3 Statements of Cash Flows

Table 6.8 summarises Melior's statement of cash flows for the 12-month period ended 30 June 2016, 2017 and 2018.

**Table 6.8: Melior's Summarised Statements of Cash Flows**

	As at 30-Jun-16 Audited (CAD'000)	As at 30-Jun-17 Audited (CAD'000)	As at 30-Jun-18 Audited (CAD'000)
<b>Cash flows from operating activities</b>			
Cash paid to suppliers, employees, and other	(4,492)	(3,104)	(3,450)
Interest received	54	34	14
<b>Net cash generated/(used in) operating activities</b>	<b>(4,438)</b>	<b>(3,070)</b>	<b>(3,436)</b>
<b>Cash flows from investing activities</b>			
Payments for property, plant and equipment	(417)	-	(1,427)
Payments for mineral properties	(3,350)	-	-
Cash receipts from pre-production	1,983	-	-
<b>Net cash generated/(used in) investing activities</b>	<b>(1,784)</b>	<b>-</b>	<b>(1,427)</b>
<b>Cash flows from financing activities</b>			
Proceeds from issue of ordinary shares	-	1,746	1,309
Loan proceeds	2,894	1,006	4,834
Proceeds from disposal of equipment	118	9	311
Finance lease repayment	-	(19)	(9)
<b>Net cash generated/(used in) financing activities</b>	<b>3,012</b>	<b>2,742</b>	<b>6,445</b>
Change in cash and cash equivalents during the year	(3,210)	(328)	1,582
<b>Cash and cash equivalents at the beginning of the year</b>	<b>3,676</b>	<b>466</b>	<b>138</b>
<b>Cash and cash equivalents at the end of the year</b>	<b>466</b>	<b>138</b>	<b>1,720</b>

Source: Melior FY2017 and FY2018 Annual Reports

With reference to Table 6.8, we note the following;

- ▶ Melior's operating and investing activities are being funded by financing activities;
- ▶ Cash flows from investing activities in FY16 largely relate to the Goondicum Project, with C\$1.98 million from the sale of pre-production product;
- ▶ Financing activities have increased across all observed periods with notable funding including:
  - C\$1.7 million in FY2017 as a result of Melior's private placement of 6 million Melior ordinary shares (on a post-consolidation basis);
  - C\$1.3 million in FY2018 as a result of Melior's private placement of 1.8 million Melior ordinary shares;
  - The loan proceeds relate to drawdown from the loan facility agreement with Pala. On 9 August 2018, Melior entered into an agreement with Pala to restructure existing loans with Pala into one consolidated facility for funding the re-start of the Goondicum Project. The aggregate facility available to be drawn down is US\$13.75 million and has a 24-month maturity date (see Section 4.5.1);
- ▶ Loans, which have since been refinanced with Pala, had a conversion feature at the time, so not all funds received were attributed to loan proceeds; and
- ▶ Ending cash and cash equivalents for the year increased in FY2018 with Melior increasing its debt and equity financing as it prepares for commencement of production from the Goondicum Project.

## 7.0 Common Valuation Methodologies

A 'fair market value' is often defined as the price that reflects a sales price negotiated in an open and unrestricted market between a knowledgeable, willing but not anxious buyer and a knowledgeable, willing but not anxious seller, with both parties at arm's length. The valuation work set out in this Report assumes this relationship.

We have set out a description of commonly adopted valuation methodologies below.

### 7.1 Discounted Cash Flows ('DCF')

The DCF approach calculates the value of an entity by adding all of its future net cash flows discounted to their present value at an appropriate discount rate. The discount rate is usually calculated to represent the rate of return that investors might expect from their capital contribution, given the riskiness of the future cash flows and the cost of financing using debt instruments.

In addition to the periodic cash flows, a terminal value is included in the cash flow to represent the value of the entity at the end of the cash flow period. This amount is also discounted to its present value. The DCF approach is usually appropriate when:

- ▶ An entity does not have consistent historical earnings but is identified as being of value because of its capacity to generate future earnings; and
- ▶ Future cash flow forecasts can be made with a reasonable degree of certainty over a sufficiently long period of time.

Any surplus assets, along with other necessary valuation adjustments, are added to the DCF calculation to calculate the total entity value.

### 7.2 Capitalisation of Maintainable Earnings ('CME')

The CME approach involves identifying a maintainable earnings stream for an entity and multiplying this earnings stream by an appropriate capitalisation multiple. Any surplus assets, along with other necessary valuation adjustments, are added to the CME calculation to calculate the total entity value.

The maintainable earnings estimate may require normalisation adjustments for non-commercial, abnormal or extraordinary events.

The capitalisation multiple typically reflects issues such as business outlook, investor expectations, prevailing interest rates, quality of management, business risk and any forecast growth not already included in the maintainable earnings calculation. While this approach also relies to some degree on the availability of market data, the multiple is an alternative way of stating the expected return on an asset.

The CME approach is generally most appropriate where an entity has historical earnings and/or a defined forecast or budget. Further, a CME is usually considered appropriate when relevant comparable information is available.

### 7.3 Asset Based Valuation ('ABV')

An ABV is used to estimate the fair market value of an entity based on the book value of its identifiable net assets. The ABV approach using a statement of financial position alone may ignore the possibility that an entity's value could exceed the book value of its net assets. However, when used in conjunction with other methods which determine the value of an entity to be greater than the book value of its net assets, it is also possible to arrive at a reliable estimate of the value of intangible assets including goodwill.

Alternatively, adjustments can be made to the book value recorded in the statement of financial position in circumstances where a valuation methodology exists to readily value the identifiable net assets separately and book value is not reflective of the true underlying value. Examples of circumstances where this type of adjustment may be appropriate include when valuing certain types of identifiable intangible assets and/or property, plant and equipment.

The ABV approach is most appropriate where the assets of an entity can be identified and it is possible, with a reasonable degree of accuracy, to determine the fair value of those identifiable assets.

#### **7.4 Market Based Valuation ('MBV')**

An MBV methodology determines a value for an entity by having regard to the value at which securities in the entity have recently been purchased. This approach is particularly relevant to:

- ▶ Entities whose shares are traded on an exchange. The range of share prices observed may constitute the market value of the shares where a sufficient volume of shares is traded and the shares are traded over a sufficiently long period of time; and/or
- ▶ Entities for which it is possible to observe recent transactions relating to the transfer of relatively large parcels of shares (e.g. recent capital raisings).

For listed entities, the range of share prices observed may constitute the market value of the shares in circumstances where sufficient volumes of shares are traded and the shares are traded over a sufficiently long period of time. Share market prices usually reflect the prices paid for parcels of shares not offering control to the purchaser.

#### **7.5 Industry Based Metrics (Comparable Analysis)**

It is often appropriate to have regard to industry specific valuation metrics in addition to the traditional valuation approaches outlined above. These metrics are particularly relevant in circumstances where it is reasonably common for market participants to have regard to alternative measures of value.

For resource companies, it is common for market analysts to have regard to multiples related to resources and tenement size.

## 8.0 Valuation of Metallica Prior to the Arrangement

This section sets out our valuation of the shares in Metallica as follows:

- ▶ Section 8.1 sets out our view of the most appropriate valuation methodologies to adopt for the purpose of valuing Metallica;
- ▶ Section 8.2 sets out our DCF valuation of Metallica's UBP;
- ▶ Section 8.3 sets out the value of Metallica's other assets and liabilities;
- ▶ Section 8.4 sets out the total ABV of Metallica;
- ▶ Section 8.5 sets out our MBV of Metallica; and
- ▶ Section 8.6 sets out our view of the most appropriate value to adopt for each Metallica share, on a controlling interest basis, for the purpose of this Report.

### 8.1 Our Valuation Approach for Metallica

To value Metallica we have adopted the following methodologies:

- ▶ Valued Metallica's key primary asset, the UBP, adopting a discounted cash flow methodology. For assets as advanced as the UBP, it is common for a DCF methodology to be adopted. See Section 8.2 for our DCF valuation of the UBP;
- ▶ Adopted the technical valuations for the other resources/tenements held by Metallica, as provided by the specialist technical valuer AMC. Details of the values of these tenements/resources are set out in Section 8.3.1;
- ▶ Valued the other assets and liabilities held by Metallica in Section 8.3.2 to 8.3.3;
- ▶ Adding the values of Metallica's other assets/liabilities to the DCF value calculated in Section 8.2 and the technical valuations for the other tenements/resources detailed in Section 8.3.1 we have calculated an ABV for Metallica. This analysis is set out in Section 8.4;
- ▶ Completed an MBV of Metallica, set out in section 8.5; and
- ▶ Having regard to the ABV and our MBV, we have set out our view of the most appropriate value to adopt for each Metallica share, on a controlling interest basis, for the purpose of this Report. This analysis is set out in Section 8.6.

### 8.2 DCF Valuation of UBP

#### 8.2.1 Basis of the Financial Model Adopted for the DCF

The UBP has been the subject of a pre-feasibility study completed by IMC Mining Pty Ltd in September 2018 ('the UBP Study'). The latest iteration of the UBP Study results were announced by Metallica on 12 September 2018. We understand that the UBP is well advanced and the understanding of the UBP parameters are sufficiently advanced to complete a DCF valuation. On this basis we have completed a DCF valuation utilising the financial model underpinning the UBP Study.

To assist with our DCF valuation we have engaged AMC to review the operating costs, capital costs and physical volume assumptions ('the AMC Assumptions') necessary to complete the DCF valuation. AMC has provided the AMC Report dated 19 December 2018, which is attached at Appendix B (the 'AMC Report').

The AMC Report provides further background on the UBP and their findings regarding the operating costs, capital costs and physical volume assumptions. Users of this Report should review the AMC Report in detail to ensure they understand the premise for the AMC Assumptions underpinning our valuation work.

Based on our enquiries and the information provided to us, we regard AMC to be an independent specialist and in our view, it is appropriate for us to consider the work of AMC in completing this valuation work. AMC understand the purpose of the valuation set out in this Report.

We confirm that we have been provided with express written consent by AMC to refer to and rely on the AMC Report as for the purposes of our valuation work this Report. We have made reasonable enquiries of AMC and are satisfied that the work and valuations in the AMC Report are suitable for use in this Report. Notwithstanding this, we do not take responsibility for the work of AMC.

As set out in Metallica's announcement of 12 September 2018, the UBP Study has modelled three scenarios as follows:

- ▶ Scenario 1 (Base Case): This case allows for the mining of Proved and Probable Reserves in 'Area A', as depicted in Figure 3.5 of the AMC Report;
- ▶ Scenario 2: This case allows for the mining of Inferred Resources in 'Area A' and 'Area B', in addition to the reserves in 'Area A' depicted in Figure 3.5 of the AMC Report; and
- ▶ Scenario 3: This case allows for the volumes detailed in Scenario 2 as well as further volumes associated with screening transitional stockpiled material ('STSM').

### 8.2.2 Key Assumptions

As set out in Section 8.2.1, we have taken the AMC Assumptions as provided in the AMC Report. Users of this Report must read the AMC Report to understand the basis for those assumptions.

In addition to those assumptions, we have detailed the other key assumptions we have adopted for the DCF valuation of the UBP below.

#### Price of Direct Shipping Ore ('DSO')

The assumed prices of DSO have been set having regard to a bauxite price forecast report provided by CM Group to Metallica, dated November 2018 ('the CM Group Report').

The updated CM Group pricing is lower than the pricing relied upon by Metallica for the updated pre-feasibility as released on 12 September 2018. We understand this pricing assumes the sale of the product to low temperature refineries in China. We understand it may be possible to realise higher prices from high temperature refineries, however, high temperature test data is not currently available.

We understand CM Group is highly experienced in this area, is independent from Metallica and the pricing remains materially current.

Table 8.1 below sets out the bauxite pricing basis that we have adopted within the DCF valuation of the UBP.

**Table 8.1: Bauxite Pricing for Metallica Provided by the CM Group (real basis)**

	CY2019	CY2020	CY2021	CY2022	CY2023	CY2024	CY2025	CY2026	CY2027+
Bauxite Pricing (US\$/dmt) <sup>1</sup>	38.3	39.2	42.6	40.6	42.6	43.3	43.3	43.3	43.6

Source: CM Group, September 2018

<sup>1</sup> Bauxite pricing based on US\$ per dry metric tonne and is on a cost and freight ('CFR') basis.

We note that the bauxite pricing in Table 8.1 is specific to the Metallica bauxite specification as at July 2018 with the composition as follows:

- ▶ Total alumina: 52.70%;
- ▶ Available alumina 145<sup>4</sup>: 40.60%;
- ▶ Total silica: 13.30%; and
- ▶ Reactive silica 145<sup>4</sup>: 5.70%.

CM Group has recommended an adjustment to the pricing of Metallica's bauxite based on deviation to the specifications of the July 2018 bauxite sample (set out above). The adjustments to bauxite prices based on the CM Group Report that we have adopted within the DCF valuation are:

- ▶ US\$1.0/dmt increase in value for a 1% increase in available alumina; and
- ▶ US\$2.0/dmt decrease in value for a 1% increase in reactive silica.

#### Discount Rates

The discount rate is usually calculated to represent the rate of return that investors might expect from their capital contribution, given the riskiness of the future cash flows and the cost of financing using debt instruments for the relevant asset. We have selected a real after tax discount rate in the range of 13.0% to 17.0% to discount the free cash flows of the UBP to their present value. In selecting this discount rate we have considered the following:

- ▶ The required rate of return of comparable companies in the resources sector;
- ▶ The capital structure of comparable companies;
- ▶ The UBP's projected cash flows, including high sensitivity of the projections to the assumed price and operating costs;
- ▶ The joint control ownership held by Metallica via the 50/50 JV (rather than absolute 100% control); and
- ▶ The pre-feasibility status of the UBP and lack of an offtake agreement.

<sup>4</sup> Result of both wet chemical, laboratory 'bomb' digestion at 145°C, as well as X-ray fluorescence (the CM Group Report)

The real after tax discount rate range selected reflects our assessment of the weighted average cost of capital ('WACC') for the UBP based on the following:

- ▶ a risk free rate of 2.66% based on the 10-year Australian bonds as at 1 November 2018;
- ▶ an equity market risk premium of 6.0%;
- ▶ a beta in the range of 0.9 to 1.3;
- ▶ a company specific risk premium to reflect the specific matters relevant to the UBP, including those matters detailed above;
- ▶ the limited ability of projects of this nature (i.e. with relatively thin operating margins) to procure debt;
- ▶ a corporate tax rate of between 27.5% and 30%; and
- ▶ a value for imputation credits (y) of nil. This assumption has been made with reference to the fact that imputation credits for Australian companies are available to domestic investors only and that not all investors in Metallica are Australian. The marginal investor is likely to be an investor who is not entitled to claim imputation credits.

#### Tax Rate

The tax rate adopted is consistent with the Australian corporate tax rate. During initial ramp up of the UBP, where the aggregated turnover is less than \$50 million a 27.5% tax rate is adopted and for the subsequent periods where the aggregated turnover is above the \$50 million threshold, a 30% tax rate is adopted.

#### Tax Losses

We have assumed Metallica is able to utilise full tax losses of \$16.8 million from previous periods to offset its tax expense.

#### Exchange Rate

We have adopted US\$ and A\$ exchange rate based on Consensus Economic forecasts as at July 2018 outlined in Table 8.2 below.

**Table 8.2: Consensus Economics Annual Average Exchange Rate**

FX Rate	CY2019	CY2020	CY2021	CY2022	CY2023	CY2024+
Consensus Economics (USD/AUD)	0.737	0.758	0.783	0.784	0.770	0.764

Source: Consensus Economics July 2018

#### Base Case Start Date

One of the most uncertain aspects of the UBP is the date that production will begin. Metallica must secure the right to construct a haul road through ML 7024 (Rio Tinto Alcan Weipa's Amrun bauxite project), to enable mined ore to be trucked to the Hey Point port facility. From Metallica's ASX announcement dated 9 November 2018, it has entered into a binding accesses agreement in relation to the haul road, particularly regarding the provision of consent as required under the Mineral Resources Act for the grant of a section 316 mining lease. Metallica expects that operations will commence in the first half of calendar 2019, however no assurance can be provided that this will actually occur as intended.

For the purposes of this Report, we have adopted April 2019 as the Base Case starting date. Given the uncertainty associated with the start date we have made an adjustment to our DCF valuation for UBP in Section 8.2.5.

We have discounted all cash flows to 1 November 2018.

#### Ownership interest of 50%

Metallica holds a 50% interest in the UBP via a joint venture. All valuation work completed is on the basis of Metallica receiving a 50% share in all assets, liabilities revenue and expenses in the joint venture.

#### Marketing Cost

Marketing costs are based on the marketing agency agreement signed between Metallica and Bigbites Ltd dated 17 August 2017.

#### Working Capital

We have been advised by Metallica Management that:

- ▶ bauxite sales are generally contracted such that 80% of payables are paid within two to three weeks of loading and then the balance paid following delivery; and
- ▶ there will unlikely be any material amount of bauxite held in stockpile or in transit.

Based on this information, we have not made any working capital adjustments within the DCF valuation model for the UBP.

### 8.2.3 DCF Valuation Results with the Base Case Start Date

Table 8.3 sets out our valuation of the UBP using a DCF valuation methodology and adopting the AMC Assumptions and the assumptions set out above.

**Table 8.3: DCF Valuation Results of the UBP**

Case	Low Value (\$m)	High Value (\$m)
Scenario 1	5.46	6.10
Scenario 2	4.19	4.50
Scenario 3	4.36	4.71

Source: AMC and BDOCF analysis

For completeness, the value above represents the post-tax NPV value of the UBP. We note that Scenario 1 provides the largest value. As it has the largest value, notwithstanding the greater uncertainty associated with the other scenarios relative to Scenario 1, we have adopted Scenario 1 for the purposes of our valuation of the UBP.

### 8.2.4 Sensitivity Analysis of DCF Valuation Results with the Base Case Start Date

The DCF valuation of the UBP is based on a number of assumptions which are subject to a significant amount of uncertainty. To provide further information to Shareholders, we have completed a sensitivity analysis on the value of the UBP for Scenario 1 (assuming a midpoint of \$5.77 million calculated using the discount rate of 15%).

The following variables have been adjusted in isolation, all other things held equal:

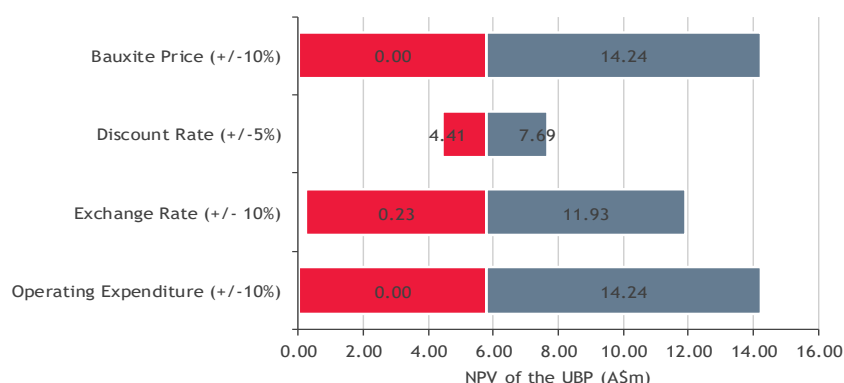
- ▶ A +/- 10% change in bauxite price;
- ▶ An absolute +/- 5% change in discount rate;
- ▶ A +/- 10% change in the exchange rate; and
- ▶ A +/-10% change in the operating expenditure.

Users of this Report should note that:

- ▶ We have not completed a sensitivity on capital expenditure as the UBP is not a capital intensive project;
- ▶ Notwithstanding the base case does not consider Scenarios 2 and 3, the scenario analysis does incorporate values from Scenarios 2 and 3 where the change in the variable means that Scenario 2 or 3 produce a higher value than Scenario 1. In other words, the sensitivities that provide for increased values under Scenarios 2 and 3 are adopted where they provide incremental value (i.e. the bauxite price, exchange rate and the operating expenditure sensitivities).
- ▶ In reality, the variables described above would have compounding or offsetting effects and are unlikely to move in isolation;
- ▶ The variables for which we have performed sensitivities are not the only variables which are subject to deviation from the forecast assumptions;
- ▶ The sensitivities we have performed do not cover the full range of possible variances from the base case assumptions assumed (i.e. variances could be greater than the percentage increase or decreases set out in this analysis). Variances could result where the value of the UBP becomes nil; and
- ▶ We have not adjusted the discount rate applicable to any incremental cash flows in Scenario 2 and Scenario 3. This sensitivity has been completed for illustrative purposes only and the higher end values may be higher than would be the case if the cash flows associated with the more uncertain volumes shipped in Scenarios 2 and 3 were appropriately discounted relative to Scenario 1. Notwithstanding, we note the additional value provided under alternate scenarios, relative to Scenario 1, is approximately 10% higher at the high end of the sensitivity ranges.

Figure 8.1 provides an overview of the impact on the value of the UBP from a change in selected key inputs.

**Figure 8.1: Sensitivity Analysis of Key Inputs within the DCF Valuation Results of the UBP**



Source: BDOCF analysis



### 8.2.5 Adjustment for Start Date Uncertainty

As detailed in Section 8.2.2, there is uncertainty relating to the start date of the UBP. Our adopted discount rates for the DCF valuation of the UBP has been adopted excluding this issue and we are of the view that an adjustment to our DCF valuation is required to account for this specific uncertainty<sup>5</sup>.

In considering the adjustment required we have considered Managements views on this matter, including:

- ▶ The history surrounding the seeking the haul road approval and progress to date and the numerous milestone dates which have been missed and current/likely delays as a consequence; and
- ▶ Metallica's ASX announcements and discussions with Metallica Management.

Having regard to these discussions and other matters, we have applied a discount to our calculated DCF value for UBP in the range of nil to 20%.

### 8.2.6 Adopted UBP Value

Having regard to our DCF value for UBP and our discount for the uncertainty associated with the start date, we have adopted a value range of \$4.4 million to \$6.1 million for the UBP.

## 8.3 Value of Metallica's Other Assets and Liabilities

This section is set out as follows:

- ▶ Section 8.3.1 sets out the values for the other resource assets as estimated in the AMC Report;
- ▶ Section 8.3.2 calculates the value of the other assets and liabilities held by Metallica on its balance sheet;
- ▶ Section 8.3.3 calculates the value of the contingent consideration asset held by Metallica related to the SCONI Project it divested in September 2017; and
- ▶ Section 8.3.4 calculates the total value of all the assets/liabilities detailed above.

### 8.3.1 Value of the Other Tenements/Resources

The other tenements/resources held by Metallica, excluding those included in the UBP, as summarised in Section 5.1, and discussed in more detail in the AMC Report are:

- ▶ Urquhart Point HMS;
- ▶ Cape Flattery Silica Sand Project;
- ▶ Cape York Project;
- ▶ Esmeralda Graphite Project; and
- ▶ Fairview Limestone Project.

AMC has valued the above tenements in section 6 of the AMC Report. We have summarised their values for these tenements and AMC's adopted valuation methodologies in Table 8.4 below. While AMC has provided us with information which indicates they have the requisite experience to complete a technical valuation of the tenements and we have critically analysed their work, we are not responsible for the AMC Report.

**Table 8.4: AMC Technical Valuations of Tenements Excluding the UBP**

Tenement/Project	Valuation Methodology	Low Value (\$ million)	High Value (\$ million)
Urquhart Point HMS	Written Down Value of Property, Plant and Equipment. AMC ascribed no value to the project beyond the value for equipment held in storage for this project.	1.00	1.04
Cape Flattery Silica Sand Project	Not applicable. AMC ascribed no value to the Cape Flattery silica asset.	-	-
Cape York Project	Not applicable. AMC ascribed no value to the Cape York bauxite exploration assets.	-	-
Esmeralda Graphite Project	Comparable transactions and the Past expenditure method.	0.07	0.11
Fairview Limestone Project	Not applicable. AMC ascribed no value to the Fairview tenement holdings within the Fairview Limestone Project.	-	-
<b>Total</b>		<b>1.07</b>	<b>1.15</b>

Source: AMC Report

The preferred values provided by AMC match the midpoint between the high and low values (i.e. \$1.11 million).

<sup>5</sup> We note all projects which are yet to start production have risks associated with the date of commencement due to unforeseen events (e.g. weather), contractor delays, construction risk and other matters. While we believe our adopted discount rate ranges account for these sorts of matters, we are of the view that the is a very specific risk which requires explicit adjustment.

### 8.3.2 Value of the Other Assets and Liabilities of Metallica

We have considered the assets and liabilities of Metallica as at 31 August 2018 provided by Management in determining what items need to be added to our calculated values for UBP and the other tenements (in Sections 8.2 and 8.3.1). We are instructed by the Company that no other assets or liabilities are held by Metallica, other than those present on the 31 August 2018 balance sheet, with the exception of the SCONI contingent consideration (detailed in Section 8.3.3).

Table 8.5 below sets out the values we have adopted for the other assets and liabilities and the basis for those values.

**Table 8.5: Value of Other Assets/Liabilities of Metallica (excluding the UBP, tenements and SCONI Contingent Payment)**

Asset/Liability	Value (\$)	Basis
<b>Assets</b>		
Cash and cash equivalents	4,937,000	Cash balance as at 31 October 2018. We are instructed this balance has not materially changed.
Trade and other receivables	20,000	Trade and other receivables balance as at 31 August 2018. We are instructed this balance has not materially changed.
Other current assets	1,042,000	Value of 16,811,916 Australian Mines Limited shares as at 8 November 2018 based on closing price of \$0.062 per share on the ASX.
Property, plant and equipment	-	The value of the warehoused HMS plant is included in the tenement valuations completed by AMC.
Exploration and evaluation	-	The value of exploration and evaluation is captured in our UBP DCF valuation and the value calculated for the tenements by AMC.
Other current assets	-	Security deposits balance excluded as it relates to deposits held for the rehabilitation of the tenements.
<b>Less Liabilities</b>		
Trade and other payables	(214,000)	Trade and other receivables balance as at 31 August 2018. We are instructed this balance has not materially changed.
Employee benefits	(117,000)	Employee benefits balance as at 31 August 2018. We are instructed this balance has not materially changed.
Rehabilitation and decommissioning liabilities	-	The rehabilitation and decommissioning liabilities have been captured in the UBP DCF valuation.
<b>Total</b>	<b>5,668,000</b>	

Source: Metallica Management and BDOCF analysis

### 8.3.3 Value of the SCONI Contingent Payment

In the 6 September 2017, Metallica announced the sale of its interest in the SCONI scandium, cobalt and nickel project ('the SCONI Project').

The consideration for the sale had three components as follows:

- ▶ An upfront payment of \$3.5 million, which has been received on completion;
- ▶ A payment of \$1.5 million in Australian Mines Limited shares upon completion of a Definitive Feasibility Study on the SCONI Project or 30 June 2018. These consideration shares have been received; and
- ▶ A further \$5 million dollar payment in cash or Australian Mines Limited shares following the completion of commercial production from the SCONI Project ('the SCONI Contingent Payment'). As the SCONI Project is yet to begin, this payment has not been received.

To value the SCONI Contingent Payment, in our view it is appropriate to apply a probability factor to the \$5 million face value.

In determining the probability factor to apply to the SCONI Contingent Payment we have considered:

- ▶ Discussions with Metallica Management, given their familiarity with the SCONI Project;
- ▶ The time value of the money and the discount which is appropriate to apply to receipts in future periods, noting that the most recent likely start date proposed is 2021;
- ▶ The high capital cost required for the start-up of the mine. In 2013, Metallica completed a pre-feasibility study on the SCONI Project which indicated total capital expenditure for phase 1 of \$247 million; and
- ▶ The FY2018 financial statements of Australian Mines Limited ('AUZ') and other recent announcements. It appears from these announcements that AUZ is progressing with investment in feasibility work and resource definition for the SCONI Project, including recently completing its bankable feasibility study. We also understand that AUZ is progressing with an application for Northern Australia Infrastructure Facility funding.

Having regard to the above we have applied a probability factor to the face value of the SCONI Contingent Payment of 10% and 30% for the low and high value of Metallica respectively.

Applying the probability factor, we calculate a value for the SCONI Contingent payment between \$0.5 million and \$1.5 million.

## 8.4 Asset Based Value for Metallica

Having regard to the respective sections set out above, Table 8.6 sets out a summary of our calculated ABV for Metallica.

### 8.4.1 Corporate Overheads

Our ABV for Metallica includes an adjustment of \$2 million, to approximate a year of corporate overheads and other transaction costs. The approximation of corporate overheads is not associated with the direct furtherance or development of the UBP or other assets held by Metallica.

While we are of the view that the marginal purchaser of Metallica is likely to seek ways to purchase the assets of Metallica without the aforementioned corporate overheads, in assessing the controlling interest value of Metallica, in accordance with RG 111, prior to the Arrangement, we are of the view that this adjustment is appropriate. Metallica would take time to realise the value of its assets and any process to realise value is likely to have costs which are not immaterial, relative to the asset base of Metallica.

In determining the above, we have also considered royalties received by Metallica from Sibelco for a limestone deposit. Metallica management has advised us that royalties received from Sibelco have been consistently around \$50,000 per annum. Metallica management is uncertain on the quantity of resource remaining in the deposit and how much longer they will be receiving these royalties, but expect they will cease in the next five years.

### 8.4.2 Calculated Asset Based Value for Metallica

**Table 8.6: Asset Based Value of Metallica**

Asset	Reference	Value - Low (\$)	Value - High (\$)
The UBP	Section 8.2	4,368,000	6,100,000
Tenements Excluding the UBP	Section 8.3.1	1,070,000	1,150,000
Other Assets and Liabilities	Section 8.3.2	5,668,000	5,668,000
SCONI Contingent Payment	Section 8.3.3	500,000	1,500,000
Allowance for Corporate Overheads and Other Transaction Cost	Section 8.4.1	(2,000,000)	(2,000,000)
<b>Total ABV value of Metallica</b>		<b>9,606,000</b>	<b>12,418,000</b>
Number of Metallica shares <sup>1</sup>	Section 5.3.1	322,447,408	322,447,408
<b>Value of a Metallica share (control basis)</b>		<b>0.030</b>	<b>0.039</b>

Source: BDOCF Analysis

<sup>1</sup> Not including the 1,000,000 Metallica options related to the SCONI Project and the 11,000,000 performance rights. Refer to the section below.

In our opinion, the controlling interest value of Metallica, having regard to an asset based valuation methodology (and the underlying valuation methodologies within the preceding parts of Section 8) is in the range of **\$9.6 million to \$12.4 million** or **\$0.030 to \$0.039** per ordinary share in Metallica on a controlling interest basis.

For completeness, as set out in Section 5.3, Metallica also has 1 million options related to the SCONI Project and 11 million performance rights that are currently outstanding. As discussed in Section 5.3, there is significant uncertainty whether the Metallica options will be exercised and whether the Metallica performance rights will vest. As such, we have not valued the Metallica shares on a fully-diluted basis (i.e. including the reduction in value from the dilution the options and performance rights may create). Notwithstanding, the impact to the value of a Metallica share on a fully-diluted basis is, in our opinion, immaterial (<4%) in the circumstances.

## 8.5 MBV of Metallica

This section sets out our MBV of Metallica by considering:

- ▶ The recent share trading data relating to Metallica; and
- ▶ The liquidity of Metallica ordinary shares.

### 8.5.1 Analysis of Metallica's Share Trading Data

Metallica's ordinary shares are listed on the ASX. Information relating to the recent share trading data of Metallica's ordinary shares along with an analysis of recent announcements made by Metallica to the ASX are set out in Section 5.4 of this Report.

For the purposes of our market-based valuation, we have assessed the VWAP of Metallica shares over 1 week, 1 month, 3 months, 6 months, 9 months and 12 months prior to the announcement of the Arrangement on 13 September 2018 and 31 October 2018, as set out in table 8.7 below.

**Table 8.7: Metallica's VWAP for Specified Periods Prior to 13 September 2018 and 31 October 2018**

Period before 13 September 2018	VWAP (AUD)	Period before 31 October 2018	VWAP (AUD)
1 Week	\$0.032	1 Week	\$0.031
1 Month	\$0.034	1 Month	\$0.033
3 Months	\$0.037	3 Months	\$0.033
6 Months	\$0.041	6 Months	\$0.037
9 Months	\$0.045	9 Months	\$0.041
12 Months	\$0.048	12 Months	\$0.044

Source: Capital IQ as at 2 November 2018

With reference to Table 8.7, we note the following:

- ▶ The VWAP of Metallica shares over the periods specified before 13 September 2018 ranges from \$0.032 to \$0.048;
- ▶ The VWAP of Metallica shares over the periods specified before 31 October 2018 ranges from \$0.031 to \$0.044; and
- ▶ Metallica's share price has marginally decreased since the announcement of the Arrangement and the 31 October 2018.

### 8.5.2 Conclusion on MBV

Having regard to the information set out above, in our view it is appropriate to adopt a value of \$0.032 to \$0.041 per Metallica ordinary share on a minority interest basis for our market based valuation. This range is consistent with the high and low VWAP range for the periods set out in Table 8.7 above over the past six months.

To calculate a controlling interest value, we are of the view that it is appropriate to apply a control premium to the value range we have estimated from the trading data of minority parcel share interests in Metallica.

Discussion relating to the derivation of a control premium to apply to Metallica is set out in Appendix A. On the basis set out in Appendix A, we have adopted a control premium of 20%.

Table 8.8 below sets out our calculated controlling interest MBV.

**Table 8.8: Market Based Value of Metallica (Controlling Interest)**

	Reference	Value - Low (\$)	Value - High (\$)
Metallica Minority Interest Share Value		0.032	0.041
Control Premium	Appendix A	20%	20%
<b>Value of a Share in Metallica (Control Interest Basis) Adjusted for Warrants and Options</b>		<b>0.038</b>	<b>0.049</b>

Source: BDOCF Analysis

### 8.6 Value Adopted per Metallica Share

Table 8.9 sets out the calculated value that we have determined for an ordinary Metallica share on a controlling interest basis using an ABV methodology and a MBV methodology.

**Table 8.9: Adopted Value of a Metallica Ordinary Share (Controlling Interest Basis)**

Value of a Metallica Ordinary Share	Reference	Value - Low (\$)	Value - High (\$)
ABV methodology	Section 8.4	0.030	0.039
MBV methodology	Section 8.5	0.038	0.049

Source: BDOCF analysis

Based on the information set out in Table 8.8 above, in our opinion it is appropriate to adopt a value of **\$0.030 to \$0.049** for an ordinary share in Metallica on a controlling interest basis.

We note that the valuation range provided is relatively wide. We are of the view that this is appropriate in the circumstances as Metallica's key asset, the UBP, has uncertainties surrounding its start date and is a lower margin project. We also note that the SCONI Contingent Payment has a binary outcome of payment and non-payment (albeit that the timing of the payment, if any, is unknown) and adds to the spread in our valuation range.

## 9.0 Valuation of the Merged Entity

This section sets out our valuation of the shares in the Merged Entity as follows:

- ▶ Section 9.1 sets out our view of the most appropriate valuation methodologies to adopt for the purpose of valuing the Merged Entity;
- ▶ Section 9.2 sets out our DCF valuation of Melior's Goondicum Project;
- ▶ Section 9.3 sets out the value of Melior's other assets and liabilities;
- ▶ Section 9.4 sets out the total ABV of Melior;
- ▶ Section 9.5 sets out the value of Metallica adopted for determining the value of the Merged Entity;
- ▶ Section 9.6 sets out the ABV of the Merged Entity;
- ▶ Section 9.7 sets out our MBV of the Merged Entity; and
- ▶ Section 9.8 sets out our view of the most appropriate value to adopt for each Merged Entity share, on a minority interest basis, for the purposes of this Report.

### 9.1 Our Valuation Approach for the Merged Entity

To value a share in the Merged Entity we have adopted the following methodologies:

- ▶ Valued Melior's key primary asset, the Goondicum Project, adopting a DCF methodology. For assets as advanced as the Goondicum Project, it is common for a DCF methodology to be adopted. See Section 9.2 for our DCF valuation of the Goondicum Project;
- ▶ Valued the other assets and liabilities held by Melior in Section 9.3;
- ▶ Calculated a total ABV for Melior by adding the DCF value for the Goondicum Project and the other assets and liabilities of Melior in Section 9.4;
- ▶ Calculated the value of Metallica, adjusting for any matters from the value calculated in Section 8.4 which are relevant in the context of the Merged Entity. This analysis is set out in Section 9.5;
- ▶ Calculated an ABV for the Merged Entity by adding the asset values of Melior and Metallica in Section 9.6;
- ▶ Completed a MBV of the Merged Entity having regard to the trading data for Melior and Metallica, set out in section 9.7; and
- ▶ Having regard to the ABV and our MBV, we have set out our view of the most appropriate value to adopt for a share in the Merged Entity, on a minority interest basis, for the purpose of this Report. This analysis is set out in Section 9.8.

### 9.2 DCF Valuation of the Goondicum Project

#### 9.2.1 Basis of the Financial Model Adopted for the DCF

The Goondicum Project has been the subject of a preliminary economic assessment, completed by TZ Minerals International Pty Ltd in April 2018 ('the GPEA'). The GPEA results were announced by Melior on SEDAR on 20 April 2018. We understand that the Goondicum Project is well advanced, expecting to be in operation in November 2018. We understand that the Goondicum Project parameters are sufficiently advanced to complete a DCF valuation. On this basis we have completed a DCF valuation utilising the financial model underpinning the GPEA.

To assist with our DCF valuation we have engaged AMC to review the GPEA operating costs, capital costs and physical volume assumptions necessary to complete the DCF valuation.

The AMC Report is attached at Appendix B. The AMC Report provides further background on the Goondicum Project and their findings regarding the operating costs, capital costs and physical volume assumptions. Users of this Report should review the AMC Report in detail to ensure they understand the premise for the key operating, capital and volume assumptions underpinning our valuation work.

While AMC has provided us with information that indicates they have the requisite experience to complete a technical review of the Goondicum Project and we have critically analysed their work, we are not responsible for the AMC Report.

AMC has provided two cases for the DCF valuation of the Goondicum Project:

- ▶ Goondicum Base Case: assumes that mining takes place only on the current tenement (ML 80044) granted to Melior until 2028; and
- ▶ Goondicum Upscale Case: assumes that mining takes place on ML 80044 until 2028, after which it assumes that mining and processing will continue for a further five years on an adjacent exploration tenement (MDLA 2007).

### 9.2.2 Key Assumptions

As set out in Section 9.2.1, we have adopted the operating cost, capital cost and physical volume assumptions as provided in the AMC Report. Users of this Report must read the AMC Report to understand the basis for those assumptions.

In addition to those assumptions, we have detailed the other key assumptions we have included in our DCF valuation of the Goondicum Project in the following section.

#### Price of Ilmenite

The assumed prices of ilmenite have been adopted from Consensus Economics and is set out in Table 9.1 below.

**Table 9.1: Ilmenite FOB Prices (Nominal basis, and prior to the 5% premium applied)**

Ilmenite Pricing	CY2019	CY2020	CY2021	CY2022	CY2023+
Consensus Economics (US\$/t)	203	203	203	205	207

Source: Consensus Economics July 2018

It is noted that in conjunction with the Hainan Wensheng Loan, there is an offtake agreement for Goondicum ilmenite for prices based on the African Ilmenite Price ('AIP') plus a 15% premium to reflect the higher quality of Goondicum ilmenite (relative to an AIP product), less a discount of 5% to 12.5% dependent on the AIP (refer to Section 4.5.2).

We have been advised by Melior management that the Indian ilmenite is a suitable proxy for the Goondicum ilmenite based on product specifications, and historically the Indian ilmenite pricing has traded at a long-term premium to AIP of approximately 12%.

Based on the historical AIP pricing provided by Melior, the recent historical Consensus Economics ilmenite price has been largely comparable to the AIP. While a large proportion of the ilmenite produced in the first six years is expected to be taken under the terms of the Hainan Wensheng offtake agreement, if the Goondicum Project can sell other volumes at prices more consistent with Indian ilmenite products, greater revenues may be achieved. Based on the agreed terms of the Hainan Wensheng offtake, where a premium between 0.6% to 9.25% (15% premium and 5% to 12.5% discount) is achieved, we have applied a 5% premium to the Consensus Economic prices on the ilmenite sold to other parties excluding Hainan Wensheng. This is also in line with price premium expectations referenced in the GPEA. We note for completeness, there may be an inherent interest charge in the Hainan Wensheng offtake agreement due to funds advanced for the Goondicum Project (see Section 4.5.2).

Additional sensitivity analysis on the ilmenite prices are set out in Section 9.2.4.

We have confirmed with AMC that the specification for ilmenite required by the offtake is expected to match the ilmenite product from the Goondicum Project.

#### Price of Apatite

The assumed price of apatite has been adopted from the offtake agreement between Melior and SOFT Agriculture Pty Ltd. While the offtake agreement sets out a notional price, the price is not set for the term of the agreement.

We understand from Melior management that the only other local source for apatite is from the Duchess Mine, which is a lower quality to the Goondicum apatite and located further inland. We have had high level discussions with the apatite offtaker to consider the alternatives available for supply of a product comparable to the apatite produced from Goondicum.

Having regard to the information supplied, we have adopted the initial nominated offtake price for the forecast period. Additional sensitivity analysis on the apatite prices are set out in Section 9.2.3.

We have confirmed with AMC that the specification for apatite required by the offtake is expected to match the apatite product from the Goondicum Project.

#### Discount Rate

We have applied a nominal after tax discount rate of:

- ▶ 11% to 14% to the Goondicum Base Case; and
- ▶ 14% to 17% for the incremental cash flows from the Goondicum Upscale Case to the Goondicum Base Case;

to discount the free cash flows of the Goondicum Project to their present value. The discount rates are differentiated between the Goondicum Base Case and the incremental cash flows from the Goondicum Upscale Case as the Goondicum Upscale Case has greater uncertainties due to less knowledge of the mining and processing conditions of the area (which has not been historically mined), no mining licence being in place and margins will likely be lower due to additional haulage costs.

In selecting this discount rate we have considered the following:

- ▶ The required rate of return of comparable companies in the resources sector;
- ▶ The recent commencement of the Goondicum Project with majority of capital expenditure already outlaid;
- ▶ The limited success from previous operations of the Goondicum Project as a result of volatile market conditions and operational barriers (albeit there have been upgrades to the facility since previous operations);



- ▶ The offtake agreements in place for a large portion of Goondicum Project's ilmenite and apatite products; and
- ▶ The capital structure of Melior and comparable companies.

The nominal after tax discount rate range selected reflects our assessment of the weighted average cost of capital for the Goondicum Project based on the following:

- ▶ A risk free rate of 2.66% based on the 10-year Australian bonds as at 1 November 2018;
- ▶ An equity market risk premium of 6.0%;
- ▶ A beta in the range of 0.9 to 1.3;
- ▶ A company specific risk premium to reflect the specific matters relevant to the Goondicum Project, including those matters detailed above;
- ▶ A corporate tax rate of between 27.5% and 30%; and
- ▶ A value for imputation credits ( $\gamma$ ) of nil. This assumption has been made with reference to the fact that imputation credits for Australian companies are available to domestic investors only and that not all investors in the Goondicum Project are Australian. The marginal investor is likely to be an investor who is not entitled to claim imputation credits.

#### Tax Rate

The tax rate adopted is consistent with the Australian corporate tax rate. During initial ramp up of the Goondicum Project, where the aggregated turnover is less than \$50 million a 27.5% tax rate is adopted and for the subsequent periods where the aggregated turnover is above the \$50 million threshold, a 30% tax rate is adopted.

We have also considered expected revenue from the UBP (on the basis it will also be owned by the Merged Entity) in determining the applicable tax rate (noting this variation in tax rates is not significant in the context of the overall valuation).

#### Tax Losses

We understand Metallica has tax advice that indicates the Melior tax losses will be available for use by the Merged Entity. However, in accordance with the relevant tax legislation only an '*available fraction*' of Melior's tax losses can be utilised each year. The '*available fraction*' is yet to be determined but will, in broad terms, approximate the value percentage of Melior as part of the Merged Entity (potentially adjusted for some other items). For the purposes of an estimate, we have adopted a percentage of 64% based on the terms of the Arrangement.

We have been advised by Melior management that tax losses for Melior are approximately \$35 million.

#### Exchange Rate

We have adopted US\$ and A\$ exchange rate based on Consensus Economic forecasts as at July 2018 outlined in Table 9.2 below.

**Table 9.2: Consensus Economics Annual Average Exchange Rate**

FX Rate	CY2018	CY2019	CY2020	CY2021	CY2022	CY2023	CY2024+
Consensus Economics (USD/AUD)	0.722	0.737	0.758	0.783	0.784	0.770	0.764

Source: Consensus Economics July 2018

1 We have adopted the September average monthly rate for the remainder of the 2018 calendar year given the decrease in exchange rate since the start of the year

#### Start Date

The expected start date of the Goondicum Project is November 2018. We have been advised by Melior management that operation has already begun as at the date of this IER.

We have discounted all cash flows to 1 November 2018.

#### Marketing Rate

The portion of ilmenite sold as part of the offtake agreement with Hainan Wensheng assumes marketing rates as contracted with Hainan Wensheng. Additional ilmenite sold to other parties assumes the marketing rates as set out in the Exclusive Distributorship Agreement with Sojitz Corporation dated 28 June 2018.

#### Hainan Wensheng Loan

Given the bespoke nature and repayment profile for the Hainan Wensheng Loan, which depends on volumes and prices for the rate of repayment, we have included it in the cash flow profile for the Goondicum Project. This means that we have not subtracted the value of the Hainan Wensheng Loan in Section 9.3 as a surplus liability.

#### Escalation

A 2% escalation factor has been applied to costs as prices are quoted on a nominal basis. This escalation has also been applied to the long-term ilmenite price from CY2023 onwards.

### 9.2.3 DCF Valuation Results of the Goondicum Project

Table 9.3 sets out our valuation of the Goondicum Project using a DCF valuation methodology and adopting the AMC Assumptions and the assumptions set out in Section 9.2.2.

As set out in Section 9.2.2, we have completed our valuation assuming separate discount rates for the Goondicum Base Case cash flows and the incremental Goondicum Upscale Case. We note that the Upscale Case incremental adds approximately 14% to the low end value and 15% to the high end value.

**Table 9.3: DCF Valuation Results of the Goondicum Project**

Case	Low Value (\$m)	High Value (\$m)
Goondicum Upscale Case	38.22	44.19

Source: AMC and BDOCF analysis

From Table 9.3, the value range for the Goondicum Project we have calculated is between **\$38.22 million** and **\$44.19 million**.

### 9.2.4 Sensitivity Analysis of DCF Valuation Results

The DCF valuation of the Goondicum Project is based on a number of assumptions which are subject to a significant amount of uncertainty. To provide further information to Shareholders, we have completed a sensitivity analysis on the value of the Goondicum Project for the Goondicum Base Case (assuming a midpoint of \$41.04 million calculated using the discount rate of 12.5% for the Base Case cash flow and 15.5% for the Upscale Case incremental cash flows).

The following variables have been adjusted in isolation, all other things held equal:

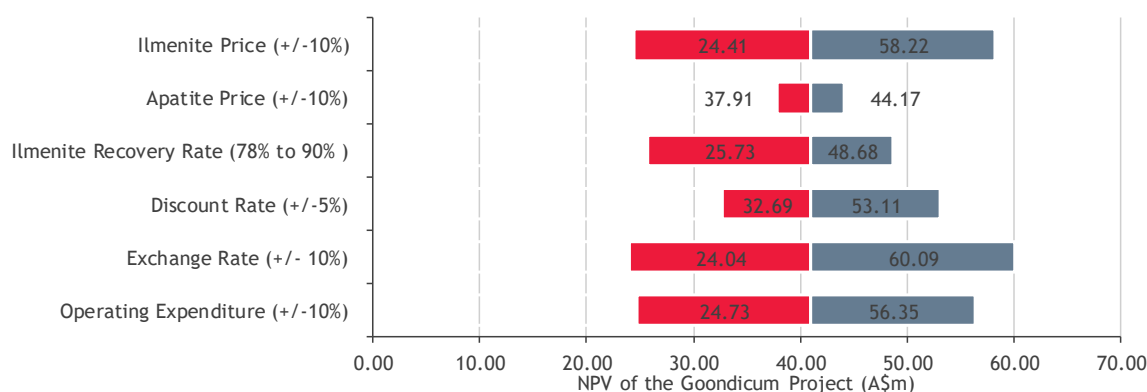
- ▶ A +/- 10% change in ilmenite price;
- ▶ A +/- 10% change in apatite price;
- ▶ An ilmenite recovery rate of 78% to 90% based on AMC's recommendation<sup>6</sup>;
- ▶ An absolute +/- 5% change in discount rate;
- ▶ A +/- 10% change in the exchange rate; and
- ▶ A +/-10% change in the operating expenditure.

Users of this Report should note that:

- ▶ In reality, the variables described above would have compounding or offsetting effects and are unlikely to move in isolation;
- ▶ The variables for which we have performed sensitivities are not the only variables which are subject to deviation from the forecast assumptions;
- ▶ The sensitivities we have performed do not cover the full range of possible variances from the base case assumptions assumed (i.e. variances could be greater than the percentage increase or decreases set out in this analysis). Variances could result where the value of the Goondicum Project becomes nil.

Figure 9.1 provides an overview of the impact on the value of the Goondicum Project from a change in selected key inputs.

**Figure 9.1: Sensitivity Analysis of the Key Inputs for the DCF Valuation Results of the Goondicum Project**



Source: BDOCF analysis

While we have considered the sensitivity of capital expenditure, we have not included this in Figure 9.1 above as it had an immaterial impact on the value of the Goondicum Project.

<sup>6</sup> AMC has adopted a long-term recovery rate for ilmenite of 86%



### 9.3 Value of Melior's Other Assets and Liabilities

We have considered the asset and liability balances of Melior as detailed in the 31 August 2018 balance sheet and 31 October 2018 cash balance provided by Melior Management in determining what the items to be added to our calculated value for the Goodicum Project. We are instructed by Melior that no other assets or liabilities are held by Melior, other than those present on the 31 August 2018 balance sheet.

Table 9.4 sets out the values we have adopted for the other assets and liabilities and the basis for those values.

**Table 9.4: Value of Other Assets/Liabilities of Melior (Exc. The Goondicum Project)**

Asset/Liability	Value (\$)	Basis
<b>Assets</b>		
Cash and cash equivalents	1,538,000	We have adopted the estimated cash balance as at 31 October 2018.
Prepaid expenses and other receivables		- As working capital is included in the Goondicum Project model, we have not adjusted for working capital related balances.
Other current assets		- As working capital is included in the Goondicum Project model, we have not adjusted for working capital related balances.
Inventories		- As working capital is included in the Goondicum Project model, we have not adjusted for working capital related balances.
Deposits		- We understand any deposits held are for the benefit of the Goondicum Project. The model assumes these deposits are received at the conclusion of mining.
Property, plant and equipment		- Included in the valuation of the Goondicum Project.
Mineral properties		- Included in the valuation of the Goodicum Project.
<b>Less Liabilities</b>		
Trade and other payables		- As working capital is included in the Goondicum Project model, we have not adjusted for working capital related balances.
Related party loans	(17,301,000)	Pala Loan drawdown as at 31 October 2018.
Unearned- revenue		- As the next drawdown and repayment of the Hainan Wensheng Loan is allowed for in the production profile in our discounted cash flow valuation of the Goodicum Project, we have not included this liability here.
Provisions		- Employee costs are allowed for in the model.
Decommissioning liability		- The rehabilitation and decommissioning liabilities have been captured in the Goodicum Project value.
<b>Total</b>	<b>(15,763,000)</b>	

Source: Melior Management and BDOCF analysis

### 9.4 Asset Based Value for Melior

Having regard to the respective sections set out above, Table 9.5 sets out a summary of the ABV for Melior.

**Table 9.5: Asset Based Value of Melior**

Asset	Reference	Value - Low (\$)	Value - High (\$)
The Goondicum Project	Section 9.2	38,220,000	44,190,000
Other Assets and Liabilities	Section 9.3	(15,763,000)	(15,763,000)
<b>Total</b>		<b>22,457,000</b>	<b>28,427,000</b>

Source: BDOCF Analysis

In our opinion, the controlling interest value of Melior, having regard to an ABV (and the underlying valuation methodologies within the preceding parts of Section 9) is in the range of **\$22.5 million to \$28.4 million**.

## 9.5 Asset Based Value for Metallica Adopted for the Merged Entity

To calculate an ABV for Metallica for the purposes of estimating the value of the Merged Entity, we have adopted the same methodologies and assumptions as detailed in Section 8.

Metallica Management has advised us that they estimate baseline corporate costs, which are not related to furtherance of tenements or included in the project cash flows for the UBP or the Goodicum Project are in the order of \$1.61 million per annum in the first year and we have adopted \$1.45 million each year thereafter.

We have discounted the additional corporate cost cash flows to a present value, assuming they will be incurred until the conclusion of the Goondicum Project Upscale Case and adopting a discount rate of 13.7% (being the weighted average of the mid-point discount rate based on length of operation for the Goondicum Base Case and Goondicum Upscale Case). The discounted value for corporate costs assuming on this basis is approximately \$10.44 million.

## 9.6 Asset Based Value for the Merged Entity

Table 9.6 sets out the summarised version of the ABV for the Merged Entity from the precedent sections of Section 9.

**Table 9.6: Asset Based Value of the Merged Entity (Excluding the Impact of Option and Warrant Dilution)**

	Reference	Value - Low (\$)	Value - High (\$)
Metallica Asset Based Valuation <sup>1</sup>	Section 8.4	11,606,000	14,418,000
Melior Asset Based Valuation	Section 9.4	22,457,000	28,427,000
Corporate Cost Adjustment	Section 9.5	(10,440,000)	(10,440,000)
<b>Asset Based Value of Merged Entity</b>		<b>23,623,000</b>	<b>32,405,000</b>
Number of shares in Metallica	Section 5.3	322,447,400	322,447,400
Number of Melior shares converted to Metallica shares <sup>7</sup>		579,599,600	579,599,600
<b>Total number of shares</b>		<b>902,047,000</b>	<b>902,047,000</b>
<b>Value of a share in the Merged Entity (control basis)</b>		<b>0.026</b>	<b>0.036</b>

Source: BDOCF Analysis

<sup>1</sup> Reversing the \$2 million in allowance for Metallica's corporate costs and transaction costs as this would be included in the corporate cost adjustments for the Merged Entity

The controlling interest value of the Merged Entity, having regard to an asset based valuation methodology (and the underlying valuation methodologies within the preceding parts of Section 9) is in the range of **\$23.6 million to \$32.4 million** (or approximately **\$0.026 to \$0.036** per share), before considering the impact of dilution associated with the warrants and options on issue in Melior.

The values calculated above do not account for the difference between a controlling interest (the basis on which our ABV has been derived) and a minority interest. As a minority interest in the Merged Entity essentially represents the interest that the Shareholders will hold after the Arrangement and it is appropriate to consider an adjustment for this matter.

We have considered control premiums in Appendix A. Having regard to those factors and the inverse of the matters relevant to the control premium applied to Metallica, we have applied a minority discount of 16.67% to calculate a minority interest value, as set out in Table 9.7 below.

**Table 9.7: Asset Based Value of the Merged Entity**

	Reference	Value - Low (\$)	Value - High (\$)
Asset Based Value of Merged Entity	Table 9.6	23,623,000	32,405,000
Minority Interest Discount	Appendix A	(16.67%)	(16.67%)
<b>Minority Asset Value</b>		<b>19,686,000</b>	<b>27,004,000</b>
Total Number of Shares	Table 9.6	902,047,000	902,047,000
<b>Value of a Share in the Merged Entity (Minority Interest Basis)</b>		<b>0.022</b>	<b>0.030</b>

Source: BDOCF Analysis

Having regard to the analysis set out above, we have valued a minority interest in the Merged Entity between **\$0.022 and \$0.030** per share.

<sup>7</sup> Assumes the number of shares outstanding in Section 6.3.1 multiplied by the Exchange Ratio of 20.

We have set out the calculated impact of the options and warrants on issue in Melior, detailed in Sections 6.3.2 and 6.3.3, in Table 9.8. As set out in Section 8.4, we are of the view that the Metallica options and performance rights on issue (and described in Section 5.3.2 and 5.3.3) are not material to our analysis. We have adjusted for the Melior options and warrants by:

- ▶ Adopting the Black Scholes option valuation methodology;
- ▶ Assuming our calculated value for the Merged Entity to derive the share value. This creates a circularity to the calculation that we solve by iteration;
- ▶ Adopting strike prices and lives for the warrants and options consistent with those in Sections 6.3.2 and 6.3.3;
- ▶ Assuming a volatility of 75%, having regard to the recent historical volatility of Melior (noting the limited trading in Melior shares), Metallica and other companies in sectors similar to Metallica and Melior; and
- ▶ Assuming no dividend payments and a risk free rate consistent with Australian Government bonds of similar maturities.

**Table 9.8: Asset Based Value of the Merged Entity Adjusted for the Melior Warrants and Options**

	Reference	Value - Low (\$)	Value - High (\$)
Asset Based Value of Merged Entity	Table 9.5	19,686,000	27,004,000
Calculated Adjustment for Warrants and Options		(430,000)	(857,000)
<b>Asset Based Value of Merged Entity Adjusted for Warrants and Options</b>		<b>19,256,000</b>	<b>26,147,000</b>
Total Number of Shares	Table 9.5	902,047,000	902,047,000
<b>Value of a Share in the Merged Entity (Minority Interest Basis) Adjusted for Warrants and Options</b>		<b>0.021</b>	<b>0.029</b>

Source: BDOCF Analysis

After adjusting for dilution, we calculate a value of **\$0.021 to \$0.029** per share in the Merged Entity on a minority interest basis.

## 9.7 MBV of the Merged Entity

This section sets out our MBV of the Merged Entity by considering:

- ▶ The recent share trading data relating to Melior;
- ▶ The liquidity of Melior ordinary shares; and
- ▶ The analysis already completed in relation to Metallica shares in Section 8.5.

### 9.7.1 Analysis of Melior's Share Trading Data

Melior's ordinary shares are listed on the TSXV. Information relating to the recent share trading data of Melior's ordinary shares along with an analysis of selected recent announcements made by Melior are set out in Section 6.4.

For the purposes of our MBV, we have assessed the VWAP of Melior shares over 1 week, 1 month, 3 months, 6 months, 9 months and 12 months prior to the announcement of the Arrangement on 13 September 2018 and 31 October 2018, as set out in Table 9.9 below.

**Table 9.9: Melior's VWAP for Specified Periods Prior to 13 September 2018 and 31 October 2018**

Period before 13 September 2018	VWAP (AUD)	Period before 31 October 2018	VWAP (AUD)
1 Week	\$0.882	1 Week	\$0.646
1 Month	\$0.849	1 Month	\$0.687
3 Months	\$0.903	3 Months	\$0.773
6 Months	\$0.986	6 Months	\$0.874
9 Months	\$1.054	9 Months	\$0.956
12 Months	\$1.018	12 Months	\$1.034

Source: Capital IQ as at 2 November 2018

With reference to Table 9.9, we note the following:

- ▶ Melior's share price has decreased following the announcement of the Arrangement, as evidenced by the lower 1-week VWAP before 31 October 2018 relative to the week leading up to the announcement of the Arrangement;
- ▶ The VWAP of Melior shares over the periods specified before 13 September 2018 ranges from \$0.849 to \$1.054; and
- ▶ The VWAP of Melior shares over the periods specified before 31 October 2018 ranges from \$0.650 to \$1.034.

Having regard to the preceding information in Section 9.7, we have adopted a market based value for the share in Melior of \$0.650 to \$0.900 per share. This range is consistent with the high and low VWAP range for the periods set out in Table 9.8 above over the past six months.

### 9.7.2 MBV Value of the Merged Entity's Shares

Table 9.10 sets out the MBV value of the Merged Entity shares. The calculated value assumes the VWAP ranges and the total outstanding number of shares for Metallica and Melior set out in Section 5.3.1 and 6.3.1 respectively.

**Table 9.10: The MBV Value of the Merged Entity**

MBV Merged Entity	Reference	Low	High
Melior Share Value (\$)	Section 9.7.1	\$0.650	\$0.900
Melior Shares on Issue	Section 6.3.1	28,979,963	28,979,980
<b>Equity Value Melior (\$)</b>		<b>18,836,976</b>	<b>26,081,982</b>
Metallica Share Value (\$)	Section 8.5.2	\$0.032	\$0.041
Metallica Shares on Issue	Section 5.3.1	322,447,408	322,447,408
<b>Equity Value Metallica (\$)</b>		<b>10,318,317</b>	<b>13,220,344</b>
<b>Total equity value of Merged Entity (\$)</b>		<b>29,155,293</b>	<b>39,302,326</b>
Total number of Merged Entity Shares		902,047,000	902,047,000
<b>Merged Entity Share Value (Minority Interest Basis) (\$)</b>		<b>0.032</b>	<b>0.044</b>

Source: Capital IQ and BDOCF Analysis

The MBV value that we have calculated for the Merged Entity is in the range of **\$0.032 to \$0.044** per share post the Arrangement. We note that this value represents a minority interest basis.

### 9.8 Value Adopted per Merged Entity Share

Table 9.11 sets out the calculated value that we have determined for an ordinary Merged Entity share on a minority interest basis using an ABV methodology and a MBV methodology.

**Table 9.11: Adopted Value of a Merged Entity Ordinary Share (Minority Basis)**

Method	Reference	Value - Low (\$)	Value - High (\$)
ABV methodology	Section 9.6	0.021	0.029
MBV methodology	Section 9.7	0.032	0.044

Source: BDOCF analysis

Based on the information set out in Table 9.11 above, in our opinion it is appropriate to adopt a value of **\$0.021 to \$0.040** for an ordinary share in the Merged Entity on a minority interest basis.

We note that the valuation range provided for the Merged Entity is relatively wide. We are of the view that this is appropriate in the circumstances given the spread in the Metallica value, outlined above, and the level of debt within Melior and its recently commenced project status. Debt serves to increase equity valuation ranges as smaller changes in asset values (i.e. the Goodicum Project) are amplified when a static debt value deducted.

## 10.0 Industry Overview

Australia is renowned for being a major mineral sands and bauxite mining country due to its large natural reserves and extensive mining sites. These minerals are located for future development and production prior to being exported or used by domestic manufacturers. This section sets out an overview of these industries and specific minerals in which Metallica and Melior operate in.

The information presented in this section has been compiled from a range of publicly available sources, together with information taken from various databases to which we subscribe. BDOCF has not independently verified any of this information and we recommend that users of this Report refer to the original source of any information listed in this section. This section should be referred to as a broad guide only.

### 10.1 Bauxite Mining<sup>8</sup>

#### 10.1.1 Bauxite Mining Industry in Australia Overview

Australia is the world's largest producer of bauxite, with approximately one-third of global output. Bauxite ore is mined primarily in Queensland, the Northern Territory and Western Australia. Bauxite ore from Queensland and the Northern Territory is amongst the world's highest grade deposits at 49% and 53% aluminium oxide respectively<sup>9</sup>. More than 85% of the bauxite mined globally is converted to alumina for the production of aluminium metal, with the remaining going to non-metal uses in various forms of specialty alumina and non-metallurgical bauxite applications. In Australia, while the majority of the bauxite mined is processed domestically, an estimated 46% of the revenue within the industry arise from exports.

Over the past five years, expansion projects at several bauxite mines have increased mine output to meet higher demand. Looking forward, the bauxite mining industry is expected to slow over the next five years. Future growth of the bauxite mining industry is strongly affected by the growth in the Chinese economy as it is projected to mature and slow slightly. The industry revenue is expected to grow at an annualised rate of 2.8% through to 2023.

The bauxite mining market is made up of three major players, Rio Tinto Limited, Alcoa of Australia Limited and South32 Limited, which occupy over 95% of the market.

#### 10.1.2 Key Drivers

Bauxite mining operations in Australia are affected by a number of key external drivers. Table 10.1 outlines the factors that will contribute to the growth (or otherwise) in this industry.

**Table 10.1: Key Drivers for Growth in the Bauxite Mining Industry**

Key External Drivers	
Demand from alumina production	As bauxite is a key feedstock in the production of aluminium from alumina, the demand of alumina production is one the key drivers for bauxite. Although the majority of bauxite is processed domestically, a large portion is exported for processing. A decline in the demand of alumina production will have a direct negative impact on the demand for bauxite.
World price of aluminium	Bauxite prices do not follow a clearly defined benchmark price, and as such are determined via negotiations between buyers and sellers. However, bauxite prices are influenced by the price of aluminium. Higher aluminium prices tend to result in a higher bauxite price.
GDP of mainland China	The large majority of all Australian bauxite exports are delivered to China, meaning China's growth is a key driver in the demand for bauxite from Australian mines. With the growth of China's GDP, it is likely the demand for aluminium increases, likewise increasing demand for alumina and bauxite.
The US exchange rate	As the majority of bauxite sales are internationally distributed, the fluctuation of exchange rates has a direct impact on the revenue generated by exports. The price of bauxite is typically agreed upon in US dollar terms, and therefore the price received by the local sellers depends on both the exchange rate and the agreed upon US dollar price.

Source: IBIS World 2018

Figure 10.1 depicts the aluminum prices on the Shanghai Futures Exchange from Capital IQ. As discussed above, demand for aluminum is a key driver for the demand of bauxite, and the prices of bauxite are highly correlated with the prices of aluminum.

<sup>8</sup> IBISWorld, 2018, *Industry Report B0802: Bauxite Mining in Australia*

<sup>9</sup> Britt, A. F., 2018. Australian Resource Reviews: Bauxite 2017. Geoscience Australia

**Figure 10.1: Aluminum Futures Prices from the Shanghai Futures Exchange**



Source: Capital IQ as at 6 November 2018

## 10.2 Mineral Sands Mining<sup>10</sup>

### 10.2.1 Mineral Sands Mining Industry in Australia Overview

Due to its vast natural resources and reserves, Australia is a major producer of mineral sands with a \$2.8 billion dollar revenue industry. Mineral sands refer to old beach sands that contain a high concentration of heavy minerals. Mineral sand consists of two primary product streams, being titanium dioxide minerals (i.e. ilmenite, rutile and leucosene) and zircon. The titanium dioxide minerals are used in the production of pigments, plastics and coatings, while zircon is primarily used to manufacture refractory bricks for metal smelting operations. Demand for mineral sands are largely driven by downstream manufacturing markets.

Also present in the Goondicum Project is apatite, a group of phosphate minerals. Apatite is known for its phosphorus content and predominantly used in the production of phosphate fertilisers as well as within pharmaceutical industries. Infrequently, apatite may also be used as a gemstone.

In the five years to 2019, the mineral sand mining industry is expected to increase at an annualised rate of 4.9% due to anticipated growth in the production volume and pricing growth. The industry is still in the growth phase of the industry lifecycle fuelled by increasing demand for titanium dioxide pigments and higher mineral sand prices. However, in the next five years to 2024, the mineral sand annualised growth rate is expected to reduce to 3%. This is driven by the slowing growth in China's construction and manufacturing sectors, as China is a major importer of Australian processed mineral sands.

The mineral sand mining industry displays a moderate market share concentration with four major industry players - Iluka Resources Limited, Tronox Limited, Cristal Australia Pty Ltd and Sibelco Asia Pacific Pty Ltd occupying approximately two thirds of the market share.

### 10.2.2 Key Drivers

Mineral sands mining operations in Australia are impacted by a number of key external drivers. Table 10.2 outlines the factors that will contribute to the growth (or otherwise) in this industry.

<sup>10</sup> IBISWorld, 2018, *Industry Report B0805: Mineral Sand Mining in Australia*

**Table 10.2: Key Drivers for Growth in the Mineral Sands Mining Industry**

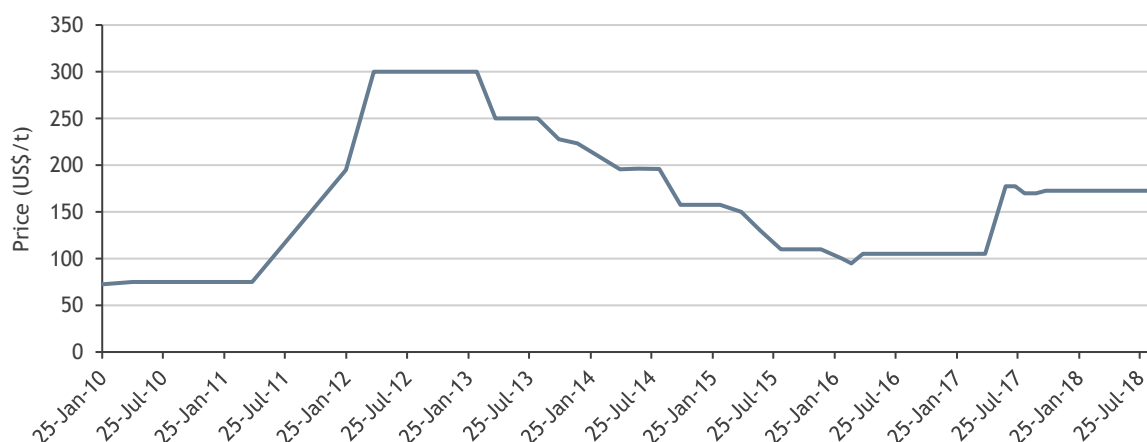
Key External Drivers	
Domestic price of plastic and rubber products	As mineral sands are the feedstock to a range of plastic and rubber products, the price of these products tend to directly correlate and influence the demand for mineral sands. The domestic price of plastic and rubber products is expected to increase in the coming year, which is expected to drive the increase in the price of mineral sands.
Demand from polymer product and rubber product manufacturing	The industry mines and supplies the raw materials in titanium dioxide based products including polymer, plastic and coating products. A decreased demand from downstream manufacturers will likely directly reduce the demand for mineral sands.
Demand from basic chemical manufacturing	Chemical manufacturing firms that process mineral sands into titanium dioxide pigments will also impact the demand for mineral sands. Demand from basic chemical manufacturing is expected to increase in the 2018-19 year.
Trade-weighted index	The Australian dollar is a key driver on the profitability of the mineral sands industry in foreign markets. As the growth of the industry will be in part supported by exports and foreign demand, a stronger Australian dollar makes the industry less competitive globally, reducing demand; while a weaker dollar has the potential to increase demand.
Demand from pulp, paper and paperboard manufacturing	Titanium dioxide is also a feedstock in the production of paper and paperboard production. Consequently, the mineral sands demand will be influenced by demand in the paper and paperboard manufacturing industry. Demand from the paper and paperboard manufacturers is expected to decrease slightly in the coming year.

Source: IBIS World 2018

### 10.2.3 Ilmenite Pricing

Figure 10.2 illustrates the monthly spot prices of ilmenite since 2010.

**Figure 10.2: Ilmenite Spot Prices**



Source: Consensus Economics

Figure 10 shows that the price of ilmenite shows wide variation over the past eight years. We note that the Australian dollar/US dollar exchange rate will also impact the margins received by a company producing ilmenite in Australia.



## Appendix A: Control Premium Analysis

A controlling interest in a company is usually regarded as being more valuable than a minority interest as it provides the owner with control over the operating and financial decisions of the company, the right to set the strategic direction of the company, control over the buying, selling and use of the company's assets, and control over appointment of staff and setting financial policies.

The increase in value for a controlling interest is often observed where an acquirer launches a takeover bid, or some other mechanism for control, for another company. For the purposes of our research on control premiums, we have defined a controlling interest to be an interest where the acquirer has acquired a shareholding of greater than 50% in the target company.

Generally, control premiums may be impacted by a range of factors including the following:

- ▶ Specific acquirer premium and/or special value that may be applicable to the acquirer;
- ▶ Level of ownership in the target company already held by the acquirer;
- ▶ Market speculation about any impending transactions involving the target and/or the sector that the target belongs to;
- ▶ The presence of competing bids; and
- ▶ General market sentiment and economic factors.

To form our view of an appropriate range of control premium applicable to Metallica for the purposes of this Report, we have considered information which includes:

- ▶ Recent independent expert's reports which apply control premiums in the range of 20% to 40%;
- ▶ Various industry and academic research, which suggests that control premiums are typically within the range of 20% to 40%;
- ▶ Various valuation textbooks; and
- ▶ Industry practice and our experience.

Having regard to the information set out above and for the purposes of assessing the Arrangement within the context of this Report, it is appropriate to consider control premiums within the range of 20% to 40% to be applicable. This implies a minority interest discount in the range of 16.7% to 28.6%, which is calculated as the inverse of the control premium<sup>11</sup>.

In the circumstances of Metallica and Melior, we are of the view that a control premium at the low end of the range is appropriate for reasons which include the following:

- ▶ The relatively narrow focus of each of Melior and Metallica as far as key projects are concerned. Specifically, each company is focusing on one key project and neither of the projects have a particularly long project life; and
- ▶ The relatively large cash balances held by Metallica, and in the case of Melior cash and debt balances, relative to the size of the other assets and liabilities.

A control premium at the lower end of our range, amongst other matters, reflects limitations when it comes to the ability to change the strategic direction of the projects of both Metallica and Melior.

<sup>11</sup> Calculated as:  $1 - 1 / (1 + \text{control premium})$



## Appendix B: Technical Specialist Report

**AMC Consultants Pty Ltd**

ABN 58 008 129 164

**Level 21, 179 Turbot Street  
Brisbane Qld 4000**

Australia

T +61 7 3230 9000  
E [brisbane@amcconsultants.com](mailto:brisbane@amcconsultants.com)  
W [amcconsultants.com](http://amcconsultants.com)



# Report

## **Project Robin**

Metallica Minerals Limited

AMC Project 318052  
21 November 2018

## Executive summary

Metallica Minerals Limited (Metallica) (listed on the Australian Securities Exchange (ASX) code - MLM) has entered into a binding agreement to merge with Melior Resources Inc (Melior) (listed on the Toronto Stock Exchange – Venture exchange (TSX-V) code - MLR) via a Canadian Plan of Arrangement to be approved by the Court in British Columbia, Canada (the Merger).

Metallica has engaged BDO Australia Ltd (BDO) to complete an Independent Expert's Report (IER) to be provided to Metallica shareholders, opining on the Merger. BDO requested Metallica to commission AMC Consultants Pty Ltd (AMC) as an independent mineral specialist to assist BDO by providing an independent technical specialist's report (ITSR) to BDO on the exploration and mining assets (the Mineral Assets) of Metallica and Melior.

The Mineral Assets are all located in Queensland Australia and are summarised as follows:

Company	Mineral asset	Ownership %
Metallica	Urquhart Bauxite project	50%
Metallica	Cape Flattery Silica Sands	100%
Metallica	Esmeralda Graphite	100%
Metallica	Urquhart Point Mineral Sands	50%
Melior	Goondicum mineral sands (ilmenite) mine	100%

Melior's main mineral asset is the Goondicum mineral sands (ilmenite) mine. Metallica's main asset is the Urquhart Bauxite Project.

AMC has been instructed by BDO to provide production schedules and cost estimates for Metallica's Urquhart Bauxite Project and Melior's Goondicum mineral sands mine that BDO can use as a basis for valuing these assets. AMC has also been instructed to provide valuations for the other Mineral Assets.

### The Goondicum Ilmenite Mine

The Goondicum ilmenite mine and the associated exploration tenements are near the town of Monto. The mine has previously been in operation and is currently undergoing a A\$7.8 million capital refurbishment. Melior plans to restart the mine in November 2018.

Melior's plan for the reopening and operating the mine is based on a preliminary economic assessment (PEA) completed by TZ Minerals International Pty Ltd (TZMI) in mid-2018. Melior has provided AMC with a life-of-mine production schedule and cost model for the proposed operation. The plan completes ilmenite mining on Mining Lease (ML) 80044 by 2028, after which it assumes that mining and processing will continue for a further five years on the adjacent exploration tenements (Mineral Development Licence Application (MDLA) 2007 and Exploration Permit for Minerals (EPM) 9100).

Mineral Resources have been reported on ML80044 and MDLA2007, but no Ore Reserves have been reported on either tenement. No mineral Resources have been reported on EPM9100

AMC has reviewed the Melior's production and cost model, together with the PEA and other information provided by Melior and others. Based on this information AMC has prepared two production and cost models (AMC Production Case G1 and Case G2) for the restart of the mine. Case G1 assumes that mining takes place only on ML80044. Case G2 assumes that mining takes place from both tenements as envisaged by Melior.

Both production cases have been provided to BDO as a basis for valuing the Goondicum Mine.

In preparing the AMC production cases, AMC has considered the following points:

- Melior plans to mine and process 2.5 Mtpa of ore to produce separate ilmenite and apatite concentrates.
- The plan envisages that 37% of the ilmenite contained in the Mineral Resources on the ML80044 will be mined and processed under the current economics and cut-off. A similar conversion rate of Mineral Resources to plant feed has been assumed for MDLA2007.
- Melior plan to appoint a mining contractor to mine the deposit using scraper mining methods. Competitive pricing has been obtained by Melior for the work.
- During a site visit by AMC it was observed that refurbishment of the plant was nearly complete and on schedule for commissioning in November 2018. During the visit it was reported by Melior that the refurbishment costs were in line budget.
- The Goondicum ore is complex when compared to other mineral sands deposits, with the ore containing high slimes content, fine to medium grained ilmenite, variable depths of slimes material, partially weathered gabbro rock, other ore types, and undulations in the base of the deposit.
- Ore processing requires that a blended product be delivered from the mine on a near continuous basis. This will require diligent mine scheduling and operational control of the scrapers to blend different ore types in real time from different depths, or from separate mining bocks. Limiting the slimes content to less than 42% will be a key requirement.
- During previous operations, the processing plant had large variations in performance due in part to variable ore types or slimes content. During the last operational period an average ilmenite recovery of 72% was achieved. Melior expects that the plant modifications and improvements in operational management will reduce performance variability leading to an improvement in ilmenite recovery.
- Recovery estimates vary. Melior has estimated that process plant recovery will be 88% for ilmenite and 81% for apatite, while the PEA envisaged a recovery of 90% for ilmenite and 69% for apatite. AMC has based the apatite recovery on the PEA and the supporting available plant data.
- Melior has estimated operating costs based on the plants previous operating history, a tender process for the mining contract, a quote for trucking, labour contracts for employees, and supplier estimates.

AMC has reviewed the production schedule prepared by Melior up to the point that mining is completed on Mining Lease ML80044 and has adjusted the ilmenite and apatite recovery to 85% and 70% respectively. AMC believes that these adjustments and the resulting production schedule are based on reasonable grounds. AMC has used this adjusted schedule as the basis for the AMC Production Case G1.

AMC also believes that, after making the adjustments to plant recovery, the production schedule that includes mining on both tenements (Case G2) is also based on reasonable grounds. AMC notes that there is greater uncertainty associated with this schedule than with Case G1 for the following reasons:

- No previous mining has taken place on MDLA2007, and mining and processing conditions may differ from those experienced by previous mining operations that only took place on ML80044.
- A Mining Licence is yet to be granted that would enable mining to take place on MDLA2007.
- The ore on MDLA2007 is typically further from the processing plant and will have increased haulage costs over time. Additional economic margin ranging work is required to determine the tonnage and location of economic resources.

AMC has reviewed the cost estimates prepared by Melior in its production and cost model and has made adjustment to these where AMC believes that there are reasonable grounds to do so.

These adjustments result in an increase in the average life-of-mine unit operating cost from A\$141/t or US\$106/t to A\$166/t or US\$127/t of ilmenite.

AMC has reduced the ilmenite and apatite recovery factors and estimates a long-term ilmenite recovery of 86% and an apatite recovery of 70%. Average life-of-mine recoveries are slightly lower at 85% for ilmenite and 68% for apatite as the schedule allows for lower recoveries during commissioning period. AMC notes that the project is likely to be highly sensitive to the ilmenite recovery rate and AMC suggests that BDO test a sensitive range for ilmenite recovery of 78% to 90%. AMC is of the opinion this range is achievable providing consistent blending is achieved from the mining operation. The project is less sensitive to the apatite recovery.

The project is sensitive to the mining contract costs, labour costs in the processing plant, contract trucking costs, power, consumables and materials.

### **The Urquhart Bauxite Project**

The Urquhart Bauxite Project (the UB Project) is on granted Mining Leases (ML10044, ML20669 and ML20737 near the town of Weipa, close to other operating bauxite mines. ML 10044 hosts two mining areas; Area A and Area B. Metallica is the operator of the UB Project and plans to commence mining after it has been granted approvals to transport bauxite over the Rio Tinto Australia Weipa Pty Ltd mining lease. Metallica has a target date of March 2019 for this to be achieved.

A prefeasibility study (PFS) has been completed on behalf of Metallica for the UB Project by IMC Consultants. Metallica has provided AMC with three life-of-mine production and cost models for the project that are based on the PFS.

The schedules provide three different life-of-mine scenarios. Each scenario plans to mine the Ore Reserves plus some of the Mineral Resources have not yet been converted to Reserves. The three scenarios are summarised as follows:

- Scenario 1: Mining the existing Proved and Probable Reserves in Area A.
- Scenario 2: Adds Inferred Resources in both Area A and Area B to Scenario 1.
- Scenario 3: Adds low-grade stockpiled material to Scenario 2 towards the end of mine life.

Scenario 1 mines 6.5 Mt of the higher grade, lower strip ratio bauxite, Scenario 2 adds an additional 2 Mt of lower confidence, lower grade bauxite. Scenario 3 adds lower grade stockpiled bauxite that is planned to be screened and upgraded in quality to produce 1.6 Mt of saleable bauxite at product specifications. Total life-of-mine production for the three scenarios ranges from 6.5 Mt to 10.3 Mt of bauxite shipped.

AMC has reviewed the three production and cost models, together with the PFS report and other information provided by Metallica. Based on this information AMC has prepared three production and cost models (AMC's Production Case UB1, Case UB2, and Case UB3) for use by BDO.

In preparing the AMC production cases, AMC has considered the following points:

- Metallica plans to mine and ship approximately 1.5 Mtpa of direct shipping grade bauxite from the UB Project via the Hey Point barge loading facility and then transshipping to ocean going vessels in the Embley River.
- A low capital cost mine development is proposed with capital costs estimated at A\$2.7 million.
- The ultimate mine plan is intended to be able to adapt to changes in the margin received on bauxite sales.
- The bauxite on ML10044 is flat lying and production from Areas A and B is scheduled from areas of higher grade, lower strip ratio first followed by ore with a higher strip ratio.

- Towards the end of the mine life lower grade bauxite is planned to be dry screened to remove fine silica sand and increase the product grade.
- Metallica plans to utilise a mining contractor for all site mining and ore haulage services except statutory management and geological control, which will be conducted by Metallica. Commercial terms have been agreed with a mining contractor, subject to the granting of access and haulage rights.

AMC has reviewed the three production schedules provided by Metallica and believe that they are based on reasonable grounds. AMC has used the schedules as the basis for its three UB production cases.

AMC has reviewed the cost estimates provided by Metallica in its production and cost models and has made adjustment to these where AMC believes that there are reasonable grounds to do so. These adjustments include:

- An increase in the fuel pricing to an estimated delivered cost of \$1.32/litre.
- A 5% allowance for contract mining variations and project contingency
- An allowance for additional grade control drilling
- An increase of US\$2.00/t in the international shipping rates to US\$18.00/t for 35,000t class vessels and US\$13.00/t for 55,000t class vessels to reflect estimates for current shipping rates.
- An increase of \$500,000 to the project capital to allow for owner's costs, facilities and contingency.
- An increase of \$100,000 to the general and administration costs.

AMC has made no change to Metallica's estimate of the contract mining rates and transshipping rates.

AMC notes that the project is likely to be highly sensitive to commodity pricing, exchange rates and variations in the international shipping rates.

### Valuation of other Mineral Assets

AMC has assessed the value within a range of the other Mineral Assets of Melior and Metallica that do not form part of the Urquhart Bauxite Project or the Goondicum Mineral Sands Mine.

The values in Table ES1 have been assessed based on the transaction multiples for comparable assets to derive yardstick values for Mineral Resources, and the past expenditure method for exploration EPMs.

Table ES1 Metallica Exploration Asset Valuations

Location	Low (\$M)	High (\$M)	Preferred (\$M)
Urquhart Point HMS	1.0	1.042	1.02
Cape York exploration			No value ascribed
Esmeralda graphite	0.07	0.11	0.09
Cape Flattery silica			No value ascribed
Fairview			No value ascribed
<b>Total</b>	<b>1.07</b>	<b>1.15</b>	<b>1.11</b>

AMC ascribes a Preferred Value of \$1.1 million to the Metallica Assets. This is within a range of values from a low of \$1.07 million to a high of \$1.15 million.

The valuation has been prepared based on information available up to and including the date of this report.

## Contents

1	Introduction .....	1
1.1	Context, scope and terms of reference .....	1
1.2	Qualifications, experience and independence .....	1
1.3	The Assets .....	2
1.4	Use of AMC's report .....	3
2	Melior Assets.....	4
2.1	Location and infrastructure .....	4
2.2	Projects tenure.....	5
2.3	AMC scope .....	5
2.4	Goondicum .....	5
2.4.1	Geology .....	5
2.4.1.1	Mineral Resource estimate.....	8
2.4.1.2	Additional potential .....	10
2.4.2	Mining .....	10
2.4.2.1	General.....	10
2.4.2.2	Schedule.....	10
2.4.2.3	Contracts .....	13
2.4.3	Processing .....	13
2.4.3.1	Goondicum site visit .....	14
2.4.3.2	Restart upgrade .....	14
2.4.3.3	Operating availability and utilisation .....	14
2.4.3.4	Metallurgical recovery .....	17
2.4.3.5	Other processing constraints .....	18
2.4.3.6	Slimes content of ore feed.....	18
2.4.3.7	Summary .....	19
2.4.4	Tailings storage .....	20
2.4.5	Management, administration and labour .....	20
2.4.6	Environmental, Health, Safety and Community Aspects .....	20
2.4.7	Regulatory approvals.....	21
2.4.8	Capital costs.....	21
2.4.9	Operating Costs .....	21
3	Metallica Assets.....	23
3.1	Location and infrastructure .....	23
3.2	Projects tenure.....	27
3.3	AMC scope .....	27
3.4	Urquhart bauxite .....	29
3.4.1	Project overview .....	29
3.4.2	Ownership, tenure and approvals .....	30
3.4.3	Geology .....	31
3.4.3.1	Mineral Resource estimate.....	31
3.4.4	Mining .....	33
3.4.4.1	General.....	33
3.4.4.2	Schedule.....	34
3.4.5	Processing .....	36
3.4.6	Barging and transshipping .....	37
3.4.7	Infrastructure and services.....	37
3.4.8	Management .....	38
3.4.9	Regulatory approvals.....	38
3.4.10	Environmental, Health, Safety and Community Aspects .....	38
3.4.11	Contracts .....	38
3.4.11.1	Mining contracts .....	38
3.4.11.2	Barging and transshipping contracts .....	39
3.4.11.3	Shipping contracts .....	39
3.4.12	Capital costs.....	39
3.4.13	Operating costs .....	40

3.4.14	Revenue and NPV model .....	41
3.5	Cape Flattery silica sands.....	41
3.5.1	Introduction and location .....	41
3.5.2	Geology .....	41
3.5.3	Exploration target .....	42
3.6	Esmeralda graphite.....	42
3.6.1	Location.....	42
3.6.2	Geology .....	42
3.6.3	Exploration to date.....	43
3.7	Urquhart Point mineral sands .....	44
3.7.1	Location.....	44
3.7.2	Mineral Resources .....	45
3.7.3	Ore Reserve .....	45
3.8	Fairview (Phoenix Lime Pty Ltd).....	46
3.9	Exploration properties .....	47
3.9.1	Cape York bauxite.....	47
3.9.2	Cape York Heavy Mineral Sands.....	48
4	Review of financial models .....	49
4.1	Metallica.....	49
4.2	Melior.....	49
5	Valuation background.....	50
6	Project Valuation .....	52
6.1	Introduction .....	52
6.2	Income based method .....	52
6.3	Comparable transaction method .....	53
6.4	Exploration property Valuation summary .....	57
6.4.1	Development projects.....	57
6.4.2	Cape Flattery silica sands.....	57
6.4.3	Urquhart Point HMS Valuation.....	58
6.4.4	Cape York Bauxite.....	58
6.4.5	Cape York HMS .....	59
6.4.6	Esmeralda Graphite Project .....	59
6.4.7	Other .....	59
7	Valuation Summary .....	60
8	Signature page.....	61

## Tables

Table 1.1	Metallica and Melior Assets .....	3
Table 2.1	Melior's tenure .....	5
Table 2.2	2017 Mineral Resource estimate for ML80044 at 3% available ilmenite cut-off... 8	
Table 2.3	2017 Mineral Resource estimate for MDLA2007 at 2.5% available ilmenite cut-off8	
Table 2.4	Case G1: Goondicum Mine Schedule .....	12
Table 2.5	Case G2: Goondicum Mine Schedule Upside Case .....	12
Table 2.6	Goondicum plant upgrade status .....	14
Table 2.7	Goondicum average availability for FPP and WCP May 2015 to July 2015 .....	16
Table 2.8	Goondicum capital cost budget status .....	21
Table 3.1	Metallica's tenure.....	28
Table 3.2	Urquhart DSB Resource statement details at 48% Al <sub>2</sub> O <sub>3</sub> cut-of .....	31
Table 3.3	Urquhart bauxite scenario specifications .....	35
Table 3.4	Urquhart Point Mineral Resource at a 2% HM cut-off .....	45
Table 3.5	Urquhart Point HMS Ore Reserve estimate .....	46



Table 3.6	Cape York bauxite Exploration Target potential.....	48
Table 6.1	Comparable transactions to develop yardstick values for bauxite .....	54
Table 6.2	Comparable transactions to develop yardstick values for ilmenite & zircon .....	55
Table 6.3	Comparable transactions to develop yardstick values for graphite .....	56
Table 6.4	Urquhart Point HMS contained Valuable HM in Ore Reserves.....	58
Table 6.5	Past expenditure method values .....	58
Table 6.6	Esmeralda Graphite project valuation .....	59
Table 7.1	Metallica Exploration Assets technical values .....	60

## Figures

Figure 1.1	Location plan of Melior and Metallica projects in Queensland .....	2
Figure 2.1	Melior's Goondicum tenement location map.....	4
Figure 2.2	Goondicum regional geology .....	6
Figure 2.3	Schematic cross section for development of mineral-hosting lithologies .....	7
Figure 2.4	Goondicum sampling and assaying flowsheet .....	9
Figure 2.5	Goondicum area mined by year .....	11
Figure 2.6	Goondicum site landscape and processing plant photograph.....	13
Figure 2.7	Goondicum plant downtime graph.....	15
Figure 2.8	Goondicum wet commissioned processing plant run time graph .....	15
Figure 2.9	Goondicum WCP plant availability graph .....	16
Figure 2.10	Goondicum plant ilmenite recovery 08/12 – 06/13.....	17
Figure 2.11	Goondicum tailings dam construction photograph .....	20
Figure 3.1	Metallica Cape York tenement locations .....	23
Figure 3.2	Metallica (Touchstone) Esmeralda project tenement locations.....	24
Figure 3.3	Metallica Cape Flattery project tenement location .....	25
Figure 3.4	Metallica (Phoenix Lime) Fairview tenement location map .....	26
Figure 3.5	Plan view of Urquhart Bauxite Project.....	30
Figure 3.6	Plan of drill collars and resource classification on LiDar topography image.....	32
Figure 3.7	Regressed Al <sub>2</sub> O <sub>3</sub> vs THA and SiO <sub>2</sub> vs RSi .....	33
Figure 3.8	Indicative quarterly mining schedule for Area A (IMC, 2018) .....	35
Figure 3.9	Indicative mining schedule for Area B (IMC, 2018).....	36
Figure 3.10	GCR's barge loading facility at Hey Point.....	37
Figure 3.11	Location of Cape Flattery EPM with competitor mining licences and Exploration Target areas .....	41
Figure 3.12	Esmeralda regional geology .....	43
Figure 3.13	Location of Urquhart Point heavy mineral deposit.....	44
Figure 3.14	Fairview geological map.....	47

## Distribution list

1 e-copy to Metallica Minerals Limited  
1 e-copy to AMC Brisbane office

<b>OFFICE USE ONLY</b> Version control 21 November 2018 17.00
---

## 1 Introduction

### 1.1 Context, scope and terms of reference

BDO Corporate Finance (QLD) Ltd (BDO) has advised AMC Consultants Pty Ltd (AMC) in its instruction letter dated 24 September 2018 that:

BDO has been appointed by Metallica Minerals Limited (Metallica) (listed on the Australian Securities Exchange (ASX): Code - MLM) to prepare an independent expert's report (IER) in relation to a binding Arrangement Agreement (AA) to merge with Melior Resources Inc (Melior) (listed on the Toronto Stock Exchange – Venture Exchange (TSX-V) Code - MLR) via a Plan of Arrangement to be approved by the court in British Columbia, Canada (Merger). Metallica's main asset is the Urquhart Bauxite project and Melior's main asset is the Goondicum mineral sands (ilmenite) mine.

The merger is to be implemented by way of a Canadian Plan of Arrangement, whereby Metallica has agreed to acquire all of the issued capital of Melior by the issue of 20 new Metallica shares for every one Melior share held. Further details of the AA and Plan of Arrangement are provided in the Metallica ASX announcement dated 13 September 2018.

BDO requested Metallica to commission AMC as an independent mineral specialist to assist BDO by providing an independent technical specialist's report (the ITSR) of Metallica's and Melior's exploration and mining assets (the Assets) addressed to BDO.

In preparing the ITSR, AMC will:

- Comment on and confirm or otherwise the inputs into the net present value (NPV) model for the Urquhart Bauxite project, on which a prefeasibility study has recently been completed.
- Comment on and confirm or otherwise the inputs into the NPV model for Melior's Goondicum ilmenite mine.
- Value Metallica's and Melior's other mining tenements or exploration assets that do not form part of the NPV models.

### 1.2 Qualifications, experience and independence

AMC is a firm of mineral industry consultants whose activities include the preparation of independent technical specialist's reports, and due diligence reports on, and reviews of, mining and exploration projects for purposes related to equity and debt funding, and public reports. In these assignments, AMC and its subconsultants act as an independent party. AMC provides this professional advice from its offices in Australia, Canada, Singapore, Russia and the UK. A copy of an AMC profile detailing AMC's capability and available consulting services is available from our website ([www.amcconsultants.com](http://www.amcconsultants.com)).

The following people have contributed to this ITER.

Name	Position	Role
Peter Stoker (HonFAusIMM(CP))	Principal Geologist – An employee of AMC	Management and coordination of the ITSR, including review of the Metallica exploration assets.
Mike Thomas (MAusIMM(CP))	Principal Mining Consultant – An employee of AMC.	Peer review of the ITSR.
Paul Greenhill (FAusIMM(CP), MAICD)	Principal Consultant - An employee of AMC.	Review of the metallurgical, plant and infrastructure aspects including the site visit to Goondicum.
Rod Carlson MAIG (RPGeo), MAusIMM	Geology Manager Geology, Principal Geologist - An employee of AMC.	Review of the geological and mineral resource information for the project, plant and infrastructure aspects including the site visit to Goondicum.
Tim Mortimer First Class Mine Manager's Certificate of Competency Qld,	Associate employee of AMC.	Review the mining, Ore Reserve and economic modelling aspects of the Project and, with others, the infrastructure aspects.

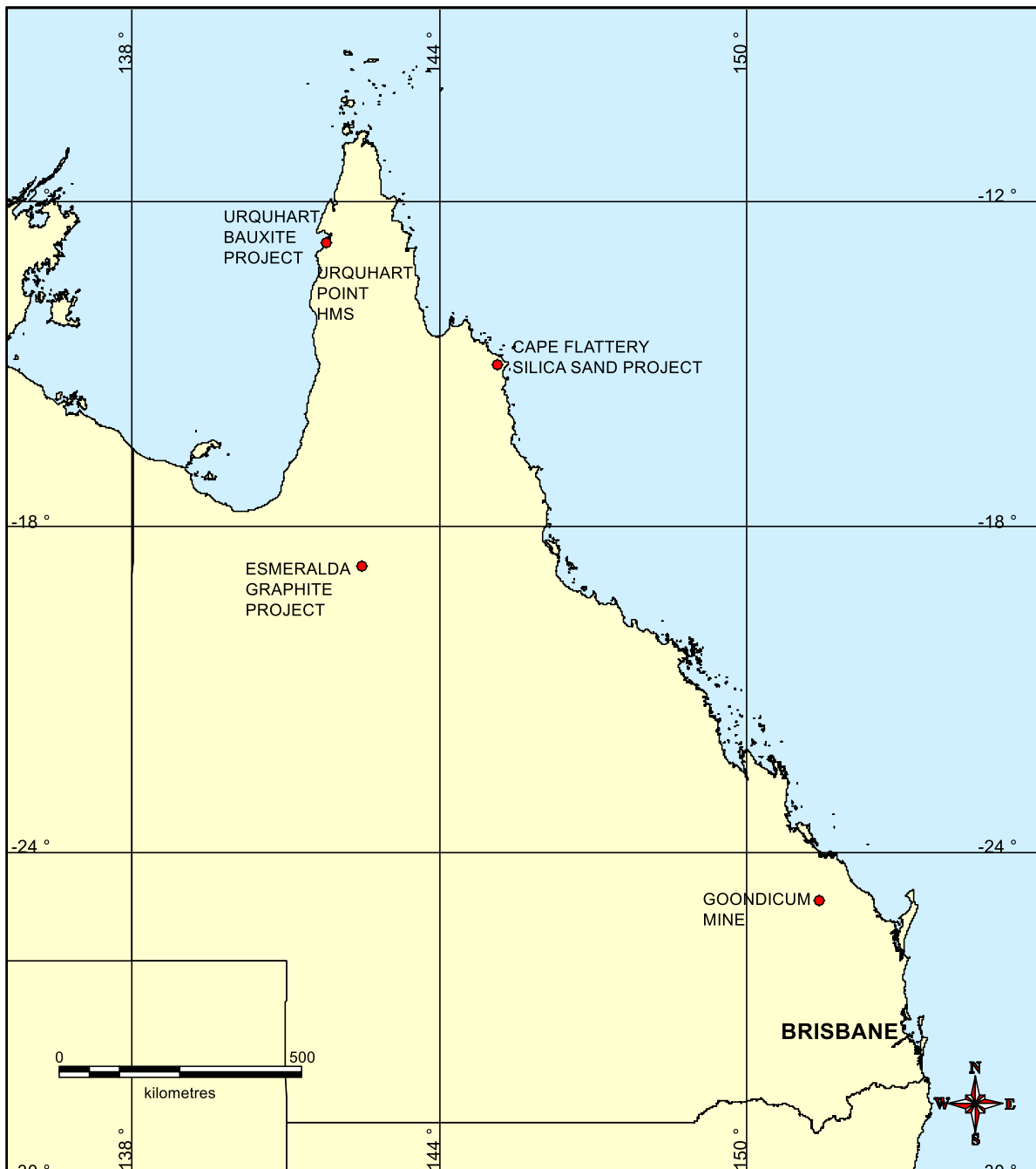
While some employees of AMC and its subconsultants may have small direct or beneficial shareholdings in Metallica or Melior, neither AMC nor the contributors to this ITSR nor members of their immediate families have any interests in Metallica or Melior that could be reasonably construed to affect their independence. AMC has no pecuniary interest, association or employment relationship with Metallica or Melior.

Metallica will pay AMC a professional fee according to AMC's normal per diem rates, for the preparation of this Report, plus reimbursement of out-of-pocket expenses. The fee is not contingent upon the outcome of the ITSR, and AMC will receive no other benefit for the preparation of this ITSR. AMC's professional fees total approximately \$77,500.

### 1.3 The Assets

The ownership and Mineral Assets that will be the subject of the ITSR are shown in Figure 1.1 and Table 1.1.

Figure 1.1 Location plan of Melior and Metallica projects in Queensland



Source: AMC. Projection Longitude/Latitude (GDA94)

Table 1.1 Metallica and Melior Assets

Company	Mineral asset	Ownership %
Metallica	Urquhart Bauxite project	50%
Metallica	Cape Flattery Silica Sands	100%
Metallica	Esmeralda Graphite	100%
Metallica	Urquhart Point Mineral Sands	50%
Melior	Goondicum mineral sands (ilmenite) mine	100%

AMC is not a tenement specialist and has relied upon the report by UTM Global Pty Ltd (UTM Global) (UTM Global, 2018a) for Metallica, and the report by UTM Global from Metallica (UTM Global, 2018b) for the status of the Melior tenure.

#### 1.4 Use of AMC's report

AMC understands that this ITSR will be attached in full as an appendix to the IER, which will be presented to the shareholders of Metallica for their consideration.

Both Metallica and BDO must obtain AMC's prior consent to the inclusion of the ITSR or any reference to it and to the form and context in which it appears in any documentation to be sent to third parties, including shareholders.

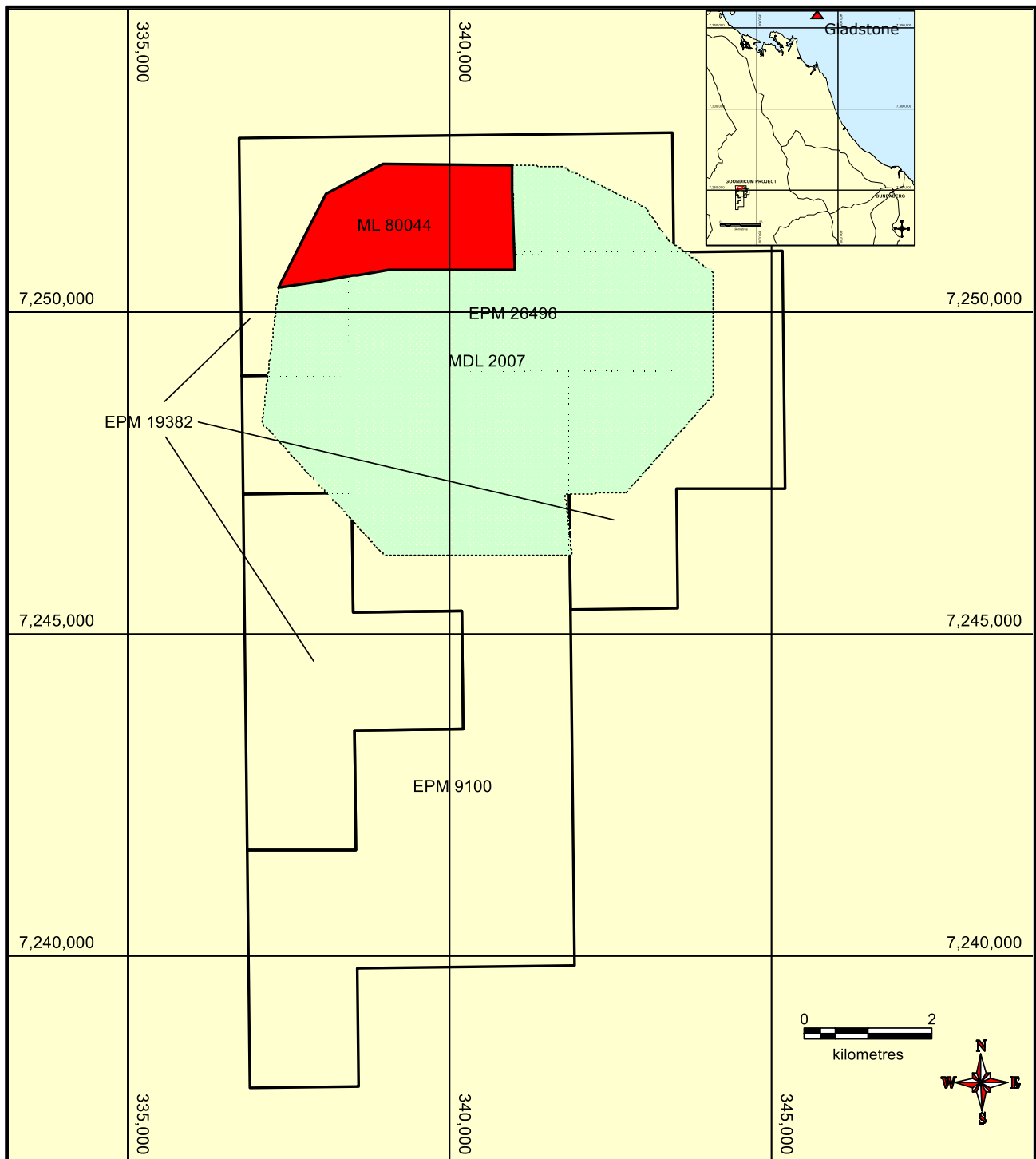
## 2 Melior Assets

### 2.1 Location and infrastructure

The Goondicum project is located 30 km due east of the town of Monto, or about 50 km by bitumen and dirt road, in Central Queensland, Australia. Monto itself is approximately 150 km south of the port city of Gladstone or 100 km west of Bundaberg.

The population of the area is estimated at approximately 2,500 within the Monto area. Sealed roads from Monto to export ports at Gladstone and Bundaberg are available. Local gravel roads access the lease areas.

Figure 2.1 Melior's Goondicum tenement location map



Source: AMC. Projection MGA Zone 56 (GDA94)

## 2.2 Projects tenure

Table 2.1 shows all tenure held by Melior. Goondicum Resources Pty Ltd (Goondicum Resources) is a 100% wholly owned subsidiary of Melior.

Table 2.1 Melior's tenure

Permit Number	Authorised holder name	Project	Area	Grant Date	Expiry Date	Status
ML 80044	Goondicum Resources Pty Ltd	Goondicum	5.178 km <sup>2</sup>	09/02/99	30/09/31	Granted
MDLA2007 (Application)	Goondicum Resources Pty Ltd	Goondicum	28.64 km <sup>2</sup>	Pending	-	Pending
EPM 9100	Goondicum Resources Pty Ltd	Goondicum	37.30 km <sup>2</sup> (12 sub-blocks)	11/12/92	11/11/19	Granted
EPM 19382	Goondicum Resources Pty Ltd	Goondicum	40.42 km <sup>2</sup> (13 sub-blocks)	25/09/13	24/09/19	Granted
EPM 26496	Goondicum Resources Pty Ltd	Goondicum	9.33 km <sup>2</sup> (3 sub-blocks)	15/06/17	14/06/19	Granted

Source: MyMinesOnline (<https://www.business.qld.gov.au/industries/mining-energy-water/resources/minerals-coal/online-services/minesonlinemaps> Accessed 03/10/2018) and UTM Global, 2018b.

## 2.3 AMC scope

Melior's major asset is the Goondicum Ilmenite Mine and surrounding exploration tenements.

In reviewing Melior's assets and providing commentary, confirmation or otherwise on the net present value (NPV) model provided by Melior for the Goondicum mine, AMC has reviewed the associated Preliminary Economic Assessment (PEA) for the Goondicum Mine, completed by TZ Minerals International Pty Ltd Report 1744/04\_2018 and other supporting data provided in electronic form by Melior.

The PEA results were released to the TSX-V. The PEA has an order of accuracy of +/- 40%.

A site visit to review the Goondicum mine site, processing plant and to discuss progress with Melior staff on the upgrade works in progress for the planned restart of operations was completed on Tuesday 2 October.

AMC has relied upon the PEA, other documents provided, public information, the site visit and discussions with Melior personnel in forming the opinions stated in this document. AMC has not uncritically relied on this information provided and has aimed to satisfy itself as to the reasonableness of the information it used.

## 2.4 Goondicum

### 2.4.1 Geology

The Goondicum Complex is a layered mafic intrusion, mostly comprised of gabbros and leucogabbros, with some oxide gabbros (Figure 2.2). The gabbro has intruded Devonian mudstones, siltstones and sandstones, as well as higher metamorphic grade schists and slates, east of the major regional structure the Yarrol Fault. West of the Yarrol Fault lies later Upper Palaeozoic siliciclastic sequences in conjunction with slightly older basaltic and andesitic volcanoclastic sequences including andesites, conglomerates and limestones. The Yarrol Fault skirts the south-western margin of the complex. Serpentinite bodies are associated with the fault and are observed in outcrop both to the north and south of the Goondicum Crater. It is speculated that the fault may have controlled the gabbro intrusion (Tear & Lee, 2017).

The gabbro is located within, and forms all of, a distinctive large shallow circular crater-like topographic feature approximately 6 km across. The mineralisation occurs as a result of the weathering of the gabbro within the crater. The resulting preferential enrichment of ilmenite and apatite within thin lateritic soils due to chemical weathering and deflation (see Figure 2.3).



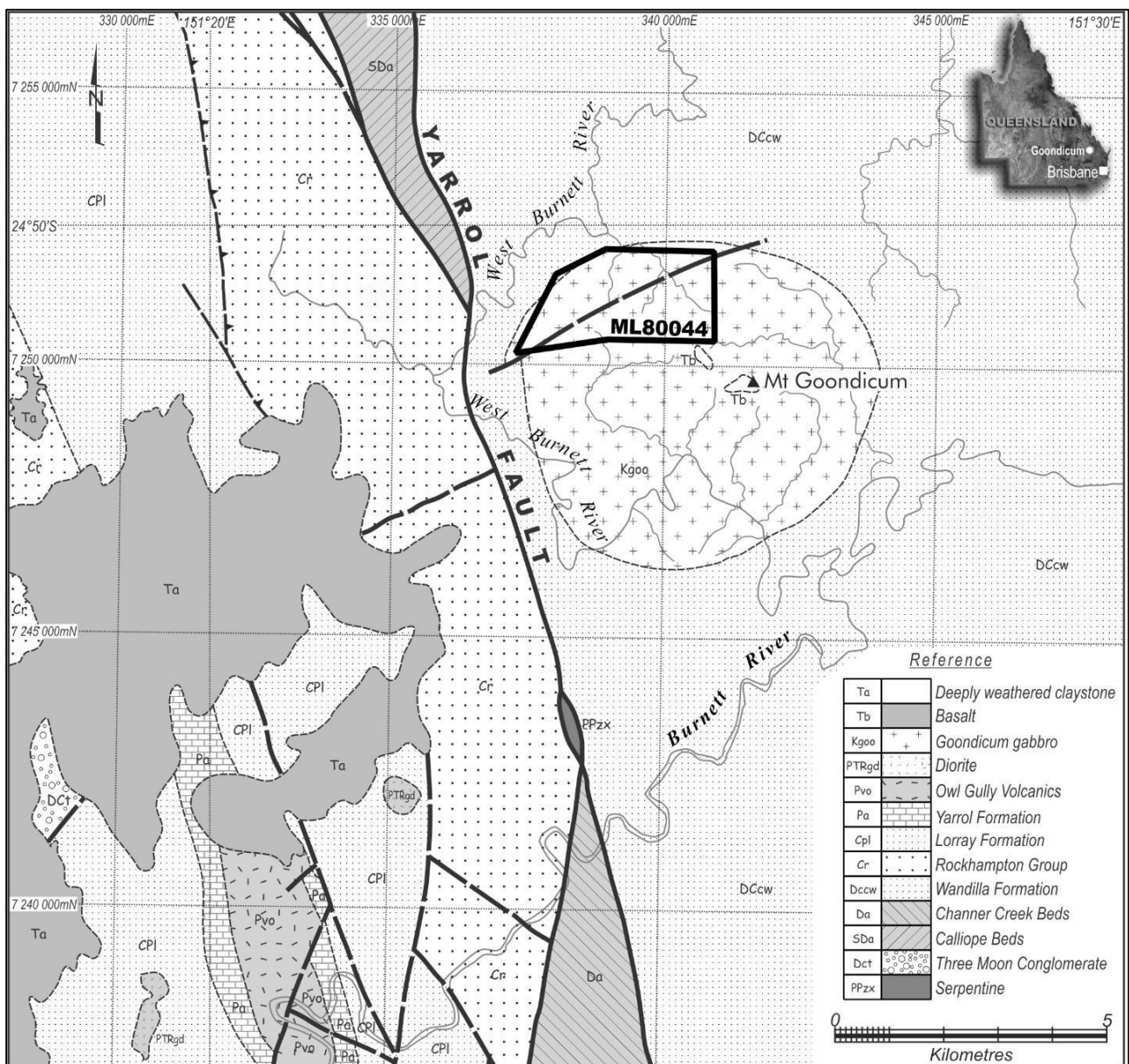
Mineralisation is comprised of the resistive minerals liberated by the weathering process including ilmenite, apatite and titanomagnetite.

The key abbreviations for the rock types used in this ITSR are:

- Soil – SL
- Colluvium – CL
- Clay-sand with high slimes -CS-H
- Clay sand with low slimes – CS-L
- Decomposed Gabbro – DG
- Fresh Gabbro - G

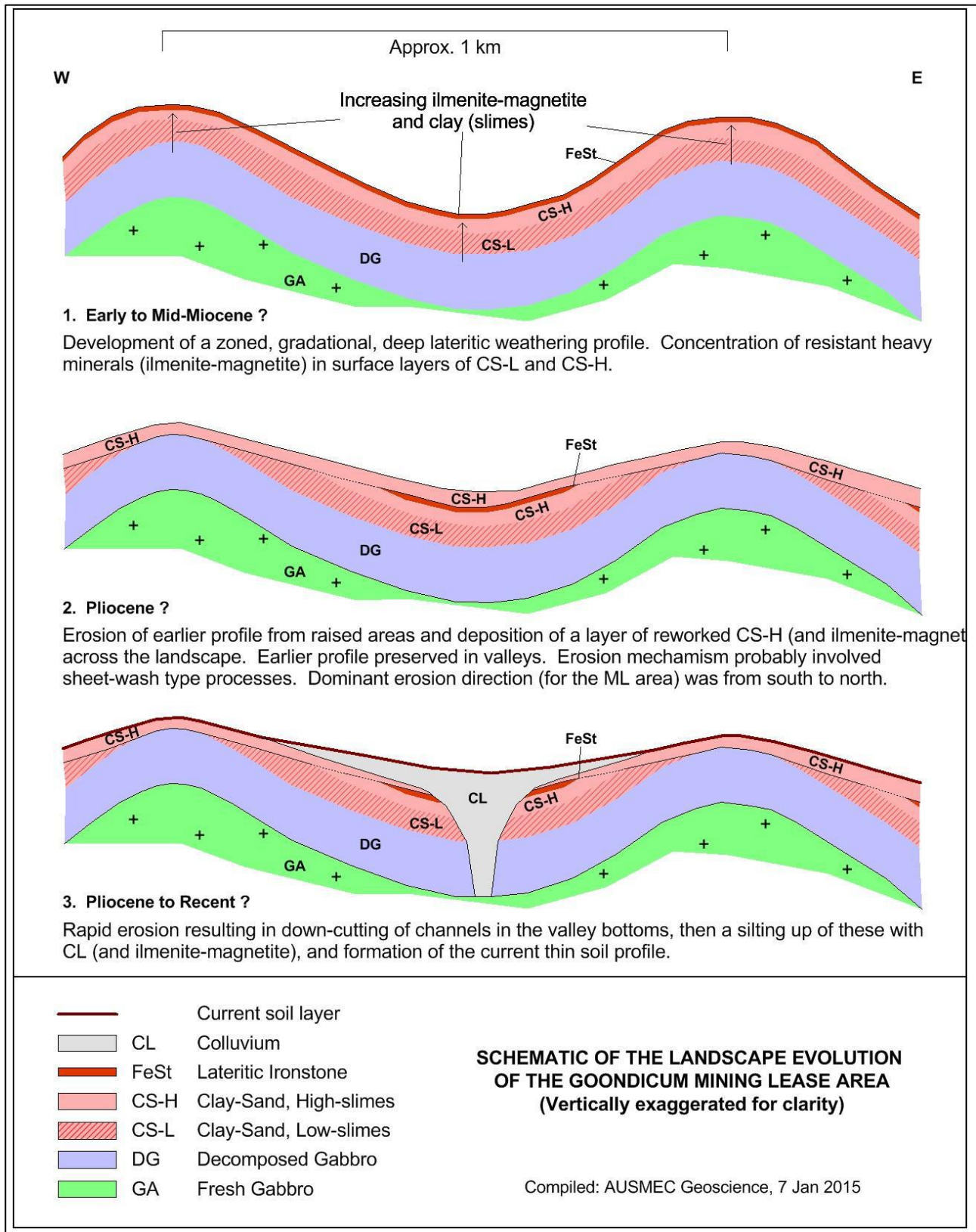
The dimensions of the mineralisation covered under ML80044 are approximately 3.5 km by 1.3 km (area approximately 5.1 km<sup>2</sup>) by up to 25 m thick. The dimensions of the mineralisation covered under the western half of MDL2007 are approximately 7 km by 1.5 km (area approximately 10.5 km<sup>2</sup>) by up to 15 m thick.

Figure 2.2 Goondicum regional geology



Source: Figure 7.1 Gilman et al, 2018

Figure 2.3 Schematic cross section for development of mineral-hosting lithologies



Source: Dawney, 2015



### 2.4.1.1 Mineral Resource estimate

The most recent Mineral Resource estimate was published in December 2017 by H&S Consultants (Tear and Lee, 2017) in a National Instrument (NI) 43-101 format. The summary of the estimates for the mining lease (ML) 80044 and mineral development lease application (MDLA) 2007 are shown in Table 2.2 and Table 2.3 respectively.

Table 2.2 2017 Mineral Resource estimate for ML80044 at 3% available ilmenite cut-off

Category	Mt	Ilmenite %	Apatite %	Slimes %	Ilmenite Mt	Apatite Mt	Slimes Mt
Indicated	50.7	5.2	2.4	23.5	2.60	1.20	11.90
Inferred	14.2	5.4	2.4	28.6	0.77	0.34	4.06

Source: Tear and Lee, 2017

Table 2.3 2017 Mineral Resource estimate for MDLA2007 at 2.5% available ilmenite cut-off

Category	Mt	Ilmenite %	Slimes %	Ilmenite Mt	Slimes Mt
Indicated	15.6	5.1	29.5	0.79	4.60
Inferred	12.3	5.2	27.3	0.64	3.37

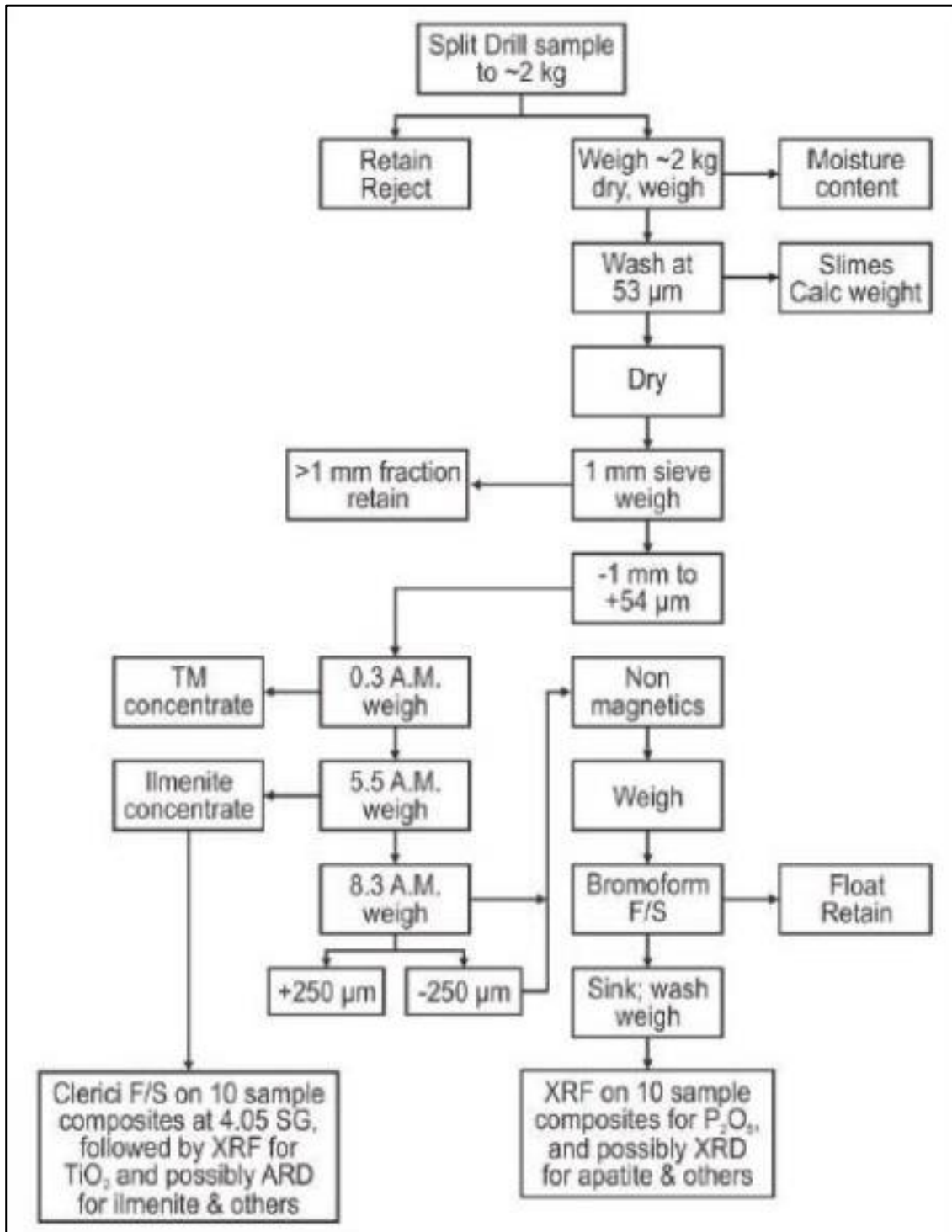
Source: Tear and Lee, 2017

The Mineral Resource is based on the sampling of 224 aircore drillholes for 2,394 m drilled in 2009 for the ML80044. The resource estimates for the MDLA are based on 332 reverse circulation (RC) drillholes and 38 hand auger holes for 2,152 m as 2,523 samples, drilled between 1996 and 2000.

Samples from drilling were prepared from 1 m composites, sub-sampled, and then processed by magnetic separation (using 0.3AM and 5.5AM (AM refers to Amp Magnetics: the current input to the induced roll magnet to separate less magnetic particles from more magnetic particles)) on-site at Goondicum (see Figure 2.4). The samples then had sizing and magnetic fraction analyses at the mine site laboratory before selected composites were sent to Downer EDI Mining – Mineral Technologies Pty Ltd (Mineral Technologies) for Clerici float/sink and Bromoform float/sink testwork to determine ilmenite and apatite content based on XRF analysis of TiO<sub>2</sub> and P<sub>2</sub>O<sub>5</sub> respectively.

The sampling flowsheet in Figure 2.4 describes the relatively complex process for the determination of the available ilmenite and available apatite. The full testwork using the Clerici and Bromoform float/sink chemistry was completed on samples composited from multiple drillholes for selected lithologies. A correlation between the measured available ilmenite/apatite in the Clerici/Bromoform data, and the measured proportion of material reporting to the magnetic 5.5AM and non-magnetic 8.3AM respectively, provided a correlation that was used to estimate the ilmenite and apatite mineral percentages at the sample level.

Figure 2.4 Goondicum sampling and assaying flowsheet



Source: Tear and Lee, 2017

The available ilmenite correlation by rock type to the percentage of Clerici sink was established using the following formula:

Available Ilmenite = adjusted 5.5AM magnetic fraction  $wt_{total}\%$  \* Clerici sink  $wt_{5.5AMmag}\%$

The adjusted 5.5AM magnetic fraction  $wt_{total}\%$  is the 5.5AM magnetic fraction with the 0.3AM magnetic fraction added. Laboratory testwork has shown Clerici floats contain no significant ilmenite. The rock type correlation is then applied to the individual samples for estimation.

The apatite percentage correlation to the bromoform results was established using the following formula:

$$\text{Apatite \%} = (\text{BSinks \%} * (\%P_2O_{5\text{com}} * (100/(32\% P_2O_5)))) / \text{Total Material \%}$$

Where BSinks% = The mass proportion of the sample that sinks in Bromoform at a 2.85 specific gravity (SG),  
%P<sub>2</sub>O<sub>5</sub>com = The reported XRF assay grade of P<sub>2</sub>O<sub>5</sub> in the BSinks material. The stoichiometric value of P<sub>2</sub>O<sub>5</sub> in apatite (general formula) is 42% P<sub>2</sub>O<sub>5</sub>, however, the product grade from previous mining accepted as 32% P<sub>2</sub>O<sub>5</sub>.

The value of the stoichiometry of P<sub>2</sub>O<sub>5</sub> in apatite was adjusted to represent accepted values by buyers. Without further understanding of the apatite mineralogy (there are many forms of apatite, and solid-state chemistry substitutions of P by Ca), AMC accepts that the formula whilst not strictly valid in its usage would, or could, result in an undercall of phosphorous rather than an overcall, and is thus acceptable in a financial accounting assessment.

#### **2.4.1.2 Additional potential**

The Mineral Resource in the ML and MDLA covers all the potential areas within the Goondicum crater. No additional potential is apparent.

### **2.4.2 Mining**

#### **2.4.2.1 General**

Mining of the Goondicum deposit is to be conducted principally by scrapers. The scrapers will mine the ore from the scheduled mining blocks using a traditional method that has the scrapers working a downhill slope and cutting through the various ore types to pick up a load/bowl of ore with some blending of ore types occurring for feed to the process plant. The average annual haulage distance varies from approximately 700 m to 1,250 m requiring two scrapers to be used to provide the plant feed tonnage rate of 375 tonnes per hr (tph).

#### **2.4.2.2 Schedule**

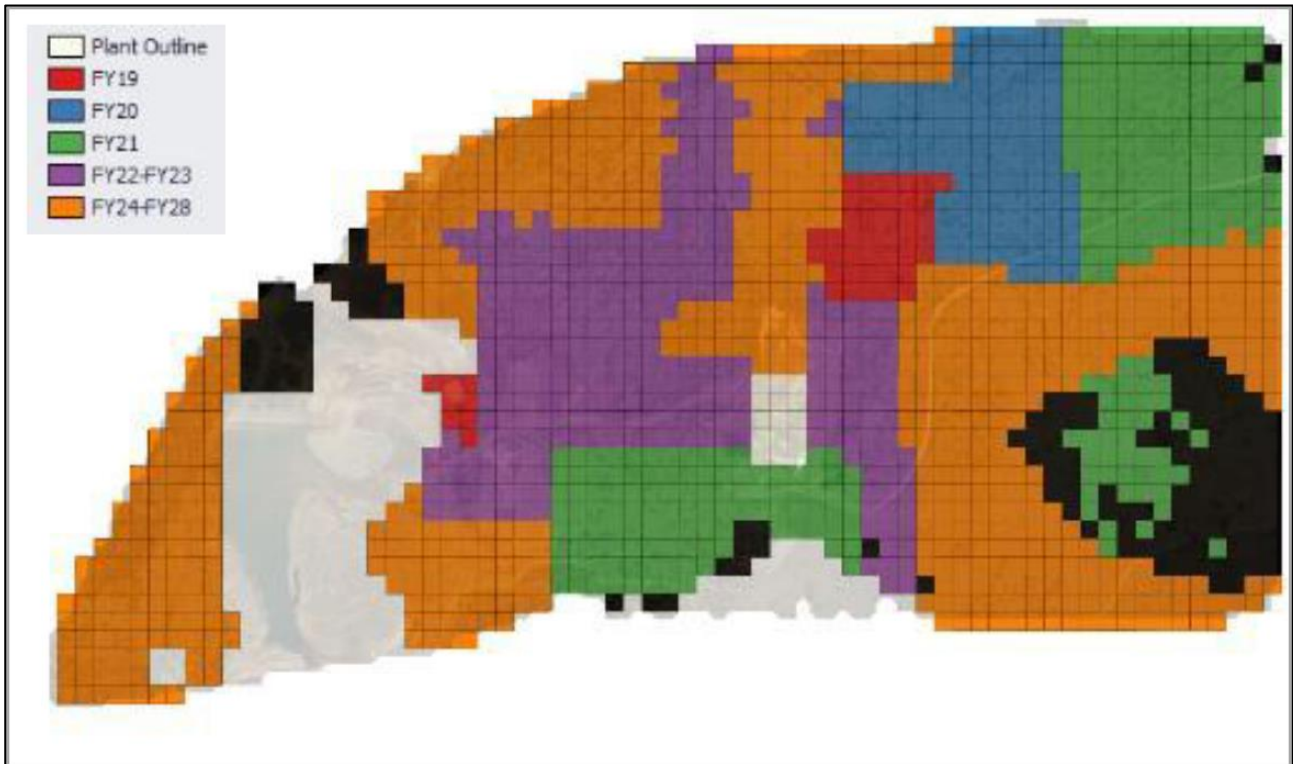
The life of mine plan and schedule for the Goondicum Mine report prepared by consultants Precision Mining and Goondicum Resources was reviewed for the underlying assumptions of the mining and scheduling process by AMC. The PEA uses this schedule data and the process steps are detailed in the scheduling section of the PEA (Gilman et al. 2018). A discussion with Precision Mining was held where the assumptions, parameters and scheduling technique used in Spry software were reviewed. It was noted in the discussion that topographical data and history of areas mined or used for waste or tailings dumps was not complete so in areas of the resource, best judgement was used. Whilst the scheduling for tonnes and grade has several steps to reach a scheduled output and some complexity in the assumptions, AMC is satisfied that the schedule accurately reflects the planned mining of the deposit.

To optimise project economics the schedule prioritises higher grade ilmenite blocks that are closest to the processing plant and also targets blocks for bending of slimes to achieve an approximate 42% slimes content. AMC notes that the PEA assumes more defined scheduling on a weekly / monthly basis will be required to achieve the targeted 42% slimes content. As an overall perspective the PEA estimates that approximately 70% of the 50 m x 50 m mining blocks have either low slimes content or require fewer than 5 m to reach the DG floor to blend slimes to <=42% within the mining block. The other 30% of the blocks will thus require blending from adjacent blocks or a separate area. There are a number of areas that have been defined in the five year mine plan that have both a high slimes thickness down to the DG layer when blending will occur and a high slimes content. With multiple blocks and areas available combined with the flexibility of scrapers it is considered reasonable by AMC that detailed schedules can be prepared by site engineering staff for control of the mining activities.

We note that the performance of the processing plant and ilmenite recovery is directly linked to the ability of the mining operations to deliver a relatively uniform blend of ore materials on a consistent basis over short time intervals.

The period plot for the Goondicum mine is shown in Figure 2.5 and shows the progress on mining over time along with the mining from two separate areas when required for blending.

Figure 2.5 Goondicum area mined by year



Source: Gilman, Tear & Lee, 2018

The LOM plan and schedule as developed by Precision Mining is considered suitable by AMC. This schedule mines the economic ore available in ML80044 during the period 2018 – 2027. The PEA uses the same schedule but completes mining of the 23.5Mt in 2028.

The Goondicum Mine schedule as originally provided to AMC by Melior also included the scheduling of the resources in the adjacent MDLA2007. The schedule adopted by AMC for the mining of the ore available on ML80044, Case G1 is included in Table 2.4.

While AMC has included some resources from the MDLA area in an upside case, Case G2 (see Table 2.5), it has not considered the remaining, more distant from the plant, resources further.

Table 2.4 Case G1: Goondicum Mine Schedule

Parameter		2,018	2,019	2,020	2,021	2,022	2,023	2,024	2,025	2,026	2,027	Total
Ore Milled	Mt (dry)	0.90	2.44	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	23.58
Ilmenite Grade	%	7.8	8.0	9.1	8.1	7.9	7.0	6.4	6.0	5.6	6.1	7.1
Apatite Grade	%	2.5	2.6	3.0	2.1	2.6	2.3	1.7	2.4	2.0	2.3	2.3
Slimes %	%	40.7	38.9	42.5	38.9	41.4	38.1	40.9	40.2	39.5	41.0	40.2

Source; AMC, Input schedule

Table 2.5 Case G2: Goondicum Mine Schedule Upside Case

Parameter		2,019	2,020	2,021	2,022	2,023	2,024	2,025	2,026	2,027	2,028	2,029	2,030	2,031	2,032	Total
Ore Milled	Mt (dry)	0.90	2.45	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	2.53	33.69
Ilmenite Grade	%	5.2	8.0	9.1	8.1	7.9	7.0	6.4	6.0	5.6	7.0	6.1	6.1	6.1	6.1	6.8
Apatite Grade	%	1.7	2.6	3.0	2.1	2.6	2.3	1.7	2.4	2.0	2.3	2.3	2.3	2.3	2.3	2.3
Slimes %	%	40.7	38.9	42.5	38.9	41.4	38.1	40.9	40.2	39.5	41.0	41.0	41.0	41.0	41.0	40.4

Source; AMC, Input schedule

### 2.4.2.3 Contracts

It is proposed by Goondicum Resources that a contractor, experienced in scraper mining be used for the mining of the deposit. Goondicum have said that they may purchase scrapers after a few years of operations to conduct the mining themselves so as to potentially reduce operating costs.

A tender process was conducted earlier in 2018 for the mining at Goondicum with three contractors providing quotes for a haulage distance and elevation matrix that covers the LOM schedule to 2028. AMC have reviewed the tenders and concludes that the pricing received is reasonable and competitive.

AMC have assumed a contract scraper operation of the LOM with the pricing as provided by the contractor.

### 2.4.3 Processing

The processing plant at the Goondicum mine is centrally located on the mining lease such that most of the reserves and resources are within a 1200 m haulage distance to the plant. The processing plant and a scraper pit from previous operations is shown in Figure 2.6 below.

Figure 2.6 Goondicum site landscape and processing plant photograph



Source: <http://www.meliorresources.com/gallery> accessed 10/10/18



### 2.4.3.1 Goondicum site visit

The operating facility and process flowsheet has been described previously<sup>1</sup>. The current flowsheet includes significant modifications to the process upgraded in 2014 to 375 tph capacity.

The general arrangement is three stages. The feed preparation plant (FPP) consists of a run-of-mine (ROM) feeder, dual scrubbers for de-agglomeration, trash cyclone and trammel for trash removal, and double deck screen for coarse material removal. The wet concentrating plant (WCP) is two stages, an ilmenite recovery circuit and an apatite recovery circuit. The ilmenite recovery circuit consists of a constant density feed tank, a spiral classification circuit, a low intensity magnetic separation circuit (LIMS), a wet high intensity magnetic separation circuit (WHIMS), and a de-phosphorisation circuit. The apatite concentrating circuit is composed of a WHIMS, a classifier, a spiral concentrator, and a (future) table gravity concentrator.

### 2.4.3.2 Restart upgrade

The restart of the Goondicum processing operation includes additions and upgrades to the plant in existence at the time of transition to care and maintenance in 2014. The current completion status of selected critical plant items is shown in Table 2.6 for the upgrades.

Table 2.6 Goondicum plant upgrade status

Item	% Complete (2/10/18)
ROM Feeder	97%
Scrubber Feed pipes and seals	100%
Spiral Module Merge	88%
10-BN-06 'Blue Bin' Modifications - Oversize Attritioning	95%
10-BN-04 Make up water addition	100%
10-PU-25 WHIMS wash water feed pump	98%
WHIMS Wash water filter	100%
Second Cleaner WHIMS	100%
WCP Oversize Tramp Protection	77%
12-BN-08A & 12-BN-10 CD Tanks	93%
Ilmenite De-Phosphate Leaching Circuit	83%
Drying Circuit	76%
Tailings Dams	95%
Average	92%

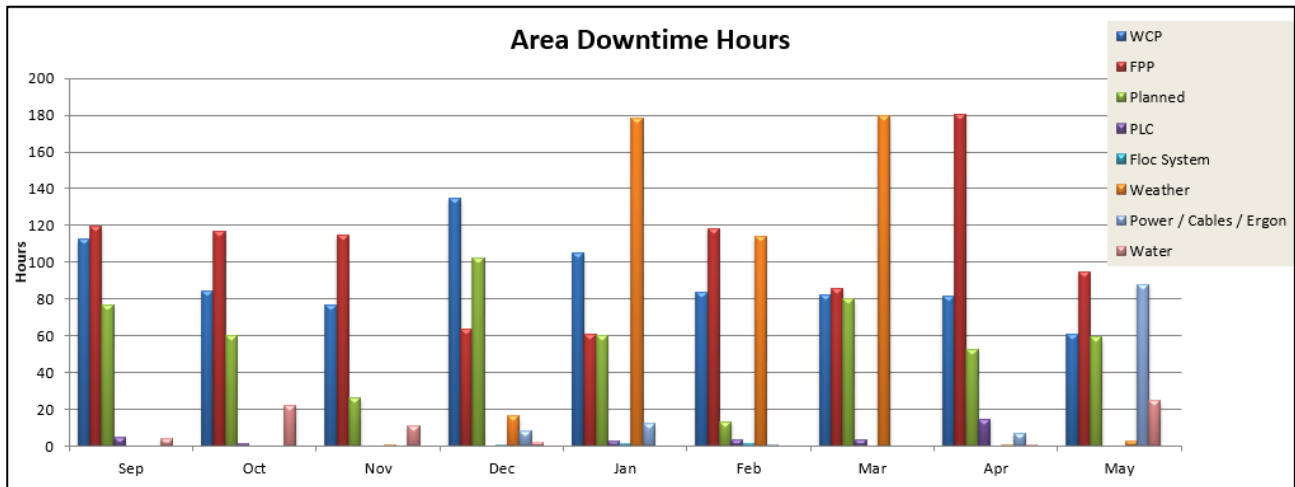
Some items have been wet commissioned. Handover to the commissioning team is planned for 23 October 2018.

### 2.4.3.3 Operating availability and utilisation

Historical availability has been poor. Monthly downtime is shown across plant sections for the period September 2012 to May 2013 are shown in Figure 2.7.

<sup>1</sup> TZ Minerals International Pty Ltd Report 1744/04\_2018

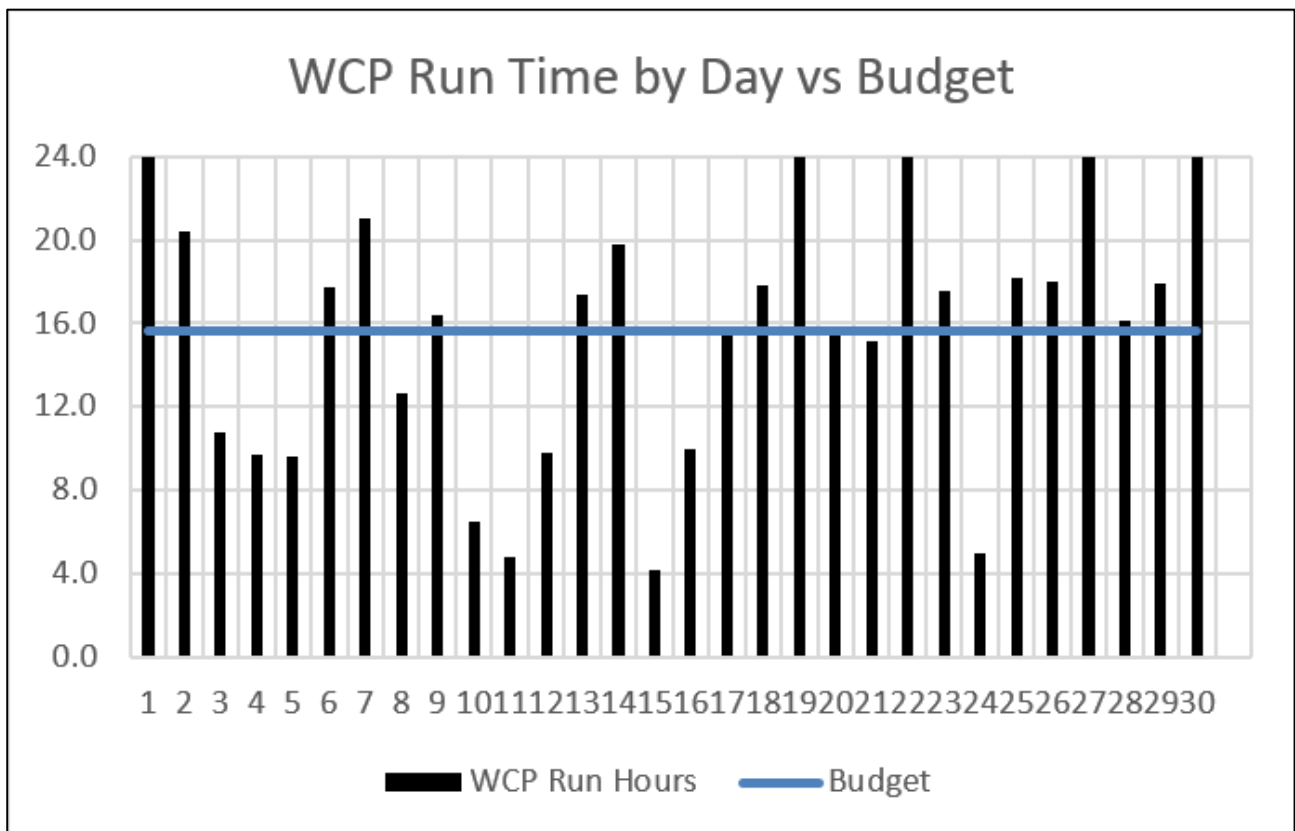
Figure 2.7 Goondicum plant downtime graph



Source: Melior, Management Report 201305.xlsx

WCP operating hours for June 2015 are shown in Figure 2.8.

Figure 2.8 Goondicum wet commissioned processing plant run time graph

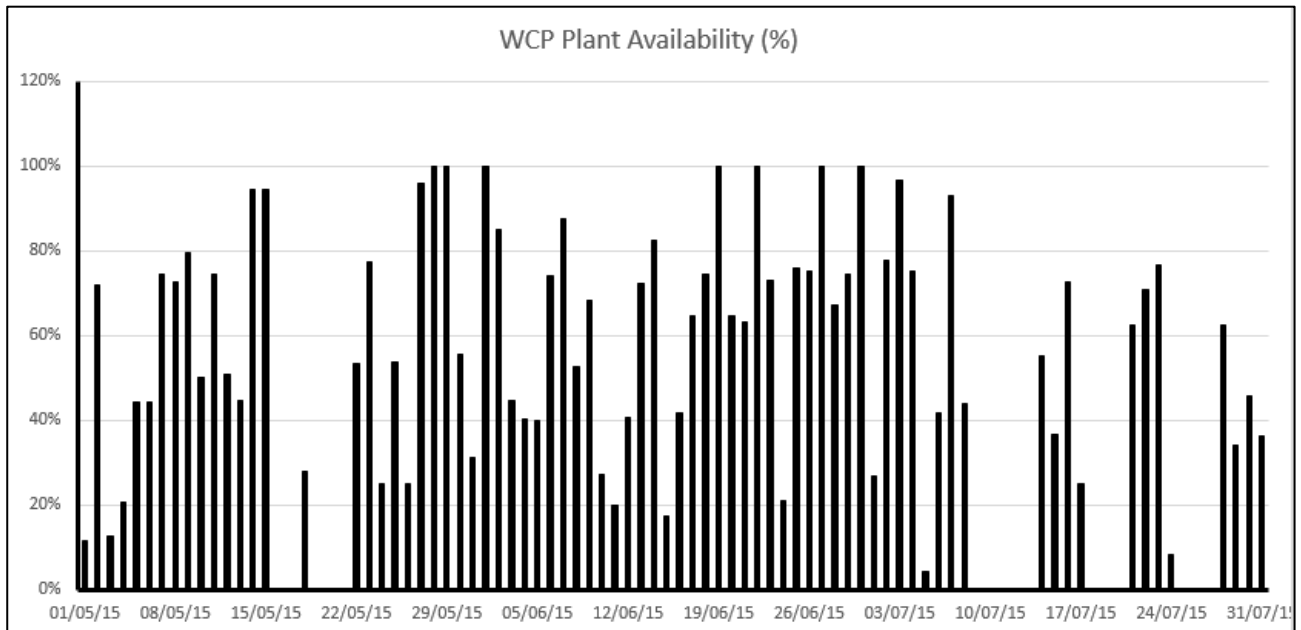


Source: Melior, Met Accounting F14-15 (Graphs)\_PGG.xlsx

WCP plant availability for 1 May 2015 to 31 July 2015 is shown in Figure 2.9.



Figure 2.9 Goondicum WCP plant availability graph



Source: Melior, Met Accounting F14-15 (Graphs)\_PGG.xlsx

Calculated average availability for the FPP and WCP for 1/5/2015 to 31/7/2015 is shown in Table 2.7.

Table 2.7 Goondicum average availability for FPP and WCP May 2015 to July 2015

	Total (94 Days)	Excluding Consecutive Days of Non-Operation
FPP	47%	57%
WCP	49%	59%

Source: Melior, Met Accounting F14-15 (Graphs)\_PGG.xlsx

AMC regards this availability in Table 2.7 as low and hence the achievement of 80% availability of the economic model as challenging. However, AMC has used 80% availability which ought to be achievable once the current upgrades are completed.

Previous analysis has identified key process performance causes and formed the basis for the current restart upgrade capital projects.

The restart upgrade projects are expected to address the following causes of downtime. Resolution will increase plant availability.

- ROM feeder – increased capacity and effective removal of oversize material that otherwise leads to scrubber damage.
- Scrubber feed pipes and seals – better distribution into scrubbers and improved deagglomeration performance increasing VHM content to WCP.
- Spiral module merge – Eliminate parallel circuit operability problems and improve recovery.
- 10-BN-06 'Blue Bin' modifications - Oversize attritioning – Reduce oversize rejects from the FPP and increase VHM content to WCP – estimated at up to 10%.
- 10-BN-04 Make up water addition – increase water supply to the de-slime cyclone underflow improving management of WCP feed density.
- 10-PU-25 WHIMS wash water feed pump – provide consistent water pressure and flow to WHIMS improving operating performance.
- WHIMS Wash water filter – static screen to prevent oversize material blocking WHIMS spray nozzle reducing downtime.

- Second Cleaner WHIMS – additional ilmenite concentrate cleaning capacity.
- WCP Oversize Tramp Protection – removal of primarily organic matter from feeds to WHIMS and spirals circuits.
- 12-BN-08A & 12-BN-10 CD Tanks – Provision of constant feed rate control to WHIMS circuit reducing operating variability and improving recovery.
- Ilmenite de-phosphate leaching circuit – improve ilmenite product grade by removal of apatite contaminants from ilmenite concentrate.
- Drying circuit – upgrade drying circuit to improve reliability.
- Tailings dam – Raise western dam walls and build the next stage to allow for continued operations.

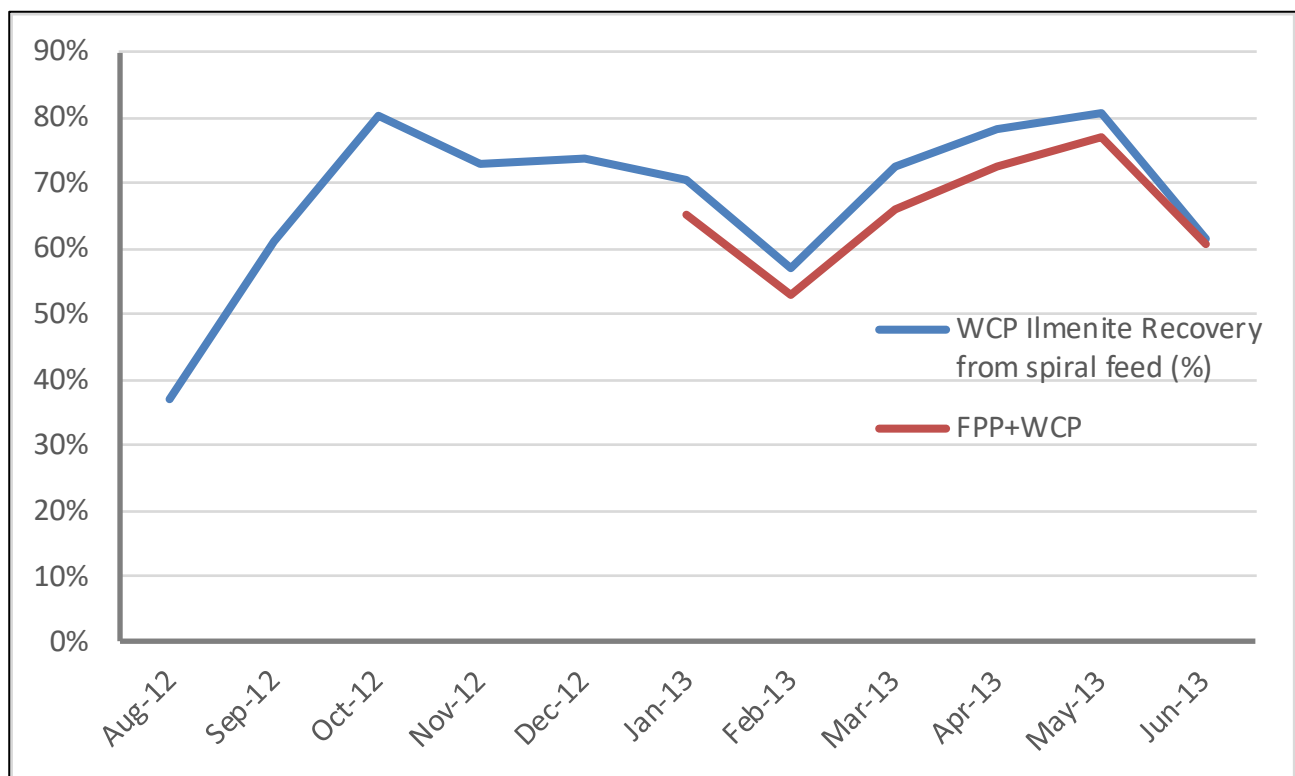
AMC is of the opinion that these plant upgrades will contribute to an increased overall availability.

#### 2.4.3.4 Metallurgical recovery

Metallurgical recoveries for the period September 2012 to June 2013 are shown in Figure 2.10. TZ Minerals International Pty. Ltd (TZMI) regard this period as the best representation of metallurgical recoveries for the process operation.

Average production weighted mineral recovery for ilmenite was 72.7%. Apatite recoveries for the same period ranged from approximately 18% to 45%. The base case operating budget uses LOM recoveries of 88.1% ilmenite and 80.6% apatite.

Figure 2.10 Goondicum plant ilmenite recovery 08/12 – 06/13



Source: AMC based on information from Gilman, Tear & Lee, PEA 2018

TZMI has used product recoveries of 80% to 90% for ilmenite and 55% to 75% for apatite in the PEA. TZMI further expects to achieve recoveries at the higher end of the range after an initial period of operation. AMC regards these recovery ranges as optimistic given the uncertainties in performance of the upgraded flowsheet. AMC considers a range of 78% to 90% in recovery could possibly occur, providing consistent blending is achieved from the mining operation, and estimates a LOM average recovery of 85% for ilmenite, with a target of 86% based on the process improvements producing a modest increase over the previously attained maximum monthly recovery and the observed high variability.

AMC considers an apatite recovery range of 55% to 75% as reasonable and recommends an average long-term recovery of 70%. AMC notes that this range is less than the planned LOM recovery of 80.6% proposed by Melior.

#### **2.4.3.5 Other processing constraints**

AMC regards two other areas of risk that may impact processing performance. These are the operating water balance and availability of makeup water, along with the variation of slimes content in the feed ore.

Goondicum has a water licence to extract up to 3000 ML per annum from the Mulgildie bore field (Licence 74220M). The existing (single) bore has a capacity of 1500 ML per annum. This equates to approximately 214 kL/h at 80% plant availability.

The mass balance for the restart operation models the raw water input requirement at 209.3 kL/h equivalent to the maximum available raw water input. Poor settling behaviour will require additional raw water input necessitating the development of additional bore infrastructure and capital expenditure. AMC regards this as a potential risk that may constrain production.

The mass balance assumes a settled solids density of 50 wt% for the tailings storage facility (TSF) slimes and recovery of 43% of the water. On the basis of past experience, AMC regards this as achievable with careful monitoring and management. However, an increase in settling density provides an opportunity for additional water recovery and thus an increase in production. AMC calculates that a settled solids density of 58 wt% would increase water recovery to 59% equivalent to 46 kL/h or 22% of the raw water input. AMC has been advised that densities of this magnitude and higher have been measured at Goondicum.

#### **2.4.3.6 Slimes content of ore feed**

The slimes content of the ROM ore feed is managed by the ratio of DG to CS ore mined. The LOM plan calculates that slimes will make up 40.4% of the feed. Maintaining this ratio is dependent upon the ability of the mining operations to blend the ore types in the mining process for feed into the ROM hopper. AMC regards this as a source of variability and risk to the project.

The key impacts of the variability will be on the performance of the scrubbers should the slimes proportion increase and the capacity of the WCP to handle higher mass of ilmenite bearing feed if the slimes proportion decreases.

The scrubbers have previously operated at up to 40% slimes feed, but their performance is unknown at higher proportions. Individually, AMC regards this as a minor risk.

The potential higher mass of heavy minerals in WCP feed may exceed throughput capacity of the current design both at primary spiral classification circuit and at the ilmenite WHIMS circuit. There is potential for a loss of recovery and revenue. Individually, AMC regards this as a minor risk.

The combination of variability, and performance losses present a higher risk as they are likely to occur concurrently. AMC regards the management of mining and blending of the ore types as an important factor in the overall plant performance.

#### 2.4.3.7 Summary

AMC concludes that the restart of the Goondicum processing plant is on schedule and within budget.

AMC is of the opinion that the capital projects undertaken for the restart will positively impact the availability and utilisation of the plant.

Mining of the deposit is planned to be by scrapers at a low cost and is considered the optimum mining method. The mining process is required to maintain a constant slimes content and blend the different ore types ore as they are mined into the ROM hopper, sourcing ore from within one mining area or at times from two mining areas.

Plant metallurgical performance is partially dependent upon the ratio of CS to DG material in the ore feed. This ratio is highly dependent upon the blending of ore fed into the ROM hopper by the mining contractor and the method of mining each of the various ore types to achieve the blend over short, hour to hour timeframes by the mining contractor. Control of the blending throughout each shift is required and is achievable with good management and skilled operators. Ore delivery however remains a source of variability and thus at times ranges in delivery is expected to impact plant circuits and recovery performance.

The metallurgical recovery (80-90%) used in the PEA is below general industry averages for mineral sands mining operations, however the Goondicum plant will treat ore that is more complex than most mineral sands operations. Data records show that prior operational periods have demonstrated maximum recoveries of approximately 80%. The processing plant refurbishment targets to improve the processing recoveries. AMC is of the opinion that the increased level of operational knowledge combined with the plant upgrades will enable increased recoveries, however the upgrades have not been tested so recovery improvement from previous levels has some uncertainty.

Long term recovery rates of 86% for ilmenite and 70% for apatite are proposed following a gradual increase in recovery rates from when the plant is commissioned, and the process improvements are gained over time. LOM average recoveries for ilmenite are 85% and apatite 68%

Maintaining LOM production is highly dependent upon water availability. Increased production is constrained without an increase in water recovery or the provision of additional raw water supplies. An increase in settled solids density to 58 wt% from the planned 50 wt% will reduce raw water requirement by approximately 22%.

The operating costs in the Goondicum mine budget model provided by Melior have been developed from historical operating data and built with a high level of detail. AMC considers the model to be a reasonable forecast of mine operating costs. Overall estimated operating costs are similar to the PEA and those benchmarked by AMC for other similar mineral sands operations.

AMC is of the opinion that there is significant upside in the project value if the upper range recoveries are achieved. Specifically, further gains are possible if the mining process delivers uniformly blended ore without excessive slimes, the plant upgrades are successfully implemented and then achieve their maximum operating efficiencies inclusive of increased plant availability.

#### 2.4.4 Tailings storage

Tailings will be stored initially in dedicated tailings dam and as areas are mined out will be stored in the previous pit voids. The mine plan has several locations over the site that will be progressively used. The voids when full will be rehabilitated. The tailings are being replaced where ore was originally located and no significant risks for acid mine drainage or other issues have been identified. Flocculation of the tailings will assist settlement, water return to the processing plant and consolidation over time. AMC considers this a low risk and suitable tailings storage strategy. Part of the plant upgrade is a tailings and water storage dam with an estimated capital cost of approximately \$1.1M and was observed as near complete on the site visit. Dam construction at the time of the site visit is shown in Figure 2.11.

Figure 2.11 Goondicum tailings dam construction photograph



Source: Melior

#### 2.4.5 Management, administration and labour

Melior propose to employ a mine management and administration team and staffing for the operation of the processing plant with the mining contractor providing labour for the mining operations. Production personnel will work on a rotating 7 days on 7 days off 12-hour shifts roster requiring 4 crews. Employees will reside locally in the Monto area when on shift, utilising existing housing, so no camp facilities are required. Corporate and some support staff will be located in Brisbane. AMC consider the management, administration, environmental, safety, and human resources staffing suitable for the project.

#### 2.4.6 Environmental, Health, Safety and Community Aspects

AMC understands that the Goondicum mine has studies, management plans, agreements and relationships with local stakeholders from previous operations and understand these will be updated in the restart of the operation. AMC is satisfied that an appropriate allocation of resources has been made for these aspects.



### 2.4.7 Regulatory approvals

The Goondicum mine has existing regulatory approvals with the mining lease ML80044 granted and the mining Environmental Authority EA EPML00799713 issued in November 2015.

Environmental Authority EA EPPR00872613 for the bulk materials handling of ilmenite, including stockpiling, loading and unloading at Barney Point, the wharf at Gladstone was issued in May 2015.

### 2.4.8 Capital costs

The capital cost for the refurbishment, upgrade and restart of the Goondicum Mine that is currently in progress were estimated at AUD \$7.8 M. The PEA proposed a value of US \$6.4 M. The capital costs are very low as compared to similar new mine projects due to the existing plant and the sunk capital costs, ad hoc reported to be, but not verified to be, circa \$100 M.

On the site visit AMC confirmed that the capital works for the restart are nearing physical completion and discussed the capital costs with site management. Data on the capital costs incurred along with a forecast cost to completion was provided by Melior. From this data AMC concludes that the project is likely to be completed slightly under budget costs. A summary of the budgeted, expended to date, forecast to completion is shown in Table 2.8.

Table 2.8 Goondicum capital cost budget status

Item	Budget	Spent	Remaining	Forecast
ROM Feeder	1,131	1,412	-9	1,403
Ilmenite de-phos circuit	789	911	91	1,002
Tailings dam	1,102	1,095	83	1,178
Spiral merge project	624	435	85	520
Site defects	511	348	68	415
General CAPEX items	1,579	735	879	1,614
Consumables, PLC	419	517	37	555
Other and contingency	1638	897	191	1088
Total	7,792	6,350	1,425	7,775

Source: Melior

The LOM capital as forecast by Melior includes an annual provision of approximately \$400,000 per year for tailings dams raisings and construction, a \$5.0M upgrade to the Eastern access road to allow shorter transport of concentrates, an upgrade to the apatite recovery circuit and additional port storage facilities for ilmenite concentrates plus miscellaneous items. At a pre- feasibility study level the ongoing capital costs forecast appears reasonable, however has risk as the values are not supported by tender or historic data and thus will require additional scoping and estimation for each individual item over time.

On average an approximate allowance of \$580k pa for nonspecific sustaining capital, understood to be mainly for processing plant items is included in the capital budget and based on historical values. AMC considers an ongoing 15% contingency to the sustaining capex to be suitable.

### 2.4.9 Operating Costs

The PEA for the restart of Goondicum mine provides a summary of the proposed operating costs with a unit product operating cost estimated at US\$ 127/t or AUD \$166/t at an average forecast exchange rate of 0.764 USD/AUD. The operating cost model or details thereof for the PEA were not made available to AMC for review however we understand that the PEA operating costs were based on the Melior Goondicum Mine model and then adapted as part of the PEA process.

The estimated LOM operating costs have been provided to AMC by Melior as the Goondicum Mine budget model in excel format. The costs are built up from first principals with underlying assumptions based on the previous operating history of the Goondicum processing plant, mine in general and recent tender pricing.

Data to support the main operating cost assumptions has broadly been provided by Melior. AMC has reviewed this model and the operating assumptions and provided adjustments where considered appropriate. These have been provided to BDO for the NPV valuation.

In reviewing the cost model AMC provides the following comments:

- The contract tendered prices are recommended for use in the model with adjustments for an estimated current delivered, rebated fuel pricing of \$1.20 per litre and a 2.5% contingency allowance to allow for minor contractor variations, variances in haul routes from optimum at times and other unforeseen minor project items.
- The processing plant operating costs are based on Melior data from previous experience and include labour, material supplies, power water and other inputs. AMC concur that the labour rates for persons being employed are in accordance with the modelled costs assuming significant overtime is not required. Power is as per current contract rates and there may be an opportunity to reduce these via market negotiations. A contingency of 15% has been applied to the maintenance supplies and consumables.
- Haulage rates for the haulage of ilmenite concentrate to the Port of Gladstone are as per quotes for the 260km haul route. Road tax rates for the heavy vehicles were provided. We have accepted but not validated Melior's estimate of \$5M in capital for the cost of the Eastern access haul route connection to the Bruce highway in 2023, reducing the haulage distance to 160km with significant reductions in haulage and road tax costs.
- Port stockpile and usage charges are as per Melior estimates from prior operating experience and their discussions with contractors and the Gladstone Port Authority.
- The project has a finder's royalty in addition to state royalties. Rates in the model are as per the finder's royalty documents provided by Melior and state legislation.
- Following model adjustments, the operating costs estimated by AMC are similar to that calculated in the PEA.

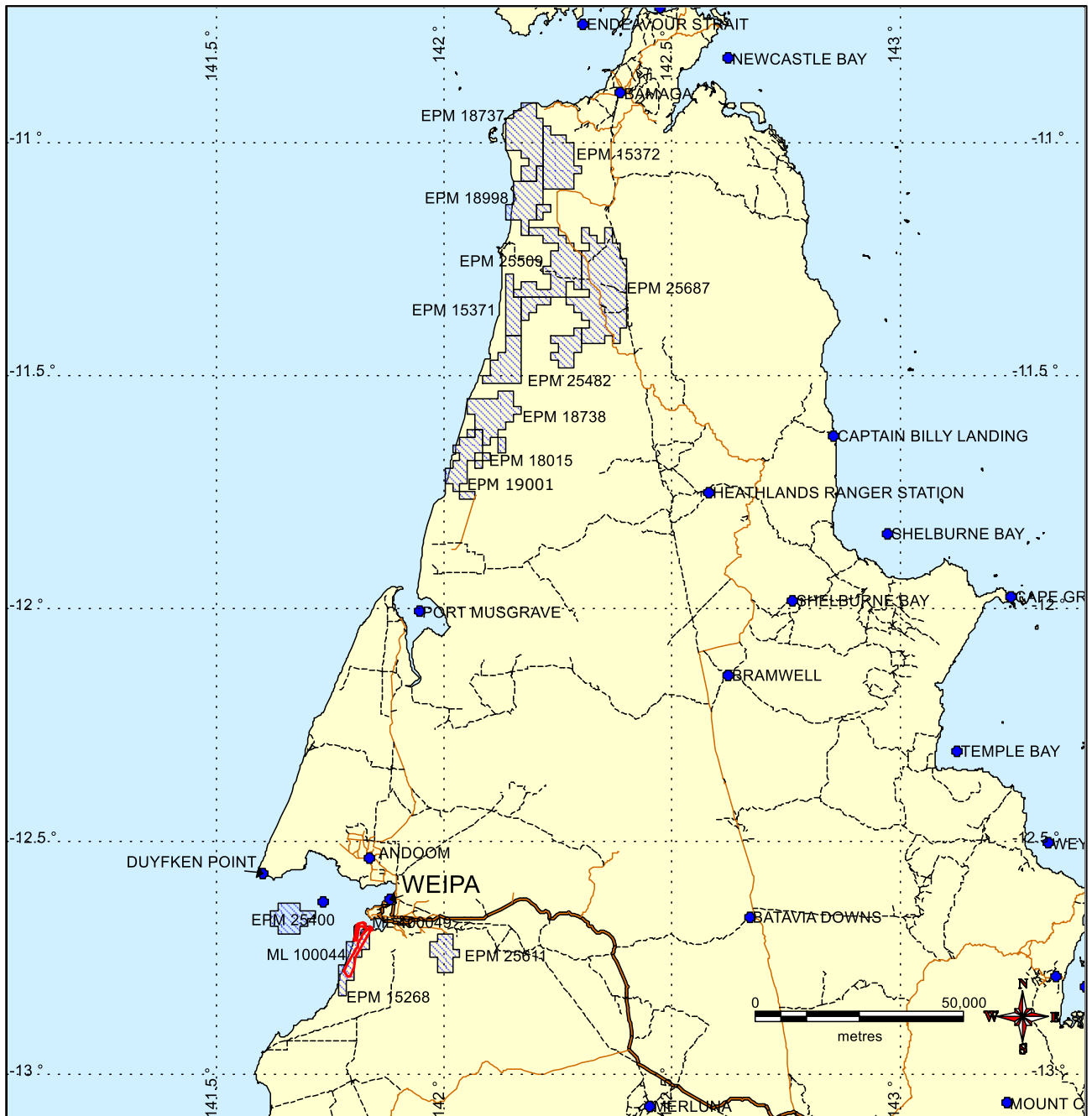
AMC has also used its industry knowledge to compare the estimated operating costs with another mineral sand operation that also processes material with a high clay slimes content. In benchmarking the proposed total operating costs for Goondicum, AMC finds that the estimated total costs align reasonably well with another similar operation.

### 3 Metallica Assets

#### 3.1 Location and infrastructure

The Metallica tenure is all located in Queensland as shown in Figure 1.1. In detail the tenements are located in the Cape York area for bauxite as shown in Figure 3.1.

Figure 3.1 Metallica Cape York tenement locations



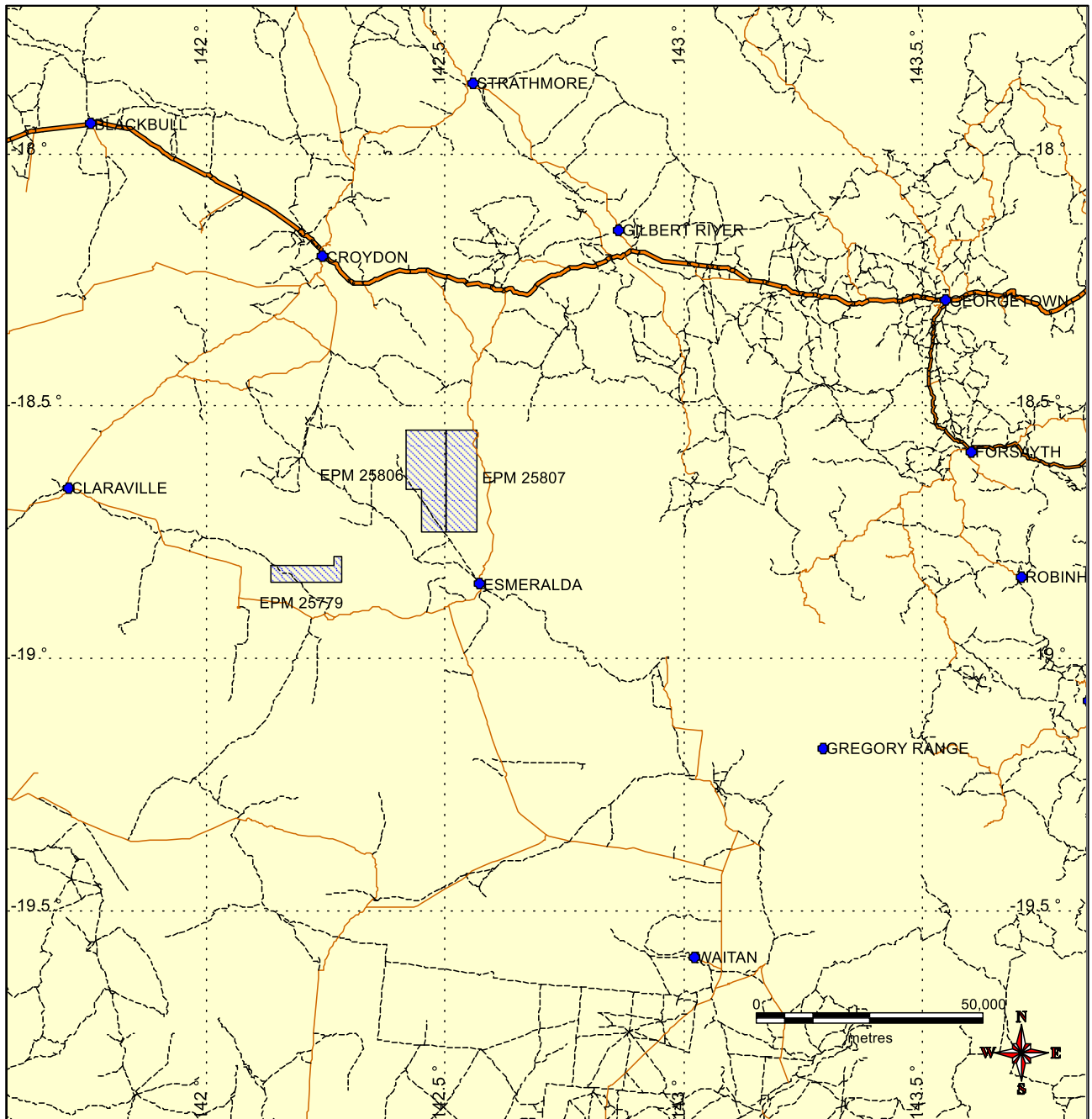
Source: AMC. Projection Lat/Long (GDA94)

Access to the Urquhart bauxite and mineral sands projects is via the Cape York road from Cairns or via sea. The Urquhart bauxite project is directly south of the town of Weipa, with access to shallow draft barges in the Embley river. Regional tenements on the west coast of the Cape are only accessible via water or helicopter.

The Touchstone Resources Pty Ltd (Touchstone) Esmeralda graphite project is located in central Queensland, 50 km south of the town of Croydon with tenement locations as shown in Figure 3.2.



Figure 3.2 Metallica (Touchstone) Esmeralda project tenement locations

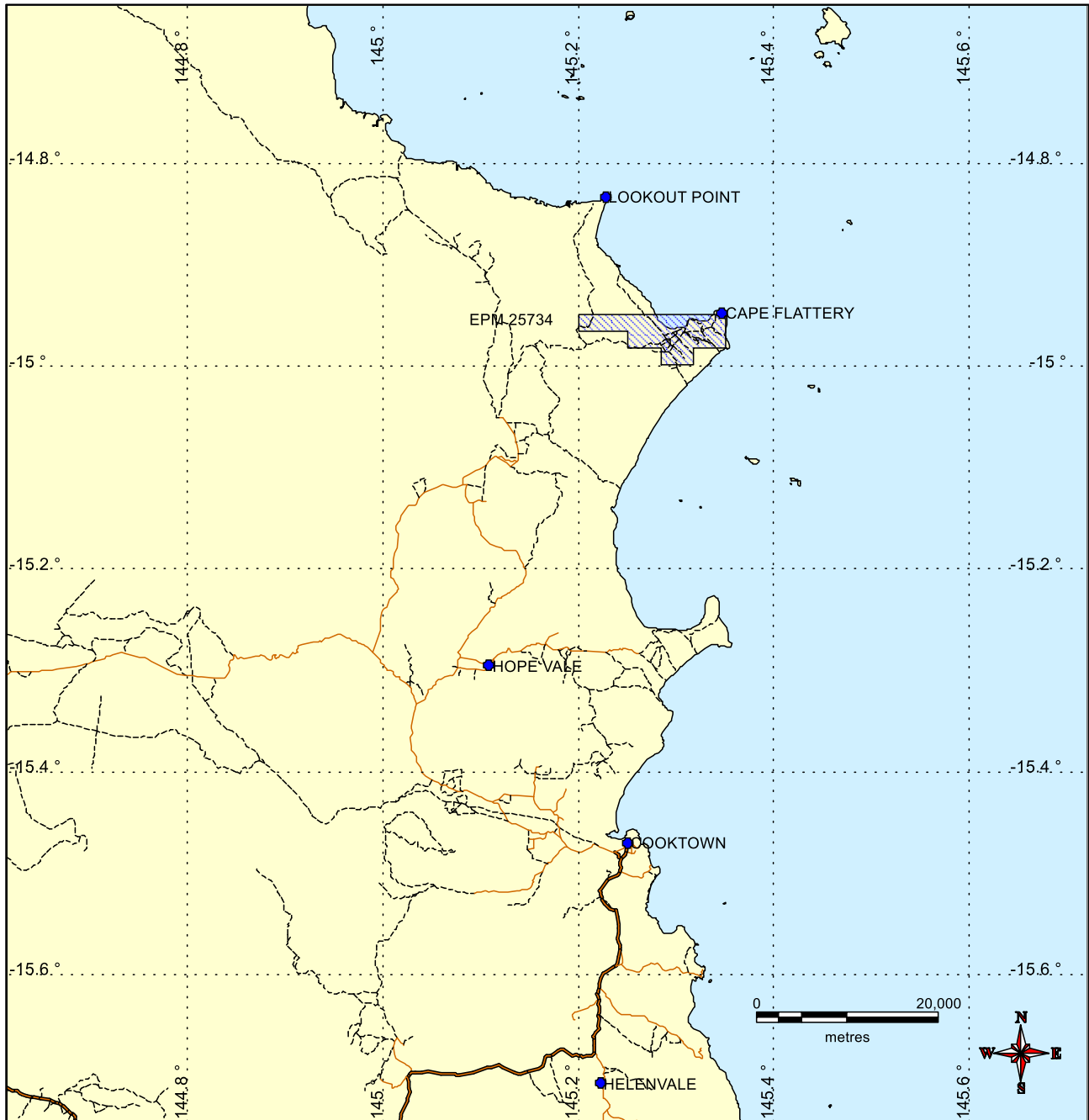


Source: AMC. Project Lat/Long (GDA94)

Access to the Esmeralda tenure is via the Croydon sealed highway and then on regional dirt roads to Esmeralda.

The Cape Flattery silica sand project is located in north Queensland, 56 km north of Cooktown with tenement location as shown in Figure 3.3.

Figure 3.3 Metallica Cape Flattery project tenement location

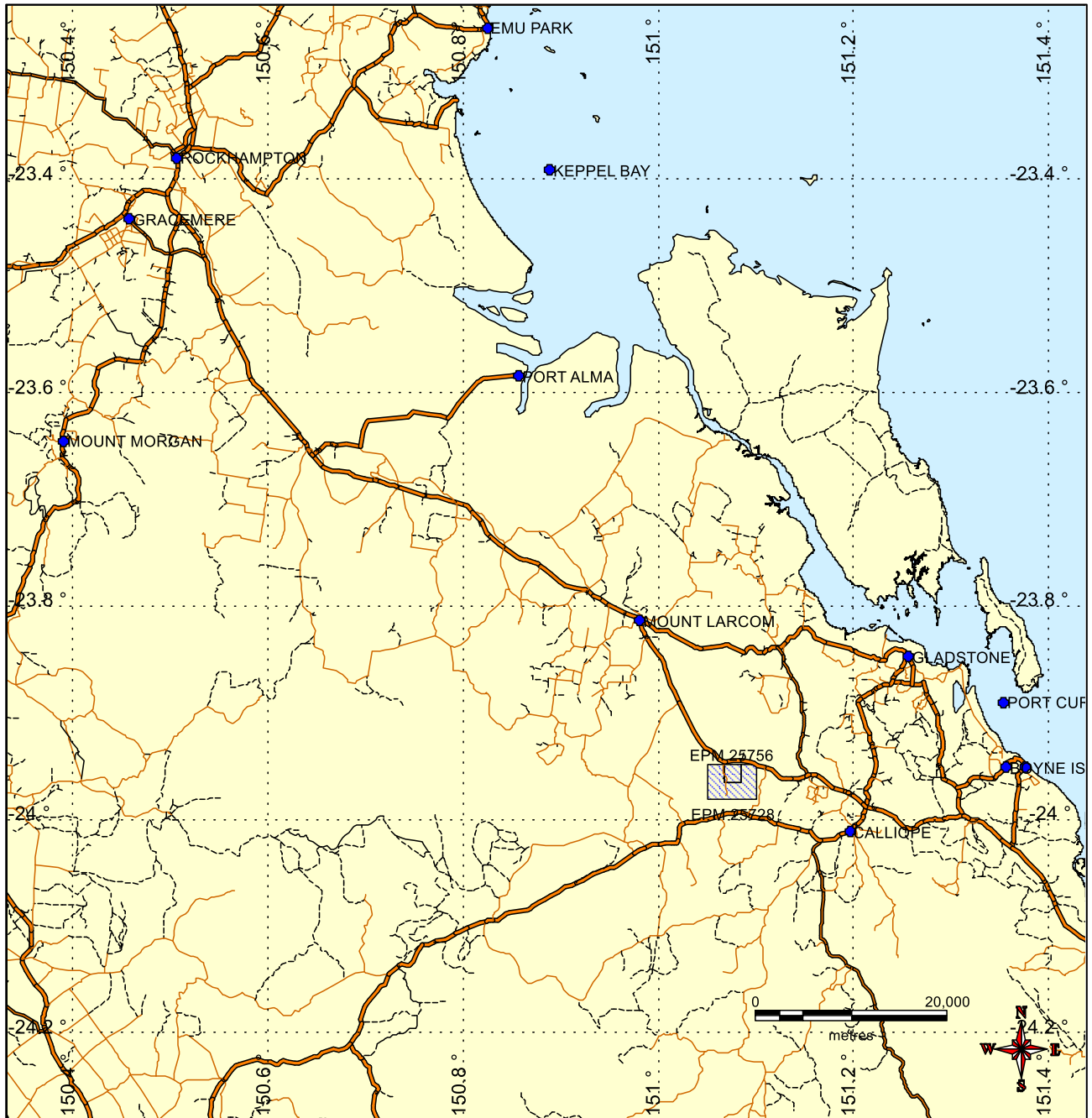


Source: AMC. Projection Lat/Long (GDA94)

Access to Cape Flattery is via regional dirt roads north from Cooktown, or via water to the Cape Flattery port.

The Phoenix Lime Pty Ltd (Phoenix Lime) Fairview tenements are located in central Queensland approximately 20 km southwest of Gladstone as shown in Figure 3.4.

Figure 3.4 Metallica (Phoenix Lime) Fairview tenement location map



Source: AMC. Projection Lat/Long (GDA94)

Good access is available via the Bruce Highway.

### 3.2 Projects tenure

Table 3.1 shows all tenure held by Metallica as at October 2018. Oresome Australia Pty Ltd (Oresome) is a 100% subsidiary of Metallica. Phoenix Lime and Touchstone are 100% subsidiary of Metallica (Metallica, 2018b). Ozore Resources Pty Ltd is a separate entity not associated with Metallica. AMC is not a tenement specialist and has relied upon the report by UTM Global (UTM Global, 2018) for Metallica's tenement validation. AMC notes that rent for EPM25734 is overdue from 24 May 2018, and that seven annual technical reports and statements of expenditure are outstanding. AMC notes that UTM's observation that these fees and reports are required before the tenements can all be described as being in good standing.

### 3.3 AMC scope

Metallica's major asset is the Urquhart Bauxite Project (UB Project) located near Weipa. Metallica also hold a number of exploration tenements in Queensland that include the Cape Flattery silica sands, Esmeralda graphite and Urquhart Mineral Sands projects.

In reviewing Metallica's assets and providing commentary, confirmation or otherwise on the NPV models provided by Metallica for the UB Project, we have reviewed the associated pre-feasibility study, completed by IMC Mining Pty Ltd (IMC) (IMC, 2018) and other supporting data provided in electronic form by Metallica.

The PFS update results were released to the ASX on the 12 of September 2018. The PFS has an order of accuracy of +/- 25%.

We have relied upon the PFS, documents provided, public information, and discussions with Metallica personnel in forming our opinions. AMC has not uncritically relied on this information provided and has aimed to satisfy itself as to the reasonableness of the information it used.

Table 3.1 Metallica's tenure

Permit Number	Authorised holder name	Project	Area	Grant Date	Expiry Date	Status
ML20669	50% Oresome Australia P/L / 50% Ozore Resources P/L	Urquhart Point HMS	3.66 km <sup>2</sup>	08/10/13	31/10/23	Granted
ML20737	50% Oresome Australia P/L / 50% Ozore Resources P/L	Urquhart Point HMS	0.05 km <sup>2</sup>	26/03/15	31/03/25	Granted
ML100044	Oresome Bauxite Pty Ltd	Urquhart	13.65 km <sup>2</sup>	02/01/18	31/01/33	Granted
MLA100049	Oresome Bauxite Pty Ltd	Urquhart	3.89 km <sup>2</sup>	-	-	Application
EPM15268	50% Oresome Australia P/L / 50% Ozore Resources P/L	Urquhart Bauxite and Urquhart Point HMS	53.4 km <sup>2</sup> (16 sub-blocks)	25/10/07	24/10/22	Granted
EPM15371	50% Oresome Australia P/L / 50% Ozore Resources P/L	Doughboy	43.6 km <sup>2</sup> (13 sub-blocks)	29/09/09	28/09/19	Granted
EPM15372	50% Oresome Australia P/L / 50% Ozore Resources P/L	Jardine	97.4 km <sup>2</sup> (29 sub-blocks)	29/09/09	28/09/19	Granted
EPM18015	50% Oresome Australia P/L / 50% Ozore Resources P/L	Jackson	13.4 km <sup>2</sup> (4 sub-blocks)	19/10/10	18/10/20	Granted
EPM18737	50% Oresome Australia P/L / 50% Ozore Resources P/L	Sandman	114.2 km <sup>2</sup> (34 sub-blocks)	22/01/15	21/01/20	Granted
EPM18738	50% Oresome Australia P/L / 50% Ozore Resources P/L	Sandman	160.9 km <sup>2</sup> (48 sub-blocks)	09/04/12	09/03/18	Granted (Renewal lodged)
EPM18998	50% Oresome Australia P/L / 50% Ozore Resources P/L	Sandman	80.6 km <sup>2</sup> (24 sub-blocks)	09/04/12	09/03/20	Granted
EPM19001	50% Oresome Australia P/L / 50% Ozore Resources P/L	Sandman	70.4 km <sup>2</sup> (21 sub-blocks)	13/09/12	01/11/19	Granted
EPM25400	50% Oresome Australia P/L / 50% Ozore Resources P/L	Sandman	56.7 km <sup>2</sup> (17 sub-blocks)	01/12/15	18/03/20	Granted
EPM25482	50% Oresome Australia P/L / 50% Ozore Resources P/L	Sandman	67.1 km <sup>2</sup> (20 sub-blocks)	19/03/15	31/03/20	Granted
EPM25509	50% Oresome Australia P/L / 50% Ozore Resources P/L	Sandman	137.6 km <sup>2</sup> (41 sub-blocks)	04/01/15	23/07/22	Granted
EPM25611	50% Oresome Australia P/L / 50% Ozore Resources P/L	Embley	43.4 km <sup>2</sup> (13 sub-blocks)	24/07/17	04/01/20	Granted
EPM25687	50% Oresome Australia P/L / 50% Ozore Resources P/L	Vrilya East	261.7 km <sup>2</sup> (78 sub-blocks)	04/02/15	24/05/20	Granted
EPM25734	Oresome Australia Pty Ltd	Flattery	56.2 km <sup>2</sup> (17 sub-blocks)	25/05/15	24/05/20	Granted
EPM25728	Phoenix Lime Pty Ltd	Fairview	15.7 km <sup>2</sup> (5 sub-blocks)	06/08/15	05/08/20	Granted
EPM25756	Phoenix Lime Pty Ltd	Fairview	3.1 km <sup>2</sup> (1 sub-blocks)	12/12/14	11/12/19	Granted
EPM25779	Touchstone Resources Pty Ltd	Esmeralda	61.6 km <sup>2</sup> (19 sub-blocks)	24/06/15	23/06/20	Granted
EPM25806	Touchstone Resources Pty Ltd	Esmeralda	162.2 km <sup>2</sup> (50 sub-blocks)	14/05/14	13/05/20	Granted
EPM25807	Touchstone Resources Pty Ltd	Esmeralda	155.7 km <sup>2</sup> (48 sub-blocks)	15/05/14	14/05/20	Granted

Source: MyMinesOnline (<https://www.business.qld.gov.au/industries/mining-energy-water/resources/minerals-coal/online-services/minesonlinemaps> Accessed 03/10/2018)

### 3.4 Urquhart bauxite

#### 3.4.1 Project overview

The UB Project is situated on the western side of the Cape York Peninsula in Queensland, approximately 5 km to 15 km southwest of Weipa, on the southern side of the 2 km wide tidal estuary of the Embley River. Access to the project is via boat or barge from Weipa (Figure 3.5).

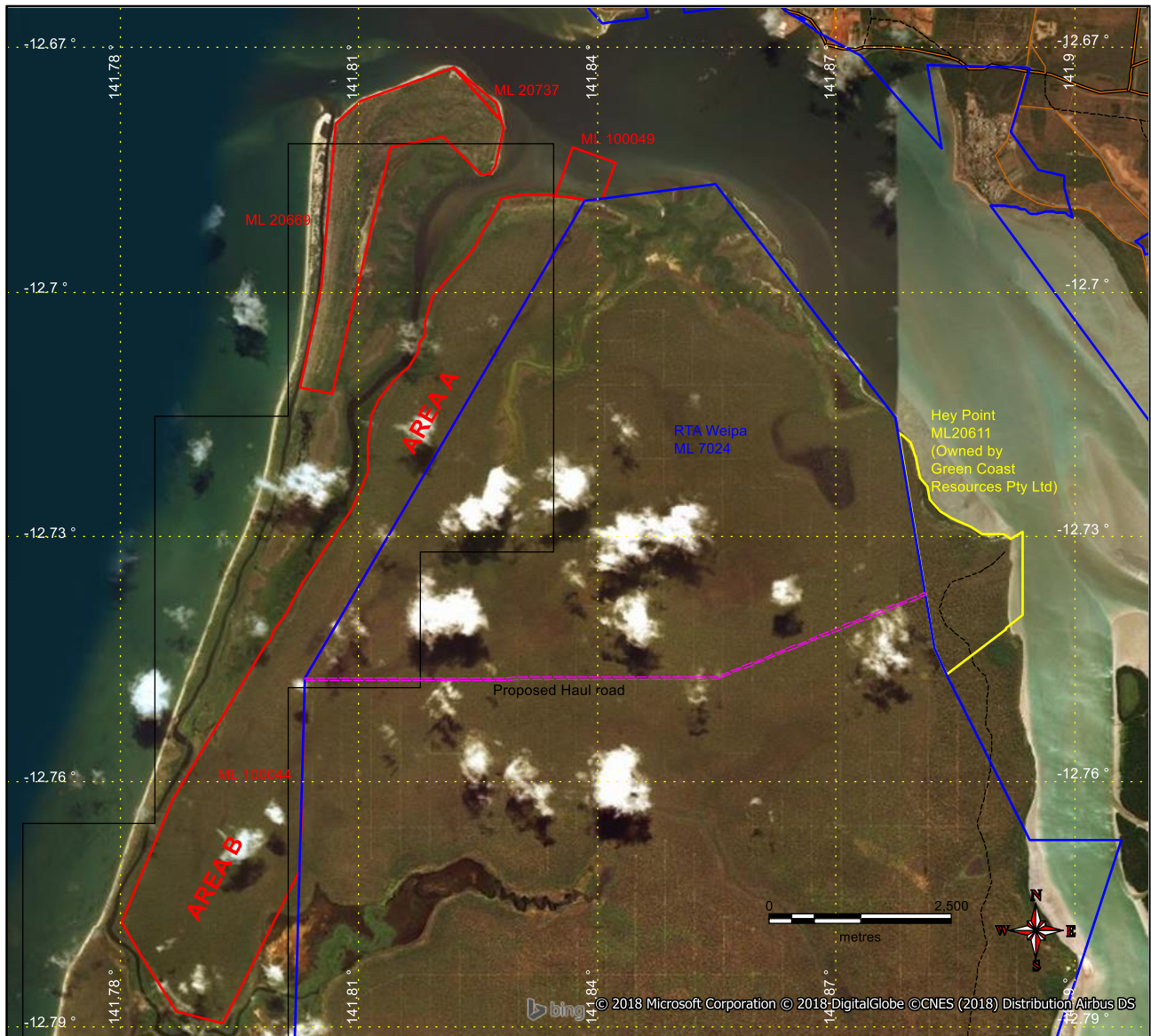
The project contains Weipa-type pisolitic bauxite that is of suitable export quality containing predominantly high alumina content ( $>50\% \text{ Al}_2\text{O}_3$ ). Similar product is exported by Rio Tinto Australia Weipa Pty Ltd (RTAW) and others and is well known and accepted by alumina refineries.

Exploration at the UB Project has identified two bauxite plateaus, known as Area A and Area B on mining lease ML100044 that have been the subject of the PFS, as completed by IMC for Metallica. The PFS proposes:

- Development of the Urquhart Bauxite project following the approval of permitting for a haul road to Hey Point. Metallica anticipates development to occur post the 2018 / 2019 wet season.
- The contract mining, haulage, screening and transshipping via barge to ocean going ships of bauxite during the nine-month dry season only (April to December)
- Target production rate of 1.5 million tonnes per annum (mtpa)
- Sales of approximately 6.5 Mt of bauxite from Area A
- Additional sales including screened products of about 3.3 Mt from Areas A and B.
- Capital costs of approximately \$2.2 M



Figure 3.5 Plan view of Urquhart Bauxite Project



### 3.4.2 Ownership, tenure and approvals

The UB bauxite reserves and resources in Areas A and B are wholly contained within ML 100044. The mining lease ML 100044 is held 50% by Oresome Australia Pty Ltd (a wholly-owned subsidiary of Metallica) and 50% by Ozore Resources Pty Ltd (a Chinese owned investment company) in a joint venture (UBJV) arrangement with Metallica the operator.

A native title agreement with the native title holders, represented by the Ngan Aak-Kunch Aboriginal Corporation RNTBC (NAK) has been agreed with a royalty payable.

The land where the proposed haul road is located on ML 7024 owned by RTAW. The UBJV is negotiating to gain access across ML7024 and secure the haul road via s316 of the Minerals Resources Act 1989. This process is yet to be concluded and there is some uncertainty around the timing of access. Metallica has confirmed that it has elevated the issue of access within the Queensland State Government and remains confident of securing all necessary approvals so as for a s316 ML to be granted. AMC is not providing a legal opinion on this process; however, it notes that for every year of delay that the UB Project value will be reduced by the NPV discount rate used. It is likely that a nominal rental for access may apply and for this an annual value of \$100,000 is considered suitable.

Hey Point, where the proposed barge loading facility is located on ML 20611 is owned and operated by Green Coast Resources Pty Ltd (GCR). GCR holds an Environmental Authority (EMPL02705614) for bulk materials handling permitting the barging and transshipping of bauxite. The UBJV have a contract agreement with GCR to provide barging and transshipping services using the Hey Point facility.

### 3.4.3 Geology

The deposit type is a bauxite laterite derived from the tropical to sub-tropical weathering of aluminous sediments. The deposit appears typical of the pisolitic bauxite style that occurs in the Weipa area on Cape York. The deposit is near the coast and is slightly deeper than normal as it is in places covered by unconformable sands (Metallica, 2015a).

The deposit has a simple geometry being approximately flat lying, with overlying soil and sand, a thin high silica bauxite surface followed by the target bauxite, with a transitional (usually <0.25m) lower high silica bauxite and underlying sands.

#### 3.4.3.1 Mineral Resource estimate

The most recent Mineral Resource estimate was published in November 2016 by John Horton of IMC Consultants Pty Ltd (Horton, 2016). The stated Mineral Resource by classification and by area is shown in Table 3.2

Table 3.2 Urquhart DSB Resource statement details at 48% Al<sub>2</sub>O<sub>3</sub> cut-of

Classification	Area	Mt	Al <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %	THA*%	RSi**%
Measured	A	3.0	54.4	11.8	43.2	5.0
Indicated	A	3.9	53.3	13.1	40.8	5.2
M+I	A	6.9	53.8	12.5	41.8	5.1
Inferred	A	0.3	54.2	11.3	42.0	4.7
	B	2.3	49.9	17.4	37.2	6.0
	subtotal	2.6	50.3	16.8	37.6	5.9
Total		9.5	52.8	13.7	40.7	5.3

\*THA is trihydrate available alumina (gibbsite alumina + kaolinite alumina – low temperature desilication product (DSP) alumina) at 150°C

\*\*RSi is reactive silica at 150°C

Source: Horton, 2016

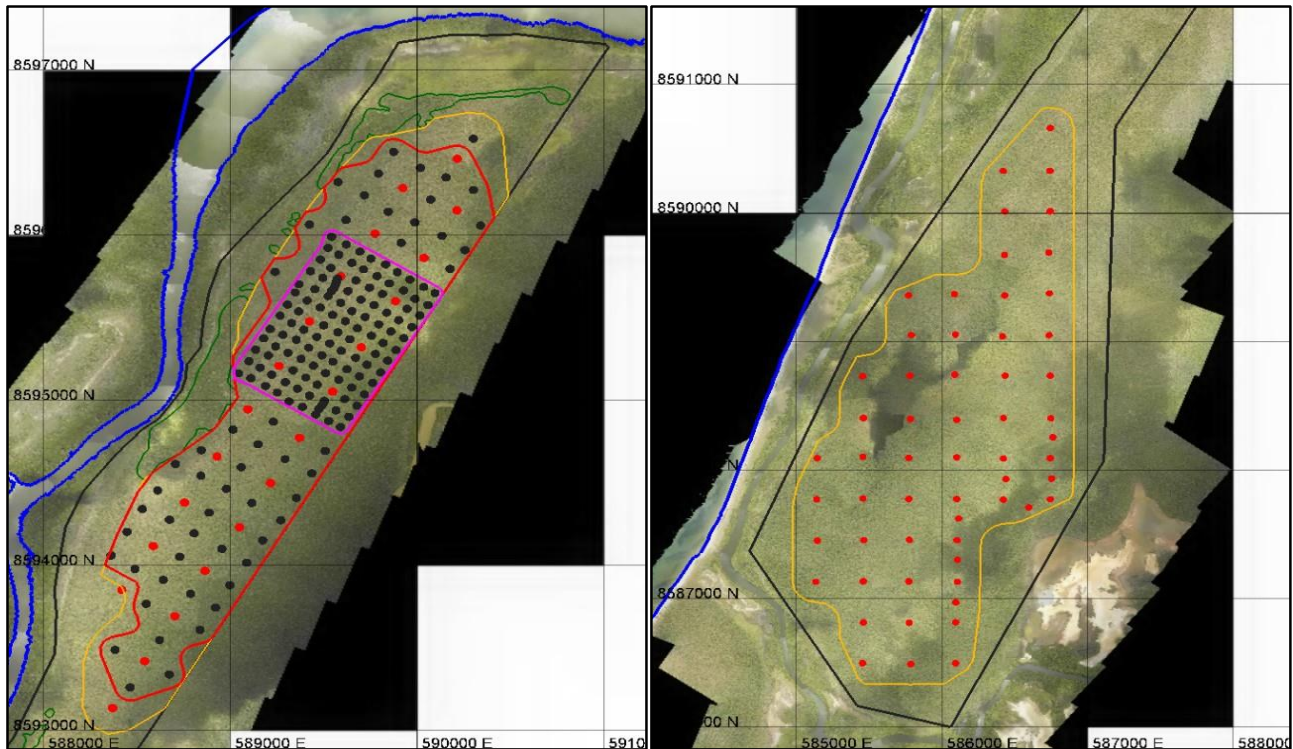
The resource drilling arrangement and resultant classification boundaries are displayed in Figure 3.6. The geological logging data was used to define the five principal domains for Area A as follows:

- 100 Overburden soil (coded SA + SO, KS, RS, EB)
- 200 Upper high silica Bauxite (coded SB + PB, EB) <48% Al<sub>2</sub>O<sub>3</sub> & >20% SiO<sub>2</sub>
- 300 Target Bauxite (coded PB + SB, TZ) >48% Al<sub>2</sub>O<sub>3</sub> & <20% SiO<sub>2</sub>
- 400 Lower high silica Bauxite (coded TZ + PI, PB) <48% Al<sub>2</sub>O<sub>3</sub> & >20% SiO<sub>2</sub>
- 500 Underburden (coded IS + PI, KA, KI).

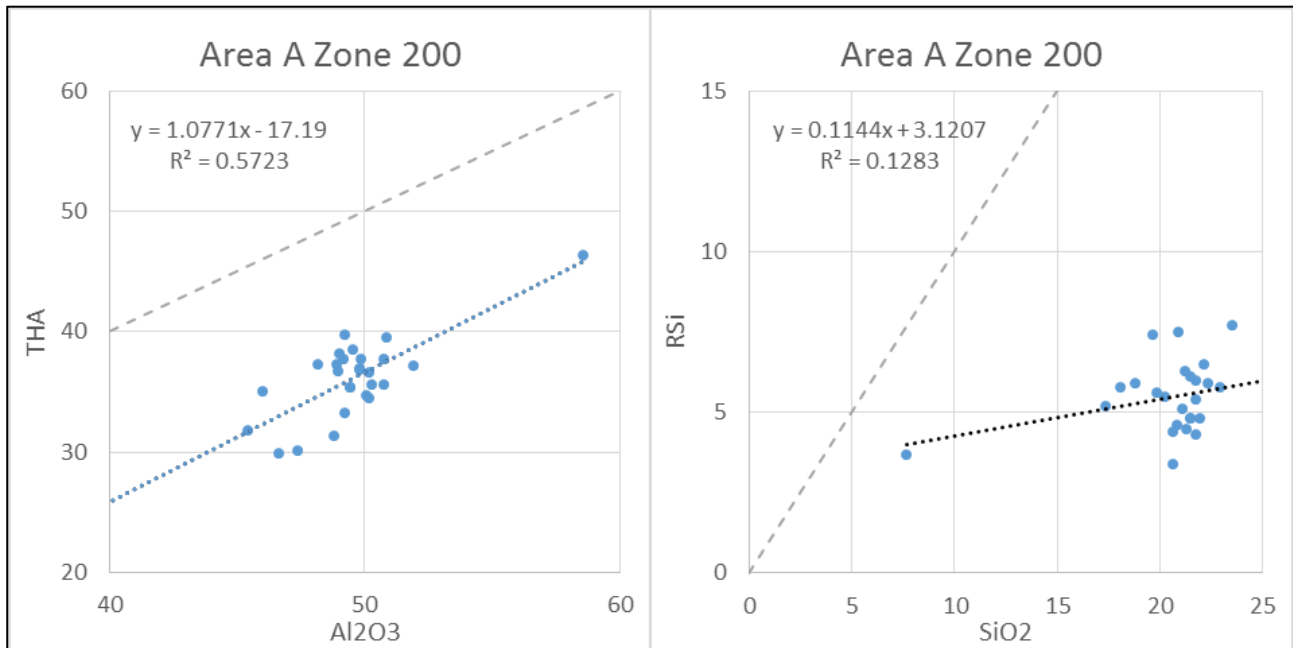


AMC has examined the inputs to, and manipulation of the data in, the resource estimation. Drilling locations, sampling, analysis and quality assurance are in line with industry best practice. Regressions between  $\text{Al}_2\text{O}_3$  vs THA and  $\text{SiO}_2$  vs RSi are used to populate metallurgical grades for peripheral samples in domains 200 and 400 for dilution and fill the a few missing values in domain 300 Area A and all domain 300 in Area B. An indicator is carried in the resource estimate (AAIAss) which represents the proportion of assigned grades in the estimates. AMC comments that the regressions, shown in Figure 3.7, are weak for  $\text{Al}_2\text{O}_3$  vs THA at best, and does not exist between  $\text{SiO}_2$  and RSi. This may result in imprecision for the metallurgical (THA and RSi) estimates in Area B, however, this area is all classified as Inferred.

Figure 3.6 Plan of drill collars and resource classification on LiDar topography image



Note: LH image is Area A, RH image is Area B. Circles: Red = 2014 drilling, Black = 2016 drilling  
 Polygons: Orange = Inferred, Red = Indicated, Pink = Measured, Black = ML, Green = Vine Thicket  
 Source: Horton, 2016

Figure 3.7 Regressed  $\text{Al}_2\text{O}_3$  vs THA and  $\text{SiO}_2$  vs RSi

AMC has reviewed the Mineral Resource inputs and outcomes and found that they are appropriate for use as inputs to the PFS models.

### 3.4.4 Mining

#### 3.4.4.1 General

The UBJV plans to mine from Area A and Area B approximately 1.5 Mtpa of direct shipping and lower grade bauxite for upgrading via screening for export as discussed above.

The mining is to be conducted by a mining contractor using equipment provided by the mining contractor.

Personnel will reside in Weipa, so logistics require the workforce to commute from Weipa across the river estuary to Hey Point via boat, then drive to site via the 16km haul road at the start and end of each shift.

The PFS proposes mining in 160m wide strips with 40t articulated K - TEC scrapers removing the overburden to uncover the bauxite, dumping the waste overburden to backfill the previous adjacent mined out strip. Mining of the bauxite will then use a large front-end loader (FEL) such as a Cat 992 FEL to directly load B double or 130 t road train style trucks for the transport of bauxite to the Hey Point stockpile yard in readiness for screening if required and then loading onto the barge for transhipping. Support equipment includes dump trucks, a D9 dozer, 14G grader and water cart.

The PFS assumes that blasting of the bauxite will not be required. Data on the ore hardness has not been provided or reviewed. It is possible that the deposit contains areas of harder more consolidated bauxite that will require ripping by dozers.

Dewatering of the pit is planned to occur progressively as mine operations advance from strip to strip. The PFS indicates that the water table would appear to be consistently above the top of the prospective bauxite horizon (Lewis, S. 2017).

Mining will be conducted during the dry season only, from April through to December each year. This avoids the issues associated with sticky materials and high rainfall conditions.

Grade control is to be conducted by UBJV geological personnel. In the early years of the project this is reported as being simple as the cut between bauxite ore and waste is visual. Lower grade material such as that separated by thin waste partings or interburden, will require more specific geological control. GPS guidance control for horizon control is proposed. The mining selectivity criteria used has a 100 mm bauxite ore loss on the top surface and a 100 mm waste dilution on the base of mining. This is considered appropriate for the proposed equipment with suitable geological control and reserve definition drilling.

The stockpiling and rehandle of material, especially lower grade bauxite may be required at times.

AMC considers the method of mining and the planned equipment to be suitable for the UB Project.

AMC however identifies a number of risk areas to be addressed in a Feasibility Study that could potentially add to project costs or may affect revenues:

- Additional drilling to convert resources to reserves
- Updated reserve modelling, mine planning and scheduling
- Infill grade control drilling and control of the contractor's mining selectivity practices
- The stockpiling and blending of lower grade ores
- Determination of the bulk ore hardness over the deposit and identification of any harder ore areas that may require ripping or blasting
- Water management, ground water levels, flow rates, volumes, water structures required.
- That appropriate allowances have been made for project logistics, including the productivity effects on the contractor's workforce commuting from Weipa across the river estuary to Hey Point, then driving to site via the 16 km haul road at the start and end of each shift.

#### **3.4.4.2 Schedule**

Three potential schedules for the UB Project have been included in the PFS study and they include both reserves and resources. The bauxite reserves and resources at the UB Project are flat lying and shallow with an average overburden strip ratio of 2.6 waste tonnes per bauxite ore tonne (t/t) and varying from 1.3 t/t at the start of the mine to 3.8 t/t towards the end of the mine life.

The three schedules in the PFS provide three different life of mine scenario cases 1 to 3 and target to mine the reserves and resources in three progressive stages or scenarios. The life of mine plan mines the higher margin, better grade and lower strip ratio bauxite first and then progresses to mine lower margin reserves or resources towards the end on the mine life. The three scenario stages are:

- Scenario 1: Mining the Proved and Probable Reserves in Area A, (AMC Production and cost model UB1)
- Scenario 2: Mining scenario 1 bauxite plus the additional mining of Inferred Resources in both Area A and Area B, (AMC Production and cost model UB2)
- Scenario 3: Mining of scenario 2 bauxite plus the screening of lower grade stockpiled material towards the end of mine life, (AMC Production and cost model UB3)

In tonnage terms, scenario 1 mines 6.5 Mt of the higher grade lower strip ratio bauxite, Scenario 2 adds an additional 2 Mt of lower confidence, lower grade, lower margin bauxite and then Scenario 3 adds the screening of lower grade bauxite that upgrades the product specifications to produce 1.6 Mt for a total saleable output of 10.3 Mt as shown in Table 3.3 below along with the product quality properties.

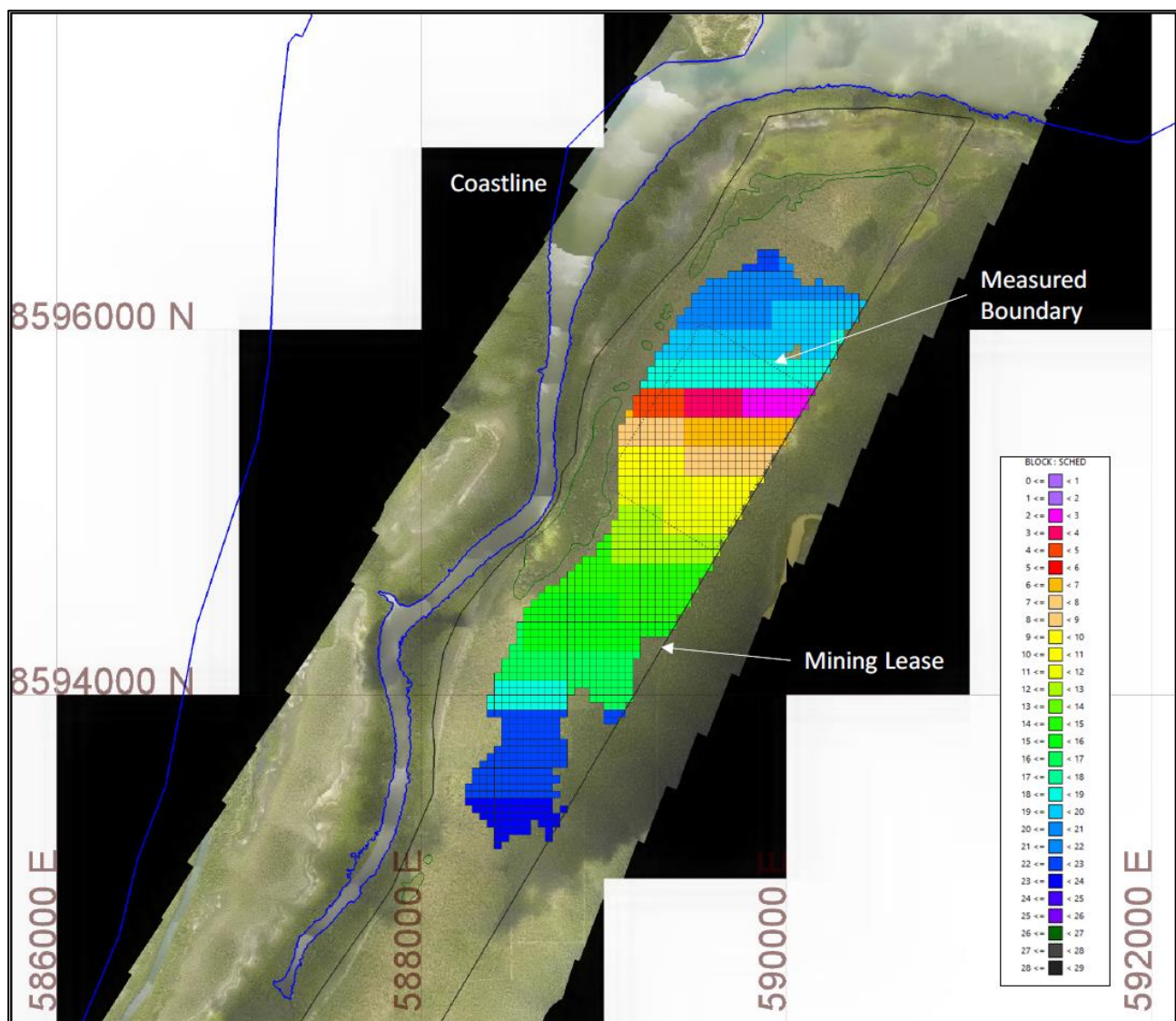
Table 3.3 Urquhart bauxite scenario specifications

Item	Unit	Scenario 1 (Base Case) (AMC - UB1)	Scenario 2 (AMC - UB2)	Scenario 3 (AMC - UB3)
Total cumulative saleable product	dry kt	6,532	8,672	10,296
Total Al <sub>2</sub> O <sub>3</sub>	%	52.7	51.6	51.2
Total SiO <sub>2</sub>	%	13.3	14.7	15.4
Available alumina	%	40.6	39.1	38.1
Reactive silica	%	5.7	6.1	6.1

Source: Metallica, 2016b

The indicative mining schedule progress plots as per the PFS are detailed in the Figures 3.8 and 3.9 below.

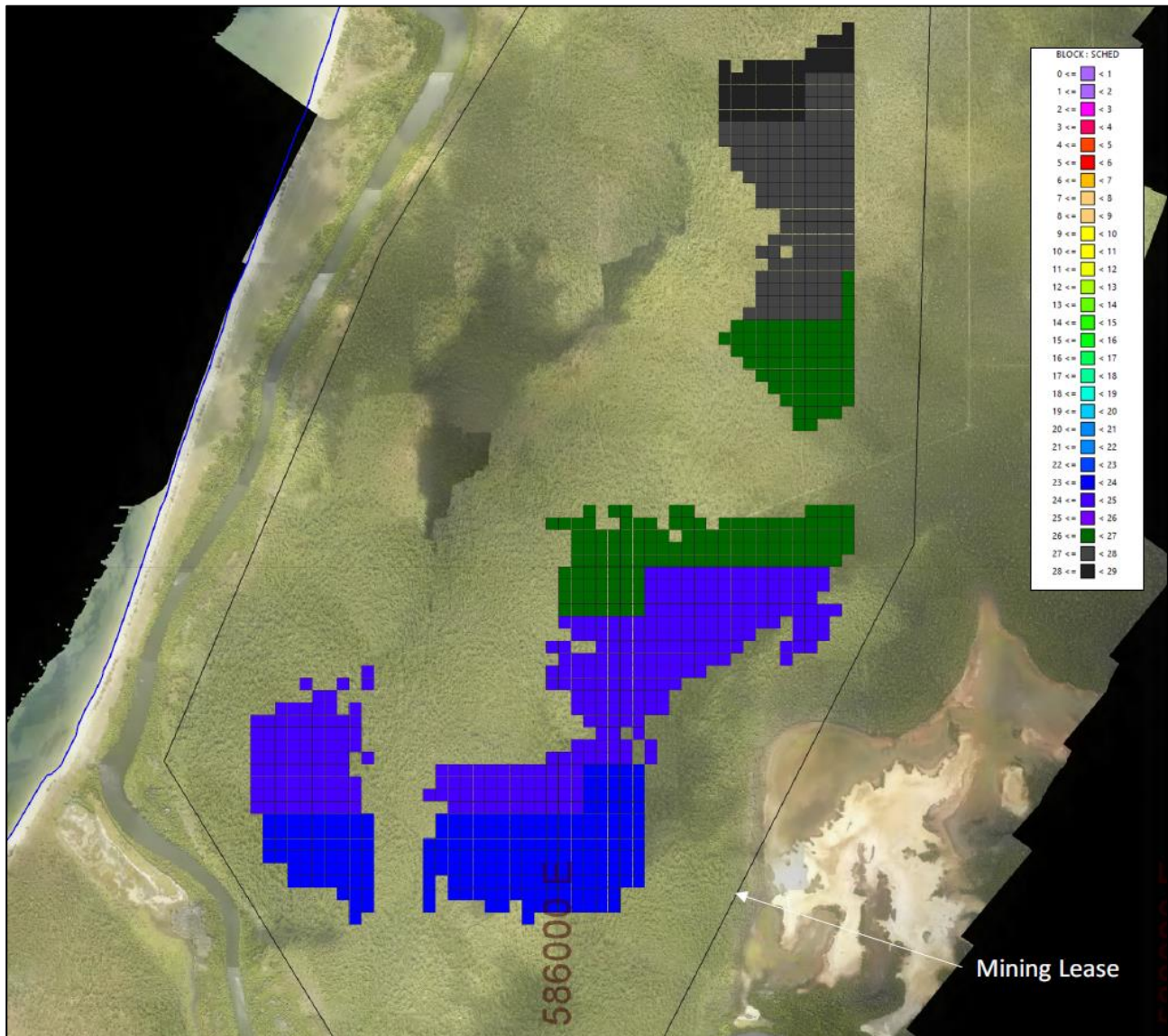
Figure 3.8 Indicative quarterly mining schedule for Area A (IMC, 2018)



Source: Lewis, 2018



Figure 3.9 Indicative mining schedule for Area B (IMC, 2018)



Source: Lewis, 2018

These plots show the initial mining of bauxite in the Ore Reserve and Measured and Indicated Resources areas in the first three years and then has mining progressing southwards for around two years then to the northern part of Area A before relocating to Area B. AMC has reviewed the progress schedule above with the ore strip ratio, bauxite quality and margin distribution for the mining blocks of the deposit and compared these to the mining sequence. The strategy of mining the higher value ore first and progressing to lower margin product over time is sound.

### 3.4.5 Processing

All bauxite will undergo oversize scalping prior to shipment using a scalping screen to remove tree roots and larger + 100mm cemented particles. Besides this scalping operation direct shipped bauxite will not undergo any processing.

Bauxite in the scenario 3 schedule will be dry screened to remove silica fines and this will also increase the alumina content of this material.

### 3.4.6 Barging and transshipping

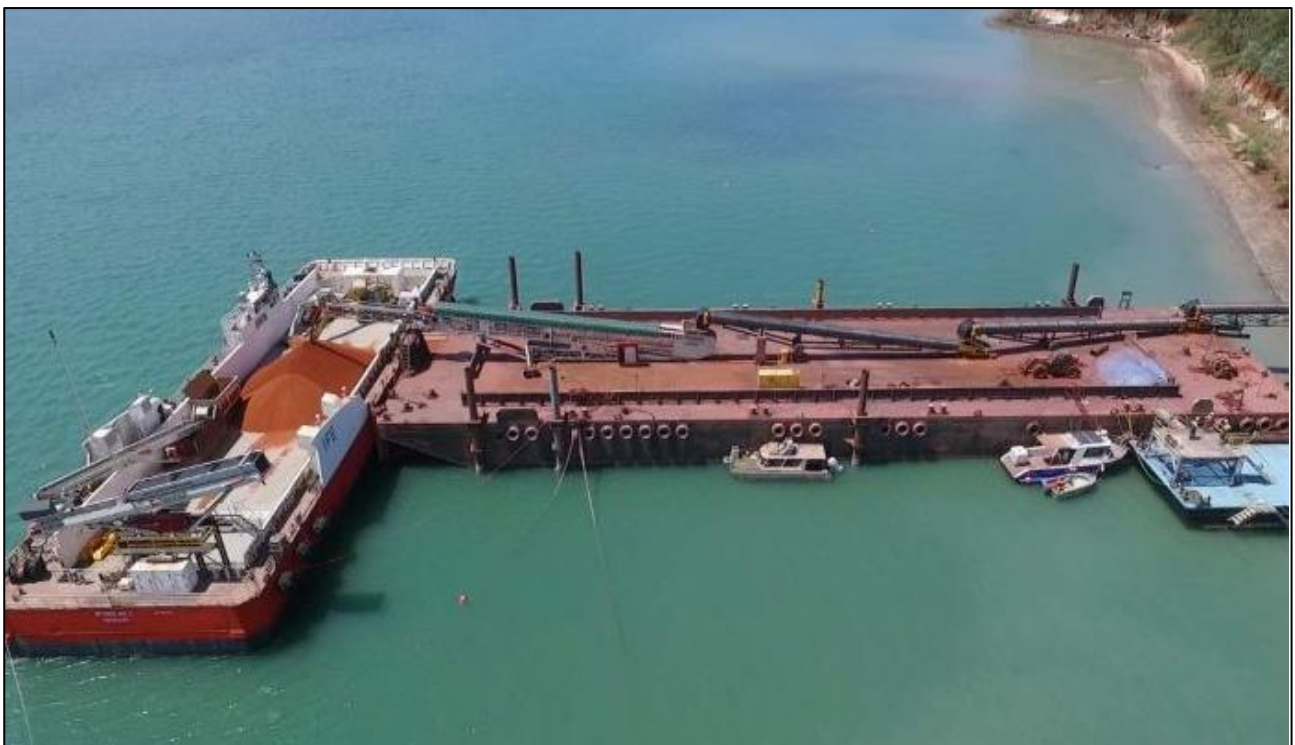
The UB Project proposes to ship bauxite via Hey Point, located 15 km east of ML 100044 using the GCR facility (Figure 3.10). In addition to potentially providing contract services to the UBJV, GCR holds mining lease ML 20611 that contains bauxite and GCR has been mining and shipping bauxite from their own lease. The loading point for the ocean-going ships is located three to four km downstream from Hey Point (Figure 3.5). As the loading point is relatively shallow, initially only smaller 35,000 t class ships can be loaded and the PFS proposes that dredging be conducted to allow larger 55,000 t class ships to be loaded. Dredging is routinely conducted downstream in the river by RTAW to allow ships to access the RTAW loading wharf.

An alternative to dredging to for loading of larger ships is to tranship the bauxite at an offshore location, however this will incur longer barging times.

AMC considers the assumptions for barging and transshipping reasonable for a PFS level, however comments that a cost benefit analysis will be required prior to commencing any permitting and dredging works required.

A picture of the initial barge loading at Hey Point is shown below.

Figure 3.10 GCR's barge loading facility at Hey Point



Source: Metallica

### 3.4.7 Infrastructure and services

The UB Project has low infrastructure requirements. The main infrastructure for the UPB is the barge loading facility, proposed to be provided by GCR, the haul road to the mine site, site roads, water management dams, office and workshop facilities. The bulk of these facilities will be provided by contractors.

The project capital provides for the infrastructure needs. Weipa is the closest town where personnel will reside, and services and supplies will be provided from via barge or boat. This includes labour, materials, fuel and equipment.

### 3.4.8 Management

Metallica will provide site management, including statutory management, geologic and environmental management and administration functions.

Management plans and associated procedures are proposed to be developed as part of the project commissioning. This includes those for safety and health, environmental, mining activities and other functions as required.

Contractors will conduct and provide supervision of the works.

### 3.4.9 Regulatory approvals

AMC has not investigated the status of regulatory approvals and notes that the PFS provides the following:

- The environmental approval process has been completed and Mining Lease ML100044 issued in January 2018.
- A Traditional Landowner (TLO) compensation agreement was completed in mid-2017.
- The environmental management plan (EMP) for the project was completed in January 2018.
- An approval for the transport of bauxite over ML7024 is yet to be completed.
- The GCR barging and transshipping facility has a limited tonnage throughput and depending on the timing of mining GCR's bauxite and Metallica's bauxite additional capacity may need to be granted or a schedule for tonnage shipments agreed.

The granting of the final approvals has the potential to delay the project as recognised in the PFS.

### 3.4.10 Environmental, Health, Safety and Community Aspects

AMC understands that all the environmental studies for the UB Project complete and Metallica is establishing relationships with local stakeholders but is yet to develop management plans for the mining of the UB Project. The project budget has a limited allocation of resources for these aspects and will likely require corporate support.

### 3.4.11 Contracts

#### 3.4.11.1 Mining contracts

The LCR Mining Group Pty Ltd (LCR) has been contracted by the UBJV to provide mining and haulage services to the UB Project for the production of 0.5 Mt to 1.5Mt of bauxite per year. The contract has been reviewed by AMC and has typical terms for contract mining and haulage agreements.

Some of the noted contract provisions include:

- A number of conditions precedent, including the granting of a haulage access route on the RTAW mining lease.
- Extension provisions for the commencement of the contract.
- Metallica providing statutory management.
- LCR are responsible for all operational management, planning, production and maintenance activities, services and facilities required for mining, with the exception of fuel supply.
- LCR to provide equipment for the mining of overburden and bauxite plus the haulage to the barge loading facility.
- Fuel is provided by Metallica.
- Fuel usage rates.

- Ranges of scheduled annual production tonnages.
- Daywork rates for any variation work.
- A rise and fall escalation provision.

No significant risks, besides normal contract risks have been identified by AMC.

#### **3.4.11.2 Barging and transshipping contracts**

Metallica has a heads of agreement contract with GCR to provide for the stockpiling of ore, barging to ships and transshipping / loading of the ore onto the ocean-going ships. A contract with GCR is being negotiated, however terms have not been finalised. It is reasonable to expect that a contract will be completed between Metallica and GCR for the stockpiling, barging and transshipping services. While GCR is the only potential supplier for these services, a loan from Metallica to GCR to enable GCR to start production from GCR's mining lease, ML20411 that is to be repaid as a \$2.00 per tonne discount on transshipping rates provides a reasonable basis at a PFS level. The contract rate provided for in the PFS has been benchmarked against rates provided in recent feasibility studies for mining projects in the Gulf of Carpentaria and found to be suitable by AMC.

#### **3.4.11.3 Shipping contracts**

The PFS includes shipping of bauxite from the transshipping location at in the Embley River to China with bauxite sold on a cost and freight (CFR) basis at the destination in China. Initially 35,000 t class ships are proposed with larger ships with a capacity of 55,000 t to be used following dredging of the channel to the transshipping anchorage in the Embley River. The use of larger ships will provide a significant reduction unit in shipping rates.

#### **3.4.12 Capital costs**

Capital for the project is estimated in the PFS at \$2.2 million (Metallica share \$1.1 million) at a +/-25% accuracy. The capital requirements are spread over the life of the project and is very low when compared to most mining operations.

The project has low owner infrastructure requirements by design as it will use contractors and facilities provided by the contractors for the works.

There is no requirement for off-site infrastructure. The employees will reside in Weipa and the town facilities such as housing, the airport, roads, existing business's and services can be used. Transport from Weipa to Hey Point to get access to the site will utilise existing ferry, barge and boat services. A minor allowance for a boat to provide the Metallica personnel independent river crossings could be included.

The haulage and site access road from Hey Point to the UB Project, Area A and Area B is required to be constructed and is included in the mining contract. The pricing and basic road specifications are included in the contract. While we consider the pricing for the road construction very low, the mining contractor is required to haul the bauxite along this road for the life of the project and as such the quality of the road will directly affect LCR's haulage operations.

Capital to upgrade the existing resources to reserves is included on a distributed basis. With the strip progression over time this is considered suitable.

The mining contractor is providing the mining equipment and includes the capital component in the contract rates. The mining contract includes capitalised mobilisation payments that are staged in years 1 – 4 of the project.

The stockpiling and barging facility is currently in place and owned by GCR. A contract with GCR on a throughput basis is proposed.



The itemised capital has a limited allowance for owner facilities needed to provide project management and geological control functions. This includes, office facilities, travel, temporary accommodation, communications and minor equipment. The feasibility study should evaluate if any laboratory facilities are needed for bauxite quality testing.

AMC has assumed that any pre-project costs for studies, approvals and related expenditure is corporate costs. There is potential that some of the capital planned post year two of the project could be expensed or equipment leased.

AMC has reviewed the itemised capital items and believes additional capital of approximately \$550,000 should be allowed principally for additional owner's costs, facilities and contingency items, for a total UB Project capital value of \$2.7 million.

### **3.4.13 Operating costs**

AMC has reviewed the operating costs for the UB Project and provide the following comments and where appropriate recommended adjustments for input to the valuation model by BDO. AMC considers these changes provide a mid-point estimate for a PFS study that provides a +/- 25% accuracy estimate for the project.

Mining costs will essentially be the contract costs to the LCR group for the mining, haulage and in later years screening. The contract unit rates have been used as the basis for the mining costs in the PFS. AMC has reviewed the contract rates, benchmarked them against similar projects and found them to be comparable. AMC has also completed a first principal build up for the ore mining and haulage contract rate. AMC concludes that LCR contract rates are reasonable for the proposed scope of work.

It is likely that there will be additional contract costs for stockpiling and re-handling of initial box-cut material, potential changes to the mine schedule or production plan, owner directives, contractor-initiated variations plus other unforeseen events or costs for the overall project. To allow for these AMC proposes that a 5% contingency be applied to the mining costs.

The fuel rate has been adjusted and estimated at \$1.62 per wet product tonne using a rebated diesel fuel pricing of \$1.32 per litre. Volumes used are based on the contractors estimated usage rates and AMC notes that the nominated scraper usage rate is at the lower end of expected hourly usage rates.

General administration and overhead costs are considered to be comparable to other small operations with low management structures.

The unit rate of \$10.50 /t of bauxite barged and transhipped included in the PFS is subject to a final agreement with GCR. AMC notes that higher rates up to \$13 /t are included in data room, AMC is of the opinion that this higher unit rate ought to be used as a sensitivity test unit rate.

AMC in reviewing the shipping rates discussed forecast rates with Braemar ACM Shipbroking, who provided mid-range estimates of approximately 18.00/t for 35,000t vessels and \$13.00/t for 55,000t vessels for bauxite shipped. The PFS includes shipping costs at an initial unit rate of \$16.00/t, decreasing to \$11.00/t of bauxite shipped, at the lower end of expected rates. AMC recommend that rates of \$18.00/t decreasing to \$13.00/t be used in the financial model. The lower rates are conditional on the project completing dredging to the transshipping facility such that larger vessels can be used. AMC note that rates are subject to variations in international shipping rates, demurrage and loading rates.

Royalties provided are consistent with other Cape York bauxite projects and include:

- A state royalty of 10%.
- A 3% payment to traditional owners on a free on board (FOB) revenue basis.

### 3.4.14 Revenue and NPV model

Product bauxite pricing and exchange rates are sourced by BDO.

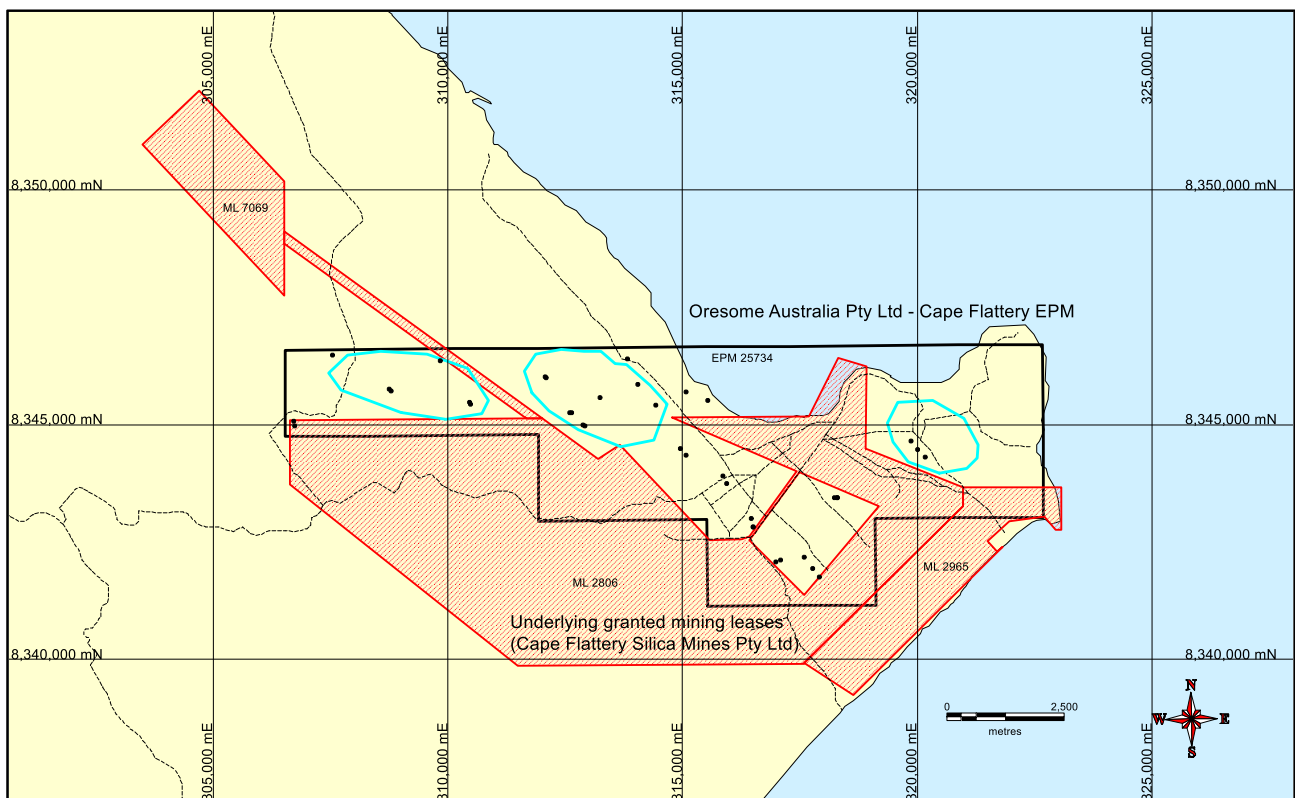
AMC has reviewed the bauxite quality bonus and penalty calculations included in the CM Group Report and provided adjustments where appropriate in the financial model by applying these calculations to the Available Alumina rather than the Total Alumina.

## 3.5 Cape Flattery silica sands

### 3.5.1 Introduction and location

The location of Cape Flattery EPM25734 is shown in Figure 3.11 with locations of the pre-existing Mining Leases owned by the Cape Flattery Silica Mines Pty Ltd (CFSM), a wholly owned subsidiary of Mitsubishi Corporation. CFSM has been in continuous operation since 1967 and is the world's largest silica sand mining producer. A jetty is owned and operated by Ports North a wholly owned Queensland Government entity for shipping of the silica sand product. Operation of the jetty and loading facility is governed by the Ports Corp/CFSM Agreement, which allows third party access to the facilities, however access from Metallica's target areas to the port will require access across CFSM's mining leases.

Figure 3.11 Location of Cape Flattery EPM with competitor mining licences and Exploration Target areas



Source: AMC. Projection MGA Zone 55 (GDA94)

### 3.5.2 Geology

Cape Flattery hosts very large wind-blown sand dunes with very high silica contents. The dune field lies to the east of an upland area consisting mainly of Mesozoic sedimentary rocks with a few outcrops of lower Palaeozoic metamorphics and volcanics. The source sand of the dune field is weathering of Mesozoic sandstone which outcrops widely in the area.

The in-situ grade is expected to be of sufficient quality to undergo standard beneficiation processes to remove contaminant minerals (predominantly iron oxide and trace levels of heavy mineral sands) suitable for clear and high-end glass manufacturing and other uses. The treated grade is expected to be similar to the grade of CFMS's standard export product of 99.9% SiO<sub>2</sub> and 0.02 % Fe<sub>2</sub>O<sub>3</sub> with more than 88% in the 106 µm to 425 µm grain size range. A hand auger sampling program over EPM 25734 reported in April 2018 (Metallica, 2018a) identified three target areas with silica oxide (SiO<sub>2</sub>) percentages of greater than 99%. These target areas form the basis for the Exploration Target developed by Metallica.

### **3.5.3 Exploration target**

Metallica has reported an Exploration Target of 20 to 100 million tonnes of high purity silica sands with in-situ quality ranging between 96.9% and 99.6% SiO<sub>2</sub> across three identified areas at Cape Flattery (Metallica, 2018a) in accordance with the JORC Code 2012. An Exploration Target is a statement or estimate of the exploration potential of a mineral deposit in a defined geological setting where the statement or estimate is quoted as a range of tonnes and a range of grade. The potential quantity and grade is conceptual in nature, and there has been insufficient exploration to estimate a Mineral Resource and that it is uncertain if further exploration will result in the estimation of a Mineral Resource.

The locations of the targets are included in Figure 3.11. Metallica plans to develop an exploration program to test the continuity of the silica sand in the Exploration Targets which are adjacent to the Mitsubishi mining areas.

## **3.6 Esmeralda graphite**

### **3.6.1 Location**

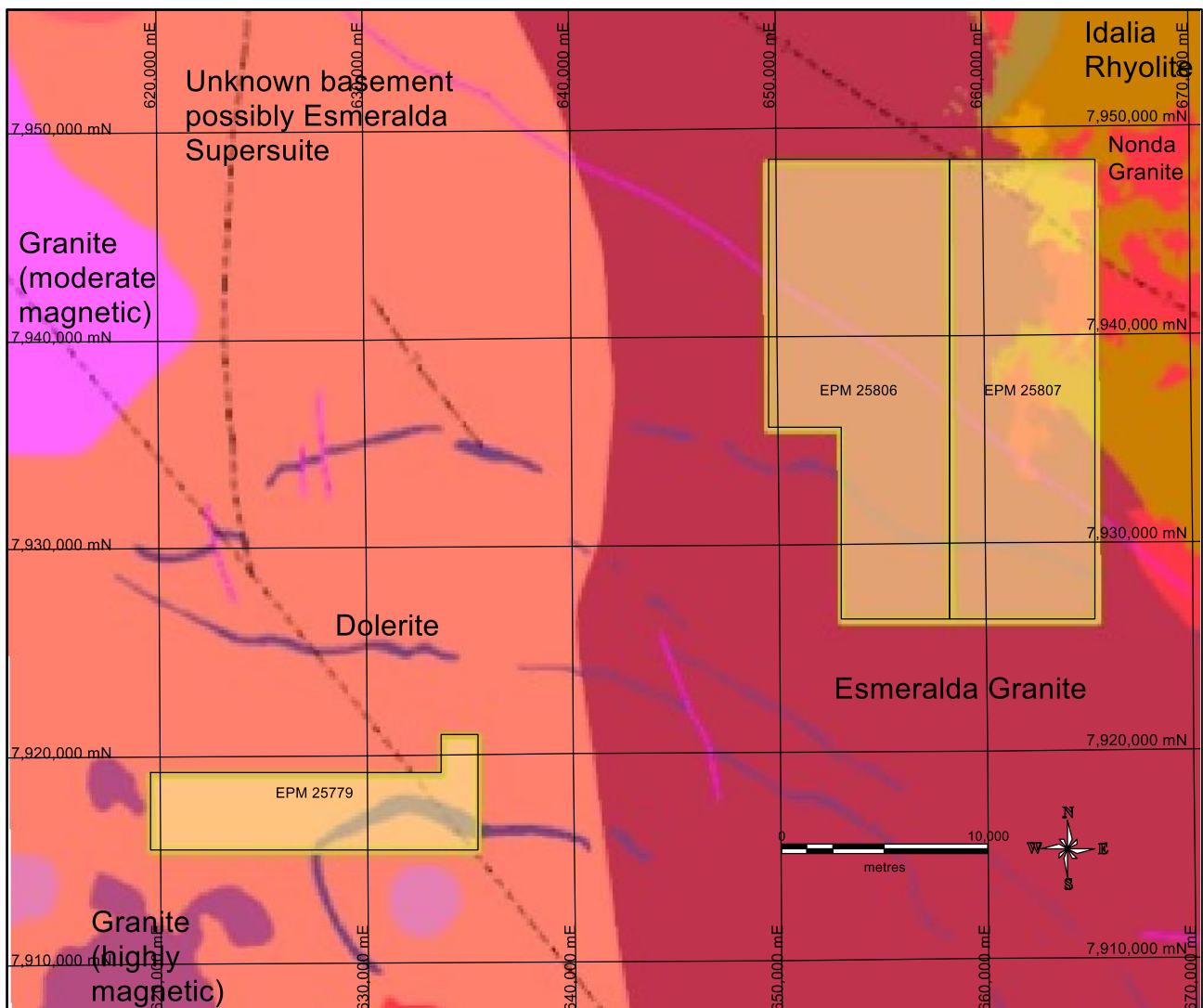
The Esmeralda graphite project is located within the Georgetown Inlier, Figure 3.2. EPM 25779 "Warrior" is part of the Esmeralda Project which also comprises EPMs 25806 "Esmeralda West" and 25807 "Esmeralda East".

### **3.6.2 Geology**

Located within the Georgetown Inlier, the project areas cover the Proterozoic Croydon Province which predominantly comprises the Croydon Volcanics and the Esmeralda Supersuite. The Esmeralda Supersuite Granites have unusually abundant and extensive graphite (~2%) bearing and Touchstone is exploring for areas where graphite percentages are significantly concentrated at >10% graphite. As most of the interpreted Esmeralda Supersuite is concealed between the Croydon Volcanics along with younger Cainozoic and Mesozoic sediments, detailed investigations of the geology are limited (Figure 3.12).

The target Proterozoic lithology's of the tenements are generally concealed under shallow to 90 m deep Cainozoic and Mesozoic cover sequences. The basement is relatively unknown with the only data available from interpretation of geophysical data and some water bore logs and drill core from reconnaissance drill holes. Basement within the area is currently mapped as "unknown basement". This basement is currently interpreted to be the Esmeralda Supersuite granites by Metallica.

Figure 3.12 Esmeralda regional geology



Source: AMC. MGA Zone 54 (GDA94)

### 3.6.3 Exploration to date

Exploration has been conducted in the region from 1971 and included company exploration by Strategic Metals Corp Pty Ltd, North Mining Ltd, Western Mining Corporation Ltd, Rusina Mining Ltd, and since 2004 Metallica. Initial exploration was targeting tantalum-niobium and included magnetics, drilling.

In 2004, Metallica conducted electromagnetic (EM) surveys (airborne). Three high priority targets were generated and four reverse circulation drillholes were completed. These holes identified the EM anomalies as relating to graphitic granites. Preliminary metallurgy was completed to give an indicative graphite product quality and beneficiation process to help determine potential project economics. Drilling results indicate that the mineralisation is relatively deep for open cut mining, but, significant thicknesses and continuity of mineralisation indicate a potentially low stripping ratio with respect to a larger resource.

A full geological model has yet to be developed for the Esmeralda tenements as exploration is at the preliminary stage only.



### 3.7.2 Mineral Resources

Coxhell provides the following description of the general setting in the 2013 Mineral Resource report (Coxhell, 2013).

"The deposit is a low slimes strand style of deposit with the heavy minerals comprised of zircon, rutile, ilmenite and iron oxides. The deposits consist of a series of strands parallel to the coast and inshore areas of Albatross Bay. The highest-grade zones are located on the northern end of the deposit area and recent reworking by storms and currents have resulted in accumulations of heavy minerals on the active beach and extending inland at Urquhart Point".

The heavy minerals (HM) consist of a variable suite of both valuable heavy minerals (ilmenite, zircon and rutile) and approximately 50% iron oxides.

The current Mineral Resource is based on shell auger holes and spiral augers, supplemented in the central portion of the deposit by a total of 83 aircore holes (a total of 283 m) in this area. Inverse distance squared estimation into a block model within appropriate geological, grade and spatial domains and based on an assumed conservative bulk density of 1.60 g/cm<sup>3</sup>, after considering the results of limited pit sampling by IMC Limited, is documented by Coxhell (2014). Metallica published the following Measured and Indicated Mineral Resource, at a 2% HM cut-off, in May 2014 (Metallica, 2014a) see Table 3.4.

Table 3.4 Urquhart Point Mineral Resource at a 2% HM cut-off

Category	Tonnes	HM%	Tot HM (tonnes)	OS %	SLIMES %	Zircon %	Rutile %	Ilmenite %
Measured	1,781,360	6.85	122,090	12.46	1.03	9.8	12.0	12.4
Indicated	1,305,680	4.70	61,335	14.44	1.15	11.4	10.9	13.2
Global	3,087,040	5.94	183,425	13.30	1.08	10.3	11.6	12.7

Source: Metallica 2018b

Notes:

1. Resource reported on a 100% basis, Metallica's interest is 50%.
2. The table is included here as published, AMC notes the estimate has not been appropriately rounded to conform with Clause 25 of the JORC Code
3. OS = oversize (>1mm screen material); Slimes (or clayey material) <38 micron.

### 3.7.3 Ore Reserve

A Feasibility Study for the Urquhart Point HMS project was completed by IMC in June 2014 (Bazin and Cavanagh, 2014) based on the Mineral Resource estimate reported above by Metallica in May 2014. Using the prevailing prices and cost inputs the modest sized project returned a positive NPV.

The Proved and Probable Ore Reserves which resulted from the IMC study is based on the May 2014 Mineral Resource but the at a 0% HM cut-off and included as Table 3.5.



Table 3.5 Urquhart Point HMS Ore Reserve estimate

		Head Grade						HM Tonnage and Mineral Assemblage			
Ore Reserve Category	Tonnes (kt)	HM %	OS %	Slimes %	Zircon %	Rutile %	Ilmenite %	HM (kt)	Zircon % of HM	Rutile % of HM	Ilmenite % of HM
<b>Proved</b>	967	10.6	8.1	1.0	1.2	1.4	1.4	102	11.1	13.7	12.9
<b>Probable</b>	210	4.8	6.7	1.2	0.9	0.6	0.7	10	17.7	13.2	14.4
<b>Total</b>	<b>1,177</b>	<b>9.5</b>	<b>7.9</b>	<b>1.0</b>	<b>1.1</b>	<b>1.3</b>	<b>1.2</b>	<b>112</b>	<b>11.7</b>	<b>13.6</b>	<b>13.1</b>

Source: Table 2 Metallica ASX Release 24 June 2014 (Metallica, 2014b).

Notes:

- Ore Reserve is reported on a 100% basis; Metallica's interest is 50%.
- The table is included here as published, AMC notes the estimate has not been appropriately rounded to conform with Clause 33 of the JORC Code.
- The Ore Reserves are based on the following long-term nominal FOB prices: Zircon US\$1500/t, Rutile US\$1200/t, Ilmenite US\$200/t
- The Ore Reserves are based on a Zircon equivalent cut-off grade of 0.90% taking into account the three saleable minerals; Zircon, Rutile and Ilmenite. The formula used for the Zircon Equivalent is as follows:  

$$\text{Zircon equivalent} = \text{Zircon \%} + 0.8 \times \text{Rutile \%} + 0.13 \times \text{Ilmenite \%}$$
The WCP recoveries used in the equivalence calculation are 98.2%, 98.0% and 95.8% for Zircon, Rutile and Ilmenite respectively.
- Bulk Density for the Ore Reserves is based on a regression formula derived from 16 pit samples and applied to the input Resource model. AMC notes the quality of the formula is questionable as the slope of regression is depend on only one very high-grade sample. The effect of adopting the density formula is to increase the Mineral Resource tonnes by 5% and the HM% by 2%. AMC does not consider this a material flaw.

On the basis of the positive Feasibility Study, Metallica contracted South African company, Consulmet, to design and construct a HMS process plant. The modularised HMS processing plant, purpose built in South Africa for the project (Metallica, 2015b), arrived in Australia in December 2015 and is currently in storage at Gympie Queensland. The plant was reported to cost \$4.5M and is now carried at \$2M (on a 100% basis) in the books. The HMS process plant has not been inspected by AMC. The project is on hold pending an increase in HMS prices.

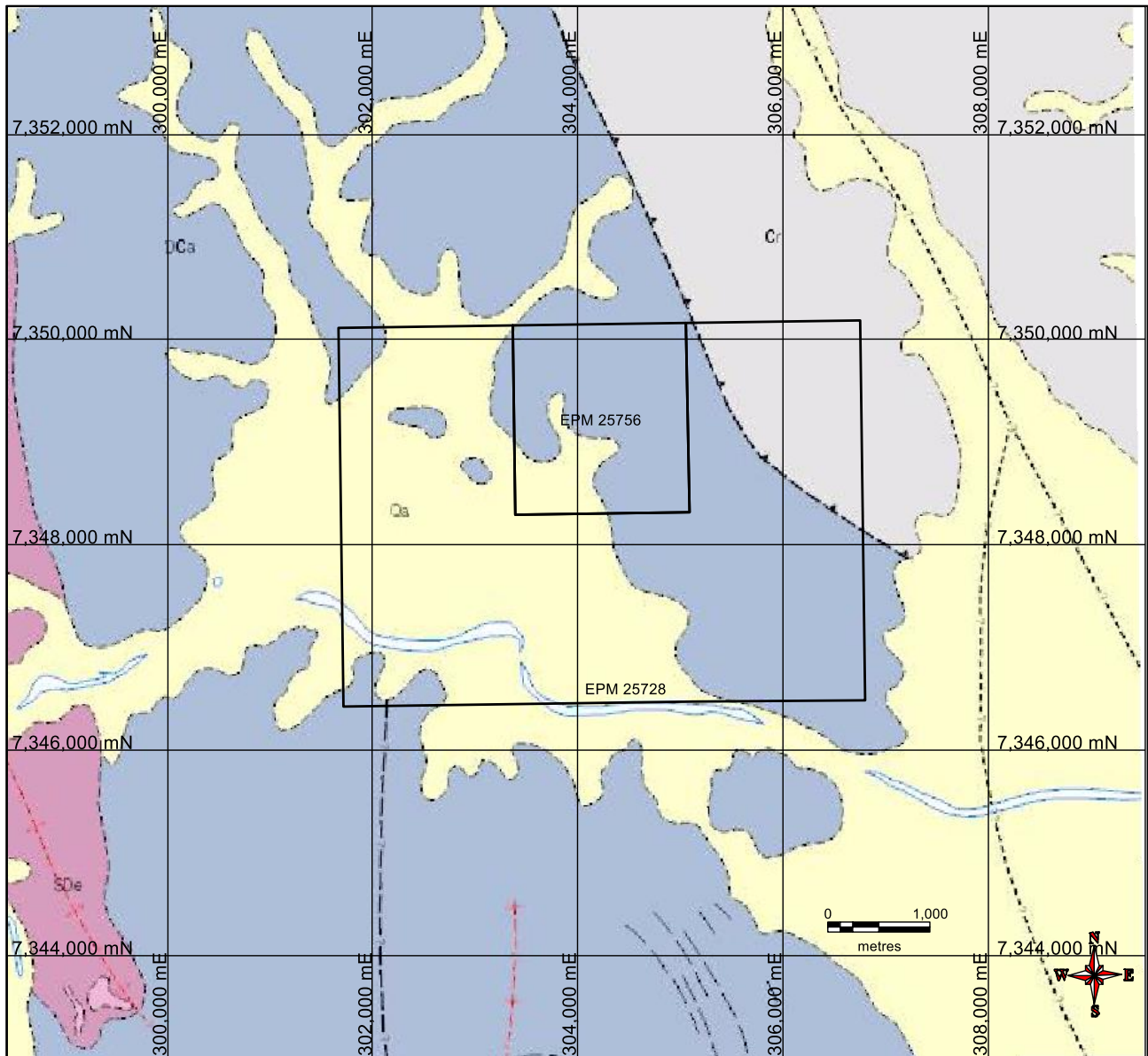
### 3.8 Fairview (Phoenix Lime Pty Ltd)

Phoenix Lime Pty Ltd (100% owned by Metallica) own two EPM's in the Fairview area southeast of Rockhampton. EPM25728 and EPM25756 cover 18.8 km<sup>2</sup>. The regional geology indicates the tenements dominantly contain thinly interbedded fine-grained sandstone and siltstone and thick beds of conglomerate (Figure 3.14).

No additional information is available to examine any potential value of the tenements.



Figure 3.14 Fairview geological map



Source: AMC from MinesOnline geology.

Legend: Qa – Quaternary alluvium, DCa – Mount Alma Formation (Thinly interbedded fine-grained sandstone and siltstone and thick beds of conglomerate with andesitic to dacitic clasts and siltstone rip-up-clasts), Cr – Rockhampton Group (Dark grey mudstone, siltstone, felsic volcanoclastic sandstone, polymictic conglomerate, ooid-bearing sandstone and conglomerate with mudstone rip-up clasts; oolitic and pisolitic limestone and minor skeletal limestone; rare rhyolitic ignimbrite), SDe – Erebus Beds (Dacitic to rhyolitic volcanoclastic sandstone and conglomerate, minor siltstone, fossiliferous limestone and marble).

### 3.9 Exploration properties

#### 3.9.1 Cape York bauxite

Areas of bauxite have been identified in the Cape York tenement portfolio, see Figure 3.1. The target areas are characterised by low lying, partly dissected and undulating laterite plateaus. Data compilation and desktop studies has outlined eight prospective plateau zones within the tenements where previous exploration drilling encountered bauxite intervals grading >40% Al<sub>2</sub>O<sub>3</sub> (alumina). An initial combined bauxite Exploration Target across the regional Cape York tenements is in the range of 42 Mt to 128 Mt (Table 3.6).

Table 3.6 Cape York bauxite Exploration Target potential

Project	Permit	Discrete targets	In-situ mineralisation tonnage range (Mt)	Total Al <sub>2</sub> O <sub>3</sub> %	Total SiO <sub>2</sub> %
Vrilya	EPM15371	3	2 to 6	40-47	unknown
Vrilya	EPM25509	7	12 to 36	40-48	10-19
Vrilya East	EPM25687	3	28 to 86	40-43	unknown
Totals		13	42 to 128		

Source: Metallica, 2018b

### 3.9.2 Cape York Heavy Mineral Sands

Metallica drilled the T16 HMS deposit in 2014 (Metallica 2014c) with 335 holes for a total of 1,933 metres of grid drilling (average depth of 5.8 metres) using an Aircore drill rig. Grid drilling was typically on a 400m drill line spacing with 100m drill hole spacing along each line. AMC is not aware whether the drill samples were analysed or if they were, the results of that analysis.

Thus, AMC is not able to assign any value to the HMS prospectivity as part of the Metallica Cape York HMS & Bauxite Project (Metallica, 2014d)

## 4 Review of financial models

BDO are completing the NPV valuations for both Melior and Metallica development projects, including commodity pricing, exchange rates forecasts and discount rates.

AMC has reviewed the production data and the physicals (capital and operating costs) and prepared production and economic models for both the UB Project and the Goondicum Mine for input into the BDO NPV valuations of each company.

The models for both companies have been prepared on a similar basis and reflect the pre-feasibility study level of models provided by both companies and the Metallica PFS for the UB Project and the Melior PEA for the Goondicum Mine restart.

### 4.1 Metallica

Three project production and economic models for the UB Project have been prepared by AMC, with one model for each of the three production scenarios. The scenarios provide economic models for mining the deposits from highest margin and lowest risk ore to the lowest margin and highest risk ore in stages. The project is most sensitive to bauxite pricing, exchange rates and shipping costs. Operationally in general observations the incremental tonnage added in scenario 2, the higher strip ratio, lower quality bauxite is most sensitive and in poor market conditions will become uneconomic first. Depending on market conditions the upgrading via screening of this lower quality material may be economic.

At for low price / margin points any negative operating cash flows are likely to result in early mine closure with less tonnes being mined; economic sensitivity modelling needs to reflect this and not carry negative cash flows. Conversely at higher prices or margin points the tonnage mined will increase to include the resources as modelled.

AMC notes that at the pricing and exchange rates estimated by BDO that scenario 2 and scenario 3 carry some negative monthly cash flows when higher strip ratio and lower quality bauxite is mined. Adjusting the mine plan to exclude mining of these areas, or only mining them when pricing / margin was suitable will add to the project NPV.

The three scenarios provide different tonnage outputs and valuations for a range of pricing and cost assumptions.

Metallica's exploration assets are valued outside the UB Project financial model, see Section 6.

### 4.2 Melior

A financial model for the mining of the Goondicum ilmenite deposit has been reviewed by AMC as discussed in the report. This model, as per the PEA, schedules the ore in the mining lease.

An additional model, Case G2 (the upside case), was created to account or the potential future mining of mineral resources on the MDLA at Goondicum. AMC is of the opinion that the operating costs involved in treatment of any further mineral resources from the MDLA other than those included in the upside case would be in excess of the revenue generated. The incremental value of the potential future mining of the additional mineral resources as part of the methodology in valuing the Goondicum ilmenite deposit is considered by AMC to fully reflect the value of the exploration assets.

## 5 Valuation background

Three widely accepted valuation approaches used for valuation of mineral assets, as defined in the VALMIN Code<sup>2</sup>, are:

- (a) Market-based, which is based primarily on the notion of substitution. In this valuation approach the mineral asset being valued is compared with the transaction value of similar mineral assets under similar time and circumstance on an open market.  
Valuation methods include but are not limited to comparable sales transactions and joint venture terms.
- (b) Income-based, which is based on the notion of cashflow generation. In this valuation approach the anticipated benefits of the potential income or cash flow of a mineral asset are analysed.  
Valuation methods include but are not limited to discounted cashflow and multiples of earnings.
- (c) Cost-based, which is based on the notion of cost contribution to value. In this valuation approach the costs incurred on the mineral assets are the basis of analysis.  
Valuation methods include but are not limited to sunk costs current replacement costs and past expenditure methods.

Where possible, AMC attempts to use more than one method before selecting the valuation appropriate to that project. Values have been rounded and outliers in contributing estimates are sometimes excluded. AMC has used the following methods of valuation:

### **Actual or comparable transaction method**

A value is determined by reference to either actual transactions for the property in question or to recent transactions for projects considered to be similar to those under review. Comparable transactions are normally converted to a value per unit area or, where a Mineral Resource has been quantified, value per unit of contained metal.

### **Expected value method**

AMC has provided production schedules and physicals for the Ore Reserves and Mineral Resources that have reasonable prospects for being mined and for which mine development plans have been developed. AMC understands that Expected Values have been estimated by BDO using discounted cashflow analysis.

This Expected Value is a Technical Value, which is an assessment of the mineral asset's future economic benefit at the valuation date (1 October 2018) excluding any premium or discount for market considerations. The valuation method is an income-based method, which is based on the notion of cashflow generation. AMC understands that BDO will undertake a discounted cashflow analysis based on the information provided by AMC.

### **The past expenditure method**

A prospectivity enhancement multiplier (PEM) generally between 0.5 and 3.0 is applied to past expenditure which we judge to be effective in regard to future prospectivity.

---

<sup>2</sup> Australasian Code for Public Reporting of Technical Assessments and Valuations of Mineral Assets The VALMIN Code 2015 Edition, Prepared by the VALMIN Committee, a joint committee of the Australasian Institute of Mining and Metallurgy, the Australian Institute of Geoscientists.

Table 4.1 Description of prospectivity enhancement multipliers (PEM)

PEM	Description
0.5 to 1.0	Prospectivity downgraded
1	Prospectivity maintained. Exploration to date justifies the next stage of exploration.
2	Prospectivity enhanced. Strong indications of potential for economic mineralisation have been identified and there are untested targets or anomalies.
3	Mineral Resources defined (note all mineral resources within MLs and separately valued). Potentially 'ore grade' intersections have already been intersected, indicating high potential for discovery of economic mineralisation.

## 6 Project Valuation

### 6.1 Introduction

The Metallica and Melior Assets principally consist of the Metallica Cape York Urquhart Bauxite Project and Melior Goondicum project; both situated in mining leases with Mineral Resources and mine development plans.

AMC's scope was to provide production schedules and physicals for Urquhart Bauxite Project and the Goondicum Ilmentite/Apatite mine to BDO to facilitate BDO undertaking an income-based valuation method.

AMC has provided technical valuations including the comparable transaction method to produce yardstick values to derive values for the Metallica exploration properties.

In relation to the development status of a mineral asset, the VALMIN Code provides the following categories:

- (a) **Early-stage Exploration Projects** – Tenure holdings where mineralisation may or may not have been identified, but where Mineral Resources have not been identified;
- (b) **Advanced Exploration Projects** – Tenure holdings where considerable exploration has been undertaken and specific targets identified that warrant further detailed evaluation, usually by drill testing, trenching or some other form of detailed geological sampling. A Mineral Resource estimate may or may not have been made, but sufficient work will have been undertaken on at least one prospect to provide both a good understanding of the type of mineralisation present and encouragement that further work will elevate one or more of the prospects to the Mineral Resources category;
- (c) **Pre-Development Projects** – Tenure holdings where Mineral Resources have been identified and their extent estimated (possibly incompletely), but where a decision to proceed with development has not been made. Properties at the early assessment stage, properties for which a decision has been made not to proceed with development, properties on care and maintenance and properties held on retention titles are included in this category if Mineral Resources have been identified, even if no further work is being undertaken;
- (d) **Development Projects** – Tenure holdings for which a decision has been made to proceed with construction or production or both, but which are not yet commissioned or operating at design levels. Economic viability of Development Projects will be proven by at least a Pre-Feasibility Study;
- (e) **Production Projects** – Tenure holdings – particularly mines, wellfields and processing plants – that have been commissioned and are in production.

The valuation of exploration projects, particularly those for which it is not possible to quantify Mineral Resources, is very subjective. There are, however, several generally accepted procedures to value exploration projects and AMC has used such methods as appropriate to arrive at balanced judgments of value.

### 6.2 Income based method

The income-based method has not been used by AMC, but AMC has provided production schedules and physicals to BDO for it to value the UB Project and the Goondicum ilmenite mine. AMC has prepared the production and physical inputs to the financial models and BDO will provide the valuation using market forecast data for the key economic assumptions of commodity price forecasts, exchange rates and discount rate factors.

### 6.3 Comparable transaction method

Where a Mineral Resource has been quantified, yardstick values can be applied that have been determined from comparable transactions. In this method, a value per unit of metal contained in the Mineral Resource is calculated from comparable transactions, located in Australia and based on the presence of (mainly) Indicated and Inferred Mineral Resources in the target properties. These yardstick values have been derived having regard for inflation of the deal value by the inflation factor (listed in Tables 6.1 to 6.3). Inflation rates have been determined by reference to the Consumer Price Index Inflation Calculator<sup>3</sup>. The yardstick values are then applied to the contained tonnage in the Mineral Resource that is the subject of the technical valuation.

AMC searched for comparable transactions meeting the following criteria:

- Tenements in Australia, for bauxite resource regions, containing undeveloped bauxite Measured, Indicated or Inferred Mineral Resources, for other commodities the search for transactions was wider than just Australia.
- Transactions between 2012 and 2018, a period of relatively low inflation.

The value of each transaction is specific to the geology of the deposit, the state of the market at the time of the transactions, and the circumstances and strategies of the buyer and seller at the time of the transactions. The range of transactions is taken to be broadly comparable and AMC is of the opinion that the midpoint of the range is the logical preferred value.

Recent transactions were used to define a range of yardstick values for contained metal or prospective tenement area for the relevant commodities, see Table 6.1, Table 6.2 and Table 6.3.

---

<sup>3</sup> <http://www.abs.gov.au/websitedbs/d3310114.nsf/home/Consumer+Price+Index+Inflation+Calculator>



Table 6.1 Comparable transactions to develop yardstick values for bauxite

Project /Company Name	Date	Project description	Deal description	Mineral Resources	Deal Price*	Inflation factor	Yardstick USD/component tonne
Metro Mining Limited acquires 60.7% of Gulf Alumina Limited	08/02/2017	Cape York, Skardon river bauxite properties	Metro Mining acquired a 60.7% interest in Gulf Alumina which held the Skardon River bauxite project in QLD for \$28.71 million.	Measured 16.6 Mt @ 50.2% Bauxite, 13.9% SiO <sub>2</sub> . Indicated 32.3 Mt @ 49.4% Bauxite 14.5% SiO <sub>2</sub>	28,710,000	1.04	\$0.97/t (Bauxite)
Mercantile OFM Pty Ltd acquires Bauxite Resources Limited	30/06/2018	Darling Range	Sydney-based Mercantile Investment Co. Ltd. unit Mercantile OFM Pty Ltd has acquired an additional 1.0% interest in the Perth, Australia-based Bauxite Resources Ltd.	Measured + Indicated 1.5 Mt @ 42.8% Bauxite. Inferred 93.2 Mt @ 41.59% Bauxite	175,000	1.0	\$0.193/t (Bauxite)

Table 6.2 Comparable transactions to develop yardstick values for ilmenite &amp; zircon

Project /Company Name	Date	Project description	Deal description	Mineral Resources	Deal Price*	Inflation factor	Yardstick USD/component tonne
Base Resources Limited acquires Toliara Sands project	19/012/2017	Toliara Sands	Perth, Australia-based Base Resources Ltd. has agreed to acquire a 100% interest in Toliara Sands project from Perth, Australia-based World Titanium Resources Ltd. Toliara Sands project is located in Toliara, Madagascar.	38,000,000 t @ 4.46% Ilmenite	92,000,000	1.0	\$2.42/t (ilmenite)
Certain undisclosed buyers have acquired an 18.80% interest in the London-based Bluejay Mining plc from Perth, Australia-based Western Areas Ltd.	09/06/2017	Dundas Ilmenite project (previously known as the Pituffik Titanium Project) in Greenland	Certain undisclosed buyers paid approx. £16.29 million in cash to acquire an 18.80% interest in the Bluejay Mining plc from Western Areas Ltd	96,000,000 t (18,048,000 t) @ 6.9% Ilmenite	21,100,000	1.03	\$0.88/t (ilmenite)
Diamond Field Resources Inc acquired 100% of the Beravina Zircon Pegmatite hard rock hosted deposit in Madagascar from an investor group	06/09/2016	The Beravina Project has an historic JORC-Compliant Indicated Mineral Resource estimate of 1.8 million tons at 29% zircon	Consideration for 100% of the property is USD360,420 and 3,265,650 common shares at a deemed price of Cdn\$0.02 (!Cdn\$=0.77212 USD on 6/9/2016 Total	530,000 t of contained zircon.	410,000	1.05	0.82/t zircon

Table 6.3 Comparable transactions to develop yardstick values for graphite

Project /Company Name	Date	Project description	Deal description	Mineral Resources	Deal Price*	Inflation factor	Yardstick AUD/km <sup>2</sup>
Mayan Iron Corporation Ltd. acquired a 100% interest in Perth, Australia-based Rhodes Resources Pty Ltd. from Ouro Pty Ltd.	23/12/2015	Rhodes Resources holds Graphite exploration licence E66/89 of 97km <sup>2</sup> which is located 130 kilometres from Geraldton, Western Australia.	Mayan Iron Corporation Ltd. paid \$50,000 and issued 10 million ordinary shares to acquire a 100% interest in Rhodes Resources Pty Ltd. from Ouro Pty Ltd	Early stage graphite exploration	\$50,000 plus 10,000,000 shares at 0.015c/share = \$200,000	1.06	2,060
Australia-based Renascor Resources Ltd. has acquired Brisbane, Australia-based Eyre Peninsula Minerals Pty Ltd. Eyre Peninsula Minerals Pty Ltd. holds an option to acquire 78% interest in the Arno project, Renascor Resources Ltd. has acquired Arno project by earning up to 100% in the share capital of Eyre Peninsula Minerals Pty Ltd.	05/12/2016	The Arno graphite project consist of three granted exploration licenses, ELs 5618, 5204 and 5496 and one application, ELA 2015/107, covering 1,372 sqr. km in the Eyre Peninsula, a proven, graphite-producing region of South Australia	Renascor Resources Ltd. issued 80,735,551 common shares, 15 million options exercisable at A\$0.05 and incurred A\$0.4 million capital expenditure to acquire a 100% interest in Arno project from Eyre Peninsula Minerals Pty Ltd. by earning 100% interest in the share capital of Eyre Peninsula Minerals Pty Ltd.	6.4Mt Graphite	\$2,050,000	1.05	
Mineral Commodities Ltd. acquired a lease E74/565 from private investor- Mr. Luke Alexander Forti.	08/06/2018	E74/565 primary exploration graphite. The licence consisted of 48 sun blocks, or approximately 144 km <sup>2</sup> .	The E74/565 is located adjacent to Munglinup project in Western Australia.	Early stage graphite exploration	\$153,000	1	1,138

Source: SNL, 2018

## 6.4 Exploration property Valuation summary

The logic of valuation of any exploration potential for the development projects and the Metallica earlier stage exploration properties is set out for each asset below.

### 6.4.1 Development projects

AMC has provided production schedules and economic models to BDO for Metallica's UB Project and the Goondicum ilmenite mine restart as proposed by Melior. It is understood that BDO will use the models provided by AMC to complete the valuation of each of these assets.

The development projects of each company are:

The Goondicum Ilmenite mine extension, as set out in Section 4.2, AMC considers the upside potential of the Mineral Resources situated on the MDLA has been accounted for in the upside schedule provided to BDO and does not consider there is any residual value to be estimated for the remaining resources.

The Metallica UB Project, AMC prepared three production schedules which were provided to BDO. These are discussed in section 3.4.4.2. Again, AMC considers the most optimistic of these schedules fully captures the extent of the value of the remaining Mineral Resources at UB Project and does not consider there is any residual value to be estimated for the remaining resources at the UB Project.

### 6.4.2 Cape Flattery silica sands

In section 3.5.3 AMC discussed Metallica's Exploration Target of 20 to 100 million tonnes of high purity silica sands with in-situ quality ranging between 96.9% and 99.6% SiO<sub>2</sub> across three identified areas at Cape Flattery. The implied particle size range is in the 106 µm to 425 µm grain size range. The size range discussed for the Metallica silica sands, by analogy with the adjacent CFSM, is larger than that required for fracking sand.

An Exploration Target relates to mineralisation for which there has been insufficient exploration to estimate a Mineral Resource. The level of confidence associated with the range of tonnes and grade for the Exploration Target is low and the potential quantity and grade is conceptual in nature, and there has been insufficient exploration to estimate a Mineral Resource and that it is uncertain if further exploration will result in the estimation of a Mineral Resource.

Thus, the project is not advanced enough to warrant the use of an income-based approach.

AMC has reviewed a number of transactions and the few transactions which appeared may be comparable are influenced either by the high demand for fracking sand in north America or relate to operating mines. In these circumstances AMC does not believe there are any reliable comparable silica sand transactions available and thus has declined to estimate a comparable transaction value for this early stage project.

Metallica reports the exploration expenditure, including licence fees, in the past three years for Cape Flattery as \$17,000 (Metallica file: *Expenditure for Silica graphite leases 20181003163414*). While AMC is of the opinion the EPM is attractive, applying a prospectivity enhancement multiplier of 1.5 to this expenditure would result in a value of \$25,000. Since this is not supported by an alternative valuation approach. AMC has not adopted a technical value for the Cape Flattery silica sands project.

### 6.4.3 Urquhart Point HMS Valuation

AMC understands that the value of the Urquhart Point HMS project has been written off with the exception of the process plant, carried at \$2M on a 100% basis. Hence a value of \$1M can be attributed to Metallica's interest in the project.

AMC has examined the SNL database for recent comparable HMS transactions and derived an average yardstick value per tonne of contained valuable HMS of USD0.78/t Zircon, USD 0.855/t Rutile, and USD2.42/t Ilmenite. The total valuable HM tonnes derived from Bazin and Cavanagh (2014) are listed in Table 6.4.

Table 6.4 Urquhart Point HMS contained Valuable HM in Ore Reserves

Upt HMS	kt Zircon	kt Rutile	kt Ilmenite
Total reserve	13	15	15

Source: Bazin and Cavanagh (2014)

This provides a nominal value of approximately \$84,000 (on a 100% basis) for the mineral resources at the Urquhart Point project, or for the 50% attributable to Metallica \$42,000.

This value is unsurprising given Metallica has reduced the carrying value of the deposit to zero.

AMC therefore concludes the technical value of Metallica's 50% share of the Urquhart Point HMS project is the midpoint of the comparable transaction value (\$42,000) and carrying value of the deposits (zero) or \$21,000 (on a 50% basis), plus Metallica's 50% share of the carrying value of the stored processing plant (\$2m on a 100% basis) \$1m.

### 6.4.4 Cape York Bauxite

Metallica has identified bauxite Exploration Targets of 42 to 128 Mt at between 40 to 48 %  $Al_2O_3$  grade as discussed in section 3.9.1 of this report. While these Exploration Targets are not Mineral Resources AMC considered discounting the tonnage range to account for the low confidence in the estimates. However, given the lower end of the  $Al_2O_3$  grade range is low for bauxite from the Cape York region, AMC determined that the Comparable Transactions listed in Table 6.1 were not appropriate to value the Metallica Cape York bauxite and has declined to consider a Comparable Transaction valuation range.

AMC has also examined the past exploration expenditure on these Cape York Bauxite tenements which over the last three years has totalled \$2,945k, licence fees excluded, (Metallica file: Expenditure for Silica graphite leases 20181003163414). AMC notes that the lower end of the  $Al_2O_3$  grade range of the Exploration Targets is low for bauxite from the Cape York region, and that the initial announcement of the Exploration Targets was not followed by any announcement of drilling results. AMC has therefore applied low PEM's of 0.5 and 1.0 (given the lack of follow up on the Exploration Targets which have been defined on some tenements), the range of values derived from the past expenditure method is listed in Table 6.5. Table 6.1

Table 6.5 Past expenditure method values

	PEM low	PEM high	Mid-point
PEM	0.5	1.0	
Expenditure \$k	2945	2945	
Technical value \$k	1,500	2,900	2,200

In the absence of a second valuation method, AMC is not prepared to ascribe a value similar to those in Table 6.5 to the Cape York bauxite exploration tenements without corroboration, especially not high values, such as those in Table 6.5.

#### 6.4.5 Cape York HMS

As noted in section 3.9.2, AMC is not able to assign any value to the HMS prospectivity of the Metallica Cape York HMS as there is insufficient information to form an opinion of prospectivity.

#### 6.4.6 Esmeralda Graphite Project

As noted in section 3.6 AMC has reviewed the information available on the Esmeralda graphite project. A full geological model has yet to be developed for the Esmeralda tenements as exploration is at the preliminary stage only.

AMC considers this to be an early stage exploration project, with limited information to provide comparisons to other graphite deposits. AMC has considered past direct exploration expenditure of \$239,000 (Metallica file: *Expenditure for Silica graphite leases 20181003163414*) with a low prospectivity enhancement multiplier adopted, due to the depth of the target, of 0.5 to 0.8 to produce a range of values of \$120,000 to \$190,000 with a midpoint value of \$155,000.

A comparison with other early stage graphite projects with limited information listed in Table 6.3 results in a range of yardstick values of \$1,140 to \$2,060 per square kilometre which when applied to EPM 25779 (Warrior) results in a range of \$18,000 to \$39,000 with a midpoint value of \$29,000.

Considering both methods (Table 6.6) AMC concludes a preferred range of values of \$70,000 to \$110,000 with a preferred value of \$90,000. (on a 100% basis which is Metallica's ownership of this project).

Table 6.6 Esmeralda Graphite project valuation

	Values \$(000)		
	Low	High	Preferred
Comparable transactions	18	39	29
Past expenditure method	120	190	155
Combined (Low, High, Preferred)	70	110	90

#### 6.4.7 Other

No value has been ascribed to Fairway as it is not apparent to AMC that this is in fact a limestone deposit.

No value has been ascribed to Wagina as Metallica has not yet acquired an interest in the project, the work being undertaken on an option arrangement.

## 7 Valuation Summary

AMC has assessed the potential value of exploration assets of Melior and Metallica.

AMC provided three schedules for the UB Project and two schedules for the Goondicum Ilmenite mine. AMC does not consider there to be any residual value to be estimated for the remaining resources at either the UB Project or Goondicum.

The following is a summary of the Valuation of the other Metallica exploration assets.

The technical values in Table 7.1 have been assessed based on the transaction multiples for comparable assets to derive yardstick values for Mineral Resources and the past expenditure method for exploration EPMs. This valuation is taking the percentage ownership of the projects into account.

**Table 7.1 Metallica Exploration Assets technical values**

Location	Low (\$M)	High (\$M)	Preferred (\$M)
Urquhart Point HMS	1.0	1.042	1.021
Cape York exploration			No value ascribed
Esmeralda graphite	0.07	0.11	0.09
Cape Flattery silica			No value ascribed
Fairview			No value ascribed
<b>Total</b>	<b>1.07</b>	<b>1.15</b>	<b>1.111</b>

AMC ascribes a Preferred Value of \$1.1 million to the Metallica exploration Assets. These lie within a range of values from a low of \$1.01 million to a high of \$1.15 million.



## 8 Signature page

The primary author of this report is Peter Stoker HonFAusIMM(CP). Peter is a professional geologist with over 45 years of experience in the mining industry. Peter is an Honorary Fellow of the Australasian Institute of Mining and Metallurgy (HonFAusIMM), a Chartered Professional and has the appropriate relevant qualifications, experience, competence and independence to be considered a "Specialist" under the definitions provided in the VALMIN Code (2015).

The peer reviewer of this report is Mike Thomas MAusIMM(CP) Principal Mining Consultant. Mike's primary expertise is in mine design, technical and operational assessment of mining operations, and in economic and financial evaluation of underground and open-pit mining projects. His broad experience in the mining industry includes managing operating mines, both in Australia and overseas, in leading feasibility studies, and in carrying out technical reviews, audits, and valuations.



Peter Stoker Project Manager



Mike Thomas Peer Reviewer

## Appendix A Bibliography

- Bazin, F. and Cavanagh, M. 2014, Urquhart Point Mineral Sands Feasibility Study, IMC Mining Pty Ltd, 17 June 2014.
- Coxhell, S. 2013, Oresome Australia Pty Ltd, JORC 2012 resource estimate of the Urquhart Point Mineral Sand Deposit. Weipa Queensland, Coxsrocks Pty Ltd, November 2013.
- Coxhell, S. 2014, Oresome Australia Pty Ltd, JORC 2012 resource estimate of the Urquhart Point Mineral Sand Deposit. Weipa Queensland, Coxsrocks Pty Ltd, April 2014.
- CM Group Report 2018, Metallica Bauxite Price Forecast to 2028 [update], provided as an attachment to a letter from Alan Clark Managing Director, The CM Group.Net Pty Ltd, 2 November 2018.
- Dawney, R. 2015. Exploration on the Ilmenite Deposits in EPMs 9100 & 19382; In areas within the Goondicum 'Crater' outside ML80044 in 2014 Unpublished report by Ausmec Geoscience to Goondicum Resources Pty Ltd.
- Gilman, S., Tear, S. and Lee, G. 2018, Goondicum 2018 Preliminary Economic Assessment, TZMI & H&SC, 20 April 2018.
- Horton, J. 2016. Report to Oresome Australia Pty Ltd on the Urquhart Bauxite: Resource update November 2016. Internal report to Oresome Australia Pty Ltd by IMC Mining Pty Ltd. 65pp. Dated 14 November 2016. IMC Project No: 001183 prepared by John Horton.
- Lewis, S. 2017, Urquhart Bauxite Pre-Feasibility Study, IMC Mining Pty Ltd, January 2017
- Lewis, S. 2018, Urquhart Bauxite Pre-Feasibility Study September 2018 Update, IMC Mining Pty Ltd, September 2018.
- Metallica, 2014a. ASX Release, Urquhart Point HMS Resource Upgraded, 20 May 2014.
- Metallica, 2014b. ASX Release, Positive Feasibility Study & Maiden Independent Ore Reserve Received for Urquhart Point HMS Project, Far North Queensland, 24 June 2014.
- Metallica, 2014c. ASX Release, Completion of T16 HMS grid drilling program, 25 November 2014.
- Metallica, 2014d. ASX Release, Metallica announced move to fully fledged dual HMS & Bauxite focus on Prime Cape York Tenement Portfolio, 11 July 2014.
- Metallica, 2015a. Maiden bauxite resource – Urquhart bauxite project simple - low cost - direct shipping bauxite (DSB) strategy. ASX public release dated 11 May 2015 by Metallica Minerals Limited.
- Metallica, 2015b. ASX Release, Update on New Cape York Mineral Sands Plant, 17 June 2015.
- Metallica, 2016a. Information Memorandum: Cape Flattery Silica Sands Project. Internal document January 2016 by Metallica Minerals Limited.
- Metallica, 2016b. Strong Pre-Feasibility (sic) Study supports 1.5 Mtpa Urquhart bauxite development. ASX public release dated 30 December 2016 by Metallica Minerals Limited.
- Metallica, 2018a. ASX Release, High Purity Silica Sands at Cape Flattery, 18 April 2018.
- Metallica, 2018b. Metallica Minerals Ltd Annual Report 2018. Available at [http://www.metallicaminerals.com.au/wp-content/uploads/2016/09/01378\\_MLM\\_AnnualReport\\_Final\\_LR.pdf](http://www.metallicaminerals.com.au/wp-content/uploads/2016/09/01378_MLM_AnnualReport_Final_LR.pdf) accessed 10/10/2018.
- Tear, S. and Lee, G. 2017. Resource estimation for the Goondicum industrial mineral project, SE Queensland, Australia. Unpublished report by H&S Consultants to Goondicum Resources Pty Ltd. Effective date 16 December 2017.
- UTM Global, 2018a. Tenement status report for Metallica Minerals Limited. Internal report for Metallica Minerals Limited by UTM Global. Date 3 October 2018. pp15.
- UTM Global, 2018b. RE: Goondicum Resources Pty Ltd Tenure Status, Internal report for Metallica Minerals Limited by UTM Global. Date 16 July 2018. Pp2.

## Our offices

### Australia

#### Adelaide

Level 1, 12 Pirie Street  
Adelaide SA 5000 Australia

T +61 8 8201 1800  
E [adelaide@amcconsultants.com](mailto:adelaide@amcconsultants.com)

#### Melbourne

Level 29, 140 William Street  
Melbourne Vic 3000 Australia

T +61 3 8601 3300  
E [melbourne@amcconsultants.com](mailto:melbourne@amcconsultants.com)

### Canada

#### Toronto

TD Canada Trust Tower  
161 Bay Street, 27<sup>th</sup> Floor  
Toronto, ON M5J 2S1 Canada

T +1 416 640 1212  
E [toronto@amcconsultants.com](mailto:toronto@amcconsultants.com)

### Singapore

#### Singapore

30 Raffles Place, Level 17 Chevron House  
Singapore 048622

T +65 6809 6132  
E [singapore@amcconsultants.com](mailto:singapore@amcconsultants.com)

### United Kingdom

#### Maidenhead

Registered in England and Wales  
Company No. 3688365

Level 7, Nicholsons House  
Nicholsons Walk, Maidenhead  
Berkshire SL6 1LD United Kingdom

T +44 1628 778 256  
E [maidenhead@amcconsultants.com](mailto:maidenhead@amcconsultants.com)

Registered Office: Ground Floor,  
Unit 501 Centennial Park  
Centennial Avenue  
Elstree, Borehamwood  
Hertfordshire, WD6 3FG United Kingdom

#### Brisbane

Level 21, 179 Turbot Street  
Brisbane Qld 4000 Australia

T +61 7 3230 9000  
E [brisbane@amcconsultants.com](mailto:brisbane@amcconsultants.com)

#### Perth

Level 1, 1100 Hay Street  
West Perth WA 6005 Australia

T +61 8 6330 1100  
E [perth@amcconsultants.com](mailto:perth@amcconsultants.com)

### Vancouver

200 Granville Street, Suite 202  
Vancouver BC V6C 1S4 Canada

T +1 604 669 0044  
E [vancouver@amcconsultants.com](mailto:vancouver@amcconsultants.com)

### Russia

#### Moscow

ul. Bakhrushina 32/1  
Moscow 115054 Russian Federation

T +7 495 134 01 86  
E [moscow@amcconsultants.com](mailto:moscow@amcconsultants.com)

