

13 September 2019

## NOTICE OF MEETING

Avenira Limited ('Avenira' or the 'Company') (ASX: AEV) is pleased to provide an update on the proposed sale of its interests in the Baobab Phosphate Project and Novaphos to a consortium of its major shareholders (the Purchasers) in return for cash consideration and essential funding support (the 'Transaction') (ASX announcement dated 1 July 2019).

Under the Transaction:

- Avenira to receive cash consideration of US\$3.0M (A\$4.3M), and loan and director fees forgiveness of approximately US\$1.2M (A\$1.8M), for a total value of approximately US\$4.2M (A\$6.1M), using a A\$:US\$ 0.69 exchange rate.
- Avenira to undertake, for nil consideration, a buy-back and capital reduction of all the existing shares and options held by the major shareholders.
- Pending completion of the sale ('Completion'), the Purchasers will provide loan funding of up to US\$1.8M to BMCC (the Avenira subsidiary which holds the Baobab Project); and
- The Purchasers will also make available until Completion additional loan funding to Avenira which, if used, will be deducted from the cash consideration.

**Attached is a copy of the Notice of Meeting and Proxy Form which is being sent to all shareholders today. The meeting will be held at the office of DLA Piper, Level 31, Central Park, 152 - 158 St Georges Terrace, Perth Western Australia at 9:30am (WST) on 14 October 2019.**

The Transaction is likely to complete shortly after the shareholder meeting. Further details are included in the Notice of Meeting documents for shareholders which are attached.

As part of the Notice of Meeting, Avenira appointed RSM to prepare an Independent Expert's Report. In its report, RSM has concluded that, in the absence of a superior proposal, the Transaction is not fair but reasonable. This is an important document and the Independent Directors encourage all shareholders to read it in full.

### Transaction Rationale

To consider the Transaction, Avenira formed a committee comprising Brett Clark (Chairman) and Louis Calvarin (formerly Managing Director) (the Independent Directors).

The Independent Directors believe there are key reasons for Avenira to undertake the Transaction:

- ***The Transaction provides funding certainty***

The Company has been seeking to progress alternative funding arrangements from a number of different sources over the past several months, including bank loans from West African banks. These discussions have taken considerably longer than anticipated and there is no certainty a loan will be obtained.

The Transaction offers an ability for Avenira to become debt free and receive cash consideration of US\$3.0M (less costs to reach Completion), which delivers greater financial certainty for Avenira shareholders than otherwise achievable.



- ***The Transaction provides value for shareholders***

The Transaction consideration, being a combination of cash and loan forgiveness, is attractive:

- Gross consideration value of approximately A\$6.1M (comprising the cash consideration of US\$3.0 / A\$4.3M plus the value of the Avenir Corporate Loan of US\$0.9 / A\$1.3M and the value of Director fees to be forgiven of approximately US\$0.3 / A\$0.4M), or A\$0.014 per remaining Avenir share, representing a 129% premium to the last traded price of A\$0.006 per share; and
- The Cash Consideration value of US\$3.0 / A\$4.3M, or approximately A\$0.010 per remaining Avenir share, represents a premium of 64% to the last traded price.

- ***Avenir retains the Wonarah Phosphate Project***

The Transaction provides a platform for Avenir to progress the Wonarah Phosphate Project as well as consider other investment opportunities.

### **Board Recommendation**

The Independent Directors:

- (a) unanimously recommend that Avenir shareholders vote in favour of the Transaction; and
- (b) affirm that they intend to vote any Avenir shares in which they have a relevant interest in favour of the Transaction,

in the absence of a superior proposal.

For further information:

**Brett Clark – Chairman**

Telephone: (08) 9264 7000



**AVENIRA LIMITED**

ACN 116 296 541

**NOTICE OF GENERAL MEETING**

**EXPLANATORY MEMORANDUM**

**AND**

**PROXY FORM**

in respect of the

**GENERAL MEETING OF SHAREHOLDERS**

to be held at 9:30am (WST) on 14 October 2019

at DLA Piper, Level 31, Central Park, 152 - 158 St Georges Terrace, Perth Western Australia

**The Independent Expert has concluded that the Transaction is not fair but reasonable**

**IMPORTANT INFORMATION**

This is an important document that should be read in its entirety. If you do not understand it you should consult your professional advisers without delay.

**AVENIRA LIMITED**  
**ABN 48 116 296 541**

**NOTICE OF GENERAL MEETING**

**NOTICE IS HEREBY GIVEN** that the General Meeting (**General Meeting** or **Meeting**) of holders of ordinary shares (**Shareholders**) of Avenira Limited ABN 48 116 296 541 (**Company** or **Avenira**) will be held at DLA Piper, Level 31, Central Park, 152 - 158 St Georges Terrace on 14 October 2019 at 9:30am (WST) for the purpose of transacting the following business, in each case, as more particularly described in the Explanatory Memorandum accompanying this Notice.

The Explanatory Memorandum provides additional information on matters to be considered at the Meeting. The Explanatory Memorandum, Proxy Form and Schedules form part of this Notice.

The Directors have determined pursuant to regulation 7.11.37 of the Corporations Regulations 2001 (Cth) that the persons eligible to vote at the Meeting are those who are registered as Shareholders at 5:00pm on 12 October 2019.

Terms and abbreviations used in this Notice (including the Explanatory Memorandum) are defined in Schedule 1.

**AGENDA**

**1. Resolution 1 – APPROVAL FOR SALE OF MAIN UNDERTAKING**

To consider and, if thought fit, to pass with or without amendment, as an **ordinary** resolution the following:

*"That, for the purposes of Listing Rules 10.1 and 11.2 and sections 208 and item 7 of section 611 of the Corporations Act, Shareholders approve the sale of the Sale Assets to the Major Shareholders and the acquisition of the relevant interest in the issued voting shares of the Company by the Major Shareholders (and their associates) up to a maximum voting power of 58.42% which would otherwise be prohibited by section 606(1) of the Corporations Act in accordance with the Sale Agreement and otherwise on the terms and conditions detailed in the Explanatory Memorandum."*

**Voting Exclusion**

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

- (a) Baobab Partners LLC, Agrifields DMCC or Tablo Corporation or any of their associates; and
- (b) a person who might obtain a benefit, except a benefit solely in the capacity as a Shareholder if the Resolution is passed, or an associate of that person.

However, the Company will not disregard a vote if:

- (c) it is cast by a person as proxy for a person who is entitled to vote, in accordance with the directions on the Proxy Form; or
- (d) it is cast by the Chairperson as proxy for a person who is entitled to vote, in accordance with a direction on the Proxy Form to vote as the proxy decides.

**Voting Prohibition**

The Company will disregard any votes cast on this Resolution by or on behalf of Baobab Partners LLC, Agrifields DMCC or Tablo Corporation or any of their associates.

However, the Company will not disregard a vote if:

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

## 2. Resolution 2 – SELECTIVE BUY-BACK

To consider and, if thought fit, to pass with or without amendment, as a **special** resolution the following:

*"That, subject to the approval of Resolution 1, pursuant to and in accordance with section 257D of the Corporations Act and for all other purposes, the Shareholders approve the terms of the Buy-Back Agreement for the selective buy-back of 617,873,016 Shares from the Major Shareholders on the terms and conditions in the Buy-Back Agreement, as detailed in the Explanatory Memorandum."*

### **Voting Prohibition**

The Company will disregard any votes cast in favour of this Resolution by or on behalf of Baobab Partners LLC, Agrifields DMCC or Tablo Corporation or any of their associates.

However, the Company will not disregard a vote if:

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

### **By order of the Board**

**Brett Clark**  
**Chairman**

**Dated: 10 September 2019**

**EXPLANATORY MEMORANDUM**

**1. Introduction**

This Explanatory Memorandum has been prepared for the information of Shareholders in connection with the business to be conducted at the Meeting to be held at DLA Piper, Level 31, Central Park, 152 - 158 St Georges Terrace, Perth Western Australia on 14 October 2019 at 9:30am (WST).

The purpose of this Explanatory Memorandum is to provide Shareholders with all information known to the Company which is material to a decision on how to vote on the Resolutions at the Meeting.

This Explanatory Memorandum forms part of the Notice which should be read in its entirety. This Explanatory Memorandum contains the terms and conditions on which the Resolutions will be voted.

The Company is not aware of any relevant information that is material to the decision on how to vote on the Resolutions other than as is disclosed in this Explanatory Memorandum or previously disclosed to Shareholders by the Company by notification to the ASX.

Neither ASIC, ASX nor their officers take any responsibility for the contents of the Notice or this Explanatory Memorandum.

**2. Action to be taken by Shareholders**

Shareholders should read the Notice including this Explanatory Memorandum carefully before deciding how to vote on the Resolutions.

**Proxies**

A Proxy Form is enclosed with the Notice. This is to be used by Shareholders if they wish to appoint a representative (a 'proxy') to vote in their place. All Shareholders are invited and encouraged to attend the Meeting or, if they are unable to attend in person, appoint a proxy to vote on their behalf by signing and returning the Proxy Form to the Company in accordance with the instructions thereon. Returning the Proxy Form will not preclude a Shareholder from attending and voting at the Meeting in person.

Please note that:

- (a) a member of the Company entitled to attend and vote at the Meeting is entitled to appoint a proxy;
- (b) a proxy need not be a member of the Company; and
- (c) a member of the Company entitled to cast two or more votes may appoint two proxies and may specify the proportion or number of votes each proxy is appointed to exercise. Where the proportion or number is not specified, each proxy may exercise half of the votes.

A Shareholder can direct its proxy to vote for, against or abstain from voting on each Resolution by marking the appropriate box in the voting directions section of the Proxy Form. If a proxy holder votes, they must cast all votes as directed. Any directed proxies that are not voted will automatically default to the Chairperson of the Meeting, who must vote the proxies as directed.

The Chairperson intends to vote all undirected proxies in favour of all Resolutions except where proxies are received from any Shareholder who is subject to a voting exclusion, in which case the Chairperson will abstain from voting those shares.

Proxy Forms must be received by the Company no later than 9:30am (WST) on 12 October 2019, being at least 48 hours before the Meeting

An appointment of a proxy or power of attorney is not effective for the Meeting unless:

- (a) in the case of a proxy, the Proxy Form and, if it is executed by an attorney, the relevant power of attorney or a certified copy of it; and
- (b) in the case of an attorney, the power of attorney or a certified copy of it, is received by the Company by one of the following means of delivery, in respect of Shareholders registered on the Company's Australian share register, prior to 9:30am WST on 12 October 2019 by:
  - (i) facsimile, to Computershare Investor Services Pty Ltd at 1 800 783 447 (International: +61 39473 2555);
  - (ii) delivery, to Computershare Investor Services Pty Ltd at Level 11, 172 St George's Terrace, Perth, Western Australia 6000;
  - (iii) mail, to Computershare Investor Services Pty Ltd at GPO Box 242, Melbourne, Victoria, 3001;
  - (iv) electronically by appointing your proxy online at [www.investorvote.com.au](http://www.investorvote.com.au). Please refer to the enclosed Proxy Form for more information about appointing your proxy online; or
  - (v) for intermediary online subscribers only (custodians) [www.intermediaryonline.com](http://www.intermediaryonline.com)

If you are a beneficial Shareholder and receive these materials through your broker or through another intermediary, please complete and return the form of proxy or voting instruction form in accordance with the instructions provided to you by your broker or by the other intermediary.

The Proxy Form provides further details on appointing proxies and lodging Proxy Forms.

### **Corporate Representative**

A body corporate which is a Shareholder, or which has been appointed as a proxy, is entitled to appoint an individual to act as its representative at the Meeting in accordance with section 250D of the Corporations Act.

Any corporate Shareholder who has appointed a person to act as its corporate representative at the Meeting should provide that person with:

- (a) a certificate or letter executed in accordance with the Corporations Act authorising him or her to act as that company's representative; or
- (b) a copy of the resolution appointing that person as the corporate Shareholder's representative at the Meeting, certified by a secretary or director of the corporate Shareholder.

A Certificate of Appointment of Corporate Representative form is available from the Company on request.

### **Independent Expert's Report**

Shareholders should carefully consider the report prepared by the Independent Expert. The Independent Expert's Report comments on the fairness and reasonableness of Resolution 1 to

the Shareholders in the Company. The Independent Expert has determined that Resolution 1 is not fair but reasonable to the Shareholders in the Company. A copy of the Independent Expert's Report is included as Schedule 3 to this Notice. If requested by a Shareholder, the Company will send to the Shareholder a hard copy of the Independent Expert's Report at no cost.

### **3. Inter-Conditional Resolutions**

The Transaction requires approval under the Listing Rules. Resolutions 1 and 2 are inter-conditional. Consequently, if any of the Resolutions is not approved by Shareholders, the Transaction will not be completed.

For information relating to the Company's intentions if the Transaction does not proceed, refer to Section 4.13.

## 4. Overview

### 4.1 Background

On 1 July 2019, the Company announced it had entered into an agreement with the Major Shareholders (**Sale Agreement**) pursuant to which the Company will:

- (a) sell its 100% interest in the issued share capital of BFA (BFA is the holding company of Avenir's 80% interest in the Baobab Phosphate Project) (Refer to Section 4.2);
- (b) sell the Novaphos Interest (Refer to Section 4.3);
- (c) assign the intellectual property associated with the Baobab Phosphate Project and the Novaphos Interest to the Major Shareholders (Refer to Section 4.4);
- (d) assign the BMCC Loan to the Major Shareholders (or their nominee) (Refer to Section 4.5);
- (e) assign the BFA Loan to the Major Shareholders (or their nominee) (Refer to Section 4.5),

(together, the **Transaction**).

### 4.2 Baobab Phosphate Project

The Baobab Phosphate Project is located in Senegal, West Africa, approximately 140km east of Dakar. Avenir owns 80% of the project through its 100% interest in BFA, which in turn owns 80% of Baobab Mining and Chemicals Corporation S.A. (**BMCC**) which holds permits for the Baobab Phosphate Project.

BMCC holds an Exploration Permit which covers approximately 1,163km<sup>2</sup> and an Exploitation Permit of approximately 75km<sup>2</sup>.

In 2016, a 'starter' mine was developed to mine the Gadde Bissik part of the deposit under a small mine permit (**SMP**) of approximately 5km<sup>2</sup>. This development experienced numerous recovery and commissioning issues and was placed on care and maintenance in 2018. The Company commenced studies investigating a new development, one which would incorporate additional processing equipment and in parallel progressed the exploitation permit which would give the Company access to a larger area to mine.

On 18 March 2019, the Company announced a Feasibility Study (+/-20% Class 4 estimate) for a new development comprising open-cut mining with a new processing plant constructed on site producing approximately 1mtpa of phosphate rock concentrate grading 36.4% P<sub>2</sub>O<sub>5</sub> for local and international sale over a 13 year life.

Pre-production capital expenditure for the Baobab Phosphate Project was estimated as US\$183 million, with projected operating costs of US\$56/t (not including any royalty).

The Company had planned, subject to funding, to commence a 'bankable' feasibility study on the Baobab Project, which would include further metallurgical test work to confirm the flow sheet to be used in the development as well as further investigation with respect to the tailings storage facilities.

The following table shows the Mineral Resources stated for the Baobab Phosphate Project as at 30 June 2019:

Area	Deposit	Classification	Mt	P <sub>2</sub> O <sub>5</sub> %	CaO %	MgO %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %
Within Exploitation Permit	Gadde Bissik East	Indicated	41.8	19.4	26.8	0.08	2.23	3.87	44.0
		Inferred	136	16	22	0.17	3.4	4.0	51
	Gandal	Inferred	31	15	21	0.10	4.3	7.9	46
	Gadde Escale	Inferred	80	16	23	0.15	2.4	3.0	52
	Subtotal within Exploitation Permit	Indicated Inferred	41.8 247	19.4 16	26.8 22	0.08 0.16	2.23 3.2	3.87 4.1	44.0 50
Outside Exploitation Permit	Gadde Bissik East	Indicated	0.3	16.4	22.3	0.17	3.96	3.76	48.7
		Inferred	9	16	22	0.19	4.2	3.3	50
	Gadde Bissik West	Inferred	26	13	17	0.35	6.7	7.0	48
	Gandal	Inferred	1	14	19	0.06	2.5	6.9	54
	Gadde Escale	Inferred	2	15	21	0.32	2.9	4.6	51
	Dinguiraye	Inferred	35	17	25	0.24	3.4	3.7	46
Subtotal outside Exploitation Permit	Indicated Inferred	0.3 73	16.4 15	22.3 21	0.17 0.27	3.96 4.7	3.76 4.9	48.7 48	
<b>Total Resource</b>		Indicated	42.1	19.4	26.8	0.08	2.24	3.87	44.0
		Inferred	320	16	22	0.18	3.5	4.3	50

**Table 1: Gadde Bissik Mineral Resources Estimates at 10% P<sub>2</sub>O<sub>5</sub> Cut-off Grade**

All Resources listed above were prepared and first disclosed under the JORC Code 2012 (refer to ASX release “Avenira Delivers Strong Feasibility Study for Expansion of Baobab Phosphate Project”, 18 March 2019). The Company confirms it is not aware of any new information or data that materially affects the information included in the relevant market announcement and, in the case of estimates of mineral resources or ore reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

The Independent Expert has valued the Baobab Phosphate Project in the range of \$21.6 million and \$44 million with a preferred value of \$32.8 million (refer to section 11.7 of the Independent Expert’s Report for further details).

#### 4.3 The Novaphos Interest

Avenira holds interests in Novaphos Inc (**Novaphos**), comprising:

- (a) US\$1,678,468 outstanding notes;
  - (b) US\$501,899 total accrued interest on the outstanding notes;
  - (c) 6,730 common shares;
  - (d) 93,425 common share warrants;
  - (e) 282 series A preference shares;
  - (f) 15,748 series B2 preference shares;
  - (g) 31,496 series B2 warrants;
  - (h) 42,702, 2018 bridge warrants; and
  - (i) all of the interests (equity or debt) of Avenira Holdings LLC,
- (together the **Novaphos Interest**).

Mr Tim Cotton, a Director and CEO of Novaphos, and Mr Farouk Chaouni, the Chairman of Novaphos and a former Director, together own 100% of Agrifos Partners LLC, which owns 100% of each of Baobab and Thetis Investments LLC (**Thetis**). Baobab and Thetis together own approximately 22.2% of the fully diluted common stock of Novaphos.

#### 4.4 Intellectual Property

Novaphos is a USA based company that has stated that it is seeking to commercialise technology to enable the efficient processing of low grade phosphate sources (**IHP Technology**). Novaphos has stated that the IHP Technology has the potential to enable sustainable production of high-quality superphosphoric acid (**SPA**) using low quality phosphate rock without creating phosphogypsum waste.

Novaphos has constructed a demonstration plant which it is continuing to refine to achieve commercialisation of the technology.

Avenira has exclusive rights to use the IHP Technology in Senegal and Australia. In connection with the Transaction, the Major Shareholders will acquire the exclusive license to use the IHP Technology in Senegal and Avenira will retain the exclusive license to use the IHP Technology in Australia. Avenira has agreed to terminate certain secured step-in license rights in favour of Avenira, included in the current license agreement to use the IHP Technology in Australia, in consideration for Novaphos' cooperation and consent to Avenira's sale and transfer of the Novaphos Interest.

#### 4.5 Loan Agreements

Avenira, BMCC and BFA are party to the following loan agreements:

- (a) the loans from Avenira to BMCC pursuant to the loan agreement dated 1 March 2017, which as at the date of this Notice has \$13,044,900 outstanding (**BMCC Loan**);
- (b) the loans from Avenira to BFA pursuant to the loan agreement dated 1 July 2018, which as at the date of this Notice has \$18,018,616 outstanding (**BFA Loan**);
- (c) the loan agreements between Avenira and each of the Major Shareholders dated 15 March 2019, which as at the date of this Notice has \$1,382,131 outstanding (**Avenira Corporate Loan**); and
- (d) the loan agreements between BMCC and each of the Major Shareholders dated 16 May 2019, which as at the date of this Notice has \$2,507,314 outstanding (**BMCC Funding Agreement**).

#### 4.6 Material Terms of the Sale Agreement

The material terms and conditions of the Sale Agreement are as follows:

##### 4.6.1 Sale Assets

Avenira will sell or assign its rights in the following assets to the Major Shareholders (or their nominee):

- (a) its 100% interest in the issued share capital of BFA (BFA is the holding company of Avenira's 80% interest in the Baobab Phosphate Project);
- (b) the Novaphos Interest;
- (c) intellectual property associated with the Baobab Phosphate Project and the Novaphos Interest;
- (d) the BMCC Loan;
- (e) the BFA Loan,

(together the **Sale Assets**).

#### 4.6.2 **Conditions Precedent**

Completion of the Transaction is subject to and conditional upon the satisfaction (or waiver) of the following:

- (a) Avenira and the Major Shareholders obtaining all requisite third-party consents to transfer the Sale Assets;
- (b) Avenira and the licenceholder, among others, entering into an agreement to amend and restate the licence agreement granting the exclusive right to use the IHP Technology in Australia;
- (c) Shareholders approving the Resolutions;
- (d) no material adverse change in the Baobab Phosphate Project or the Sale Assets occurring;
- (e) no event of default, or event or circumstance which could be an event of default, occurring under the Avenira Corporate Loan; and
- (f) no event of default, or event or circumstance which could be an event of default, occurring under the BMCC Funding Agreement,

(together the **Remaining Conditions Precedent**).

In addition to the Remaining Conditions Precedent, the Sale Agreement provides for additional conditions precedent which, as at the date of this Notice, have been satisfied.

#### 4.6.3 **Consideration**

The consideration to be received by Avenira for the Sale Assets comprises the following:

- (a) a cash payment of US\$3 million (approximately A\$4.3 million) to Avenira (less any amount outstanding under the Working Capital Supplement Facility (refer to Section 4.6.4(b)));
- (b) the Buy-Back (refer to Section 4.8);
- (c) assignment and forgiveness of any directors fees payable to Messrs Timothy Cotton, David Mimran or Farouk Chaouni, which as at the date of completion of the Transaction are expected to amount to approximately A\$405,000; and
- (d) assignment and forgiveness of the Avenira Corporate Loan, which as at the date of this notice is \$1,382,131,

(the **Consideration**).

#### 4.6.4 **Funding during the Transaction**

Under the Sale Agreement the following additional funding have been provided:

- (a) **Working Capital Facility:** by the Major Shareholders; a facility of US\$1.8 million to be used by BMCC to meet all costs incurred by BFA and BMCC in accordance with a specific budget agreed between the parties (**Budget**). At the date of this Notice Avenira has drawn down US\$873,500 of the Working Capital Facility; and

- (b) **Working Capital Supplement Facility:** by Tablo; a facility of US\$300,000 to be used by BMCC to cover any shortfall in funding for Avenira to reach completion of the Transaction and the transaction costs of the Transaction. Funds may be upstreamed from BMCC to Avenira. At the date of this Notice, BMCC has drawn down US\$300,000 of the Working Capital Supplement Facility. The cash component of the Consideration will be reduced by the amount outstanding under the Working Capital Supplement Facility.

#### 4.6.5 **Conduct of Business**

Avenira must, and must procure that BFA and BMCC conduct their businesses, in the ordinary course of and in accordance with the Budget and, without the consent of the Major Shareholders do not undertake certain actions, including:

- (a) repay any loans by BFA, BMCC or GBO to Avenira;
- (b) dispose of any interest in the Baobab Phosphate Project;
- (c) grant any security (other than in the ordinary course) over their assets;
- (d) incur any indebtedness;
- (e) issue any securities;
- (f) declare any dividend; or
- (g) change the nature of its business.

#### 4.6.6 **Exclusivity**

Avenira has granted the Major Shareholders exclusivity until the earlier of completion of the Transaction or the termination of the Sale Agreement in respect of any transaction to acquire any of the issued share capital of BFA, BMCC or GBO or an interest in the Baobab Phosphate Project or any other transaction that has that economic effect.

#### 4.6.7 **Changes to the Board and subsidiary board of Directors**

Pursuant to the Sale Agreement:

- (a) on 28 June 2019, Messrs Farouk Chaouni and David Mimran resigned from the Board.
- (b) Messrs Timothy Cotton and Louis Calvarin will resign from the Board on completion of the Transaction; and
- (c) Messrs Louis Calvarin and Rod Wheatley will resign from the boards of BMCC and BFA on completion of the Transaction.

### 4.7 **Rationale for the Transaction**

The Independent Directors (being the Directors other than Mr Timothy Cotton, who is a related party and shareholder of Baobab Partners LLC, a Major Shareholder) have considered various options available to the Company and have determined that the Transaction is in the best interest of the Company for the following reasons:

- 4.7.1 **Previous Funding:** Avenira acquired the Baobab Phosphate Project in 2016. Since that time the Company has spent considerable funds for limited gain. At the time of entering into the Sale Agreement, the Company, BFA and BMCC have approximately A\$7.1 million of external debt and BMCC has recently received a statement from the

Senegalese Government's tax office outlining the results of its recent audit of BMCC which identified US\$1.6 million in additional tax liabilities. BMCC is in the process of appealing the results of this audit, which may take up to 6 months. Subject to BMCC's payment of a holding amount, the tax liabilities will be payable at the end of the appeal process. The external debt of \$8.5m, the subject of the AEV Corporate Loan, the BMCC Loan and a short-term credit line facility to GBO, is not presently due and payable and will remain with the BFA, BMCC and GBO following completion of the Transaction. Accordingly, the Company will be debt free.

- 4.7.2 **Future Funding:** as announced on 14 June 2019, the Company requires an additional A\$11-14 million to advance the Baobab Project through to a final investment decision. Over the past year the Company has been actively seeking additional investment from third parties to repay its debts and fund the Company's activities through to the final investment decisions of the Baobab Phosphate Project. At the date of this Notice, the Company has not been able to agree any third party funding. The Independent Directors believe the key reasons for this is:
- (a) the poor state of the phosphate market;
  - (b) the high capital cost to develop the Baobab Phosphate Project reported in the Feasibility Study completed earlier this year; and
  - (c) the high amount of further funding required to de-risk the project (relative to the size of Avenir).
- 4.7.3 **Continuing Support of Major Shareholders:** While the Company's Major Shareholders have been supportive during this time, they were not able to continue to fund the Company through further debt. In late June 2019, the Company suspended from trading on ASX given the financial uncertainty facing the Company. If the Company is not approved by Shareholders, Without raising additional funds or on-going support from the Major Shareholders, the Company may not be able to continue as a going concern.
- 4.7.4 **Certainty in respect of value:** the Transaction provides value certainty for Shareholders at a significant premium to the Share price prior to announcement of the Transaction, including:
- (a) the value of the gross consideration, being A\$6.1 million, or A\$0.014 per Share on issue after the Buy-Back, represents a premium of 129% to the last trading price of Shares before announcement of the Transaction being, A\$0.06;
  - (b) the value of the cash consideration, being approximately US\$3 million (approximately A\$4.3 million) (less any amounts outstanding under the Working Capital Supplement Facility, or A\$0.01 per Share on issue after the Buy-Back, represents a premium of 64% to the last trading price of Shares before announcement of the Transaction being, A\$0.006,
- 4.7.5 **Independent Expert:** The Independent Expert has concluded that the Transaction is not fair but reasonable for non-associated Shareholders and that the position of non-associated Shareholders, on completion of the Transaction, is more advantageous than if the Transaction does not proceed.
- 4.7.6 **Future of Avenir:** The Transaction enable the Company to become debt free and receive a cash injection of approximately \$US\$3 million (approximately A\$4.3 million) in cash (less any amounts outstanding under the Working Capital Supplement Facility).

With a further A\$11-14 million required to advance the Baobab Phosphate Project through to a final investment decision, the Independent Directors believe an exit from its interests in the Baobab Phosphate Project and Novaphos Interest and a focus on new shareholder value opportunities, including the Wonarah Project are in the best interests of Avenir shareholders.

The Independent Directors believe that disposing of the Baobab Phosphate Project and Novaphos Interest (assets which the Independent Directors believe will require significant further financial investment in the near term which is not able to be met by Avenir) for the Consideration (including US\$3 million (approximately A\$4.3 million) in cash (less any amounts outstanding under the Working Capital Supplement Facility)), and is in the best interests of its shareholders.

Importantly, if the Transaction is implemented it will mean Avenira is able to exit its exposure to significant in-country debts and contingent tax liabilities. Remaining Avenira shareholders will also benefit from the Company's continued ownership of the Wonarah Project and the retention of the Australian licence for the IHP Technology and the Company will have sufficient cash available to pursue other investment opportunities should they become available.

#### 4.8 Details of the Buy-Back

In accordance with the Sale Agreement the Company will enter into a selective buy-back agreement with the Major Shareholders and their associates (**Buy-Back Agreement**).

Pursuant to the Buy-Back Agreement the Company will Buy-Back 617,873,016 Shares (**Buy-Back Shares**) held by the Major Shareholders and their associates.

The Buy-Back is subject to Shareholders approving Resolution 2.

##### 4.8.1 Rationale of the Buy-Back

The Independent Directors believe the Buy-Back is in the best interests of the Company and those Shareholders entitled to vote on Resolution 2 (i.e. Shareholders other than the Major Shareholders) for the following reasons:

- (a) **Part of the Transaction:** as detailed in Section 4.1, the Buy-Back is an integral part of the Transaction. Upon Completion, the Major Shareholders will acquire the Sale Assets, and the Buy-Back Shares held by the Major Shareholders will be cancelled resulting in the Major Shareholders ceasing to have any interest in the Company. The consideration for the Transaction has been structured so that while no cash shall be payable by the Company to the Major Shareholders to effect the Buy-Back, the Buy Back Shares will be bought back as part consideration for the Transaction.
- (b) **Anti-dilution:** as a result of the Buy-Back, each Shareholder (other than the Major Shareholders) will have their percentage interest in the entire issued share capital of the Company increased.
- (c) **Cash-backing:** the cash-backing per Share will increase from \$0.0003 per Share to \$0.01 per Share; and
- (d) **Other alternatives:** the Company determined that a capital reduction would not be appropriate in connection with the Transaction.

##### 4.8.2 Summary of the Terms of the Buy-Back

The terms of the Buy Back are contained in the Buy-Back Agreement. The principal terms are as follows:

- (a) the Company shall convene a meeting of Shareholders to consider the approval of the Buy-Back; and
- (b) the Buy-Back will, subject to the satisfaction of the Conditions (outlined in Section 4.6.2), take place on the Completion.

##### 4.8.3 Effect of the Buy-Back on Control and Issued Capital of Avenira

If the Shareholders approve Resolution 2, no cash will be paid by the Company to the Major Shareholders and the Buy-Back Shares will be cancelled upon completion of the Transaction. This will reduce the total number securities on issue as follows:

Total Securities pre Buy-Back		Total Securities post Buy-Back	
Shares	Options	Shares	Options
1,058,628,242	80,000,000	440,755,226	80,000,000

Completion of the Buy-Back will occur on, and is conditional upon, completion of the Transaction.

The Options on issue expire, and will automatically lapse, on 24 September 2019. The Options are held by Baobab Partners LLC and their associates. Baobab Partners LLC has entered into an agreement with the Company where it agrees that it will not, and that it will procure its associates do not, sell, assign, transfer or otherwise deal with the Options.

The Buy-Back Shares are held as follows, and the Buy-Back will result in the following persons ceasing to be a substantial shareholder of the Company:

	Shares	
<b>Baobab Partners LLC (and its associates)</b>	240,528,141	22.72%
<b>Agrifields DMCC (and its associates)</b>	151,761,842	14.34%
<b>Tablo Corporation (and its associates)</b>	225,583,333	21.36%
	<b>617,873,316</b>	<b>58.42%</b>

Accordingly, the Buy-Back will result in the Major Shareholders no longer having control of Avenira.

The Buy-Back will not will not cause any person, whether an existing Shareholder or not, to acquire a relevant interest in Shares exceeding 20%.

The cash backing per Shares before and after the Buy-Back is as follows:

	Before Buy-Back	After Buy-Back
<b>Total number of Shares on issue</b>	1,058,628,242	440,755,226
<b>Cash balance of the Company (A\$)</b>	\$0.3 million	\$3.9 million
<b>Cash backing per Share (A\$)</b>	\$0.0003	\$0.01

#### 4.8.4 Director Participation in the Buy-Back

Baobab Partners LLC (and its associates) (of which Timothy Cotton, a Director of the Company, is a shareholder) will participate in the Buy-Back.

#### 4.8.5 Source of funds for the Buy-Back

The Buy-Back is part consideration for the Transaction. Accordingly, Avenira will buy-back and cancel the Buy-Back Shares for part consideration of the Transaction.

### 4.9 Major Shareholders Interest

On 28 June 2019, the Major Shareholders entered into an agreement to jointly pursue the Transaction (**Major Shareholder Agreement**), as well as the Sale Agreement.

Pursuant to the Major Shareholder Agreement and the Sale Agreement, each Major Shareholder agreed that subject to Avenira passing a resolution under item 7 of section 611 of the

Corporations Act, it will dispose of its, and will procure that its associates will dispose of their, Shares under the Buy-Back. Accordingly, each Major Shareholder will acquire control over the shares in the Company held by the other Major Shareholders and but for the operation of section 609(7) of the Corporations Act, each Major Shareholder would acquire a relevant interest in the Shares of the aggregate number of Shares held by the Major Shareholders, being 617,873,016 Shares (**Major Shareholder Shares**).

The Major Shareholder Agreement, is conditional upon Resolution 1 being approved by Shareholders.

#### **4.10 Financial Effect of the Transaction**

The Company will receive US\$3 million (approximately A\$4.3 million) (less any amount outstanding under the Working Capital Supplement Facility) in cash proceeds from the Transaction which will provide working capital for the Company to undertake exploration of its Wonarah Project and potentially investigate new business and acquisition opportunities.

The Transaction provides certain value for Shareholders, but will result in the Company no longer being exposed to any financial benefit that might be realised from the Baobab Phosphate Project and Novaphos Interest in the future.

A pro-forma statement of financial position of the Company, that has been prepared to enable Shareholders to make an assessment of the likely effect of the Transaction on the financial position of the Company is detailed in Schedule 2.

#### **4.11 Advantages of the Transaction**

The advantages of the Transaction is as follows:

- 4.11.1 upon completion of the Transaction, the Transaction will add approximately US\$3 million (approximately A\$4.3 million) (less any amount outstanding under the Working Capital Supplement Facility) to the cash reserves of the Company;
- 4.11.2 the Transaction provide value certainty for Shareholders at a significant premium to the Share price prior to announcement of the Transaction, including:
  - (a) the value of the gross consideration, being A\$6.1 million, or A\$0.014 per Share on issue after the Buy-Back, represents a premium of 129% to the last trading price of Shares before announcement of the Transaction being, A\$0.06;
  - (b) the value of the cash consideration, being approximately US\$3 million (approximately A\$4.3 million) (less any amounts outstanding under the Working Capital Supplement Facility, or A\$0.01 per Share on issue after the Buy-Back, represents a premium of 64% to the last trading price of Shares before announcement of the Transaction being, A\$0.006,
- 4.11.3 the Company will become debt free and receive a cash injection;
- 4.11.4 the Directors are of the view that better opportunities exist elsewhere for the Company and will retain the Wonarah Project located in the Northern Territory and the licence to use the IHP Technology in Australia;
- 4.11.5 the Independent Expert has concluded that the Transaction is not fair but reasonable;
- 4.11.6 as at the date of the Notice, no superior proposal to acquire the Sale Assets or the Company has emerged;
- 4.11.7 as at the date of the Notice, no alternative funding arrangement has emerged;
- 4.11.8 if the Transaction is not approved, the Share price may trade below the price per Share which the consideration payable for the Transaction represents;
- 4.11.9 the Transaction means that the Company will cease to have the burden of the financial obligations it would otherwise have in relation to running and developing the Baobab Phosphate Project; and

- 4.11.10 the Selective Buy-Back:
- (a) is an integral part of the Transaction and will result in Shares having a greater level of cash backing; and
  - (b) will reduce the issued share capital of the Company by approximately 58% potentially providing for better per Share growth and cash flow opportunities for future investments.

#### **4.12 Disadvantages of the Transaction**

The disadvantages of the Transaction is as follows:

- 4.12.1 the Independent Expert has concluded that the Transaction is not fair. However, the Independent has noted that the Transaction is reasonable;
- 4.12.2 the Company will no longer own the Baobab Phosphate Project or Novaphos Interest and, therefore, Shareholders will not participate in any potential future value created by those assets;
- 4.12.3 as a result of the Transaction, the Company will not have the prospect of generating positive cash flows if the Baobab Phosphate Project enters into production;
- 4.12.4 there are risks associated with progressing the Wonarah Project and developing and exploring the Wonarah Project may not return any value for Shareholders; and
- 4.12.5 there is a risk that the Company may not be able to locate and acquire suitable investment opportunities.

#### **4.13 Avenira's Intentions Following Completion of the Transaction**

Following completion of the Transactions:

- 4.13.1 Avenira will progress the development and exploration of the Wonarah Project;
- 4.13.2 Avenira will maintain the right to use the IHP Technology in Australia; and
- 4.13.3 Avenira will have cash reserves of approximately A\$3.9 million.

Following completion of the Transaction, the Directors intend to:

- 4.13.4 undertake a review of the Wonarah project to determine the potential value that it may offer to Shareholders; and
- 4.13.5 investigate other opportunities, primarily in the mining sector.

#### **4.14 Major Shareholder Intentions Following Completion of the Transaction**

The Major Shareholders currently intend to focus BFA on the development of the Baobab Phosphate Project into an active phosphate mining operation. The near-term plan will be to reduce costs where possible pending completion of additional feasibility work. Once sufficient feasibility work is complete, BFA will need to seek financing for the investments that will be required to develop the mine and then make those investments. In parallel, the Major Shareholders intend to seek to develop commercial outlets for the Baobab phosphate rock output.

With respect to the Novaphos interests, the Major Shareholders intend to have BFA remain a minority, passive owner in Novaphos. There is no intention to increase BFA's position in Novaphos.

#### **4.15 Implications if the Transaction Do Not Proceed**

If the Transaction does not proceed, the Sale Agreement will be terminated. Upon termination of the Sale Agreement, the BMCC Funding Agreement and the Working Capital Supplement Facility become immediately due and repayable and all tax liabilities of BMCC and GBO will be payable by BMCC and GBO, subsidiaries of the Company. Without raising additional funds or on-going support from the Major Shareholders, the Company may not be able to continue as a going concern.

#### 4.16 Recommendation of the Independent Expert

As required by Listing Rule 10.1 and item 7 of section 611 of the Corporations Act, the Directors commissioned the Independent Expert, to prepare a report on Resolution 1 to ascertain whether it is fair and reasonable to Shareholders (other than the Major Shareholders and their associates).

**The Independent Expert has concluded that Resolution 1 is not fair but reasonable for Shareholders (other than the Major Shareholders and their associates).**

Schedule 3 contains a complete copy of the Independent Expert's Report. Shareholders are urged to read the Independent Expert's Report in full.

The Independent Expert has given, and has not withdrawn, its consent to the inclusion of its report in the Notice in the form and context in which it appears.

As the Major Shareholders are the purchaser, it is expected that they have made their own determination of the fairness and reasonableness of the Transaction.

#### 4.17 Directors' Recommendation

Other than Timothy Cotton, Director, who is a director and shareholder of Baobab Partners LLC, a Major Shareholder, no Director has a material interest in the outcome of the Transaction, other than as a result of any interest arising solely in their capacity as a Shareholder.

Each of the Directors, other than Mr Timothy Cotton (who has abstained from making a recommendation due to the interest noted above) consider, having reviewed the Independent Expert's Report, that the terms of the Transaction are not fair but reasonable insofar as the Shareholders are concerned, and **RECOMMEND that Shareholders (in the absence of a superior proposal) vote IN FAVOUR of the Transaction by VOTING IN FAVOUR all ALL Resolutions, as the Directors intend to do in respect of the Shares they hold.**

Refer to Section 4.7 for additional details of the reasons for the Director's recommendation.

#### 4.18 Tax Implications

There will be no tax implications for Shareholders (other than the Major Shareholders) as a result of the Transaction.

#### 4.19 Indicative Timetable

The anticipated timetable for completion of the Transaction is as follows:

Event	Date
Last date and time for receipt of Proxy Form	9:30am (WST) on 12 October 2019
Date and time for determine eligibility to vote	5:00pm (WST) on 12 October 2019
Meeting	9:30am (WST) on 14 October 2019
Satisfaction of Conditions	expected to be on 14 October 2019
Completion of Transaction	expected to be on or about 19 October 2019

## **5. Resolution 1 - Approval for Transaction of Main Undertaking**

### **5.1 Background**

Resolution 1 seeks Shareholder approval pursuant to Listing Rules 10.1 and 11.2, section 208 of the Corporations Act and item 7 of section 611 for the Company to complete the Transaction, under which it will dispose of the Sale Assets.

### **5.2 ASX Listing Rules 10.1 and 11.2**

Listing Rule 10.1 prevents a company from disposing of a "substantial asset" to certain persons identified in Listing Rule 10.1, including a "substantial holder" who alone, or together with its associates, has a Relevant Interest in at least 10% of the votes attaching to the voting securities in the company.

As the Major Shareholders hold an aggregate interest in 58.37% of the Shares, the Major Shareholders are a "substantial holder" for the purposes of Listing Rule 10.1. In addition, the Sale Assets account for more than 5% of the equity interests of the Company as set out in its last annual report, meaning that the Sale Assets constitute a "substantial asset" for the purposes of the Listing Rules.

Listing Rule 11.2 restricts the Company's ability to dispose of its main undertaking without Shareholder approval. The interest in the Baobab Phosphate Project, which the Company proposes to sell to the Major Shareholders pursuant to the Sale Agreement, constitutes the main undertaking of the Company.

The effect of passing Resolution 1 will be to allow the Company to dispose of its main undertaking and a substantial asset to the Major Shareholders by completing the Sale Agreement without breaching Listing Rules 10.1 or 11.2.

### **5.3 Section 208 of the Corporations Act**

Chapter 2E of the Corporations Act regulates the provision of financial benefits to related parties by a public company.

Under Section 208 of the Corporations Act, for a public company, or an entity that the public company controls, to give a financial benefit to a related party of the public company (such as a director of the company), the public company or entity must:

- 5.3.1 obtain the approval of the public company's members in the manner set out in Sections 217 to 227 of the Corporations Act; and
- 5.3.2 give the benefit within 15 months following such approval, unless the giving of the financial benefit falls within an exception set out in Sections 210 to 216 of the Corporations Act.

The sale of the Sale Assets constitutes giving a financial benefit to a related party.

As Baobab and Tablo are controlled by directors (or persons who were directors of the Company in the previous 6 months) they are related parties of the Company. As Agrifields is acting in concert with Baobab and Tablo, it is also a related party of the Company. Accordingly, the Major Shareholders are a related party of the Company and the proposed Transaction will constitute the provision of a financial benefit to a related party of the Company.

It is the view of the Company that the exceptions set out in sections 210 to 216 of the Corporations Act do not apply in the current circumstances. Accordingly, Shareholder approval is sought under Section 208 of the Corporations Act for the Transaction.

### **5.4 Independent Expert's Report**

As required by Listing Rule 10.10.2, the Company has appointed the Independent Expert to report on the terms of the Transaction. Refer to Section 4.16 for further details.

Shareholders are urged to carefully read the Independent Expert's Report to understand its

scope, the methodology of the valuation and the sources of information and assumptions made.

The Independent Expert's Report is also available on the Company's website. If requested by a Shareholder, the Company will send to the Shareholder a hard copy of the Independent Expert's Report at no cost.

## 5.5 Specific Information required by Listing Rules 10.1, 10.10 and 11.2

For the purposes of Listing Rules 10.1, 10.10 and 11.2 the following information regarding the Transaction is provided:

- 5.5.1 an Independent Expert's Report has been included as Schedule 3 and details:
- (a) the effect of the Transaction on the Company; and
  - (b) whether the Transaction is fair and reasonable to Shareholders (other than the Major Shareholders), and
- 5.5.2 a voting exclusion statement in relation to Resolution 1 is included in the Notice.

## 5.6 Sections 217 to 227 of the Corporations Act

Pursuant to Sections 217 to 227 of the Corporations Act, the Company provides the following information to Shareholders in respect of the Transaction:

- 5.6.1 the related party to whom the financial benefit will be given is the Major Shareholders, or their nominee;
- 5.6.2 the nature of the financial benefit to be provided is the sale of the Sale Assets;
- 5.6.3 Director Timothy Cotton is precluded from considering the Resolution 1 as he has an interest in the outcome of the Resolution 1;
- 5.6.4 each of the Directors, other than Mr Timothy Cotton (who has abstained from making a recommendation due to his interest in the Transaction) recommend that Shareholders vote in favour of Resolution 1 (refer to Section 4.16 for further details); and
- 5.6.5 ASIC in reviewing documents lodged under section 218 relating to the giving of financial benefits to related parties of public companies requires explanatory information regarding the value of the benefits proposed to be provided. Details of the set out in the Independent Experts report in Schedule 3.

## 5.7 Information required by item 7 of section 611 of the Corporations Act and ASIC Regulatory Guide 74

The information that Shareholders require under item 7 of section 611 of the Corporations Act and ASIC Regulatory Guide 74 is as follows:

### 5.7.1 The identity of the persons making the acquisition and their associates.

The persons who will have a relevant interest in the Shares are as follows:

	Maximum Number of Shares
<b>Baobab Partners LLC (and its associates)</b>	617,873,316
<b>Agrifields DMCC (and its associates)</b>	617,873,316
<b>Tablo Corporation (and its associates)</b>	617,873,316

If Shareholders approve Resolution 1, each of the Major Shareholders will have a maximum voting power of 58.42%.

## 5.7.2

**Full particulars (including the number and percentage) of Shares in which the Major Shareholders (or their associates/nominees) have or will have a relevant interest immediately before and after completion of the Major Shareholder Agreement.**

	Relevant interest before Major Shareholder Agreement		Relevant interest after Major Shareholder Agreement		Relevant interest after Buy-Back	
	Number of Shares	Percentage	Number of Shares	Percentage	Number of Shares	Percentage
<b>Baobab Partners LLC (and its associates)</b>	240,528,141	22.78%	617,873,316	58.42%	-	0%
<b>Agrifields DMCC (and its associates)</b>	151,761,842	14.34%	617,873,316	58.42%	-	0%
<b>Tablo Corporation (and its associates)</b>	225,583,333	21.36%	617,873,316	58.42%	-	0%

The following persons are associates of the Major Shareholders and will have a relevant interest in any Major Shareholder Shares acquired:

- (a) Baobab Partners LLC;
- (b) Baobab Founders LLC;
- (c) Agrifos Partners LLC;
- (d) Mr Timothy Cotton;
- (e) Mr Farouk Chaouni;
- (f) Vulcan Phosphates LLC;
- (g) Messrs Driss Chaouni, Saad Chaouni and Timothy Cotton as joint trustees of the Chaouni Family Trust;
- (h) Agrifields DMCC;
- (i) Tablo Corporation;
- (j) Ennomos Foundation;
- (k) Mr David Mimran; and
- (l) Mr Amit Gupta.

Upon completion of the Major Shareholder Agreement, the maximum voting power of the persons described above will be 58.42% of the issued Shares in the Company. This represents a maximum increase in voting power of 44.08%.

## 5.7.3

**The identity, associations (with the Major Shareholders) and qualifications of any person who is intended to become a Director if Shareholders approve Resolution 1.**

No person is intended to or will become a director of the Company if Shareholders

approve Resolution 1.

5.7.4 **An explanation of the reasons for the proposed acquisition of Shares by the Major Shareholders.**

But for the operation of section 609(7) of the Corporations Act, the Major Shareholders would have acquired a relevant interest in the Major Shareholder Shares following the entry into the Major Shareholder Agreement.

The Major Shareholder Agreement is:

- conditional on Shareholders' approval a resolution for item 7 of section 611 of the Corporations Act;
- does not confer any control over, or power to substantially influence, the exercise of voting rights attached to any of the shares held by Major Shareholders; and
- does not restrict disposal of the shares held by Major Shareholders for more than 3 months from the date of the Major Shareholder Agreement.

The Major Shareholders have entered into the Major Shareholder Agreement to pursue the Transaction.

5.7.5 **When the acquisition of the relevant interest in the Major Shareholder Shares will occur.**

The Major Shareholders will acquire a relevant interest in the Major Shareholder Shares once the resolution under item 7 of section 611 of the Corporations Act is passed.

5.7.6 **Particulars of the terms of the proposed acquisition.**

On 28 June 2019, the Major Shareholders entered into the Major Shareholder Agreement.

Pursuant to the Major Shareholder Agreement, each Major Shareholder agreed that subject to Avenira passing a resolution under item 7 of section 611 of the Corporations Act, it will dispose of its, and will procure that its associates will dispose of their, Shares on completion of the Transaction by virtue of the Buy-Back, and not otherwise dispose of them for a period of not more than 3 months from the date of the Major Shareholder Agreement.

Accordingly, but for the operation of section 609(7) of the Corporations Act, each Major Shareholder, on entering into the Major Shareholders Agreement on 28 June 2019 would have acquired a relevant interest in the Shares of the aggregate number of Major Shareholder Shares.

The Major Shareholder Agreement, is conditional upon Shareholders approving a resolution for item 7 of section 611 of the Corporations Act.

Once the resolution under item 7 of section 611 of the Corporations Act is passed, each Major Shareholder will acquire a relevant interest in the Shares of the aggregate number of Major Shareholder Shares.

5.7.7 **Details of the terms of any other relevant agreement that is conditional upon (or directly or indirectly depends on) Shareholders approval of the proposed acquisition.**

The Major Shareholder Agreement is conditional upon Shareholders approval of the proposed acquisition.

5.7.8 **Major Shareholder's intentions regarding the future of the Company if Shareholders approve Resolution 1.**

The Major Shareholders have advised the Company that they:

- (a) intend to undertake the Transaction which will result in the disposal of the Baobab Phosphate Project and Novaphos Assets;
- (b) have no current intention to inject further capital into the Company;
- (c) other than the transfer of the employment of BMCC executives Lera Grandio and Charles Graham from the Company to BMCC, have no current intentions in respect to the future employment of present employees of the entity;
- (d) intend to complete the Transaction, which will result in assets being transferred between the Company and the Major Shareholders and their associates; and
- (e) intend to enter into the Buy-Back under which the Major Shareholder Shares will be bought back and cancelled by the Company, such that none of the Major Shareholders and their associates hold any relevant interest in the Company and cease to be Shareholders.

**5.7.9 Any intention of the Major Shareholders to significantly change the Company's financial or dividend policies.**

The Major Shareholders have advised the Company that they have no current intention to change the Company's current financial or dividend policies.

**5.7.10 The interests of the Directors in Resolution 1.**

Mr Timonty Cotton is an associate of Baobab Partners LLC.

**5.7.11 Identity of the Directors who approved or voted against the proposal to put Resolution 1 to Shareholders.**

The Independent Directors approved the proposal to put Resolution 1 to Shareholders.

**5.7.12 Recommendation of each Director as to whether Shareholders should approve Resolution 1.**

Refer to Section 4.17.

**5.7.13 An analysis of whether the acquisition is fair and reasonable when considered in the context of the Shareholders other than the Major Shareholders.**

What is fair and reasonable must be judged in all the circumstances of the Transaction. This requires taking into account the likely advantages to Shareholders if Shareholders approve all of the Resolutions and the Transaction is completed, and comparing them with the disadvantages to Shareholders if the Transaction is not completed.

The Independent Expert has concluded that the acquisition of the Major Shareholder Shares the subject of Resolution 1 is not fair but reasonable to Shareholders not associated with the Major Shareholders.

The Company strongly recommends that Shareholders read the Independent Expert's Report in full, a copy of which is contained in Schedule 3.

## **5.8 Directors' Interests and Recommendation**

Refer to Section 4.17.

The Chairperson intends to exercise all available proxies in favour of Resolution 1 except where proxies are received from any Shareholder who is subject to a voting exclusion, in which case the Chairperson will abstain from voting those shares.

## **6. Resolution 2 - Selective Buy-Back**

### **6.1 Background**

Resolution 2 seeks Shareholders approval pursuant to section 257D of the Corporations Act for the Company to undertake the Buy-Back.

### **6.2 Section 257D of the Corporations Act**

The Corporations Act provides that the rules relating to share buy-backs are designed to protect the interests of shareholders and creditors by:

- 6.2.1 addressing the risk of the transaction leading to the company's solvency;
- 6.2.2 seeking to ensure fairness between the shareholders of the company; and
- 6.2.3 requiring the company to disclose all material information.

In particular, Section 257A of the Corporations Act provides that a company may buy back its own shares if:

- 6.2.4 the buy-back does not materially prejudice the company's ability to pay its creditors; and
- 6.2.5 the company follows the procedures laid down in Division 2 of Part 2J.1 of the Corporations Act.

The procedures required differ for each type of buy-back. The Buy-Back is classified as a selective buy-back.

Pursuant to Section 257D(1) of the Corporations Act, a selective share buy-back must be approved by either:

- 6.2.6 a special resolution passed at a general meeting of the Company, with no votes being cast in favour of the resolution by any person whose shares are to be bought back or by their associates; or
- 6.2.7 a resolution agreed to, at a general meeting by all ordinary shareholders.

Pursuant to Section 257D(2) of the Corporations Act, the Company must include with the Notice a statement setting out all information known to the Company that is material to the decision on how to vote on the Resolution 2. However, the Company does not have to disclose information if it would be unreasonable to require the Company to do so because the Company had previously disclosed the information to Shareholders.

Section 257H(3) of the Corporations Act provides that immediately after the registration of the transfer to a company of shares bought back, the shares are cancelled.

### **6.3 Further Details**

Refer to Section 4.8 for further details of the Buy-Back.

### **6.4 Directors' Interests and Recommendation**

Refer to Section 4.17.

The Chairperson intends to exercise all available proxies in favour of Resolution 2 except where proxies are received from any Shareholder who is subject to a voting exclusion, in which case the Chairperson will abstain from voting those shares.

## SCHEDULE 1 - GLOSSARY

**A\$** means Australian dollars.

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

**Avenira Corporate Loan** has the meaning given in Section 4.5.

**Sale Agreement** has the meaning given in Section 4.1.

**Board** means the current board of directors of the Company.

**BFA** means Baobab Fertilizer Africa of Republic.

**BFA Interest** means Avenira's interest in 100% of the issued share capital of Baobab Fertilizer Africa, a company incorporated in Mauritius.

**BFA Loan** has the meaning given in Section 4.5.

**BMCC** means Baobab Mining and Chemicals Corporation SA.

**BMCC Funding Agreement** has the meaning given in Section 4.5.

**BMCC Loan** has the meaning given in Section 4.5.

**Budget** has the meaning given in Section 4.6.4.

**Buy-Back** has the meaning given in Section 4.1(b).

**Buy-Back Agreement** has the meaning given in Section 4.8.

**Buy-Back Shares** means the Shares held by the Buy-Back Shareholders.

**Chairperson** means the chair of the Meeting.

**Company** means Avenira Limited (ACN 116 296 541).

**Consideration** has the meaning given in Section 4.6.3.

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

**Directors** means the current directors of the Company.

**Explanatory Memorandum** means the Explanatory Memorandum accompanying the Notice.

**GBO** means Gadde Bissik Phosphate Operations SUARL.

**General Meeting** or **Meeting** means the meeting convened by the Notice.

**IHP Technology** has the meaning given in Section 4.4.

**Independent Directors** means Messrs Brett Clark and Louis Calvarin.

**Independent Expert** means RSM Corporate Australia Pty Ltd.

**Independent Expert's Report** means the report prepared by the Independent Expert and annexed to this Notice.

**Major Shareholder Agreement** has the meaning given in Section 4.9.

**Major Shareholders** means Tablo Corporation, Baobab Partners and Agrifields DMCC and their associates.

**Major Shareholder Shares** has the meaning given in Section 4.8.

**Notice** or **Notice of Meeting** means this notice of meeting including the Explanatory Memorandum and the Proxy Form.

**Novaphos** has the meaning given in Section 4.3.

**Novaphos Interest** has the meaning given in Section 4.3.

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

**Proxy Form** means the proxy form accompanying the Notice.

**Remaining Conditions Precedent** has the meaning given in Section 4.6.2.

**Resolutions** means the resolutions set out in the Notice, or any one of them, as the context requires.

**Sale Assets** has the meaning given in Section 4.6.1.

**Section** means a section of the Explanatory Memorandum.

**Share** means a fully paid ordinary share in the capital of the Company.

**Shareholder** means a registered holder of a Share.

**Transaction** has the meaning given in Section 4.1.

**US\$** means United States dollars

**WST** means Western Standard Time as observed in Perth, Western Australia.

## SCHEDULE 2 - PRO FORMA

AVENIRA LIMITED - GROUP CONSOLIDATED STATEMENT OF FINANCIAL POSITION	Half Year Dec 2018	Post Transaction
	\$	\$
<b>CURRENT ASSETS</b>		
Cash and cash equivalents	2,258,962	4,326,516
Trade and other receivables	1,192,648	43,020
Inventory	1,365,275	
<b>TOTAL CURRENT ASSETS</b>	<b>4,816,885</b>	<b>4,369,535</b>
<b>NON-CURRENT ASSETS</b>		
Trade and other receivables	1,481,600	1,481,600
Plant and equipment	1,213,355	5,034
Financial assets	15,620	15,620
Capitalised Exploration Expenditure	10,468,404	5,978,000
Capitalised Development Expenditure	50,237,759	-
Other assets	688,767	-
Intangibles	136,151	44,223
<b>TOTAL NON-CURRENT ASSETS</b>	<b>64,241,656</b>	<b>7,524,477</b>
<b>TOTAL ASSETS</b>	<b>69,058,541</b>	<b>11,894,012</b>
<b>CURRENT LIABILITIES</b>		
Trade and other payables	1,541,922	253,786
Provisions	209,178	143,008
Loans and borrowings	1,623,803	-
<b>TOTAL CURRENT LIABILITIES</b>	<b>3,374,903</b>	<b>396,794</b>
<b>NON-CURRENT LIABILITIES</b>		
Provisions	2,522,046	1,289,500
Loans and borrowings	6,681,257	-
Deferred tax liabilities	2,231,428	-
<b>TOTAL NON CURRENT LIABILITIES</b>	<b>11,434,731</b>	<b>1,289,499</b>
<b>TOTAL LIABILITIES</b>	<b>14,809,634</b>	<b>1,686,293</b>
<b>NET ASSETS</b>	<b>54,248,907</b>	<b>10,207,719</b>
<b>EQUITY</b>		
Issued capital	142,270,348	142,280,148
Reserves	27,188,874	17,594,196
Accumulated losses	(118,715,784)	(149,666,625)
Capital and reserves attributable to members of Avenira Ltd	<b>50,743,438</b>	<b>10,207,719</b>
Non-controlling interest	3,505,469	-
<b>TOTAL EQUITY</b>	<b>54,248,907</b>	<b>10,207,719</b>

**SCHEDULE 3 - INDEPENDENT EXPERT'S REPORT**



## AVENIRA LIMITED

Financial Services Guide and Independent Expert's Report

16 August 2019

*We have concluded that the Proposed Transaction is not fair but reasonable*

# FINANCIAL SERVICES GUIDE

16 August 2019

RSM Corporate Australia Pty Ltd ABN 82 050 508 024 ("RSM Corporate Australia Pty Ltd" or "we" or "us" or "ours" as appropriate) has been engaged to issue general financial product advice in the form of a report to be provided to you.

In the above circumstances we are required to issue to you, as a retail client, a Financial Services Guide ("FSG"). This FSG is designed to help retail clients make a decision as to their use of the general financial product advice and to ensure that we comply with our obligations as financial services licensees.

This FSG includes information about:

- who we are and how we can be contacted;
- the financial services that we will be providing you under our Australian Financial Services Licence, Licence No 255847;
- remuneration that we and/or our staff and any associates receive in connection with the financial services that we will be providing to you;
- any relevant associations or relationships we have; and
- our complaints handling procedures and how you may access them.

## Financial services we will provide

For the purposes of our report and this FSG, the financial service we will be providing to you is the provision of general financial product advice in relation to securities.

We provide financial product advice by virtue of an engagement to issue a report in connection with a financial product of another person. Our report will include a description of the circumstances of our engagement and identify the person who has engaged us. You will not have engaged us directly but will be provided with a copy of the report as a retail client because of your connection to the matters in respect of which we have been engaged to report.

Any report we provide is provided on our own behalf as a financial services licensee authorised to provide the financial product advice contained in the report.

## General Financial Product Advice

In our report we provide general financial product advice, not personal financial product advice, because it has been prepared without taking into account your personal objectives, financial situation or needs.

You should consider the appropriateness of this general advice having regard to your own objectives, financial situation and needs before you act on the advice. Where the advice relates to the acquisition or possible acquisition of a financial product, you should also obtain a product disclosure statement relating to the product and consider that statement before making any decision about whether to acquire the product.

## Benefits that we may receive

We charge various fees for providing different financial services. However, in respect of the financial service being provided to you by us, fees will be agreed, and paid by, the person who engages us to provide the report and such fees will be agreed on either a fixed fee or time cost basis. You will not pay to us any fees for our services; the Company will pay our fees. These fees are disclosed in the Report.

Except for the fees referred to above, neither RSM Corporate Australia Pty Ltd, 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 the report.

## Remuneration or other benefits received by our employees

All our employees receive a salary.

## Referrals

We do not pay commissions or provide any other benefits to any person for referring customers to us in connection with the reports that we are licensed to provide.

## Associations and relationships

RSM Corporate Australia Pty Ltd is beneficially owned by the partners of RSM Australia, a large national firm of chartered accountants and business advisers. Our directors are partners of RSM Australia Partners.

From time to time, RSM Corporate Australia Pty Ltd, RSM Australia Partners, RSM Australia and / or RSM Australia related entities may provide professional services, including audit, tax and financial advisory services, to financial product issuers in the ordinary course of its business.

## Complaints resolution

### Internal complaints resolution process

As the holder of an Australian Financial Services Licence, we are required to have a system for handling complaints from persons to whom we provide financial product advice. All complaints should be directed to The Complaints Officer, RSM Corporate Australia Pty Ltd, P O Box R1253, Perth, WA, 6844.

When we receive a written complaint we will record the complaint, acknowledge receipt of the complaint within 15 days and investigate the issues raised. As soon as practical, and not more than 45 days after receiving the written complaint, we will advise the complainant in writing of our determination.

### Referral to External Dispute Resolution Scheme

A complainant not satisfied with the outcome of the above process, or our determination, has the right to refer the matter to the Australian Financial Complaints Authority ("AFCA"). AFCA is an independent dispute resolution scheme that has been established to provide free advice and assistance to consumers to help in resolving complaints relating to the financial services industry.

Further details about AFCA are available at the AFCA website [www.afca.org.au](http://www.afca.org.au). You may contact AFCA directly by email, telephone or in writing at the address set out below.

Australian Financial Complaints Authority  
GPO Box 3  
Melbourne VIC 3001  
Toll Free: 1800 931 678  
Email: [info@afca.org.au](mailto:info@afca.org.au)

Time limits may apply to make a complaint to AFCA, so you should act promptly or consult the AFCA website to determine if or when the time limit relevant to your circumstances expires.

## Contact details

You may contact us using the details set out at the top of our letterhead on page 5 of this report.

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16 August 2019

The Directors  
Avenira Limited  
Suite 19, 100 Hay Street  
SUBIACO WA 6005

Dear Directors

## INDEPENDENT EXPERT'S REPORT ("REPORT")

### 1. Introduction

- 1.1 This Independent Expert's Report (the "Report" or "IER") has been prepared to accompany the Notice of General Meeting and Explanatory Statement ("Notice") to be provided to shareholders for a General Meeting of Avenira Limited ("AEV" or "the Company") to be held in or around 27 September 2019, at which shareholder approval will be sought for (among other things) the sale of its interests in the Baobab Phosphate Project and Novaphos Inc to a consortium of its three largest shareholders (the "Proposed Transaction") consisting of Tablo Corporation, Baobab Partners LLC and Agrifields DMCC ("the Major Shareholders").
- 1.2 The request for approval of the Proposed Transaction is included as Resolution 1 in the Notice, as set out below:  
  
Resolution 1 – Approval for Sale of Main Undertaking  
  
*"That, for the purposes of Listing Rules 10.1 and 11.2 and sections 208 and item 7 of section 611 of the Corporations Act, Shareholders approve the sale of the Sale Assets to the Major Shareholders and the acquisition of the relevant interest in the issued voting shares of the Company by the Major Shareholders (and their associates) up to a maximum voting power of 58.42% which would otherwise be prohibited by section 606(1) of the Corporations Act in accordance with the Sale Agreement and otherwise on the terms and conditions detailed in the Explanatory Memorandum."*
- 1.3 The Proposed Transaction will result in the entire share capital of Baobab Fertilizer Africa ("BFA"), a Mauritian registered company and 100% subsidiary of AEV, being sold to the Major Shareholders along with all equity and debt interests held by AEV in Novaphos Inc, a US- based technology company ("Novaphos").
- 1.4 As consideration for the Proposed Transaction:
  - a) AEV will receive cash consideration of US\$3.0 million;
  - b) the Major Shareholders will waive outstanding director fees of approximately US\$0.28 million;

**THE POWER OF BEING UNDERSTOOD**  
AUDIT | TAX | CONSULTING

RSM Corporate Australia Pty Ltd is beneficially owned by the Directors of RSM Australia Pty Ltd. RSM Australia Pty Ltd is a member of the RSM network and trades as RSM. RSM is the trading name used by the members of the RSM network. Each member of the RSM network is an independent accounting and consulting firm which practices in its own right. The RSM network is not itself a separate legal entity in any jurisdiction.

RSM Corporate Australia Pty Ltd ABN 82 050 508 024 Australian Financial Services Licence No. 255847

- c) the Major Shareholders will forgive the existing AEV Corporate Loan of US\$0.92 million, or assign it to an entity under their control; and
  - d) AEV will undertake a buy-back of all the existing shares held by the Major Shareholders for nil consideration.
- 1.5 The share options held by the Major Shareholders automatically lapse on 24 September 2019, Baobab LLC has agreed to not deal in its options prior to this date.
- 1.6 The Directors of the Company have requested that RSM Corporate Australia Pty Ltd ("RSM"), being independent and qualified for the purpose, express an opinion as to whether the Proposed Transaction is fair and reasonable to shareholders not associated with the Proposed Transaction ("Non-Associated Shareholders").
- 1.7 The request for approval of the Proposed Transaction is included as Resolution 1 in the Notice. Resolution 1 is inter-conditional on the approval of Resolution 2, which sets out the Selective Buy-Back Terms relating to the 617,873,016 shares held by the Major Shareholders.
- 1.8 As the resolutions are inter-conditional, we have considered all resolutions, conditions and terms as part of the Proposed Transaction because, without them, the Proposed Transaction cannot complete.
- 1.9 The ultimate decision whether to approve the Proposed Transaction should be based on each Shareholder's assessment of their circumstances, including their risk profile, liquidity preference, tax position and expectations as to value and future market conditions. If in doubt as to the action they should take with regard to the Proposed Transaction, or the matters dealt with in this Report, Shareholders should seek independent professional advice.

## 2. Summary and conclusion

### Opinion

2.1 In our opinion, and for the reasons set out in Sections 14 and 15 of this Report, the Proposed Transaction is **not fair but reasonable** to the Non-Associated Shareholders of AEV.

### Approach

2.2 In assessing whether the Proposed Transaction is fair and reasonable to the Non-Associated Shareholders, we have considered Australian Securities and Investment Commission (“ASIC”) Regulatory Guide 111 – Content of Expert Reports (“RG 111”), which provides specific guidance as to how an expert is to appraise transactions.

2.3 In our approach, we have considered the overall impact on the Non-Associated Shareholders of the Proposed Transaction. If approved, the Non-Associated Shareholders will hold a 100% interest in AEV, which will retain the Wonarah Phosphate Project in the Northern Territory and be debt-free. The Non-Associated Shareholders will no longer have any interest in the Baobab Phosphate Project in Senegal or Novaphos, other than the exclusive rights to use the technology in Australia.

2.4 Therefore, we have considered whether or not the Proposed Transaction is “fair” to the Non-Associated Shareholders by assessing and comparing:

- The Fair Market Value of a Share in AEV prior to the Proposed Transaction; with
- The Fair Market Value of a Share in AEV immediately post completion of the Proposed Transaction,

and, considered whether the Proposed Transaction is “reasonable” to the Non-Associated Shareholders by undertaking an analysis of the other factors relating to the Proposed Transaction which are likely to be relevant to the Non-Associated Shareholders in their decision of whether or not to approve the Proposed Transaction.

2.5 Further information on the approach we have adopted in assessing whether the Proposed Transaction is “fair” and “reasonable” is set out at Section 4 of this Report.

### Fairness

2.6 Our assessed values of an AEV Share prior to and immediately after the Proposed Transaction are summarised in the table and figure below.

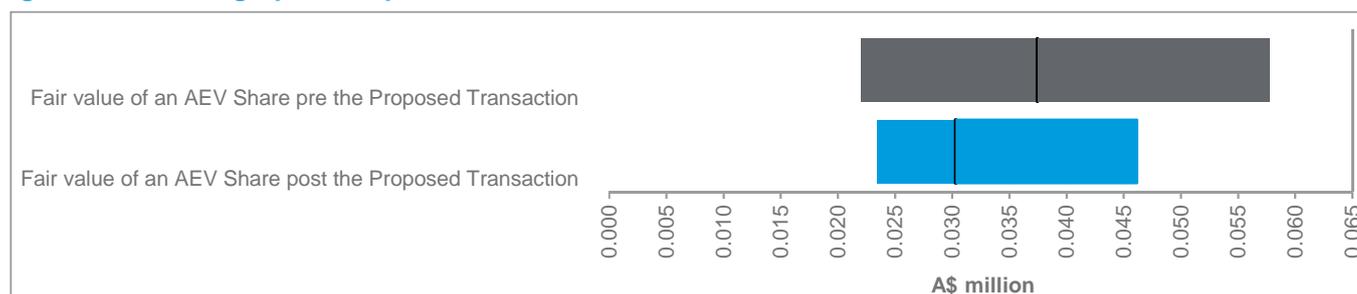
**Table 1 Assessment of fairness**

Assessment of fairness A\$	Ref.	Value per Share		
		Low	Preferred	High
Fair value of an AEV Share pre the Proposed Transaction	Section 11	0.0220	0.0374	0.0568
Fair value of an AEV Share post the Proposed Transaction	Section 13	0.0235	0.0303	0.0462

Source: RSM analysis

2.7 We have summarised the values included in the table above in the chart below.

**Figure 1 Fairness graphical representation**



Source: RSM analysis

- 2.8 The chart above indicates that the range of values of an AEV Share post the Proposed Transaction lies within the range of values of an AEV Share prior to the Proposed Transaction.
- 2.9 We note that the ranges of values are wide. RG 111 states that when a significant range of values exists, an expert should prominently explain in its expert report what factors create this uncertainty. The range of values above is driven by a wide range of values attributed to the mineral assets of AEV. Shareholders are advised to read the independent specialist report attached at Appendix D and with specific reference to the valuation summary at Table ES-1 in that report. It is not uncommon to have a wide range of values for exploration and early stage mining assets due to the uncertainty around successful exploitation. In order to reduce the uncertainty of a wide range of values, the independent specialist has included a preferred value in its report. We have placed greater reliance on the preferred value for the purposes of our assessment of fairness.
- 2.10 In accordance with the guidance set out in ASIC RG 111, and in the absence of any other relevant information, we consider the Proposed Transaction to be not fair to the Non-Associated Shareholders of AEV. We have reached this conclusion based on the analysis of the preferred value post the Proposed Transaction of \$0.0303 being marginally lower than the preferred value prior to the Proposed Transaction of \$0.0374.

## Reasonableness

- 2.11 RG 111 establishes that an offer is reasonable if it is fair. It might also be reasonable if, despite not being fair, there are sufficient reasons for security holders to accept the offer in the absence of any higher bid before the offer closes. As such, we have also considered the following factors in relation to the reasonableness aspects of the Proposed Transaction:
- The future prospects of the Company if the Proposed Transaction does not proceed; and
  - Any other commercial advantages and disadvantages to the Non-Associated Shareholders as a consequence of the Proposed Transaction proceeding.

### ***Future Prospects of AEV if the Proposed Transaction does not Proceed***

- 2.12 If the Proposed Transaction is not approved by Shareholders, the Binding Agreement with the Major Shareholders will be terminated. Upon termination of the Binding Agreement, the US\$1.8 million working capital loan provided by the Major Shareholders to BMCC ("BMCC Loan") and the US\$0.3 million Working Capital Supplement Facility provided by the Major Shareholders to AEV become immediately due and payable and BMCC, which will remain a subsidiary of AEV, will be liable for any tax liabilities.
- 2.13 Without raising additional funds or ongoing support from the Major Shareholders, the Directors of AEV believe that there would be significant uncertainty regarding the Company's ability to continue as a going concern and as a result it may enter voluntary administration.

2.14 The key advantages of the Proposed Transaction are:

Advantage	Details
Settlement of existing debts	The Proposed Transaction will eliminate all debt of AEV, including the AEV Corporate Loan and accrued directors' fees. The Company does not currently have the capacity to repay these debts without additional capital raising or asset disposals.
Non-Associated Shareholders gain 100% interest in AEV with no single substantial shareholder	If the Proposed Transaction is approved, the Non-Associated Shareholders will hold 100% of the Company with no single shareholder holding more than 12.5% of the issued capital. This could increase the attractiveness of the Company to other investors.
Cease financial burden relating to the Baobab Phosphate Project	If the Proposed Transaction is approved, AEV will cease to have the burden of financial obligations it would otherwise have in relation to running the Baobab Phosphate Project and ongoing costs of the Company will therefore reduce significantly.
Removal of exposure to Senegalese tax liabilities (known and potential)	In accordance with the Binding Agreement, any pre-completion tax liabilities (including those associated with the outcome of the Senegalese Government's tax audit of BMCC) will remain a liability of BMCC and GBO following completion of the Proposed Transaction. Accordingly, AEV will not be exposed to any further tax liabilities in Senegal which may arise in relation to the Baobab Phosphate Project operations.
Improved opportunity to progress the Wonarah Project and/or seek new investment opportunities	The Proposed Transaction will result in AEV holding cash reserves of approximately \$4 million and no debt, this will enable the Company to continue as a going concern, make further investments in the Wonarah Project and/or seek new investment opportunities in order to add value to shareholders.

2.15 The key disadvantages of the Proposed Transaction are:

Disadvantage	Details
It is not fair	We have assessed that the Proposed Transaction is not fair. However, we note that the range of values post completion lies within the range of values prior to the Proposed Transaction.
No participation in future benefits from the Baobab Phosphate Project or Novaphos	The Company will no longer have any interest in the Baobab Phosphate Project or Novaphos (other than the Australian licence agreement), and therefore will not be able to participate in any potential future value created by those assets.
Risk that the Company will not successfully acquire suitable investment opportunities	There is a risk that AEV may not be able to locate and acquire suitable investment opportunities, or that those investments will not align with the risk profiles of shareholders.

2.16 In our opinion, the position of the Non-Associated Shareholders of AEV if the Proposed Transaction is approved is more advantageous than if the Proposed Transaction is not approved. Therefore, in the absence of any other relevant information and/or a superior offer, we consider that the Proposed Transaction is reasonable for the Non-Associated Shareholders of AEV.

### 3. Summary of Proposed Transaction

#### Overview

- 3.1 On 1 July 2019, AEV announced that it had entered into a binding agreement (“Agreement”) with a consortium comprising its three largest shareholders, Baobab Partners LLC, Tablo Corporation and Agrifields DMCC (the “Major Shareholders”) to sell or assign its rights and interests in the following assets:
- Baobab Fertilizer Africa (“BFA”) (a wholly owned subsidiary of the Company) which has an 80% interest in Baobab Mining Chemicals Corporation SA (“BMCC”), the owner of the Baobab Phosphate Project located in the Republic of Senegal;
  - Equity and debt interests held by AEV and Avenir Holdings LLC in Novaphos and the exclusive Senegal Licence Agreement to use Novaphos’ technology (AEV will retain the Australian Licence Agreement);
  - Intellectual Property associated with the Baobab Phosphate Project and Novaphos;
  - The intercompany loan from AEV to BMCC; and
  - The intercompany loan from AEV to BFA.
- (together “the Assets”)
- 3.2 As consideration for the Proposed Transaction:
- a) AEV will receive cash consideration of US\$3.0 million (“Cash Consideration”);
  - b) the Major Shareholders will waive outstanding director fees of approximately US\$0.28 million (“Directors Fees”);
  - c) the Major Shareholders will forgive or assign the existing AEV Corporate Loan of US\$0.92 million (“AEV Corporate Loan”) to an entity under their control; and
  - d) AEV will undertake a buy-back of all the existing shares held by the Major Shareholders for nil consideration (“Buy-Back”).
- 3.3 The share options held by the Major Shareholders automatically lapse on 24 September 2019, Baobab LLC has agreed to not deal in its options prior to this date. Together with the Buy-Back, this effectively removes all equity interests held by the Major Shareholders in AEV post the Proposed Transaction.
- 3.4 At AEV’s request, the Major Shareholders have provided the Company with a Working Capital Supplement Facility of up to US\$0.3 million to assist with any shortfall in funding to reach completion of the Proposed Transaction. Any drawdowns under this facility will be deducted from the Cash Consideration; at the date of this report we understand that US\$0.1 million had been drawdown.

#### Key conditions of the Proposed Transaction

- 3.5 Completion of the Proposed Acquisition is subject to and conditional upon a number of conditions precedent, of which the remaining unsatisfied conditions at the date of this report are:
- The parties obtaining all necessary third party approvals and consents for the transfer of the Assets;
  - AEV and the Major Shareholders entering into an agreement to amend and restate the licence agreement granting the exclusive right to use the Novaphos technology in Australia;
  - Shareholders approving the Proposed Transaction resolutions;
  - No material adverse changes in the Assets occurring;

- No event of default on the AEV Corporate Loan; and
- No event of default on the BMCC Funding Agreements between the Major Shareholders and BMCC.

### **Rationale for the Proposed Transaction**

- 3.6 To consider the Proposed Transaction, AEV formed a committee comprising of Brett Clark (Chairman) and Louis Calvarin (former CEO) (together “the Independent Directors”) who believe there are key reasons for AEV to undertake the transaction.
- 3.7 The Independent Directors consider that the Proposed Transaction provides funding certainty to AEV which will give the Company the ability to become debt-free and receive cash consideration as well as deliver greater financial certainty for Shareholders than otherwise achievable.
- 3.8 The Company has contributed in excess of \$30 million of funds to the Baobab Phosphate Project and the Directors estimate that a further \$11-14 million will be required to advance the project through a Bankable Feasibility Study to final investment decisions. The Company has been actively seeking additional investment from third parties to fund working capital and the project activities but at the date of this report had not been able to secure any third party funding.
- 3.9 At the time of this report, the Company, BFA and BMCC have approximately \$8.5 million of external debt and BMCC has recently received a statement from the Senegalese Government's tax office outlining the results of its recent audit of BMCC which identified US\$1.6 million in additional tax liabilities. BMCC is in the process of appealing the results of this audit, which may take up to 6 months. Subject to BMCC's payment of a holding amount, the tax liabilities will be payable at the end of the appeal process. The external debt of \$8.5m, the subject of the AEV Corporate Loan, the BMCC Loan and a short-term credit line facility to GBO, is not presently due and payable.
- 3.10 In accordance with the Binding Agreement, any pre-completion tax liabilities (including those associated with the outcome of the Senegalese Government's tax audit of BMCC) and the external debt detailed above will remain owing by BMCC and GBO following completion of the Proposed Transaction. Accordingly, AEV will be debt free.
- 3.11 If the Proposed Transaction is not approved by Shareholders, the BMCC Loan and the Working Capital Supplement Facility become immediately due and payable and BMCC, which will remain a subsidiary of AEV, will be liable for any tax liabilities. Without raising additional funds or on-going support from the Major Shareholders, the Company may not be able to continue as a going concern and may enter voluntary administration.
- 3.12 The Proposed Transaction will provide AEV with a platform to progress the retained Wonarah Phosphate Project, as well as allow the Company to consider other investment opportunities.

### **AEV Intentions following the Proposed Transaction**

- 3.13 Following completion of the Proposed Transaction, AEV's main undertaking will be the Wonarah Project, the Company will retain the right to use the Novaphos Technology in Australia and hold approximately \$4 million of cash reserves with no interest-bearing debt.
- 3.14 If the Proposed Transaction is approved, the Directors intend to undertake a review of the Wonarah Project to determine the potential value it may offer to shareholders, and investigate other opportunities, primarily in the mining sector.

## Impact of Proposed Transaction on AEV's capital structure

3.15 The table below sets out a summary of the capital structure of AEV prior to and post the Proposed Transaction.

**Table 2 Share structure of AEV prior to and post the Proposed Transaction**

	Prior to Proposed Transaction		Post Proposed Transaction	
<b>Shares on issue:</b>				
Non-Associated Shareholders	440,754,926	41.6%	440,754,926	100.0%
Major Shareholders	617,873,316	58.4%	-	0.0%
<b>Total undiluted Shares on issue</b>	<b>1,058,628,242</b>	<b>100%</b>	<b>440,754,926</b>	<b>100%</b>
<b>Options:</b>				
Non-Associated Shareholders	-	0.0%	-	0.0%
Major Shareholders	80,000,000	100.0%	-	0.0%
<b>Total Options on issue</b>	<b>80,000,000</b>	<b>100%</b>	<b>-</b>	<b>0%</b>
<b>Fully diluted position:</b>				
Non-Associated Shareholders	440,754,926	38.7%	440,754,926	100.0%
Major Shareholders	697,873,316	61.3%	-	0.0%
<b>Total diluted Shares on issue</b>	<b>1,138,628,242</b>	<b>100%</b>	<b>440,754,926</b>	<b>100%</b>

Source: Company

3.16 The Non-Associated Shareholders will hold 100% of AEV post the Proposed Transaction, currently 41.6% on an undiluted basis.

## 4. Scope of the Report

### ASX Listing Rules

- 4.1 ASX Listing Rule 10.1 states that an entity must ensure that neither it, nor any of its child entities, acquires a substantial asset from, or disposes of a substantial asset to, a substantial shareholder, a related party or any of its associates without the approval of holders of the entity's ordinary securities.
- 4.2 The Purchasers of the Assets, being Baobab Partners LLC, Tablo Corporation and Agrifields DMCC collectively currently hold a relevant interest of 58.4% in AEV. Therefore, for the Purposes of the ASX Listing Rules, the Purchasers are substantial shareholders of the Company.
- 4.3 An asset is considered substantial "if its value, or the value of the consideration for it is 5% or more of the equity interest of the entity as set out in the latest financial statements given to the ASX".
- 4.4 The equity of AEV as at 31 December 2018, as recorded in the Company's Financial statements lodged for the half year ended 31 December 2018 was approximately \$54.2 million. We have assessed the value of the Assets to exceed 5% of the value of the Company's equity.
- 4.5 ASX Listing Rule 10.10 states that the notice for the shareholders' meeting required under ASX Listing Rule 10.1 must include a report on the transaction from an independent expert. The report must state whether, in the expert's opinion, the transaction is fair and reasonable to the Non-Associated Shareholders.

### Corporations Act

- 4.6 Section 606 of the Act prohibits a person from acquiring a relevant interest in the issued voting shares of a public company if the acquisition results in that person's voting interest in the company increasing from a starting point that is below 20% to an interest that is above 20%.
- 4.7 Under Item 7 of Section 611 of the Act, the prohibition contained in Section 606 does not apply if the acquisition has been approved by the Non-Associated Shareholders of the Company.
- 4.8 On 28 June 2019, the Major Shareholders entered into an agreement to jointly pursue the Proposed Transaction. In accordance with such agreement and subject to AEV passing a resolution under Item 7 of Section 611 of the Act, each Major Shareholder agreed to dispose of its, and procure its associates to dispose of their, shares in AEV.
- 4.9 Accordingly, but for the operation of section 609(T) of the Act, each Major Shareholder will acquire a relevant interest in 58.4% of AEV prior to the buy-back occurring.
- 4.10 Section 611(7) of the Act states that shareholders must be given all information that is material to the decision on how to vote at the meeting. ASIC Regulatory Guide 111 advises the requirement to commission an Independent Expert's Report in such circumstances and provides guidance on the content.
- 4.11 Accordingly, AEV is to hold a meeting of its Shareholders where it will seek approval for the Proposed Transaction and the Company has engaged RSM, to prepare a report which sets out our opinion as to whether the Proposed Transaction is fair and reasonable to Non-Associated Shareholders.

### Basis of evaluation

- 4.12 In determining whether the Proposed Transaction is "fair" and "reasonable" we have given regard to the views expressed by the ASIC in RG 111.
- 4.13 RG 111 provides ASIC's views on how an expert can help security holders make informed decisions about transactions. Specifically, it gives guidance to experts on how to evaluate whether or not a proposed transaction is fair and reasonable.

- 4.14 RG 111 states that the expert's report should focus on:
- the issues facing the security holders for whom the report is being prepared: and
  - the substance of the transaction rather than the legal mechanism used to achieve it.
- 4.15 In our approach, we will consider the overall impact on the Non-Associated Shareholders of the Proposed Transaction. If approved, the Non-Associated Shareholders will hold a 100% interest in AEV, which will retain the Wonarah Phosphate Project in the Northern Territory and be debt-free.
- 4.16 Consistent with the guidelines in RG 111, in assessing whether the Proposed Transaction is fair and reasonable to the Non-Associated Shareholders, the analysis undertaken we have undertaken is follows:
- A comparison of the fair value of an ordinary share in AEV prior to and immediately following the Proposed Transaction - fairness; and
  - a review of other significant factors which Non-Associated Shareholders might consider prior to approving the Proposed Transaction – reasonableness.
- 4.17 The other significant factors to be considered include:
- the future prospects of the Company if the Proposed Transaction does not proceed; and
  - any other commercial advantages and disadvantages to the Non-Associated Shareholders as a consequence of the Proposed Transaction proceeding.
- 4.18 Our assessment of the Proposed Transaction is based on economic, market and other conditions prevailing at the date of this Report.

## 5. Industry overview

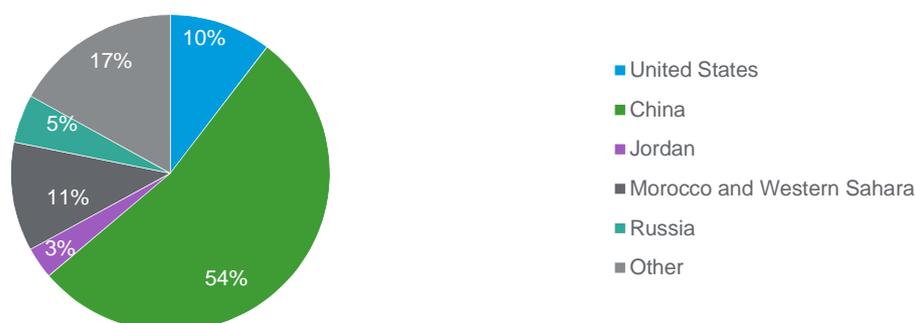
### Phosphate Mining

- 5.1 AEV is predominantly engaged in the exploration and development of phosphate minerals in Senegal and the Northern Territory.
- 5.2 Phosphate rock is a non-renewable mineral resource with a high concentration of phosphate minerals that is primarily used in fertilizer manufacturing.
- 5.3 High phosphate prices during the first half of 2018 had initially led to an expectation of increased investment in phosphate exploration and mining activities, however weaker demand and high global supply led to a sharp decline in prices in subsequent periods.

### Current Production and reserves

- 5.4 According to recent US Geological estimates, China is currently the world's largest consumer, manufacturer and exporter of phosphate and accounted for approximately 54% of phosphate rock production in 2017. The top five phosphate rock producers account for approximately 83% of global phosphate mine production Global production of phosphate is estimated to decrease by approximately 1% between 2017 and 2018.
- 5.5 The figure below shows the global phosphate production split between countries in 2017:

**Figure 2 Global phosphate production - 2017**



- 5.6 In 2017 Morocco and the Western Sahara Region had the highest amount of phosphate minerals reserves globally with approximately 71% reserves. The world's phosphate resources are estimated to be in excess of 300 billion tonnes.
- 5.7 Phosphate rock resources predominantly occur as sedimentary marine phosphorites, with the largest deposits found in China, Northern Africa, the Middle East and United States.

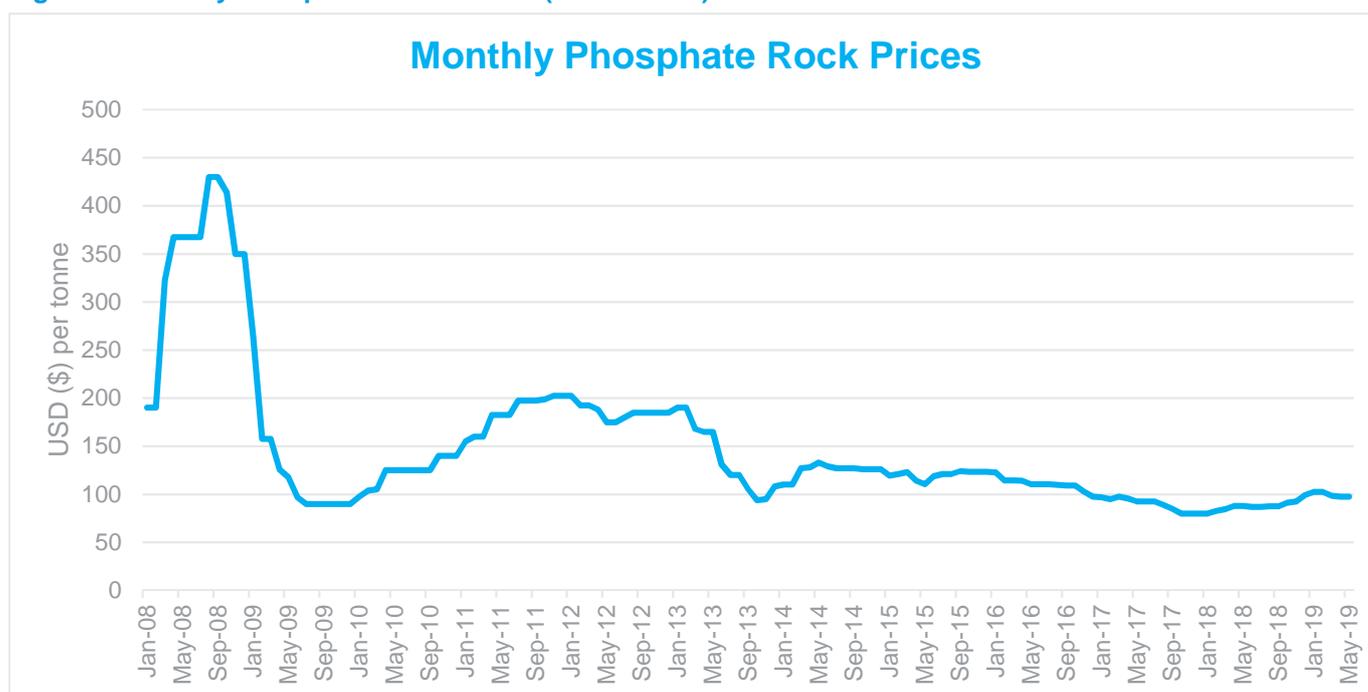
## Key External Drivers

- 5.8 The key external driver as identified by IBISWorld, an Australian industry research provider, is the demand for fertiliser manufacturing.
- 5.9 Demand for phosphate rock is directly affected by the demand from fertiliser manufacturing, which is closely linked to population growth and increasing agricultural output. An increase in fertiliser production and associated demand will generally have a positive effect on the phosphate industry and its overall revenue growth. It is expected that the demand for fertilizer manufacturing will increase during FY19.

## Historical Phosphate Prices

- 5.10 The price of phosphate rock is determined by the concentration of phosphate minerals that it contains. Although the concentration of phosphate can vary, the price of Moroccan phosphate rock is generally used as a benchmark pricing index, which contains 70% BPL (bone phosphate of lime). BPL is used as a measure of phosphate content.
- 5.11 A summary of historical phosphate prices commencing January 2008 is shown in the figure below:

**Figure 3 Monthly Phosphate Rock Prices (2008 – 2019)**



- 5.12 The price of phosphate rock was heavily affected by the GFC, peaking at US\$430 per tonne in August 2008 before falling to US\$90 per tonne in July 2009. Since then, the price has reached a high of US\$202.50 in November 2011 and fallen to US\$94 in October 2013. The price of phosphate rock has trended upwards since January 2018 and was US\$97.50 as at May 2019.

## Outlook

- 5.13 Environmental regulations in China are expected to cause a decrease in its production of phosphate rock during 2019. It is expected that other countries will increase their phosphate production over the coming years. This is likely to be evident in the Middle East and North Africa, where it is cheaper to produce phosphate.

- 5.14 According to the US Geological Survey, Worldwide phosphate production capacity is forecast to increase from 148 million tonnes in 2018 to 169 million tons in 2022, excluding capacity for China. Production of marketable phosphate rock in China was believed to be between 80 to 85 million tons. This figure is lower than official production statistics as analysts believe that the official statistics also contain crude ore production.
- 5.15 Increases in global production capacity are expected in Africa and the Middle East, with phosphate projects in place in Egypt, Jordan, Morocco, Saudi Arabia and South Africa.

## 6. Profile of Avenira Limited

### Background

- 6.1 AEV is an Australian public company listed on the ASX and based in Subiaco, Western Australia. The Company has historically focused on the exploration and development of mineral deposits in Australia and Africa.
- 6.2 AEV's primary assets consist of:
- 80% interest in the Baobab Phosphate Project located in the Republic of Senegal via its wholly owned subsidiary BFA;
  - 100% interest in the Wonarah Phosphate Project located in the Northern Territory; and
  - 6.54% minority interest in Novaphos, a US-based technology company.
- 6.3 The Company's group structure as at 30 June 2019 is shown in the figure below:

**Figure 4 AEV Group Structure – Prior to the Proposed Transaction**

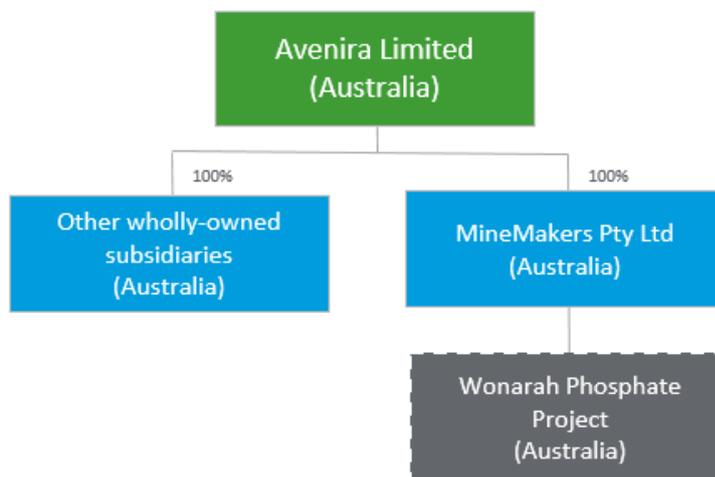


- 6.4 The remaining 20% shareholding in BMCC is held by Mimran Natural Resources (a wholly owned subsidiary of Tablo Corporation, one of the Major Shareholders).
- 6.5 AEV's other wholly owned subsidiaries comprise the following entities:

Subsidiary	Country of incorporation
Bonaparte Diamond Mines Pty Ltd	Australia
Minemakers (Salt) Pty Ltd	Australia
Minemakers (Gold) Pty Ltd	Australia
Minemakers (Nickel) Pty Ltd	Australia
Minemakers (Iron) Pty Ltd	Australia
Avenira Holdings LLC	USA

6.6 If the Proposed Transaction is completed, AEV will dispose of its entire interest in BFA and its minority interest in Novaphos. The group structure post the Proposed Transaction will therefore be as shown below:

**Figure 5 AEV Group Structure – Post the Proposed Transaction**



### Baobab Phosphate Project

- 6.7 The Baobab Phosphate Project is located approximately 140km east of the Port of Dakar, in the Republic of Senegal, West Africa.
- 6.8 BMCC was granted a Small Mine Permit in May 2015 which covered an area of thick and high-grade mineralisation within the Gidde Bissik prospect located within the Baobab Project Area. The focus of AEV’s exploration since it was granted the Small Mine Permit has been within and adjacent to the Gidde Bissik Prospect.
- 6.9 On 22 October 2018, BMCC received an Exploitation Permit for the Gadde Bissik prospect which covers an area of 75km<sup>2</sup> surrounding the former Gadde Bissik Small Mine Permit and is valid for an initial 20-year renewable period. As part of the Exploration Permit grant, the Senegalese Government is entitled to hold a 10% free-carried interest in the legal entity holding the Permit however at the date of this report, this entitlement has not been exercised.
- 6.10 BMCC also holds an Exploration Licence for the current area of 1,163km<sup>2</sup> surrounding the Exploitation Licence area. This licence was renewed on 27 July 2017 and is due to expire on 27 July 2020; the licence is not renewable. However, if an economically exploitable resource is proven, the holder of the licence may obtain an exploitation permit to continue activities.
- 6.11 Mining operations were conducted at the Baobab Phosphate Project in 2016 and 2017, with approximately 100,000 tonnes of phosphate rock produced from the Small Mine Permit area. BMCC completed an initial concept study followed by a staged feasibility process to optimise and expand the previous operations, prior to the cessation of processing in September 2018.
- 6.12 The results of the Stage 1 Feasibility Study were released to the ASX in March 2019 and activities are ongoing to progress to a Phase 2 Bankable Feasibility Study (“BFS”). The Directors estimate that further funding of \$11-14 million is required to advance the Baobab Phosphate Project through the BFS and to a final investment decision.
- 6.13 Further details of the Baobab Phosphate Project are contained in an independent specialist report attached at Appendix D.

## Wonarah Project

- 6.14 The Wonarah Project is located in the Northern Territory and holds one of the largest P<sub>2</sub>O<sub>5</sub> deposits in Australia. It comprises of four exploration licences covering an area of 247.8km<sup>2</sup> and is situated approximately 1,300 kilometres from the port of Darwin.
- 6.15 Due to geographic location, phosphate grade and current phosphate commodity prices, the Company has not pursued exploration at Wonarah Project in recent years as the focus has been on advancing the Baobab Phosphate Project.
- 6.16 If the Proposed Transaction is approved, AEV will undertake a review of the Wonarah Project and recommence exploration activities if there is potential value to shareholders.
- 6.17 Further details of the Wonarah Project are contained in an independent specialist report attached at Appendix D.

## Directors

- 6.18 The directors of AEV are summarised in the table below.

**Table 3 AEV Directors**

Name	Title	Experience
Dr Louis Calvarin	Director	Dr Calvarin has over 30 years' experience focused on operational excellence and optimisation in various process industries, including basic chemicals, speciality chemicals and the fertilizer industry. In the latter, he has extensive experience across the full value chain including leading plant operations, procurement, ocean logistics and rock transformation into fertiliser products. Dr Calvarin is the former CEO of AEV.
Mr Brett Clark	Non-Executive Chairman	Mr Clark has 25 years' experience in the mining and energy sectors in funding, operations and advisory. He has extensive leadership experience from board positions at both listed and unlisted companies. His expertise in the industry ranges from project development, operations, sales and marketing in minerals and upstream oil and gas across Africa, Asia, Latin America and North America.
Mr Timothy Cotton	Non-Executive Director	Mr Cotton has over 20 years' experience in the phosphate mining and fertiliser sector, with a focus on business and project development, strategic transactions, mergers and acquisitions and finance. He is currently Vice Chairman and a principal in the Agrifos Group, and a director of Zalagh Holding S.A.  Mr Cotton is also a Director and the CEO of Novaphos Inc.

Source: Company

## Financial information of AEV

- 6.19 The information in the following section has been extracted from the following sources:
- Year ended 30 June 2019 from the management prepared consolidation schedule;
  - Half-year ended 31 December 2018 from the reviewed financial statements of the Company; and
  - Year ended 30 June 2017 from the audited financial statements of the Company.
- 6.20 EY, the auditor of AEV, has issued an unqualified review opinion on the financial statements for the half year ended 31 December 2018. An emphasis of matter was drawn to material uncertainty regarding the Company's ability to secure additional working capital that may cast significant doubt on the Company's ability to continue as a going concern.

- 6.21 The audit of the year ended 30 June 2019 had not been completed at the date of this report and therefore all financial information presented in relation to this period is subject to audit adjustments.
- 6.22 The consolidated financial statements incorporate the assets and liabilities of all subsidiaries of AEV, fully consolidated from the date on which the Company gains control. Non-controlling interests in subsidiaries are shown separately in the financial statements.

## Financial performance

- 6.23 The following table sets out a summary of the financial performance of AEV for the year ended 30 June 2019, the half year ended 31 December 2018 and the year ended 30 June 2018.

**Table 4 AEV historical financial performance**

A\$000's	Ref	Year ended 30-Jun-19 Management	6 mths ended 31-Dec-18 Reviewed	Year ended 30-Jun-18 Audited
Revenue	6.25	760	41	84
Depreciation and amortisation expense		(390)	(194)	(365)
Salaries and employee benefits expense		(1,670)	(889)	(1,874)
Exploration expenditure		-	-	(115)
Impairment of exploration and evaluation expenditure	6.26	(55)	(26)	(110)
Impairment of mine development expenditure	6.27	(4,584)	(4,319)	(5,863)
Reversal of provision for doubtful debts/(doubtful debts)		(1,732)	(198)	3,296
Interest expense		(35)	-	-
Share based payment expense		41	(21)	(61)
Net foreign currency gain/(loss)		215	102	(148)
Administrative and other expenses		(5,534)	(1,435)	(2,486)
<b>Loss before income tax expense</b>	<b>6.24</b>	<b>(12,984)</b>	<b>(6,940)</b>	<b>(7,642)</b>
Income tax benefit		1,080	1,080	1,466
<b>Loss for the period</b>		<b>(11,904)</b>	<b>(5,860)</b>	<b>(6,176)</b>
Exchange differences on translation of foreign operations		1,077	1,225	2,627
Net fair value gain/(loss) on investment in equity instruments		(16)	(16)	-
<b>Comprehensive Loss for the year</b>		<b>(10,842)</b>	<b>(4,650)</b>	<b>(3,549)</b>

Source: Company Financials

- 6.24 AEV made a loss before tax of \$12.98 million for the year ended 30 June 2019, \$6.94 million and \$7.6 million for the half year ended 31 December 2018 and year ended 30 June 2018 respectively. This is stated before losses attributed to non-controlling interests in BMCC.
- 6.25 Revenue relates primarily to interest income. Any revenue derived from the sale of processed phosphate rock previously mined at the Baobab Phosphate Project is offset against the capitalised development costs until the project is in commercial production.
- 6.26 The impairment of exploration and evaluation expenditure for the half year ended 31 December 2018 resulted from a valuation review of the Wonarah Project conducted by Optiro. The fair market value of the Project was assessed within a range of \$6.1 million and \$10.7 million, however due to delays in IHP technology and low exploration expenditure, the Directors considered the low end of the range was most representative of the fair value less cost of disposal.

- 6.27 The impairment of mine development expenditure of \$4.32 million for the half-year ended 31 December 2018 was as a result of an updated valuation on the Baobab Phosphate Project conducted by Optiro which stated that the value of the Project lay within a range of \$35.8 million and \$78.9 million with a preferred midpoint of \$55.5 million.

## Financial position

- 6.28 The table below sets out a summary of the financial position of AEV as at 30 June 2019, 31 December 2018 and 30 June 2018.

**Table 5 AEV historical financial position**

A\$000's	Ref	30-Jun-19 Management	31-Dec-18 Reviewed	30-Jun-18 Audited
<b>Current assets</b>				
Cash and cash equivalents	6.30	301	2,259	3,679
Trade and other receivables	6.30	425	1,193	969
Inventories	6.31	1,497	1,365	2,286
<b>Total Current Assets</b>		<b>2,222</b>	<b>4,817</b>	<b>6,935</b>
<b>Non-current assets</b>				
Trade and other receivables	6.32	1,482	1,482	1,482
Investment in equity instruments		16	16	31
Plant and equipment		1,058	1,213	1,335
Capitalised exploration and evaluation expenditure	6.33	10,804	10,468	10,019
Capitalised mine development expenditure	6.34	50,238	50,238	51,407
Intangible assets		123	136	142
Other assets		674	689	684
<b>Total Non-Current Assets</b>		<b>64,394</b>	<b>64,242</b>	<b>65,099</b>
<b>Total Assets</b>		<b>66,617</b>	<b>69,059</b>	<b>72,034</b>
<b>Current liabilities</b>				
Trade and other payables	6.35	4,071	1,542	1,960
Provisions		203	209	211
Loans and borrowings	6.36	4,289	1,624	804
<b>Total Current Liabilities</b>		<b>8,563</b>	<b>3,375</b>	<b>2,975</b>
<b>Non-current liabilities</b>				
Provisions	6.40	1,884	2,522	2,483
Loans and borrowings	6.36	5,932	6,681	7,215
Deferred tax liabilities	6.41	2,231	2,231	3,221
<b>Total Non-Current Liabilities</b>		<b>10,048</b>	<b>11,435</b>	<b>12,919</b>
<b>Total Liabilities</b>		<b>18,611</b>	<b>14,810</b>	<b>15,894</b>
<b>Net Assets</b>	<b>6.29</b>	<b>48,006</b>	<b>54,249</b>	<b>56,139</b>
<b>Equity</b>				
Issued capital		142,280	142,270	139,480
Reserves		27,008	27,189	26,235

Accumulated losses		(123,581)	(118,716)	(113,993)
Non-controlling interest	6.42	2,298	3,505	4,417
<b>Total Equity</b>		<b>48,006</b>	<b>54,249</b>	<b>56,139</b>

Source: Company Financials

- 6.29 As at 30 June 2019 AEV had net assets of \$48.0 million primarily comprising capitalised mine development expenditure.
- 6.30 The Company held \$0.3 million of cash at 30 June 2019. Trade and other receivables primarily relate to security deposits held for Bargny Port in Senegal at 30 June 2019.
- 6.31 At 30 June 2019 AEV held inventories of \$1.5 million. As at 31 December 2018, Ore inventory carried at cost was \$3.4 million of which its net realisable value was \$1.3 million. The difference between the net realisable value and cost was transferred to capitalised mine development expenditure pending commencement of commercial production.
- 6.32 Non-current trade and other receivables of \$1.48 million as at 30 June 2019 relate solely to security deposits held by the Company in relation to environmental provisions at the Wonarah Project. In addition, AEV holds convertible promissory notes with Novaphos which were entered into on July 2016 and July 2017 and accrue interest at 12% per annum. The notes mature at the earlier of liquidation, dissolution or winding up of the company, or either 15 February 2020 or Novaphos's receipt of an aggregate amount of US\$6.0 million from Stonecutter Phosphates LLC. AEV records a provision for impairment against the full value of the notes, being \$2.35 million at 30 June 2018.
- 6.33 At 30 June 2019, AEV had recorded \$10.8 million of capitalised exploration and evaluation expenditure. This amount consisted of the costs incurred in relation to both the Wonarah and Baobab Phosphate Projects. Exploration and evaluation costs that relate to pre-feasibility are accumulated and carried forward where the right of the tenure if the area of interest is current and are expected to be recouped through sale or successful development and exploitation of the area of interest.
- 6.34 Capitalised mine development expenditure of \$50.2 million at 30 June 2019 represents costs incurred in preparing the Baobab Phosphate Project for production. This includes plant and equipment construction, stripping and waste removal costs incurred before commercial production commences. Movements in capitalised mine development expenditure during the year resulted from capitalised mine development, capitalised interest, capitalised provision for rehabilitation impairment of mine development expenditure and foreign currency translation movement.
- 6.35 Current trade and other payables of \$4.07 million as at 30 June 2019 includes a \$2.3 million tax liability incurred in relation to the BMCC operations.
- 6.36 Loans and borrowings of \$4.29 million (current) and \$5.93 million (non-current) as at 30 June 2019 consist of external and third-party loans outstanding for AEV and its subsidiaries. The relevant entities in which the outstanding loans are held are summarised below:

- \$1.3 million – AEV;

- \$4.26 million – BMCC;
- \$4.65 million – Gadde Bissik Operations (“GBO”), the trading entity of the Baobab Phosphate Project and a subsidiary of BMCC.

- 6.37 The AEV Corporate Loan was provided by the Major Shareholders under a US\$0.9 million facility with a maturity date of 18 March 2020. Under the terms of the Proposed Transaction, this loan will be assigned/forgiven.
- 6.38 The Major Shareholders also provided a US\$0.8million facility to BMCC with a maturity date of 30 September 2019, with a reported outstanding balance of A\$1.14 million at 30 June 2019. The remaining BMCC loan of \$3.1 million relates to funding provided by the 20% shareholder of BMCC which is presented as a liability as the investment in BMCC is equity accounted at 100% with a non-controlling interest of 20%. Under the terms of the Proposed Transaction, this loan will be also assigned/forgiven.
- 6.39 It is noted that the GBO loan is held with an external bank and attracts an interest rate of 6.75% with a 12-month repayment deferral. The loan was draw down in December 2016 and has a repayment term of 5 years.
- 6.40 Non-current provisions of \$1.88 million at 30 June 2019 primarily consist of mine rehabilitation and restoration provisions which have been recognised as a result of exploration, development and production activities at the Wonarah and Baobab Phosphate Projects.
- 6.41 Deferred tax liabilities of \$2.23 million at 30 June 2019 relate to temporary differences between carrying amount and tax bases of investments and arose as a result of the acquisition of BMCC on 23 September 2015.
- 6.42 The 20% non-controlling interest in BMCC is reflected in the statement of financial position as the assets and liabilities of all subsidiaries are fully consolidated.

## Solvency Position

- 6.43 On 7 August 2018, AEV announced to the ASX that it had received firm commitments from its Major Shareholders to raise \$2.8 million through a placement of approximately 140 million fully ordinary shares at a price of \$0.02 per share. Funds raised were used to assist BMCC to complete the Phase 1 Feasibility Study for the Baobab Expansion Project as well as for general working capital.
- 6.44 Between August 2018 and March 2019, the Company had multiple investor meetings to seek third party funding but were unsuccessful.
- 6.45 On 8 March 2019, AEV’s consolidated group cash balance was A\$0.9 million. In an attempt to secure the required funding to continue business as going concern, the Company entered into a Corporate Loan of US\$0.9 million with its Major Shareholders on 18 March 2019 where funds were drawn down immediately.
- 6.46 On 18 March 2019, AEV released the Phase 1 Feasibility Study to the ASX which estimated that the costs of executing the Baobab Expansion Project would be \$183.1 million. In addition, the Company estimated funding requirements would be between US\$8 million and US\$10 million through to its Final Investment Decision before full Project Finance requirements. AEV announced its plans to seek Project Funding via a combination of debt and equity supported by take-off agreements and implement the Baobab Phosphate Project.
- 6.47 On 14 May 2019, AEV announced to the ASX that it was progressing fund raising discussions with potential financing partners to seek additional working capital funding needs up to its Final Investment Decision. AEV highlighted that its 80% owned subsidiary, BMCC was in the process of arranging unsecured loans (“Shareholder Loans”) with the Company’s Major Shareholders.

- 6.48 On 17 May 2019, funding was made available to BMCC under the Major Shareholders loan facility of US\$0.7 million. AEV noted that as part of its pre-project fundraising activities, it was progressing discussions with West African regional commercial banks for short-term credit line facilities to GBO for approximately US\$8 million which would contribute towards financing the Company's working capital funding needs to Final Investment Decision, including funding of planned Value Engineering studies and Bankable Feasibility Study. At the date of this report, the Company has not been able to secure any third party funding.
- 6.49 On 14 June 2019, AEV announced that it had secured an additional US\$0.1 million under the Shareholder Loans, thereby bringing the aggregate amount of the loans to BMCC to US\$0.8 million. The Company reported that the original US\$0.7 million loan had been exhausted and that the additional funds would be drawn down by BMCC immediately to cover the working capital requirements of AEV's Senegalese subsidiaries.
- 6.50 The Company was placed into a trading halt on 20 June 2019 as a result of the financial uncertainty facing the Company and its Senegalese operations. The Proposed Transaction was announced on 1 July 2019.
- 6.51 As part of the transaction, the Major Shareholders provided a US\$1.8 million working capital loan to BMCC ("BMCC Loan") and an additional facility of US\$0.3 million to be used by AEV to reach completion of the Proposed Transaction ("Working Capital Supplement Facility"). Without these loan facilities, the Company was likely to be placed into voluntary administration.
- 6.52 At the time of this report, the Company, BFA and BMCC have approximately \$8.5 million of external debt and BMCC has recently received a statement from the Senegalese Government's tax office outlining the results of its recent audit of BMCC which identified US\$1.6 million in additional tax liabilities. BMCC is in the process of appealing the results of this audit, which may take up to 6 months. Subject to BMCC's payment of a holding amount, the tax liabilities will be payable at the end of the appeal process. The external debt of \$8.5m, the subject of the AEV Corporate Loan, the BMCC Loan and a short-term credit line facility to GBO, is not presently due and payable.
- 6.53 In accordance with the Binding Agreement, any pre-completion tax liabilities (including those associated with the outcome of the Senegalese Government's tax audit of BMCC) and the external debt detailed above will remain owing by BMCC and GBO following completion of the Proposed Transaction. Accordingly, AEV will be debt free.
- 6.54 If the Proposed Transaction is not approved by Shareholders, the BMCC Loan and the Working Capital Supplement Facility become immediately due and payable and BMCC, which will remain a subsidiary of AEV, will be liable for any tax liabilities. Without raising additional funds or on-going support from the Major Shareholders, the Company may not be able to continue as a going concern and may enter voluntary administration.

## Capital structure

6.55 AEV currently has 1,058,628,242 ordinary shares on issue. The top 20 shareholders of AEV as at 8 July 2019 are set out in the following table.

**Table 6 AEV Top 20 shareholders**

Rank	Name	Total Units	% Issued Share Capital
1	HSBC CUSTODY NOMINEES <AUSTRALIA>	230,295,796	21.75%
2	MERRILL LYNCH (AUSTRALIA) NOMINEES PTY LIMITED	227,798,735	21.52%
3	AGRIFIELDS DMCC	151,761,842	14.34%
4	J P MORGAN NOMINEES AUSTRALIA PTY LIMITED	53,460,244	5.05%
5	MRS VINEETA GUPTA	20,733,821	1.96%
6	SOLVOCHEM HOLDINGS LTD	15,584,951	1.47%
7	MR GIOVANNI DEL CONTE	14,849,612	1.40%
8	SOCIETE DE POLYSERVE POUR LES ENGRAIS ET PRODUITS CHIMIQUES SA	14,703,962	1.39%
9	VULCAN PHOSPHATES LLC	14,000,000	1.32%
10	MR BRETT WILMOTT <WILMOTT SUPER FUND A/C>	7,153,567	0.68%
11	MR PAUL WINSTON ASKINS	6,103,117	0.58%
12	GLOWSHORE PTY LTD <THE CONTROL INVESTMENT A/C>	5,891,536	0.56%
13	INKESE PTY LTD	4,500,000	0.43%
14	MR GREGORY BRUCE HILL	4,000,000	0.38%
15	MS KAREN THOMAS	3,997,920	0.38%
16	MR DEAN GRAEME TURNER	3,743,367	0.35%
17	MR JAY HUGHES + MRS LINDA HUGHES <INKESE SUPER A/C>	3,500,000	0.33%
18	W & K ASSOCIATES PTY LTD	3,450,832	0.33%
19	MR MANAR BA	3,210,393	0.30%
20	DJ CARMICHAEL PTY LTD	3,142,500	0.30%
	<b>Total Top 20 Shareholding</b>	<b>791,882,195</b>	<b>74.80%</b>
	Others	266,746,047	25.20%
	<b>Total Issued Capital</b>	<b>1,058,628,242</b>	<b>100.0%</b>

Source: Company

6.56 As at 1 July 2019 when the Proposed Transaction was announced, AEV had 5.0 million performance rights and 80.0 million options outstanding.

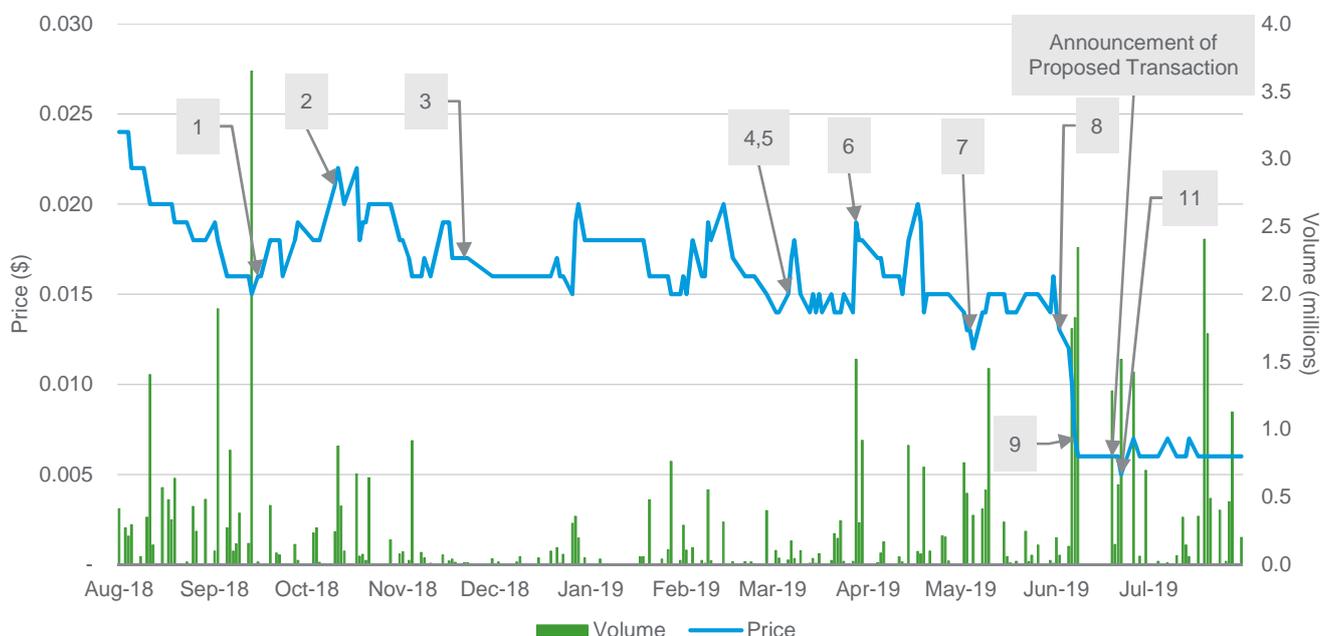
6.57 On 4 July 2019 an Appendix 3B was released on the ASX, advising shareholders that all performance rights had lapsed unvested due to the Eligible Holder Ceasing to be an Eligible Person before satisfaction of the vesting condition in accordance with the Company's Performance Rights Plan.

6.58 The 80.0 million options have an exercise price of \$0.25 and an expiry date of 24 September 2019. These options will lapse prior completion of the Proposed Transaction.

## Share price performance

6.59 The figure below sets out a summary of AEV closing share prices and traded volumes for the twelve months to 12 August 2019.

**Figure 6 AEV daily closing share price and traded volumes**



Source: S&P Capital IQ/ ASX

6.60 In the twelve-month period prior to the announcement of the Proposed Acquisition on 1 July 2019, AEV Shares were traded between \$0.031 and \$0.006 per share. The most significant trading day during this period was on 25 September 2018 when approximately 0.38% of AEV's total volume of shares were traded.

6.61 On the day of the announcement of the Proposed Transaction, approximately 0.12% of AEV's total volume of shares were traded.

6.62 The most significant trading days that have been summarised in the chart above are described as follows:

No	Date	Comments
1	28-Sep-18	AEV released its 2018 Annual Report to shareholders.
2	22-Oct-18	AEV announced that BMCC, an 80% owned subsidiary of the Company had received a Senegalese Government Exploration Permit for the Gadde Bissik area within its Baobab Phosphate project
3	3-Dec-18	AEV announced the appointment of Mr Charles Graham to the position of Project Director to manage the Company's Baobab Expansion
4	18-Mar-19	AEV announced that it had entered into convertible loans with its three major shareholders Agrifos Partners LLC, Tablo Corporation and Agrifields DMCC for the amount of A\$1.25 million to assist with its pre-project finance funding requirements
5	18-Mar-19	AEV announced the completion of its Feasibility Study for the expansion of its 80% owned Baobab Phosphate Project. The Feasibility study confirmed the technical and financial robustness of a long-life project with a very high grade 36.4% P2O5 phosphate rock concentrate product

6	9-Apr-19	AEV announced that JDCPhosphate, Inc. had changed its name to Novaphos. In addition, Novaphos had been able to achieve phosphate yields of approximately 80% and was in the process of commercialisation of its technology.
7	17-May-19	AEV announced that it had successfully executed the convertible loan agreements which were announced on 18 March 2019 for the amount of US\$0.7 million (approximately A\$1.0 million) and that the first tranche of funds was being drawn down immediately
8	14-Jun-19	AEV announced that the Company's three major shareholders Agrifos Partners LLC, Tablo Corporation and Agrifields DMCC had agreed to lend additional funds to BMCC by the way of upsized major shareholder loans totalling A\$0.14 million and short-term working capital funding requirements of approximately A\$11 million to A\$14 million
9	20-Jun-19	The ASX announced that the Company had been placed into a trading halt at the request of AEV pending an announcement regarding capital raising
10	1-Jul-19	AEV announced that it had entered into a binding agreement to sell its interests in the Baobab Phosphate Project and Novaphos to a consortium comprising of Agrifos Partners LLC, Tablo Corporation and Agrifields DMCC and undertake a buy-back and capital reduction of all of AEV shares and options held by the consortium for nil consideration
11	4-Jul-19	AEV issued an Appendix 3B to the ASX which outlined that 5.0 million performance rights in the Company had lapsed as a result of the holder ceasing to be an eligible person before the satisfaction of vesting conditions, in accordance with the Company's Performance Rights Plan.

## 7. Profile of Baobab Fertilizer Africa

- 7.1 BFA is a wholly owned subsidiary of AEV that was incorporated under the laws of Mauritius on 20 April 2015. The key activity of BFA is to support the ongoing operations of BMCC.

### Financial performance

- 7.2 The following table sets out a summary of the financial performance of BFA as a stand-alone entity for the year ended 30 June 2019, six months ended 31 December 2018 and year ended 30 June 2018.

**Table 7 Financial performance - Baobab Fertilizer Africa (Stand-alone)**

\$A000's	Year ended 30-Jun-19 Management	6 mths ended 31-Dec-18 Management	Year ended 30-Jun-18 Management
Interest received - Intercompany	2,846	-	-
Other income	99	-	-
FX Gain/(Loss) Unrealised	43	11	-
Company Secretary	-	1	1
Accounting and Tax Advisory	(14)	(6)	(2)
Audit	-	(8)	-
Other Royalties & Rights	(99)	-	-
Bank Fees	(5)	(5)	(1)
Interest on debts & borrowings - Intercompany	(2,345)	-	-
<b>Profit/(Loss) for period</b>	<b>525</b>	<b>(6)</b>	<b>(2)</b>

Source: Company

- 7.3 BFA does not conduct any trading activities in its own right, the income and expenses predominantly relate to inter-entity transactions.

## Financial position

7.4 The table below sets out a summary of the financial position of BFA as a stand-alone entity as at 30 June 2019, 31 December 2018 and 31 June 2018:

**Table 8 Financial position – Baobab Fertilizer Africa (Stand-alone)**

A\$	Ref.	30-Jun-19 Management	31-Dec-18 Management	30-Jun-18 Management
<b>Assets</b>				
Cash		3	15	11
Prepayments		1	1	1
Inter-Company Receivable		234	232	178
Inter-Company Loan - BMCC	7.5	17,750	14,659	-
Capitalised mine development expenditure		47	-	-
Investment in subsidiaries	7.6	13,185	13,114	12,494
<b>Total Assets</b>		<b>31,221</b>	<b>28,022</b>	<b>12,684</b>
<b>Liabilities</b>				
Accounts payable		32	8	8
Other payables and accruals		234	232	178
Intercompany Loan - AEV	7.5	17,580	14,915	236
<b>Total Liabilities</b>		<b>17,846</b>	<b>15,156</b>	<b>422</b>
<b>Net Assets</b>		<b>13,375</b>	<b>12,867</b>	<b>12,263</b>
<b>Equity</b>				
Share Capital		4	4	4
Share Capital - Premium		13,257	13,185	12,562
Retained Earnings		114	(323)	(303)
<b>Total Equity</b>		<b>13,375</b>	<b>12,867</b>	<b>12,263</b>

Source: Company

7.5 Inter-company loans of \$17.75 million as at 30 June 2019 relates to funds provided by BFA to BMCC to assist with the ongoing operations of the Baobab Phosphate Project. Approximately \$17.6 million of the inter-company loan receivable is payable to AEV.

7.6 The investment in subsidiary relates to BFA's 80% holding in BMCC.

7.7 Other than the BMCC investment and the inter-company loans, the only significant asset or liability held by BFA is an amount for accrued royalties on phosphate production of \$0.2 million.

## 8. Profile of BMCC

8.1 BMCC was incorporated in Senegal and holds a 100% interest in the Baobab Phosphate Project through Gadde Bissik Phosphate Operations SUARL (“GBO”).

8.2 The shareholders of BMCC are summarised below:

- BFA - 80% interest; and
- Mimran Natural Resources (a subsidiary of Tablo Corporation) - 20% interest.

### Financial Performance

8.3 The following table sets out a summary of the consolidated financial performance of BMCC for the year ended 30 June 2019, the half year ended 31 December 2018 and year ended 30 June 2018.

**Table 9 Financial Performance – BMCC Consolidated**

\$A000's	Ref.	Year ended	6 months ended	Year ended
		30-Jun-19 Management	31-Dec-18 Management	30-Jun-18 Management
Administrative expenses		(809)	(304)	(1,415)
Salaries and employee benefit expense		(320)	(173)	(346)
Exploration and development		-	-	(115)
Depreciation		(370)	(185)	(344)
Bad debt expense		(896)	(60)	(920)
Other operating expenses		(2,861)	(93)	526
Finance expenses	8.5	(2,832)	(1,629)	(1,319)
FX movements		12	(1)	(124)
<b>Total Loss for the period</b>	<b>8.4</b>	<b>(8,076)</b>	<b>(2,444)</b>	<b>(4,056)</b>

Source: Company

8.4 BMCC recorded an operating loss of \$8 million in the year ended 30 June 2019.

8.5 Finance expenses of \$2.8 million for the year ended 30 June 2019 relates to interest on AEV and third-party loans.

## Financial Position

8.6 The table below sets out a summary of the consolidated financial position of BMCC as at 30 June 2019, 31 December 2018 and 31 June 2018:

**Table 10 Financial Position – BMCC Consolidated**

A\$000's	Ref.	30-Jun-19 Management	30-Dec-18 Management	30-Jun-18 Management
<b>Current assets</b>				
Cash		19	48	168
Receivables		380	1,047	785
Inventory		1,497	1,365	2,286
<b>Total Current Assets</b>		<b>1,896</b>	<b>2,460</b>	<b>3,239</b>
<b>Non-current assets</b>				
Plant & equipment		1,053	1,205	1,322
Exploration		4,706	4,370	3,948
Mine development assets	8.7	39,076	39,205	37,062
Other assets		674	689	684
Intangibles		79	86	85
<b>Total Non-current assets</b>		<b>45,588</b>	<b>45,555</b>	<b>43,102</b>
<b>Total Assets</b>		<b>47,484</b>	<b>48,015</b>	<b>46,340</b>
<b>Current liabilities</b>				
Trade and other payables	8.8	3,162	706	1,022
Intercompany Payables	8.9	31,732	28,937	25,091
Loans and borrowings	8.10	2,971	1,624	804
Provisions		60	78	75
<b>Total current liabilities</b>		<b>37,925</b>	<b>31,345</b>	<b>26,992</b>
<b>Non-current Liabilities</b>				
Loans and borrowings	8.10	5,932	6,681	7,215
Provisions		595	1,233	1,194
<b>Total Non-current liabilities</b>		<b>6,527</b>	<b>7,914</b>	<b>8,409</b>
<b>Total Liabilities</b>		<b>44,452</b>	<b>39,259</b>	<b>35,400</b>
<b>Net Assets</b>		<b>3,032</b>	<b>8,756</b>	<b>10,940</b>
<b>Equity</b>				
Issued capital		11,721	11,721	11,721
Retained Earnings		(22,255)	(16,623)	(14,179)
Equity Premium		13,681	13,681	13,681
Foreign Currency revaluation reserve		(114)	(23)	(283)
<b>Total Equity</b>		<b>3,032</b>	<b>8,756</b>	<b>10,940</b>

Source: Company

- 8.7 Mine development assets of \$39.1 million at 30 June 2019 relate to expenditure capitalised on the Baobab Phosphate Project.
- 8.8 Approximately A\$2.3 million of trade and other payables at 30 June 2019 relates to an outstanding tax liability owed to the Senegalese government.
- 8.9 Intercompany payables of \$31.7 million as at 30 June 2019 relate to a series of loans and invoices payable to Avenirra and BFA provided to assist with the ongoing operations of the Baobab Phosphate Project.
- 8.10 Total loans and borrowings of \$8.9 million as at 30 June 2019 relate to third party loans payable to CBAO bank and the Major Shareholders, along with the amounts funded by Tablo Corporation as 20% shareholder.

## 9. Profile of Novaphos (6% minority interest)

### Background

- 9.1 Novaphos was established in 2008 with the vision of creating a solid-phase carbo-thermal reduction technology for producing phosphoric acid efficiently (“Novaphos Technology”). The technology will enable the efficient processing of low grade phosphate sources.
- 9.2 In September 2010, AEV became a cornerstone investor in Novaphos via an equity investment which gave the Company exclusive licence rights to utilise Novaphos Technology in Australia. AEV was subsequently also granted Novaphos technology licence rights in Senegal as part of the acquisition of the Baobab project in 2015. The Novaphos technology was deemed as a potential enabling technology for downstream integration at AEV’s phosphate projects.
- 9.3 Since establishment, Novaphos has focused on making their technology feasible through pilot operations in their demonstration plant. However, the Novaphos Technology is not yet commercialised, and its future viability for the Baobab Phosphate Project and Wonarah Phosphate Project is unknown at this stage.
- 9.4 AEV has exclusive rights to use the Novaphos Technology in Senegal and Australia. As part of the Proposed Transaction, the Major Shareholders will acquire the exclusive licence for Senegal, while AEV will retain the exclusive licence for Australia.

### Minority interest equity

- 9.5 AEV holds a 6.54% minority shareholding in Novaphos on a fully diluted basis which consists of the following equity instruments:

**Table 11 Equity Interests in Novaphos**

Equity instrument	Number	Key Terms
Common shares	6,730	n/a
Common share warrants	93,425	Exercisable at US\$0.01, expire 7 March 2020
Series A preference shares	282	n/a
Series B2 Preference shares	15,748	n/a
Series B2 warrants	31,496	Exercisable at US\$6.35, expire Dec 2023
2018 Bridge Notes – warrants	42,702	Exercisable at US\$7.34, expire June 2023
<b>Total</b>	<b>190,383</b>	

Source: Company

- 9.6 In addition, AEV holds US\$1,678,468 of convertible notes in Novaphos with US\$0.5 million of accrued interest outstanding. US\$1.65 million of these notes were entered into in July 2016 and have a maturity date of 15 February 2020 and attract capitalised interest at 12% per annum. The notes will convert into 93,245 shares of common stock.

### Financial Information

- 9.7 We have been provided with a summary of the financial performance of Novaphos for the five months ended 31 May 2019 and the year ended 31 December 2018 extracted from management reports, along with statements of financial position at the period ends. The audited financial statements for the year ended 31 December 2018 have not yet been prepared. Novaphos is not required to provide financial disclosure as a private company in the United States, further the Directors consider this information to be commercially sensitive and therefore it has not been included in our Report. We requested but were not provided with forecasts or budgets in relation to Novaphos; it is our understanding that this information is not provided to AEV as a minority shareholder.

- 9.8 We note that the business is not yet income-generating and therefore has recorded operating losses as the development of the technology continues. The reported net assets primarily comprise capitalised development costs, cash reserves and long-term debt. We were not provided with any breakdowns or analysis of the capitalised development costs.

## 10. Valuation approach

### Basis of Valuation

- 10.1 The valuations of AEV prior to and post the Proposed Transaction have been prepared on the basis of Fair Market Value being the value that should be agreed in a hypothetical transaction between a knowledgeable, willing but not anxious buyer and a knowledgeable, willing but not anxious seller, acting at arm's length.

### Valuation methodologies

- 10.2 In assessing the Fair Market Value of an ordinary AEV share prior to and immediately following the Proposed Transaction, we have considered a range of valuation methodologies. RG 111 proposes that it is generally appropriate for an expert to consider using the following methodologies:

- the discounted cash flow ("DCF") method and the estimated realisable value of any surplus assets;
- the application of earnings multiples to the estimated future maintainable earnings or cash flows added to the estimated realisable value of any surplus assets;
- the amount which would be available for distribution on an orderly realisation of assets;
- the quoted price for listed securities; and
- any recent genuine offers received.

- 10.3 We consider that the valuation methodologies proposed by RG 111 can be split into three valuation methodology categories, as follows.

#### *Market based methods*

- 10.4 Market based methods estimate the Fair Market Value by considering the market value of a company's securities or the market value of comparable companies. Market based methods include;

- the quoted price for listed securities; and
- industry specific methods.

- 10.5 The recent quoted price for listed securities method provides evidence of the fair market value of a company's securities where they are publicly traded in an informed and liquid market.

- 10.6 Industry specific methods usually involve the use of industry rules of thumb to estimate the fair market value of a company and its securities. Generally, rules of thumb provide less persuasive evidence of the fair market value of a company than other market based valuation methods because they may not account for company specific risks and factors.

#### *Income based methods*

- 10.7 Income based methods estimate value by calculating the present value of a company's estimated future stream of earnings or cash flows. Income based methods include:

- discounted cash flow;
- capitalisation of future maintainable earnings.

- 10.8 The DCF technique has a strong theoretical basis, valuing a business on the net present value of its future cash flows. It requires an analysis of future cash flows, the capital structure and costs of capital and an assessment of the residual value or the terminal value of the company's cash flows at the end of the forecast

period. This method of valuation is appropriate when valuing companies where future cash flow projections can be made with a reasonable degree of confidence.

- 10.9 The capitalisation of future maintainable earnings is generally considered a short form DCF, where an estimation of the Future Maintainable Earnings (“FME”) of the business, rather than a stream of cash flows is capitalised based on an appropriate capitalisation multiple. Multiples are derived from the analysis of transactions involving comparable companies and the trading multiples of comparable companies.

#### *Asset based methods*

- 10.10 Asset based methodologies estimate the Fair Value of a company’s securities based on the realisable value of its identifiable net assets. Asset based methods include:

- orderly realisation of assets method;
- liquidation of assets method; and
- net assets on a going concern basis.

- 10.11 The value achievable in an orderly realisation of assets is estimated by determining the net realisable value of the assets of a company which would be distributed to security holders after payment of all liabilities, including realisation costs and taxation charges that arise, assuming the company is wound up in an orderly manner. This technique is particularly appropriate for businesses with relatively high asset values compared to earnings and cash flows.

- 10.12 The liquidation of assets method is similar to the orderly realisation of assets method except the liquidation method assumes that the assets are sold in a shorter time frame. The liquidation of assets method will result in a value that is lower than the orderly realisation of assets method and is appropriate for companies in financial distress or where a company is not valued on a going concern basis.

- 10.13 The net assets on a going concern method estimates the market values of the net assets of a company but unlike the orderly realisation of assets method it does not take into account realisation costs. Asset based methods are appropriate when companies are not profitable, a significant proportion of the company’s assets are liquid, or for asset holding companies.

### **Selection of valuation methodologies**

#### **Valuation of an AEV Share prior to the Proposed Transaction (control basis)**

- 10.14 In assessing the value of an AEV Share prior to the Proposed Transaction we have utilised the net assets on a going concern methodology which estimates the value of an AEV share by valuing the various assets and liabilities of the Company and aggregating the values.

- 10.15 We have instructed SRK to act as an independent expert to value AEV’s 80% interest in the Baobab Phosphate Project and 100% interest in the Wonarah Project held prior to the Proposed Transaction as at 1 July 2019.

- 10.16 SRK adopted the following valuation methodologies in determining the range of values for the Baobab Phosphate Project:

- Comparable Transactions;
- Peer Analysis;
- Comparable Market; and
- Geoscientific Rating.

10.17 SRK adopted the following valuation methodologies in determining the range of values for the Wonarah Phosphate Project:

- Comparable Transactions; and
- Peer Analysis.

10.18 We have also utilised the quoted market price methodology to provide a cross-check to our primary valuation.

10.19 We have adopted the Net Assets as a going concern as our primary method for the following reasons:

- The Net Assets as a going concern approach is most appropriate for entities holding non-producing mineral assets such as the Baobab Phosphate Project and Wonarah Project, and minority investments in other entities;
- The Company has no foreseeable cashflows, therefore, a the DCF method is not appropriate; and
- The Company has no historical profits and is currently non-income generating, therefore, a capitalisation of future maintainable earnings method is not appropriate.

#### **Valuation of an AEV Share post the Proposed Transaction (non-control basis)**

10.20 In assessing the Fair Market Value of an AEV post the Proposed Transaction, we have used the pre-Proposed Transaction value and included the impact of the Proposed Transaction assuming it proceeds. In particular we have reflected the balance sheet impact of the:

- Cash Consideration received, Director Fees waived, and Corporate Loan assigned/forgiven;
- the disposal of the Assets to the Major Shareholders; and
- the buy-back of all shares in AEV currently held by the Major Shareholders.

10.21 As the Proposed Transaction does not represent a control transaction, we do not consider the application of a control premium to the value prior and a minority discount to the value post to be reflective of the substance of the transaction. We have therefore valued an AEV Share on a like-for-like basis in each scenario.

## 11. Valuation of AEV prior to the Proposed Transaction

11.1 As stated at paragraph 10.14 we have assessed the value of an AEV Share prior to the Proposed Transaction on a net assets on a going concern basis and have also considered the quoted price of its listed securities.

### Net Assets on a Going Concern

11.2 Our assessment of the value of an AEV Share prior to the Proposed Transaction based on the net assets on a going concern methodology, is summarised in the table below:

**Table 12 Assessed Value of an AEV Share – Net Assets on a Going Concern**

\$A000's	Ref	Low	High	Preferred
Net assets of AEV at 30 June 2019	6.29	48,006	48,006	48,006
Less: Non-controlling interest at 30 June 2019	6.42	(2,298)	(2,298)	(2,298)
<b>Net Assets of AEV attributable to shareholders</b>		<b>45,707</b>	<b>45,707</b>	<b>45,707</b>
Less: Book value of Baobab Phosphate Project (80%)		(44,051)	(44,051)	(44,051)
Less: Book value of Wonarah Project (100%)		(5,978)	(5,978)	(5,978)
<b>Remaining Net Liabilities of AEV</b>		<b>(4,322)</b>	<b>(4,322)</b>	<b>(4,322)</b>
Baobab Phosphate Project (80%)	11.7	21,600	44,000	32,800
Wonarah Phosphate Project (100%)	11.11	6,010	16,020	9,010
Novaphos interest (6.54%)	11.14	-	4,397	2,105
<b>Assessed Net Assets</b>		<b>23,288</b>	<b>60,095</b>	<b>39,593</b>
Number of shares on issue pre Proposed Transaction		1,058,628	1,058,628	1,058,628
<b>Value per Share pre Proposed Transaction</b>		<b>0.0220</b>	<b>0.0568</b>	<b>0.0374</b>

Source: RSM Analysis

11.3 Our assessed value per AEV share prior to the Proposed Transaction adopting the net assets approach is in the range of \$0.022 to \$0.568 with a preferred value of \$0.0374.

11.4 Our assessment has been based on the management prepared net assets of the Company as at 30 June 2019 of \$48.01 million less the Non-Controlling Interest of \$2.30 million.

11.5 In order to calculate the current market value of AEV's Shares, we have made a number of adjustments to the carrying values of the assets included in the management prepared Statement of Financial Position. These adjustments are set out below.

### Mining Assets

11.6 As set out in paragraph 10.15, we instructed SRK to act as an independent expert to value AEV's 80% interest in the Baobab Phosphate Project and 100% interest in Wonarah Phosphate Project held prior to the Proposed Transaction. Their report dated 15 August 2019 is attached at Appendix D of our Report.

#### *Baobab Phosphate Project*

11.7 The valuation provided by SRK for AEV's 80% interest in the Baobab Phosphate Project is in the range of \$21.6 million and \$44.0 million with a preferred value of \$32.8 million.

11.8 SRK placed most reliance on the values implied by the Comparable Transactions and Peer Analysis methods to inform their range for the Baobab Phosphate Project; the preferred value is at the midpoint as SRK had no preference to either end of the range. It is noted in the SRK report that the valuation range is indicative of the uncertainty associated with advanced stage exploration and development projects.

11.9 SRK considered that the work performed on the Phase 1 Feasibility Study did not provide reasonable grounds for an income based valuation at this time, with the life of mine plan being conceptual and requiring further work on Project costing estimates.

11.10 Additionally, SRK valued the exploration potential at the project, adopting the midpoint of values implied by the Comparable Market and Geoscientific Rating approaches.

#### Wonarah Phosphate Project

11.11 The valuation provided by SRK for AEV's 100% interest in the Wonarah Phosphate Project is in the range of \$6.01 million and \$16.02 million with a preferred value of \$9.01 million.

11.12 SRK relied on the implied values determined through analysis of Comparable Transactions and applied a discount to reflect the specific nature of the Wonarah Project and its mineral resources.

#### AEV's 6% minority interest in Novaphos

11.13 The valuation of AEV's minority interest in Novaphos is discussed below in Section 12 of this report. We note that AEV holds the interest in Novaphos at nil value in its financial statements.

11.14 Our assessed value of AEV's interest in Novaphos is in the range of \$nil to \$4.4 million with a preferred value of \$2.1 million.

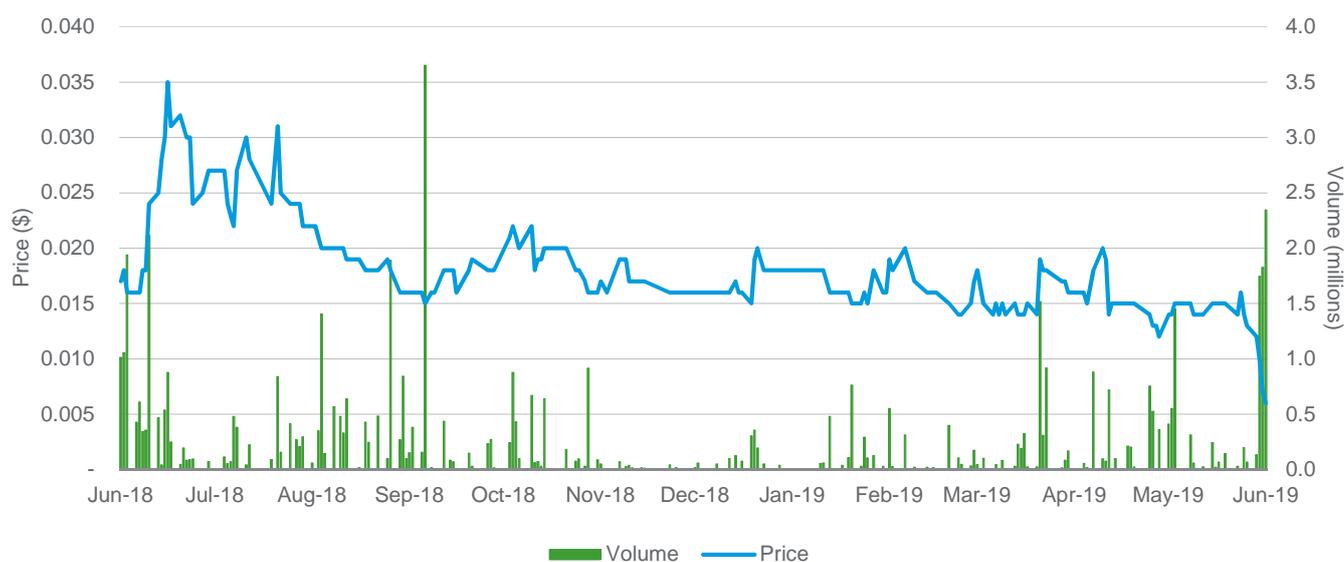
#### Quoted price of listed securities (secondary method)

11.15 In order to provide a comparison and cross check to our net assets on a going concern valuation of AEV, we have considered the recent quoted market price for AEV shares on the ASX prior to the announcement of the Proposed Transaction.

#### Analysis of recent trading in AEV Shares

11.16 The figure below sets out a summary of the closing Share price and volume of AEV Shares traded in the 12 months prior to the Company's trading halt on the ASX on 20 June 2019.

**Figure 7 AEV daily closing Share price and traded volumes**



Source: S&P Capital IQ/ ASX

- 11.17 During the 12 month period prior to the trading halt in the lead up to the announcement of the Proposed Transaction, AEV's shares traded between \$0.006 per Share and \$0.035 per Share.
- 11.18 To provide further analysis of the quoted market prices for AEV's Shares, we have considered the VWAP over a number of trading day periods ending 20 June 2019. An analysis of the volume in trading in AEV's Shares for the 1, 10, 30, 60, 90, 180 and 360 day trading periods is set out in the table below:

**Table 13 Traded volumes of AEV Shares to 20 June 2019**

# of Days	1 Day	5 Day	10 Day	30 Day	60 Day	90 Day	120 Day	180 Day
VWAP	0.006	0.008	0.008	0.011	0.013	0.014	0.014	0.015
Total volume (000's)	2,345	6,119	6,504	11,339	17,703	20,173	22,998	28,764
Total volume as a % of total shares	0.22%	0.58%	0.61%	1.07%	1.67%	1.91%	2.17%	2.72%
Low price	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
High price	0.006	0.013	0.016	0.016	0.020	0.020	0.020	0.023

Source: S&P Capital IQ/ ASX

- 11.19 The analysis shows that AEV shares are thinly traded, with only 2.72% of the issued share capital being traded in the most recent 180-day trading period.
- 11.20 In our opinion, the weighted average share price of AEV over the last 30 days is most reflective of the underlying value of an AEV Share. As such, we consider a range of values of between \$0.006 and \$0.011 (1 – 30 day VWAP) reflects the quoted market price valuation of an AEV Share prior to the Proposed Transaction on a non-control minority basis.
- 11.21 The value derived above is indicative of the value of a marketable parcel of shares assuming the Shareholder does not have control of AEV. RG 111.11 states that when considering the value of a company's Shares the expert should consider a premium for control.
- 11.22 RSM has conducted a study on 463 takeovers and schemes of arrangement involving companies listed on the ASX over the 11 years ended 30 June 2016<sup>1</sup>. In determining the control premium, we compared the offer price to the closing trading price of the target company 20, 5 and 2 trading days pre the date of the announcement of the offer. Where the consideration included shares in the acquiring company, we used the closing share price of the acquiring company on the date prior to the date of the offer. Our study concluded that, on average, control premiums were paid in the range of 25% to 35%.
- 11.23 In valuing an AEV Share prior to the Proposed Transaction using the quoted price of listed securities methodology we have reflected a premium for control in the range of 25% to 35%.
- 11.24 The resulting assessed value of an AEV on a control basis, using the quoted market price approach, is in the range of \$0.0075 to \$0.0149, with a preferred midpoint of \$0.0111 as shown in the table below:

**Table 14 Assessed Value of an AEV Share – Quoted Market Price**

\$	Low	High	Preferred
Quoted market price – minority basis	0.0060	0.0110	0.0085
Control premium	25%	35%	30%
<b>Quoted market price – control basis</b>	<b>0.0075</b>	<b>0.0149</b>	<b>0.0111</b>

Source: RSM Analysis

<sup>1</sup> RSM Control Premium Study 2017



## Valuation summary and Conclusion

11.25 A summary of our assessed values of an ordinary AEV Share prior to the Proposed Transaction, derived under the two methodologies, is set out in the table below.

**Table 15 Assessed Value of an AEV Share prior to the Proposed Transaction**

\$	Ref	Low	High	Preferred
Net asset on a going concern basis	11.3	0.0220	0.0568	0.0374
Quoted market price	11.24	0.0075	0.0149	0.0111
<b>Preferred value</b>		<b>0.0220</b>	<b>0.0568</b>	<b>0.0374</b>

Source: RSM Analysis

11.26 In our opinion, we consider that the net assets on a going concern valuation methodology provides a better indicator of the Fair Value of an AEV Share as our analysis of the recent trading of AEV's Shares indicates that the market for AEV's Shares is not liquid enough to provide an assessment of their Fair Value via the quoted market price methodology.

11.27 Therefore, in our opinion, the Fair Value of an AEV Share prior to the Proposed Transaction is between \$0.022 and \$0.057 with a preferred value of \$0.037.

## 12. Valuation of Interest in Novaphos

- 12.1 AEV holds a 6.47% fully diluted interest in Novaphos. As set out in section 9 of our Report, Novaphos is a technology company which is recording operating losses as further development is carried out on the technology prior to commercialisation.
- 12.2 The company is primarily being funded through preferred and common stock issues, with the most recent one in which AEV participated occurring in December 2018 at a share price of US\$6.35. Novaphos has confirmed that further capital has been raised through 2019 on the same terms. The preferred stock confers the same voting rights on holders as common stock but provides for preferences on payments of dividends and on liquidation.
- 12.3 We requested but were not provided with forecasts or budgets for Novaphos and understand that this information is not provided to AEV as a minority shareholder. The Novaphos Technology is pre-commercialisation with continuing cashflow requirements as evidenced by the recent capital raisings; given this and the lack of forecast information we do not consider it appropriate to adopt a discounted cashflow methodology to value Novaphos and AEV's interest in it. The capitalisation of earnings methodology is also not appropriate as the business is not generating profits.
- 12.4 The capitalisation of future maintainable dividends approach is often used to value minority interests however Novaphos has not paid any dividends to its shareholders and is not expected to in the short to medium term.
- 12.5 We have therefore relied on the net assets on a going concern methodology and undertaken a build-up of market value for each instrument held by AEV.
- 12.6 The current interests held by AEV in Novaphos are summarised below:

**Table 16 AEV Holdings in Novaphos**

Instrument Held		Number/Value	Key Terms
Common Shares	no.	6,730	n/a
Common share warrants	no.	93,425	Exercisable at US\$0.01, expire 7 March 2020
Series A pref shares	no.	282	n/a
Series B2 pref shares	no.	15,748	n/a
Series B2 warrants	no.	31,496	Exercisable at US\$6.35, expire Dec 2023
Convertible Note	US\$	1,650,000	Secured, 12% accrued interest, mature 15 Feb 2020
2018 Bridge Notes	US\$	28,468	Unsecured, 12% accrued interest, mature 15 Feb 2020
2018 Bridge Notes - Warrants	no.	42,702	Exercisable at US\$7.34, expire June 2023

Source: Company

- 12.7 AEV has fully impaired all of its interests in Novaphos for financial reporting purposes due to the uncertainty regarding timing and achievement of commercialisation of the Novaphos Technology.

### **Net Assets on Going Concern**

- 12.8 In assessing the value of Novaphos using net assets on a going concern approach, we have considered the reported net asset position of US\$3.5 million at 31 May 2019, being the latest financial information provided to us.
- 12.9 The primary assets of Novaphos are capitalised development costs and cash; we were not provided with any breakdown or analysis of the capitalised development costs. Debt and accrued interest comprise the majority of liabilities. Given the nature of these balances and limited information available, we have relied on the recorded book value in the Novaphos balance sheet as at 31 May 2019.
- 12.10 We note that pre-commercialisation technology can be valued on a cost recovery basis, i.e. the amount required to fully reimburse the costs incurred to date with respect to research and development ("R&D")

activities undertaken. The underlying rationale for the cost recovery basis is the assumption that a third party acting at arm's length could achieve similar results and outcomes by making a similar financial investment in R&D activities and would therefore not pay more than this amount to acquire the entity. We do not have detailed information on the accounting treatment adopted by Novaphos as we requested but were not provided with Novaphos financial statements, but assuming that development costs have been capitalised, the recorded book value should equate to costs incurred.

- 12.11 Given the comments above and the limited information available, we have relied on the recorded book value for the assets and liabilities of Novaphos at 31 May 2019 in our net asset valuation.
- 12.12 Accordingly, we assess the value of Novaphos on a net asset basis to be US\$3.5 million which equates to A\$5.1 million at the exchange rate of 0.68:1 at the date of this report.
- 12.13 AEV holds a fully diluted 6.54% interest in Novaphos; the pro rata value of this interest is therefore assessed to be A\$336,500. We note that this valuation is based on recorded book values, not assessed fair value for the Novaphos Technology and therefore may not reflect its stage of development and commercial potential.

### ***Build-Up of Value***

- 12.14 In assessing the value of Novaphos using a build-up of each instrument held, we have considered the most recent pricing of new shares issued by Novaphos in 2018/2019 of US\$6.35 to assess the value of common and preferred stock. We requested and received confirmation from Novaphos that the company was expecting to raise further capital on these terms later in the year.
- 12.15 The warrants have been valued using a Black-Scholes option valuation model, adopting a spot price of US\$6.35, the US Government bond rates as the risk-free rate and a volatility of 20% given the private status of the company.
- 12.16 In assessing the fair value of the convertible notes, we have considered the imminent maturity date (15 February 2020), current status of Novaphos, and the conversion entitlement to 93,425 common shares which at the most recent capital raising price of US\$6.35 equates to a value of US\$0.6 million, considerably lower than the face value of the notes at US\$1.65 million. In addition, capitalised interest of US\$0.5 million is also owed to AEV.
- 12.17 We consider that, on a hypothetical sale in an open market, the notes would not attract face value as Novaphos is not yet cash generative and the timing of commercialisation of its technology is uncertain. The US\$1.65 million notes hold security over the assets of Novaphos, however they do not have priority security and any call on the debt would most likely result in Novaphos being unable to settle without seeking additional funding elsewhere.
- 12.18 We therefore consider it likely that the notes would be renegotiated on maturity in February 2020, rather than settled or converted (given the disparity in fair value of the conversion stock). On this basis, the future repayment of the notes is intrinsically linked to the success of Novaphos in commercialising and generating cash flows from the developed technology.
- 12.19 We consider that the fair value of the notes held by AEV lies somewhere in the range of \$nil, being the carrying value in AEV, and US\$2.15 million being the full face value including accrued interest. Our preferred value is US\$0.6 million, being the derived equity value on conversion, as we consider the instruments to be more akin to equity as there is no imminent prospect of being repaid and any recovery is dependent on the financial success of the technology.
- 12.20 Accordingly, our assessed value of AEV's interests in Novaphos are set out in the table below:

**Table 17 Valuation of AEV Holdings in Novaphos**

Instrument Held	Number/Value	Valuation Approach	Low US\$	High US\$	Preferred US\$
Common Shares	6,730	Latest capital raise pricing	-	42,736	42,736
Common share warrants	93,425	Option valuation model	-	592,315	592,315
Series A pref shares	282	Latest capital raise pricing	-	1,791	1,791
Series B2 pref shares	15,748	Latest capital raise pricing	-	100,000	100,000
Series B2 warrants	31,496	Option valuation model	-	40,000	40,000
Convertible Note	US\$1,650,000	Value range – see above	-	2,151,899	593,249
2018 Bridge Notes	US\$28,468	Face value	-	28,468	28,468
2018 Bridge Notes - Warrants	42,702	Option valuation model	-	32,624	32,624
<b>Assessed Total Value – USD</b>			<b>-</b>	<b>2,989,832</b>	<b>1,431,181</b>
<b>Assessed Total Value – AUD</b>			<b>-</b>	<b>4,396,812</b>	<b>2,104,678</b>

Source: RSM Analysis

12.21 Given the uncertainty on timing and achievement of commercialisation of the Novaphos Technology, we consider it appropriate to adopt a wide valuation range. We have therefore adopted the values determined using the value build-up of A\$nil to A\$4.4 million with a preferred value of A\$2.1 million.

### 13. Valuation of AEV after the Proposed Transaction

13.1 We summarise our valuation of an AEV Share after the Proposed Transaction on a net assets on a going concern basis in the table below.

**Table 18 Assessed value of AEV post the Proposed Transaction**

\$000's	Ref	Low	High	Preferred
Proforma Net Assets post Proposed Transaction	Appendix E	10,309	10,309	10,309
Add: Uplift in value in Wonarah Project	13.11	32	10,042	3,032
<b>Net Assets</b>		<b>10,341</b>	<b>20,351</b>	<b>13,341</b>
Number of shares on issue post proposed transaction	13.12	440,755	440,755	440,755
<b>Value per share post-proposed transaction</b>		<b>0.0235</b>	<b>0.0462</b>	<b>0.0303</b>

Source: RSM Analysis

13.2 We consider that the value of an AEV Share post the Proposed Transaction is between \$0.0235 and \$0.0462 with a preferred value of \$0.0303.

13.3 As set out in Appendix E of this report, we have adjusted the management prepared 30 June 2019 net assets and shares on issue of AEV for the following:

*Elimination of BFA and BMCC Net assets*

13.4 We have made an adjustment to remove all assets and liabilities of BFA and BMCC (excluding capitalised exploration and evaluation expenditure – see below) as AEV's interest in these entities will be sold to the Major Shareholders as part of the Proposed Transaction.

13.5 The adjustment eliminates \$11.5 million of net liabilities which includes the removal of third party and external loans totalling \$8.90 million along with all tax liabilities accrued in BFA and BMCC.

*Removal of the Baobab Phosphate Project*

13.6 We have made an adjustment to remove capitalised exploration and evaluation expenditure and capitalised mine development expenditure of \$55 million directly associated with the Baobab Phosphate Project as AEV's interest in this asset will be sold to the Major Shareholders as part of the Proposed Transaction.

*Cash Consideration*

13.7 We have made an adjustment for the US\$3.0 million Cash Consideration to be received on completion of the Proposed Transaction less the US\$0.1 million drawdown from the Working Capital Supplement Facility provided by the Major Shareholders to AEV at the date of this Report. We have assessed the value of the Cash Consideration to be A\$4.13 million at the prevailing exchange rate.

*Waiver of Director fees*

13.8 We have made an adjustment for US\$0.28 million of outstanding Director fees which are to be waived on completion of the Proposed Transaction, which equates to A\$0.4 million at the date of this Report.

*Assignment of AEV Corporate Loan*

13.9 We have made an adjustment for the US\$0.92 million Corporate Loan which will be assigned / forgiven on completion of the Proposed Transaction. The balance of this loan at 30 June 2019 was A\$1.3 million.

*Adjustment to the Wonarah Phosphate Project*

- 13.10 AEV will retain the Wonarah Phosphate Project therefore we have adjusted the proforma net assets post the Proposed Transaction to reflect the assessed value of the Wonarah Project as provided by SRK in their report dated 15 August 2019 (attached as Appendix E) and as reflected in the value of an AEV prior to the Proposed Transaction (section 11).
- 13.11 SRK valued Wonarah Project in the range of \$6.01 million and \$16.02 million with a preferred value of \$9.01 million; we have reflected the resulting increase in value above the recorded book value of \$5.98 million at 30 June 2019.

*Selective Buy-back of Shares*

- 13.12 AEV will undertake a buy-back of all shares in AEV currently held by the major Shareholders and their related parties for nil consideration, effectively removing their shareholdings in the Company. As a result, the number of outstanding shares will reduce from 1,058.63 million to 440.75 million on completion of the Proposed Transaction.

## 14. Is the Proposed Transaction Fair to Non-Associated Shareholders?

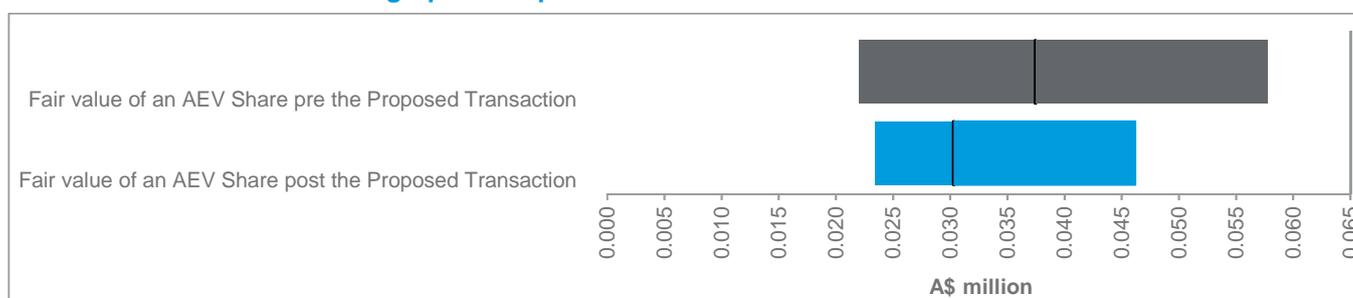
14.1 Our assessed values of an AEV Share prior to and immediately after the Proposed Transaction, are summarised in the table and figure below.

**Table 19 Assessed values of an AEV share pre and post the Proposed Transaction**

Assessment of fairness A\$	Ref.	Value per Share		
		Low	Preferred	High
Fair value of an AEV Share pre the Proposed Transaction	11.27	0.0220	0.0374	0.0568
Fair value of an AEV Share post the Proposed Transaction	13.2	0.0235	0.0303	0.0462

Source: RSM analysis

**Table 20 AEV Share valuation graphical representation**



Source: RSM Analysis

14.2 The chart above indicates that the range of values of an AEV Share post the Proposed Transaction lies within the range of values of an AEV Share prior to the Proposed Transaction.

14.3 We note that the ranges of values are wide. RG 111 states that when a significant range of values exists, an expert should prominently explain in its expert report what factors create this uncertainty. The range of values above is driven by a wide range of values attributed to the mineral assets of AEV. Shareholders are advised to read the independent specialist report attached at Appendix D and with specific reference to the valuation summary at Table ES-1 in that report. It is not uncommon to have a wide range of values for exploration and early stage mining assets due to the uncertainty around successful exploitation. In order to reduce the uncertainty of a wide range of values, the independent specialist has included a preferred value in its report. We have placed greater reliance on the preferred value for the purposes of our assessment of fairness.

14.4 In accordance with the guidance set out in ASIC RG 111, and in the absence of any other relevant information, for the purposes of Section 611, Item 7 of the Act and ASX Listing Rule 10.1, we consider the Proposed Transaction to be not fair to the Non-Associated Shareholders of AEV. We have reached this conclusion based on the analysis of the preferred value post the Proposed Transaction of \$0.0303 being marginally lower than the preferred value prior to the Proposed Transaction of \$0.0374.

## 15. Is the Proposed Transaction Reasonable to Non-Associated Shareholders?

15.1 RG111 establishes that an offer is reasonable if it is fair. If an offer is not fair it may still be reasonable after considering the specific circumstances applicable to the offer. In our assessment of the reasonableness of the Proposed Transaction, we have given consideration to:

- The future prospects of AEV if the Proposed Transaction does not proceed; and
- Other commercial advantages and disadvantages to the Non-Associated Shareholders as a consequence of the Proposed Transaction proceeding.

### Future prospects of AEV if the Proposed Transaction does not proceed

15.2 If the Proposed Transaction is not approved by Shareholders, the Binding Agreement with the Major Shareholders will be terminated. Upon termination of the Binding Agreement, the BMCC Loan and the Working Capital Supplement Facility become immediately due and payable and BMCC, which will remain a subsidiary of AEV, will be liable for any Senegalese tax liabilities.

15.3 Without raising additional funds or ongoing support from the Major Shareholders, the Directors of AEV believe that there would be significant uncertainty regarding the Company's ability to continue as a going concern and as a result it may enter voluntary administration.

### Trading in AEV shares following the announcement of the Proposed Transaction

15.4 As shown in Figure 6 of this Report, trading in AEV shares has remained stable since the announcement of the Proposed Transaction at around \$0.006.

15.5 If the Proposed Transaction is not approved, and in the absence of a superior proposal, the share price of AEV may fall below its current trading levels.

15.6 As stated above, the BMCC Loan and the Working Capital Supplement Facility will become immediately due and payable if the Proposed Transaction does not proceed. Given the circumstances, any future funding which is able to be obtained by AEV is likely to be dilutive to current shareholders and could negatively impact the share price.

### Alternative proposals and the likelihood of a superior offer

15.7 The Directors have advised us that no alternative offers or superior proposals have been received prior to the announcement of the Proposed Transaction, or since that date until the issue of our Report.

15.8 The Company has met with multiple investors over the last 12 months seeking third party funding and investigating other alternatives but had received no funding proposals that could be accepted. If the Non-Associated Shareholders do not approve the Proposed Transaction, it is unlikely that the Company would be able to continue trading for sufficient time to seek alternative proposals, without additional funding.

## Advantages and disadvantages

15.9 In assessing whether the Non-Associated Shareholders are likely to be better off if the Proposed Transaction proceeds, than if it does not, we have also considered various advantages and disadvantages that are likely to accrue to the Non-Associated Shareholders.

### Advantages of approving the Proposed Transaction

Advantage	Details
Settlement of existing debts	The Proposed Transaction will eliminate all debt of AEV, including the AEV Corporate Loan and accrued directors' fees. The Company does not currently have the capacity to repay these debts without additional capital raising or asset disposals.
Non-Associated Shareholders gain 100% interest in AEV with no single substantial shareholder	If the Proposed Transaction is approved, the Non-Associated Shareholders will hold 100% of the Company with no single shareholder holding more than 12.5% of the issued capital. This could increase the attractiveness of the Company to other investors.
Cease financial burden relating to the Baobab Phosphate Project	If the Proposed Transaction is approved, AEV will cease to have the burden of financial obligations it would otherwise have in relation to running the Baobab Phosphate Project and ongoing costs of the Company will therefore reduce significantly.
Removal of exposure to Senegalese tax liabilities (known and potential)	In accordance with the Binding Agreement, any pre-completion tax liabilities (including those associated with the outcome of the Senegalese Government's tax audit of BMCC) will remain a liability of BMCC and GBO following completion of the Proposed Transaction. Accordingly, AEV will not be exposed to any further tax liabilities in Senegal which may arise in relation to the Baobab Phosphate Project operations.
Improved opportunity to progress the Wonarah Project and/or seek new investment opportunities	The Proposed Transaction will result in AEV holding cash reserves of approximately \$4 million and no debt, this will enable the Company to continue as a going concern, make further investments in the Wonarah Project and/or seek new investment opportunities in order to add value to shareholders.

### Disadvantages of approving the Proposed Transaction

Disadvantage	Details
It is not fair	We have assessed that the Proposed Transaction is not fair. However, we note that the range of values post completion lies within the range of values prior to the Proposed Transaction.
No participation in future benefits from the Baobab Phosphate Project or Novaphos	The Company will no longer have any interest in the Baobab Phosphate Project or Novaphos (other than the Australian licence agreement), and therefore will not be able to participate in any potential future value created by those assets.
Risk that the Company will not successfully acquire suitable investment opportunities	There is a risk that AEV may not be able to locate and acquire suitable investment opportunities, or that those investments will not align with the risk profiles of shareholders.

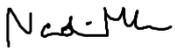
## Conclusion on Reasonableness

- 15.10 In our opinion, the position of the Non-Associated Shareholders of AEV if the Proposed Transaction is approved is more advantageous than if the Proposed Transaction is not approved. Therefore, in the absence of any other relevant information and/or a superior offer, we consider that the Proposed Transaction is **reasonable** for the Non-Associated Shareholders of AEV.
- 15.11 An individual shareholder's decision in relation to the Proposed Transaction may be influenced by his or her individual circumstances. If in doubt, shareholders should consult an independent advisor.

Yours faithfully

**RSM CORPORATE AUSTRALIA PTY LTD**

**N MARKE**



Director

**J AUDCENT**



Director



## APPENDICES

## A. DECLARATIONS AND DISCLAIMERS

### **Declarations and Disclosures**

RSM Corporate Australia Pty Ltd holds Australian Financial Services Licence 255847 issued by ASIC pursuant to which they are licensed to prepare reports for the purpose of advising clients in relation to proposed or actual mergers, acquisitions, takeovers, corporate reconstructions or share issues.

### **Qualifications**

Our report has been prepared in accordance with professional standard APES 225 "Valuation Services" issued by the Accounting Professional & Ethical Standards Board.

RSM Corporate Australia Pty Ltd is beneficially owned by the partners of RSM Australia Pty Ltd (RSM) a large national firm of chartered accountants and business advisors.

Ms Nadine Marke and Mr Justin Audcent are directors of RSM Corporate Australia Pty Ltd. Both Ms Marke and Mr Audcent are Chartered Accountants with extensive experience in the field of corporate valuations and the provision of independent expert's reports for transactions involving publicly listed and unlisted companies in Australia.

### **Reliance on this Report**

This report has been prepared solely for the purpose of assisting Shareholders of the Company in considering the Proposed Transaction. We do not assume any responsibility or liability to any party as a result of reliance on this report for any other purpose.

### **Reliance on Information**

Statements and opinions contained in this report are given in good faith. In the preparation of this report, we have relied upon information provided by the Directors and management of Avenir Limited and we have no reason to believe that this information was inaccurate, misleading or incomplete. RSM Corporate Australia Pty Ltd does not imply, nor should it be construed that it has carried out any form of audit or verification on the information and records supplied to us.

The opinion of RSM Corporate Australia Pty Ltd 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.

In addition, we have considered publicly available information which we believe to be reliable. We have not, however, sought to independently verify any of the publicly available information which we have utilised for the purposes of this report.

We assume no responsibility or liability for any loss suffered by any party as a result of our reliance on information supplied to us.

### **Disclosure of Interest**

At the date of this report, none of RSM Corporate Australia Pty Ltd, RSM, Nadine Marke, Justin Audcent, nor any other member, director, partner or employee of RSM Corporate Australia Pty Ltd and RSM has any interest in the outcome of the Proposed Transaction, except that RSM Corporate Australia Pty Ltd are expected to receive a fee of approximately \$25,000 based on time occupied at normal professional rates for the preparation of this report. The fees are payable regardless of Avenir Limited receives Shareholder approval for the Proposed Transaction, or otherwise.

### **Consents**

RSM Corporate Australia Pty Ltd consents to the inclusion of this report in the form and context in which it is included with the Notice of Extraordinary General Meeting and Explanatory Memorandum to be issued to Shareholders. Other than this report, none of RSM Corporate Australia Pty Ltd or RSM Australia Pty Ltd or has been involved in the preparation of the Notice of Extraordinary General Meeting and Explanatory Memorandum. Accordingly, we take no responsibility for the content of the Notice of General Meeting and Explanatory Statement.

## B. SOURCES OF INFORMATION

In preparing this Report we have relied upon the following principal sources of information:

- Drafts and final copies of the Notice of Meeting;
- Technical Specialist Report from SRK Consulting;
- Feasibility Study Report for Baobab Phosphate Project;
- Binding Agreement for the Proposed Transaction;
- Audited financial statements for AEV for the year ended 30 June 2018;
- Reviewed financial statements for AEV for the six months ended 31 December 2018;
- Consolidation spreadsheet for AEV for the year ended 30 June 2019;
- ASX announcements of AEV;
- Various Board Minutes of AEV;
- Shareholder registry of AEV;
- Various funding agreements between the Major Shareholder and AEV/BMCC;
- Novaphos Management Report for the year ended 31 December 2018;
- Novaphos Management Report for the period ended 31 May 2019;
- Novaphos Shareholder registry;
- Various legal agreements relating to interests held by AEV in Novaphos;
- S&P Capital IQ database;
- IBIS World;
- Discussions with Directors, Management and staff of AEV; and
- Publicly available information.

## C. GLOSSARY OF TERMS

Term or Abbreviation	Definition
\$	Australian dollar
Act	Corporations Act 2001 (Cth)
AEV	Avenira Limited
AEV Corporate Loan	Loan from the Major Shareholders to AEV
APES	Accounting Professional & Ethical Standards Board
ASIC	Australian Securities & Investments Commission
ASX	Australian Securities Exchange
ASX Listing Rules	The listing rules of ASX as amended from time to time
BFA	Baobab Fertilizer Africa
BMCC	Baobab Mining Chemicals Corporation SA
BMCC Loan	US\$1.8 million working capital loan provided by the Major Shareholders to BMCC
Buy-Back	Selective buy-back of shares held by Major Shareholders
Cash Consideration	US\$3.0 million cash consideration
Company	Avenira Limited
Control basis	As assessment of the Fair Value on an equity interest, which assumes the holder or holders have control of the entity in which the equity is held
Directors	Directors of the Company
Directors Fees	US\$0.28 million of accrued Directors fees
Explanatory Statement	The explanatory statement accompanying the Notice
Fair Value	The amount at which an asset could be exchanged between a knowledgeable and willing but not anxious seller and a knowledgeable and willing but not anxious buyer, both acting at arm's length
FME	Future Maintainable Earnings
FOS	Financial Ombudsman Service
FSG	Financial Services Guide
GBO	Gadde Bissik Operations
IER	This Independent Expert Report
Major Shareholders	Baobab Partners LLC, Tablo Corporation and Agrifields DMCC
Non-Associated Shareholders	Shareholders who are not a party, or associated to a party, to the Proposed Transaction
Notice	The notice of meeting to vote on, inter alia, the Proposed Transaction
Novaphos	Novaphos Inc
Option or Options	Unlisted options to acquire Shares with varying vesting conditions
Proposed Transaction	The sale of the Assets to the Major Shareholders
Report	This Independent Expert's Report prepared by RSM dated 15 August 2019

<b>Resolution</b>	The resolutions set out in the Notice
<b>RG 111</b>	ASIC Regulatory Guide 111 Content of Expert Reports
<b>RSM</b>	RSM Corporate Australia Pty Ltd
<b>S&amp;P Capital IQ</b>	An entity of Standard and Poors which is a third party provider of company and other financial information
<b>Share or AEV Share</b>	Ordinary fully paid share in the capital of the Company
<b>Shareholder</b>	A holder of Share
<b>VALMIN Code</b>	Australasian Code for Public Reporting of Technical Assessments and Valuations of Mineral Assets (2015)
<b>VWAP</b>	Volume weighted average share price
<b>Working Capital Supplement Facility</b>	US\$0.3 million working capital loan provided by the Major Shareholders to AEV, any draw-downs will be reduced from the Cash Consideration

## D. INDEPENDENT TECHNICAL SPECIALIST'S REPORT

# Independent Specialist Report on the mineral assets held by Avenira Limited

Report Prepared for

**RSM Corporate Australia Pty Ltd**



Report Prepared by

 **srk** consulting

SRK Consulting (Australasia) Pty Ltd

AVE001

August 2019

# Independent Specialist Report on the mineral assets held by Avenira Limited

## Avenira Limited

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## RSM Corporate Australia Pty Ltd

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**SRK Project Number: AVE001**

**August 2019**

### Compiled by

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### Peer Reviewed by

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Principal Associate Consultant

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## Executive Summary

Avenira Limited (Avenira or the Company) has entered into an agreement for the proposed sale of the Baobab Phosphate Project (the Project) in the Republic of Senegal to related parties of the Company (Proposed Transaction). The Wonarah Project in Australia's Northern Territory is to remain with the Company post transaction. Once the proposed sale is complete, the Company intends to review its holding in the Wonarah Project, including whether to commence a Scoping Study during the December 2019 quarter.

RSM Corporate Australia Pty Ltd (RSM) has been appointed by Avenira to provide an Independent Expert Report (IER) in relation to the Proposed Transaction. RSM has subsequently contacted SRK Consulting (Australasia) Pty Ltd (SRK) to provide an Independent Specialist Report (Report) incorporating a technical assessment and valuation of the mineral assets held by Avenira to accompany its IER.

### Summary of principal objectives

The objective of this Report is to provide an independent assessment of the techno-economic assumptions that would likely be considered by the market as part of a potential transaction process involving the Company's mineral assets. The Report is to be included as an appendix to RSM's IER, which will provide an opinion on whether the Proposed Transaction is fair and reasonable for Avenira's shareholders.

SRK was provided with the Company's financial model (the Model) relating to the Project based on the completion of the Baobab Project Phase 1 Feasibility Study (Class 4 estimate,  $\pm 20\%$  accuracy) as announced to the Australian Securities Exchange (ASX) on 18 March 2019 (March 2019 Feasibility Study).

SRK has completed a technical assessment of all available information pertaining to the Project and selected the most appropriate valuation techniques based on the perceived maturity of the Project and the available information. This Report expresses an opinion regarding the value of the Project as directed in SRK's mandate from RSM. This Report does not comment on the merits of any transaction between the Avenira and any other parties.

This Report has been prepared in accordance with the Australasian Code for Public Reporting of Technical Assessment and Valuation of Mineral Assets – VALMIN Code (2015), which incorporates the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves – JORC Code (2012).

### Outline of work program

SRK's work program included:

- A site inspection of the Baobab Project by SRK's West Africa-based representative
- Compiling a description of Avenira's mineral assets including ownership status, provisions and encumbrances, project history, geological setting, Resource/ Reserve base, metallurgical testwork and design, status of techno-economic studies and environmental status
- A review of the available technical information including the stated Mineral Resource and Ore Reserve estimates prepared in accordance with the JORC Code (2102) and the March 2019 Feasibility Study to determine their reasonableness for valuation purposes
- An outline of the valuation methodologies and principal assumptions adopted by SRK in determining the valuation ranges and preferred value, including details of the relevant market factors.

SRK has not carried out any Mineral Resource or Ore Reserve estimation/ calculation activities for the purposes of its Report.

## Overview

### The Baobab Project

Avenira's Baobab Project was previously worked over a short period from 2016. Production comprised contract open pit mining with a basic crushing and wet screening processing plant producing approximately 100,000 t of phosphate rock concentrate from a Small Mining Permit (SMP) area. Following the cessation of mining and processing operations in September 2018, Avenira completed an initial concept study followed by a staged feasibility process designed to optimise and expand the previous processing operation. The results of the Phase 1 Feasibility Study (stated by Avenira as being compliant with AACE Class 4 estimate,  $\pm 20\%$  accuracy) were presented to the ASX in March 2019. Activities designed to advance the Project to the completion of Phase 2 'Bankable' Feasibility Study (stated by Avenira as being compliant with AACE Class 3 estimate,  $\pm 10\%$  accuracy) are ongoing. Based on the Phase 1 Feasibility Study the key components of the current Project (100% equity basis) are as follows:

- A single granted Exploration Licence, which surrounds a single Exploitation Permit that was granted in September 2018 and covers an area of 75 km<sup>2</sup> [this area is an expansion of the SMP area, which was mined at a small scale from 2016 to 2017]
- Probable Ore Reserves of 39.3 Mt averaging 18.9% P<sub>2</sub>O<sub>5</sub> containing approximately 7.4 Mt P<sub>2</sub>O<sub>5</sub>
- Indicated and Inferred Mineral Resources (inclusive of Ore Reserves) of 362.1 Mt averaging 16.40% P<sub>2</sub>O<sub>5</sub> (at a 10% P<sub>2</sub>O<sub>5</sub> cut-off grade) containing approximately 59.4 Mt P<sub>2</sub>O<sub>5</sub>
- A less densely drilled area peripheral to the current Inferred Mineral Resource area is characterised as an Exploration Target with an estimated tonnage of ~30–60 Mt at approximately 16%–20% P<sub>2</sub>O<sub>5</sub> [the potential quantities and grades are conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource and it is uncertain that future exploration will result in the estimation of Mineral Resources]
- Open pit operations mining multiple pits to be mined using conventional strip-mining dozer push and truck and shovel methods with a targeted mine life of approximately 13.4 years commencing in 2022
- A mine schedule targeting annual production of approximately 2.9 Mtpa of Run of Mine (ROM) material annually to the processing plant in order to produce up to 1.0 Mt (after initial 1-year mining production ramp-up) of phosphate rock concentrate at a grade of 36.4% P<sub>2</sub>O<sub>5</sub>
- A processing plant designed to process  $\pm 2.94$  Mtpa of phosphate ore through the separation of clay, silica, iron and other gangue minerals to achieve a phosphate concentrate with a maximum deleterious grade of 8% SiO<sub>2</sub> and 1% Fe<sub>2</sub>O<sub>3</sub>
- Proposed mine infrastructure including power supply and distribution, bulk water supply and distribution, surface water management facilities, tailings storage and waste handling facilities, access, buildings, communication and information systems
- An estimated pre-production capital cost of US\$183 M and an estimated average operating cost of US\$56/t concentrate.

In SRK's opinion, the Mineral Resource and Ore Reserve estimates for the Project are acceptable as a reasonable representation of global grades and tonnages and are suitable for valuation purposes. SRK has reviewed the proposed mine plan and associated assumptions with respect to mining, processing and cost estimation contained in the Project financial model.

## The Wonarah Project

The Wonarah Project comprises four granted exploration licences remotely located in the Barkly Tablelands of Australia's Northern Territory. The Project involves the proposed development of two phosphate deposits known as Arruwarra and Main Zone to a depth of 35 m below the current surface. The Project has previously been evaluated for mining of a direct shipping ore (DSO) product, as well the use of the Improved Hard Process (IHP) technology, a novel processing flowsheet, which uses lower grade material and hence is able to extract more of the currently defined Mineral Resource.

Under the DSO study, it was envisaged that ore would be strip-mined from four open pits and processed via onsite crushing and screening prior to transportation by road to Tennant Creek and then transported by rail to the Port of Darwin. The DSO project was formally assessed under an Environmental Impact Statement (EIS) which concluded in April 2010 and granted approval to mine in September 2010, subject to a security being paid. The Project was subsequently deemed to be uneconomic, with key hurdles being the high transport and logistical costs associated with operating in a remote location. The high silica content of the ore was found to devalue the Wonarah ore bound for wet (sulphuric) acid processing plants, which were the only available processing option at the time.

Under the IHP study, the ore would be processed on site using local silica sand and imported petroleum coke to extract a super phosphoric acid (SPA) product. The SPA product would be transported in isotainer road trains to the Port of Darwin. The IHP enables a lower grade of ore to be processed, resulting in a longer mine life and a greater proportion of the defined resource to be extracted. Importantly the processing plant proposed is based on technology that has not previously been trialled at commercial scale and some areas of uncertainty remain. Processing plant emissions are to an extent undefined and unquantified pending completion of the Florida pilot plant exercise and trials using the Wonarah ores. Uncontrolled combustion of petroleum coke is generally associated with the release of high levels of sulphur and potentially toxic contaminants such as lead and mercury. Given the isolated nature of the Project, the novel processing technology, potential risks and the high capital cost associated with the IHP, the Project is not yet developed.

Important factors for consideration in valuing the Wonarah Project include:

- The Wonarah Project is a large phosphate project located approximately midway between the mining townships of Mount Isa and Tennant Creek along the Barkly Highway.
- Stated total Mineral Resources (Measured, Indicated and Inferred) were most recently reported in January 2013 at 842.3 Mt averaging 18% P<sub>2</sub>O<sub>5</sub> at a 10% P<sub>2</sub>O<sub>5</sub> cut-off grade. No Ore Reserves are presently defined.
- Previous incomplete studies during the period 2010 to 2012 have shown that due to its isolated location, development of the Wonarah Project is likely to require significant capital expenditure. In an effort to improve the Project's logistical issues and reduce operating costs, Avenira has pursued the development of an innovative processing technology, IHP.
- IHP technology has been in development for approximately 10 years involving the construction of a 1:18 scale model in Fort Meade, Florida, and the processing of a bulk sample extracted from Wonarah. While recent reports suggest that Novaphos Inc. (Novaphos) has now achieved commercial scale efficiencies resulting in yields of 80%, the technology remains unproven.
- Avenira has yet to complete a positive Feasibility Study for the Wonarah deposit and the Project remains effectively stranded.
- The recent corporate focus on the development of the Baobab Project has resulted in cost-cutting measures at Wonarah and a reduction in the tenure (including the relinquishment of the Mineral Lease in 2016) to encompass an area surrounding only the stated phosphate resource areas.

In SRK's opinion, with minor modifications as outlined elsewhere in this Report, the Wonarah 2011 Mineral Resource provides a reasonable representation of global grades and tonnages available and suitable for valuation purposes.

SRK has been advised by Avenira that due to recent tenure relinquishments a small proportion ~5% of the Mineral Resource is outside of the current tenure held by Avenira. SRK has therefore applied a 5% reduction to the Mineral Resources for valuation purposes.

## Valuation

When valuing the exploration and advanced exploration assets, SRK has considered methods commonly used to value mineral assets at these stages of development. These methods are outlined in this Report. SRK has produced a Market Value as defined by the VALMIN Code (2015).

All monetary figures used in this Report are expressed in either United States dollar (US\$) or Australian dollar (A\$) terms, unless otherwise stated. The final valuation is presented in Australian dollars. This Report has adopted a Valuation Date of 1 July 2019.

SRK's recommended valuation ranges and preferred values for the Project are summarised in Table ES-1 (on a 100% equity basis).

### Baobab Project - Discussion

In assigning these values, SRK has placed greater weight on the values implied by the Comparable Transactions and Peer Analysis methods to inform its overall valuation range. The preferred value overall is the midpoint of the value range, as SRK has no preference to either end of the value range. SRK is cognisant of the value attributed to the Baobab Project by Optiro (a suitably qualified mining consultancy) in February 2019 and the fact that since that time Avenira has reported the results of its Phase 1 Feasibility Study. However, the Project requires further de-risking during Phase 2 Feasibility Study.

For the determination of the value of the exploration potential, SRK has selected the midpoint of the values implied by both the comparable market and geoscientific rating approaches. Given that the value to be derived from this exploration potential is as a direct result of the development of the Baobab Mineral Resources, SRK has selected its preferred value towards the lower end of the range. This is also to recognise that the value attributable to exploration potential becomes less material to overall project value as development becomes increasingly likely.

On a net attributable basis, SRK values Avenira's 80% interest in the Baobab Project at between A\$21.6 M and A\$44.0 M, with a preferred value of A\$32.8 M.

### Wonarah Project - Discussion

SRK considers the Wonarah Project remains as a Pre-Development Project with insufficient confidence in the currently defined techno-economic parameters (i.e. no current or valid mining studies or Ore Reserves defined) to support an Income based valuation approach. SRK has therefore considered only the underlying stated Mineral Resources for valuation purposes. As a result of recent relinquishments (including the previous mineral lease), the stated Mineral Resource at Wonarah encapsulates almost the entirety of the granted exploration licence area. Therefore, SRK does not consider that there is any additional exploration potential outside of the defined Mineral Resources.

SRK's selected values are based on the implied values determined through analysis of Comparable Transactions (in particular, the Verdant and Central Australian transactions). SRK's preferred value for Wonarah was simply the midpoint of the derived range, as SRK has no preference to either end of the value range.

SRK considers that the prevailing market would apply a discount to the Wonarah Project given:

- 1 The commercial viability of the IHP technology remains to be demonstrated and is potentially critical to the development of Wonarah. There are already several large phosphate projects with Mineral Resources of a similar grade and size, located more favourably in terms of infrastructure and logistics. These projects have sufficient size and scale to fulfil immediate demand with more favourable economics.
- 2 Previous (albeit incomplete) techno-economic studies have indicated development of the Wonarah Project is likely to involve high capital costs and potentially requiring the involvement of a joint venture (JV) partner or stringent financing conditions.
- 3 As such, SRK considers the prevailing market would likely apply a 50% discount to the values attributable to the Wonarah Project, which has been incorporated into the values outlined in Table ES-1.

**Table ES-1: Valuation summary – 100% basis – as at 1 July 2019**

Project	Asset	Valuation Method	Low (A\$M)	High (A\$M)	Preferred (A\$M)
Baobab	Resources / Reserves	Actual Transactions – Apr 2015 (100 M)	22.25	23.26	
		Actual Transactions – Apr 2015 (140 M)	31.44	32.87	
		Actual Transactions – Nov 2015	220.57	230.60	
		Comparable Transactions – Farim only	14.15	151.71	
		Comparable Transactions – LEDC (total)	21.73	45.51	
		Comparable Transactions – LEDC (accounting for resource confidence)	20.67	34.76	
		Peer Analysis – African focus (Resource)	33.86	93.55	
		Peer Analysis – African focus (Reserve)	10.40	20.85	
		Peer Analysis – All (Resource)	33.86	80.91	
		Peer Analysis – All (Reserve)	33.42	56.45	
		Yardstick	49.44	98.88	
	<b>Selected</b>	<b>27.0</b>	<b>55.0</b>	<b>41.0</b>	
	Exploration Potential	Comparable Transactions	0	1.30	
		Geoscientific Rating	0	1.74	
		<b>Selected</b>	<b>0</b>	<b>1.52</b>	<b>0</b>
		<b>Total</b>	<b>27.0</b>	<b>56.5</b>	<b>41.0</b>
Wonarah	Resources	Comparable Transactions (by Resource category)	18.50	31.75	23.74
		Comparable Transactions (Preferred Total Resource)	12.01	32.04	18.02
		Peer Analysis (MEDC)	39.76	331.34	185.55
		Peer Analysis (Australian projects)	39.76	367.12	203.44
		Peer Analysis (Australian projects excluding outliers)	39.76	60.97	50.36
		Yardstick	135.41	270.81	203.11
		<b>Selected</b>	<b>12.01</b>	<b>32.04</b>	<b>18.02</b>
		<b>50% discount*</b>	<b>6.01</b>	<b>16.02</b>	<b>9.01</b>
		<b>Total</b>	<b>6.01</b>	<b>16.02</b>	<b>9.01</b>

Note: Any discrepancies between values in the table are due to rounding. Avenirra has an 80% interest in the Baobab Project and a 100% interest in the Wonarah Project. MEDC - More Economically Developed Countries, LEDC – Less Economically Developed Countries.

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## Disclaimer

The opinions expressed in this Report have been based on the information supplied to SRK Consulting (Australasia) Pty Ltd (SRK) by Avenir Limited (Avenir). The opinions in this Report are provided in response to a specific request from RSM Corporate Australia Pty Ltd (RSM) to do so. SRK has exercised all due care in reviewing the supplied information and the publicly available market information. While SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data and the market information. SRK does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them. Opinions presented in this Report apply to the site conditions and features as they existed at the time of SRK's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this Report, about which SRK had no prior knowledge nor had the opportunity to evaluate.

## List of Abbreviations

Abbreviation	Meaning
%	Percentage
€	Euro
µm	Micrometres (unit of measurement)
AACE	Association for the Advancement of Cost Engineering
A\$	Australian dollars
AC	Aircore
Agrimin	ASX Code - AMN
AIG	Australian Institute of Geoscientists
Al <sub>2</sub> O <sub>3</sub>	Alumina
AMD	Acid Mine Drainage
ASIC	Australian Securities and Investment Commission
ASL	Above sea level
ASX	Australian Securities Exchange
AusIMM	Australasian Institute of Mining and Metallurgy
Avenira	Avenira Limited
BAC	Base Acquisition Cost
bcm	Bank cubic metres
BMI	Benchmark Mineral Intelligence
Bn	Billion
Bt	Billion tonnes
CAPEX	Capital expenditure or capital expense
CFA	West African CFA franc
Company	Avenira Limited
CoV	Coefficient of Variation
DAP	Diammonium phosphate
Datamine	3D modelling and mining software package for manage mining operations
DCF	discounted cashflow
DD	Diamond core drilling
DGPS	Digital Global Positioning System
DH	Dihydrate
EIS	Environmental Impact Statement
EPS	Enhanced Production Scheduler
EV	Enterprise Value
FAP	P <sub>2</sub> O <sub>5</sub> /CaO ratio
Fe <sub>2</sub> O <sub>3</sub>	Iron oxide
FEL	Front End Loader
FS	Feasibility Study
FSA	Fluorosilicic acid
G&A	General and Administrative
g/cm <sup>3</sup>	Grams per cubic centimetre
g/L	Grams per litre
GDMS	Gas Discharge Mass Spectrometry
GDP	Gross domestic product
GEMS™	3D modelling and mining software package for manage mining operations
GJ	Gigajoules

<b>Abbreviation</b>	<b>Meaning</b>
GSQ	Genealogical Society of Queensland
HG	High Grade
ICP-MS	Inductively Coupled Plasma Mass Spectrometry
IER	Independent Expert Report
IFA	International Fertilizer Association
ISO	International Organization for Standardization
IVSC	International Valuation Standards Council
JORC Code	The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (2012 Edition)
JV	Joint Venture
kg	Kilograms
km	Kilometres
km <sup>2</sup>	Square kilometres
kt	Kilotonnes
ktpa	Kilotonnes per annum
LDC	Least Developed Countries
Leapfrog	Leapfrog 3D geological modelling software
LED	Light Emitting Diode
LEDC	Less Economically Developed Countries
LG	Low Grade
LME	London Metals Exchange
LOM	Life of Mine
M	Million
m	Metres
MAP	Monoammonium Phosphate
MEDC	More Economically Developed Countries
MEE	Multiples of Exploration Expenditure
MEND	Mine Environment Neutral Drainage
MER	Minor Elements Ratio
MG	Medium Grade
mg/L	Milligrams per litre
MineMax	Minemax Planner Pit optimisation software
Mineral Resources	Mineral Resources – as defined by the JORC Code (2012)
mm	Millimetres
MOU	Memorandum of Understanding
MPR	MPR Geological Consultants Pty Ltd
MRE	Mineral Resource estimate
Mt	Million tonnes
Mtpa	Million tonnes per annum
MTR	Metal Transaction Ratio
MW	Megawatts
N	Nitrogen
NI 43-101	National Instrument 43-101 for the Standards of Disclosure for Mineral Projects within Canada
NPV	Net Present Value
NW	North-West
OCE	Office of the Chief Economist

<b>Abbreviation</b>	<b>Meaning</b>
OK	Ordinary Kriging
OLED	Organic Light Emitting Diode
OPEX	Operating expenses
P <sub>2</sub> O <sub>5</sub>	Phosphate
Pb	Lead
PEM	Prospectivity Enhancement Multiplier
PFS	Pre-Feasibility Study
ppm	Parts per million
PSD	Particle size distribution
Q1	Quarter 1
QAQC	quality assurance/ quality control
RAB	Rotary air blast
RC	Reverse Circulation
RICS	Royal Institution of Chartered Surveyors
ROM	Run of Mine
RSM	RSM Corporate Australia Pty Ltd
S&P	S&P Global Market Intelligence (formerly SNL)
SAG	Semi-Autogenous Grinding
SAP	Sulphuric Acid Plant
SE	South-East
Simulus	Simulus Engineers Pty Ltd
SMC	The SMC Test is a laboratory comminution test which provides a range of information on the breakage characteristics of rock samples for use in the mining/ minerals processing industry.
SMU	Selective Mining Unit
SPA	Superphosphoric acid
SRK	SRK Consulting (Australasia) Pty Ltd
Surpac™	GEOVIA Surpac™ is the world's most popular geology and mine planning software, supporting open pit and underground operations and exploration projects
t	Tonnes
t/m <sup>3</sup>	Tonnes per cubic metre
TDS	Total dissolved solids
the Project	Baobab Phosphate Project in western Senegal
tpa	Tonnes per annum
TSF	Tailings Storage Facility
TSP	Triple Superphosphate
US\$	United States dollars
US	United States
USA	United States of America
VALMIN Code	The Australasian Code for the Public Reporting of the Technical Assessment and Valuation of Mineral Assets
Vulcan	3D modelling and mining software package for manage mining operations
Whittle	Strategic mine planning software used to determine and optimise the economics of open pit mining projects.
XRF	X-ray fluorescence

# 1 Introduction and Scope of Report

Avenira Limited (Avenira or the Company) has entered into an agreement to sell its interests in the Baobab Phosphate Project (the Project) and Novaphos Inc. (Novaphos) to a consortium of its major shareholders, these being Agrifos Partners LLC, Tablo Corporation and Agrifields DMCC (Major Shareholders) and receive immediate funding support (Proposed Transaction, ASX announcement on 1 July 2019).

RSM Corporate Australia Pty Ltd (RSM) has been appointed by Avenira to provide an Independent Expert Report (IER) in relation to the Proposed Transaction. RSM has subsequently contacted SRK Consulting (Australasia) Pty Ltd (SRK) to provide an Independent Specialist Report (Report) incorporating a technical assessment and valuation of the Company's mineral assets to accompany the IER.

Avenira's principal mineral asset is the Baobab Project located in the Republic of Senegal. In addition, Avenira holds a 100% interest in the Wonarah Project in Australia's Northern Territory, as well as a minority (approximately 7%) interest in Novaphos's (formerly JDCPhosphate Inc.'s) Improved Hard Process (IHP) proprietary technology for producing high-quality phosphoric acid from low-quality phosphate rock without creating toxic phosphogypsum waste.

The Report focuses on the Baobab and Wonarah phosphate projects.

As defined in the VALMIN Code (2015), mineral assets comprise all property including (but not limited to) tangible property, intellectual property, mining and exploration tenure and other rights held or acquired in relation to the exploration, development of and production from those tenures. This may include plant, equipment and infrastructure owned or acquired for the development, extraction and processing of minerals relating to that tenure.

For this valuation, the Project and associated tenure were classified in accordance with the categories outlined in the VALMIN Code (2015):

- **Early Stage Exploration Projects** – Tenure holdings where mineralisation may or may not have been identified, but where Mineral Resources have not been identified.
- **Advanced Exploration Projects** – Tenure holdings where considerable exploration has been undertaken and specific targets have been 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.
- **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.
- **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. The economic viability of Development Projects will be proven by at least a Pre-Feasibility Study (PFS).
- **Production Projects** – Tenure holdings – particularly mines, wellfields and processing plants that have been commissioned and are in production.

**SRK has classified the Baobab and Wonarah phosphate projects as Pre-Development Projects.**

## 1.1 Nature of the brief and summary of principal objectives

The Report was initiated by RSM. The Report is to be included as an appendix to RSM's IER, which will provide an opinion on the merits of the Proposed Transaction.

The objective of the Report is to provide an independent assessment of the techno-economic assumptions that would likely be considered by the market as part of a potential investment or transaction process involving the Company's principal mineral assets, in particular the Baobab Project.

SRK was provided with the Company's financial model (AEVFSModel2019-0226 FSReport.xls, otherwise known as the Model) supporting the Baobab Project and has completed a technical assessment of the inputs to assess their reasonableness for use in a cashflow-based valuation.

Key areas reviewed by SRK include:

- Mineral Resources and Ore Reserves incorporated into the Model (excluding estimation or calculations)
- Reasonableness of any timing assumptions incorporated in the Model
- Mining physicals (including tonnes of ore mined, ore grade mined and waste material)
- Processing physicals
- Operating costs
- Capital expenditure
- Any other relevant technical assumptions not specified above.

SRK has selected the most appropriate valuation technique for the Project, based on its perceived maturity and the available information. This Report expresses an opinion regarding the value of the Project as directed in SRK's mandate from RSM. This Report does not comment on the merits of any transaction between the owners of these mineral interests and any other parties.

## 1.2 Reporting standard

For the avoidance of doubt, this report has been prepared according to the:

- 2015 edition of the Australasian Code for the Public Reporting of Technical Assessments and Valuations of Mineral Assets (VALMIN Code)
- 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code).

This Report has been prepared by SRK as a Technical Assessment and Valuation Report under the VALMIN Code, as well as the Australian Securities and Investment Commission (ASIC) Regulatory Guides 111 and 112.

One of the authors of this Report, Jeames McKibben, is a Registered Valuer and Chartered Valuation Surveyor with the Royal Institution of Chartered Surveyors (RICS). As a result, this Report may be subject to monitoring by RICS under its Conduct and Disciplinary Regulations. This Report does not comply with the RICS 2017 Valuation Standards, otherwise known as the 'Red Book', as SRK is required to provide a valuation range that reflects the highest and lowest likely Market Values of the Project in accordance with its mandate.

For the purposes of the Report, value is defined as 'market value', being the amount of money (or the cash equivalent or some other consideration) for which a mineral asset should change hands on the

date of valuation between a willing buyer and a willing seller in an arm's length transaction after appropriate marketing, wherein the parties each acted knowledgeably, prudently and without compulsion.

### 1.3 Work program

This assignment commenced in July 2019 with a review of information supplied by Avenira, as well as other publicly available data and information sourced by SRK, including subscription databases such as S&P Global Market Intelligence database services. Company information was uploaded to an online data room and SRK consultants worked through the datasets and the Model and completed research on comparable market transactions to assist with the valuation.

SRK's representative, Isaac Baidoo, visited the Baobab Project during the period 16–18 July 2019 for the purposes of the Report. While the Wonarah Project was not visited for the purposes of this Report, SRK previously completed a number of reviews of this asset and as such has a reasonably good understanding of the Wonarah Project.

#### 1.3.1 Legal matters

SRK has not been engaged to comment on any legal matters.

SRK notes that it is not qualified to make legal representations as to the ownership and legal standing of the tenements that are the subject of this valuation. SRK has not attempted to confirm the legal status of the tenements with respect to joint venture agreements, local heritage or potential environmental or land access restrictions.

SRK has been provided with documentation obtained by Avenira from Geni & Kebe SCP D'Avocats, (G&C), an independent legal firm. The document, *Legal Opinion issued for and at the request of DLA Piper (Perth Office)*, dated 13 August 2019, comments on the Company's legal rights to the Baobab Project, which are the subject of this Report. SRK has also been provided with a second document obtained by Avenira from GlobalLex Chambers, a Mauritius-based independent legal firm, titled *Baobab Fertilizer Africa* File No. C129735 and dated 13 August 2019.

Based on its review of the K&C document, SRK understands:

- Baobab Mining Chemical Corporation S.A. (BMCC) is the legal owner of the Mining Tenements (comprising the Cherif Lo Ngakham exploration permit and the Gadde Bissik exploitation permit) granted by the Republic of Senegal.
- The Baobab Mining Tenements have been duly authorised and delivered by or on behalf of the Senegalese Ministry of Mines.
- All signatures and seals on behalf of the Republic of Senegal are genuine and that the documents available are authentic copies of the originals.
- BMCC holds a 100% of the shares in Gadde Bissik Phosphates Operations (GBO)
- Baobab Fertilizer Africa (BFA) holds 80% of BMCC's shares.
- In accordance with Article 18 of the Senegalese *Mining Code*, at the end of the second renewal period of the Exploration Permit, there is no extension of the period nor a third renewal.

Based on its review of the GlobalLex Chambers document, SRK understands:

- BFA is a duly authorised private company incorporated under the *Mauritius Companies Act 2001*.
- BFA holds a Category 1 Global Business Licence.

In addition, SRK has sighted documentation on the Northern Territory Strike online database that indicates that Avenira has the legal rights to the Northern Territory mineral assets that are the subject of this Report. Opinions regarding the status of mineral tenure, tenure agreements, encumbrances and environmental liabilities were provided to SRK by Avenira or its legal consultants. SRK has made all reasonable enquiries into this status as at 1 July 2019.

## 1.4 Key data sources

Data and information relating to the Project as used by SRK during the preparation of this Report are referenced throughout the Report. SRK has also relied upon discussions with Avenira's management and consultants for information contained within this assessment.

## 1.5 Effective date

The Effective Date of this Report is 14 August 2019, and the Valuation Date is 1 July 2019.

## 1.6 Project team

This Report has been prepared by a team of consultants from SRK's offices in Australia and Ghana. SRK's Project Manager for this Project was Jeames McKibben, a Principal Consultant (Project Evaluation) with over 25 years' experience.

**Table 1-1: Team members and allocated scope topics**

Consultant Name/ Position	Role
Isaac Baidoo Senior Consultant (Geotechnical)	Site visit and site memorandum
Jeames McKibben Principal Consultant (Project Evaluation)	Project management, report compilation and valuation
Leesa Collin Senior Consultant (Geology)	Geology and Resources
Rebecca Getty Consultant (Environment)	Environment, rehabilitation and closure costs
Mathew Davies Senior Consultant (Project Evaluation)	Market transaction analysis
Scott McEwing Principal Consultant (Mining)	Mine design, mine planning, production profile, Reserve review, OPEX and CAPEX
Simon Walsh Associate (Process Engineering)	Testwork regime, processing and OPEX and CAPEX
Karen Lloyd Associate (Project Evaluation)	Peer review

Details of the qualifications and experience of the consultants who have carried out the work in this Report, who have extensive experience in the mining industry and are members in good standing of appropriate professional institutions, are set out below.

### **Isaac Baidoo, BSc (Hons) – Senior Geotechnical Consultant**

Isaac Baidoo is a Geotechnical Engineer with over 18 years of experience in the geotechnical aspects of surface mining and civil engineering construction. Isaac has worked on a number of mine construction projects including leach pads and ponds, dams and metallurgical plant foundations. His surface mining geotechnical experience ranges from core logging to pit slope design and geotechnical risk management. He has had expatriate working experience in Burkina Faso, the DRC, Ivory Coast and Botswana.

**Jeames McKibben, BSc Hons, MBA, Chartered Valuation Surveyor (MRICS), MAusIMM(CP), MAIG – Principal Consultant**

Jeames McKibben is an experienced international mining professional having operated in a variety of roles including consultant, project manager, geologist and analyst over more than 25 years. He has a strong record in mineral asset valuation, project due diligence, independent technical review and deposit evaluation. As a consultant, he specialises in mineral asset valuations and Independent Technical Reports for equity transactions and in support of project finance. Jeames has been responsible for multi-disciplinary teams covering precious metals, base metals, bulk commodities (ferrous and energy) and other minerals in Australia, Asia, Africa, North and South America and Europe. He has assisted numerous mineral companies, financial, accounting and legal institutions and has been actively involved in arbitration and litigation proceedings. Jeames is a current member of the VALMIN Code and IMVAL Committees.

**Leesa Collin, BAppSci (Geophysics), GDip (Applied Geology), GDipEd, MAusIMM – Senior Consultant**

Leesa Collin is a geologist with 17 years' experience working on mineral exploration, resource development and project evaluation. She has experience across multiple commodities including battery minerals, precious metals, base metals and bulk commodities. She spent two years working in Indonesia and has experience across multiple other jurisdictions, including Australia, Malaysia, Vietnam, Cambodia, Laos, Korea, West Africa, Eastern Europe and Russia. Leesa has undertaken prospectus development for multiple listings and Independent Technical Expert reporting for merger and acquisition activity. She has specific expertise in assessing and articulating the risk profile of opportunities on behalf of mining, banking and investment houses for project financing and mergers and acquisitions. Leesa carried out Qualified Person reporting for a recent SGX listing, including estimation of mineral resources and exploration potential in accordance with the Catalist Rulebook and JORC Code (2012) guidelines.

**Rebecca Getty, BSc Hons (Geology), MAusIMM, MAIG – Consultant**

Rebecca Getty is an environmental management professional with 10 years' experience in the mining industry. Her experience as an environmental advisor includes mine closure, environmental management plans and environmental approvals. She commenced her career as an exploration geologist, responsible for supervising drill programs and preparing technical and statutory reports. She has designed, implemented and managed exploration programs for greenfields, mine definition and multi-stage projects in Australia and Canada. Rebecca's experience in technical reporting includes authoring and co-authoring of reports across scoping, pre-feasibility and feasibility study levels according to international reporting guidelines, JORC Code and NI 43-101. Rebecca has strong project management and risk assessment skills.

**Mathew Davies, BSc Hons (Exploration & Resource Geology), MAusIMM – Senior Consultant**

Mathew Davies is a geologist with over nine years' experience in the Australian mining industry. Mathew's multi-commodity experience includes coal and mineral exploration, with technical competency in exploration management and planning; drill rig supervision; core logging and sampling; regional- to prospect-scale geological mapping; target generation; prospectivity analysis; legislative compliance; and reporting. Mathew is also competent in the development of geological models using Leapfrog and Minex, supported by a high level of competence in spatial packages such as ArcGIS and MapInfo. Mathew has been developing his skills in project valuation and has experience in valuation for a broad range of commodities and geological settings, including coal, iron ore, copper, gold, lead, zinc, silver, tin, nickel, molybdenum, phosphate, potash, uranium, mineral sands, niobium, tantalum and graphite.

**Scott McEwing, BEng (Mining), FAusIMM(CP) – Principal Consultant**

Scott McEwing has over 20 years' mining experience in both open pit and underground mining. Scott is a mining engineer who works in due diligence, project management and with technical mine planning arenas. Scott has been SRK's project manager for the delivery of a number of large multi-discipline feasibility studies. His technical skills include mine planning, optimisation and design. He is proficient in the use of computerised mining software packages – Whittle and MineSight, in particular. Scott has practical experience in both production and planning roles in Australia at Golden Grove and Boddington Gold Mine, and in New Zealand at the Martha Mine. While being a consultant with SRK, Scott has been seconded to several mining operations.

**Simon Walsh, BSc (Extractive Metallurgy & Chemistry), MBA, MAusIMM, GAICD – Principal Associate (Metallurgy) – Simulus**

Simon Walsh is the Principal Metallurgist with Simulus Engineers. He has extensive design and operational expertise across a range of mineral processing and hydrometallurgical processes, including nickel, cobalt, alumina, copper, gold and iron ore. His broad range of experience covers management, supervisory and technical roles in plant operations, commissioning, process simulation, project studies, detailed engineering design, metallurgical testwork management and competent person reporting.

**Karen Lloyd, BSc (Hons), MBA, FAusIMM – Associate Principal Consultant**

Karen Lloyd has more than 20 years' international resource industry experience gained with some of the major mining consulting and investment houses globally. She specialises in independent reporting, mineral asset valuation, project due diligence and corporate advisory services. Karen has worked in funds management and analysis for debt, mezzanine and equity financing and provides consulting and advisory in support of project finance. She has been responsible for multidisciplinary teams covering precious metals, base metals, industrial minerals and bulk commodities in Australia, Asia, Africa, the Americas and Europe. Karen is a Fellow of the Australasian Institute of Mining and Metallurgy (FAusIMM) and has the appropriate relevant qualifications, experience, competence and independence to be considered a 'Specialist' and 'Competent Person' under the VALMIN (2015) and JORC (2012) Codes, respectively.

## **1.7 Limitations, reliance on information, declaration and consent**

### **1.7.1 Limitations**

SRK's opinion contained herein is based on technical information provided to SRK by Avenir throughout the course of SRK's assessments as described in this Report, which in turn reflects various technical and economic conditions at the time of writing. Such technical information as provided by Avenir was taken in good faith by SRK. SRK has not independently verified the Mineral Resource or Ore Reserve estimates by means of recalculation.

This Report includes technical information, which requires subsequent calculations to derive subtotals, totals, averages and weighted averages. Such calculations may involve a degree of rounding. Where such rounding occurs, SRK does not consider it to be material.

As far as SRK has been able to ascertain, the information provided by Avenir was complete and not incorrect, misleading or irrelevant in any material aspect. Avenir has confirmed in writing to SRK that full disclosure has been made of all material information and that to the best of its knowledge and understanding, the information provided by Avenir was complete, accurate and true and not incorrect, misleading or irrelevant in any material aspect. SRK has no reason to believe that any material facts have been withheld.

### 1.7.2 Statement of independence

Neither SRK, nor any of its personnel involved in the preparation of this Report have:

- any material present or contingent interest in Avenira or any of the properties or mineral assets described herein; or
- any association with Avenira, or related parties, which may lead to bias.

SRK warrants that its team of consultants is competent to undertake the Report as requested by RSM, and to the best of SRK's knowledge and belief, having made reasonable enquiries, SRK has no conflicts, real or perceived, capable of preventing SRK from performing the requested services.

SRK has no beneficial interest in the outcome of this technical assessment capable of affecting its independence.

### 1.7.3 Indemnities

As recommended by the VALMIN Code (2015), Avenira has provided SRK with an indemnity under which SRK is to be compensated for any liability and/ or any additional work or expenditure resulting from any additional work required:

- which results from SRK's reliance on information provided by Avenira or this party not providing material information; or
- which relates to any consequential extension workload through queries, questions or public hearings arising from this Report.

### 1.7.4 Consent

SRK consents to this Report being included, in full, in RSM's IER in the form and context in which the technical assessment is provided. SRK provides this consent on the basis that the technical assessment expressed in the Summary and in the individual sections of this Report is considered with, and not independently of, the information set out in the complete report. SRK does not consent to this Report being used for any other purpose.

### 1.7.5 Consulting fees

SRK was remunerated with a time-based fee for the preparation of this Report, with no part of the fee contingent on the conclusions reached, or the content or future use of this Report. Except for these fees, SRK has not received and will not receive any pecuniary or other benefit whether direct or indirect for or in connection with the preparation of this report.

SRK's estimated fee for completing this Report is based on its normal professional daily rates plus reimbursement of incidental expenses. The fees are agreed based on the complexity of the assignment, SRK's knowledge of the assets and availability of data. The fee payable to SRK for this engagement is estimated at approximately A\$68,000.

## 2 Overview of Avenira Limited

Avenira is an Australian Securities Exchange (ASX) listed development and exploration company with a portfolio of phosphate projects in the Republic of Senegal and the Northern Territory of Australia.

Avenira was initially incorporated as Minemakers Limited (Minemakers) which was first registered on 19 September 2005 and admitted to the Official List of the ASX on 17 August 2006. Minemakers was initially focused on the exploration and development of phosphate, tin, tungsten and polymetallic deposits in Tasmania, Western Australia and the Northern Territory.

In addition to its ASX listing, Minemakers was also listed on the Toronto Stock Exchange (TSX) from 10 September 2010 to 11 March 2016 (with continued reporting disclosure to 20 August 2016).

On 27 April 2015, Minemakers entered into a conditional agreement to acquire a 100% interest in the Project from Agrifos Partners LLC and others through the issue of Minemakers shares, options and contingent share rights. On 21 August 2015, Minemakers announced that its shareholders had approved the acquisition of the Baobab Project.

On 26 November 2015, Minemakers changed its name to Avenira Limited and changed its ASX Code from MAK to AEV.

Avenira's stated long-term strategy is to 'use the Baobab Project as the foundation for an integrated downstream development to produce higher-value phosphoric acid, the key feedstock to the phosphate fertiliser industry. Avenira considers Africa to be an attractive market for phosphate fertilisers because of population growth, current low fertiliser application rates and urbanisation' (Avenira, ASX announcement dated 17 October 2017).

### 2.1 Corporate structure

#### 2.1.1 Stakeholder companies

According to S&P Global Market Intelligence, the institutional investors and stakeholders holding material interests in Avenira are listed in Table 2-1.

**Table 2-1: Stakeholder companies in Avenira Limited**

Stakeholder	Country of incorporation	Equity holding
Agrifos Partners LLC	USA	21.40%
Tablo Corp.	Panama	21.31%
Agrifields DMCC	United Arab Emirates	14.34%
JP Morgan Asset Management	USA	4.98%
Vineeta Gupta		1.96%
Sovochem Holdings Limited	Cyprus	1.47%
Giovanni Del Conte		1.40%
Polyserve Fertilizers and Chemicals	Egypt	1.39%
Vulcan Phosphates LLC	USA	1.32%
Brett Willmott		0.68%

Source: S&P Global Market Intelligence

## 2.1.2 Subsidiary companies

As disclosed in the Company's 2018 Annual Report, subsidiary companies of Avenira are outlined in Table 2-2.

**Table 2-2: Subsidiary companies of Avenira Limited**

Subsidiary	Country of incorporation	Equity holding
Minemakers Australia Pty Ltd	Australia	100%
Minemakers (Iron) Pty Ltd	Australia	100%
Minemakers (Nickel) Pty Ltd	Australia	100%
Minemakers (Salt) Pty Ltd	Australia	100%
Minemakers (Gold) Pty Ltd	Australia	100%
Bonaparte Diamond Miners Pty Ltd	Australia	100%
Baobab Fertilizer Africa	Mauritius	100%
Baobab Mining and Chemicals Corporation S.A.	Senegal	80%
Gadde Bissik Phosphate Operations SUARL	Senegal	80%
Avenira Holdings LLC	USA	100%

Source: Avenira 2018 Annual Report

## 2.2 Key assets

As at 1 July 2019, the key assets in Avenira's portfolio comprised phosphate projects in the Republic of Senegal and the Northern Territory of Australia, including:

- An 80% interest in the Baobab Project some 145 km east of the Port of Dakar in western Senegal
- A 100% interest in the Wonarah Project located along the Barkly Highway to the east of Tennant Creek in central Northern Territory
- A 7% interest in Novaphos Inc (other than the existing Australian Licence Agreement)

Only the Baobab and Wonarah projects are the subjects of this Report.

### 3 Overview of the Senegalese Phosphate Industry

The following section is largely derived from the US Central Intelligence Agency (CIA) *World Fact Book* along with other public data sources as referenced.

#### 3.1 Overview of Senegal

The Republic of Senegal (herein referred to as Senegal) is an independent republic situated on the western coastal fringe of West Africa located between latitude 12°20' and 16°36' North and longitude 11°20' and 17°33' West. The country has a total land area of some 192,530 km<sup>2</sup> and a near-enclave within its borders – the small nation of Gambia in the interior. It shares its borders with Gambia, Guinea, Guinea Bissau, Mali and Mauritania and has a 531 km long coastline on the Atlantic Ocean.

Senegal serves as a regional business centre for Francophone West Africa. Senegal has a total population of approximately 15 million people (July 2018 estimate), with the population concentrated in the west where the nation's capital and main port, Dakar (2.98 million), provides a well-defined core area. Approximately 70% of the population is rural. Dakar is linked to the rest of the country by a reasonably comprehensive network of roads (tar and gravel) and limited rail infrastructure. Other major urban centres include Touba, Rufisque and Thiès.

Senegal has an extensive road network with over 15,200 km of dedicated national highways, of which more than 5,000 km is asphalt road. There are more than 374,000 motor vehicles in the country, of which 73.6% of the vehicles are concentrated in the capital Dakar area. Senegal has well-developed port facilities, an international airport serving 28 international airlines that serves as a regional hub, and telecommunications infrastructure, including fibre optic infrastructure. Cellular phone penetration exceeds 50% of the population, and there are 1.818 million Internet users.

Senegal is mainly a low-lying country with elevations ranging between 0 m and 648 m above mean sea level and a mean elevation of 69 m, with a semi-desert area in the north and northeast and forests in the southwest. The Senegal, Gambia and Casamance Rivers flow from east to west draining extensive inland plains with altitudes of less than 200 m. In the southeast of the country, plateaux with altitudes of up to 600 m form the foothills of the north–south striking Bassaride mountain range. North of the Gambia River, much of the land is barren except for the floodplains of the Senegal River.

Senegal has a humid, hot, tropical climate comprising two main seasons – dry (December to April) dominated by hot, dry harmattan winds, and rainy (May to November) dominated by strong southeast winds. Dakar's annual rainfall averages 600 mm, primarily falling between June and October when temperatures typically range between 24°C and 30°C. Mean temperatures range between 18°C and 26°C but are typically hotter in the country's interior.

Senegal's flora is highly complex and characterised by three types of vegetation: forest in the south, savannah in the interior and steppe in the north.

The country's official language is French, but other languages spoken are Wolof, Pular, Jola, Mandinka, Serer and Sninke. Senegal uses the West African CFA franc as its official legal tender, which is valued at 565.11 to 1 US dollar (1 July 2019).

Senegal experienced an extended period of internal conflict spanning the period between 1967 and 2002, following independence, various military coups, military actions and wars, which led to instability. More recently, political and economic stability has returned to the country. Investor and consumer confidence continue to rise, adding impetus to the country's economic recovery. In addition, there is greater freedom of movement and the successful rehabilitation and resettlement of residential areas.

## 3.2 Senegalese macro-economic environment

Senegal's economy is based on agriculture, primarily groundnuts, cotton, grain crops, livestock and fishing; industry, primarily food processing, gold, iron ore and phosphate mining, fertiliser and cement production and downstream petroleum products; and services, which are the main contributor to Senegal's gross domestic product (GDP).

Mining, construction, tourism, fisheries and agriculture are the primary sources of employment in rural areas. The country's key export industries include phosphate mining, fertiliser production, agricultural products and commercial fishing and it is also working on oil exploration projects. Senegal relies heavily on donor assistance, remittances and foreign direct investment. Senegal reached a growth rate of 7.0% in 2017 (the most recent records available).

For 2019, Senegal has a 3% growth target (WAEMU's convergence criterium), yet high commodity prices imply continued constraints on the fiscal balance. Looking forward, expected oil and gas production is forecast to increase fiscal revenues beginning in 2022.

President Macky Sall, who was elected in March 2012 under a reformist policy agenda, inherited an economy with high energy costs, a challenging business environment, and a culture of overspending. President Sall unveiled the Emerging Senegal Plan (ESP), which aims to implement priority economic reforms and investment projects to increase economic growth while preserving macroeconomic stability and debt sustainability.

Senegal receives technical support from the International Monetary Fund (IMF) under a Policy Support Instrument (PSI) to assist with implementation of the ESP. The PSI implementation continues to be satisfactory as concluded by the IMF's fifth review in December 2017. Financial markets have signalled confidence in Senegal through successful Eurobond issuances in 2014, 2017, and 2018.

Key projects developed under the ESP include the Thiès-Touba Highway, the international airport, which was opened in December 2017, and upgrades to energy infrastructure. The cost of electricity is a chief constraint for Senegal's development. Electricity prices in Senegal are among the highest in the world. Power Africa, a US presidential initiative led by USAID, supports Senegal's plans to improve reliability and increase generating capacity.

## 3.3 Senegalese political environment

Senegal is a former French colony that was merged with French Sudan in 1959 and granted independence in 1960 as the Mali Federation. The union broke up after only a few months. Senegal joined with Gambia to form the nominal confederation of Senegambia in 1982. The envisaged integration of the two countries was never implemented, and the union was dissolved in 1989. The Movement of Democratic Forces in the Casamance has led a low-level separatist insurgency in southern Senegal since the 1980s. Several attempts at reaching a comprehensive peace agreement have failed to resolve the conflict but, despite sporadic incidents of violence, an unofficial cease-fire has remained largely in effect since 2012.

Today, Senegal is one of the most stable democracies in Africa and has a long history of participating in international peacekeeping and regional mediation.

A new constitution was adopted by referendum on 7 January 2001. The constitution has been amended several times thereafter. The Senate was abolished in 2001, re-established in 2007 and then abolished again in September 2012.

A 2016 constitutional referendum reduced the presidential term to five years with a maximum of two consecutive terms for future presidents – the change did not apply to President Sall's first term. Sall won his bid for re-election in February 2019; his term will end in 2024. A month after the election, the

National Assembly voted to abolish the office of the prime minister. Opposition organisations and civil society have criticised the decision as a further concentration of power in the executive branch at the expense of the legislative and judicial branches.

Administratively, Senegal is divided into 14 regions: Dakar, Diourbel, Fatick, Kafrine, Kaolack, Kédougou, Kolda, Louga, Matam, Saint-Louis, Sedhiou, Tambacounda, Thies and Ziguinchor, each administered by a governor. Each region is further divided into administrative departments, which are subdivided into districts. The administrative departments are administered by *préfets* and each district by a *sous-préfets*. Governors, *préfets* and *sous-préfets* are appointed by the President, while village chiefs and neighbourhood chiefs are appointed or acknowledged by the *sous-préfets* and *préfets*, respectively.

### 3.4 Phosphate market overview

Phosphate rock is a phosphorus-bearing mineral that provides the raw material for a range of downstream products including fertilisers, animal feeds and industrial phosphates. While an essential element for all forms of life, phosphorous represents one of three macronutrients – phosphorous (P), nitrogen (N) and potassium (K) – required by plants. The depletion of these nutrients in soil is commonly replaced by the use of chemical fertilisers. The demand for fertilisers is closely linked to population growth and increasing agricultural output.

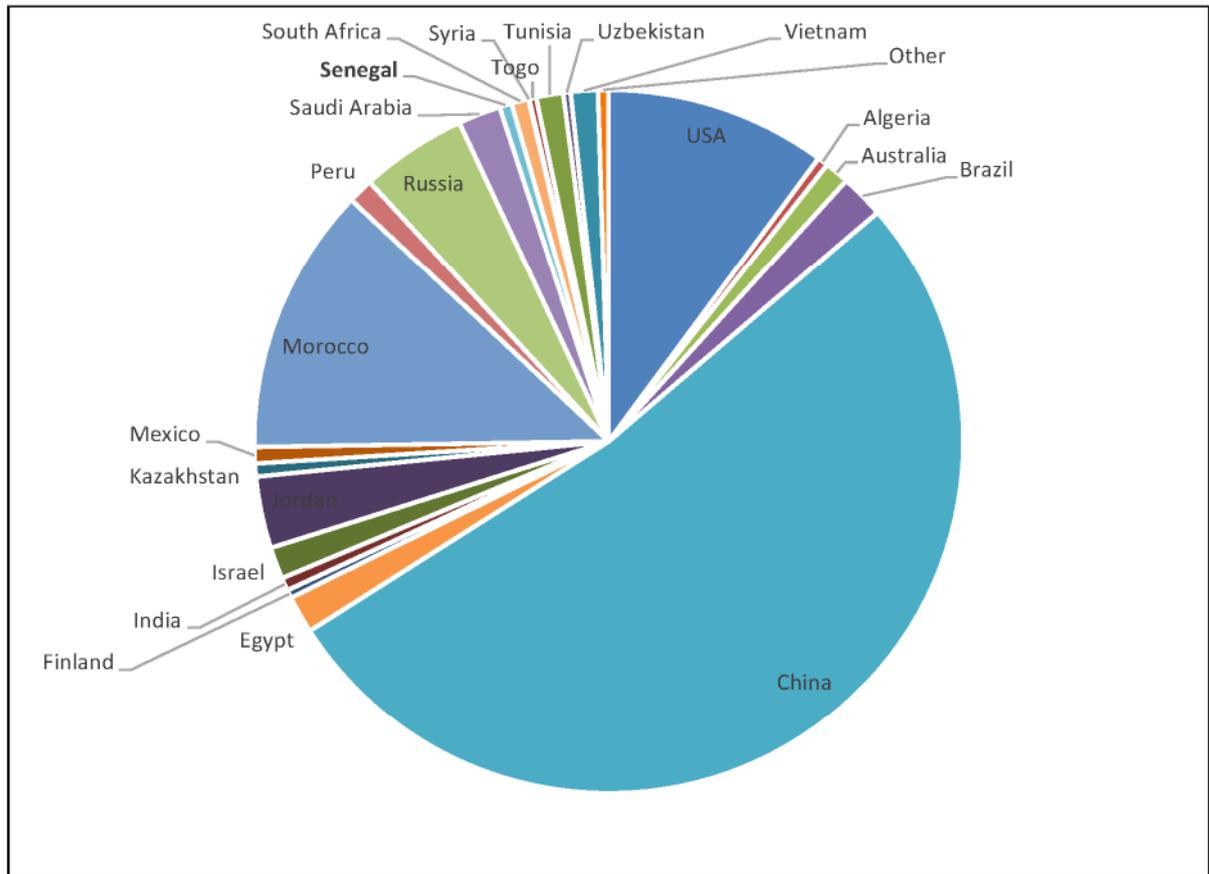
Common phosphate fertilisers include single superphosphate (SSP), triple superphosphate (TSP), diammonium phosphate (DAP), monoammonium phosphate (MAP), and nitrogen-phosphorous-potassium (NPK). Other applications for phosphates include as animal feed (di-calcium phosphate or DCP and industrial and food applications (including phosphate salts) and elemental phosphorous.

Phosphate rock is generally graded by its P<sub>2</sub>O<sub>5</sub> content. This is commonly measured as bone phosphate in lime (BPL). A grade of 68–72% BPL, an industry standard, translates to 31%–33% P<sub>2</sub>O<sub>5</sub>. Widely traded rock grades range from about 29% (i.e. grades sold from Egypt) to 35% (i.e. grades sold from West Africa). Figure 3-1 illustrates the countries where phosphate rock mining takes place and the total rock mining capacity in each region.



**Figure 3-1: Global phosphate rock capacity (Mt)**

Source: CRU, Kropz prospectus 2018



**Figure 3-2: Rock phosphate 2018 mine production**

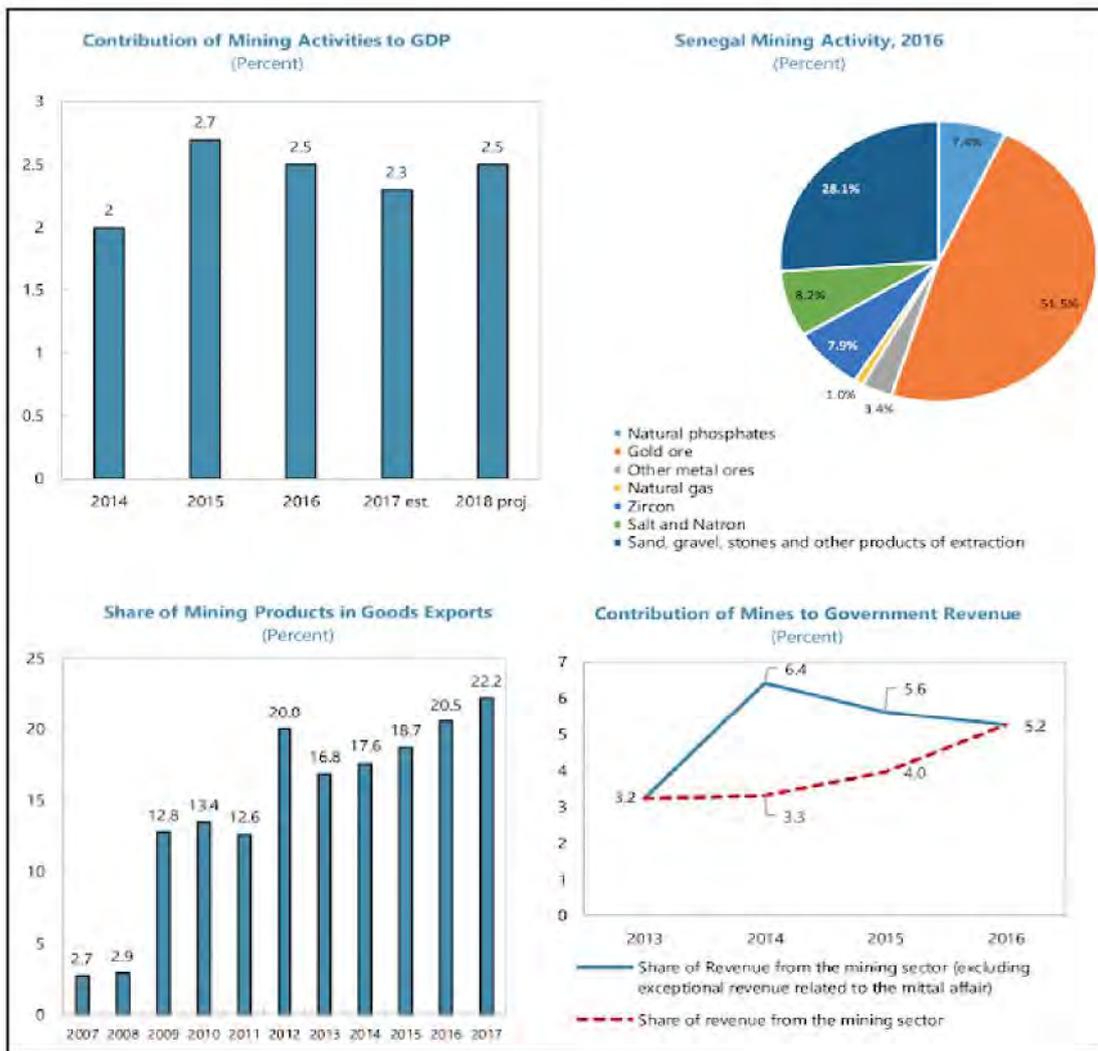
Source: USGS (2019)

Much of the growth in world phosphate rock output over the last decade has been in China and Morocco. China produces approximately 40% of the world's phosphate rock, but also uses almost all of it for domestic production. Morocco and the US produce approximately 14% of the world's phosphate rock each.

China and India account for almost half of global phosphate fertiliser consumption. The difference between the two countries is that China has vast phosphate resources, while India has very little. The largest consumer, India, relies heavily on imports of phosphate rock (23%), phosphoric acid and finished products. The USA has become the second-largest importer of phosphate rock, importing 8% of the world's phosphate rock production. Brazil holds only 0.4% of the world's phosphate reserves at present but is the fourth-largest consumer of fertiliser in the world and is a net importer.

### 3.5 Senegalese phosphate industry

Senegal's sedimentary basin rocks are rich in phosphates, heavy minerals, attapulgites (a magnesium aluminium phyllosilicate) and resources used in construction/ building activities. The underlying basement rocks also contain gold, manganese, iron and base metal mineralisation. Mining accounted for a relatively small proportion of Senegal's GDP in 2017 (2.9%; the most recent statistics available); however, new exploration techniques, increased foreign investment and the construction of a new industrial transport infrastructure are expected to enhance exploration outcomes.



**Figure 3-3: Senegal: contribution of the mining sector**

Source: IMF, 2019

Modern mining in Senegal dates to 1940–1950 with the opening of two large phosphate mines in Taiba and Lam in the Thiès region. The exploitation of these large phosphate deposits has contributed to the success of the Senegalese economy for several decades. Today, the exploitation of phosphates remains the main activity of the Senegalese mining sector.

The country’s four main phosphate areas are:

- 1 The Neoproterozoic/ Cambrian phosphates in the Namel area, southeastern Senegal
- 2 The Eocene phosphate deposits along the Senegal River, including the Matam deposits
- 3 The Eocene primary phosphate deposits in western Senegal mined at Taiba and Lam Lam
- 4 The aluminous phosphates of the Thiès region, weathering products of the Eocene phosphates, also found in western Senegal.

Senegal is one of the major phosphate producers in sub-Saharan Africa. Phosphates and phosphoric acid are estimated to account for 6.0% of Senegal’s total exports in 2017, a 2.4% decrease compared to an 8.4% share in 2016. In 2017, the total phosphate production from Senegal was 2.4 Mt, which was exported to India, Canada, Australia, Mexico and China. The bulk of the exports are phosphoric acid (a value-added product) as opposed to phosphate rock (no added value). A high proportion of the concentrate is used for industrial processing and the production of soluble P-fertilisers, for instance SSP, TSP, DAP and NPKs. Most of the processed P-fertilisers are exported.

According to the Senegalese Government (2018), in addition to Avenir, there are several phosphate exploration and production companies operating in Senegal:

- *Industries Chimique du Sénégal* (ICS), one of the world's largest phosphate producers and the owner of a mining concession in Senegal, operates the mine of Tobene in Taiba (formerly held by *Compagnie Sénégalaise des Phosphates de Taïba*), whose natural reserves are estimated to be in excess of 50 Mt (Govt of Senegal, 2016). ICS is the largest industrial complex in Senegal and consists of three sites. The mine site is located 100 km from the capital of Dakar and has extensive reserves of high-quality phosphate ore. The phosphoric acid plants are located in Darou and have a production capacity of 600,000 tpa. The downstream fertiliser plant is located in Mbao, which is close to Dakar. The fertiliser plant can produce 250,000 tpa of DAP and NPK products. ICS has well-integrated logistics, including access to the railway system, its own fleet of locomotives and wagons, and dedicated berth at Dakar port. ICS exports most of its phosphoric acid to India, while it sells its fertiliser products in West Africa and international markets. Shareholders in 2018 were Indorama (78%), Senegal Government (15%), IFCCO (6.78%) and India (0.22%). In 2018, ICS reportedly produced 1.77 Mt of phosphates compared to 1.4 Mt in 2017, an increase of 26%. Total production capacity is estimated at 2 Mt. The production of phosphoric acid amounted to 548,000 t in 2018, with a total production capacity of 600,000 t<sup>1</sup>.
- *Societe Sénégalaise de Phosphates de Thiès* (SSPT) mines mainly palygoskite and minor amounts of Al-phosphate from the Thiès region. SSPT recently celebrated its 70<sup>th</sup> anniversary and its major shareholders include the Government and the Spanish Group, TOLSA. Approximately 98% of its production (mainly fertiliser and livestock feed) is exported to Europe.
- In May 2011, *Sephos Senegal S.A.* was awarded a phosphate exploration permit in the Baiti zone (Thiès region). Since that time, the company has also acquired interests in the Lam Lam area (Thiès region) and at Niakhene (between Thiès and Louga). Sephos is 81% owned by IFCOM (Senegal) and Spanish company Fertinagro Nutrients (part of the Tervalis Group). Sephos produces phosphate rock from its Lam Lam operation (production of 116,963 t in 2017 with capacity for 400,000 t) for export worldwide. Sephos has undertaken to install a phosphoric acid manufacturing unit as well as a fertiliser plant.
- Phosphate production at Ndiendoury by *Société Minière de la Vallée du Fleuve Senegal* (SOMIVA) commenced in 2014, with 679,175 t produced in 2017 with a targeted full production capacity of 1.2 Mtpa.

### 3.6 Geological setting of Senegal

Senegal comprises two major geological domains – the Sedimentary Basin, which occupies more than 75% of the country, and the Precambrian Basement, representing the country's southeast.

#### 3.6.1 Sedimentary basin

The Senegal Basin is a Mesozoic Basin representing the central part of the Mauritania-Senegal-Gambia-Bissau-Conakry (MSGBC) Basin, which stretches from Mauritania to Guinea Bissau along the coast of West Africa. It is a passive margin opening westward to the Atlantic Ocean and its eastern limit is represented by the Mauritanides mountain chain. The Senegal Basin has gone through a complex history in relation to the pre-rift (Upper Proterozoic to Palaeozoic), the syn-rift (Permian to Triassic) and the post-rift (Central Jurassic to Holocene) at different stages of development of the basin.

<sup>1</sup> Development of the phosphates and fertiliser sector, sourced from <https://translate.google.com/translate?hl=en&sl=fr&u=http://senegal-emergent.com/fr/developpement-de-la-filiere-phosphates-et-fertilisants&prev=search> accessed 9 July 2019.

Most of the exposed rocks of the basin are composed of Recent sandy cover rocks. Maestrichian and Eocene-aged formations crop out on the Cape Verde Peninsula, while Eocene outcrops are evident in the Senegal River valley. Secondary formations include:

- Palaeocene limestone which is exploited at Bandia and Pout by cement plants and aggregates producers
- Maestrichian sands, clays and sandstones.

Palaeocene and Maestrichian formations are also known to be major aquifers that contribute significantly to the water supply for cities and villages in the basin. Tertiary formations hold significant resources of phosphates, limestone, attapulgite, clay and ceramics and solid fuels.

A major part of the basin is covered with superficial Quaternary formations that are characterised by fixed red sand dunes, semi-fixed or alive yellow and white dunes. These dunes, often exploited as building materials around urban centres, also constitute important reservoirs of heavy minerals.

### 3.6.2 Precambrian basement

The Precambrian basement formations are represented in the west by the Mauritanides Range bordering the eastern part of the Sedimentary Basin and in the east by the Palaeoproterozoic volcano-sedimentary sequences of the Kédougou-Kéniéba Inlier.

Rocks of the Mauritanides chain are Hercynian in age and constitute one of the mobile belts associated with the West African Craton. They are known for their numerous copper and chromium occurrences which, in Mauritania, constitute the important copper deposits of the Akjoujt region. The Palaeoproterozoic volcano-sedimentary sequences, mostly known as Birimian Formations, are of great metallogenic importance, in that they contain the major deposits discovered in the region.

The Kédougou-Kéniéba Inlier is limited to the west by the Mauritanides chain, and on all other sides by the Upper Proterozoic and Cambrian sediments of the Taoudenni Basin. The Kédougou-Kéniéba Inlier is interpreted as an accretion of northeasterly trending Birimian age volcanic terrains. It includes two major geological structures, the Senegalomalian Fault and the Main Transcurrent Zone (MTZ).

The inlier is divided into three main stratigraphic units from west to east:

- The Mako Supergroup hosts the Sabodala deposits in an area of intense shearing and silicification associated with pyrite gold mineralisation. It forms a north–east trending structure, turning northwest near the Mali border. Typical lithologies include basalt, often carbonate altered and minor volcanoclastic intercalations, magnesium basalt or komatiites, ultramafic sub-volcanic intrusions (pyroxenites) and numerous massive biotite and amphibole granitoids. These granitoid intrusions are interpreted to have been the source for deep mineralised magmatic fluids related to the gold mineralisation in the Kédougou-Kéniéba Inlier.
- The Diale Supergroup is weakly metamorphic. It includes extensively folded formations, deposited after those of the Mako Supergroup and consisting of shale, greywacke, quartzite and volcanosedimentary rocks.
- The Dalema Supergroup comprises volcanosedimentary schist and graywacke.

These Birimian formations are affected by syn, late and post-tectonic granite intrusions.

The Precambrian Basement is a metallogenic province of major importance for Senegal, which hosts numerous deposits and anomalies of gold, iron, uranium, lithium, tin, molybdenum and nickel in Birimian formations, and copper and chromium in the Mauritanides range. In addition to these metal resources, there are large marble and other ornamental rock deposits, but also deposits of barytes, kaolin and asbestos, for example.

## 4 Senegalese Mining Law

The following section is largely derived from Mayer Brown (2017) along with other public documents as referenced.

### 4.1 Overview

Senegal is a civil law jurisdiction, meaning that the core principles of law are codified and serve as the primary source of law. The Constitution of Senegal, adopted by constitutional referenda on 7 January 2001, is the fourth constitution of the country (after those of 1959, 1960 and 1963). As with most Franco-African countries, the Constitution of Senegal is heavily based on the 1958 French Constitution, considered as being the 'Mother Constitution'.

Whereas in a common law legal system (such as England and Wales) judicial cases are regarded as the most important source of law (giving judges an active role in developing rules), in civil law systems codes and statutes are designed to cover all eventualities and judges have a more limited role – to apply the law to the case in hand. To ensure consistency, courts in common law jurisdictions abide by precedents set by higher courts examining the same issue, whereas in a civil law system previous judgments are really no more than a (loose) guide.

The judicial branch consists of the *Conseil Constitutionnel*, the *Conseil d'Etat*, the *Cour de Cassation*, the *Courdes Comptes* and the Courts and Tribunals.

The *Organisation pour l'Harmonisation en Afrique du Droit des Affaires* (Organisation for Harmonisation of Business Law in Africa or OHADA) legal system applies in Senegal. OHADA was created on 17 October 1993 and is a uniform system of business laws adopted by 17 west and central African nations. It provides for a uniform system of business law directly applicable in its Member States through 'Uniform Acts', which have been largely inspired by French law. These Uniform Acts cover matters such as corporate law, security, insolvency, arbitration and recognition of foreign courts' decisions.

Senegal is part of the West African Economic and Monetary Union (WAEMU or UEMOA in French), an organisation of eight West African states established to promote economic integration among countries that share the CFA franc as a common currency. The CFA franc (FCFA) is linked to the Euro (€) at a fixed rate of 655,957 FCFA to €1.

It is also part of the Economic Community of West African States (ECOWAS), a regional group of 15 West African nations created to promote economic integration across the region.

### 4.2 Relevant authorities

According to Dempsey (2019), the Senegalese mining industry is administered by the Ministry of the Industry and Mines (formerly the Ministry of Energy and Mines), the Mines Authority (formerly the Directorate of Mines and Geology) and regional mines departments (in each of the 14 administrative districts).

### 4.3 Types of tenure under the *New Mining Code*

In Senegal, there are three major levels of permitting required to undertake mineral exploration and development.

- The first, an Exploration Permit (Permis de Recherche), allows exploration to be undertaken.
- The second, a Small Mine Permit (SMP), allows resource estimates, feasibility studies, and mining for smaller-scale, less capital-intensive projects with a mining duration of five years or less.

- The third, an Exploitation Permit (Permis d'exploitation) or Mining Licence, is intended for large-scale projects with mining durations of 5 years to 20 years and includes significant tax incentives from the Government. The Government is entitled to a 10% free-carry interest in the mining company and may purchase shares up to a total interest of 25%.

In each case, a 'Mining Convention' or 'Mining Agreement' is the initial contractual agreement between the investor and the State. This contract sets out the legal, fiscal, administrative, and specific corporate conditions under which the permit holder shall undertake its operations.

## 4.4 Mineral tenure

President Sall made mining industry reform one of his top priorities following his election in early 2012. Recognising the significance of the mining industry to Senegal, his goal is to increase foreign investment in the mining sector and thereby increase its contribution to the Senegalese GDP.

The Parliament of Senegal passed a new *Mining Code* (No. 27/2016) on 30 October 2016 (the '*New Mining Code*'). The *New Mining Code* applies to new applications, with the provisions of the 2003 *Mining Code* (the '*Previous Code*') continuing to apply to existing permits. The passing of the *New Mining Code* follows a three-year consultation and legislative drafting process and introduced many initiatives used within the region. The bill was presented to the President for promulgation on 8 November 2016 (No. 2016-32).

While the framework of the mining regime remains substantially the same, key changes from the *Previous Code* include:

- **Type and length of mining permits:** Under the *Previous Code*, the distinction between a 'mine permit' and a 'mining concession' caused confusion for investors. The *New Mining Code* attempts to simplify these titles. Under the *New Mining Code*, a company can apply for a 'small mine permit' or a 'mining permit':
  - A 'small mine permit' is limited to a daily treatment capacity of 500 tonnes of minerals and a mining area of 500 ha. It is issued for an initial term of five years (increased from three years under the *Previous Code*). It may be renewed for three years at a time, with no limit on the number of renewals. A 'small mine permit' holder must commence mining operations within three months of the small mine permit being granted.
  - There are no limitations on the scale of operations under a 'mining permit'. A mining permit is issued for an initial term of between 5 years and 20 years, depending on the mineral reserves identified and the investment required – this is less than the maximum 25 years for an initial permit under the *Previous Code*. Mining permits are renewable as many times as necessary until the resource is exhausted. Holders of 'mining permits' must commence mining operations 'as soon as possible'. No specific timeframe is included but the *New Mining Code* states that, if operations have not commenced within one year of the date of entry into force of the mining permit, the permit holder will be liable to penalties of US\$100,000 per month for the first three months, increasing thereafter. If the permit holder has not commenced work within 24 months, the State may revoke the mining permit.
- Mining companies are required to enter into a mining convention at the same time as the permit is granted. The convention must be published on the website for the Ministry of Mines following execution. It cannot derogate from the provisions of the *New Mining Code*, but may supplement them, and it must detail the rights and obligations of the parties, including the stability of the legal conditions under which the mining title was granted.
- **Fees, royalties, taxes and tax relief:** One of the key objectives of the *New Mining Code* is to increase revenues to the Government from the mining sector.

- **Introduction of production sharing agreements:** The *New Mining Code* permits the State of Senegal and a mining company to enter into a production sharing agreement, giving the mining company the exclusive right to research and mine a particular area and recover the cost of doing so from sale of the mined substance. The profits from the sale of the product are split between the State and the mining company in the amount specified in each individual agreement. Where a production sharing agreement exists, the mined substance will not be subject to the quarterly mining tax outlined below.
- **Enhanced social and environmental obligations:** The *New Mining Code* introduces an obligation for mining title holders to contribute annually to a local development fund in the amount of 0.5% of sales, minus 'annual fees' (unspecified). The purpose of the local development funds is to promote the economic and social development of local communities residing around mining areas and must include women's empowerment projects. The introduction of a local development component has been a common theme in recent years in African jurisdictions.
- 'Small mine permit' holders (who had no obligations regarding rehabilitation costs under the Previous Code) must provide a guarantee as security for rehabilitation costs under the *New Mining Code*.
- In addition to rehabilitation obligations, under the *New Mining Code* all mining title holders are required to:
  - respect, protect and implement human rights in areas affected by mining operations
  - respect the provisions of the *Forestry Code* where the mining title has been granted over a 'classified forest zone'
  - respect the principles and obligations under the Extractive Industries Transparency Initiative (EITI), such as declaring all payments made to the State to the EITI authorities.
- **Penalties:** The *New Mining Code* lists various potential infractions that may be penalised, including non-payment of taxes, health and safety violations and illegal mining activity or storage, transport or sale of mineral substances.
- **Transparency:** Under the *New Mining Code*, mining companies, as well as the State, are subject to more thorough audits. All mining revenues due to the State will be published in publicly available statements. In addition to abiding by the principles of EITI, the State is free to appoint independent firms to audit mining companies.

## 4.5 Other laws affecting the mining industry

Apart from the *Mining Codes*, the mining sector is also regulated by:

- The *Civil Code*
- The revised *Uniform Act* relating to general commercial law dated 15 December 2010
- The *Tax Code*, No. 2012-31 of 31 December 2012
- Law No. 2001-01 enacting the *Environmental Code*, dated 12 April 2001
- Law No. 98/03 dated 8 January 1998, enacting the *Forest Code* and its implementing decree dated 20 February 1998
- Regulation No. 09/2010/CM/UEMOA dated 1 October 2010.

### 4.5.1 Restrictions on foreign ownership

The mining permit must be held by a company incorporated under Senegalese law. Under the *Previous Code*, foreign investors were not permitted to own 100% of the shares in a Senegalese company. This restriction has been removed under the *New Mining Code*.

## 4.5.2 Local content

Mining title holders may freely choose their suppliers, sub-contractors and service providers as well as their partners. However, mining title holders and their suppliers and sub-contractors shall use, whenever possible:

- services and material originating from Senegal
- products made or sold in Senegal, provided these services and products are available at competitive conditions regarding their price, quality, warranties and time delivery.

Mining title holders have to develop and publish an annual procurement plan. See also 'Enhanced social and environmental obligations' above.

## 4.5.3 Government free/ earned carried interest in projects

The State has a 10% free participation in the mining company at the exploitation stage and may negotiate for itself an additional participation in the capital of the mining company.

## 4.5.4 Taxation of mining projects (including royalties)

Under the *New Mining Code*, entry fees for the grant of permits have increased. An annual surface royalty payable by all title holders has been introduced. The annual surface royalty for a 'small mine permit' is FCFA 50,000 per hectare and that for a 'mining permit' is FCFA 250,000 per square kilometre.

The specific 'mining tax' (which was included in the *Previous Code*) has been retained, but under the *New Mining Code* its application has been revised such that all authorised mining activities are subject to a quarterly mining tax levied on the market value of the commercialised product. The rate varies according to the mineral substance being mined, for example iron ore (concentrate 5%, locally processed 2%) and gold (1.5%).

Various tax benefits contained in the *Previous Code* have been revised in the *New Mining Code*. During the period commencing on the date of entry into force of the mining permit or small mine permit and ending on the first date of commercial production (the 'Investment Period'), the mining title holder will be exempt from most taxes and fees including VAT and the COSEC port charge. Several taxes have been carved out from this exemption (as compared to the *Previous Code*) including the community levy. The provisions of the *Previous Code* that exempted mining title holders from export tax have been removed such that export tax is now payable in respect of products mined within the mining permit area from the date of entry into force of the mining title.

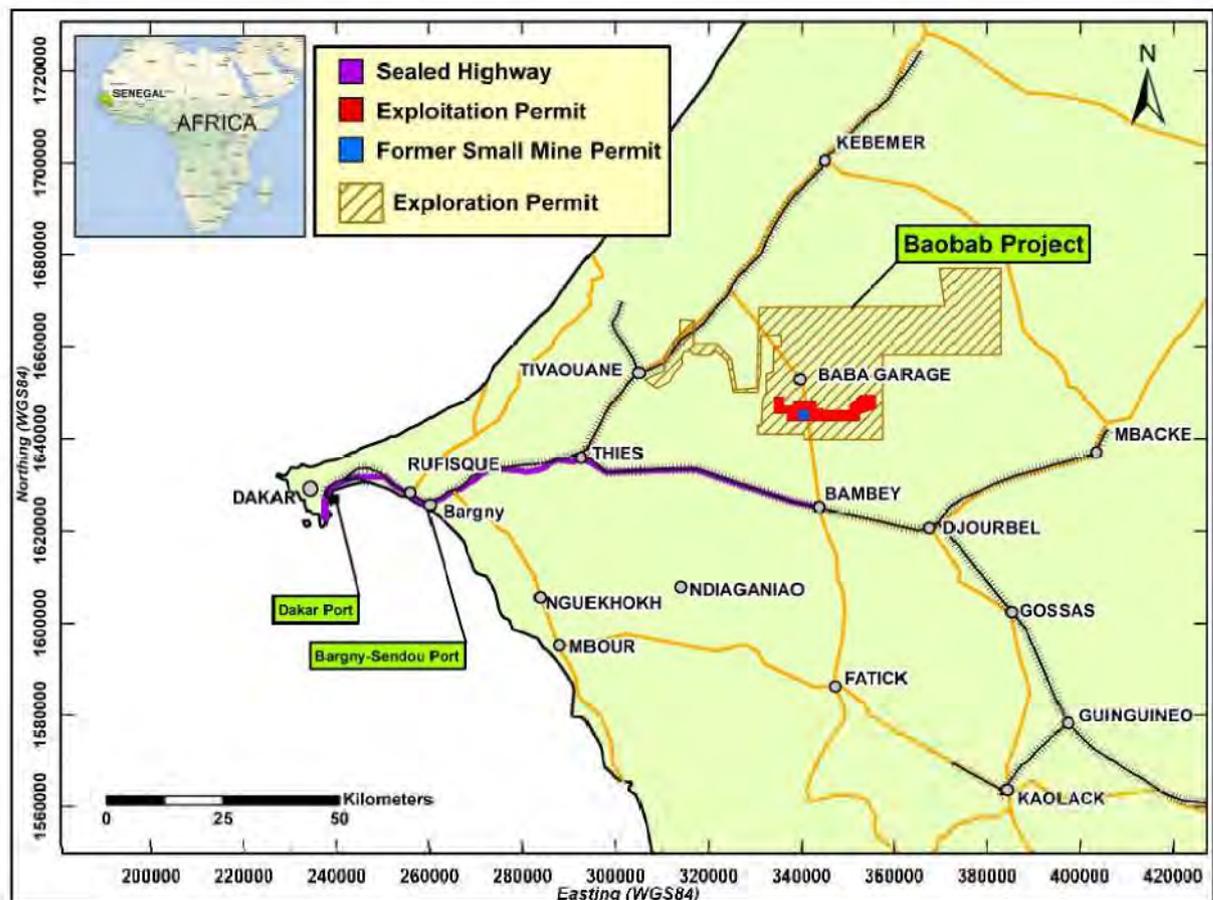
The mining title holder can freely export extracted mineral substances, their concentrates, their primary products and other derivatives (subject to completion of legal formalities) and there is an exoneration from exportation tax.

Resident corporations are subject to tax on their worldwide income. The standard rate of corporate income tax is 30%, which is imposed on net profits (after deduction of allowable expenses and charges). Capital gains are treated as operating profits and included in the corporate income tax base. Value-added tax (VAT) is 18% for all products and services. There is a fixed payroll tax of 3% of taxable gross salary.

## 5 Baobab Phosphate Project

The Project is located in the Diourbel region in western Senegal, at approximate latitude 14°53'45' S, longitude 16°27'12' W and an altitude of approximately 134 to 140 m above mean sea level (amsl). The Project is situated between the towns of Baba Garage and Bambey, approximately 140 km east of the national capital, Dakar.

The Project area does not have any mining activity other than Avenir's own operations and a previous small operation 8 km from Bambey. The Project lies in relative proximity to ICS's phosphoric acid plant, and the active phosphate mining operations of Sephos and African Investment Group, all located to the west of the Project and the N2 National Highway connecting Kebemer-Tivaouane-Thiès (Figure 5-1).



**Figure 5-1: Location of the Baobab Project**

Source: Avenir

### 5.1 Location, access and climate

Access to the Project is by paved road from Dakar to the town of Bambey (National Road 3, 116 km) then secondary gravel road from Bambey to the Gadde Bissik mine area (R32, 22 km) with a total travel time of three hours. The Project is supported by a well-connected regional road network, with access to the interior of the Project via gravel roads constructed to provide access for the current operations, as well as trails and sandy tracks. Lateritic gravel roads are in generally poor condition, especially during the rainy season.

There is a regional rail system linking the major centres. The economic feasibility of product transit along the rail system to the Project has not been evaluated to date.

The Blaise Diagne International Airport at Ndiass, 50 km east of Dakar and 99 km west of the Project, has daily domestic, regional and international scheduled flights. The approximate travel time from the airport is three hours via Bambey or Baba Garage.

The port of Dakar is a major West African logistics hub with deep-draft structure. The operational capability of the port includes capacity for bulk freight loading and unloading, container shipping, handling and storage, tanker terminal and passenger freight. Wharf and storage capacity, though consistent with being an international port, is limited.

The Project area is characterised by low rolling sandy plains supporting a low population density within small villages. Elevation ranges from 134 m above sea level (asl) to a maximum of approximately 140 m amsl. The vegetation on the site comprises scrub and sparse trees (mainly baobab and acacia species), with part of the area under cultivation by local populations. This setting is characteristic of the semi-arid Sahel climate, which separates the arid Sahara Desert to the north from the humid Sudanian Savannah to the south.



**Figure 5-2: Typical landscape of the Baobab Project area**

Source: Avenirra

The Project area falls within the Sudano-Sahelian climate domain, which experiences a rainy season from June to October and a dry season for the remainder of the year. The average temperature varies between 23.9°C and 28.2°C, with the cooler months coinciding with the dry season. Rains are unevenly distributed throughout the year and average 400–600 mm per annum (depending on point of measurement). The relative humidity is at its minimum in February and maximum in August–September. It is possible to carry out exploration and mining activities throughout the year, though production capacities may be curtailed during the wet season.

## 5.2 Supporting resources and infrastructure

The Exploitation Permit area encompasses 21 villages that practice mainly agriculturally based farming activities. A lack of work during the dry season pushes most young people (more than 70% of the local population) to leave the villages after the rainy season and subsequent harvest, to seek work in the major urban centres of Dakar, Thies, Mbour and Touba.

The Project falls within the cellular network coverage area, with data and internet currently provided by a satellite network.

The towns of Bambey and Baba Garage offer basic to deficient education, health and community services, as well as reasonable access to water and electricity infrastructure.

It is expected that:

- Due to the flat terrain and low rainfall, there are no permanent surface water sources and hence water for the processing facility and greater site will need be derived from Palaeocene (104–280 m depth) and Maastrichtian (240–349 m depth) groundwater aquifers by bores.
- Electrical power for the Project will be from the grid (50Hz, 90 kV, 3-phase, 3-wire bulk power to be provided by national electricity provider, Senelec). Currently at the mine site, the supply of electricity is provided by power generators.

### 5.3 Ownership history and tenements

The Project comprises a single granted Exploration Permit covering an area of 1,163 km<sup>2</sup>, as well as an enclosed Exploitation Permit covering an area of approximately 75 km<sup>2</sup>

The Exploration Permit was originally granted in 2011 and reduced to 1,533 km<sup>2</sup> on 28 July 2014. The renewal application for the Exploration Permit was granted for 1,163 km<sup>2</sup> and three additional years commencing 27 July 2017.

This permit was originally granted to Atlas Resources S.A.R.L., which underwent a name change to Baobab Mining and Chemical Corporation S.A. (BMCC) in late 2014. BMCC is a corporation duly incorporated and existing under the laws of the Republic of Senegal.

On 27 July 2011, Atlas Resources S.A.R.L. and the Senegalese Government signed a Mining Convention in relation to the Project area.

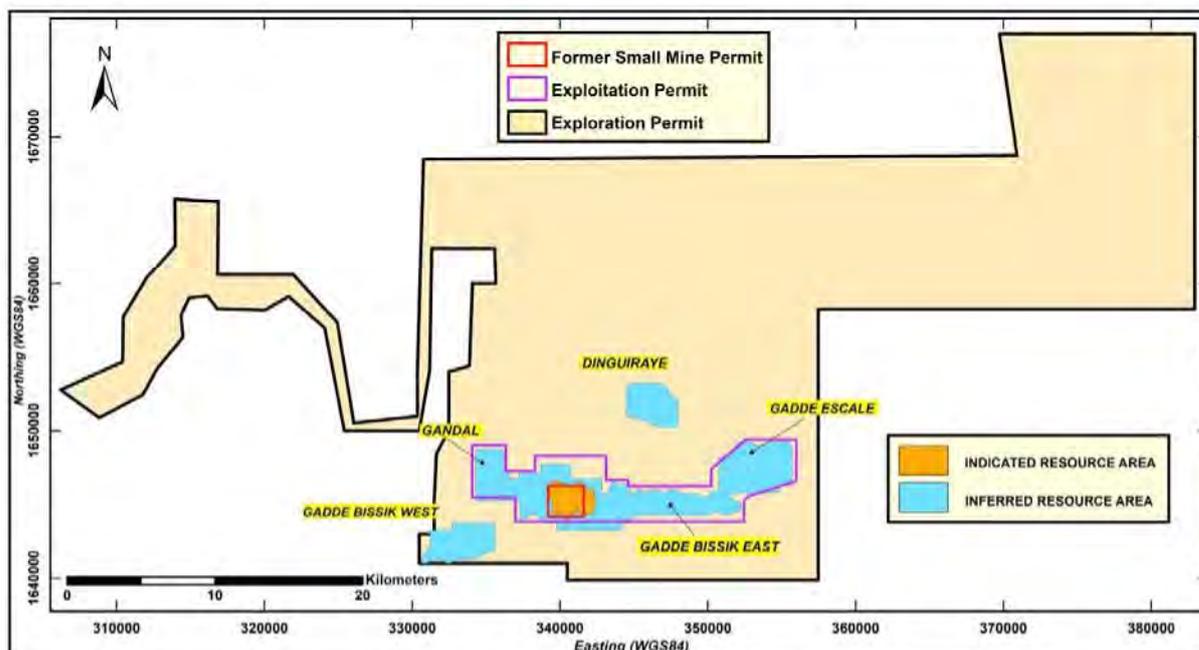
In March 2015, BMCC's wholly owned affiliate, Gadde Bissik Phosphates Operations SUARL (GBO) submitted an application for a Small Mine Permit (SMP) covering an area of 5 km<sup>2</sup> within the Gadde Bissik East area, which was granted on 6 May 2015.

Avenira acquired the Project from a consortium in September 2015 through completion of a Reverse Triangular Merger involving the amalgamation of Baobab Fertilizer Africa (BFA), a wholly owned subsidiary of Baobab Partners and the parent company of BMCC, and Minemakers Baobab Mauritius, a wholly owned subsidiary of Minemakers. Following the Amalgamation, BFA is the sole surviving company, with Minemakers as its sole shareholder.

In May 2017, an application was lodged for the conversion of the SMP into a 'Permit d'Exploitation'.

Avenira was granted an Exploitation Permit dated 27 September 2018, of which BMCC (Avenira's subsidiary company) was notified on 17 October 2018. Consequently the issuance of the Exploitation Permit cancel and replace the SMP. The Exploitation Permit covers an area of 75 km<sup>2</sup> around the former Gadde Bissik SMP (Figure 5-3) and is valid for an initial renewable period of 20 years. The new permit covers the area identified by Avenira as offering the best economic potential for commercial phosphate rock mining. It surrounds the small mining operation initiated by Avenira through BMCC in 2016.

Following a restructuring triggered by the grant of the Exploitation Permit, the Senegalese Government holds the right to a 10% free-carried interest in BMCC, the legal entity owning the permit, and the new structure will be exempt from paying certain taxes.



**Figure 5-3: Avenira’s mineral tenure comprising the Baobab Project**

SRK has sighted documentation provided by K&C, an independent legal firm located in Dakar, Senegal. The documentation indicates that BMCC has the legal rights to the minerals at the Project that are the subject of this Report. SRK considers that it has made all reasonable enquiries into the status of the subject tenures as at 1 July 2019.

**Table 5-1: Baobab Project – tenure status**

Licence No.	Licence Type	Status	Company Holder	Percentage Held	Expiry Date	Area (km <sup>2</sup> )
014015 MIM/DMG	Exploration Permit	Granted	Baobab Mining and Chemicals Corporation S.A.	80%	27/07/2020	1,163
09810 MIM/DMG	Exploitation Permit	Granted	Baobab Mining and Chemicals Corporation S.A.	80%	26/09/2038	74.528

Source: Avenira, Senegal Government

SRK has been advised by Avenira that:

- Avenira presently owns 80% of Baobab. While the Senegalese Government is entitled to elect to take a 10% interest in the Project, it has not asserted this right at this stage.
- Its Senegalese Exploration Permit has previously been renewed and that under the *Mining Code* it is unable to be further renewed. The Exploration Permit is therefore not able to be kept by Avenira after July 2020 and will be available to other potential applicants. Further, there is insufficient time to convert the Exploration Permit to an Exploitation Permit prior to it lapsing.

### 5.3.1 Material contracts

Prior to the cessation of mining at the Project in 2017, Avenira entered into several contracts as outlined below (Avenira 2016 Annual Report):

- Water Drilling – Bauer Resources Senegal
- Ongoing mine design and scheduling – Australian Mining Consultants (AMC)
- Mining contract – Agromines SUARL (Senegalese contractor)

- Processing plant design and construction – Consulmet (Pty) Limited (South African engineering and construction company)
- Port Services – TVS Necotrans (Senegalese port company)
- Road haulage – Sogetrans (Senegalese transport company)
- Off-take – Polyserve Import Export and Trade, Getax Agrifert DMCC and Actatrade S.A.
- Supervision of loading operations, sampling and laboratory testing – Bureau Veritas and SGS
- Bespoke maritime services – Sahel Shipping Agency.

Avenira has advised SRK that most of the above-listed contracts will no longer be relevant after project re-development, but some of these suppliers, partners and contractors could be part of the Company's future operational environment on resumption of activities post re-development.

## 5.3.2 Royalties

### Royalties

The following information has been provided to SRK:

- Avenira has paid/ accrued royalties of 5% on previous sales.
- On achieving production, a State royalty of 5.0% on revenue will become payable from the current Exploitation Permit as per the Senegalese *Mining Code* and BMCC's Mining Convention signed with the Government.
- As part of the acquisition of BMCC in 2015, Minemakers undertook that, subject to the grant of the IHP Technology Licence to BMCC for Senegal, it would pay a licence assignment fee to Vulcan comprising:
  - royalty of 3.5% free-on-board (FOB) net revenue for phosphate rock sales by BMCC from Senegal in perpetuity. FOB net revenue was defined as net realised price per metric tonne of phosphate rock sales FOB a customer's vessel (ex-Dakar)
  - US\$0.75/t of any phosphate rock produced by BMCC in Senegal and transferred for the production of phosphoric acid by BMCC, its co-licensees and/ or their respective controlled entities.
- Based on Avenira's current mine plan as outlined in its 2019 Feasibility Study (Class 4), the Company estimates royalties are payable over a period of 13.4 years (Indicated Mineral Resources only) to 22 years (Indicated + some Inferred Mineral Resources), commencing from Year 1 (currently undefined) onwards.

## 5.4 Geology

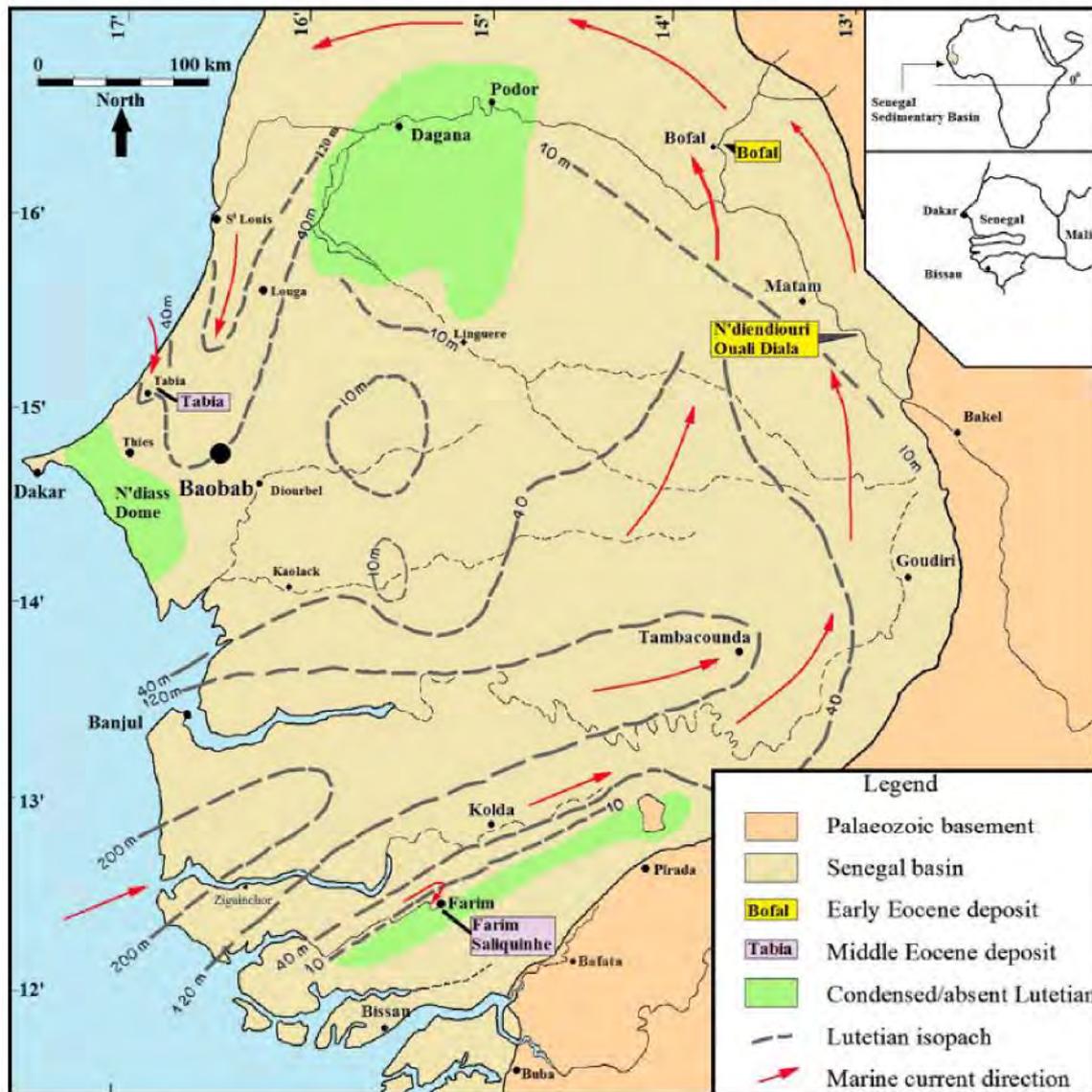
### 5.4.1 Regional geology

The Eocene rocks of the Senegal Sedimentary Basin host several phosphate deposits including those targeted within Avenira's Baobab Project. These deposits can be subdivided into two main ages: early Eocene deposits from the Ypresian Epoch (47.8 to 56.0 Ma) and middle Eocene deposits from the Lutetian Epoch (41.3 to 47.8 Ma).

Senegal's phosphate mineralisation developed from deposition of the remains of benthic and planktonic organisms nourished by nutrient-rich currents upwelling from the Atlantic Ocean in the shallow seas over continental platforms comprising the Senegal Sedimentary Basin. Reworking during sedimentation variably concentrated the mineralisation.

For most of the Senegal Sedimentary Basin's area, early Eocene phosphate occurrences are generally low grade, with limited extents. Economically significant phosphate deposits of the early Eocene, such as the Matam and Bofal deposits, are located along the eastern portions of the Senegal Sedimentary Basin, proximal to the borders of Mali and Mauritania (Figure 5-4).

Middle Eocene deposits, such as Baobab, Taiba and Farim-Saliquinhé, generally occur in western portions of the basin and provide the bulk of Senegalese phosphate production. These deposits were developed around shoals at the entrances to the continental platform.



**Figure 5-4: Regional geological setting**

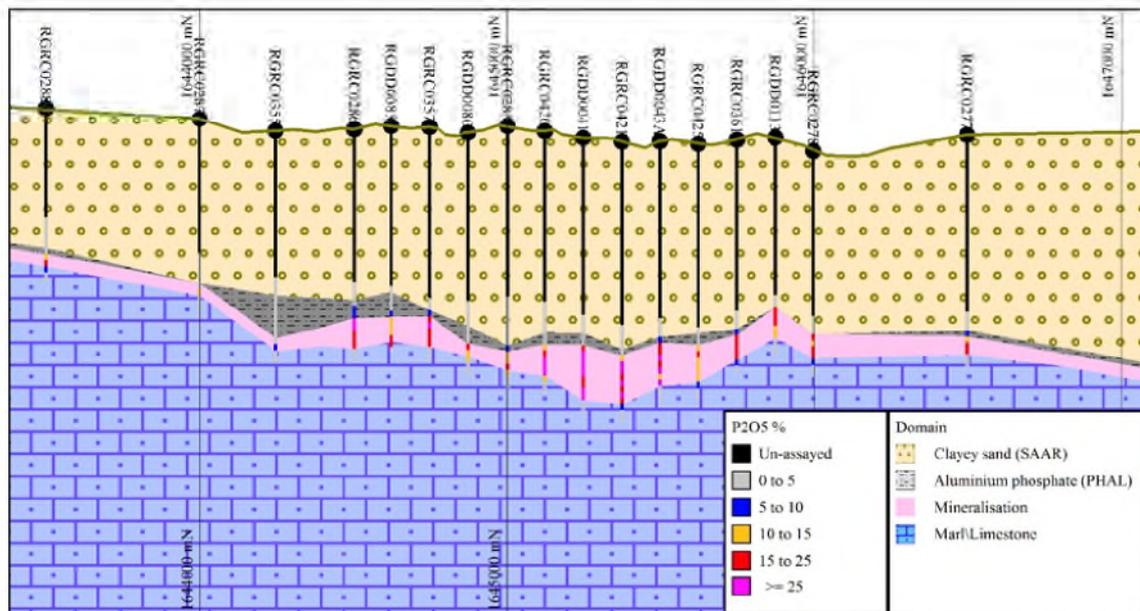
Source: Avenira

### 5.4.2 Local geology and mineralisation

Figure 5-6 presents a simplified cross section showing the general geological sequence at the Gadde Bissik area within the Baobab Project. The geological sequence is typically flat-lying to gently undulating, with phosphate mineralisation showing a slight general increase in depth towards the north.

In the Gadde Bissik area, footwall units to the phosphatic sediments comprise a sequence of limestone or dolostone. These units are overlain by marls and marly clays and local zones of nummulitic limestones that underlie the phosphatic sediments. The contact between basement units and

phosphatic sediments is commonly marked by a variably developed ferruginous clay layer uncomfortably overlaying the basement. Where present, this layer generally ranges from ~0.5 to 3 m in thickness.



**Figure 5-5: Schematic geological cross section, looking west**

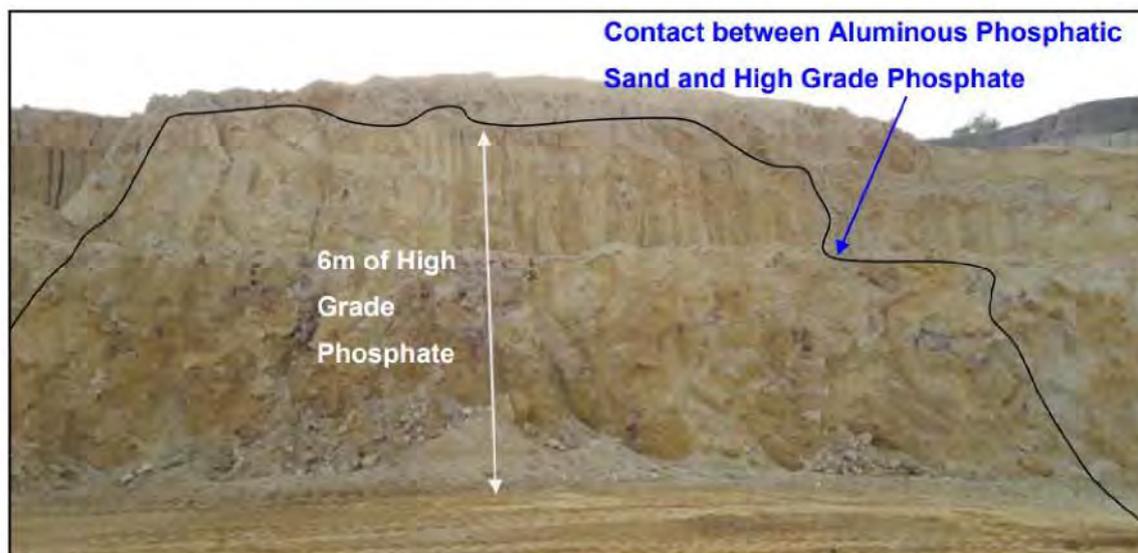
Source: Avenira

The main phosphate mineralisation comprises clayey sandstone generally ranging from ~2 m to 12 m in thickness and averaging ~3 m. Thicker areas are interpreted as lenticular or pod-like bodies. Within this layer, phosphate mineralisation is variably developed and occurs as soft to hard pebbles of phosphate of lime, gravels of phosphate of alumina and ferruginous gravels.

In higher-grade zones, the phosphate generally occurs as pebbles varying from brown to beige to white; therefore, colour can be used as a means of distinguishing varying grade products.

The main phosphate layer is overlain by a layer of commonly gravelly aluminium phosphates (PHAL) with  $P_2O_5$  grades of generally less than 5%. This contact can vary sharply (Figure 5-6). Where present, this layer is generally ~1 m to (rarely) 5 m thick.

The aluminium phosphate zone is overlain by clayey sands (SAAR). Phosphatic units do not outcrop in the Project area, with an average depth to mineralisation of ~29 m.



**Figure 5-6: Phosphate horizon in the western wall of Gadde Bissik East Phase 1 Open Pit**

Source: Avenira ASX announcement dated 28 October 2016

In January 2019, four samples from the Project were submitted to Mintek's Mineralogy Division (MNL) for QEMSCAN and electron microprobe analyses. Apatite is the main phosphate mineral present in the samples in amounts of 68 mass %, 48 mass %, 27 mass % and 31 mass % in the high-grade (HG), medium-grade (MG), low-grade (LG) and Life of Mine (LOM) samples, respectively. MNL reported that apatite in all samples was well liberated, even in the coarse fraction (>600  $\mu\text{m}$ ).

Quartz is the dominant gangue in all samples, at levels of 30 mass %, 43 mass %, 67 mass % and 67 mass % in the HG, MG, LG and LOM samples, respectively. Minor gangue detected are iron oxides and clay.

The MNL study reported that the iron oxides are associated with apatite and fluorite to a degree of approximately 5% to 10 mass %. Iron oxide association is highest in the MG and LG samples. Where they are associated with apatite and fluorite, the iron oxide grains occur as very fine inclusions too fine to be liberated from their apatite hosts by finer milling. These very fine iron oxide inclusions will thus report to the apatite concentrate along with their hosts. A low proportion of clay in each sample is also present as fine inclusions in apatite.

SRK used the univariate statistics presented in the 2018 Mineral Resource estimate report for each resource area to carry out broad geochemical validation checks. The  $\text{P}_2\text{O}_5/\text{CaO}$  ratio (FAP) was calculated; a value of 0.76 (pure fluorapatite) can be used as a differentiator between majority calcium phosphate and the presence of aluminophosphates. The Minor Elements Ratio (MER) is defined as  $(\% \text{Fe}_2\text{O}_3 + \% \text{Al}_2\text{O}_3 + \% \text{MgO} / \% \text{P}_2\text{O}_5)$  and was used to check for a relationship between phosphate grade and impurities.

The statistical and geochemical analysis of the composite samples that inform the Inferred and Indicated Mineral Resource are presented in Table 5-2. In general, the Coefficient of Variation statistic is less than one, which indicates a normal sample population distribution and suitability for the Ordinary Kriging estimation method. The FAP value is generally just below 0.76, which shows that most of the  $\text{P}_2\text{O}_5$  and CaO is from fluorapatite. Contamination of the mineralisation samples at the overlying aluminophosphate and underlying marly clay contacts may cause the lower FAP ratio. There is a pattern of the MER increasing with the  $\text{P}_2\text{O}_5$  grade, the cause of which remains to be determined.

**Table 5-2: Univariate statistics for composite samples adopted in February 2018 Mineral Resource estimate**

<b>Gadde Bissik East Indicated (2,564 composites)</b>								
	<b>P<sub>2</sub>O<sub>5</sub> %</b>	<b>Al<sub>2</sub>O<sub>3</sub> %</b>	<b>CaO %</b>	<b>Fe<sub>2</sub>O<sub>3</sub> %</b>	<b>MgO %</b>	<b>SiO<sub>2</sub> %</b>	<b>FAP</b>	<b>MER</b>
Average	20	2.13	27.6	3.38	0.07	43.4	0.72	0.28
Coef. Var.	0.39	0.76	0.41	1.14	3.24	0.44		
Minimum	0.11	0.26	0.07	0.19	0.01	0.98		
1st Quartile	11.9	1.04	16.2	1.09	0.01	23	0.73	0.18
Median	19.8	1.75	27.1	2.26	0.03	43	0.73	0.20
3rd Quartile	25.7	2.49	35.7	3.66	0.05	56.8	0.72	0.24
Maximum	39.6	16.1	54.6	41.1	3.16	98.4		
<b>Gadde Bissik East Inferred (701 composites)</b>								
	<b>P<sub>2</sub>O<sub>5</sub> %</b>	<b>Al<sub>2</sub>O<sub>3</sub> %</b>	<b>CaO %</b>	<b>Fe<sub>2</sub>O<sub>3</sub> %</b>	<b>MgO %</b>	<b>SiO<sub>2</sub> %</b>	<b>FAP</b>	<b>MER</b>
Average	16.5	3.17	22.4	3.41	0.15	50.4	0.74	0.41
Coef. Var.	0.43	0.77	0.45	1.07	2.89	0.35		
Minimum	0.06	0.42	0.06	0.32	0.01	1.55		
1st Quartile	9.84	1.45	12.9	0.84	0.01	31.8	0.76	0.23
Median	16.1	2.42	22.2	2.18	0.04	49.9	0.73	0.29
3rd Quartile	21.3	3.64	29.2	4.18	0.07	62.6	0.73	0.37
Maximum	37.5	15.6	53.3	26.8	3.7	97.8		
<b>Gadde Bissik West Inferred (104 composites)</b>								
	<b>P<sub>2</sub>O<sub>5</sub> %</b>	<b>Al<sub>2</sub>O<sub>3</sub> %</b>	<b>CaO %</b>	<b>Fe<sub>2</sub>O<sub>3</sub> %</b>	<b>MgO %</b>	<b>SiO<sub>2</sub> %</b>	<b>FAP</b>	<b>MER</b>
Average	12.4	6.83	15.8	6.79	0.39	50.7	0.78	1.13
Coef. Var.	0.59	0.51	0.66	0.67	1.71	0.4		
Minimum	0.56	1.79	0.18	0.31	0.01	7.17		
1st Quartile	3.56	2.91	2.6	2.24	0.03	30.5	1.37	1.46
Median	12.8	6.32	16.4	6.22	0.08	48.7	0.78	0.99
3rd Quartile	16.4	9.21	21.8	9.92	0.4	63.4	0.75	1.19
Maximum	34.7	14.8	46.5	19.3	3.01	91.4		
<b>Gandal Inferred (99 composites)</b>								
	<b>P<sub>2</sub>O<sub>5</sub> %</b>	<b>Al<sub>2</sub>O<sub>3</sub> %</b>	<b>CaO %</b>	<b>Fe<sub>2</sub>O<sub>3</sub> %</b>	<b>MgO %</b>	<b>SiO<sub>2</sub> %</b>	<b>FAP</b>	<b>MER</b>
Average	14.8	4.18	20.6	7.94	0.1	47.5	0.72	0.83
Coef. Var.	0.38	0.56	0.4	0.5	1.44	0.32		
Minimum	0.62	1.02	0.21	1.81	0.01	12.5		
1st Quartile	9.35	1.9	12.9	4.73	0.05	31.4	0.72	0.71
Median	14.9	3.42	20.2	6.9	0.08	47.5	0.74	0.70
3rd Quartile	17.6	6.23	24.5	9.78	0.11	56	0.72	0.92
Maximum	33.2	10.1	44.8	25.1	1.43	90.2		

<b>Gadde Escale Inferred (224 composites)</b>								
	<b>P<sub>2</sub>O<sub>5</sub> %</b>	<b>Al<sub>2</sub>O<sub>3</sub> %</b>	<b>CaO %</b>	<b>Fe<sub>2</sub>O<sub>3</sub> %</b>	<b>MgO %</b>	<b>SiO<sub>2</sub> %</b>	<b>FAP</b>	<b>MER</b>
Average	16.3	2.42	22.9	3.11	0.17	51.5	0.71	0.35
Coef. Var.	0.44	0.52	0.44	1.15	2.5	0.34		
Minimum	0.28	0.58	0.16	0.59	0.01	7.98		
1st Quartile	9.94	1.34	13.7	1	0.01	33.6	0.73	0.24
Median	15.7	2.1	22.7	2.11	0.03	51.4	0.69	0.27
3rd Quartile	20.4	2.97	28.7	3.32	0.08	62.4	0.71	0.31
Maximum	36.8	8.21	50.6	27.9	2.93	95.9		
<b>Dinguiraye Inferred (87 composites)</b>								
	<b>P<sub>2</sub>O<sub>5</sub> %</b>	<b>Al<sub>2</sub>O<sub>3</sub> %</b>	<b>CaO %</b>	<b>Fe<sub>2</sub>O<sub>3</sub> %</b>	<b>MgO %</b>	<b>SiO<sub>2</sub> %</b>	<b>FAP</b>	<b>MER</b>
Average	16.9	3.35	24.9	3.54	0.22	46.1		
Coef. Var.	0.44	0.51	0.43	0.7	2.53	0.36		
Minimum	0.95	0.84	0.74	0.74	0.01	8.7		
1st Quartile	9.76	1.89	14.3	1.79	0.03	30.1	0.68	0.38
Median	16.6	2.8	26.2	3.12	0.08	45.3	0.63	0.36
3rd Quartile	22.6	4.29	33.5	4.2	0.12	57.9	0.67	0.38
Maximum	34.1	10.2	49.5	21.1	3.56	88.9		

Adapted from: MPR 2018 report

## 5.5 Project history

Phosphate mineralisation was first identified in the greater Project area in water wells completed by the French Government in the early 1950s (Froud, 2015). A review of historical reports by the commercial arm of the French Geological Survey (BRGM) for Agrifos West Africa SUARL (Agrifos), identified a broad area (4 km by 8 km) at Gadde Bissik as a high-priority target for phosphate exploration, along with several other prospects in the greater Baobab area. This led to Agrifos' initial interest in the area, which resulted in the acquisition of Atlas Resources SUARL (Atlas), an entity that had been granted the Baobab Exploration Permit in 2011. In 2014, Atlas and Agrifos merged to form BMCC.

During the 2011 to 2013 period, Atlas carried out several diamond core drilling programs that led to the identification of Gadde Bissik as the most prospective area within the tenement. In early 2014, BMCC commenced regional reverse circulation (RC) and diamond drilling in the Gadde Bissik area, with the assistance of Avenir's (formerly Minemakers') geologist. Drilling of the broader Gadde Bissik area commenced in May 2014 and consisted of broad spaced drilling on a predominantly 2 km by 2 km grid with infill drilling at 1 km by 1 km and 500 m by 500 m in the Gadde Bissik area.

Following its acquisition of the Project, in May 2015, Minemakers announced a maiden Inferred Mineral Resource estimate for the Gadde Bissik prospect in the SMP area. The Gadde Bissik Mineral Resource estimates covered two areas designated as Gadde Bissik East and Gadde Bissik West, comprising 25 Mt at 23% P<sub>2</sub>O<sub>5</sub> inside the SMP area and 43 Mt at 21% P<sub>2</sub>O<sub>5</sub> outside the SMP for a total of 68 Mt at 22% P<sub>2</sub>O<sub>5</sub>, all at an 18% P<sub>2</sub>O<sub>5</sub> cut-off grade. An Exploration Target<sup>2</sup> of approximately 45 to

<sup>2</sup> The potential quantities and grades are conceptual in nature. There was insufficient exploration to estimate a Mineral Resource and it was uncertain whether future exploration would result in the estimation of a Mineral Resource.

60 Mt at grades of between 19% P<sub>2</sub>O<sub>5</sub> and 22% P<sub>2</sub>O<sub>5</sub> were also estimated at this time based on broad spaced drilling.

A Canadian National Instrument (NI) 43-101 report was subsequently filed in June 2015.

In July 2015, the Company commenced an internal Preliminary Economic Assessment (PEA), which ultimately involved the preparation of a conceptual open pit mine design and schedule, hydrological studies, value-in-use analysis, ongoing metallurgical testwork, and processing plant design and engineering.

In September 2015, the results of an infill drilling program were announced and confirmed the presence of significant phosphate mineralisation within the SMP. In addition, Minemakers commissioned a value in use analysis in relation to two product specifications. This study indicated that the Brazilian and SE Asian markets offer the highest netback prices (FOB ex-Dakar). CRU Consulting (CRU) identified possible marketing issues and considerations with both products.

Following the completion of the PEA, Avenira announced its intention to commence mining at the Project without completing a feasibility study (Minemakers ASX announcement dated 12 November 2015). Construction of a 500 ktpa nameplate capacity processing plant construction commenced in November 2015 and was completed in July 2016, with commissioning in August 2016. Site work including the establishment of the main access road and installation of site buildings commenced in December 2015.

Minemakers changed its name to Avenira on 25 November 2015.

In December 2015, Avenira announced an Indicated Mineral Resource estimate for the eastern half of the SMP at Gadde Bissik East. The reported total Indicated Mineral Resource at Gadde Bissik was 12.6 Mt at 21% P<sub>2</sub>O<sub>5</sub> and Inferred Mineral Resources of 87 Mt 19% P<sub>2</sub>O<sub>5</sub>, each at a 15% P<sub>2</sub>O<sub>5</sub> cut-off grade.

Mobilisation of the mining fleet was undertaken through January and February 2016, with pre-stripping for the initial open pit (Phase 1) commencing in March 2016. Phosphate mining in the Phase 1 open pit was ultimately completed in November 2016.

In February 2016, Senegalese company, Mimran Natural Resources, an affiliate of Groupe Mimran, completed the acquisition of a 20% interest in BMCC via a BMCC capital increase share issue, which coincided with the start of mining activities (including initial overburden stripping and pit access ramp establishment).

Pre-stripping of the Stage 2 open pit was undertaken between late June and late December 2016. The first phosphate horizon was uncovered in late July 2016, with phosphate mining commencing in August 2016 and trucking of product to the Dakar port commencing in October 2016 in preparation for the first shipment. Phosphate mining of the Stage 2 open pit was ultimately completed in April 2017.

Offtake agreements were negotiated with three separate parties during July and August 2016. Collectively, these offtake agreements accounted for between 360,000 tpa and 480,000 tpa of production for the first three years of operation, representing almost all of the expected annual production.

A road transport weighbridge was installed and commissioned in September 2016.

In February 2017, Avenira announced an increase in the Indicated Mineral Resource estimate at the Project. The Indicated Mineral Resource estimate was increased to 31.7 Mt at 20.6% P<sub>2</sub>O<sub>5</sub> and the Inferred Mineral Resource estimate to 114 Mt at 19% P<sub>2</sub>O<sub>5</sub>, each at a 15% P<sub>2</sub>O<sub>5</sub> cut-off grade. This resource reporting included Inferred Mineral Resource estimates at Dinguiraye, Gandal and Gad Escalé.

The maiden product shipment was completed in March 2017 when a vessel loaded with 21,400 t departed the Port of Dakar bound for India. This phosphate rock was processed into phosphoric acid and finished fertilisers by the end customer in June 2017. The Company sold a second cargo of approximately 30,000 t, with the vessel sailing from the Port of Dakar in June 2017.

In the March 2017 quarter, a crushing plant productivity and availability review was conducted at the Project. The review indicated that supplementary equipment was required to provide continuity of crushed product.

In May 2017, BMCC submitted an application to transform its SMP into an Exploitation Permit for an expanded area around the SMP, which was granted in October 2018.

In May and June 2017, Avenir carried out a 50 by 50 m grid aircore grade control drilling program within the SMP perimeter to better control the presence, thickness, grade and geometry of the phosphate sequence to be developed during Stages 3 and 4 of the operating plan. This was followed by sterilisation drilling in the northern part of the SMP area.

On 9 June 2017, Avenir announced it intended to implement a new strategic plan for the development of the Project, with Stage 1 being the optimisation (capacity and performance enhancement) of the existing ore beneficiation units to bring it to a sustainable operational level and then construct a second production line delivering approximately 1 Mtpa of additional capacity. During operation of the mine and plant, it had become evident that the processing plant design was sub-optimal due to the simple wet screening technique employed. This resulted in lower product recovery and high unit operating costs, making the operation financially unsustainable in the prevailing market conditions. Engineering studies were initiated to provide a detailed design as well as capital and operating cost estimates for Stage 1. The expanded plant was expected to be fully commissioned in stages within 12 to 18 months of funding being secured. Pre-feasibility work for Stage 2 was projected to commence before the end of 2017.

In July 2017, Avenir engaged Hatch Ltd (Hatch) to undertake a conceptual study to upgrade the processing plant and increase the nameplate capacity to 1 Mtpa of high-grade phosphate rock concentrate. The expanded and upgraded plant was projected to include new crushing and milling stages, flotation units, magnetic separation, filtration and drying, as well as a covered product storage area to expand and improve on the original design of the ore processing plant. The Hatch conceptual study was completed with a positive outcome in October 2017.

Ore mining activities were stopped in September 2017 due to the onset of the wet season; however, processing of ROM stockpiles continued until September 2018. A total of three shipments have been sold to overseas customers totalling some 80,000 t, in addition to several thousand tonnes to a local fertiliser producer.

In October 2017, Avenir announced updated Mineral Resource estimates, with an Indicated Mineral Resource estimate of 34.9 Mt at 20.7% P<sub>2</sub>O<sub>5</sub> and an Inferred Mineral Resource estimate of 156 Mt at 18% P<sub>2</sub>O<sub>5</sub>, both at a 15% P<sub>2</sub>O<sub>5</sub> cut-off grade.

On 17 October 2017, Avenir announced the results of Hatch's conceptual engineering study (Front End Loading or FEL 1 Level). This study concluded that upgrading the processing plant and increasing its nameplate capacity to 1 Mtpa concentrate could be undertaken year-round at a relatively low capital cost and was likely to significantly improve product specifications and operating costs, on a quality adjusted basis.

On 5 February 2018, Avenir announced updated Mineral Resource estimates with an Indicated Mineral Resource estimate of 42.0 Mt at 19.4% P<sub>2</sub>O<sub>5</sub> and an Inferred Mineral Resource estimate of 320 Mt at 16% P<sub>2</sub>O<sub>5</sub>, both at a 10% P<sub>2</sub>O<sub>5</sub> cut-off grade. Avenir considered this updated Mineral Resource able to support the expansion and upgrade of the Project.

On 16 May 2018, Avenira announced that it had appointed Wood Group PLC (Wood) as the lead engineering consultants for the Baobab expansion and to upgrade the Project to a Bankable Feasibility Study level. This study was structured to include an initial Feasibility Study phase (Class 4 cost estimate due for delivery by early July 2018), followed by the final Bankable Feasibility Study (Class 3 cost estimate to be delivered by late 2018). The scope included mining, processing and tailings storage.

In October 2018, the Company announced that BMCC had received the Exploitation Permit for the Gadde Bissik area within the Project area.

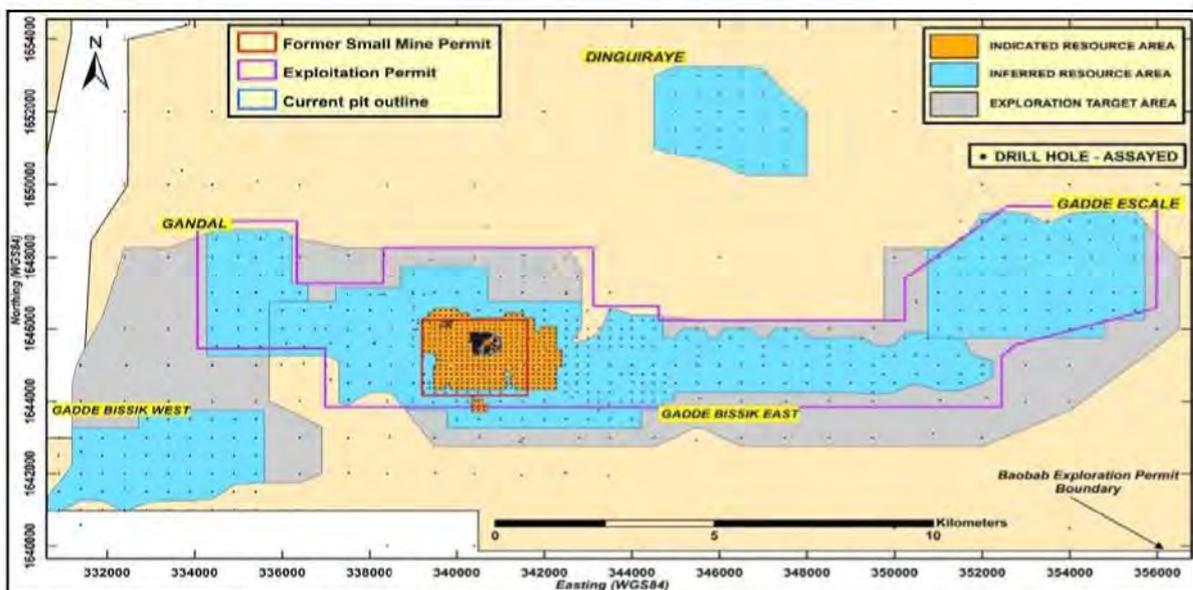
On 18 March 2019, Avenira announced the completion of the Feasibility Study (Class 4 estimate) for the expansion of the Baobab Project to a projected high-grade phosphate rock mine with concentrate capacity of 1 Mtpa. The Company intended to progress to a Bankable Feasibility Study phase (Class 3 estimated with a  $\pm 10\%$  targeted accuracy).

On 1 July 2019, Avenira announced it intended to sell its interest in the Project.

### 5.5.1 Regional exploration programs and potential

The Project is located in a rich phosphate mining area, that includes the Taiba and Lam Lam deposits (referred to in Section 3.5) to the northwest and west respectively.

Avenira has been actively infill drilling in the Gadde Bissik area of the Project since 2014 and steadily increasing the Projects Mineral Resource base and classification. Avenira has defined an Exploration Target area of less densely-spaced drilling peripheral to the current Inferred Mineral Resource areas (Figure 5-7).



**Figure 5-7: Baobab Exploration Target**

Source: Avenira Minerals 2019 DFS Report

The current Exploration Target estimates are derived from the current Mineral Resource estimates for peripheral areas at  $P_2O_5$  cut-off grade of 15%. MPR Geological Consultants Pty Ltd (MPR) calculated range of tonnages and grades by multiplying the estimated factors which it determined are representative of the confidence in the estimates in the Exploration Target area.

- Tonnages: Lower factor 0.6, upper factor 1.2
- Grades: Lower factor 0.95, upper factor 1.2.

With appropriate rounding, these factors give an Exploration Target estimate of approximately 30 Mt to 60 Mt at a grade of approximately 16% P<sub>2</sub>O<sub>5</sub> to 20% P<sub>2</sub>O<sub>5</sub>. The Exploration Target was reported to the ASX on 5 January 2018.

The Exploration Target is conceptual in nature, as there has been insufficient exploration to estimate a Mineral Resource and that it is uncertain that future exploration will result in determination of a Mineral Resource.

In the ASX announcement, Avenira stated that exploration work was planned at a regional scale, infilling current 4 km by 4 km grid spaced drilling in the northern and eastern part of the tenement. Further infill and extension drilling is planned for the Dinguiraye, Gadde Escale and Gandal prospects.

## 5.6 Mineral Resources

The most recent Mineral Resource estimate (Table 5-3) was prepared for the Project 2018 Feasibility Study and was reported to the ASX on 5 February 2018. The Mineral Resource estimate was completed by Jonathon Abbott of MPR Geological Consultants Pty Ltd (MPR) and classified and reported in accordance with the JORC Code (2012).

**Table 5-3: Gadde Bissik Mineral Resource estimate at a 10% P<sub>2</sub>O<sub>5</sub> cut-off (January 2018)**

Area		Resource Category	Tonnage (Mt)	P <sub>2</sub> O <sub>5</sub> %	CaO %	MgO %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %
Gadde Bissik East	Within SMP	Indicated	31.5	20	28	0.09	2.19	3.80	42.9
		Inferred	3	18	24	0.15	3.0	2.9	49
	Outside SMP	Indicated	10.5	17.9	24.7	0.08	2.40	4.10	47
		Inferred	142	16	22	0.17	3.4	3.9	51
	Combined	Indicated	42.0	19.4	26.8	0.09	2.24	3.88	44.0
		Inferred	145	16	22	0.17	3.4	3.9	51
Gadde Bissik West		Inferred	26	13	17	0.4	6.7	7.0	48
Gandal		Inferred	32	15	21	0.1	4.2	7.9	46
Gadde Escale		Inferred	82	16	23	0.2	2.4	3.0	52
Dinguiraye		Inferred	35	17	25	0.2	3.4	3.7	46
<b>Total Resources</b>		<b>Indicated</b>	<b>42.0</b>	<b>19.4</b>	<b>26.8</b>	<b>0.09</b>	<b>2.24</b>	<b>3.88</b>	<b>44</b>
		<b>Inferred</b>	<b>320</b>	<b>16</b>	<b>22</b>	<b>0.18</b>	<b>3.5</b>	<b>4</b>	<b>50</b>

Adapted from: MPR 2018 MRE report

SRK has completed a high-level assessment of the Mineral Resource estimates for the Baobab deposit, including a document review of MPR's Mineral Resource estimation reports (2016, 2017 and 2018) and check reporting of the resources from the block model. SRK did not carry out check calculations on the drilling database.

Mineral Resource estimates for the Project have been announced by Avenira on 7 December 2015, 7 January 2016, 2 March 2017 and 12 October 2017. The initial 2016 Mineral Resource estimate report contains a thorough review of the quality the drilling database and sets the domain modelling and estimation methodologies. Subsequent reports updated the tables, figures and text as required with minor changes to the methodologies.

Avenira supplied SRK with the Mineral Resource block model. SRK imported the model into Datamine Studio RM software and was able to reproduce the Mineral Resource estimate statement as per Table 5-3. The Mineral Resource estimate statement released to the ASX, as shown in Table 5-3, divided the stated resources into deposits located inside and outside of the expired SMP area. SRK has restated the Mineral Resource estimate in Table 5-4 as it is the Indicated Mineral Resources

within the Exploitation Permit used to inform the Ore Reserve estimate, not the Indicated Mineral Resources within the SMP area.

**Table 5-4: Gadde Bissik Mineral Resource estimate at 10% P<sub>2</sub>O<sub>5</sub> cut-off (February 2018)**

Deposit	Classification JORC (2012)	Tonnage (Mt)	P <sub>2</sub> O <sub>5</sub> %	CaO %	MgO %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %
<b>Within Exploitation Permit</b>								
Gadde Bissik East	Indicated	41.8	19.4	26.8	0.08	2.2	3.9	44.0
	Inferred	136	16	22	0.17	3.4	4.0	51
Gandal	Inferred	31	15	21	0.10	4.3	7.9	46
Gadde Escale	Inferred	80	16	23	0.15	2.4	3.0	52
<b>Subtotal</b>	<b>Indicated</b>	<b>41.8</b>	<b>19.4</b>	<b>26.8</b>	<b>0.08</b>	<b>2.2</b>	<b>3.9</b>	<b>44.0</b>
	<b>Inferred</b>	<b>247</b>	<b>16</b>	<b>22</b>	<b>0.16</b>	<b>3.2</b>	<b>4.1</b>	<b>50</b>
<b>Outside Exploitation Permit but inside Exploration Permit</b>								
Gadde Bissik East	Indicated	0.3	16.4	22.3	0.17	3.96	3.76	48.7
	Inferred	9	16	22	0.19	4.2	3.3	50
Gadde Bissik	Inferred	26	13	17	0.35	6.7	7.0	48
West Gandal	Inferred	1	14	19	0.06	2.5	6.9	54
Gadde Escale	Inferred	2	15	21	0.32	2.9	4.6	51
Dinguiraye	Inferred	35	17	25	0.24	3.4	3.7	46
<b>Subtotal</b>	<b>Indicated</b>	<b>0.3</b>	<b>16.4</b>	<b>22.3</b>	<b>0.17</b>	<b>3.96</b>	<b>3.76</b>	<b>48.7</b>
	<b>Inferred</b>	<b>73</b>	<b>15</b>	<b>21</b>	<b>0.27</b>	<b>4.7</b>	<b>4.9</b>	<b>48</b>
<b>Total Mineral Resources</b>								
<b>Indicated</b>		<b>42.1</b>	<b>19.4</b>	<b>26.8</b>	<b>0.08</b>	<b>2.24</b>	<b>3.87</b>	<b>44.0</b>
<b>Inferred</b>		<b>320</b>	<b>16</b>	<b>22</b>	<b>0.18</b>	<b>3.5</b>	<b>4</b>	<b>50</b>

SRK notes slightly different rounding adopted between the two statements, but this is not considered material to overall project value.

### 5.6.1 Data Collection and Quality Control

The basis for the Mineral Resource estimates was the collar, survey, assay and geological logging information collected since 2014 from the aircore (AC), reverse circulation (RC) and diamond core (DD) drilling undertaken in the Project area. MPR compiled the sampling database from files supplied by Avenir. A summary of the drilling database is presented in Table 5-5.

**Table 5-5: Baobab Project – Drill hole summary**

Drilling Type	Mineral Resource area		Regional Exploration		Total	
	No. Holes	Metres	No. Holes	Metres	No. Holes	Metres
<b>AC</b>	617	22,997	177	5,483	794	28,480
<b>RC</b>	-	-	33	918	33	918
<b>DD</b>	470	19,188	77	1,655	547	20,844
<b>Total</b>	<b>1,087</b>	<b>42,185</b>	<b>287</b>	<b>8,056</b>	<b>1,374</b>	<b>50,242</b>

Source: MPR 2018 MRE report

The MPR reports contain extensive commentary on the validation and quality checks carried out on the data in the drilling database that was used to inform the Mineral Resource estimate. The Mineral Resource estimate reports noted several concerns and adjustments made to the data, but MPR

established that the field sub-sampling and assaying are representative and free of any biases or other factors that may materially impact the reliability of the sampling and analytical results.

All drill holes are vertical and, if necessary, collar surveys were aligned to the topographic surface.

A density value of 1.55 g/cm<sup>3</sup> was determined from 68 oven dried immersion density measurements taken on mineralised core and used for determination of mineralised tonnes used in the Mineral Resource estimate (MRE). Additionally, MPR derived density measurements from core weights, recovered lengths and diameters for 1,926 diamond intervals from 125 drill holes. This data suggests that density increases with phosphate grade. MPR commented that due to the small number of immersion samples the differences between the two datasets could not be reliably determined.

SRK recommends that additional immersion density measurements be undertaken. This would enable studies to determine if factoring of the geometric measurements to the immersion measurements is possible so that the local density variability as determined from the drill core can be used to inform the tonnages in the Mineral Resource estimate.

SRK considers the data collection techniques, including drilling methods, data location methods, sampling analytical methods, quality assurance/ quality control (QAQC) of sampling and analysis, density measurement, and topographic control to be in line with industry standard practice and finds that moderate confidence can be placed in the data.

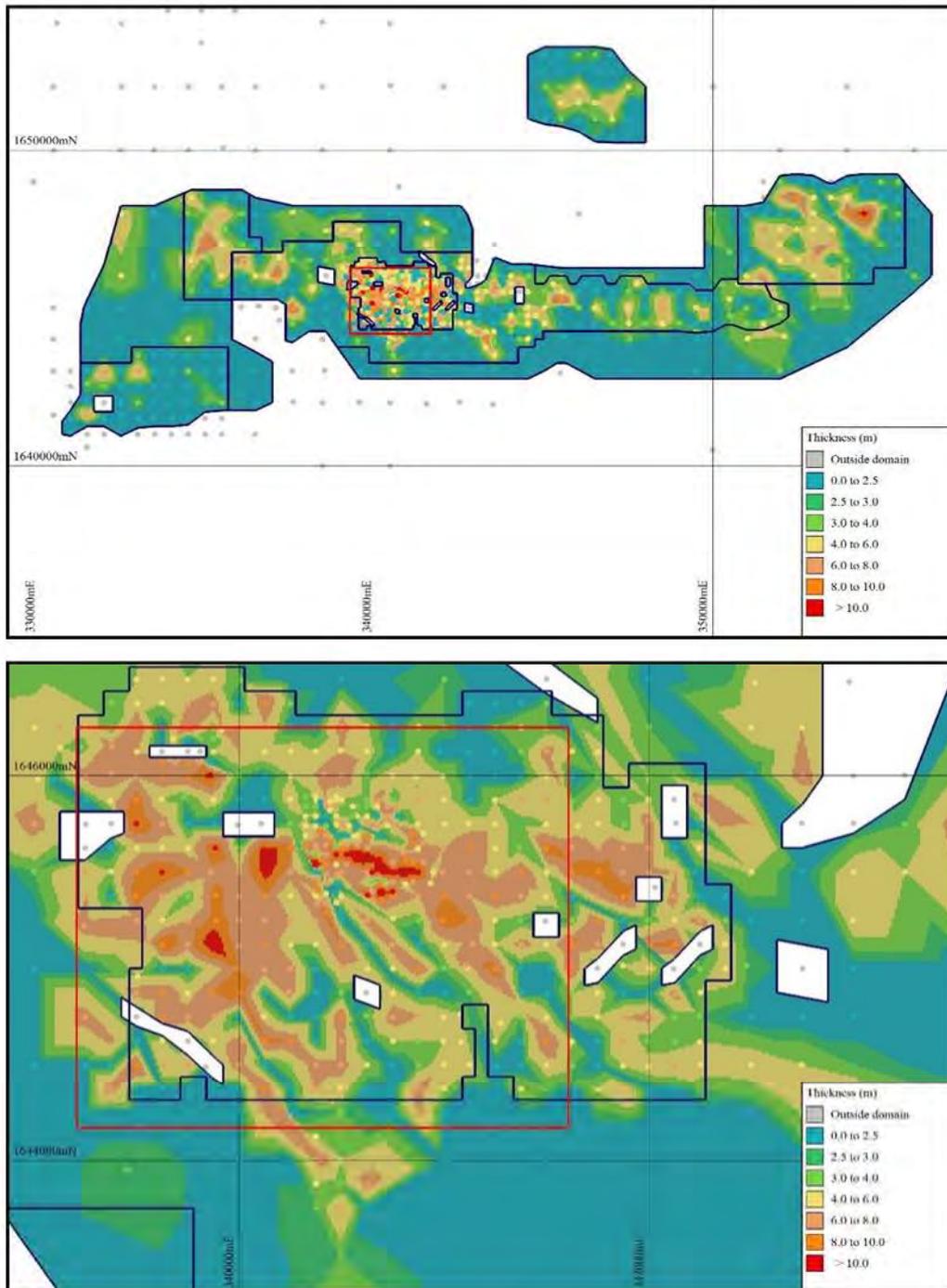
## 5.6.2 Geological Interpretation and Mineralisation Modelling

The mineralised domains were interpreted by MPR using 1 m downhole composited P<sub>2</sub>O<sub>5</sub> grades and geological logging. The domains capture zones of continuous mineralisation with composite P<sub>2</sub>O<sub>5</sub> grades of greater than nominally 10% with a minimum thickness of 2 m. Lower grades are sometimes included to give a continuous shape. Composite intervals with elevated MgO or CaO grades near the contact of the mineralisation and basement were excluded even if the P<sub>2</sub>O<sub>5</sub> was above 10%.

The main deposit extends east–west over a 26 km strike length with an average width of ~ 4.8 km. It includes the Gadde Bissik East, Gadde Bissik West Gandal, and Gadde Escalé areas. The Dinguiraye zone, which lies ~ 4 km to the north, covers an area measuring ~ 3.5 km east–west by 2.7 km north–south. The overall domain trends east–west, but thickness variations show greatest continuity following northwest–southeast trends. As illustrated in Figure 5-8, the thickness trends are clearly defined within the area of 125 by 125 m drilling.

SRK reviewed geological cross sections of the neighbouring deposits and the well-studied Taiba deposit (60 km to the northwest of Baobab). At these deposits, the main phosphate mineralisation domains often contain zones of silicification and ferruginisation, which may affect mining and processing. The univariate statistics suggest that these zones are also present at Baobab, but the current drilling density is insufficient for them to be modelled separately and excluded from the mineralisation domains. Further drilling at a grade control density may delineate these layers.

SRK's assessment of the 3D modelling is that it reflects the phosphate mineralisation and is appropriate for the Mineral Resource estimation methods used by MPR at this stage of development.



**Figure 5-8: Mineralised domain thickness**

Source: MPR 2018 MRE report

### 5.6.3 Estimation of Mineral Resources

MPR summarised the key steps taken to prepare the Mineral Resources estimates as:

1. Calculation of 1 m downhole composite grades for all drill holes using the logged basement contact as the origin for diamond holes
2. Interpretation and wireframing of the mineralised domain
3. Flagging of composite grades by the mineralised domain wireframe and unfolding composite locations relative to the mineralised domain base
4. Variogram modelling for each attribute using the unfolded composite locations

5. Ordinary Kriging of the unfolded mineralised composites using six progressively relaxed search passes and 62.5 by 62.5 by 1.0 m (east, west vertical) blocks
6. Re-blocking parent blocks to consistently 31.25 by 31.25 by 0.25 m sub-blocks
7. Calculating elevation of the lower contract of the mineralised domain wireframe at the plan view centroids of sub-blocks and re-folding of the Kriged estimates back to real-world coordinates on the basis of these elevations
8. Identifying blocks within the mineralised domain and classifying them into Indicated and Inferred Mineral Resource and Exploration Target categories by polygons outlining the extents of generally 125 by 125 and 500 by 500 m spaced drilling, respectively.

MPR states Micromine software was used for data compilation, domain wireframing, and coding of composite values, and GS3M was used for resource estimation. The resulting estimates were imported into Micromine for resource reporting. SRK has summarised the inputs MPR used for the estimation in Table 5-6.

**Table 5-6: Mineral Resource estimation parameters**

<b>Estimation Methodology</b>	Ordinary Kriging with parent cell estimation						
<b>Estimated variables</b>	P <sub>2</sub> O <sub>5</sub> , Al <sub>2</sub> O <sub>3</sub> , CaO, Fe <sub>2</sub> O <sub>3</sub> , MgO, and SiO <sub>2</sub>						
	North (m)	East (m)	RL (m)	Drill dip	Drill Az		
<b>Drill/ sample spacing</b>	125-500	125-500	1	90°	Na		
<b>Parent block size</b>	62.5	62.5	1				
<b>'Re-block' cell size</b>	31.25	31.25	0.25				
<b>Theoretical Variogram Model</b>							
Attribute	Nugget	First structure (spherical)		Second structure (spherical)		Third structure (spherical)	
		Sill	Range (x,y,z) m	Sill	Range (x,y,z) m	Sill	Range (x,y,z) m
P <sub>2</sub> O <sub>5</sub>	0.10	0.51	140,135,2.9	0.26	165,160,11	0.13	295,600,9.3
Al <sub>2</sub> O <sub>3</sub>	0.16	0.51	120,120,2.9	0.27	250,185,8.2	0.06	2500,1500,9.2
CaO	0.10	0.51	140,135,2.9	0.26	165,160,11	0.13	295,600,9.3
Fe <sub>2</sub> O <sub>3</sub>	0.16	0.32	130,130,2.3	0.33	150,140,9.0	0.19	1250,850,49
MgO	0.34	0.40	130,105,1.3	0.08	165,140,4.4	0.18	185,170,25
SiO <sub>2</sub>	0.19	0.35	120,125,2.5	0.40	175,150,9.0	0.06	450,2900,26

Major axis orientation	Dip	0°	Dip dir.	0°		
<b>Search Ellipse Parameters</b>						
Passes	East (m)	North (m)	Elevation (m)	Minimum Data	Minimum Octants	Maximum data
Extent (pass 1)	200	400	1	8	2	24
Extent (pass 2)	300	300	1.5	8	2	24
Extent (pass 3)	300	300	1.5	4	1	24
Extent (pass 4)	600	600	1.5	2	1	24
Extent (pass 5)	1,200	1,200	3.0	2	1	24
Extent (pass 6)	1,200	1,200	3.0	2	1	24
Major axis orientation	dip	0°	Dip dir.	0°		

Source: MPR 2018 MRE report

MPR's reports do not present figures of the experimental versus theoretical variograms or quality statistics that support the selection of the estimation parameters. As such, SRK can only assess in general terms, based on experience, the quality of the input parameters against the sampling dimensions and mineralisation characteristics.

SRK recommends that Kriging Neighbourhood Analysis (KNA) be undertaken to assist in the determination of estimation input parameters and that the performance statistics (Kriging Efficiencies and Slope of Regression) be reported. Additionally, the inclusion of figures showing the experimental and theoretical variograms will provide transparency about the quality of the variogram model and show any trends, cyclicity or anisotropy in the spatial correlation of the samples.

SRK notes that the direction and form (nugget variance, range and variance for each structure) of the variograms can impact the quality of the local block grade estimate. In general, over-smoothing of the local block grade estimate occurs when the nugget variance is high and/ or the ranges are 'short' relative to the drill hole spacing. Short ranges can be the result of the drill hole spacing being larger than the geological structures present (under-sampled) or an incorrect choice for the direction of maximum grade continuity.

The latest Mineral Resource estimate report states that the thickest mineralisation trends in a northwest–southeast direction as shown in Figure 5-7. Thus, most sample pairs would also occur in these thicker northwest–southeast trending zones given that the composite grades were flattened ('unfolded') to a basement surface. SRK recommends that the main direction of maximum continuity for the variogram be reviewed in the direction of these thicker zones to see if the ranges of the first and second structures can be extended, thus improving the quality of the local block grade estimate. SRK notes the nugget variance (0.16) is low, indicating that there are minimal measurement errors or geological structures at less than downhole sampling distance.

The grade estimation process used six passes with increasing search ellipse distances and a decreasing minimum number of required samples to form valid block grade estimates. For the Indicated Mineral Resources, 98% of the block grades were estimated in the first two estimation passes. Based on the drilling pattern and search parameters, SRK would expect the local estimate to be based on two to three samples per drill hole from eight to nine drill holes. Given the shape of the variogram model, this should give a reasonable quality block grade estimate for the Indicated Mineral Resources. The Inferred Mineral Resources are in areas with a 500 by 500 m drill spacing. At this sample spacing, the model variograms have a normalised covariance value that is approaching one, indicating there is little spatial correlation between sample pairs. Thus, SRK would expect the estimated block grades for the Inferred Mineral Resources to be smoothed. SRK notes that all the search radiuses in the vertical distance are short and well within the vertical ranges modelled in the variograms. This is not an unusual approach for sample selection where the data has been flattened prior to estimation. This approach effectively restricts the number of samples per drill hole to two or three, which can assist in retaining local variability in the vertical direction.

For the reporting of the Mineral Resources, MPR re-blocked the block model to 31.25 by 31.25 by 0.25 m blocks, to ensure the mineralisation block model and 3D wireframes reported a similar volume (and tonnage). SRK understands that the preferred mining equipment is a surface miner and that the vertical resolution of the Selective Mining Unit (SMU) is 0.25 m. SRK recommends that, prior to grade control drilling, a review be undertaken of the current 1 m drill hole sampling interval and its effect on mine planning at this flitch height.

For the purposes of estimation validation, MPR presented a comparison of the model estimate versus production, a comparative polygonal estimate and swath plots, looking north, of the Indicated Mineral Resources against input composited sample grade. The swath plots imply that general composite grade trends are followed by the block estimates. SRK recommends a complete set of swath plots

and representative cross sections and plans showing block and composite grades be presented in a 'bankable' feasibility study-level Mineral Resource estimation report so that the independent specialist can assess the performance of the estimate thoroughly.

The 2018 MPR Mineral Resource estimate report presents a table comparing the Indicated Mineral Resource estimate to a 'polygonal model estimate'. The tabulation shows that the kriged block estimate has 5% less tonnes and 3% less phosphate grade than the polygonal estimate. Although these differences are minimal, SRK notes the report does not provide any details of how the polygonal estimate values are derived, so the quality of this estimate cannot be assessed.

The tonnes and grades from a trial pit, mined to the end of August 2017, was compared to the MRE for the same volume. Table 5-7 from the 2018 MPR MRE report indicates the production grade is 13% less than was expected from the MRE block model. The 619 kt mined from the trial pit represents approximately 20% of the proposed annual throughput of 2.9 Mt to the processing plant. The report did not include details of where the trial mining was conducted, or if close-spaced grade control drilling had been undertaken, or whether the MRE block model had incorporated any additional grade control drilling. Consequently, SRK is unable to assess the significance of the differences in phosphate grade, but recommends they be thoroughly investigated.

**Table 5-7: Block Model estimate versus trial mining production (to August 2017)**

	Tonnage (kt)	Grade (P <sub>2</sub> O <sub>5</sub> %)
Model estimates	617	22.2
Estimated production	619	19.4
Difference	0.3%	-13%

Source: Avenira Minerals Feb 2018 MRE report

The 2018 MPR MRE report tabulated the block model estimate at a 0% P<sub>2</sub>O<sub>5</sub> cut-off grade. This enabled SRK to compare the block and sample composite average grades for each of the resource areas. The estimated P<sub>2</sub>O<sub>5</sub> %, Al<sub>2</sub>O<sub>3</sub> %, CaO % and SiO<sub>2</sub> % grades are within 5% of the composite grades as tabulated in Table 5-8. The fluorapatite ratio (P<sub>2</sub>O<sub>5</sub> %/ CaO % - FAP) for each of the deposits is also consistent for the composite and block grades. The MER is defined as (Fe<sub>2</sub>O<sub>3</sub> % + Al<sub>2</sub>O<sub>3</sub> % + MgO % / P<sub>2</sub>O<sub>5</sub> %). The MER for the Gadde Bissik East Indicated Mineral Resources is 15% higher than the informing composite value. The univariate statistics previously presented in Table 5-2 showed the Coefficients of Variation (CoVs) for the MgO % and Fe<sub>2</sub>O<sub>3</sub> % composites to be 3.24 and 1.14, respectively. The CoV allows a comparative assessment of the dispersion of grade values around the mean for the different analytes. These values are much higher than the CoVs for the other analytes and indicate the population distribution is different. SRK recommends that the location of high-grade MgO % and Fe<sub>2</sub>O<sub>3</sub> % composites be investigated to check if their influence on the MRE can be minimised. SRK understands that metallurgical testing of the ore at the Baobab Project has shown instances where the Fe<sub>2</sub>O<sub>3</sub> % is locked into the apatite crystals and cannot be improved by beneficiation. This could attract a penalty in an offtake agreement.

Overall, SRK's assessment of the MRE is that the quality and quantity of the data inputs and the work undertaken are reflected in the level of Mineral Resource classification applied.

**Table 5-8: Block Model estimate versus composite grades at 0% P<sub>2</sub>O<sub>5</sub>**

Deposit Classification	No. of Composites vs Resource tonnes	P <sub>2</sub> O <sub>5</sub> %	Al <sub>2</sub> O <sub>3</sub> %	CaO %	Fe <sub>2</sub> O <sub>3</sub> %	MgO %	SiO <sub>2</sub> %	FAP ratio	MER ratio
Gadde Bissik East Indicated	Comps (2564)	20	2.13	27.6	3.38	0.07	43.4	0.72	0.28
	Res (42.8Mt)	19.3	2.25	26.6	3.86	0.08	44.4	0.73	0.32
	<b>% difference</b>	<b>-4%</b>	<b>6%</b>	<b>-4%</b>	<b>14%</b>	<b>14%</b>	<b>2%</b>	<b>0%</b>	<b>15%</b>
Gadde Bissik East Inferred	Comps (701)	16.5	3.17	22.4	3.41	0.15	50.4	0.74	0.41
	Res (115.1Mt)	16.3	3.22	22.2	3.89	0.16	50.2	0.73	0.45
	<b>% difference</b>	<b>-1%</b>	<b>2%</b>	<b>-1%</b>	<b>14%</b>	<b>7%</b>	<b>0%</b>	<b>0%</b>	<b>9%</b>
West Gandal Inferred	Comps (104)	12.4	6.83	15.8	6.79	0.39	50.7	0.78	1.13
	Res (38.1Mt)	11.8	6.97	14.9	6.89	0.39	51.9	0.79	1.21
	<b>% difference</b>	<b>-5%</b>	<b>2%</b>	<b>-6%</b>	<b>1%</b>	<b>0%</b>	<b>2%</b>	<b>1%</b>	<b>7%</b>
Gandal Inferred	Comps (99)	14.8	4.18	20.6	7.94	0.1	47.5	0.72	0.83
	Res (34.7Mt)	14.7	4.23	20.5	7.66	0.1	48	0.72	0.82
	<b>% difference</b>	<b>-1%</b>	<b>1%</b>	<b>0%</b>	<b>-4%</b>	<b>0%</b>	<b>1%</b>	<b>0%</b>	<b>-1%</b>
Gadde Escalé Inferred	Comps (224)	16.3	2.42	22.9	3.11	0.17	51.5	0.71	0.35
	Res (86.5Mt)	15.9	2.41	22.5	3	0.17	52.5	0.71	0.35
	<b>% difference</b>	<b>-2%</b>	<b>0%</b>	<b>-2%</b>	<b>-4%</b>	<b>0%</b>	<b>2%</b>	<b>-1%</b>	<b>0%</b>
Dinguiraye Inferred	Comps (87)	16.9	3.35	24.9	3.54	0.22	46.1	0.68	0.42
	Res (36.7Mt)	16.2	3.41	24.2	3.64	0.24	47.2	0.67	0.45
	<b>% difference</b>	<b>-4%</b>	<b>2%</b>	<b>-3%</b>	<b>3%</b>	<b>9%</b>	<b>2%</b>	<b>-1%</b>	<b>7%</b>

### 5.6.4 Mineral Resource classification and statement

The Mineral Resource classification was carried out in accordance with the JORC Code (2012) by MPR. The Mineral Resource statement was reported at cut-off grades of 10% P<sub>2</sub>O<sub>5</sub> and 15% P<sub>2</sub>O<sub>5</sub>.

MPR reported in the 2018 MRE report that the model estimates are classified by a set of plan view polygons defining areas of relatively consistent drill spacing:

- Estimates for mineralisation tested by drilling spaced at 125 by 125 m or less are classified as Indicated.
- Estimates based on holes spaced at between 125 by 125 m and approximately 500 by 500 m are classified as Inferred Mineral Resources.
- No Measured Mineral Resources are reported.

The MRE performance statistics are presented in Table 5-9.

- Indicated Mineral Resources are primarily informed by search passes 1 and 2 (98%), with search passes 4 and 5 contributing only small proportions.
- Inferred Mineral Resources are dominated by blocks informed by search pass 4, with search passes 5 and 6 contributing only small proportions.
- Estimates for peripheral, broadly sampled areas included in estimates of Exploration Targets are primarily informed by search passes 4 and 5.
- Search pass 6 is used only for estimation of very broadly sampled areas and provides only a small proportion of the Inferred Mineral Resources and Exploration Target estimates.

**Table 5-9: Mineral Resource estimate performance statistics**

Search Pass	Indicated		Inferred		Exploration Target	
	Tonnage (Mt)	Proportion	Tonnage (Mt)	Proportion	Tonnage (Mt)	Proportion
1	15.0	35%	0.07	0.02%	-	-
2	26.9	63%	13.0	4%	-	-
3	0.81	2%	41.3	12%	1.15	0.6%
4	0.05	0.1%	276	79%	46.8	23%
5	0.001	0.003%	20.2	6%	147	74%
6	-	-	0.50	0.1%	3.92	2.0%
<b>Total</b>	<b>42.8</b>	<b>100%</b>	<b>351.1</b>	<b>100%</b>	<b>199.2</b>	<b>100%</b>

Source: MPR 2018 MRE report

SRK considers it good industry practice to additionally refer to the quality of the input data, confidence in the interpretation, and geostatistical results as well as the sample spacing when considering the classification criteria.

### 5.6.5 Concluding assessment

SRK's assessment of the MRE is that the quality and quantity of the data inputs and the work undertaken are reflected in the Mineral Resource classification applied.

Overall, SRK considers that the preparation method for the Mineral Resources does not represent a material risk to the progress, mining or overall value of the Project at this stage of development.

However, SRK recommends the following be carried out:

- A thorough reconciliation study of the trial mining data to determine the reason for the difference in phosphate grade
- A review of the sampling interval and estimation methodology to improve the local variability in the block estimate at an SMU size before commencing grade control drilling
- Implementation of strategies to ensure more detail and hence transparency in the reporting of the estimation process, estimation parameter determinations, estimation validation results, Mineral Resource classification schema and estimation performance statistics.

## 5.7 Mining studies

### 5.7.1 Introduction

The mining studies for the Project have been incrementally developed and updated. The mining studies provided to SRK include a report titled 'Gadde Bissik LMP Mine Planning', dated 4 January 2017, issued by AMC Consultants, and the Phase 1 Feasibility Study report titled 'Baobab Phosphate Project' issued by Wood in March 2019.

SRK notes that the mine was operating while the AMC study was being developed. AMC quotes the accuracy of its 2017 Mining Study to be at a conceptual level. SRK notes that the mine planning work in the Phase 1 Feasibility Study is generally at a pre-feasibility level and is supported by several mine planning-specific memorandums, which were provided as appendices to the report.

The mine was operated at a small scale from September 2016 to September 2017, producing an estimated 80,000 t of phosphate product for export with additional tonnages sold to a local fertiliser manufacturer.

## 5.7.2 Mining methods

The mining operations from 2016 to 2017 employed a mining contractor using small-scale truck and excavator mining equipment. AMC's 2017 Mining Study considered a mining fleet similar to that being operated by the incumbent mining contractors using small-scale truck and excavator mining methods.

The Phase 1 Feasibility Study included a Mining Method Trade-off Study that considered a range of mining methods. The selection process presented focused on the operating cost estimation and selection of methods primarily based on minimising operating costs. The selected overburden mining fleet is a dozer push waste mining option. For ore mining, a truck and excavator mining method was selected, similar to that used in at the previous small-scale mining operation.

The Phase 1 Feasibility Study selected the following primary mining fleet:

- Ore mining – a single 75 t excavator for ore mining with 4 × 36 t on-road style trucks
- Waste mining – 6 × Komatsu D475 Super Dozer.

The proposed mining operation is owner operated with a 24 hour/day operation using 3 × 8 hour shifts for waste mining and 2 × 8 hour shifts for ore mining.

SRK notes that the Mining Trade-off Study was developed at a conceptual level with a focus on cost minimisation. While some regard was given to the operability of the waste mining method, the variable contacts between the overburden and the ore unit and their associated implications on ore loss and dilution are predicted to introduce some risk. SRK highlights that the technical work supporting the mining cost estimation is high-level and therefore there is a risk that the mining costs are optimistic.

## 5.7.3 Mine planning

The level of technical detail in the mine planning work forming the Phase 1 Feasibility Study report appears to be at pre-feasibility study level. The mine planning workflows used in the Phase 1 Feasibility Study are conventional and consider open pit optimisation, mine design and production scheduling. The report correctly considers Measured, Indicated and Inferred Mineral Resource classifications in its evaluation of Ore Reserves and scheduling.

Ore loss and dilution has been approached at a conceptual level, reporting ore loss and dilution applied differently between the top of the ore, the base of the ore and the contact between mining strips. While SRK considers ore loss and dilution is important, the ore loss and dilution assumptions may be under-called, particularly due to the undulating upper contact between ore and waste.

The inputs considered in the open pit optimisation appear to be supported by benchmarking or rules of thumb and in most instances appear reasonable.

An ore production rate of 3 Mtpa was established as the production scheduling production rate. The production schedule is based on progressive strip-mining development, commencing mining with early access to high grade and low-cost ore.

## 5.7.4 Mining capital cost

The Phase 1 Feasibility Study considers an owner-operated mining fleet. The mining capital cost therefore includes the mining fleet, first fills, capitalised pre-stripping and sustaining capital.

Mining infrastructure such as workshops, offices and ablutions are included in the general infrastructure cost centre.

The capital cost estimation appears appropriate.

## 5.7.5 Mining operating cost

The mining operating costs for the small-scale contractor mining from 2016 to 2017 were quoted at £1.30/bcm or US\$1.63/bcm. The Mining Method Trade-off Study within the Phase 1 Feasibility Study report estimated the operating cost for total overburden removal at €0.613/bcm, including re-handling costs or €0.418/t dry Overburden to Final Resting Place. The estimated operating cost for ore mining is €1.158/bcm or €0.749/dry t.

The operating costs for the fleet included allowances for maintenance, labour and fuel. Provision is made for support/ ancillary equipment.

SRK notes that there is a risk that the operating costs may be under-called.

## 5.7.6 Ore Reserve

The Baobab Phosphate Project Ore Reserve estimate is presented in Table 5-10.

**Table 5-10: Ore Reserve estimate for the Baobab Project as at 1 March 2019**

Category	Ore (kt)	Grade (P <sub>2</sub> O <sub>5</sub> %)	P <sub>2</sub> O <sub>5</sub> content (kt)	Al <sub>2</sub> O <sub>3</sub> %	CaO%	Fe <sub>2</sub> O <sub>3</sub> %	MgO%	SiO <sub>2</sub> %	CaO/P <sub>2</sub> O <sub>5</sub>
Proven	-	-	-	-	-	-	-	-	-
Probable	39,305	18.9	7,446	2.1	26.1	3.7	0.1	43.2	1.38
<b>Total</b>	<b>39,305</b>	<b>18.9</b>	<b>7,446</b>	<b>2.1</b>	<b>26.1</b>	<b>3.7</b>	<b>0.1</b>	<b>43.2</b>	<b>1.38</b>

Ore Reserves date is 1 March 2019.

Ore Reserves are reported to a 34.7% P<sub>2</sub>O<sub>5</sub> concentrate price of US\$105/t.

Tonnages are in metric units and rounded to the nearest 1,000 t.

Rounding of tonnes as required by the reporting guidelines may result in apparent summation differences between tonnes, grade, and P<sub>2</sub>O<sub>5</sub> content.

Only Indicated Mineral Resources are considered in both the mine planning and reported Ore Reserve.

Based on its review, SRK regards the mine planning to remain at a conceptual level and hence the confidence in the cost estimate to remain poorly defined. SRK therefore does not consider that the stated Ore Reserve provides a reasonable basis for valuation using a discounted cashflow analysis.

## 5.8 Processing

### 5.8.1 Introduction

SRK's metallurgical associate, Simulus Engineers (Simulus), undertook an assessment of the mineral processing and metallurgical testwork aspects of the Project. This was undertaken at a desktop level predominantly using the Phase 1 Feasibility Study issued in March 2019, along with the supporting appendices.

The intent of this assessment was to comment on the level of study undertaken, the reasonableness of the proposed processing flowsheet, the current status of the Project and the required work for the value engineering and 'Bankable Feasibility Study' (Stage 2) as well as the reasonableness of the technical inputs into the Phase 1 Feasibility Study financial model.

A simple, smaller-scale screening plant was used for the processing of ore during the 2016 and 2017 mining campaign. Three shipments of phosphate concentrate were produced.

The original flowsheet incorporated dry, then wet, screening of crushed ore to produce a -6 mm +212 µm product. Phosphate concentrate product was solar dried and the -212 µm tailings were thickened and pumped to tailings storage. Several issues were encountered with the original plant as constructed. They included, but are not limited to, the capacity of the crushing circuit, difficulty in screening ores with a clay content higher than expected, higher water consumption than expected and

ultimately, the inability to reduce the product moisture to below the stringent 3% target. This was the case even outside the (relatively) wet season of July to October. The silica content of the product from this early simple flowsheet was also high, at between approximately 13% and 16%, and the iron content would also have been elevated.

This experience is not unusual and should not be used as an indicator of the likely success of the proposed expanded project now that the Exploitation Permit has been granted. However, it demonstrates the importance of appropriate and sufficient metallurgical testwork on representative samples, the importance of appropriate application of this testwork derived data to the process design, the need to ensure a robust and flexible plant design with sufficient engineering allowances in the equipment sizing, and the need to sequentially progress through the relevant stages of engineering development.

Based on SRK's discussions with management, Avenira is aware of this and a much more considered approach has been undertaken for the proposed expansion project. Tier 1 engineering groups, experienced metallurgical laboratories and technology providers and a number of specialist consultants have been engaged in the study this time around. Hatch undertook the 2017 concept study and in May 2018, Wood was appointed as the lead engineering consultant for the Baobab expansion and upgrade project. This engagement was structured into an initial Feasibility Study stage (Phase 1), which is reviewed here, followed by a final 'Bankable' Feasibility Study stage (Phase 2), which remains in progress.

This first 'Feasibility Study' phase is estimated at an AACE International (Association for the Advancement of Cost Engineering) Class 4 Estimate. The study reports the expected accuracy range to be  $\pm 20\%$ . With this AACE class accuracy across a range of +20 to +50%, it covers a broad range of study types. The equivalent AusIMM cost estimation Class 4 is more prescriptive and defines the accuracy range of +20 to +25% as a pre-feasibility study level of accuracy.

SRK considers the current mineral processing and engineering report and confidence in the cost estimates as being more aligned with a pre-feasibility level of study, but with evidence that work has now progressed past this level. The engineering report can be relatively easily updated once additional testing becomes available to inform the design assumptions and revise any changes to the flowsheet.

Avenira states that the final (Phase 2) Feasibility Study will develop the capital and operating costs to approximately  $\pm 10\%$  accuracy. SRK considers this as being aligned with an AusIMM Class 3 level Feasibility Study and at an investment decision quality.

## 5.8.2 Metallurgical testwork

Extensive metallurgical testwork has been undertaken to support the Project development. This work is not yet definitive and testwork is ongoing. The work has been undertaken largely at batch scale and includes vendor (technology supplier) testing for equipment such as thickening, filtration, drying and magnetic separation. It is supplemented by historical testwork undertaken for the original screening plant, along with the large-scale operating experience gained in 2016 and 2017 from which some parallels can be drawn.

The testing for both the 2017 internal pre-feasibility and Phase 1 Feasibility studies was undertaken by Avenira's laboratory in Senegal and by other independent accredited, reputable and appropriately experienced metallurgical laboratories, most with specialist experience in the testing of phosphate ores. Vendor testing was undertaken by recognised equipment vendors. In some cases, such as filtration, the testing was undertaken by several different vendors. SRK notes that a large number of flotation (and other) tests have been undertaken in Avenira's laboratory. These were not reported in the Phase 1 'Feasibility Study' report in order to maintain the independence of the study. They were

undertaken in site water and are understood to reflect the external laboratory testing and were generally used to provide initial guidance on test parameters.

Testwork has also been supervised by several phosphate beneficiation specialists. They are embedded in the owner's team, acting as owner's consultants, in the engineer's team and gained through the expertise of the metallurgical testwork laboratories and the vendors. There is confidence in the results reported.

This Study used particle size distribution (PSD) estimates from nine DD core samples used in the 2017 conceptual engineering study (FEL 1 Level). Comminution (crushing and grinding) testwork used testwork on three composite samples (a high grade (HG), medium grade (MG) and low grade (LG) sample) selected from remnant Run of Mine (ROM) stockpiles, targeted to reflect the LOM ores, but with a bias towards the hardest samples. The latest flotation testwork by Mintek has been undertaken on bulk samples collected from the exposed pit face. The face was cleaned to expose fresh material, with three composites made up to generate separate HG, MG and LG samples. Each comprised sub-samples from different areas of the pit to incorporate some variability. Samples were taken based on the  $P_2O_5$  content, and by association, the silica ( $SiO_2$ ) content. The iron grade or other geometallurgical behaviours were not considered in detail. The 2017 conceptual engineering study testwork was undertaken on drill core from varying depths.

SRK considers that during the Stage 2 Feasibility Study, additional detail is required to demonstrate the sample representativity. This should show the samples' location in relation to the preliminary pit design, show that the grades reflect the LOM forecast, show that the samples reflect the main lithologies, reflect different depths and samples along strike and provide sufficient variability samples to demonstrate the likely range of metallurgical behaviours that can be expected over the LOM, particularly the first 3–5 years of operation.

The tests undertaken were typical of those used for rock phosphate ores and included comprehensive head grade and size by size analysis, mineralogy, physical (comminution) tests, batch scale flotation, materials handling and tailings geochemical tests. Products were also sent to vendors (technology providers) for equipment testing including high intensity magnetic separation, thickening, filtration, and drying.

A sample was also dispatched for phosphoric acid production testing at Prayon S.A., the world specialist in this field. This work confirmed the suitability of the concentrates for phosphoric acid production, although it is unclear if they were products from the previous operation (reports not reviewed). The higher grade (and lower impurity) concentrate produced from the more selective flotation process can only improve the amenability to acid production.

Once the processing flowsheet and flotation parameters are optimised, further variability testing is required on a wider range of samples to demonstrate the robustness of the proposed plant design to throughput, recovery, product specifications and operating costs. Given the variability, consideration should be made to undertaking larger-scale piloting to provide confidence around the final flowsheet.

Overall, the testwork demonstrates that a conventional and relatively simple flotation-style concentrator can be used to beneficiate the ores to a saleable phosphate concentrate grade at reasonable phosphate recovery levels. The product specification is expected to be far superior to the previous operation and it is better able to achieve the concentrate moisture target.

However, SRK still considers the testwork to be a work in progress. It has not generated definitive process design criteria at a 'Bankable' Feasibility Study level of confidence and there is work to be done to understand the natural proportion of  $-38 \mu m$  material in the feed and the  $-38 \mu m$  material generated during the comminution and attritioning processes. Further work is required to better define and optimise the flotation conditions, undertake locked-cycle flotation testing, flotation testing using

site water, additional magnetic separation to remove part of the iron content in the flotation concentrate, and improve the thickening and filtration parameters.

The metallurgical testwork has demonstrated that:

- Phosphate was predominantly contained in clean apatite and silicate-bearing apatite. Gangue minerals were predominantly quartz and other silicates (clay, mica and feldspar), minor iron oxides (goethite) and notably some zircon.
- The phosphate bearing apatite is well-liberated from the gangue minerals. The quartz is generally well-liberated but decreases in the coarsest -2 mm top +600 µm fraction analysed. The iron oxides are reasonably well-liberated, but not to the same extent as the apatite and phosphate.
- The Mineral Resource/ Ore Reserve requires beneficiation to meet typical phosphate specifications, both to upgrade the phosphate grade and reduce impurities (specifically the silica), but also to manage the iron and to a lesser extent the aluminium and magnesium oxides, which contribute to the MER. Phosphate (and by association silica) and iron oxide cut-off grades are required to control the feed impurities to ensure on-specification product can be produced.
- A saleable phosphate concentrate grade nominally above 33%–34% P<sub>2</sub>O<sub>5</sub>, silica below 8% and with acceptable key impurities such as an MER of below 0.1, CaO, SiO<sub>2</sub>, Pb, F, Cl, Na<sub>2</sub>O and K<sub>2</sub>O and Cd can be produced. More work on the concentrate specification is required once the flowsheet and flotation variables are finalised.
- There is some zircon and cadmium in the feed and it is important to ensure these elements and the level of other radionuclides are not elevated in the final product. This work has not yet been undertaken.
- Testing was focused on the different phosphate feed grades (i.e. HG, MG and LG) that make up the current Ore Reserves. More testwork is required with a focus on other geometallurgical characteristics of the deposit and the different lithology types, which may differ greatly in silica and Fe<sub>2</sub>O<sub>3</sub> associations and/ or other metallurgical behaviour, but which are often spatially differentiable (selectively mineable).
- Comminution characteristics were typical of apatite ores, i.e. they are soft and non-abrasive and do not present an excessive grinding power or wear risk. Conversely, a key risk is the proportion of fines that is present in the feed and that will be generated during the comminution and attritioning process. This undersize material reports to tailings. More work is required on the amount of natural (mined) -38 µm fines, i.e. the PSD, and the amount that will be generated through the flowsheet prior to flotation.
- Historical flotation testwork was used to select the overall flowsheet, (i.e. either to use direct flotation of the phosphate or the reverse flotation of the gangue silica). While both were effective in producing a saleable product, with the former generating a very high-quality product, reverse flotation was selected due to the simpler flowsheet and higher phosphate recovery. SRK understands it was not a clear-cut decision but accepts that a decision needed to be made to progress one option over the other.
- The reverse flotation process is effective in separating the gangue silica (insoluble) minerals from the phosphate. The kinetics are extremely fast.
- Flotation is sensitive to a number of variables tested including grinding, desliming, attritioning, conditioning, reagent dosage and flotation residence time, and number of stages. Flotation testing could benefit from other variables such as density and temperature. Further optimisation is required to balance achieving the concentrate specification with the phosphate recoveries. A number of recovery relationships have been developed but further flotation variability testing is required to provide a 'Bankable' Feasibility Study level of confidence in the expected recoveries and concentrate grade.

- The flotation testwork completed by the independent metallurgical laboratories was not undertaken using site water; however, the parallel testing undertaken by Avenira's laboratory used site water. This allows for a comparison, but additional external locked-cycle flotation testing using site water is still required, as the impact has not been adequately tested.
- Flotation is sensitive to fines. Desliming of the nominally -38 µm fraction was undertaken, although there may be an opportunity to optimise the size fraction required for optimal flotation performance.
- The flotation product still has a moderately elevated iron grade, above target. Magnetic separation testwork successfully removed some (but not all) of the iron. This iron is partly associated with the phosphate mineralisation so there is a modest phosphate recovery loss during this final beneficiation step. The testwork did not achieve the target of <1.0% Fe<sub>2</sub>O<sub>3</sub> but was relatively close at approximately 1.5% Fe<sub>2</sub>O<sub>3</sub>. More testwork is required to finalise the expected product iron grade.
- The proportion of fines, both natural and generated, was sensitive to the crushing, scrubbing/attritioning and milling process. This has significant implications for the mass and phosphate recovery and requires further consideration in the flowsheet and mechanical equipment selection.
- The three composite samples taken from the pit and used for Phase 1 Feasibility Study testwork were focused on high, medium and low phosphate grades. The 2017 conceptual engineering study testwork was undertaken on nine drill hole samples. The samples are considered by SRK to be generally representative of the deposit, but additional variability samples are required, and additional details on the location and nature of the samples in the Stage 2 Feasibility Study reporting are required to support the sample representativity.
- Vendor testing provided dewatering data for engineering design. The testing demonstrated that the products can be thickened, filtered and dried. However, there was some variability in the results, particularly in the filtration testing, which was undertaken by multiple vendors. While vacuum filtration was selected, SRK considers that there may be an opportunity to use pressure filtration to reduce product moistures and by doing so, reduce the drying demands, which contributes a large operating cost. SRK does not consider dewatering and drying to be a risk, but appropriate engineering design is required to guarantee the tight product moisture specification can be consistently achieved.
- Reportedly the phosphoric acid production testing was successful on the sample(s) provided. Reporting has not been provided to confirm this. Additional details of this work should be provided in the Stage 2 Feasibility Study report.
- The flowsheet selected for the engineering design largely reflected that used in testing. SRK expects there will be minor changes to the flowsheet and equipment type selected during the Stage 2 Feasibility Study stage of design.

While testwork supports the technical capacity to generate a saleable concentrate, in SRK's opinion there are a number of variables that are not adequately defined to provide sufficient confidence in several of the Phase 1 Feasibility Study assumptions, particularly the phosphate recovery, specifically:

- The Feasibility Study phosphate recovery assumption of 64.8% is based on the Phase 1 Feasibility Study testwork to date and is a reasonable assumption at this time. However, SRK considers that more optimisation and variability testing of the consolidated flowsheet is required to confirm these values. It requires additional definition of the mass balance and the PSD in the ROM feed and that generated during comminution and attritioning.
- The optimum feed preparation (attritioning and conditioning) and flotation conditions are still a work in progress. Additional attritioning, locked-cycle (flotation) testing (LCT) using site water across a range of variability samples is required.

- The proposed variability testwork is also essential to provide confidence over the product specification range currently reported, and the recoveries and upgrade characteristics of the impurities across the different feed types.
- Additional high intensity magnetic separation on combined pebble and flotation products with representative grades is required to confirm final product specifications and additional phosphate losses during this process.
- Additional filtration testwork is required. The Project may benefit from another review of pressure filtration rather than belt filtration in order to produce a lower moisture concentrate prior to drying.
- The confidence in the metallurgical behaviours may benefit from a larger-scale piloting testwork program, but this will come at additional cost and time. Given the relatively straightforward nature of the flowsheet, it could be excluded.
- Higher  $\text{Fe}_2\text{O}_3$  and  $\text{Al}_2\text{O}_3$  parts of the deposit have not had enough testwork to determine the benefits of selectively mining these ores.

Avenira and its engineers and consultants are aware of this and it is clearly identified in the Stage 2 Feasibility Study report in both the metallurgical testwork conclusions and recommendations, and in the risks section of the report. This report highlights the areas of additional testwork required. SRK understands additional work is in progress to address these gaps.

SRK considers this additional optimisation, confirmatory and variability testwork on samples representative of the LOM to be a fundamental requirement in completing the Stage 2 'Bankable' Feasibility Study, before it can progress to detailed design and implementation.

SRK does not consider these factors risks to the technical viability of the Project. Instead, they highlight the additional work required to allow for appropriate engineering design.

### 5.8.3 Processing flowsheet

A beneficiation process is required to separate the phosphate-containing minerals from the gangue (waste) minerals present. At the Project, the gangue material is predominantly silica, but also includes clays, iron oxides and other minor and trace minerals. The Project aims to produce a phosphate product >34%  $\text{P}_2\text{O}_5$ , with silica <8%  $\text{SiO}_2$  and iron levels below 1%  $\text{Fe}_2\text{O}_3$ . The plant has been designed to produce 1 Mtpa of phosphate concentrate product from approximately 2.94 Mtpa of feed, i.e. 34% mass recovery, with a phosphate recovery of 64.8% to the concentrate.

The process design and engineering has been undertaken by Wood in collaboration with Avenira and its consultants.

The proposed processing plant is a conventional flotation-style concentrator. Mined ore is hauled by truck to the beneficiation plant and stored on a ROM pad. A three-stage crushing circuit is used to crush and screen ore to generate a mill feed product below 20 mm. A crushed ore stockpile decouples the crushing circuit from downstream processing. Crushed ore is recovered and wet screened to remove fines prior to rod milling in order to separate the -2 mm material. A rod mill has been selected to reduce overgrinding, with the rod mill operated in closed cycle with the same screen. This reduces ultra-fines generation which does not respond well to flotation.

A second stage of screening separates the -2 mm +850  $\mu\text{m}$  pebble fraction. This oversize material is close to final product specification and is sent to final magnetic separation. The -850  $\mu\text{m}$  screen fraction is deslimed using hydrocyclones (these 'slimes' are tailings), and attritioned in high intensity agitated cells for particle surface cleaning prior to conditioning and flotation. The flotation circuit operates at a single size fraction (i.e. there are no separate coarse and fines flotation circuits). It is a reverse flotation rougher circuit with several rougher stages. The silica gangue reports to the floats, leaving the phosphate in the sinks product.



While the flowsheet used for engineering is conventional and largely reflects the testwork undertaken, SRK's key concerns are that further verification of several key process design criteria inputs is still required, particularly:

- The PSD and the expected range of fines in the ROM feed and that generated during comminution and attritioning, as this has a large bearing on the mass balance, equipment sizing, phosphate recoveries and concentrate specifications
- Optimisation of the flotation flowsheet, residence time, carry rate, loadings, appropriate scale-up (from testwork to full scale), recoveries applied and the operating variables
- Confirmation of the amenability of the combined pebble and flotation sinks product to magnetic separation, and confirmation of the final product iron grade and phosphate recovery losses through this processing stage
- Confirmation of comminution, attritioning, flotation, thickening and filtration mechanical equipment sizing
- Opportunities to improve the design – consider some surge capacity between attritioning and flotation to stabilise flow through flotation, particularly given the fast kinetics and variability in performance shown during testwork; the use of pressure filtration of final products and optimising the fines/ slimes sizing cut-point.

Secondly, the overall circuit as designed, while reflecting the testwork, does not fully support the overall forecast  $P_2O_5$  recovery. Additional testwork is likely to identify modifications required to the flowsheet, although SRK accepts that it is unlikely to be considerably different to that currently designed. It may result in changes to the capital cost estimate.

The list above does not differ significantly from the listed risks in the Phase 1 Feasibility Study report. In SRK's opinion, Avenira is aware of the metallurgical design gaps and is actioning them in Stage 2 of the 'Bankable' Feasibility Study. Some of the risk provides opportunities for improved flowsheet design.

#### 5.8.4 Throughput and metallurgical recovery

The processing facility is designed with a production rate of 1.0 Mtpa of rock phosphate concentrate. The corresponding plant feed rate is approximately 2.94 Mtpa using an overall uptime (utilisation) of 87% at an average feed grade of 19.4%  $P_2O_5$ , product grade of >33%  $P_2O_5$  and 64.8%  $P_2O_5$  recovery.

The plant utilisation of 65% and 87% for the crushing and beneficiation circuits, respectively, is considered a reasonable allowance and typical for the proposed flowsheet. Once operating, a plant of this nature would endeavour to increase the overall uptime above this level, which will benefit the forecast throughput.

The key risk related to throughput is not just feed but also concentrate production. If the phosphate recovery of 64.8% is not achieved, there will not be sufficient excess design capacity or a catch-up margin to meet the design phosphate concentrate production rate of 1 Mtpa.

The engineering equipment design factor is listed as 20%. This provides additional catch-up capacity. Standby pumps are limited to critical duties.

SRK notes that given the variability in the feed grades, potential PSD and the variability demonstrated during metallurgical testwork, it is critical to build a reasonable redundancy and catch-up capacity into the plant design to allow for feed variations and process upsets. This extends to areas such as thickening and filtration that benefit from a high design factor, while only incurring a moderate additional capital cost.

SRK expects that further capacity design confidence and additional redundancy will be provided in the full 'Bankable' Feasibility Study plant design. SRK considers that at this stage of study, the design is sufficient to meet the plant feed requirements as proposed in the financial model.

The P<sub>2</sub>O<sub>5</sub> recovery adopted in the Phase 1 Feasibility Study financial model is 64.8%. This is based on metallurgical testwork and the associated mass balance derived from this work. It is a function of the silica grade and the mass and grade of phosphate reject to the natural and process generated -38 µm fines, the flotation losses and final magnetic separation losses. The related financial model recovery is closely aligned, but marginally lower at 64.6% over the LOM. One potential risk to recovery is that the testwork has not been scaled up from bench-scale testing to full plant size. This must be considered during the next phase of design.

SRK considers the testwork to be not yet at a feasibility level of study. Additional testwork is underway and planned to achieve this level of confidence.

In SRK's experience, Avenir's current base case recovery benchmarks well against other phosphate operations. Once further testing has been completed, these recovery relationships will need to be updated.

A conservative throughput ramp-up curve has been applied to the financial model that realises a target throughput of 3 Mtpa from the 13<sup>th</sup> month of operation. SRK considers this to be a reasonable base case assumption. No recovery ramp-up curve has been applied to the financial model. SRK considers that the recovery risk during early operation should be considered separately and an appropriate ramp-up applied to financial modelling. This could be an 18-month curve with a long tapering 'tail' over the last 6 months. SRK also considers it prudent for any potential financier to undertake downside 'stress case' modelling assuming a slower ramp-up and lower ultimate recovery to test the robustness of the Project economics.

An indicative overall implementation schedule for the plant and supporting infrastructure of 23 months has been estimated in the Phase 1 Feasibility Study report. This includes the detailed engineering. The financial model shows production nominally from January 2022 ramping up over the first few months. An accelerated schedule will be supported by the brownfields nature of the plant and some of the existing infrastructure already available to the Project. SRK considers this timeframe to be possible but more likely to be an optimistic/ best case. It is possible that the timeline will be driven by financing, approvals and other non-process related activities. Additional detail regarding implementation and schedule will be developed during the Stage 2 'Bankable' Feasibility Study. Until then, SRK recommends that a schedule contingency be applied to any financial modelling.

### 5.8.5 Product specification

A rock phosphate concentrate specification for the Project was established from the testwork and has been used for design purposes. A target of above 33%–34% P<sub>2</sub>O<sub>5</sub> and below 8% SiO<sub>2</sub> was used for the design. A number of concentrate grade relationships were developed for both the phosphate and gangue minerals. The recovery algorithms were based on silica in the feed grade. The final concentrate grades are a resultant of the recoveries of the phosphate and gangue minerals and the ~34% concentrate mass recovered.

These relationships have been used to estimate a typical concentrate specification. These values are presented in Table 5-11 as reported in the Phase 1 Feasibility Study report. This differs marginally from the design values and there will be some variation in the concentrate quality over the LOM. Key elements of the specification are a 36.4% P<sub>2</sub>O<sub>5</sub>, 8.2% SiO<sub>2</sub> and 1.2% Fe<sub>2</sub>O<sub>3</sub>. Target moisture specifications are 3%.

These specifications have been largely demonstrated during testwork. Avenira has not fully established that a 1.2% Fe<sub>2</sub>O<sub>3</sub> target can be achieved; however, it is close. Additional confirmatory testwork is required. Other considerations could be targeting lower iron cut-off grades in the ROM feed in order to achieve this, focusing on any areas of the resource associated with iron banding, water levels with elevated iron levels avoiding them in the resource to reserve conversion and mine scheduling.

SRK considers these product specifications to be within typical rock phosphate benchmarks. They should be readily saleable. They are below typical maximum levels and there may be opportunities to relax some of the specifications including the iron and moisture levels. Avenira reports that phosphoric acid production testing using a product sample demonstrated that a good quality acid suited to fertiliser production can be generated.

Further testwork is required once the flowsheet and flotation variables have been finalised, using a range of variability samples to confirm the likely average and range of the specification including maximum levels. Additional reporting of other potential impurities is also required. This would include reporting of the MER, CaO/P<sub>2</sub>O<sub>5</sub> ratio, Cl, F, Cd, Pb, As, zircon and other radionuclides if present. Some of these impurities have not been reported in the Feasibility Study report (however, they may be available) and can have implications on the marketability of the phosphate product.

**Table 5-11: Average feed and concentrate product quality (Phase 1 Feasibility Study)**

Component (%)	Process Plant Feed	Process Plant Product
P <sub>2</sub> O <sub>5</sub>	18.9	36.4
SiO <sub>2</sub>	43.2	8.7
Fe <sub>2</sub> O <sub>3</sub>	3.8	1.2
Al <sub>2</sub> O <sub>3</sub>	2.1	0.8
MgO	0.1	0.1
CaO	26.1	50.1

Source: Feasibility Study (Wood 2019)

While the product quality range is supported by the testwork, in SRK's opinion, further testing is required to confirm the average product grade and deleterious elements and improve the confidence in the typical grade range. SRK does not see this as fatal flaw as there is confidence provided in the testing to date, by the acid production testing, and through preliminary offtake discussions (none of which are material or binding), as well as the marketing experience gained through the previous operation.

### 5.8.6 Processing capital cost

An AACE 'Class 4' capital cost estimate, accurate to within ±20%, was developed by Avenira's engineer, Wood, to support the Baobab Project Phase 1 Feasibility Study. The cost is reported in US dollars with a base date of August 2018. Aspects of the estimate, namely the mining fleet and the TSF, were estimated at a Class 3 accuracy of ±10%.

The capital cost estimate for the mining development, mining infrastructure, processing, infrastructure, tailings, temporary facilities, port development and owner's costs is US\$183,145,511 including a contingency of US\$23 M. The contingency is approximately 18% of the estimate excluding owner's costs, and 14.5% of the overall costs. It does not account for escalation and only partly allows for growth. The Phase 1 Feasibility Study capital cost estimate summary is provided in Table 5-12.

In SRK's opinion, the level of rigour assigned to the processing and infrastructure aspects of the capital cost estimate meets the engineering requirements of a pre-feasibility level of study, rather than a feasibility study. This is reflected in the claimed estimate accuracy.

While SRK considers the quality of engineering undertaken by Wood to be of a high level, as would be expected of a Tier 1 engineer, the methodology is aligned with a pre-feasibility level of study. The engineering basis of the costing uses informal quotes and in-house database costs, does not use multiple mechanical equipment quotations, only partly uses material offtake quantities for steel and concrete, otherwise factors costs such as piping, valves, electrical and instrumentation costs, as well as contractor erection costs for steel, piping, platework and mechanicals. This is clearly presented in the report. It is understood that a true feasibility study level of cost accuracy will be undertaken during the Stage 2 'Bankable' Feasibility Study to a true Class 3 accuracy of  $\pm 10\%$ . This is better aligned with the AusIMM definition of a feasibility study cost estimate.

A detailed revision of the capital costs is not part of SRK's scope but, to assess the reasonableness of the processing and infrastructure capital cost estimate, SRK has benchmarked the Project against another equivalent 3 Mtpa feed phosphate project. The costs for both are similar. Further comparison against similar capacity flotation-style concentrator projects shows the plant costs also to be similar.

While the estimated costs are not necessarily incorrect, in SRK's experience, most projects incur capital cost increases during the feasibility, detailed design and construction phase of work. Further to this, SRK is currently observing an escalation in costs to complete projects that are currently under construction.

This could also be compounded if phosphate recovery is lower than expected and the plant throughput needs to be increased to achieve the design production rate, and/ or if modifications need to be made to the flowsheet or mechanical equipment selection based on ongoing testwork.

SRK considers the overall contingency allowance to be low at a feasibility study level of costing given these design and cost risks. This presents a likely risk of increased capital costs. SRK would normally recommend a stress case capital cost allowance be modelled to test Project sensitivities and robustness to a modest increase in the capital costs.

**Table 5-12: Baobab Project – Capital cost estimate summary**

DESCRIPTION	A SUPPLY COST	% TOTAL A	B ERECTION COST	TOTAL COST A+B
<b>Direct Field Costs</b>				
Mining Costs (Mine Development)	-		5,040,900	5,040,900
Mine Area Buildings	-		1,225,401	1,225,401
Tailings Storage Facility	-		10,428,829	10,428,829
Plant Infrastructure & Bulk Earthworks	-		5,375,943	5,375,943
Port Infrastructure	4,997,742	10.45%	4,155,113	9,152,855
Process Plant	42,825,379	89.55%	36,960,733	79,786,112
<b>Total Direct Field Costs</b>	<b>47,823,121</b>	<b>100%</b>	<b>63,186,920</b>	<b>111,010,040</b>
<b>Home Office &amp; Indirect Field Costs</b>				
EPCM	14,421,617	30%	-	14,421,617
<b>Total H.O. &amp; Indirect Field Costs</b>	<b>14,421,617</b>	<b>30%</b>	<b>-</b>	<b>14,421,617</b>
<b>Total Nett Cost</b>	<b>62,244,738</b>	<b>130%</b>	<b>63,186,920</b>	<b>125,431,658</b>
<b>Other Costs</b>				
Bonds Guarantees, etc.	72,108		-	72,108
Insurance	1,505,180		-	1,505,180
Contingency	23,130,365		-	23,130,365
<b>Total Other Costs</b>	<b>24,707,653</b>		<b>-</b>	<b>24,707,653</b>
<b>Owner's Costs</b>				
Owner's Costs	-		-	-
Mobile Equipment	2,252,000		-	2,252,000
90kV HT Overhead Power Supply & Reticulation	8,878,367		-	8,878,367
Temporary Facilities/Site Establishment	2,768,916		-	2,768,916
Mining Sustaining Capital Costs	-		-	-
Mining Mobile Equipment	16,971,639		-	16,971,639
First Fills of Reagents	385,789			385,789
First Fills of Lubricants	161,250			161,250
Strategic and 1 Year Operating Spares	1,640,096			1,640,096
Relocate Existing Weighbridge	51,857			51,857
<b>Total Owner's Cost</b>	<b>33,006,200</b>			<b>33,006,200</b>
<b>Overall Project Estimate</b>	<b>119,958,592</b>		<b>63,186,920</b>	<b>183,145,511</b>

Source: Feasibility Study (Wood 2019)

No general sustaining capital allowance for the plant and infrastructure is made in the Feasibility Study report and no value has been assigned to this in the financial model or in the operating cost model. An allowance has been made for mining equipment replacement and TSF works.

SRK considers that a sustaining capital allowance should be incorporated into the economic model from the first year of production, tapering over the last year of operation. There are several methods used to do this including applying a cost per tonne processed, or a percentage of the direct capital costs of the installed plant. This may be in the order of US\$1.5 M to US\$2.5 M per year.

### 5.8.7 Processing operating cost

An operating cost estimate in US dollars was developed by Wood to support the Baobab Project Feasibility Study. The accuracy of the estimate is reported to be within  $\pm 20\%$  AACE Class 4 accuracy as at Q3 2018. Estimates have been provided in terms of annual cost over the 13.4-year LOM, as

well as per tonne of ROM ore processed and per tonne of concentrate produced, assuming a feed rate of 3 Mtpa and a concentrate production of 1 Mtpa.

The total operating cost including mining, processing, infrastructure, concentrate handling and port handling is US\$18.91/t of feed. Once mining, tailings and concentrate transport costs are removed, this drops to US\$6.63/t for processing. No contingency or escalation has been incorporated into these costs, which is common engineering practice at this level of study. The operating cost estimate summary is provided in Table 5-13.

**Table 5-13: Baobab Project – Operating cost estimate summary**

	Total			Fixed US\$/Year	Variable		
	US\$/Year	US\$/t ROM	US\$/t Conc		US\$	US\$/t ROM	US\$/t Conc
Mining	\$20 618 895	\$7.03	\$20.91	\$0	\$20 618 895	\$7.03	\$20.91
Labour	\$2 100 591	\$0.72	\$2.13	\$2 100 591	\$0	\$0.00	\$0.00
Reagents and Consumables	\$3 047 573	\$1.04	\$3.09	\$36 720	\$3 010 853	\$1.03	\$3.05
Power	\$5 405 950	\$1.84	\$5.48	\$1 081 013	\$4 324 937	\$1.47	\$4.39
Maintenance Materials	\$434 586	\$0.15	\$0.44	\$434 586	\$0	\$0.00	\$0.00
Miscellaneous	\$530 935	\$0.18	\$0.54	\$530 935	\$0	\$0.00	\$0.00
HFO	\$7 924 279	\$2.70	\$8.04	\$0	\$7 924 279	\$2.70	\$8.04
Concentrate Transport	\$15 194 815	\$5.18	\$15.41	\$0	\$15 194 815	\$5.18	\$15.41
Tailings	\$210 719	\$0.07	\$0.21	\$210 719	\$0	\$0.00	\$0.00
<b>TOTAL</b>	<b>\$55 468 344</b>	<b>\$18.91</b>	<b>\$56.26</b>	<b>\$4 394 565</b>	<b>\$51 073 780</b>	<b>\$17.41</b>	<b>\$51.80</b>

Source: Feasibility Study (Wood 2019)

The build-up of the operating costs is conventional, thorough, supported with testwork and appropriate engineering methodology and costing details, and reflects a typical feasibility level of study. Reagents are based on scaled-up testwork consumption and recent supplier costs. Power demand is based on the electrical load list with the installed power modified with load and operating factors applied as per normal practice. Labour was estimated from a head count and local rates supplied by Avenira. Maintenance costs were factored based on the 12-month spares list (rather than a percentage of installed capital costs which is more conventional). Diesel and heavy fuel oil costs were provided through budget pricing provided by Avenira.

Mobile equipment, General and Administrative (G&A), mobile equipment and other costs are captured under the miscellaneous costs category. Concentrate transport costs are based on current discussions with potential haulage contractors and benchmarked against the previous costs incurred by the operation.

In SRK's opinion, while the basis of the process operating cost estimate is thorough, detailed, well supported and meets the typical standards of a feasibility level of study, there is still a reasonable likelihood that there will be a moderate escalation in operating costs. This is SRK's general experience when reviewing actual operating costs against project forecast costs prior to start-up. This view is supported when benchmarked against similarly sized phosphate and generic flotation concentrators where it would be at the low end of the likely range.

Potential sources of increase include (but are not limited to) higher labour costs, particularly during early operations, higher fuel prices, underestimated maintenance costs, miscellaneous costs increasing due to specific exclusions in the estimate, potential for future general escalation in grinding media and reagent prices, access road maintenance costs, higher light vehicle costs, contractors and

specialist consulting support, again particularly during early operations along with other scope omissions and exclusions, and additional G&A costs, which are often incurred in practice.

The financial model should allow for higher costs associated with the ramp-up of production, a function of fixed costs.

It is expected further confidence in the operating cost estimate will be provided with delivery of the full 'Bankable' Feasibility Study. Until then, SRK recommends a stress case be modelled to test the Project's sensitivity to a modest +20% increase in the operating costs. This allows for increased costs, particularly until operations are ramped up, stabilised and optimised.

## 5.9 Infrastructure and logistics

The proposed Project area comprises relatively flat topography with few undulations and no significant hills or valleys. As such, there are few site restrictions on the location or layout of site infrastructure, as there are no environmentally sensitive or restricted areas identified.

Provision has been included in the Phase 1 Feasibility Study for the relocation of the main road and overhead power lines in order to alleviate traffic through local villages and avoid localised sterilisation of the mining licence area.

### Logistics

According to the Phase 1 Feasibility Study, Baobab concentrates are to be transported by road, either directly to the customer or to the Port of Dakar for export.

Depending on progress, the future bulk handling port of Bargny-Sendou is also an option with Avenir holding a 2 ha area at this port on which a 100,000 t capacity storage facility is planned and costed as part of the Phase 1 Feasibility Study.

Contracted covered single trailer rear-tipping trucks (50 t capacity) have been used during previous mining operations to transport concentrates to the Port of Dakar along the existing road network. The new Dakar to Touba sealed toll highway (opened Q1 2019) runs approximately 15 km south of the mine site and is expected to reduce transport times to port.

### Water supply

Water for the Project will initially be sourced from existing boreholes. One of these boreholes will be consumed as the open pit area is expanded and it is assumed in the Phase 1 Feasibility Study that water will then be sourced from a replacement borehole (which remains to be drilled).

### Power supply

The Phase 1 Feasibility Study considered several options for power supply to the site, with grid power selected as the best option. Adequate quantities of power are available by accessing the 90 kV HT national distribution grid operated by Senelec at the Mékhé transformer station approximately 30 km from site. The estimated costs associated with the construction of a 30 km HT connection line were considered in the Phase 1 Feasibility Study.

The Stage 2 Feasibility Study is expected to consider additional opportunities including power supply by a contractor Independent Power Provider thereby negating the need for a 30 km grid-connection HT line.

## 5.10 Environment, social and permitting

### 5.10.1 Permitting

Mining in Senegal is principally legislated under Law No. 2016-32 of 8 November 2016 (the *2016 Mining Code*) which is administered by the Ministry of Industry and Mines. Under the *2016 Mining Code*, companies are required to enter a Mining Convention (a contractual agreement with the Senegalese Government, which details rights and obligations) at the same time a permit is granted. Two types of mining (exploitation) permit are recognised, an SMP, which allows a processing capacity up to 500 t with an area up to 500 ha, and a Mining Permit, which has no size limitations.

Environmental legislation comprises Law No. 2001-01 of 15 January 2001 (the *Environment Code*) and Orders (009468/MJEHP/DEEC, 9469/MJEHP/DEEC, 9470/MJEHP/DEEC, 009471/MJEHP/DEEC, 009472/MJEHP/DEEC) which provide for the requirements of an Environmental Impact Assessment (EIA). Environmental policy is managed by the Ministry of Environment and Sustainable Development (MEDD) and EIA and pollution prevention are administered by the Environment and Classified Installations Office (DEEC).

The current status of environmental permitting for the Project is shown in Table 5-14. The Project was granted an Environmental Certificate in 2016 based on the Environmental and Social Impact Assessment (ESIA) and the SMP approved in 2015 for an area of 5 km<sup>2</sup> within the Gadde Bissik East area. The current Project involves an expanded area of approximately 75 km<sup>2</sup>.

**Table 5-14: Environmental permitting status (not exhaustive)**

Permit	Date granted/ approved	Expiry date	Comments
Small Mine Permit (09810/MIM/DMG)	6 May 2015	May 2018	For 5 km <sup>2</sup> within the Gadde Bissik East area
Environmental and Social Impact Assessment (ESIA)	November 2015	Does not expire	Prepared for the 5 km <sup>2</sup> Gadde Bissik East project
Environmental Certificate (No. 13439)	5 September 2016	Does not expire	Awarded for the SMP based on the 2015 ESIA
Environmental Licence (3017/MEDD/DEEC/DRC/rkl/cabd)	November 2017	Does not expire	Classified establishment for processing phosphate
Exploitation (Mining) Permit – (Decree 2018-1840)	September 2018	September 2038	For the Gadde Bissik operations 75 km <sup>2</sup>
Environmental Certificate	Application not yet made		For the Mining Permit
Mining Convention	27 July 2011	Does not expire	Agreement between Atlas Resources and the State of Senegal
Mining Convention	20 March 2018	Does not expire	Amendment No. 1 between BMCC and the State of Senegal
Exploration Permit	9 August 2017	8 August 2020	

The *2016 Mining Code* and amendments in the Mining Convention (20 March 2018) contain penalties if operations have not commenced within a specified timeframe. The Mining Convention (as amended 20 March 2018, article 25.3) includes penalties if investment operations have not commenced within 18 months of CFA50 M for the first three months, increasing thereafter. If development has not commenced within two years, the State of Senegal has the right to withdraw the Mining Permit.

The revision of the *Mining Code* in 2016 contained several additions that were not required when the ESIA was approved for the Project, including provision for local development funds, the requirement for all Mining Permit holders to fund a trust account for mine rehabilitation, and information

requirements in accordance with the Extractive Industry Transparency Initiative. The Mining Permit approval (2018-1840) references the 2015 ESIA and 2016 Environmental Certificate and does not specify any additional environmental or social information requirements. However, Article 8 of the Mining Convention (as amended, 2018) states, 'The State and the Company have thus agreed to update, supplement and specify and/ or to confirm the terms of the mining agreement and to put them in harmony with the new provisions of the ... 2016 bearing Mining Code'. It is not clear how BMCC intends to address the gaps between the existing approvals and the 2016 Mining Code. BDO suggested that a 'Supplementary Information Package' could address this, subject to confirmation from the DEEC, or that a new ESIA may be required (Environmental and Social Gap Analysis, 2019).

The financial cost model has incorporated the environmental compliance and permit fees required by the Mining Convention (as amended, 2018).

### 5.10.2 Land access

The Mining Convention (as amended, 2018) allows access to occupy the land and the use of natural resources such as wood and water for exploration and mining activities (Article 34.4). However, BMCC is required to pay fair compensation for the relocation of people or use of resources as well as any damage or depletion of aesthetic or social factors (Article 34.6).

### 5.10.3 Environmental and social studies

Environmental and social impacts of a project are assessed under the *Environment Code* and supplementary EIA Orders (Section 5.10.1). SRK has not sighted the ESIA or the associated Environmental and Social Management Plan (ESMP) approved for the SMP in 2015, and therefore cannot comment on the appropriateness of the content or any commitments made. The 2015 ESIA was an assessment of the SMP, for an area of 5 km<sup>2</sup>. The Mining Permit granted in 2018 is approximately 75 km<sup>2</sup>, and the associated impacts for the larger Project area have therefore not been assessed.

#### Environmental assessment

The Environmental and Social Gap Analysis completed by BDO in 2019 highlighted numerous deficiencies with the ESIA and the Project's environmental management framework, including the lack of a detailed environmental management system, environmental management plans, or site level policies. The ESIA was also criticised by BDO for a lack of baseline data including surface and groundwater quality, rudimentary and simplistic biodiversity studies (for a smaller area), and a lack of information regarding the geochemistry and potential adverse impacts of mine waste and products.

SRK is unable to verify the criticism presented by BDO; however, a lack of adequate baseline information will reduce the effectiveness of environmental monitoring and has the potential to cause conflict with local communities regarding evaluation of the deterioration of resources such as soil and water. This can lead to complicated compensation negotiations. A lack of geochemical analysis of waste rock and tailings may result in inadequate engineering controls and contribute to pollution and degradation of the surrounding environment. The financial model provided for the Project includes an annual amount of US\$50,000 for 'Environmental audit and other consult', which is reasonable for ongoing environmental monitoring and management. However, in SRK's view, additional studies are required to provide an adequate baseline for the Project.

An environmental compliance audit was conducted by DEEC for the SMP for the 2017–2018 tax period. This audit did not identify any serious environmental non-compliances and recommended the development of a Land Control Management Plan.

## Social assessment

BMCC has an obligation under the 2016 Mining Code to make annual contributions to a local development fund to promote the economic and social development of local communities levied at 0.5% of its duty-free business, and to preferentially employ and train Senegalese people. The Mining Convention (as amended, 2018) also contains provision for a minimum of US\$300,000 for the pre-production period.

The Environmental and Social Gap Analysis completed by BDO (February 2019) identified inconsistencies in the 2015 ESIA regarding the number of villages likely to be impacted (either five or seven), a lack of socio-economic baseline data and a lack of cultural heritage impact assessment. BDO indicated that at least two villages require resettlement, which was not identified in the 2015 ESIA. A resettlement action plan is therefore required for the Project, yet from information provided by BDO, it appears that the level and type of displacement is not well understood. This has the potential to adversely impact local communities, erode community support for the Project and lead to illegitimate compensation claims.

The financial model has included a total of US\$2.5 M for relocation and land compensation over the LOM. An assessment of relocation costs by BDO considers US\$5 M to US\$10 M to be appropriate for relocation of a 200-person village. The population for resettlement and compensation requirements has not been presented in the documents reviewed, and therefore relocation costs are difficult to evaluate. SRK therefore considers that the cost of relocation and land compensation allocated in the financial model may be appropriate but also has the potential to be significantly higher.

The compliance audit conducted by DEEC for the SMP area for the 2017–2018 tax period concluded that community consultation and stakeholder engagement required improvement and identified some serious issues with workforce health and safety (such as a lack of an infirmary or doctor and lack of personal protective equipment worn on site).

### 5.10.4 Mine closure

Legislative requirements for mine rehabilitation include financial provision to a rehabilitation trust fund and an obligation to rehabilitate the site by expiry of the mining tenure. A simplistic mine closure plan is presented in the Feasibility Study prepared by Wood (2019) and outlined in the environmental compliance audit conducted by DEEC (2018). Mine rehabilitation described in the Phase 1 Feasibility Study report (Wood, 2019) is progressive and undertaken in consultation with the local community. The Phase 1 Feasibility Study report (Wood, 2019) states that the rehabilitation and closure plan will be developed following agreement with the stakeholders.

SRK has not sighted a detailed mine closure and rehabilitation plan, or a consultation strategy for mine rehabilitation. Requirements for monitoring and maintenance are vague and specific completion criteria have not been identified. SRK considers that the level of detail is not sufficient to facilitate effective mine rehabilitation.

SRK has not sighted a detailed closure cost estimate. A cost estimate for rehabilitation of the first three years of mining of CFA1,552,400,000 (US\$2,658,485) was presented by the DECC in the compliance audit. SRK considers this cost estimate to be reasonable, but low. The financial model provided has allocated total rehabilitation costs of CFA1,905,000,000 (US\$3,262,312) for the LOM. SRK is unable to verify the cost estimation method and a LOM closure cost is dependent on the closure plan (which has not yet been defined for the Project) but considers that this is likely to be low (~50%).

### 5.10.5 Conclusions

Avenira's Baobab Project has achieved several of the permits required for project development. The Environmental Certificate requires an amendment to incorporate the larger project.

SRK concludes:

- Confirmation should be obtained from the DEEC regarding the validity of the 2015 ESIA, and whether a 'Supplementary Information Package' could address the information gap to enable the Project to comply with the *2016 Mining Code* (as required by the amended Mining Convention).
- Based on information presented by BDO (February 2019), baseline environmental and social studies are rudimentary or absent. Additional studies should be undertaken to characterise the environmental and social baseline of the larger project. This will improve the effectiveness of environmental monitoring and aid evaluation of compensation claims by the local community.
- The cost of relocation and land compensation may be low. Based on BDO's findings, land and resettlement requirements have been poorly characterised.
- The mine closure and rehabilitation plan are simplistic and rudimentary. The Phase 1 Feasibility Study report states a detailed mine rehabilitation plan will be developed following stakeholder consultation. SRK considers the total rehabilitation cost allocated in the financial model (CFA1,905,000,000, US\$3,262,312) likely to be low (~50%).

## 5.11 Risk and opportunity analysis

SRK has conducted an assessment of the Phase 1 Feasibility Study and notes the following with regard to risks and opportunities identified for the Project:

- It is assumed that all material is free dig and that drilling and blasting is not required. This remains to be confirmed through ongoing grade control drilling to minimise potential for increased mining costs.
- Equipment productivities and availabilities are based on manufacturer recommendations and have not been tested in the field, with lower-skilled operators potentially impacting mining costs and production volumes/ timings.
- Further metallurgical testwork is required to ensure some of the key metallurgical assumptions can be achieved, in particular the sample representivity, magnetic recoveries based on rougher stage testing to date, the target 1.5% Fe<sub>2</sub>O<sub>3</sub>, additional reporting of other potential impurities, water quality, and moisture levels in product.
- Connection to the national grid power and associated timings requires confirmation.
- Delays in permits and licences (i.e. TSF licence) could have an impact.
- Closure and resettlement costings require conformation.
- Geotechnical investigations for detailed foundations and terracing designs as well as the TSF are still required.
- Owner's cost/ scope and relocation costs require improved definition.

## 6 Site Visit Notes

### 6.1 Introduction

Isaac Baidoo, Senior Geotechnical Engineer of SRK Consulting Ghana Limited, visited the Baobab Project during the period 16–18 July 2019. The objective of the site inspection was to assess the current state of the Project. Mr Baidoo was accompanied by Avenir's site representatives, Issa Seck (Mine Manager) and Tourki Nouri (Geological Superintendent).

The current open pit consists of a stack of five benches, with the ore occurring in the fifth bench. Mining of the first two ore blocks had been completed prior to SRK's site visit. A third block was exposed in the pit but was not mined due to the cessation of processing activities in 2017. The phosphate ores average 8 m in thickness and occur between sands-calcrete sedimentary sequence.



**Figure 6-1: Mining pit, taken facing east**

A CAT390 and CAT385 excavator were reportedly used in mining the upper four benches (waste), while a smaller excavator (CAT520) was used to selectively mine the fifth (final) bench, which contained the ore. Mining of the pit was completed when the calcrete footwall horizon was reached.

The open pit was dry during SRK's visit, and it appeared no groundwater had been encountered during previous mining operations. The mine access ramps were still in good condition at the time of SRK's site visit. Mining appeared to have ceased some 6 months to 1 year prior to SRK's visit.

Mining of waste by simply dozing off the overburden into a previously depleted pit, instead of load and hauling this material to a designated waste dump, was being considered on site as a more economic mining method.

### 6.1.1 Slope stability

The pit was designed to be mined in 8 m high benches and 8 m wide berms, with 45° bench face angles. During SRK's visit, it was evident some of the benches were at angle of about 60° and some berm widths appeared to be 6 m wide. Overall, however, the slopes appeared to be in sound condition at the time of SRK's visit, although some bench-scale erosion had taken place in localised sections.

### 6.1.2 Drilling and sampling

There was no drill rig on site during SRK's visit. Both RC and DD core were noted in the core yard during the visit. It was evident that PQ3 diameter diamond core was previously used to enable good core recovery in the weathered sediments. At the geology laboratory, the core was cut in halves for sampling, with one of the halves quartered to obtain a quarter of the core. The quartered core was then sent to an external laboratory for assay.

RC sampling was completed using coning and quartering. Samples were wet-sieved and oven-dried before being sent to an external assay laboratory.



**Figure 6-2: Processing of samples at the site geological laboratory**

SRK considers that adequate sampling and QAQC protocols were in place at the time of its visit.

### 6.1.3 Mining equipment

The mining contractor, Agromine S.A., had largely demobilised its fleet of haulage trucks from site at the time of SRK's visit; however, several excavators and fuel tanks were parked at the site laydown area. Agromine was also responsible for the processing of the ore from the ROM stockpile. The mine management was reportedly considering changing contractor due to previous poor delivery.



**Figure 6-3: Mining contractor laydown area**

## 6.2 Processing aspects

The Baobab process plant consists of a crushing and screening plant arranged as follows:

1. A 3 mm dry screening plant which separates ROM ore into -3 mm and +3 mm. The undersize (-3 mm) material is stockpiled as a finished product, and the oversize (+3 mm) material is fed into a jaw crusher (Stage 1 crusher).



**Figure 6-4: ROM power screen**

2. The jaw crusher feed bin has a gap of 800 mm. Larger-sized material reporting at the bin is broken by an excavator fitted with a hydraulic hammer before it can be fed into this crusher. The size of material reporting from this crusher would be -90 mm due to the jaw size. This is then fed into a percussion crusher with a 3 mm screen (Stage 2 crusher).



**Figure 6-5: Mine Manager (left) and Geological Superintendent (right), jaw crusher (cream) and percussion crusher (white) in background**

- The percussion crusher further reduces the material size to -10 mm before discharging onto the 3 mm screen. The 3 mm screen oversize is loaded back into the same percussion chamber. The 3 mm screen undersize is conveyed to a wet screening plant.



**Figure 6-6: Wet sieving and concentration plant**

- Water is added to the -3 mm material reporting as feed for the wet crusher, to form a pulp before it is pumped into cyclones and jigs on board the wet screening plant. Oversize from this plant will be +212  $\mu\text{m}$  and is stockpiled as a finished product. The -212  $\mu\text{m}$  undersize from this plant is pumped into a slimes dam.

Several stockpiles of finished and unfinished products were evident on the ROM pad during SRK's visit. The finished product was stockpiled at the ROM and subsequently loaded into 50 t haul trucks for road transport from the site to the Port of Dakar.

### 6.2.1 Losses

It appeared that a significant amount of phosphate material was lost as fines, since the current process could not concentrate -212  $\mu\text{m}$  sized grains. Design studies were ongoing on site for inclusion of a flotation unit that could recover fine concentrates of up to 34  $\mu\text{m}$ .



Figure 6-7: Laboratory flotation trial equipment on site



Figure 6-8: Fines recovered in pulp from site laboratory flotation unit

## 6.2.2 Current situation

The plant was expected to process about 25 tph. At the time of SRK's visit, however, the plant was not operational, and had likely not been running in the last 6 months. The reason given by site management was that there was rapid wear and tear of the jaws of the Stage 1 crusher, which caused delays and increased the cost of previous operations. The mine is currently investigating the use of alternative Stage 1 crushing technology such as a cone crusher, before processing can resume. All other parts of the plant appear to be in good condition.

## 6.2.3 Water source

Three wells currently supply water to the wet screening plant. The wells are between 450 m and 500 m in depth. One of these wells is located near the pit and could soon be affected by the future mining operations. The mine is therefore considering the drilling of a replacement well. The wet plant currently requires some 2 m<sup>3</sup> per tonne of dry ore fed.



Figure 6-9: Water well supplying water to the process plant

## 6.2.4 Power source

There is currently no power grid extension to the site, so diesel-powered generators were used at the plant and in the offices. It may be possible, however, to connect to the national grid as there are power pylons located along a road close to the site.



Figure 6-10: Power plant for water well

### 6.3 Slimes Dam

The waste dump for the open pit was designed to form a circular embankment, which provides containment for slimes from the processing plant. The embankment was traffic compacted by haul trucks and has an estimated width of 10–12 m. The embankments were estimated to be about 5 m high on the west side and 20 m high on the east side, which is closer to the pit. The embankment slopes appeared to be stable, although erosion gullies had developed in some parts. There was no sign of seepage on the side slopes.



**Figure 6-11: Walking on surface of dried tailings, photo facing east**

The tailings beach was very dry and powdery at the time of SRK's visit. The dam appeared to have been fed by a single 250 mm diameter pipe from the processing plant. No tailings deposition was ongoing at the time of SRK's visit, as processing had ceased several months prior.

At the time of SRK's site visit, surveyors were busy picking up spot heights at a location to the north of the current plant site for the design of a new TSF, which could enable water to be recovered and recycled.



**Figure 6-12: Part of flat valley to be impounded for the new TSF**

The area has a natural impoundment capacity and would require minimum embankment construction. Laterite for embankment construction is available on and around the site.

## 6.4 Community

Site management advised that several villages may need to be relocated as the mining sequence progresses. One such village is located to the southwest of the current waste dump. The villages likely to be affected are relatively small.



**Figure 6-13: Typical village likely to be affected by mining sequence**

## 7 Wonarah Phosphate Project

### 7.1 Location, access and climate

Avenira's Wonarah Project is located within plains of the Barkly Tableland in Australia's Northern Territory, approximately 240 km east of Tennant Creek, 960 km southeast of Darwin and 320 km west of Mount Isa in Queensland (Figure 3-1). The Wunara Community is the closest populated centre (approximately 10 km east) to the Project and comprises four houses and associated buildings with the population (<25 persons) fluctuating according to season.

Despite its remote nature, the Wonarah Project is supported by its relative proximity to the Barkly Highway, the Amadeus–Darwin gas pipeline and the Darwin–Adelaide rail line. The Project straddles the all-weather Barkly Highway and can be accessed by road from Tennant Creek or from Mount Isa.

The nearest airfield is situated 75 km to the west of the Project at the Barkly Roadhouse with Tennant Creek providing the closest regular air service. Charter flights can be organised from Darwin or Alice Springs to Tennant Creek. Airnorth currently services Tennant Creek, providing mining charters between Darwin, Katherine, Alice Springs and Tennant Creek. Tennant Creek has daily coach bus service from Darwin, Alice Springs and Queensland.

The Adelaide–Darwin railway is approximately 240 km to the west of the Project near Tennant Creek.

The area has a hot desert climate characterised by distinct wet and dry seasons. Most rain falls during the period December to March and averages some 450 mm per annum. Summer maximum temperatures average up to 37°C in December and January, with minimum temperatures of 12°C in June and July.

The Wonarah area is flat lying to gently undulating, with rare rocky rises generally covered by scrubby vegetation and few large trees. The area is dominated by sand plains and open woodlands. Watercourses are ephemeral and only flow after major rains. No significant watercourses traverse the Project area, with the closest significant watercourse being the ephemeral Ranken River approximately 50 km to the east. There are very few permanent waterholes; however, some waterholes retain water for extended periods.

Exploration and mining can be conducted throughout the year, with most activities being focused in the cooler and drier winter months. Short interruptions may occur due to localised rain events during the wet season.



Figure 7-1: Wonarah Project location and infrastructure

Source: Avenir

## 7.2 Supporting resources and infrastructure

Wonarah is centrally located (200–300 km in each direction) between the mining centres at Mount Isa and Tennant Creek. These centres can provide skilled labour and associated plant and equipment, as well as other general services. Both Mount Isa and Tennant Creek are connected to rail but Wonarah itself can only be accessed by road along the Barkly Highway.

Wonarah is a greenfields site with no established infrastructure and all services would therefore need to be imported to site. Given its isolated nature, development of the Wonarah Project would require the construction of a full mining camp and village to support any future mining and processing operations.

Broad-scale land use mapping identifies the Project area was having grazing, natural vegetation and traditional indigenous use. Surrounding pastoral properties are grazed with beef cattle; however, no pastoral activities are currently carried out in the Project area. It is understood there is some hunting and gathering by the local Aboriginal community within the Project area.

## 7.3 Ownership history and tenements

### 7.3.1 Project ownership

Wonarah was initially discovered by IMC Development Corporation (IMC) in 1967 and has been targeted by several exploration campaigns since that time.

**1967:** IMC was granted a Prospecting Licence covering the Wonarah region. This Prospecting Licence was converted to a Prospecting Authority in 1968 and subsequently relinquished by IMC.

**1976:** ICI Australia Ltd and Australian Fertilizers Ltd (AFL) were granted two Exploration Licences in the Wonarah area including EL1083 which covered portions of the current resource area.

**1983:** CRA Exploration Pty Ltd was granted an Exploration Licence in the south of the Wonarah area. CRA relinquished the licence in 1984.

**1997:** Rare Earths and Minerals Pty Ltd (REM) and Pilbara Chemical Corporation NL (PCC) were granted several Exploration Licences covering the area.

**1998:** Australian Kimberly Diamonds NL (AKD) acquired REM's and PCC's tenements. Between 1999 and 2000, Rio Tinto Exploration Pty Ltd explored the tenements in joint venture with AKD.

**2006:** AKD was renamed to Indo Mines NL (Indo). Minemakers acquired a 90% interest in Indo's Wonarah tenements in October 2006 and in June 2008, Minemakers acquired Indo's remaining interests in the tenements.

### 7.3.2 Project tenure

Avenira's 100% interest in the Wonarah Project is held by its wholly owned subsidiary company, Minemakers Australia Pty Ltd. The current Wonarah Project comprises four granted Exploration Licences covering a combined area of 151.74 km<sup>2</sup>, which encapsulates the entire Arruwarra and Main Zone resource areas. The underlying land tenure is NT freehold held by the Arruwarra Aboriginal Corporation. Dalmore Downs and West Ranken pastoral stations lie to the north and northeast respectively.

In February 2010, Mineral Lease (ML) 27244 was granted to Minemakers for a 25-year period and covering the Wonarah and Arruwarra deposit areas on the basis of a completed direct shipping ore (DSO) Feasibility Study. ML27244 remained in place while a variety of studies were undertaken on the Project exploring the viability of the IHP process.

During 2016 and 2017, Avenir sought to reduce the holding costs associated with the Wonarah Project. In the September 2016 quarter, EL23767 was surrendered and, ML27244 was surrendered in May 2017.

Avenir has maintained Exploration Licences over the main resource areas that are no longer held under ML 27244. SRK notes that relinquishments in 2019 have reduced the tenement holding (Table 7-1) principally to the areas directly overlying the defined Mineral Resources (Figure 7-2).

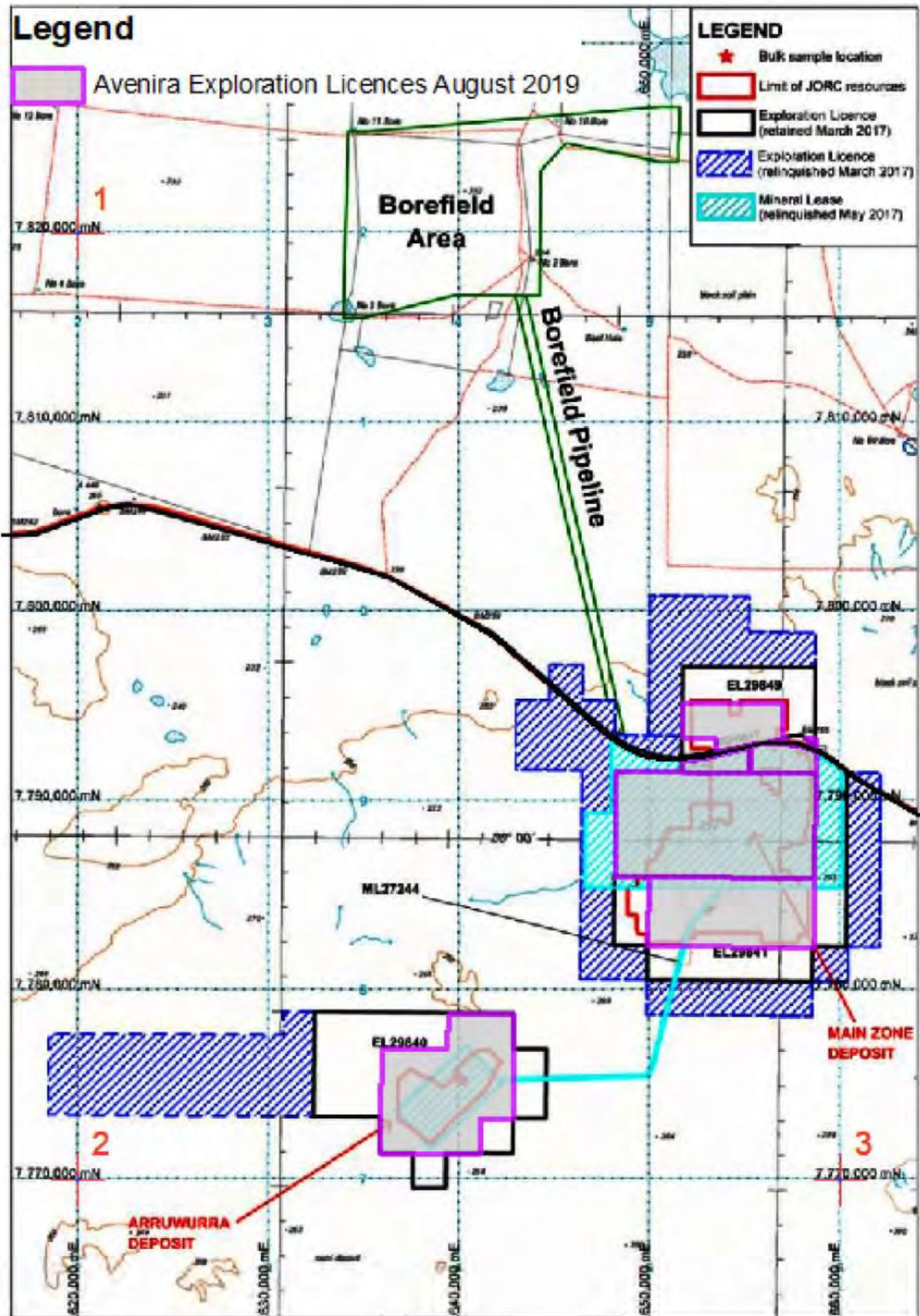
**Table 7-1: Wonarah Project – tenure status**

Licence No.	Name	Status	Registered Holder	Percentage Held	Expiry Date	Area (km <sup>2</sup> )
EL31477	Central Wonarah	Grant	Minemakers Australia Pty Ltd	100%	22/05/2023	58.10
EL29840	Arruwarra	Renew Retained	Minemakers Australia Pty Ltd	100%	18/03/2021	41.92
EL29849	Dalmore	Renew Retained	Minemakers Australia Pty Ltd	100%	18/03/2021	11.19
EL29841	Wonarah	Renew Retained	Minemakers Australia Pty Ltd	100%	18/03/2021	40.53

Source: Modified from NT Government Strike database

Avenir (via Minemakers) has previously made application for a number of primary and secondary approvals including:

- Mineral Lease (recently relinquished) under the *Mining Act*
- Environmental Assessment Act approval via the assessment of the Wonarah Phosphate Project Environmental Impact Statement (EIS)
- Aboriginal Areas Protection Authority (AAPA) Authority Certificate issued under the *Northern Territory Aboriginal Sacred Sites Act* for the Mineral Lease and northern borefield area.



**Figure 7-2: Project tenure**  
 Source: Modified from Optiro 2019

### 7.3.3 Material contracts

SRK understands that Avenirra (via Minemakers Australia Pty Ltd) entered into the following contracts:

- A Deed for Exploration with the Central Land Council and the Arruwarra Aboriginal Corporation dated 19 March 2009 pertaining to the Arruwarra Estate (ELs 26589, 265586, 26584 and 26583 and Substitute EL 26452 or substituted numbers granted by the Minister authorising the Company to carry out Exploration in the Licence area).
- a Mining Agreement with the Arruwarra Aboriginal Corporation and Central Land Council regarding Mineral Lease ML27244 in February 2011.
- a Native Title Agreement with the Northern Land Council and the Native Title Party dated July 2011, which provides the Native Title party's consent to take or use water from the borefield and construct, operate, maintain and decommission a pipeline in the Project area and certain benefits for the Native Title Party.

There are no other material agreements or contracts pertaining to the Wonarah Project currently in place.

No existing binding off-take agreements have been negotiated or signed.

### 7.3.4 Royalties

The Wonarah Project is subject to the *Northern Territory Mineral Royalty Act*, which levies a royalty at a rate of 20% of the net value of mineral commodities sold or removed from the Wonarah Project. The first A\$50,000 of net value is not liable for royalty. Royalty is payable by six monthly provisional payments.

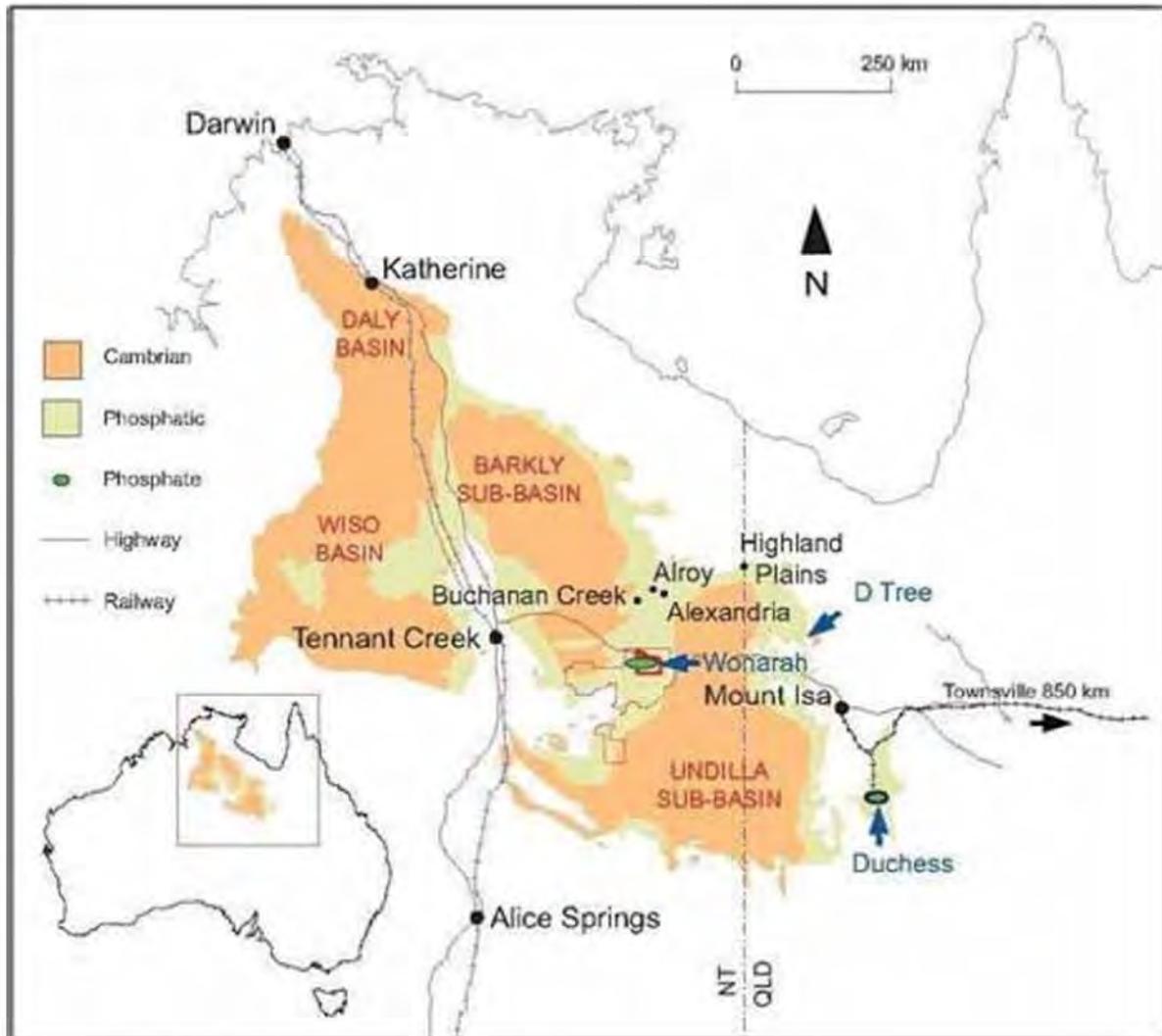
The Traditional Landholders Royalty is also payable on all ore sold, though the terms of the agreement are not to be made public. The mine gate revenue is calculated by deducting all off-site costs (primarily transport) from ore sales revenue.

## 7.4 Geology

### 7.4.1 Regional geology

The Wonarah Project is situated in the central western Georgina Basin, a large late Proterozoic to early Palaeozoic basin that extends from northwestern Queensland through much of the eastern Northern Territory. This extensive basin covers 325,000 km<sup>2</sup> with thickness ranges from tens of metres on basin margins and highs to up to 2 km in the deepest parts. The basin fill is dominated by Cambrian marine carbonate platform sediments. The Georgina Basin is subdivided into several sub-basins that primarily reflect the thickness of Cambrian deposition.

The Wonarah Project is located on the Alexandria-Wonarah Basement High between the margins of the Barkly and Undilla sub-basins (Figure 7-3), which are made up of Middle Cambrian sediments and volcanics.



**Figure 7-3: Regional geological setting**

Source: Optiro 2012 Evaluation Report

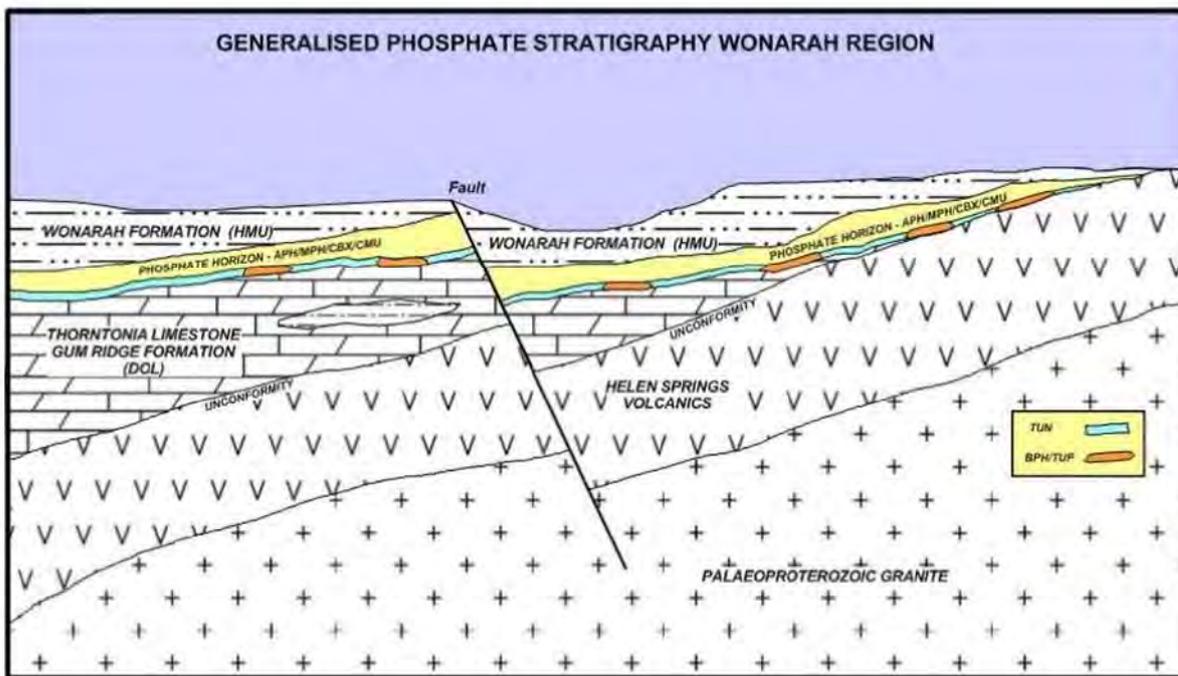
Unmineralised basement in the Womerah area comprises the Peaker Piker Volcanics which generally appear in drilling intersections as highly weathered saprolitic basalt overlain by ferruginous duricrust, and the dolomitic Thornton Limestone (DOL) which laterally onlaps the Peaker Piker volcanics.

Overlying Middle Cambrian, sediments are divided into two basin-wide sequences.

Sequence One deposited clastics, carbonates, organic shales and minor phosphorites during gradual transgression which was abruptly terminated by rapid regression. In the Womerah region, basement highs are flanked by onlapping dolomitic rocks equivalent to the Thornton Limestone. An erosional unconformity is represented by the development of a karst surface.

Sequence Two deposited shallow clastics, carbonates, grainstones, peritidal phosphorites and phosphatic limestones in a transgressive tract system. At Womerah, dolostone, mudstone and phosphorite of the lower Middle Cambrian Upper Gum Ridge Formation overlie Sequence One rocks and basement highs. This formation contains major phosphorite mineralisation and is equivalent to the Beetle Creek Formation on the eastern Margin of the basin which hosts Phosphate Hill and Lady Annie-D-Tree phosphate deposits.

The overlying Womerah Beds are Middle Cambrian mudstone, siltstone and dolostones. Silcrete, ferricrete and calcrete regolith are extensively developed, and large areas are covered by stabilised aeolian sand. These stratigraphic units are presented as a schematic cross section in Figure 7-4.



**Figure 7-4: Schematic cross section of the generalised phosphate stratigraphy in the Wonarah region**

Source: Optiro 2012 Evaluation Report

**7.4.2 Local geology and mineralisation**

Avenira subdivides the Upper Gum Ridge Formation into four units which are listed in stratigraphic (top down) order in Table 7-2. For some units, different logging codes are used at Arruwarra and Main Zone, as there are slight variations in the rock types between the projects. For these units, the code used for Main Zone is shown after the Arruwarra code in Table 7-2.

**Table 7-2: Wonarah Project mineralised lithology codes**

Lithology Codes		Unit	Description
Main Zone	Arruwarra		
CMU		Convolute Mudstone	Convolute Mudstone
MPH	APH (BPH)	Mudstone Phosphorite	Mudstone phosphorite with traces of chert
CBX		Chert Breccia Phosphorite	Brecciated phosphatic chert fragments within a mudstone phosphorite matrix
TUN (TUP)		Undifferentiated transitional sediments	Weathered mudstone and siltstone

Source: MPR 2013 MRE report

The TUN unit shows generally only low phosphate grades. Higher grade portions include rare generally discontinuous beds of high grade porcelaneous mudstone phosphorite designated as transitional phosphorite (TUP).

The chert fragments within the CBX unit are interpreted to represent silicified phosphatic dolostone bands, replaced by silica during diagenesis, and brecciated through post-depositional collapse processes.

The Mudstone Phosphorite (MPH) unit is commonly friable with typically medium to high phosphate grades. At Arruwarra, this unit is designated as APH and locally includes a visually distinct indurated, high-grade phosphorite basal unit designated as the Basal Phosphorite (BPH).

The Convolute Mudstone (CMU) overlies the main mineralised zones and generally contains only low-grade phosphorus values interpreted to be of supergene origin with rare, discontinuous high-grade mudstone phosphorite interbeds.

SRK used the univariate statistics presented in the 2013 MRE report for each of the mineralised lithology units to carry out broad geochemical checks. The  $P_2O_5/CaO$  ratio (FAP) was calculated; a value of 0.76 (pure fluorapatite) can be used as a differentiator between majority calcium phosphate and the presence of aluminophosphates. The Minor Elements Ratio (MER) is defined as  $(\% Fe_2O_3 + \% Al_2O_3 + \% MgO) / \% P_2O_5$  can be used to check for a relationship between phosphate grade and impurities.

The statistical and geochemical analysis of the composite samples that inform the Mineral Resource are presented in Table 7-3. In general, the CoV statistic is  $<1$ , which indicates a normal sample population distribution and suitability for the Ordinary Kriging estimation method. For the Main Zone lithology units, the FAP value is generally just below the 0.76 which shows most of the  $P_2O_5$  and CaO is from fluorapatite. The Arruwarra lithology units have a FAP value that is considerably lower than 0.76, indicating that some other phosphate mineral may be present, they also have a relatively high MER. A high MER value is not a concern for processing via IHP, but it may lower a product quality if upgrading is via a traditional Wet Acid Process.

**Table 7-3: Univariate Statistics for composite samples used in March 2013 resource estimate**

<b>APH: 1445 composites (Arruwarra)</b>								
	<b>P<sub>2</sub>O<sub>5</sub> %</b>	<b>Al<sub>2</sub>O<sub>3</sub> %</b>	<b>CaO %</b>	<b>Fe<sub>2</sub>O<sub>3</sub> %</b>	<b>MgO %</b>	<b>SiO<sub>2</sub> %</b>	<b>FAP</b>	<b>MER</b>
Mean	15.9	5.77	22.7	1.43	0.56	46.8	0.70	0.49
Coef. Var.	0.46	0.56	0.45	1.76	0.86	0.31		
Minimum	0.51	0.44	0.35	0.14	0.02	7.98		
Median	15.3	5.06	22.3	0.65	0.43	47.5	0.69	0.40
Maximum	36.8	23.3	49.8	29.1	5.70	92.9		
<b>BPH: 181 composites (Arruwarra)</b>								
	<b>P<sub>2</sub>O<sub>5</sub> %</b>	<b>Al<sub>2</sub>O<sub>3</sub> %</b>	<b>CaO %</b>	<b>Fe<sub>2</sub>O<sub>3</sub> %</b>	<b>MgO %</b>	<b>SiO<sub>2</sub> %</b>	<b>FAP</b>	<b>MER</b>
Mean	30.0	3.35	40.8	0.91	0.22	20.0	0.74	0.15
Coef. Var.	0.18	0.58	0.19	1.03	0.61	0.55		
Minimum	15.0	0.32	20.6	0.14	0.03	1.87		
Median	29.8	3.02	40.2	0.57	0.17	20.6	0.74	0.13
Maximum	39.4	10.8	54.4	5.70	0.73	52.2		
<b>CMU: 49 composites (Main Zone)</b>								
	<b>P<sub>2</sub>O<sub>5</sub> %</b>	<b>Al<sub>2</sub>O<sub>3</sub> %</b>	<b>CaO %</b>	<b>Fe<sub>2</sub>O<sub>3</sub> %</b>	<b>MgO %</b>	<b>SiO<sub>2</sub> %</b>	<b>FAP</b>	<b>MER</b>
Mean	21.3	6.3	27.2	0.96	0.18	38.3	0.78	0.35
Coef. Var.	0.36	0.50	0.41	1.63	0.44	0.41		
Minimum	10.6	1.67	5.24	0.19	0.04	9.60		
Median	19.7	5.6	25.9	0.66	0.17	40.8	0.76	0.33
Maximum	36.5	18.9	49.0	11.3	0.37	64.5		
<b>MPH: 5,270 composites (Main Zone)</b>								
	<b>P<sub>2</sub>O<sub>5</sub> %</b>	<b>Al<sub>2</sub>O<sub>3</sub> %</b>	<b>CaO %</b>	<b>Fe<sub>2</sub>O<sub>3</sub> %</b>	<b>MgO %</b>	<b>SiO<sub>2</sub> %</b>	<b>FAP</b>	<b>MER</b>
Mean	21.1	5.0	27.8	1.45	0.15	39.7	0.76	0.31
Coef. Var.	0.41	0.61	0.42	1.86	0.66	0.47		
Minimum	0.54	0.17	0.29	0.12	0.00	0.55		
Median	20.4	4.5	27.1	0.72	0.13	40.9	0.75	0.26
Maximum	41.0	29.9	54.8	43.4	1.21	94.7		

<b>CBX: 4,108 composites (Main Zone)</b>								
	<b>P<sub>2</sub>O<sub>5</sub> %</b>	<b>Al<sub>2</sub>O<sub>3</sub> %</b>	<b>CaO %</b>	<b>Fe<sub>2</sub>O<sub>3</sub> %</b>	<b>MgO %</b>	<b>SiO<sub>2</sub> %</b>	<b>FAP</b>	<b>MER</b>
Mean	9.0	4.4	11.8	1.31	0.14	69.0	0.76	0.65
Coef. Var.	0.64	0.55	0.68	1.90	0.90	0.20		
Minimum	0.05	0.47	0.04	0.13	0.00	11.3		
Median	8.04	3.7	10.6	0.70	0.10	71.0	0.76	0.56
Maximum	34.0	20.3	46.6	42.5	1.20	96.2		
<b>TUN: 3,858 composites (Main Zone)</b>								
	<b>P<sub>2</sub>O<sub>5</sub> %</b>	<b>Al<sub>2</sub>O<sub>3</sub> %</b>	<b>CaO %</b>	<b>Fe<sub>2</sub>O<sub>3</sub> %</b>	<b>MgO %</b>	<b>SiO<sub>2</sub> %</b>	<b>FAP</b>	<b>MER</b>
Mean	5.5	8.8	7.33	3.52	0.51	67.2	0.75	2.33
Coef. Var.	0.88	0.35	0.89	1.79	0.97	0.16		
Minimum	0.01	0.04	0.01	0.14	0.01	0.05		
Median	4.76	9.3	6.30	1.73	0.49	68.4	0.76	2.42
Maximum	34.3	27.7	46.3	62.1	8.78	93.1		
<b>TUP: 396 composites (Main Zone)</b>								
	<b>P<sub>2</sub>O<sub>5</sub> %</b>	<b>Al<sub>2</sub>O<sub>3</sub> %</b>	<b>CaO %</b>	<b>Fe<sub>2</sub>O<sub>3</sub> %</b>	<b>MgO %</b>	<b>SiO<sub>2</sub> %</b>	<b>FAP</b>	<b>MER</b>
Mean	26.4	3.2	35.3	1.34	0.11	29.3	0.75	0.18
Coef. Var.	0.24	0.58	0.25	0.96	0.95	0.45		
Minimum	10.0	0.11	13.2	0.13	0.01	0.89		
Median	25.6	3.0	34.3	0.87	0.08	30.8	0.75	0.15
Maximum	40.6	10.6	55.2	13.5	1.33	63.3		

Adapted from: MPR 2013 MRE report

## 7.5 Project history

Phosphate exploration in the central Georgina Basin was initiated by the Bureau of Mineral Resources (BMR) in the early 1960s. The Wonarah Project area was first identified by IMC in 1967 using regional mapping, geophysics and open-hole drilling. The ore-grade phosphorite was at depths in the range 12–59 m and was characterised as two successive phosphorite beds comprising phosphatic mudstone, silty mudstone and grainstone (of reworked mudstone clasts). IMC relinquished its interest in the Wonarah deposit in 1971, after an unfavourable preliminary feasibility study cited the transport distance of 260 km to the nearest railway was a major drawback.

The AKD joint venture explored for large-tonnage phosphorite in the Wonarah area during the period 1999–2002, employing photointerpretation, geological mapping, rock chip sampling, ground gravity geophysical surveys and the drilling of RC and some DD holes. A higher-grade (>15% P<sub>2</sub>O<sub>5</sub>) 'phosphorite horizon' was delineated, almost directly overlying the early Cambrian Helen Springs Volcanics, in a decametre-scale stratigraphic interval attributed to the upper Gum Ridge Formation. However, the presence of the Gum Ridge Formation is not confirmed in this area on the Alexandria-Wonarah Basement High, and the phosphorite interval may represent basal Wonarah Formation. In 2002, AKD announced an Inferred Mineral Resource of 72 Mt at 23% P<sub>2</sub>O<sub>5</sub> beneath 15–77 m of overburden.

As a result of significant rock phosphate price increases in the mid-2000s, the Wonarah deposit was reviewed as a potential long-term mining operation by Minemakers. After several drilling campaigns commencing in 2008, Minemakers determined that mineralisation is controlled by palaeo-highs and that there are at least two substantial phosphate deposits in the Wonarah area. Mineralisation previously delineated by Rio Tinto-AKD is now included within the Main Zone deposit, whereas mineralisation outcropping over a 2 km strike length approximately 15 km to the southwest is termed the Arruwarra deposit. In February 2010, Indicated and Inferred Mineral Resources totalling 620 Mt

at 18% P<sub>2</sub>O<sub>5</sub> at a 10% P<sub>2</sub>O<sub>5</sub> cut-off were announced. In the same month, ML27244 was granted for a period of 25 years.

In early June 2010, Minemakers announced results from the Wonarah DSO feasibility study. The base case for the feasibility study included production at 500,000 tpa, which would ramp up to 3 Mtpa, with 9.4 Mt of DSO to be mined in an initial 5-year operation. The base case capital costs were estimated at US\$190 M (A\$209 M) and cash costs of US\$116/t (A\$128/t). Capital costs for a 10-year operation model was estimated at US\$195 M (A\$215 M) and cash costs at US\$111/t (A\$122/t).

In early September 2010, Minemakers signed a licence agreement and a subscription agreement with JDCPhosphate Inc. (JDCPhosphate). The principal aspects of the agreements were Minemakers to invest A\$1 M to buy a 6.67% equity in JDCPhosphate; subject to further testwork and successful trialling of Wonarah phosphate, Minemakers would have the exclusive rights in Australia to construct a plant, and associated infrastructure, which used JDCPhosphate's patented dry kiln process, in order to make superphosphoric acid (SPA) at Wonarah.

Drilling at the Project continued during the latter half of 2010. Early testwork results for the production of phosphoric acid from Wonarah ore by the JDCPhosphate dry kiln process were received. Results indicated the preferred binder for pelletising the material, which would require a low level of on-site beneficiation. It performed well via the IHP and phosphorus yield was 97% over the full design operating temperature range.

In February 2011, Minemakers announced the signing of a mining agreement for the development of the Wonarah phosphate deposits, which included the mining operation, beneficiation processing operations, production of fertilisers, and all associated infrastructure. The agreement also provided a clear process for the protection of sacred sites, skills training and job opportunities for local aboriginal people in the mining, processing and freight operations and for financial benefits to the Traditional Landowners.

In June 2011, National Mineral Development Corp. (NMDC) signed a non-binding Memorandum of Understanding (MoU) relating to the Wonarah Project. Under the MoU, NMDC management staff would join the Minemakers team to undertake a joint feasibility study into the full development of the Wonarah Project. The feasibility study was expected to be advanced by the December quarter so that the results would support Minemakers and NMDC signing a full JV agreement. General terms for the JV included NMDC arranging project finance.

Minemakers announced an updated MRE at the Main Zone deposit which now hosted indicated resources of 252 Mt grading 18.2% P<sub>2</sub>O<sub>5</sub>. Total Wonarah Indicated Mineral Resources were 303 t grading 18.2% P<sub>2</sub>O<sub>5</sub>, using a 10% P<sub>2</sub>O<sub>5</sub> cut-off grade in October 2011.

In November 2011, results from the Wonarah study confirmed the economic potential for a fertiliser production facility. The study focused on two options to produce 1 Mtpa P<sub>2</sub>O<sub>5</sub> – production of 1.4 Mtpa of 70% P<sub>2</sub>O<sub>5</sub> SPA by the IHP route with a capital cost of US\$1.74 Bn (A\$1.69 Bn); or production of 2 Mtpa of DAP/ MAP via a conventional wet acid process (WAP) with a capital cost of US\$2.72 Bn (A\$2.64 Bn). JDCPhosphate was the holder of the patent for the IHP. JDCPhosphate had to prove its ability to produce at commercial scale. JDCPhosphate was raising capital to construct and operate a demonstration plant at Fort Meade in Florida (USA) with completion planned for the end of 2012.

The Wonarah feasibility study has been ongoing since 2012 with emphasis on the IHP aspects. JDCPhosphate's IHP demonstration plant was in the commissioning phase in late 2013. The plant was a 1:18 scale of an anticipated full-scale plant but was still expected to operate as a commercial plant and (over time) generate positive cashflow.

In the December 2014 quarter, Minemakers considered a small DSO operation at Wonarah and concluded that, even with the depreciating Australian dollar and potentially lower local costs, it was

not viable. Given challenges experienced during commissioning the JDCPhosphate demonstration plant in Florida, feasibility study work at Wonarah was largely suspended while the technology is not commercially validated.

From 2015 to 2019, Avenir (following the name change from Minemakers) continued to reduce holding costs with tenement reductions, including the surrender of ML27244, and to monitor the improving phosphate market.

### 7.5.1 Exploration history and potential

The following information was summarised by Optiro (2015) since which time no further exploration activities have been undertaken at Wonarah.

Exploration activities are dominated by several phases of exploratory and infill drilling undertaken by Avenir and previous holders of the Wonarah Project. Historical exploration, including surface mapping and sampling, has been carried out but is not reported in detail.

Table 7-4 summarises the drilling included in the Wonarah exploration and resource drill hole database. Except for four DD holes, and 44 RC holes (inclined at 60°) completed for groundwater investigation purposes, all Wonarah holes were drilled vertically. Drill hole depths range from 1.8 m to 175 m and average 53 m.

Sampling is predominantly by RC holes, drilled by Minemakers between 2008 and 2011. Minemakers commissioned several drilling companies to undertake its drilling programs. The drilling and sampling activities were supervised by Minemakers' geologists who, in conjunction with consulting groups Hellman & Schofield Pty Ltd and MPR Geological Consultants Pty Ltd (MPR), undertook the geological interpretations on which the 2011 and 2013 MREs are based.

**Table 7-4: Wonarah Project – Summary of Exploration**

Source	Unit	RAB	Aircore	RC	Diamond	Total
IMC (1967 to 1969)	Holes	87	--	--	--	87
	Metres	3,677	--	--	--	3,677
ICI (1978)	Holes	10	--	--	--	10
	Metres	514	--	--	--	514
CRA (1992)	Holes	--	--	--	--	1
	Metres	--	--	--	--	78
Rio Tinto (2000 to 2001)	Holes	--	4	122	12	138
	Metres	--	238	6,280	664	7,182
Minemakers/ Avenir (2008 to 2011)	Holes	209	--	1,568	99	1,876
	Metres	514	--	84,514	3,838	88,866
<b>Total</b>	Holes	306	4	1,690	111	2,111
	Metres	4,705	238	90,764	4,502	100,238

Source: Optiro (2015)

## 7.6 Mineral Resource estimate

The most recent MRE (Table 7-5) for the Wonarah Project was reported to the ASX on 31 January 2013 as part of Minemakers' December 2012 Quarterly Activities Report. At that time Minemakers was listed on the Toronto Stock Exchange (TSX) and as such the reporting followed the rules and guidelines of the national instrument for the Standards of Disclosure for Mineral Projects within Canada known as National Instrument NI 43-101. There are no material differences between the definitions of the Mineral Resource classifications adopted by the Canadian Institute of Mining, Metallurgy and Petroleum and the corresponding definitions in the Australasian JORC (2012) Code for Mineral Resources. The MRE was completed by Jonathon Abbott of MPR Geological Consultants Pty Ltd (MPR), who is a Qualified Person in accordance with NI 43-101.

**Table 7-5: Wonarah Mineral Resource estimate at 10% P<sub>2</sub>O<sub>5</sub> cut-off (March 2013)**

Deposit / Lithology		Resource Classification	Tonnage (Mt)	P <sub>2</sub> O <sub>5</sub> %	CaO %	MgO %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %
Arruwurra	APH	Measured	21.8	16.6	23.9	0.57	5.69	0.91	45.4
		Indicated	27	17.5	24.8	0.51	4.79	1.66	44.4
		Inferred	82	16	23	0.3	4.9	3.5	46
	BPH	Measured	3.9	30.3	41.1	0.2	3.33	0.84	19.5
		Indicated	0.7	29.8	40.4	0.23	3.28	1.1	20.3
	Subtotal	Measured	25.7	18.7	26.5	0.51	5.33	0.9	41.5
		Indicated	27.7	17.8	25.2	0.5	4.75	1.65	43.8
		Inferred	82	16	23	0.3	4.9	3.5	46
	Main Zone	MPH	Measured	52.6	21.8	28.8	0.12	4.62	1.22
Indicated			115	20.9	27.6	0.16	5.07	1.57	39.9
Inferred			264	20	27	0.2	5	2.1	41
CBX		Indicated	69	12.4	16.2	0.13	3.87	1.25	62.5
		Inferred	135	13	17	0.2	4.2	1.7	59
TUN		Indicated	10	11.7	14.9	0.34	7.07	1.89	59
		Inferred	25	12	15	0.3	7.4	2	58
TUP		Inferred	35	27	36	0.1	3.3	1.2	29
CMU		Inferred	1	20	27	0.2	6	0.9	40
Subtotal		Measured	52.6	21.8	28.8	0.12	4.62	1.22	38.9
		Indicated	194	17.4	22.9	0.16	4.75	1.47	48.9
	Inferred	460	18	24	0.2	4.8	1.9	46	
Total Resources		Measured	78.3	20.8	28	0.25	4.85	1.11	39.7
		Indicated	222	17.5	23.2	0.2	4.75	1.49	48.3
		Inferred	542	18	24	0.2	4.8	2.1	46

Adapted from: MPR 2013 MRE report

This resource update was prepared for the incomplete Wonarah Phosphate Project Bankable Feasibility Study (BFS) that began in 2012. A critical aspect of the BFS was JDCPhosphate's IHP technology which produces high quality SPA from low-grade phosphate. Minemakers/ Avenir invested heavily in the technology and holds exclusive licenses to use IHP technology in Australia and Senegal. The development of the Wonarah deposit has been on hold since December 2014 as, at that time, the IHP technology was not commercially viable and phosphate market conditions were poor. In 2015, Minemakers reviewed the potential for a small DSO operation at Wonarah as market conditions had improved and lower operating costs, in some areas, were possible. This review

determined that even under these conditions, a small DSO operation was not feasible due to the high local operating costs.

SRK's assessment of the Mineral Resources is based primarily on a desktop review of the following documents:

- Hellman & Schofield's (H&S) 2011 Mineral Resource estimation report
- MPR's 2013 MRE report
- Optiro Limited Pty's technical assessments completed by as part of its 2012, 2015 and 2019 Independent Technical Valuation reports for Minemakers/ Avenira.

These reports were supplied by Avenira or downloaded from SEDAR (the System for Electronic Document Analysis and Retrieval) which is the system used for electronically filing most securities related information with the Canadian securities regulatory authorities. SRK did not consider it necessary to carry out additional technical checking of the block model or drilling database based on the available information.

The Optiro 2015 Valuation Report stated Optiro had confirmed the current Mineral Resource statement at the 10% P<sub>2</sub>O<sub>5</sub> cut-off grade.

Table 7-6 compares the previous H&S 2011 MRE with the current estimate. Even though no additional drilling was undertaken at the Project in the period between the two estimates, the contained phosphate in the current MRE has increased by 10% by increasing the Mineral Resource classification boundary.

**Table 7-6: Comparison of 2011 and 2013 Wonarah Mineral Resource estimates**

Wonarah Mineral Resource estimate at 10% P <sub>2</sub> O <sub>5</sub> cut-off (March 2013)								
Area	Resource Classification	Tonnage (Mt)	P <sub>2</sub> O <sub>5</sub> %	CaO %	MgO %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %
Arruwarra	Measured	26	18.7	26.5	0.51	5.33	0.9	41.5
	Indicated	28	17.8	25.2	0.5	4.75	1.65	43.8
	Inferred	82	16	23	0.3	4.9	3.5	46
	<b>Total</b>	<b>135</b>	<b>16.9</b>	<b>24.1</b>	<b>0.4</b>	<b>5.0</b>	<b>2.6</b>	<b>44.7</b>
Main Zone	Measured	53	21.8	28.8	0.12	4.62	1.22	38.9
	Indicated	194	17.4	22.9	0.16	4.75	1.47	48.9
	Inferred	460	18	24	0.2	4.8	1.9	46
	<b>Total</b>	<b>707</b>	<b>18.1</b>	<b>24.1</b>	<b>0.2</b>	<b>4.8</b>	<b>1.7</b>	<b>46.3</b>
<b>Total</b>	<b>Measured</b>	<b>78</b>	<b>20.8</b>	<b>28.0</b>	<b>0.25</b>	<b>4.85</b>	<b>1.11</b>	<b>39.7</b>
	<b>Indicated</b>	<b>222</b>	<b>17.5</b>	<b>23.2</b>	<b>0.2</b>	<b>4.75</b>	<b>1.49</b>	<b>48.3</b>
	<b>Inferred</b>	<b>542</b>	<b>18</b>	<b>24</b>	<b>0.2</b>	<b>4.8</b>	<b>2.1</b>	<b>46</b>
	<b>Total</b>	<b>842</b>	<b>18.1</b>	<b>24.2</b>	<b>0.2</b>	<b>4.8</b>	<b>1.8</b>	<b>46.0</b>

Wonarah Mineral Resource estimate at 10% P <sub>2</sub> O <sub>5</sub> cut-off (November 2011)								
Area	Resource Classification	Tonnage (Mt)	P <sub>2</sub> O <sub>5</sub> %	CaO %	MgO %	Al <sub>2</sub> O <sub>3</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	SiO <sub>2</sub> %
Arruwarra	Measured	-	-	-	-	-	-	-
	Indicated	51	18.3	25.8	0.5	5.09	1.27	42.7
	Inferred	84	16	23	0.4	4.8	3.4	46
	<b>Total</b>	<b>135</b>	<b>16.9</b>	<b>24.1</b>	<b>0.4</b>	<b>4.9</b>	<b>2.6</b>	<b>44.8</b>
Main Zone	Measured	-	-	-	-	-	-	-
	Indicated	252	18.2	24	0.15	4.73	1.41	46.9
	Inferred	395	18	24	0.2	4.7	1.9	46
	<b>Total</b>	<b>647</b>	<b>18.1</b>	<b>24.0</b>	<b>0.2</b>	<b>4.7</b>	<b>1.7</b>	<b>46.4</b>
<b>Total</b>	<b>Measured</b>	-	-	-	-	-	-	-
	<b>Indicated</b>	<b>303</b>	<b>18.22</b>	<b>24.30</b>	<b>0.21</b>	<b>4.79</b>	<b>1.39</b>	<b>46.19</b>
	<b>Inferred</b>	<b>479</b>	<b>17.6</b>	<b>23.8</b>	<b>0.2</b>	<b>4.7</b>	<b>2.2</b>	<b>46.0</b>
	<b>Total</b>	<b>782</b>	<b>17.9</b>	<b>24.0</b>	<b>0.2</b>	<b>4.7</b>	<b>1.9</b>	<b>46.1</b>

Adapted from: MPR 2013 MRE and H&S's 2011 MRE reports

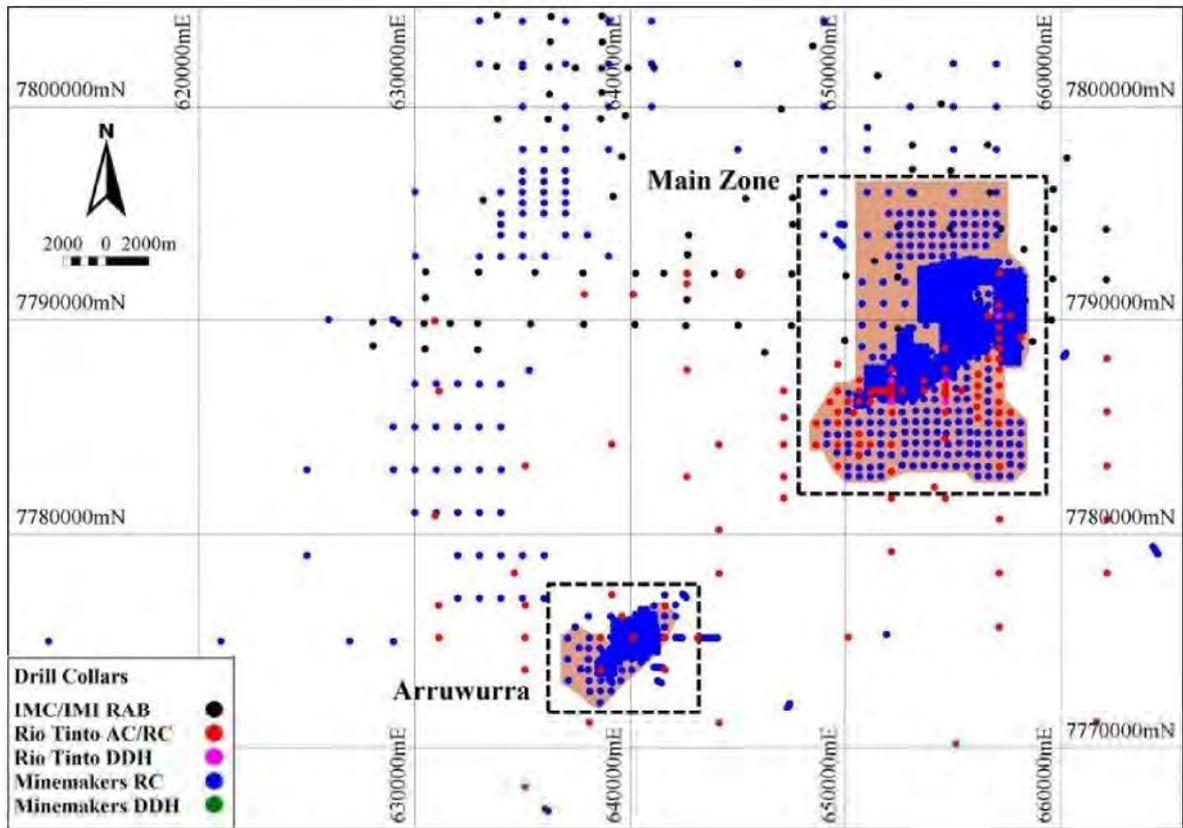
The MPR 2013 MRE report states the 2011 MRE classification was

*“... based higher grade areas suitable for DSO phosphate rock production. Delineation of high-grade bodies requires relatively close spaced drilling for resource estimation at even the Indicated confidence level. As the development plan for Wonarah is now for a larger downstream fertiliser operation rather than a DSO operation, Avenira has recently been focused upon broader areas of mineralisation, which could be mined at a lower grade as this will be feed to a beneficiation plant. Additionally, should the IHP be adopted, a lower P<sub>2</sub>O<sub>5</sub> ore grade with a higher silica content will be required.”*

The Mineral Resources at Arruwarra are unchanged from 2011. The mineralised domain boundary at Main Zone is unchanged since the 2011 estimation. The additional Inferred Mineral Resources are likely to be a result of the reduced controls on sample selection to form a valid estimate.

### 7.6.1 Data collection and quality control

The basis for the MREs was the collar, survey, assay and geological logging information collected, primarily since 2008, from the RAB, AC, RC and DD drilling programs conducted by Avenira. MPR compiled the sampling database from files supplied by Avenira. A summary of the drilling database is presented in Table 7-7. Figure 7-5 presents the MRE block model extents and drill hole collar locations.



**Figure 7-5: MRE block model extents and drill hole collar locations**

Source: MPR 2013 MRE report

**Table 7-7: Drill hole summary**

Full database for Wonarah Project						
Drilling method		IMC 1967-1969	ICI 1978	Rio Tinto 2000-2001	Avenira 2008-2011	Total
RAB	Holes	87	10	-	209	306
	Metres	3,677	514	-	514	4,705
Aircore	Holes	-	-	4	-	4
	Metres	-	-	238	-	238
RC	Holes	-	-	122	1,568	1,690
	Metres	-	-	6,280	84,514	90,794
Diamond	Holes	-	-	12	99	111
	Metres	-	-	664	3,838	4,502
<b>Total</b>	<b>Holes</b>	<b>87</b>	<b>10</b>	<b>138</b>	<b>1,876</b>	<b>2,111</b>
	<b>Metres</b>	<b>3,677</b>	<b>514</b>	<b>7,182</b>	<b>88,866</b>	<b>100,238</b>

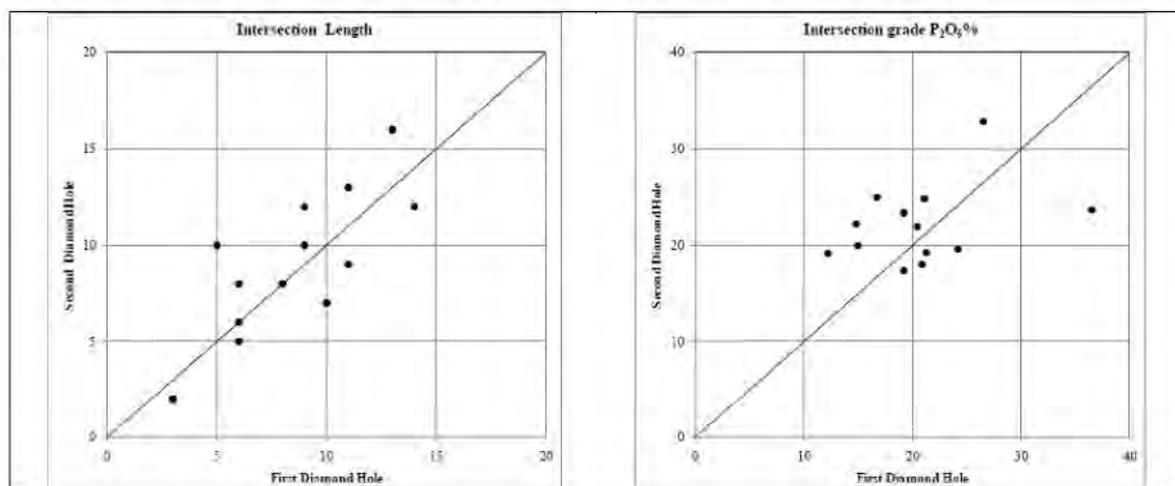
Database subset to current Mineral Resource model areas						
Drilling method		IMC 1967-1969	ICI 1978	Rio Tinto 2000-2001	Avenira 2008-2011	Total
RAB	Holes	17	7	-	209	233
	Metres	794	343	-	514	1,651
Aircore	Holes	-	-	4	-	4
	Metres	-	-	238	-	238
RC	Holes	-	-	79	1,431	1,510
	Metres	-	-	4,030	75,363	79,393
Diamond	Holes	-	-	12	99	111
	Metres	-	-	664	3,838	4,502
<b>Total</b>	<b>Holes</b>	<b>17</b>	<b>7</b>	<b>95</b>	<b>1,739</b>	<b>1,858</b>
	<b>Metres</b>	<b>794</b>	<b>343</b>	<b>4,932</b>	<b>79,715</b>	<b>85,784</b>

Source: MPR 2013 MRE report

The drill holes are vertical except for 48 inclined Avenira holes comprising four diamond holes and 44 RC holes primarily drilled for groundwater investigations. Most downhole sample lengths reflect true thicknesses of the gently undulating domains. The two MRE reports do not discuss the accuracy and quality of survey control for the drill hole collar locations or topographic surface.

The H&S and MPR reports contain extensive commentary on the validation and quality checks carried out on the data in the drilling database that were used to inform the MRE. The MPR 2013 MRE report disclosed several concerns and adjustments made to the data, but MPR established that the field sub-sampling, and assaying is representative and free of any biases or other factors that may materially impact the reliability of the sampling and analytical results.

The H&S 2011 MRE report has a comparison of the mineralised intersections for 13 DD hole pairs with a separation distance less than 5 m. The scatter plots (Figure 7-6) show considerable variation in both the grades and intersection widths between the pairs. This indicates significant short-scale variability and had implications for future grade control drilling and mine planning.



**Figure 7-6: Mineralised intervals for paired Avenira diamond drill holes**

Source: H&S 2011 MRE report

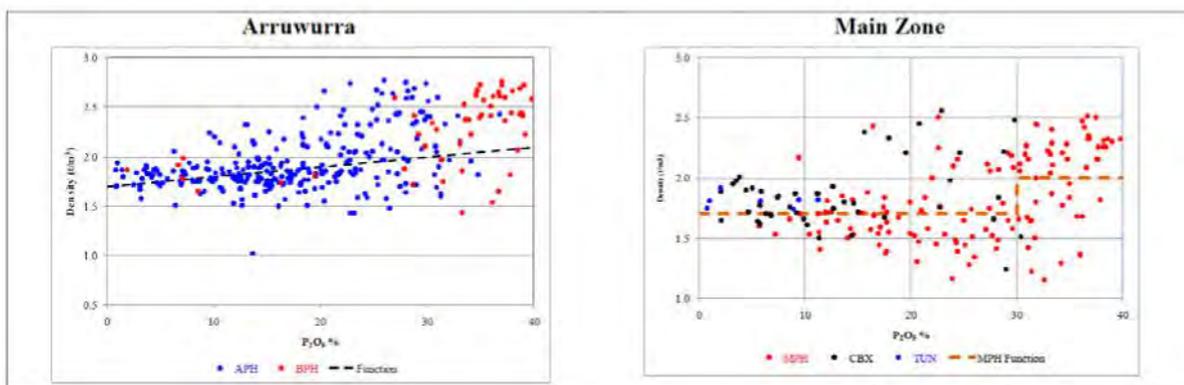
Average dry bulk density (DBD) values were determined from 623 oven-dried immersion density measurements taken on mineralised and waste core and used for the MRE determination of mineralised tonnes (Table 7-8).

**Table 7-8: Dry bulk density measurements and block model assignments**

Area	Dry bulk density (DBD) Immersion samples		Diamond core		Block Model		
	Lithology	No. samples	Average DBD (t/bcm)	Average grade (P <sub>2</sub> O <sub>5</sub> %)	Assigned DBD (t/bcm)	Average grade (P <sub>2</sub> O <sub>5</sub> %)	
Waste	Surficial sediment (REG)				1.7		
	Hangingwall sediments (HMU)	62	1.79		1.8		
	Basalt	56	1.92		1.9		
	Dolomite	1	1.9		1.9		
Arruwarra Mineralisation	APH	279	1.94	17.4	1.8	16.0	
	BPH	53	2.26	31.6	2.0	30.0	
Main Zone Mineralisation	CMU				1.8	20	
	MPH	<30% P <sub>2</sub> O <sub>5</sub>	131	1.83	25.6	1.7	21.1
	MPH	>30% P <sub>2</sub> O <sub>5</sub>				2.0	
	CBX		46	1.86	13.2	1.7	12.8
	TUN		7	1.81	5.57	1.7	11.9
	TUP		1	1.92	25.7	2.0	27.0

Adapted from: H&S's 2011 MRE report

The DBD measurements from the APH core samples at Arruwarra show a reasonable relationship with phosphate grade. The DBD measurements for all the lithologies from Main Zone show a considerable spread ( $\pm 15\%$ ) and are not clustered tightly around the average assigned values (Figure 7-7).



**Figure 7-7: Immersion density measurements versus P<sub>2</sub>O<sub>5</sub> grade**

Adapted from: H&S's 2011 MRE report

SRK's assessment of the data collection techniques, including drilling methods, sampling, analytical methods, QAQC of sampling and analysis are that they are industry standard practise and moderate confidence can be placed in the data.

SRK is unable to assess the quantity of survey control as the information was not available in the supplied documents.

SRK has concerns with the DBD measurements from the drill core from Main Zone. The spread of measured immersion density values is significant and most likely to have an effect on the calculation of ore tonnes in the Mineral Resources.

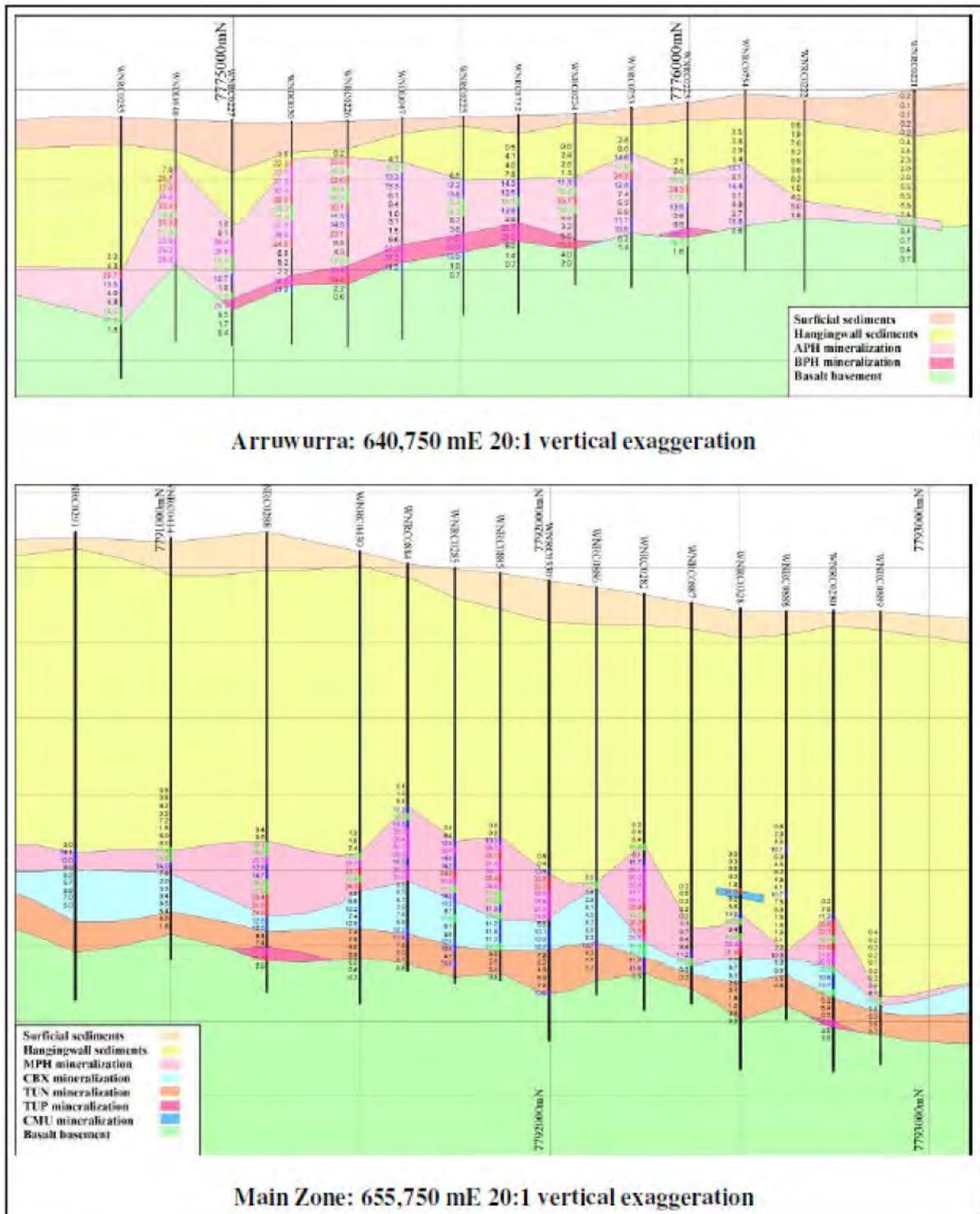
## 7.6.2 Mineralisation Interpretation and Modelling

Avenira used the geological logging and 1 m downhole composited assay grades from the drill programs to create 3D wireframe surfaces for use in the estimation process. Figure 7-8 presents example cross sections of the domain interpretation for each deposit relative to drill hole traces annotated by 1 m downhole composited P<sub>2</sub>O<sub>5</sub> grades. Table 7-10 summarises the thicknesses of each resource domain, based on mineralised domain wireframe vertical thicknesses measured at 50 by 50 m spaced discretisation points.

**Table 7-9: Mineralised domain thicknesses**

Deposit	Domain	Domain thickness (metres)		
		Minimum	Average	Maximum
Arruwarra	APH	0.1	5.7	13.1
	BPH	0.1	1.6	4.5
	Combined mineralisation	0.1	5.9	18.5
Main Zone	MPH	0.1	4.3	17.2
	CBX	0.1	4.2	13.2
	TUN	0.1	3.5	11.1
	TUP	0.1	1.2	5.2
	Combined main domains	2.0	10.1	26.8
	CMU	0.2	1.4	3.0

Source: MPR 2013 MRE report



**Figure 7-8: Cross sections of mineralisation domains**

Source: MPR 2013 MRE report

The Main Zone mineralised domains are interpreted to cover an area ~ 10 km east-west by 14 km north-south. MPH and CBX domains at Main Zone contain ~ 96% of combined Measured and Indicated Mineral Resources estimated for this deposit at a cut-off grade of 10% P<sub>2</sub>O<sub>5</sub>. The MPH domain averages 4 m thick, but it is not continuous over the full extents of the resource area. MPH is not interpreted in the central west of the deposit and is relatively discontinuous zones in the central and southern parts of the deposit. CBX mineralisation is significantly more continuous than the MPH zone. It is interpreted over most of the Main Zone area with an average thickness of ~4 m. The TUP

and CMU mineralised domains represent comparatively small, discontinuous zones that are generally intersected by only a small number of drill holes.

The majority of Arruwarra phosphate mineralisation is hosted by the APH unit which has an average thickness of ~6 m. The high-grade basal BPH zone is developed in central portions of the deposit with an average interpreted thickness of approximately 1.6 m over an area of approximately 0.9 by 2.2 km. The other lithology units are present at Arruwarra but are not continuous enough to be confidently wireframed. The Arruwarra domains cover an area approximately 6 by 2.5 km.

SRK's assessment of the 3D modelling is that it most likely reflects the broad phosphate mineralisation and is appropriate of the estimation methods used by MPR at this stage of development.

### 7.6.3 Estimate of Mineral Resources

The Mineral Resources were estimated by Ordinary Kriging of 1 m downhole composited assay grades within wireframes representing the mineralised domains. SRK has summarised the inputs MPR used for the two estimations in Table 7-10 and Table 7-11.

**Table 7-10: Mineral Resource estimation parameters – Arruwarra**

<b>Estimation Methodology</b>		Ordinary Kriging with parent cell estimation					
Estimated variables		P <sub>2</sub> O <sub>5</sub> , Al <sub>2</sub> O <sub>3</sub> , CaO, Fe <sub>2</sub> O <sub>3</sub> , MgO, and SiO <sub>2</sub>					
		North (m)	East (m)	RL (m)	Drill dip	Drill Azimuth	
Drill/sample spacing		125-500	125-500	1	90°	na	
Parent block size		125	125	1			
'Re-block' cell size		12.5	12.5	0.25			
<b>Theoretical Variogram Model</b>							
Attribute	Nugget	First structure (spherical)		Second structure (spherical)		Third structure (spherical)	
		Sill	Range (x,y,z) m	Sill	Range (x,y,z) m	Sill	Range (x,y,z) m
P <sub>2</sub> O <sub>5</sub>	0.02	0.02	45,40,48	0.73	62,125,53.5	0.23	631,634,60
Al <sub>2</sub> O <sub>3</sub>	0.02	0.14	46,42.5,51.5	0.50	67,200.5,78.5	0.34	888,1070,108
CaO	0.02	0.67	155,105,51.5	0.13	251,258,57	0.18	620,626,62
Fe <sub>2</sub> O <sub>3</sub>	0.02	0.71	130,154.5,60	0.22	396.5,442,382.5	0.05	1270,849,386
MgO	0.02	0.38	153.5,135.5,79.5	0.4	214,197.5,253.5	0.56	691,792,268
SiO <sub>2</sub>	0.02	0.79	211,118,50	0.01	267.5,335.5,51.5	0.17	618,632,63
Major axis orientation		Dip - 0°; Dip direction - 045°					
<b>Search Ellipse Parameters</b>							
<b>Estimation Passes</b>		X (m)	Y (m)	Z (m)	Minimum data	Minimum octants	Maximum data
extent (pass 1)		300	150	30 (1.5)	8	2	32
extent (pass 2)		390	195	45 (2.25)	8	2	32
extent (pass 3)		390	195	45 (2.25)	4	1	32
extent (pass 4)		800	800	60 (3.0)	4	1	32
Major axis orientation		Dip - 0°; Dip direction - 045°					

Adapted from: H&S's 2011 MRE report

**Table 7-11: Mineral Resource Estimation Parameters – Main Zone**

<b>Estimation Methodology</b>	Ordinary Kriging with parent cell estimation						
Estimated variables	P <sub>2</sub> O <sub>5</sub> , Al <sub>2</sub> O <sub>3</sub> , CaO, Fe <sub>2</sub> O <sub>3</sub> , MgO, and SiO <sub>2</sub>						
	North (m)	East (m)	RL (m)	Drill dip	Drill Azimuth		
Drill/sample spacing	125-500	125-500	1	90°	na		
Parent block size	125	30	1				
'Re-block' cell size	25	15	0.25				
<b>Theoretical Variogram Model</b>							
Attribute	Nugget	First structure (spherical)		Second structure (spherical)		Third structure (spherical)	
		Sill	Range (x,y,z) m	Sill	Range (x,y,z) m	Sill	Range (x,y,z) m
P <sub>2</sub> O <sub>5</sub>	0.06	0.43	71,230.5,59	0.27	131,251,202	0.24	1130,2513,251
Al <sub>2</sub> O <sub>3</sub>	0.06	0.32	58.5,106.5,53	0.41	106.5,311,82	0.22	631,1231,123
CaO	0.06	0.43	33.5,183,59.5	0.28	132,233.5,206.5	0.23	1019,2425,242
Fe <sub>2</sub> O <sub>3</sub>	0.16	0.65	85.0, 137.5, 43.5	0.09	86,284,496	0.11	1812,4296,536
MgO	0.05	0.22	72.5,40.5,44.5	0.49	108,189,109.5	0.24	735,1250,125
SiO <sub>2</sub>	0.12	0.45	88,65,67	0.23	144,75.5,173	0.20	859,1782,178
Major axis orientation	Dip - 0.3°; Dip direction - 150°						
<b>Search Ellipse Parameters</b>							
Estimation Passes	X (m)	Y (m)	Z (m)	Minimum data	Minimum octants	Maximum data	
extent (pass 1)	400	150	30 (1.5)	8	2	32	
extent (pass 2)	533	120	40 (2)	8	2	32	
extent (pass 3)	533	120	40 (2)	4	1	32	
extent (pass 4)	600	200	60 (3.0)	4	1	32	
extent (pass 5)	900	300	90 (4.5)	4	1	32	
extent (pass 6)	900	300	90 (4.5)	2	1	32	
Major axis orientation	Dip - 0.3°; Dip direction - 150°						

Adapted from: H&S's 2011 MRE and MPR's 2013 MRE reports

The H&S 2011 MRE report states Gemcom software was used for data compilation, wireframing and composite calculation, and GS3©, the resource estimation software marketed by H&S, was used for resource estimation. The resulting GS3© model was imported into a sub-blocked Vulcan format model for reporting of estimates and mine planning studies. The 2013 MRE report does not state which software was used to process the MRE.

For resource estimation of the gently undulating Arruwarra mineralised domains, the composites were unfolded prior to variogram modelling and estimation. The estimates were unfolded back to the correct positions, and the vertical exaggeration removed so the estimates were converted back to real-world coordinates. This unfolding approach was adopted to improve estimation of internal higher and lower grade zones within the APH mineralisation.

The MPR reports do not present figures of the experimental vs theoretical variograms or quality statistics that support the selection of the estimation parameters. SRK can therefore only assess in general terms, based on experience, the quality of the estimation parameters against the sampling dimensions and mineralisation characteristics.

SRK recommends that Kriging Neighbourhood Analysis be undertaken assist in the determination of estimation parameters and the performance statistics (Kriging Efficiencies and Slope of Regression) be reported. Additionally, the inclusion of figures showing the experimental and theoretical variograms will provide transparency about the quality of the variogram model and show any trends, cyclicity or anisotropy in the spatial correlation of the samples.

SRK notes that the nugget variance used for the estimation is very low. This contradicts the high short-scale variability that was evident in the twin DD hole figures presented in Section 7.6.1. SRK would have expected the nugget variance to be approximately 0.5. A higher nugget variance increases the uncertainty in the estimate as it decreases the relative influence of nearby samples.

Additionally, the MPR 2013 MRE report did not include any visual or statistical validation of the estimation process. When preparing its valuations from 2015 to 2019, Optiro stated it had assessed the two Mineral Resource models representing the Main Zone and Arruwarra deposits to identify any obvious flaws in the MREs. The attributes included in the models are P<sub>2</sub>O<sub>5</sub>, Al<sub>2</sub>O<sub>3</sub>, CaO, Fe<sub>2</sub>O<sub>3</sub>, K<sub>2</sub>O, MgO, MnO, Na<sub>2</sub>O, SiO<sub>2</sub> and TiO<sub>2</sub>, with P<sub>2</sub>O<sub>5</sub> being the primary controlling attribute.

Optiro carried out visual validation out on the models by comparing the estimated block grades and the drill hole data in cross section. Overall, there was good conformance between sample grades and the block estimates. Grade trend profiles were constructed to assess any global bias and compare the average grade of the block estimates with the average of the composited input data for slices through the models. The trend plots were examined in the easting, northing and elevation directions for all the estimated variables. Overall, there was generally good conformance between the declustered sample grade trends and the block grades across each deposit.

In order to validate Avenir's reporting of the of the Wonarah Mineral Resource figures, Optiro reported the models at a 10% P<sub>2</sub>O<sub>5</sub> cut-off and compared the results with those reported by Avenir. The results confirmed the Avenir figures with minor difference, which can be attributed to rounding errors.

SRK compared the average phosphate grade values of the composite samples and the block model above a 0% P<sub>2</sub>O<sub>5</sub> cut-off, for each lithology. These tests are susceptible to data clustering and differences between the averages are expected because the data are not regularly gridded. However, the comparisons can provide some useful indications that the estimation process has performed as intended by ensuring that the mean grades are similar. A summary of the statistical comparisons is presented in Table 7-12. Globally the estimation has performed well with the mean grades of the composites and block showing little differences. Although statistically the Fe<sub>2</sub>O<sub>3</sub> and MgO comparisons show differences greater than 20%; this is most likely due to the low analytical value of these grades and not an irregularity in the estimation process.

**Table 7-12: Block Model estimate versus composite grades at 0% P<sub>2</sub>O<sub>5</sub>**

Lithology Code	No. of composites vs Resource tonnes	P <sub>2</sub> O <sub>5</sub> %	Al <sub>2</sub> O <sub>3</sub> %	CaO %	Fe <sub>2</sub> O <sub>3</sub> %	MgO %	SiO <sub>2</sub> %	FAP ratio	MER ratio
APH	Comps (1,445)	15.9	5.8	22.7	1.4	0.6	46.8	0.70	0.49
	Res (135.8 Mt)	16.1	5.2	23.1	2.7	0.4	46.1	0.70	0.51
	Difference	1%	-11%	2%	86%	-27%	-1%	-1%	5%
BPH	Comps (181)	30.0	3.4	40.8	0.9	0.2	20.0	0.74	0.15
	Res (4.6 Mt)	30.2	3.3	41.0	0.9	0.2	19.6	0.74	0.15
	Difference	1%	-1%	0%	-3%	-9%	-2%	0%	-2%
CMU	Comps (49)	21.3	6.3	27.2	1.0	0.2	38.3	0.78	0.35
	Res (1.0 Mt)	20.0	6.0	27.0	0.9	0.2	40.0	0.74	0.36
	Difference	-6%	-5%	-1%	-6%	11%	4%	-5%	2%

Lithology Code	No. of composites vs Resource tonnes	P <sub>2</sub> O <sub>5</sub> %	Al <sub>2</sub> O <sub>3</sub> %	CaO %	Fe <sub>2</sub> O <sub>3</sub> %	MgO %	SiO <sub>2</sub> %	FAP ratio	MER ratio
MPH	Comps (5,270)	21.1	5.0	27.8	1.5	0.2	39.7	0.76	0.31
	Res (436 Mt)	20.4	5.0	27.3	1.8	0.2	40.5	0.75	0.34
	Difference	-3%	0%	-2%	27%	20%	2%	-1%	10%
CBX	Comps (4,108)	9.0	4.4	11.8	1.3	0.1	69.0	0.76	0.65
	Res (601 Mt)	9.0	4.8	11.3	1.7	0.2	68.4	0.80	0.74
	Difference	0%	9%	-4%	27%	23%	-1%	5%	13%
TUN	Comps (3,858)	5.5	8.8	7.3	3.5	0.5	67.2	0.75	2.33
	Res (521 Mt)	5.8	8.9	7.4	3.9	0.5	66.6	0.79	2.30
	Difference	5%	2%	0%	11%	-1%	-1%	5%	-1%
TUP	Comps (396)	26.4	3.2	35.3	1.3	0.1	29.3	0.75	0.18
	Res (35 Mt)	27.0	3.3	36.0	1.2	0.1	29.0	0.75	0.17
	Difference	2%	3%	2%	-10%	-9%	-1%	0%	-3%

Adapted from: MPR 2018 MRE report

It is difficult for SRK to confidently assess the quality of the Mineral Resource estimates given the concerns relating to variography, dry bulk density and short-scale variability in the continuity of the grade and lithology. Optiro reported its assessment of the Mineral Resources using generalised and guarded wording.

SRK contends it is good professional practise to provide detailed and hence transparent reporting of the estimation process, estimation parameter determinations, estimation validation results, Mineral Resource classification schema and estimation performance statistics.

#### 7.6.4 Mineral Resource classification and statement

The MPR 2013 MRE reports states the Mineral Resource classification was reported in accordance with NI 43-101 cut-off grade of 10% P<sub>2</sub>O<sub>5</sub>. The classification schema used is based on drill hole spacing and estimation search passes; the schema is presented in Table 7-13.

Classification schema such as this often result in the 'spotted dog' effect where blocks of Inferred Mineral Resources or unclassified material separate blocks of Measured and/ or Indicated Mineral Resources, or individual drill holes are surrounded by annuli of Measured and Indicated Mineral Resource blocks. As there does not appear to be a minimum number of samples per hole set for a valid estimate, as such this could result in isolated blocks of mineral resources surrounded by unclassified material based around a single drill hole.

Without the images of the block model classification in the report, SRK cannot assess if the resulting classification is sufficiently continuous or smoothed to avoid the 'spotted dog' effect. Misclassified Mineral Resource estimates can subsequently cause substantial problems for engineers undertaking a mine design and applying modifying factors to the MREs to produce Ore Reserve estimates.

SRK considers it good industry practise to additionally refer to the quality of the input data, confidence in the interpretation, and geostatistical results as well as the sample spacing when considering the classification criteria.

SRK does not consider the quality descriptors for a Measure Resource have been met, and has concerns in relation to the following:

- Variability of the dry bulk density values measured for each lithology type
- Significant short-scale variability between the intersection length and grade that was evident in the twin DD hole data
- Uncertainty associated with the quality of the model variograms and the use of a low nugget value.

**Table 7-13: Resource classification schema**

Lithology	Search Pass	Nominal spacing < 125 by 125 m	Nominal spacing < 250 by 250 m	Nominal spacing > 250 by 250 m	
APH	1&2	Measured	Indicated	Inferred	
	3	Indicated	Indicated	Inferred	
	4	Indicated	Inferred	Inferred	
BPH	1&2	Measured	Indicated	Inferred	
	3&4	Indicated	Indicated	Inferred	
Lithology	Search Pass	Nominal spacing < 125 by 62.5 m	Nominal spacing < 250 by 250 m	Nominal spacing < 500 by 500 m	Nominal spacing >500 by 500 m
MPH	1-3	Measured	Indicated	Inferred	Inferred
	4	Indicated	Inferred	Inferred	Inferred
	5	Inferred	Inferred	Inferred	Exp. Potent.
	6	Exp. Potent.	Exp. Potent.	Exp. Potent.	Exp. Potent.
	Soft 1-6	Exp. Potent.	Exp. Potent.	Exp. Potent.	Exp. Potent.
CBX and TUN	1-3	Indicated	Indicated	Inferred	Inferred
	4	Inferred	Inferred	Inferred	Inferred
	5	Inferred	Inferred	Inferred	Exp. Potent.
	6	Exp. Potent.	Exp. Potent.	Exp. Potent.	Exp. Potent.
	Soft 1-6	Exp. Potent.	Exp. Potent.	Exp. Potent.	Exp. Potent.
TUP and CMU	1-5	Inferred	Inferred	Inferred	Inferred
	6	Exp. Potent.	Exp. Potent.	Exp. Potent.	Exp. Potent.
	Soft 1-6	Exp. Potent.	Exp. Potent.	Exp. Potent.	Exp. Potent.

Exp. Potent. – Exploration Potential

### 7.6.5 Concluding assessment

Based on its review of the available technical information pertaining to the Wonarah Mineral Resources, SRK considers that the quality and quantity of the data inputs and the work undertaken does not reflect the level of Mineral Resource classification applied. SRK recommends that the 2011 Mineral Resource classification schema, and hence statement, be used for the purposes of valuation.

Overall, SRK considers the method in which the Mineral Resources was prepared does not represent a material risk to the progress of the Project. However, SRK recommends a thorough review of the input data and estimation parameters.

As part of future work undertaken, SRK recommends more detail and hence transparency in the reporting of the estimation process, estimation parameter determinations, estimation validation results, Mineral Resource classification schema and estimation performance statistics.

## 7.7 Mining studies

A number of technical and mining studies have been undertaken for the Wonarah Project. SRK has not been provided with these studies but notes the following summaries provided by Optiro.

### 7.7.1 DSO study 2010

Minemakers completed a DSO Feasibility Study in 2010, which reported positive results regarding the generation of a product suitable for fertiliser manufacture. Minemakers, however, stated that it had not necessarily found buyers for the product in the spot or short-term contract markets. Uncertainty concerning future prices and the appreciating value of the Australian dollar resulted in Minemakers' decision to focus further on downstream processing (Optiro, 2015).

### 7.7.2 2011 Enabling/ Feasibility Study

In 2011, Minemakers commenced an enabling study which considered a number of options for the Wonarah Project. The initial study considered the conventional wet acid phosphoric (WAP) process for production of DAP/ MAP. This option required the construction of a beneficiation plant at Wonarah and a slurry pipeline from Wonarah to Tennant Creek. A MAP/ DAP production plant would also be constructed at Tennant Creek which would require the import of sulphur and ammonia by rail from Darwin to produce the MAP/DAP product.

The second option centred on using IHP technology at the Wonarah Project to produce SPA at Wonarah itself which removed the requirement for construction of the slurry pipeline. This option would require the import of petroleum coke to Wonarah. The higher grade 70% P<sub>2</sub>O<sub>5</sub> SPA product was considered more economical to export and also had a potential capital expenditure saving of up to A\$0.5 Bn after adding the cost of a fertiliser production facility in India that would use the SPA product. Minemaker's preferred option was to pursue the IHP route.

### 7.7.3 2012 Feasibility Study

In 2012, Minemakers commenced a feasibility study centred on utilising the IHP process at Wonarah. The study was divided firstly into an IHP focused study, and secondly into studies required to support the IHP but external to the actual IHP operation. Optiro noted that in 2014, the commissioning of the JDCPhosphate demonstration plant was progressing more slowly than anticipated. Given the challenges experienced during commissioning, study work was largely suspended to limit expenditure until the technology has been commercially validated. Work on the feasibility study is planned to resume following successful commercial validation of the IHP technology (Optiro, 2015).

### 7.7.4 Low cost mining review

In January 2015, Minemakers reviewed the potential for a small DSO operation at Wonarah in light of the stable phosphate rock price, depreciating Australian dollar and potentially lower energy, mining and logistic prices. This review determined that even under the prevailing conditions a small DSO operation was not feasible due to the high local operating costs (Optiro, 2015).

## 7.8 Processing

The three processes for recovery and upgrading of Australian rock phosphorite being used or in development are discussed by Wingate and Dunster (2016).

- The traditional mine, crush, mill, float, thicken, filter and dry the concentrate, suitable for the production of MAP and DAP products
- A variation of the above where the ore is scrubbed to remove clays and then milled to prepare the concentrate suitable for the production of MAP and DAP products
- The use of the IHP that treats low grade phosphate ore with high MgO and silica contents in a pyrometallurgical process that produces SPA and a benign alumino-silicate slag.

### 7.8.1 Novaphos – IHP

In 2010, Minemakers invested US\$1 M in Novaphos Inc. (formerly JDCPhosphate Inc.) and secured the exclusive rights to use the patented IHP for the manufacture of phosphate fertiliser in Australia and Senegal. In 2012, Minemakers commenced a feasibility study for developing Wonarah using IHP but suspended work in 2014 as a result of issues with the commissioning of a 1:18 scale demonstration IHP pilot plant in Fort Meade, Florida.

In September 2017, Avenira announced that JDCPhosphate was progressing with planned pilot plant modifications and that construction activities were due to be completed in early 2018. In April 2019, Avenira reported that Novaphos had achieved phosphate yields of ~80% and was seeking to commercialise the technology.

Avenira announced an agreement dated 28 June 2019, whereby Avenira will sell its interest in the Baobab Project and its remaining 7% interest in Novaphos. Avenira will retain its licensing for use of IHP technology in Australia (i.e. at Wonarah).

The IHP technology is considered critical to the potential economic viability of Wonarah with the potential for significant capital expenditure savings in excess of A\$0.5 Bn based on the 2010–2012 mining studies.

## 7.9 Infrastructure and logistics

From an infrastructure perspective, the Georgina Basin phosphorites can generally be classified into two categories – eastern, and central and western. The eastern Georgina Basin areas are restricted to the use of the Mount Isa–Townsville railway, which along with the Townsville Port, is heavily congested.

The central and western Georgina Basin phosphorite deposits are potentially easier in that they can access the Darwin–Adelaide railway, which is generally less congested. The Darwin Port has shipping advantages to Asia markets over the Townsville Port. Additionally, this line provides access to Adelaide and southeastern Australia, where most of Australia's agricultural activity is located.

The Wonarah Project is centrally located between both potential routes (albeit at a significant distance to the established rail lines) and would require significant capital expenditure to build the required infrastructure connections as highlighted in the mining studies conducted in 2010–2012. These studies indicated that connections to Tennant Creek and the Darwin–Adelaide Railway would be preferred.

## 7.10 Environment, social and permitting

SRK understands that the Mineral Lease previously held over the Wonarah resource area has been relinquished. Therefore, Avenira will be required to follow the standard application process for any future application for mining in line with current State and Federal legislation, including Native Title and cultural heritage conditions.

## 8 Other Considerations

### 8.1 Country risk ratings

According to Control Risks ratings (accessed via S&P Global Market Intelligence), the risk ratings for various countries are provided in Table 8-1 for cross referencing mineral assets used in SRK's Comparative Transactions and Peer Analysis.

**Table 8-1: Risk rating of other countries for comparison purposes**

Country	Political	Operational	Security	Terrorism
Angola	Medium	Medium	Low	Low
Australia	Low	Insignificant	Low	Low
Brazil	Medium	Medium	Medium	Low
Canada	Low	Low	Low	Low
Congo (DRC)	High	High	Medium	Low
Congol (Rep)	Medium	High	Low	Insignificant
Guinea Bisseau	High	High	Medium	Low
Mail	Medium	High	Medium	High
Morocco	Medium	Medium	Low	Low
New Zealand	Low	Insignificant	Low	Insignificant
Peru	Medium	Medium	Medium	Low
Senegal	Low	Medium	Low	Low
South Africa	Medium	Medium	Medium	Low
Tunisia	Medium	Medium	Medium	Medium
USA	Low	Low	Low	Low

### 8.2 Commodity trends and prices

#### 8.2.1 Phosphate

The balance of world phosphate rock consumption (approximately 5%) is used in a variety of other products, such as vitamins, pharmaceuticals, soft drinks, toothpaste, flame retardants, glass, photographic film and other consumer goods.

Cost inputs for DAP and MAP products including costs with sulphur and ammonia have generally also increased in price resulting in increased cost pressures on producers. DAP requires less ammonia to produce than MAP, while MAP is generally a better product, but the increased cost makes its use prohibitive in some areas.

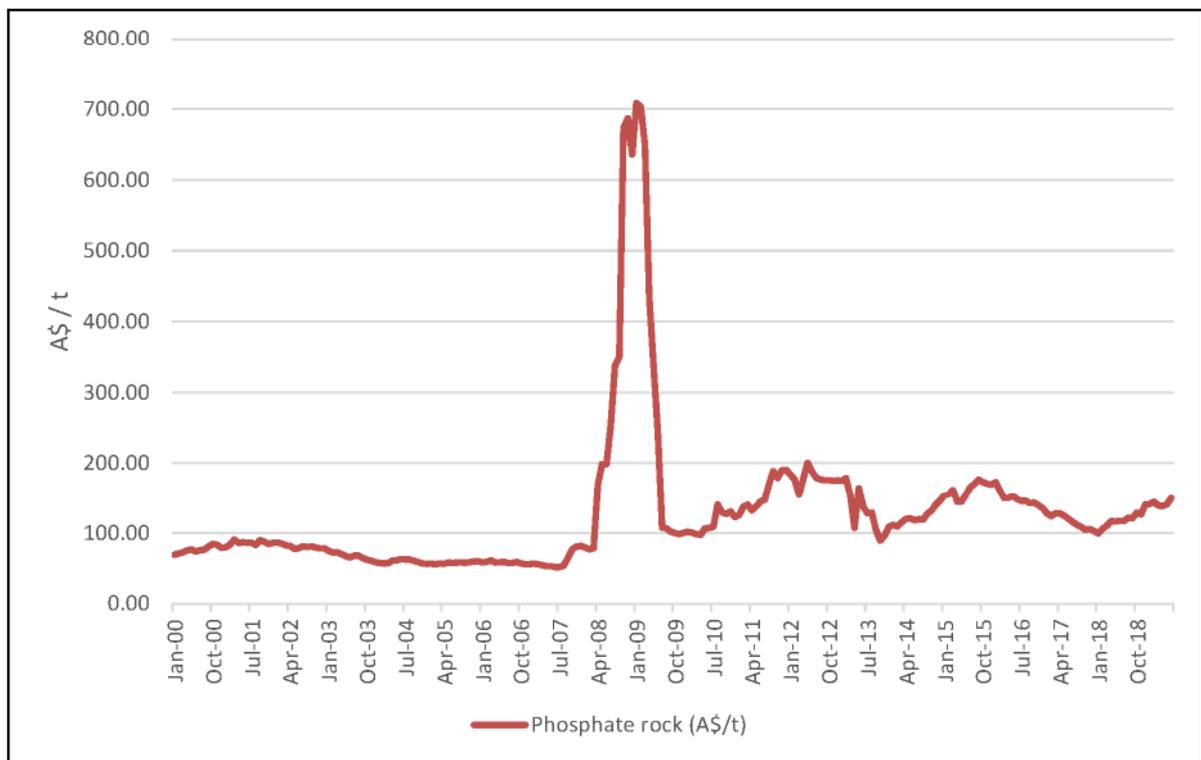
The World Bank's Fertiliser Price Index fell 5.4% in the first quarter (q/q) of 2019 after three consecutive increases. Seasonally weak Chinese demand, limited fertiliser application in North America and declines in input costs contributed to the recent fall. Fertiliser demand is expected to recover, and the price index is forecast to increase by 4.8% in 2019, led by potash. Over the medium term, prices are subject to downside risks as adoption of speciality fertilisers gains pace, leading to reduced application of conventional fertilisers (World Bank, 2019).

The phosphate rock price is forecast by the World Bank to be relatively stable over the next decade ranging from US\$101/t in 2020 to US\$99/t in 2030. CRU has a slightly higher price outlook in the near to medium term (trading at approximately US\$113/t Morocco 68%–72% BPL benchmark from 2012 to 2023 – Avenira's ASX announcement dated 18 March 2019). Chinese consumption is expected to

continue to fall as it moves towards a zero growth policy on fertiliser use, while Indian demand remains lacklustre as buyers seek clarity on subsidies following general elections in May. Cheaper input costs (ammonia and sulphur) also pushed prices lower. Phosphate production has risen in Morocco and Saudi Arabia, while Chinese exports, which had been trending down due to environmental restrictions, have also increased. Over the remainder of 2019, prices are expected to mildly recover from current levels, but on average remain some 6% below 2018 levels (World Bank, 2019).

The Baobab Project historically produced a circa 32% P<sub>2</sub>O<sub>5</sub> rock product with a slightly elevated silica content (13%–16% SiO<sub>2</sub>) from its previous operations. The proposed upgrade and expansion of the Project is targeting production of high-grade (36.4% P<sub>2</sub>O<sub>5</sub>) premium rock phosphate, characterised by low CaO/ P<sub>2</sub>O<sub>5</sub> ratio and moderate silica (<10% SiO<sub>2</sub>).

In support of its Phase 1 Feasibility Study at Baobab, Avenir commissioned CRU, an independent market forecasting consultancy, to provide a pricing model for the Baobab phosphate rock concentrate. CRU’s pricing model refers to industry standard reference Moroccan K10 (32% P<sub>2</sub>O<sub>5</sub> phosphate rock), corrected for three factors: higher P<sub>2</sub>O<sub>5</sub> content, lower CaO/ P<sub>2</sub>O<sub>5</sub> ratio and MER [(Al<sub>2</sub>O<sub>3</sub> + Fe<sub>2</sub>O<sub>3</sub> + Mg) / P<sub>2</sub>O<sub>5</sub>] ratio. SRK considers the pricing model to be reasonable in light of these adjustments.



**Figure 8-1: Rock phosphate price**

Source: SRK analysis of World Bank commodity price data

## 8.3 Previous valuations

### 8.3.1 Baobab

The VALMIN Code (2015) requires that an Independent Valuation Report refer to other recent valuations or Expert Reports undertaken on the mineral properties being assessed.

SRK notes that in July 2015, Optiro Pty Ltd (Optiro) compiled a Valuation of the mineral assets of Minemakers, Baobab Mining and Chemical Corporation S.A., in support of an IER relating to the

proposed acquisition of BMCC by Minemakers. Optiro's report relates to the current Baobab Project area.

The Project was at the Advanced Exploration stage with an Inferred Mineral Resource of 68 Mt grading 22% P<sub>2</sub>O<sub>5</sub> in 2015. No techno-economic studies had been carried out at that time. The defined Mineral Resources at Baobab accounted for approximately 78% of the value (on a preferred value basis) attributed by Optiro to the Project, with the residual attributed to the exploration potential. Optiro considered the value of a 100% equity interest in the Baobab Project as at 29 May 2015 resided between A\$20 M and A\$37.2 M, with a preferred value of A\$28.6 M.

Avenira's 2017 Annual Report notes that a valuation review was conducted by Optiro in June 2017, which revealed that the Market Value of the Baobab Project had increased to fall within the range between A\$32.8 M and A\$62.8 M, with a preferred value of A\$47.9 M.

As announced in Avenira's 2018 Annual Report, further reviews were conducted by Optiro at 31 December 2017 and 30 June 2018 on the same basis as at 30 June 2017. The valuation review as at 30 June 2018 revealed the value had increased (on the basis of increased resources) and lies within the range between A\$35.8 M and A\$78.9 M, with a preferred value of A\$55.5 M.

RSM provided SRK with a copy of Optiro's most recent valuation review of the Baobab Project dated February 2019 with an effective date of 31 December 2018. The valuation review as at 31 December 2018 revealed that the value remained largely unchanged since 30 June 2018 and lies within the range A\$35.8 M to A\$78.9 M, with a preferred value of A\$55.5 M (for both defined resources and exploration potential on a 100% equity basis). On a net attributable basis this equates to A\$28.6 M to A\$63.1 M, with a preferred value of A\$44.5 M.

Subsequent to the previous valuation, the Phase 1 Feasibility Study (Class 4) for the Baobab Project was completed, during which Ore Reserves were reported and the Exploitation Permit awarded. The Phase 1 Feasibility Study outlines an unlevered, post-tax net present value of US\$212 M (A\$294 M) based on an 8% discount rate and an internal rate of return of 25.5%.

SRK notes that the valuation methods and associated multiples (resource and area multiples) implied in this Report are not significantly different from those considered in Optiro's 2015 to 2019 valuations. Furthermore, SRK considers that the increase in value now attributed to these assets is reasonable given the intervening period and material changes to the Mineral Resource/ Ore Reserve base (including upgrading to defined Ore Reserves), development stage, level of techno-economic study and state of the market since the preparation of Optiro's previous valuations.

### 8.3.2 Wonarah

As a result of the relinquishment of ML27244 and surrounding tenure, the granted Exploration Licences now only cover the defined Mineral Resources, with little to no exploration upside. As such, previous valuations of the exploration potential at Wonarah are no longer a valid basis for comparison. Optiro's more recent valuations over the period 2016 to 2018 have assigned A\$0 value to the exploration potential component at Wonarah, citing the reduced tenure size and the large resource size.

The Wonarah Mineral Resource was previously valued by Snowden as at 16 March 2012 with the value of the Mineral Resources between A\$26.58 M and A\$53.16 M, with a preferred value of A\$39.87 M. A further revised value was provided on 10 May 2012 which resided between A\$29.27 M and A\$58.54 M, with a preferred value of A\$43.91 M.

A valuation by Optiro as at 10 July 2012 valued the Mineral Resources at Wonarah at between A\$62.88 M and A\$78.25 M, with a preferred value of A\$70.57 M.

As noted above in July 2015, Optiro Pty Ltd (Optiro) compiled a Valuation of the mineral assets of Minemakers, BMCC, in support of an IER relating to the proposed acquisition of BMCC by Minemakers. Optiro considered the value of a 100% equity interest in the Wonarah Project as at 29 May 2015 resided between A\$15.3 M and A\$30.5 M, with a preferred value of A\$22.9 M. The decrease in value was cited to be mainly associated with the fall in the phosphate rock prices from US\$180/t to US\$200/t to approximately US\$115/t.

As announced in Avenira's 2016 Annual Report, a valuation review by Optiro in June 2016 concluded that the value of Wonarah Mineral Resources remained unchanged from its 2015 value.

In December 2016, a further review and valuation by Optiro reported as 'Level 3 in the fair value hierarchy' reported that the fair market value of the Wonarah Project had declined to between A\$6.1 M and A\$10.7 M, with a preferred value of A\$8.4 M. Further reviews in December 2017 and June 2018 did not consider the value had changed.

As at 31 December 2018, Optiro undertook a further review and valuation of Wonarah, but again determined there was no change to the value from December 2016.

SRK notes that the valuation methods and associated multiples (resource and area multiples) implied in this Report are not significantly different from those considered in Optiro's 2015 to 2019 valuations.

## 9 Valuation Preface

### 9.1 Introduction

SRK was engaged by RSM to assist in the preparation of an assessment of the market value of the Baobab and Wonarah phosphate projects owned by Avenira.

In determining the appropriate parameters for valuation, SRK has considered the assessments that might be made by a willing, knowledgeable and prudent buyer in assessing the value of the Project and the Project's associated tenure.

In assessing the technical aspects relevant to this Valuation, SRK has relied on information provided by Avenira, as well as information sourced from the public domain.

The opinions expressed and conclusions drawn are appropriate at the Valuation Date of 1 July 2019. The valuation is only valid for this date and may change with time in response to variations in economic, market, legal or political conditions in addition to the receipt of new exploration information.

### 9.2 Valuation approaches

While the VALMIN Code (2015) states that the selection of the valuation approach and methodology is the responsibility of the practitioner, where possible, SRK considers a number of methods.

The aim of this approach is to compare the results achieved using different methods to select a preferred value within a valuation range. This reflects the uncertainty in the data and interaction of the various assumptions inherent in the valuation.

The VALMIN Code (2015) outlines three generally accepted valuation approaches:

- 1 Market Approach
- 2 Income Approach
- 3 Cost Approach.

The Market Approach is based primarily on the principle of substitution and is also called the comparison transactions approach. The mineral asset being valued is compared with the transaction value of similar mineral assets transacted in an open market (CIMVAL, 2003). Methods include comparable transactions, metal transaction ratio (MTR) and option or farm-in agreement terms analysis.

The Income Approach is based on the principle of anticipation of economic benefits and includes all methods that are based on the income or cashflow generation potential of the mineral asset (CIMVAL, 2003). Valuation methods that follow this approach include Discounted Cashflow (DCF) modelling, Monte Carlo Analysis, Option Pricing and Probabilistic methods.

The Cost Approach is based on the principle of contribution to value (CIMVAL, 2003). Methods include the appraised value method and multiples of exploration expenditure, where expenditures are analysed for their contribution to the exploration tenure of the mineral asset.

The applicability of the various valuation approaches and methods vary depending on the stage of exploration or development of the mineral asset, and hence the amount and quality of the information available on the mineral potential of the assets. Table 9-1 presents the various valuation approaches for the valuation of mineral assets at the various stages of exploration and development.

**Table 9-1: VALMIN – page 29 – valuation approaches according to development status**

Valuation Approach	Exploration Projects	Pre-Development Projects	Development Projects	Production Projects
Market	Yes	Yes	Yes	Yes
Income	No	In some cases	Yes	Yes
Cost	Yes	In some cases	No	No

Source: VALMIN Code (2015)

The market-based approach to valuation is generally accepted as the most suitable approach for valuation of projects at all stages of development.

An income-based method such as a DCF model is commonly adopted for assessing the value of a Tenure containing a deposit where an Ore Reserve has been reported following an appropriate level of technical studies and to accepted technical guidelines such as the JORC Code (2012). However, an income-based method is not considered an appropriate method for deposits that are less advanced, i.e. where there is no declared Ore Reserve or supporting mining and related technical studies.

The use of cost-based methods, such as considering suitable multiples of exploration expenditure, is best suited to exploration properties, i.e. prior to estimation of Mineral Resources. As current Mineral Resources have been declared for the development and advanced exploration projects, cost-based methods of valuation are considered less suitable than market-based methods of valuation for these properties.

In general, these methods are accepted analytical valuation approaches that are in common use for determining Market Value (defined below) of mineral assets, using market-derived data.

The 'Market Value' is defined in the VALMIN Code (2015) as, in respect of a mineral asset, the amount of money (or the cash equivalent of some other consideration) for which the Mineral Asset should change hands on the Valuation Date between a willing buyer and a willing seller in an arm's length transaction after appropriate marketing wherein the parties each acted knowledgeably, prudently and without compulsion. The term 'Market Value' has the same intended meaning and context as the International Valuation Standards Council (IVSC) term of the same name. This has the same meaning as Fair Value in Regulatory Guide 111. In the 2005 edition of the VALMIN Code this was known as Fair Market Value.

The 'Technical Value' is defined in the VALMIN Code (2015) as an assessment of a Mineral Asset's future net economic benefit at the Valuation Date under a set of assumptions deemed most appropriate by a Practitioner, excluding any premium or discount to account for market considerations. The term 'Technical Value' has an intended meaning that is similar to the IVSC term 'Investment Value'.

Valuation methods are, in general, subsets of valuation approaches. For example, the income-based approach comprises several methods. Furthermore, some methods can be considered to be primary methods for valuation while others are secondary methods or rules of thumb that are considered suitable only to benchmark valuations completed using primary methods.

The methods traditionally used to value exploration and development properties include:

- Multiples of exploration expenditure (MEE)
- Joint venture terms (expenditure-based)
- Geoscience rating (e.g. Kilburn – area-based)
- Comparable market value (real estate-based)

- MTR analysis (ratio of the transaction value to the gross dollar metal content, expressed as a percentage – real estate-based)
- Yardstick/ rule of thumb (e.g. \$/t resource or production unit, percentage of an in situ value)
- Geological risk.

In summary, however, the various recognised valuation methods are designed to provide an estimate of the mineral asset or property value in each of the various categories of development. In some instances, a particular mineral asset or property or project may comprise assets which logically fall under more than one of the previously discussed development categories.

### 9.3 Valuation basis

In estimating the value of the Project as at the Valuation Date, SRK has considered various valuation methods within the context of the VALMIN Code (2015). SRK has considered the Mineral Resources and Ore Reserves associated with the Project, as well as the extent and exploration potential of the granted tenure associated with the Projects.

The valuation method applied depends on the relative maturity of assessment for each asset, as well as the amount of available data supporting the project. In preparing its valuation of the Project, SRK has considered the three main approaches (income, market and cost) as well as the available methodologies under each approach.

In selecting its overall valuation approach for Baobab, SRK has studied the valuation approaches adopted in previous valuation exercises, the history of the Gadde Bissik mining and processing operation, the current status of the defined resources (predominantly Inferred) and comparatively small reserve base, the input parameters and associated financial outcomes from the Phase 1 Feasibility Study (Class 4) as announced by the Company on 18 March 2019 and the results of its review of the supplied technical data. Accordingly, SRK considers it more appropriate to value the Project using market-based metrics and to not use an income-based DCF analysis, as SRK does not consider that there are reliable long-term forecasts, with several underlying assumptions as provided in the Phase 1 Feasibility Study remaining uncertain and as such there are insufficient reasonable grounds for an income-based valuation.

Furthermore, in considering the defined Mineral Resources at Baobab for valuation purposes, SRK notes that under the prevailing Senegalese *Mining Code*, the Baobab Exploration Permit is unable to be further renewed after it expires in July 2020 (less than 1 year). Further, there is currently insufficient time to progress all the regulatory requirements to convert this Exploration Permit to an Exploitation Permit prior to it expiring. Defined Resources within the Exploration Permit total 73.3 Mt at 15% P<sub>2</sub>O<sub>5</sub> (or 11.0 Mt of contained P<sub>2</sub>O<sub>5</sub>), in addition to a number of exploration prospects. In order to reflect the likely value of the exploration potential and Mineral Resources within the Exploration Permit, SRK considers the market would apply a significant discount (in the order of 80% to 100%) to these components.

The Wonarah Project's viability remains tied to the commercialisation of the IHP technology being developed by Novaphos. Further, Wonarah does not have a declared Ore Reserve or a definitive techno-economic outcome capable of support an income-based analysis (such as discounted cashflow). Therefore, SRK considers it is appropriate to value the Wonarah Project using market-based metrics.

In SRK's opinion, with minor modifications as outlined elsewhere in this report, the Wonarah 2011 Mineral Resource provides a reasonable representation of global grades and tonnages available and suitable for valuation purposes.

SRK has been advised by Avenira that due to recent tenure relinquishments a small proportion ~5% of the Mineral Resources is outside of the current tenure held by Avenira. SRK has therefore applied a 5% reduction to the Mineral Resources for valuation purposes.

**Table 9-2: Valuation basis**

Development Stage	Description	Valuation basis
Development to Advanced Exploration	Defined Mineral Resources and Ore Reserves	Market: Comparable transactions Market: Peer Trading multiples
Early Stage Exploration	Associated tenure not currently the focus of exploration efforts	Market: Comparable transactions Cost: Geoscientific rating

Where possible, SRK has also considered industry yardsticks to help provide a high-level cross check of the reasonableness of the value outcomes determined through market-based methods.

In determining the value of the currently stated Mineral Resources and Ore Reserves at Baobab and Mineral Resources at Wonarah, SRK considers that the defined Mineral Resources are reported to a sufficient standard under the JORC Code guidelines and hence are suitable for valuation purposes, albeit with minor modifications. SRK considers that less reliance can be attributed to the stated Ore Reserves at Baobab and as such SRK has elected not to adopt a DCF valuation methodology.

In valuing the defined Mineral Resources, SRK has adopted market-based valuation methods as its primary determinant of value; particularly Actual Transactions, Comparable Transactions and Peer Trading multiples. SRK has also referenced various industry benchmarks in its consideration of value.

Outside of the defined Mineral Resources and Ore Reserves, SRK considers there is additional potential associated with the surrounding tenure and potential extensions to the known resource areas at Baobab. This potential has been assessed and valued using a combination of the Comparable Transactions and geoscientific rating valuation methods.

At Wonarah, the areal extent of the tenure has been reduced to broadly cover the area of the defined Mineral Resources. As such, SRK considers there is no value attributable to exploration potential outside of the defined resource areas. In addition, given the existing size of the defined resource and the likely requirement to maintain ground for any future infrastructure development (and thus avoid sterilising the existing Mineral Resources), SRK does not consider there is any reason to value the remaining tenure outside of the resource areas.

### 9.3.1 Introduction

In arriving at a market value for Avenira's mineral assets, SRK has considered the market for phosphate.

To value the stated Mineral Resources, SRK has carried out a search for publicly available information on market transactions involving similar projects (excluding those with associated mine infrastructure) that have occurred in the period leading up to, or about, the Effective Date of this valuation. Notably, SRK considered global transactions given the limited dataset for recent phosphate transactions. SRK has also completed a research of peer companies to determine resource multiples through the analysis of Mineral Resources and enterprise value.

SRK notes that the dataset compiled by SRK for analysis occurs over a long period of time (2010–2019). The transaction multiples have been adjusted by normalising the multiples using the difference between the commodity price at the time of the transaction and the current commodity price. Both the raw and normalised values are presented where adjustments have been made.

Importantly, while both peer company and transaction multiples are widely used in valuation, they both rely on the assumption that the reported Mineral Resources have been appropriately reported and can be taken at face value. As such, the method assumes that differences in reporting regimes, between different Competent Persons, resource classification, metal recovery and adopted cut-off grades (which may change between assets and/ or companies) do not materially influence the implied multiple. The method implicitly assumes total recoverability of all metal tonnes, as reliable and accurate data is generally not disclosed or available around the time of most transactions or for all companies. Importantly, SRK's implied value calculations are for the purposes of its valuation and do not attempt to estimate or reflect the metal likely to be recovered as required under the JORC Code (2012).

### 9.3.2 Market approach – Actual transactions – Baobab

On 27 April 2015, Minemakers announced it had entered into a conditional agreement to acquire 100% of the Baobab Project in exchange for 100 M ordinary shares, 80 M unlisted options with an exercise price of A\$0.25 and a term of 4 years, 40 M contingent share rights (Class A) vesting on achievement of a preliminary feasibility study or decision to proceed with construction of a phosphate rock mine or first commercial production) and 40 M contingent share rights (Class B) vesting upon first commercial production of phosphate rock. On 11 May 2015, prior to shareholder approval and finalisation of the acquisition, Minemakers announced the maiden Inferred Mineral Resource of 68 Mt at 22% P<sub>2</sub>O<sub>5</sub>. Shareholders approved the transaction, which was ultimately finalised on 25 September 2015. Shares, options and contingent shares were issued on 28 September 2015.

SRK notes that in its 2015 IER, BDO elected not to value either the unlisted options (which were out of the money) or contingent shares, on the basis that it had insufficient information regarding the future performance and ability of Minemakers to achieve the respective performance milestones and hence did not have reasonable grounds for valuation.

Adopting a similar philosophy, SRK notes the implied value of the transaction implied a multiple of A\$0.45/t P<sub>2</sub>O<sub>5</sub> (or A\$0.46/t P<sub>2</sub>O<sub>5</sub> normalised to account for difference in the phosphate price between the Transaction Date and Valuation Date).

Should the 40 M Class A shares that were converted to ordinary shares on 12 November 2015 be included, the implied multiple becomes A\$0.63/t P<sub>2</sub>O<sub>5</sub> (or A\$0.65/t P<sub>2</sub>O<sub>5</sub> normalised).

On 4 November 2015, Minemakers entered an MoU with Mimran Natural Resources (Mimran), in which Mimran acquired a 20% stake in the Project for US\$11.25 M (A\$15.6 M). The stated resources at the time was 68 Mt at 22% P<sub>2</sub>O<sub>5</sub>. The implied value of this transaction was A\$5.21/t P<sub>2</sub>O<sub>5</sub> (or A\$4.56/t P<sub>2</sub>O<sub>5</sub> normalised). Given that this transaction involved the introduction of a Senegalese equity partner to satisfy the requirements of the Senegalese *Mining Code* and thus enable expansion beyond an SMP, SRK considers this transaction was undertaken for strategic reasons and hence may not reflect actual market value.

Applying these multiples to the current Baobab total resource base of 362.1 Mt (or 59.37 Mt P<sub>2</sub>O<sub>5</sub> – comprising 48.37 Mt within the Exploitation Permit and 11.0 Mt in the Exploration Permit), implies the value outcomes listed in Table 9-3.

**Table 9-3: Value outcomes**

Transaction Date	Consideration	Implied Multiple (A\$/t P <sub>2</sub> O <sub>5</sub> )	Implied Value (100% basis) (A\$ M)	Implied Value (attributable basis) (A\$ M)
27 Apr 2015	100 M shares	0.46	22.25–23.26	17.80–18.61
	140 M shares	0.65	31.44–32.87	25.15–26.30
4 Nov 2015	US\$11.25 M (A\$15.6 M)	4.56	220.57–230.60	176.45–184.48

### 9.3.3 Market approach – Actual transactions – Wonarah

The Wonarah Project was initially acquired from Indo in September 2006 at the listing of Minemakers (now Avenira) on the ASX. The Project transacted for A\$50,000 in cash and the issue of 625,000 shares and 625,000 options; Indo retained a clawback right for a 10% equity interest in the phosphate rights through the payment of the cash equivalent to 20% of Avenira's expenditure on the Project.

The acquisition included a 100% interest in the exploration licences (EL9976, EL9978, EL9979, EL22168 and EL24562) and the underlying historical resources defined by Rio Tinto.

In June 2008, Avenira agreed to purchase Indo's clawback right for A\$2.0 M in cash and the issue of 3.0 M fully paid Minemakers shares.

Given the age of these transactions, and the change in the Project's Mineral Resources and development stage, SRK does not consider that these transactions should be considered further for determination of the value of Wonarah.

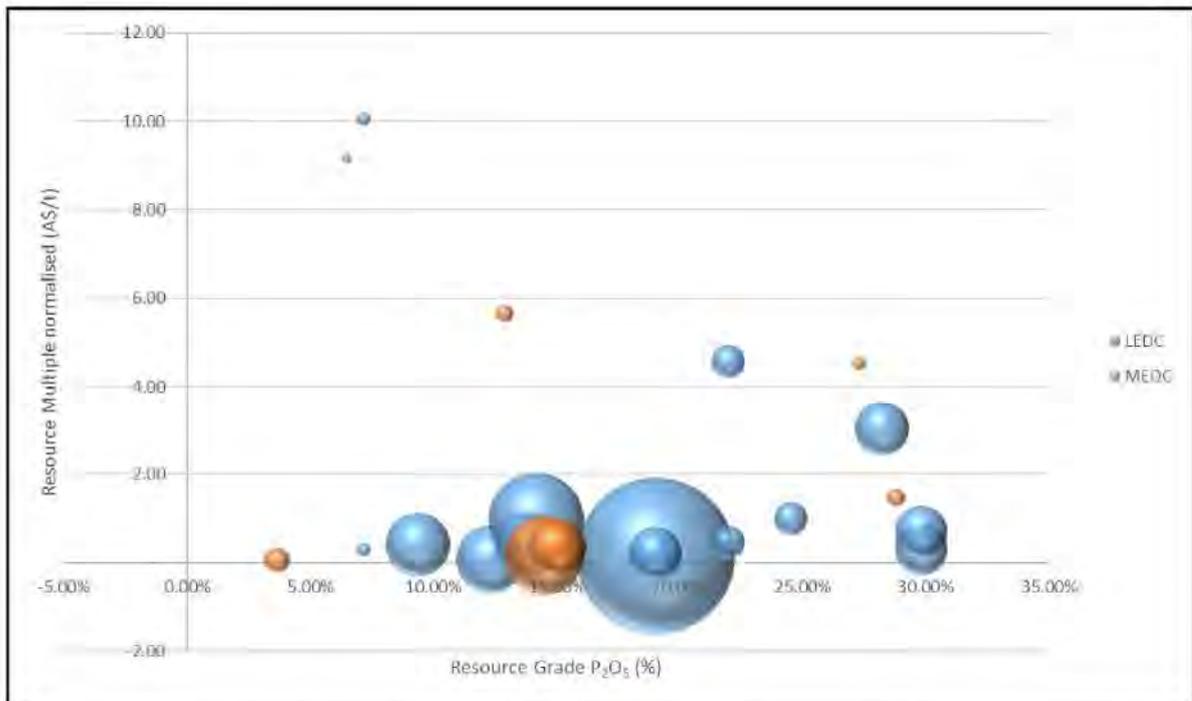
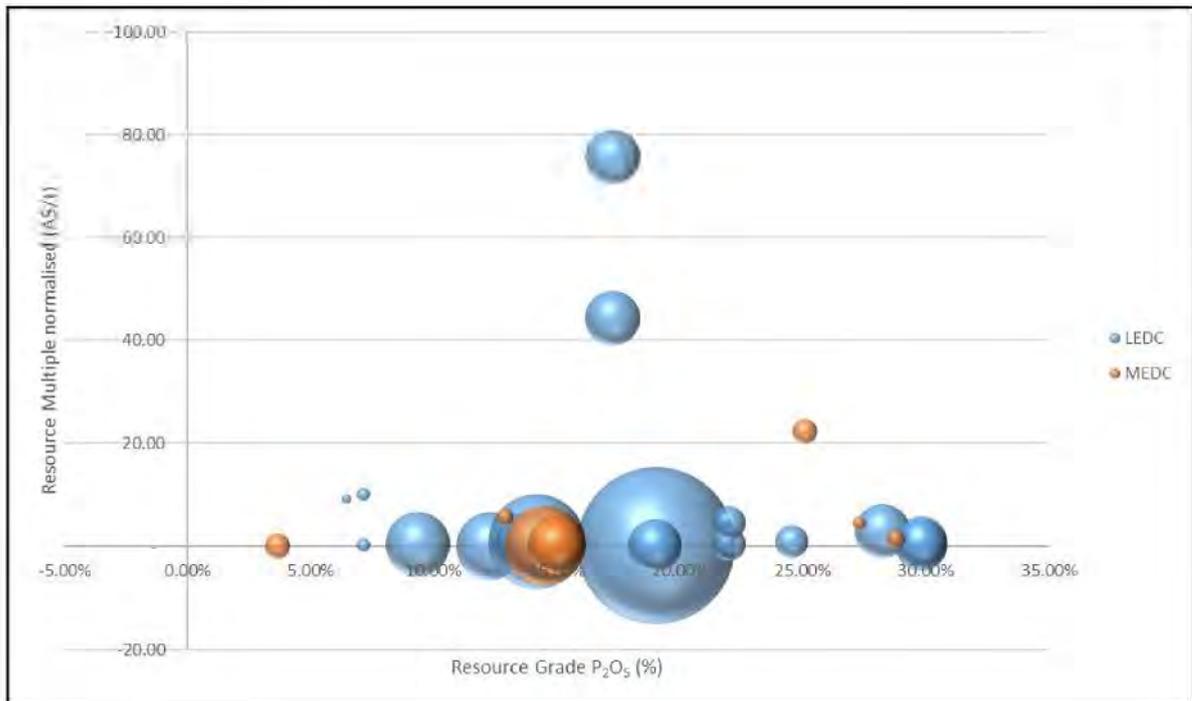
### 9.3.4 Market approach – Comparable transactions

SRK has reviewed phosphate transactions globally over the past 10 years to identify comparable transactions for analysis. Of the 76 transactions identified, 35 had sufficient information with which to derive meaningful transaction value multiples (A\$/t P<sub>2</sub>O<sub>5</sub> or A\$/km) that were considered useful.

Of those transactions, 25 (Appendix B) had sufficient information to derive resource-based transaction multiples. Three of these transactions involved mineral assets at the production stage, 17 involved assets at the pre-development/ development stage and feasibility stages, and the remaining five transactions involved mineral assets at the early to advanced exploration stage.

Where Exploration Targets were reported in accordance with the guidelines of the JORC Code (2012), SRK calculated the midpoint of the tonnage and grade ranges to derive a proxy for an implied resource value multiple for comparable purposes.

SRK's analysis of the implied resource value multiples based on the reported Mineral Resources is described in Figure 9-1 and Table 9-4. The selected comparable transactions are presented in Table 9-5. SRK has considered the implied values associated with deposits located in Less Economically Developed Countries (LEDC) and More Economically Developed Countries (MEDC).



**Figure 9-1: Analysis of resource multiple (A\$/t P<sub>2</sub>O<sub>5</sub>) vs resource grade (with resource shown as bubble size)**

Source: SRK analysis of transactions identified from S&P Global Market Intelligence and Company announcements.  
 Note: Outliers have been removed for graphical purposes.

**Comparable transactions – Baobab Project**

Based on its review of transactions involving similar phosphate projects to Avenira’s Baobab Project, SRK notes the implied transaction multiples shown in Table 9-4.

**Table 9-4: Resource based multiple transaction analysis - Baobab Project**

Statistical analysis	Transaction Resource multiple – Raw (A\$/t P <sub>2</sub> O <sub>5</sub> )	Transaction Resource multiple – Normalised (A\$/t P <sub>2</sub> O <sub>5</sub> )
<b>All resource multiples</b>		
Minimum	0.05	0.05
Median	0.64	0.70
Average	6.30	7.45
Maximum	49.68	75.68
Weighted average	3.61	5.15
<b>Comparative multiples in LEDC</b>		
Minimum	0.06	0.07
Median	0.54	0.58
Average	2.20	2.25
Maximum	10.86	10.05
Weighted average	0.59	0.62
<b>Comparative LEDC excluding high outliers, offshore projects and operating assets</b>		
Minimum	0.35	0.29
Median	0.43	0.43
Average	0.73	0.82
Maximum	2.08	3.03
Weighted average	0.73	0.86

SRK considers that the transactions involving the Farim asset are the most comparable to Avenira's Baobab Project (Table 9-5). The Farim phosphate deposit is located within the Middle Eocene Lutetian Formation, the same aged formation as at Baobab, and both projects are located within the Mauritania-Senegal-Guinea Cretaceous sedimentary basin. The Farim project also has a granted Mining Lease current for 25 years as of 2009. The Farim project's location in Guinea Bissau is considered by SRK to have more challenging infrastructure requirements and a significantly higher geopolitical risk than Senegal (Section 7.1.); however, this is partially offset by the higher grade of the Farim deposit relative to Baobab.

**Table 9-5: Comparable transactions considered by SRK for resource multiples**

Date	Project/ Company Name	Assets acquired	Buyer	Seller	Country
1/02/2011	Farim	Farim	Plains Creek Phosphate Corp.	Investor Group	Guinea-Bissau
25/02/2013	Farim	Farim	Plains Creek Phosphate Corp.	Investor Group	Guinea-Bissau
28/12/2017	GB Minerals Ltd	Farim	Itafos	GB Minerals Ltd	Guinea-Bissau

At the time of the February 2011 transaction, Farim had declared resources but full details of the transaction and project could not be located by SRK. The transaction data available implies a resource multiple of A\$0.64/t P<sub>2</sub>O<sub>5</sub> on a raw basis and A\$0.70/t P<sub>2</sub>O<sub>5</sub> on a normalised basis.

At the time of the February 2013 transaction, the Farim Project had a completed Feasibility Study with a Definitive Feasibility Study in progress. This transaction implies a resource multiple of A\$0.35/t P<sub>2</sub>O<sub>5</sub> on a raw basis and A\$0.29/t P<sub>2</sub>O<sub>5</sub> on a normalised basis.

In December 2017, Itafos and GB Minerals Ltd entered an agreement pursuant to which Itafos acquired all of the issued and outstanding common shares of GB Minerals not already owned directly or indirectly by Itafos in exchange for ordinary shares of Itafos or shares and cash. This transaction implies a resource multiple of A\$2.08/t P<sub>2</sub>O<sub>5</sub> on a raw basis and A\$3.03/t P<sub>2</sub>O<sub>5</sub> on a normalised basis. SRK notes that the Mineral Resources and Ore Reserves remain unchanged between the two transaction dates (2013 and 2017) but understands the Definitive Feasibility Study was largely completed (de-risked) since the 2013 transaction, which generally supports the increased multiple. SRK further notes that as a related party transaction, the transaction may not be fully representative of market value.

Using multiples implied by the Farim transactions exclusively (i.e. A\$0.30/t P<sub>2</sub>O<sub>5</sub> to A\$3.00/t P<sub>2</sub>O<sub>5</sub>) and applying these to the current Baobab total resource base of 362.1 Mt (or 59.37 Mt P<sub>2</sub>O<sub>5</sub> – comprising 48.37 Mt within the Exploitation Permit and 11.0 Mt in the Exploration Permit) implies a value range of between A\$14.51 M and A\$151.71 M on a 100% equity basis. On a net attributable basis this equates to A\$11.61 M and A\$121.37 M.

In consideration of the range of multiples paid for phosphate resources in LEDC (Table 9-5), including the Farim project, SRK considers the market has generally been paying between A\$0.45/t P<sub>2</sub>O<sub>5</sub> and A\$0.90/t P<sub>2</sub>O<sub>5</sub> (on a total resource basis). Application of these multiples to the currently defined Project resource base of 362.1 Mt (or 59.37 Mt P<sub>2</sub>O<sub>5</sub> – comprising 48.37 Mt within the Exploitation Permit and 11.0 Mt in the Exploration Permit) implies a value range of between A\$21.77 M and A\$45.51 M on a 100% equity basis. On a net attributable basis this equates to A\$17.41 M and A\$36.41 M.

Alternatively, it is not unreasonable to expect that the market may take account of the classification of the presently defined Mineral Resources (rather than just total resource) and as such SRK expects the market may pay between A\$0.60/t P<sub>2</sub>O<sub>5</sub> and A\$1.20/t P<sub>2</sub>O<sub>5</sub> for the defined Indicated Mineral Resources (41.8 Mt/ 8.11 Mt contained P<sub>2</sub>O<sub>5</sub>) and between A\$0.40/t P<sub>2</sub>O<sub>5</sub> and A\$0.60/t P<sub>2</sub>O<sub>5</sub> for the defined Inferred Mineral Resources (320 Mt/ 50.5 Mt contained P<sub>2</sub>O<sub>5</sub> – comprising 39.52 Mt within the Exploitation Permit and 11.0 Mt in the Exploration Permit ) at the Baobab Project. Applying these multiples implies a value range of between A\$20.67 M and A\$34.76 M on a 100% equity basis. On a net attributable basis this equates to A\$16.54 M and A\$27.81 M.

### Comparable transactions - Wonarah Project

Based on its review of transactions involving similar phosphate projects to the Wonarah Project, SRK notes the implied transaction multiples listed in Table 9-6.

**Table 9-6: Resource based multiple transaction analysis – Wonarah Project**

Statistical analysis	Transaction Resource multiple – Raw (A\$/t P <sub>2</sub> O <sub>5</sub> )	Transaction Resource multiple – Normalised (A\$/t P <sub>2</sub> O <sub>5</sub> )
<b>All resource multiples</b>		
Minimum	0.05	0.05
Median	0.64	0.70
Average	6.30	7.45
Maximum	49.68	75.68
Weighted average	3.61	5.15
<b>Comparative Multiples in MEDC</b>		
Minimum	0.05	0.05
Median	0.79	0.90
Average	5.93	4.32

Maximum	24.56	22.28
Weighted average	1.23	1.14
<b>Comparative MEDC excluding high outliers, offshore projects and operating assets</b>		
Minimum	0.05	0.05
Median	0.26	0.24
Average	0.44	0.50
Maximum	1.22	1.47
Weighted average	0.24	0.24

SRK considers that the transaction involving the Arganara asset is the most comparable to Avenira's Wonarah Project (Table 9-7).

**Table 9-7: Comparable Transactions considered by SRK for resource multiples**

Date	Project/ Company Name	Asset's acquired	Buyer	Seller	Country
11/03/2019	Verdant Minerals Ltd	Ammaroo, Arganara, Brunchilly, Karinga Lakes, Lagoon Creek, Mount Bundey, Patanelia	CD Capital Asset Management Limited	Verdant Minerals Ltd	Australia
2/02/2017	Ardmore project	Ardmore	Centrex Metals Limited	Incitec Pivot Limited	Australia
24/05/2013	Central Australian phosphate	Arganara	Rum Jungle Resources Limited	Central Australian Phosphate	Australia

Rum Jungle Resources Limited (RUM)'s acquisition of Central Australian Phosphate (Central) occurred in May 2013. At the time of the transaction, the key asset held by Central was the Arganara Deposit, which has since been amalgamated with RUM's adjacent project and is now called the Ammaroo project (as discussed below). In consideration of RUM's adjacent tenure and prospects, it also represents a strategic acquisition. SRK believes this is overall the most comparable transaction, as it was the sole asset involved in the acquisition and is highly similar to Wonarah in terms of resource size and resource grade, and is also located in the Northern Territory of Australia. The transaction implied a resource multiple of A\$0.37/t on a raw basis and A\$0.33/t on a normalised basis.

SRK notes that the acquisition of Verdant Minerals Ltd by CD Capital Management Ltd is the most recent transaction, dated 11 March 2019. Notably, it includes the Ammaroo Project, which is the most comparable to Wonarah in terms of resource size and grade. However, the transaction was for the entire company of Verdant Minerals, which also held multiple additional phosphate-containing Resources and or Exploration Targets. In addition, Verdant holds several advanced potash projects with resource estimates and a silica project, all located in Australia. In its valuation in December 2019, Optiro considered that approximately half of the value of Verdant Minerals was associated with the Phosphate assets for the determination of a peer multiple. Taking the same approach for the transaction multiple results in a phosphate resource multiple of A\$0.15/t and A\$0.16/t on a normalised basis.

The Ardmore Project was drilled in the 1970s and has been held under an ML ever since, although it was subject to renewal at the time of the deal. The project had over 300 drill holes and was historically considered as a potential satellite project to the Duchess Mine. At the time of the transaction, the

Ardmore Project had a small Exploration Target reported in accordance with the JORC Code (2012). The small tonnage and high-grade nature of this deposit and its location within an ML preclude direct comparison with the Wonarah deposit as smaller tonnage deposits are biased to higher multiples. The transaction implied a Resource multiple of A\$1.22/t on a raw basis and A\$1.47/t on a normalised basis.

Based on the available data, SRK considers the current market would pay between A\$0.10/t and A\$0.50/t for the defined Mineral Resources at Wonarah. In selecting this range, SRK is cognisant of the size and grade of the project but also its remote location in central Australia. The distance to port/markets has a significant impact on the project's economic viability in Australia.

### 9.3.5 Market approach – Peer analysis – Babobab

To assess the market value of the Avenir's Baobab phosphate resources and reserves, SRK has reviewed the enterprise value (EV) per resource/ reserve tonne of selected listed companies (ASX, AIM, OTC and TSX-V) with defined phosphate resources/ reserves. The enterprise value is based on each company's share price as at 1 July 2019 and the most recently reported financial and share registry information.

SRK has identified five companies with African phosphate resource projects in the advanced stages of assessment that can be considered broadly comparable to those held by Avenir – Celamin Holdings NL (Tunisia), Great Quest Fertilizer Limited (Mali), Kropz PLC (South Africa/ Republic of Congo), Minbos Resources Limited (Angola/ DRC) and Montero Mining and Exploration Ltd (South Africa). With regard to the assets held by each of these companies, SRK notes the following:

- In relation to Celamin, in April 2019, the Court of Appeal of Tunisia issued orders for the return of Celamin's 51% interest in the Chaketma Project, following a fraudulent transfer by Tunisian Mining Services (TMS) in 2015. The decision is final and cannot be lifted. Celamin is currently chasing damages from TMS of approximately US\$6.4 M (as at June 2019). The company also holds a 100% interest in the Djebba zinc/ lead exploration project in Tunisia. In 2012, the Company completed a scoping study on the Chaketma Project. The Gassaa El Kebira deposit (at the Chaketma Project but not included in the Resource estimate) outcrops but reaches a maximum depth of 157 m in the north of the deposit. The defined Mineral Resources are overlain by massive dolomite, which will likely require conventional drill and blast, load and haul truck and excavator operations. As such, SRK considers that Baobab is likely to trade at a premium to the multiple implied by Celamin's Chaketma asset.
- Great Quest's principal asset is the Tilemsi Phosphate Project located in Gao Province of eastern Mali, which hosts an Inferred Mineral Resource of 50 Mt at 24.3% P<sub>2</sub>O<sub>5</sub> (at a 10% P<sub>2</sub>O<sub>5</sub> cut-off grade) The Gao region of Mali has a higher risk profile than the remainder of the country (refer section 7.1.) and is currently classified by Country Risks as Political (medium), Operational (high), Security (extreme) and Terrorism (extreme) The phosphate mineralisation is of similar grade to that at Baobab and comprises apatite, with quartz, montmorillonite and kaolinite gangue minerals hosted within middle Eocene laminated siltstones and clays. The deposit is classified as Inferred and is smaller in size than Baobab. In April 2015, the company completed a preliminary economic assessment for the staged production of up to 1 Mtpa ROM from Tilemsi. Phosphate outcrops within the tenure, with an overall average strip ratio of 6.8:1, which is proposed to be mined through conventional truck and shovel (no drilling or blasting envisaged). Great Quest recently completed an acquisition of an Ivory Coast-based cashew processor, involving a change of business. However, Great Quest has said it will continue to focus on advancing its Tilemsi project and is currently awaiting renewals of its environmental and exploration permits. It submitted a mining permit application over the project in late 2018. As such, SRK considers that Baobab is likely to trade at a premium to the multiple implied by Great Quest's Tilemsi asset.

- In relation to Kropz PLC, the company completed its listing on AIM (Alternative Investment Market) in November 2018 and subsequently completed the acquisition of the mineral assets of Cominco (holder of the Hinda Project, a large undeveloped phosphate project in the Republic of Congo). Hinda is a free-dig operation, which was studied at Definitive Feasibility Study level in 2015. Kropz's Elandsfontein project is a free-dig operation targeting apatite mineralisation within poorly sorted, angular quartz sands and gravels on South Africa's west coast. It has been developed with capacity to produce circa 1 Mtpa of rock concentrate from a shallow mineral resource. Kropz also holds the Aflao Phosphate Project in Ghana. On the balance of its projects, SRK considers that Baobab is likely to trade broadly in line or at a slight discount to the multiple implied by Kropz's phosphate assets.
- The Angolan National Directorate of Mineral Resources revoked the Mineral Investment Contracts for Prospecting of Phosphate Rock in the Province of Cabinda in April 2019, effectively ending Minbos' involvement in the Cabinda Phosphate Project. Since this time, Minbos' only mineral asset has been the Ambato rare earth elements (REE) project in Madagascar. It is preparing to tender for new Rock Phosphate Exploration licences covering the key prospective areas covered by the terminated Mineral Investment Contracts in Angola with a local partner. Minbos has reportedly invested more than US\$20 M over 8 years on Angolan phosphate projects and developed specific technical knowledge. As such, SRK has elected to discount Minbos from further consideration.
- In relation to Montero Mining and Exploration Limited, its most advanced mineral asset is its 44% interest in the Duyker Eiland Phosphate Project located in the Western Cape Province of South Africa. Montero holds interests in several other early to advanced stage lithium, tin, uranium and rare earth exploration projects in Canada, Chile, Namibia, South Africa and Tanzania. A preliminary economic assessment in 2012 considered the economics associated with the development of a 490 ktpa product operation at Duyker Eiland. The phosphate deposit predominantly consists of unconsolidated phosphatic sand with thin, sporadic intercalations of hard, well-cemented layers. The licences comprising the broader Phosco project expired in February 2019 and the Company has only re-applied for the Prospecting Rights to Duyker Eiland due to a change in company's focus towards lithium exploration in Namibia. As such, SRK considers that Montero's Duyker Eiland asset is likely to be towards the upper end of the multiples applicable to the Baobab Project.

Based on its analysis for peer companies holding African phosphate resource projects, SRK considers the current market would pay between A\$0.70/t P<sub>2</sub>O<sub>5</sub> and A\$1.85/t P<sub>2</sub>O<sub>5</sub> held in Mineral Resource (on a 100% equity basis). Applying these multiples to the total resource base of 362.1 Mt (or 59.37 Mt P<sub>2</sub>O<sub>5</sub> – comprising 48.37 Mt within the Exploitation Permit and 11.0 Mt in the Exploration Permit) implies a value range of between A\$33.86 M and A\$93.55 M on a 100% equity basis. On a net attributable basis, this equates to a range between A\$27.09 M and A\$74.84 M.

Based on its analysis for peer companies holding African phosphate reserve projects, SRK considers the current market would pay between A\$1.40/t P<sub>2</sub>O<sub>5</sub> and A\$2.80/t P<sub>2</sub>O<sub>5</sub> held in Ore Reserve (on a 100% equity basis). Applying these multiples to the total reserve base of 39.3 Mt (7.4 Mt contained P<sub>2</sub>O<sub>5</sub>) implies a value range between A\$10.40 M and A\$20.80 M on a 100% equity basis. On a net attributable basis, this equates to a value range between A\$8.32 M and A\$16.62 M.

Considering multiples implied for the broader hemisphere of peer phosphate resource companies (excluding outliers), SRK notes the market has been paying between A\$0.70 and A\$1.60/t P<sub>2</sub>O<sub>5</sub>. Applying these multiples to the total resource base of 362.1 Mt (59.4 Mt contained P<sub>2</sub>O<sub>5</sub>) implies a value range of between A\$33.86 M and A\$80.91 M on a 100% equity basis. On a net attributable basis, this equates to A\$27.09 M and A\$64.73 M.

Considering multiples implied for the broader hemisphere of peer phosphate reserve companies (excluding outliers), SRK notes the market has been paying between A\$4.50 and A\$7.60/t P<sub>2</sub>O<sub>5</sub>. Applying these multiples to the total reserve base of 39.3 Mt (7.4 Mt contained P<sub>2</sub>O<sub>5</sub>) implies a value range of between A\$33.42 M and A\$56.45 M on a 100% equity basis. On a net attributable basis, this equates to A\$26.74 M and A\$45.16 M.

### 9.3.6 Market approach – Peer analysis – Wonarah Project

To assess the market value of the Avenir's phosphate Wonarah Resources, SRK has reviewed the enterprise value (EV) per resource tonne of selected listed companies (ASX, AIM, OTC and TSX-V) with defined phosphate resources/ reserves. The enterprise value is based on each company's share price as at 1 July 2019 and the most recently reported financial and share registry information.

SRK has identified three companies with Australian phosphate resource projects in the early to advanced stages of assessment that can be considered broadly comparable to those held by Avenir – Centrex Metals Ltd, Gibb River Diamonds and Parkway Minerals NL.

Regarding the assets held by each of these companies, SRK notes the following:

- Centrex Metals Limited is an Australia-based fertiliser mine developer. The company has two primary projects: the Ardmore phosphate rock project in Northwest Queensland and the Oxley potassium nitrate project in Western Australia. Centrex has completed a Definitive Feasibility Study for the Ardmore project, and begun project construction; a start-up plant has been commissioned and installation and commissioning is due from mid-2019.
- Gibb River Diamonds Ltd, formerly POZ Minerals Limited, is a multi-commodity resources company. The company is primarily involved in phosphate exploration, and also explores for gold, manganese, iron and uranium. The company holds interests in various projects, such as Blina diamond project (Blina), located in Ellendale, Western Australia; Highland Plains phosphate project, located in the Northern Territory; Laverton gold project, located in Laverton, Western Australia; Mount Monger gold project, located in Western Australia, and Horse Well gold project, located in Wiluna, Western Australia.
- Parkway Minerals NL, formerly Potash West NL, is an Australia-based exploration company. The company focuses on developing greensand deposits in Western Australia's Perth Basin. The company is engaged in exploration for minerals, namely phosphate and potash. The company's Dandaragan Trough Project focuses on exploiting a shallow deposit of greensand, which contains both rock phosphate and glauconite. The company is advancing its Dinner Hill Potash and Phosphate Deposit, north of Perth in Western Australia. The Dinner Hill project covers two horizontal greensand formations – the Poison Hill Greensand and the Molecap Greensand.

Based on its analysis for peer companies holding Australian phosphate resource projects, SRK considers the current market would pay between A\$0.30/t P<sub>2</sub>O<sub>5</sub> and A\$2.77/t P<sub>2</sub>O<sub>5</sub> held in Mineral Resource (on a 100% equity basis). Applying these multiples to the total resource base of 743 Mt (132.5 Mt contained P<sub>2</sub>O<sub>5</sub>) implies a value range between A\$39.76 M and A\$367.12 M on a 100% equity basis.

Considering multiples implied for the broader hemisphere of peer phosphate resource companies (excluding FertoZ outlier), SRK notes the market has been paying between A\$0.30/t P<sub>2</sub>O<sub>5</sub> and A\$2.50/t P<sub>2</sub>O<sub>5</sub>. Applying these multiples to the total resource base of 743 Mt (132.5 Mt contained P<sub>2</sub>O<sub>5</sub>) implies a value range of between A\$39.76 M and A\$331.34 M on a 100% equity basis.

Considering peer companies holding Australian phosphate resource projects (excluding the Ardmore outlier), SRK notes the market has been paying between A\$0.30/t P<sub>2</sub>O<sub>5</sub> and A\$0.46/t P<sub>2</sub>O<sub>5</sub>. Applying

these multiples to the total resource base of 743 Mt (132.5 Mt contained P<sub>2</sub>O<sub>5</sub>) implies a value range between A\$39.76 M and A\$60.97 M on a 100% equity basis.

### 9.3.7 Yardstick

As a cross-check to the values implied by market multiples, SRK has also considered standard industry yardsticks. Under the yardstick method of valuation, specified percentages of the spot price are used to assess the likely value. Commonly used yardstick factors are:

- Measured Mineral Resources - 2% to 5% of the spot price
- Indicated Mineral Resources - 1% to 2% of the spot price
- Inferred Mineral Resources - 0.5% to 1% of the spot price.

For the valuation of the Project, SRK considers it appropriate to use the Moroccan phosphate rock (68% to 70% BPL, contract, ex-Casablanca) price as at 30 June 2019 (the most recently published data) of US\$105/t P<sub>2</sub>O<sub>5</sub> (A\$146.40/t P<sub>2</sub>O<sub>5</sub> based on an exchange rate of A\$1:US\$0.687). The yardstick assumptions along with the implied values for the Baobab defined resources are listed in Table 9-8.

**Table 9-8: Yardstick assumptions and implied values for Baobab Project**

Mineral Resource Category	Percentage of spot price		Baobab price assumptions (A\$/t)		Implied value (A\$ M)	
	Low	High	Low	High	Low	High
Inferred	0.5%	1.0%	0.73	1.46	37.48	74.96
Indicated	1.0%	2.0%	1.46	2.93	11.96	23.92
Measured	2.0%	5.0%	2.93	7.32	-	-
<b>Total</b>					<b>49.44</b>	<b>98.88</b>

The yardstick assumptions along with the implied values for the Wonarah Project defined resources are listed in Table 9-9.

**Table 9-9: Yardstick assumptions and implied values for Wonarah Project**

Mineral Resource Category	Percentage of spot price		Wonarah price assumptions (A\$/t)		Implied value (A\$ M)	
	Low	High	Low	High	Low	High
Inferred	0.5%	1.0%	0.73	1.46	58.63	117.25
Indicated	1.0%	2.0%	1.46	2.93	76.78	153.56
Measured	2.0%	5.0%	2.93	7.32		
<b>Total</b>					<b>135.41</b>	<b>270.81</b>

In SRK's view, the yardstick method is likely to overvalue the stated resources at the Baobab and Wonarah projects as it only considers the defined resource base and not strategic factors such as proximity to infrastructure and length of tenure, for example.

## 9.4 Valuation of exploration tenure

In terms of exploration potential, SRK notes that both the comparable transaction and peer analysis methods encapsulate value attributable to exploration potential. However, SRK considers that in the case of Baobab it is appropriate to separately value to the exploration potential over and above that captured by peer company and transaction multiples. This additional value was considered appropriate in order to reflect the large, coherent tenure holding (1,163 km<sup>2</sup>) and the potential to delineate additional Mineral Resources outside of the current Exploitation Permit area (including that

associated with Exploration Targets immediately peripheral to the currently defined resource areas) not adequately captured through the use of market-based multiples.

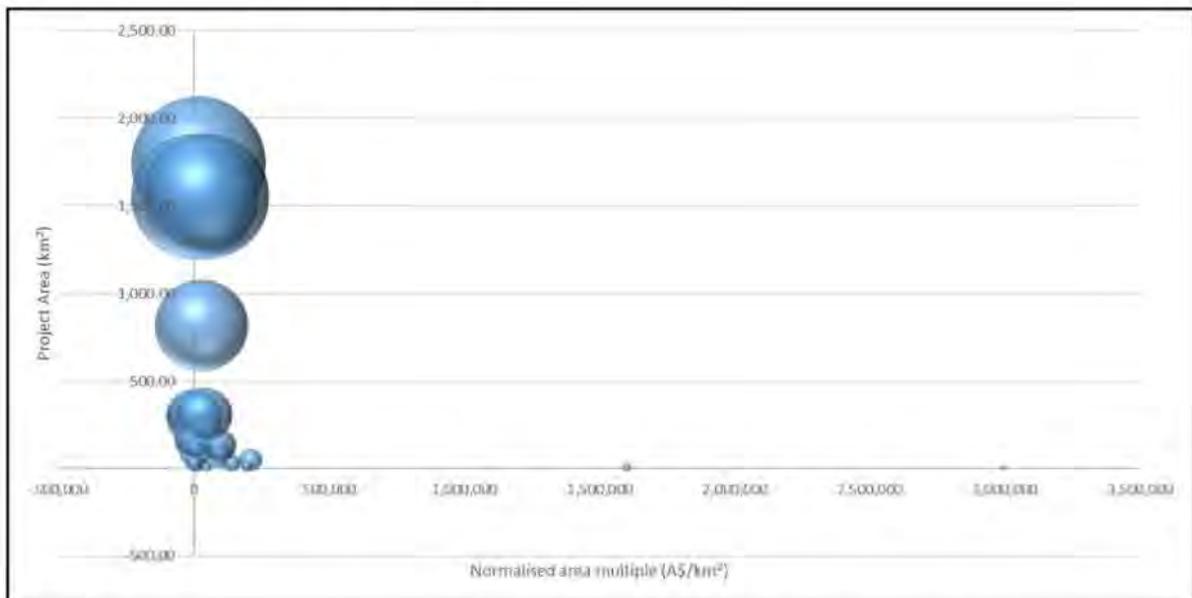
#### 9.4.1 Phosphate exploration multiples

To establish a benchmark market value for phosphate exploration properties, a search for transactions involving sizeable phosphate exploration projects was carried out in the period leading up to or about the Valuation Date.

Using SRK's internal databases and the S&P Global Intelligence subscription database, SRK compiled transactions involving early to advanced exploration stage assets with no reported Mineral Resources. The mineral assets incumbent in these transactions were assessed according to commodity type and project development categories as outlined in the VALMIN Code (2015).

Of the transactions identified, nine had no reported Mineral Resources or Exploration Targets (Appendix B).

SRK's analysis of the area-based transaction multiples is presented in Table 9-10. Details of the transactions are presented in Appendix B. Analysis of the transaction dataset on an area basis highlighted that projects with a larger area tend to have lower derived multiples (A\$/km<sup>2</sup>) relative to projects with smaller areas (Figure 9-2), which is similar to the results of the analysis undertaken on resource-based comparable transactions.



**Figure 9-2: All transactions – implied multiple vs area (with area shown as bubble size)**

**Table 9-10: Area-based multiples for early to advanced exploration assets**

Statistical analysis	Transaction Resource multiple – Raw (A\$/km <sup>2</sup> )	Transaction Resource multiple – Normalised (A\$/km <sup>2</sup> )
<b>All areas (excluding outliers)</b>		
Minimum	28.67	36.07
Median	44,623	51,107
Average	44,623	51,107
Maximum	164,045	209,324
Weighted Average	24,267	23,717
<b>Early stage (excluding projects with Resources or Exploration Targets)</b>		
Minimum	1,017	1,083
Median	59,366	72,380
Average	59,366	72,380
Maximum	164,045	209,324
Weighted Average	26,484	33,538
<b>Early stage (LEDC with no Resources)</b>		
Minimum	7,139	8,385
Median	95,721	110,992
Average	90,657	109,924
Maximum	164,045	209,325
Weighted Average	56,621	72,036
<b>Early stage (MEDC with no Resources)</b>		
Minimum	1,017	1,083
Median	3,142	5,268
Average	34,333	42,346
Maximum	156,684	195,220
Weighted Average	6,038	7,422

Source: SRK analysis

SRK has been unable to identify any transactions involving exploration tenure only that are comparable to the Project. SRK considers that the most comparative transactions are those involving projects in LEDC. However, of the four projects within this setting, all have a relatively small tenure size, which results in higher implied A\$/km<sup>2</sup> multiples overall (Figure 9-2), making direct comparison difficult. In SRK's opinion, application of the implied multiples to the broader Baobab exploration tenure would result in values that are too high and unable to be justified given the current exploration status outside of the defined resource areas.

SRK notes that transactions involving projects with larger tenure sizes (>500 km<sup>2</sup>) in LEDC; being the Farim (2011) and Bayovar transactions, have implied area multiples of between ~A\$15,000/km<sup>2</sup> and A\$60,000/km<sup>2</sup> on a normalised basis. However, these projects contain defined Mineral Resources and comparably sized tenure. In SRK's opinion, this provides an upper limit for large sized exploration tenure in LEDC.

SRK further notes that previous transactions involving the Baobab Project (on an area basis but with associated Mineral Resources defined) value the project at between A\$4,400/km<sup>2</sup> and A\$44,000/km<sup>2</sup> on a normalised basis.

On this basis, SRK has elected to adopt a multiple of between A\$5,000/km<sup>2</sup> (based on Baobab) and A\$15,000/km<sup>2</sup> (based on Farim) when valuing the broader exploration tenure associated with the Baobab Project. SRK has then applied a 50% discount to these multiples on the assumption that the exploration potential outside of the presently defined resource areas is unlikely to be developed on a standalone basis by Avenir prior to the development of the main Baobab Project.

Application of these multiples to 1,088.5 km<sup>2</sup> area (i.e. 1,163 km<sup>2</sup> less the 74.5 km<sup>2</sup> held in the Exploitation Permit) implies a value range of between A\$2.72 M and A\$8.16 M on a 100% equity basis. However, given the Exploration Permit is due to expire in July 2020 with no ability to renew, SRK considers the market would apply a significant discount to these values (80% to 100%). As such, SRK considers that the market would attribute a value of between A\$0 and A\$1.63 M on a 100% equity basis. On a net attributable basis, this equates to A\$0 to A\$1.30 M.

#### 9.4.2 Geoscientific rating

SRK has used the geoscientific rating method as a cross check for its estimated value of the exploration tenure associated with the Baobab Project. The geoscientific rating or modified Kilburn method of valuation attempts to quantify the relevant technical aspects of a property through appropriate multipliers (factors) applied to an appropriate base (or intrinsic) value. The intrinsic value is referred to as the base acquisition cost (BAC) and is critical because it forms the standard base from which to commence a valuation. It represents the 'average cost to identify, apply for and retain a base unit of area of title'.

Multipliers are considered for off-property aspects, on-property aspects, anomaly aspects and geology aspects. These multipliers are applied sequentially to the BAC to estimate the technical value for each tenement. A further market factor is then considered to derive a market value.

A BAC of A\$880/km<sup>2</sup> (average of exploration permits) has been assumed in this valuation (Appendix D). This BAC incorporates annual rental, administration and application fees, in addition to nominal indicative minimum expenditure on acquisition.

In converting its implied technical value to a market value, SRK considers that market participants would not apply either a premium or discount to the technical value of the exploration tenure given the current market sentiment (as reflected by recent phosphate pricing, market activity and initial public offerings involving phosphate assets). SRK has therefore allocated a market factor of 1.0 to the analysis. The rating criteria used for assessing the modifying factors are provided in Table 9-11. These rating criteria have been modified by SRK.

Application of these factors to a 1,088.5 km<sup>2</sup> area (i.e. 1,163 km<sup>2</sup> less the 74.5 km<sup>2</sup> held in the Exploitation Permit) implies a value range of between A\$2.87 M and A\$10.78 M on a 100% equity basis. However, given the Exploration Permit is due to expire in July 2020 with no ability to renew, SRK considers the market would apply a significant discount to these values (80% to 100%). As such, SRK considers that the market would attribute a value of between A\$0 and A\$2.17 M on a 100% equity basis. On a net attributable basis, this equates to A\$0 to A\$1.74 M.

**Table 9-11: SRK's modified property rating criteria**

Rating	Off-property factor	On-property factor	Geological factor	Anomaly factor
0.1			Unfavourable geological setting	No mineralisation identified – area sterilised
0.5	Unfavourable district/ basin	Unfavourable area	Poor geological setting	Extensive previous exploration provided poor results
0.9			Generally favourable geological setting, under cover or complexly deformed or metamorphosed	Poor results to date
1.0	No known mineralisation in district	No known mineralisation on lease	Generally favourable geological setting	No targets outlined
1.5	Minor workings	Minor workings or mineralised zones exposed		
2.0	Several old workings in district	Several old workings or exploration targets identified	Multiple exploration models being applied simultaneously	Target identified, initial indications positive
2.5			Well-defined exploration model applied to new areas	
3.0	Mine or abundant workings with significant previous production	Mine or abundant workings with significant previous production	Significant mineralised zones exposed in prospective host rock	Significant grade intercepts evident but not linked on cross sections or long sections
3.5				
4.0	Along strike from a major deposit	Major mine with significant historical production	Well-understood exploration model, with valid targets in structurally complex area, or under cover	Several economic grade intercepts on adjacent sections
5.0	Along strike for a world class deposit		Well-understood exploration model, with valid targets in well understood stratigraphy	
6.0			Advanced exploration model constrained by known and well-understood mineralisation	
10.0		World class mine		

Source: Modified after Xstrat, 2009 and Agricola Mining Consultants, 2011

**Table 9-12: Geoscientific approach – modified Kilburn rating**

Permit	Area* (km <sup>2</sup> )	BAC	Equity Interest	Off-property		On-property		Anomaly		Geology		Market Factor	Valuation (A\$ M)	
				Low	High	Low	High	Low	High	Low	High			
Exploration Permit	1,088.5	957,850	100%	1.0	1.5	2.0	2.5	1.5	2.0	1.0	1.5	1	2.87	10.78
												<b>Total</b>	<b>2.87</b>	<b>10.78</b>

Source: SRK Analysis; \*1,163 km<sup>2</sup> less the 74.5 km<sup>2</sup> held in the Exploitation Permit.

## 10 Valuation Summary

RSM has commissioned SRK to prepare an Independent Specialist Report incorporating a technical assessment and valuation of the Baobab Phosphate Project held by Avenira. This Report has been prepared under the guidelines of the VALMIN Code (2015), which incorporates the JORC Code (2012).

For this valuation, SRK conducted a high-level review of the available Mineral Resources and Ore Reserves at the Projects, for the purpose of determining their validity from a valuation perspective.

### 10.1 Discussion – Baobab Project

SRK has elected to consider only the underlying stated Mineral Resources for valuation purposes as the life of mine plan presented for review is conceptual and further work is required with regards to the Project costing estimates. As such, use of an Income Approach for valuation was not considered to be reasonable at this time.

Table 10-1 summarises the market value at the effective Valuation Date. Based on its review of the values implied by the various valuation methodologies, SRK considers the market would pay in the range between A\$27.0 M and A\$55.0 M, with a preferred value of A\$41.0 M, for a 100% interest in the Baobab Project held by Avenira, as at the Valuation Date.

In assigning these values, SRK has placed greater weight on the values implied by the Comparable Transactions and Peer Analysis to inform its overall valuation range. The preferred value overall was simply the midpoint of the value range, as SRK has no preference to either end of the value range. In doing so, SRK is cognisant of the value attributed to the Project by Optiro (a suitably qualified mining consultancy) in February 2019 and the fact that since that time Avenira has delivered the results of its Phase 1 Feasibility Study. However, further work is required in de-risking the Project during Phase 2 of the Feasibility Study.

For the determination of the value of the exploration potential, SRK has selected the mid-point of the values implied by both the comparable market and geoscientific rating approaches. Given that the value to be derived from this exploration potential is as a direct result of the development of the Baobab Resources, SRK has selected its preferred value towards the lower end of the range. This is also to recognise that the value attributable to exploration potential becomes less material to overall project value as development becomes increasingly likely and that the Exploration Permit is not renewable beyond July 2020. On a net attributable basis, SRK values Avenira's 80% interest in the Baobab Project at between A\$21.6 M and A\$44.0 M, with a preferred value of A\$32.8 M.

### 10.2 Discussion – Wonarah Project

SRK has elected to consider only the underlying stated Mineral Resources for valuation purposes as there are no current or valid mining studies or Reserves on which to base a cashflow model. As a result of recent relinquishments including the ML, the stated Resource at Wonarah encapsulates almost the entirety of the exploration licence area. Therefore, SRK does not consider that a valuation of the remaining exploration potential is warranted or material. SRK's selected values were based on the range defined by the Verdant and Central Australian transactions, which SRK considers are the most comparable. SRK's final and preferred value for Wonarah was simply the midpoint of the value range, as SRK has no preference to either end of the value range.

SRK considers there are a number of issues with the Wonarah Project that the market would likely consider material, such as:

- The commercial viability of the IHP technology is potentially critical to the economic viability of the Wonarah Project. There are already several large phosphate projects with Mineral Resources of a similar grade and size located more favourably in terms of infrastructure and logistics. These projects have sufficient size and scale to fulfil immediate demand with more favourable economics. Therefore, until this technology is successfully demonstrated, SRK considers the market would be unlikely to invest in the Wonarah Project.
- The market would also apply a discount for the likely high capital costs associated with the development as suggested by the previous (albeit incomplete) studies, likely requiring the involvement of a joint venture partner or stringent financing conditions.

For these reasons, SRK considers the current market would apply a 50% discount to implied values associated with the Wonarah Project (Table 10-1). This discount is based on SRK's opinion as to the market perception of a stranded asset, high capital expenditure requirements and reliance on the IHP technology for economic viability. To SRK's knowledge, there is no empirical data to provide support for the level of discount, however SRK considers that its discount is not unreasonable as its derived value is broadly aligned with that determined by Optiro in February 2019. On a 100% equity basis, SRK considers the current market would pay in the range A\$6.01 M to A\$16.02 M for the Wonarah Project, with a preferred value of A\$9.01 M.

**Table 10-1: Valuation summary – 100% basis – as at 1 July 2019**

Project	Asset	Valuation Method	Low (A\$M)	High (A\$M)	Preferred (A\$M)
Baobab	Resources / Reserves	Actual Transactions – Apr 2015 (100 M)	22.25	23.26	
		Actual Transactions – Apr 2015 (140 M)	31.44	32.87	
		Actual Transactions – Nov 2015	220.57	230.60	
		Comparable Transactions – Farim only	14.15	151.71	
		Comparable Transactions – LEDC (total)	21.73	45.51	
		Comparable Transactions – LEDC (accounting for resource confidence)	20.67	34.76	
		Peer Analysis – African focus (Resource)	33.86	93.55	
		Peer Analysis – African focus (Reserve)	10.40	20.85	
		Peer Analysis – All (Resource)	33.86	80.91	
		Peer Analysis – All (Reserve)	33.42	56.45	
		Yardstick	49.44	98.88	
		<b>Selected</b>	<b>27.0</b>	<b>55.0</b>	<b>41.0</b>
	Exploration Potential	Comparable Transactions	0	1.30	
		Geoscientific Rating	0	1.74	
		<b>Selected</b>	<b>0</b>	<b>1.52</b>	<b>0</b>
		<b>Total</b>	<b>27.0</b>	<b>56.5</b>	<b>41.0</b>
Wonarah	Resources	Comparable Transactions (by Resource category)	18.50	31.75	23.74
		Comparable Transactions (Preferred Total Resource)	12.01	32.04	18.02
		Peer Analysis (MEDC)	39.76	331.34	185.55
		Peer Analysis (Australian projects)	39.76	367.12	203.44
		Peer Analysis (Australian projects excluding outliers)	39.76	60.97	50.36
		Yardstick	135.41	270.81	203.11
		<b>Selected</b>	<b>12.01</b>	<b>32.04</b>	<b>18.02</b>
		<b>50% discount</b>	<b>6.01</b>	<b>16.02</b>	<b>9.01</b>
		<b>Total</b>	<b>6.01</b>	<b>16.02</b>	<b>9.01</b>

Note: Any discrepancies between values in the table are due to rounding.

### 10.3 Discussion on SRK’s valuation range

In assigning its valuation range and preferred value, SRK is mindful that the valuation range is also indicative of the uncertainty associated with advanced stage exploration/ development assets.

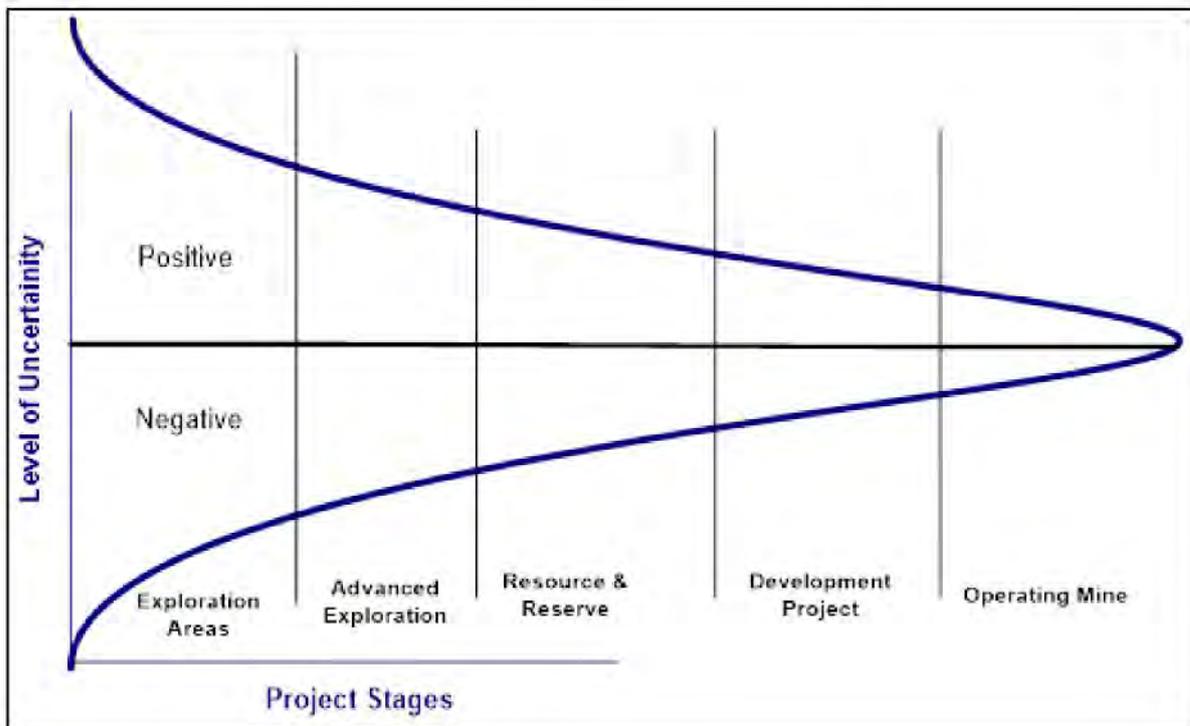
The range in value is driven by the confidence limits placed around the size and grade of mineralised occurrences assumed to occur within each project area. Typically, this means that as exploration progresses, and a prospect moves from an early to advanced stage prospect, through Inferred, Indicated or Measured Mineral Resource categories to Reserve status, there is greater confidence around the likely size and quality of the contained phosphate and its potential to be extracted profitably.

Table 10-2 presents a general guide of the confidence in targets, resource and reserve estimates, and hence value, referred to in the mining industry.

**Table 10-2: General guide regarding confidence for target and Resource/ Reserve estimates**

Classification	Estimate range (90% confidence limit)
Proven/ Probable Reserves	±5 to 10%
Measured Mineral Resources	±10 to 20%
Indicated Mineral Resources	±30 to 50%
Inferred Mineral Resources	±50 to 100%
Exploration target	+100%

This level of uncertainty with advancing project stages can be seen in Figure 10-1.



**Figure 10-1: Uncertainty by advancing exploration stage**

Estimated confidence of ±60% to 100% or more, are not uncommon for exploration areas and are within acceptable bounds, given the level of uncertainty associated with early stage exploration assets. By applying narrower confidence ranges, one is implying a greater degree of certainty regarding these assets than may be the case in reality. Where possible, SRK has endeavoured to narrow its valuation range.

## 10.4 Valuation risks

SRK is conscious of the risks associated with valuing assets which can impact the valuation range. In defining its valuation range, SRK notes that there are always inherent risks involved when deriving any arm's length valuation. These factors can ultimately result in significant differences in valuations over time. The key risks include but are not limited to risks outlined in the following subsections.

### 10.4.1 Resources and Reserves

Resources and Reserve estimates prepared under the JORC Code (2012) are best estimates based on individual judgement and reliance upon knowledge and experience using industry standards and the available database. SRK deems the resource to reserve conversion to be moderate to high risk.

### 10.4.2 Mining and production risk

While SRK considers the risk associated with mining and infrastructure to be low, it considers the processing risk to be moderate.

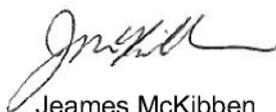
### 10.4.3 Environmental risk

SRK considers the environmental risk at the Project to be moderate, given several appropriate approvals and permits are in place.

### 10.4.4 Land access

SRK considers the land access risk to be low, given the status of the tenure at the Valuation Date.

#### Compiled by



Jeames McKibben

Principal Consultant

#### Peer Reviewed by



Karen Lloyd

Associate Principal Consultant

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*World Bank Group. 2019. Commodity Markets Outlook, Food Price Shocks: Channels and Implications, April. World Bank, Washington, DC. License: Creative Commons Attribution CC BY 3.0 IGO.*

# Appendices

## **Appendix B: Phosphate Transaction Analysis**



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5 August 2019

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By email: [jmckibben@srk.com.au](mailto:jmckibben@srk.com.au)

Dear Jeames

**Avenira Limited**

Further to our initial instruction letter dated 4 July 2019, RSM Corporate Australia Pty Ltd ("RSM") has been engaged by the Directors of Avenira Limited ("AEV" or "the Company") to prepare an Independent Expert's Report ("IER") in relation to the proposed sale of certain assets to related parties of the Company ("Proposed Transaction").

RSM is to prepare an IER stating whether, in the expert's opinion, the Proposed Transaction is fair and reasonable to the non-associated Shareholders of AEV.

AEV has a number of exploration and development assets that form a significant component of the value of the Company.

In order to complete the IER, we require an independent valuation prepared in accordance with the VALMIN Code for the Baobab Phosphate Project located in Senegal and the Wonarah Project located in the Northern Territory of Australia.

We request SRK provide this scope of works. Please note that whilst you will be preparing this report for RSM, AEV will be responsible for the payment of your fees.

We look forward to working with you on this assignment.

Yours faithfully

NADINE MARKE  
Director

**THE POWER OF BEING UNDERSTOOD**  
AUDIT | TAX | CONSULTING

RSM Corporate Australia Pty Ltd is beneficially owned by the Directors of RSM Australia Pty Ltd. RSM Australia Pty Ltd is a member of the RSM network and trades as RSM. RSM is the trading name used by the members of the RSM network. Each member of the RSM network is an independent accounting and consulting firm which practices in its own right. The RSM network is not itself a separate legal entity in any jurisdiction.

RSM Corporate Australia Pty Ltd ABN 82 050 508 024 Australian Financial Services Licence No. 255847

**Table B-1: Phosphate transactions with Mineral Resources**

Project	Country	Date	Vendor	Purchaser	Consideration (100% basis) (A\$ M)	Tonnage (Mt)	Total P <sub>2</sub> O <sub>5</sub> (%)	Contained P <sub>2</sub> O <sub>5</sub> (Mt)	Implied Value (A\$/t)	Implied Value Normalised (A\$/t)
Nolans Bore	Australia	Mar-09	East China Non-Ferrous International Mineral	Arafura Resources Ltd	96.00	30.30	13%	3.91	24.56	5.65
Verdant Minerals Ltd	Australia	Mar-19	CD Capital Asset Mgmt Ltd.	Verdant Minerals Ltd	25.78	610.00	15%	88.48	0.29	0.31
Mejillones phosphate deposit	Chile	Oct-14	Mining Global Inc.	Xtract Resources Plc	0.74	130.00	?	8.45	0.09	0.10
Korella (include Yttrium) + other	Australia	Jan-13	Australia New Agribusiness & Chemical Group	Krucible Metals Ltd	12.00	8.30	27%	2.27	5.30	4.52
Ardmore project	Australia	Feb-17	Centrex Metals Limited	Incitec Pivot Limited	5.00	14.25	29%	4.10	1.22	1.47
Central Australian phosphate	Australia	May-13	Rum Jungle Resources	Central Australian Phosphate	17.00	310.00	15%	46.50	0.37	0.33
Dissimieux Lake property	Canada	Mar-16	Genius Properties Ltd.	Jourdan Resources Inc.	0.40	235.00	4%	8.58	0.05	0.05
Mineral rights	USA	Nov-17	Itafos	Nutrien Ltd.	130.96	33.13	25%	8.32	15.75	22.28
Offshore Project Sandpiper/Meob Phosphate JV	Namibia	Oct-12	Mawarid Mining LLC	Minemakers Ltd	58.82	1,820.51	19%	346.81	0.17	0.14
Bomfim project	Brazil	Sep-14	DuSolo Fertilizers Inc.	Quantum Fertilizantes do Tocantins Ltda	9.40	18.66	6%	1.21	7.80	9.16
Duyker Eiland project	South Africa	Mar-15	Ovation Capital	Montero Mining and Exploration Limited	25.47	32.80	7%	2.35	10.86	10.05
Stonegate Agricom Ltd	USA / Peru	May-17	Itafos	Stonegate Agricom Ltd	3.52	519.89	12%	63.93	0.06	0.07

Project	Country	Date	Vendor	Purchaser	Consideration (100% basis) (A\$ M)	Tonnage (Mt)	Total P <sub>2</sub> O <sub>5</sub> (%)	Contained P <sub>2</sub> O <sub>5</sub> (Mt)	Implied Value (A\$/t)	Implied Value Normalised (A\$/t)
Itafos	Brazil, Guinea- Bissau, Peru, USA	May-19	CL Fertilizers Holding LLC	Undisclosed seller	114.87	903.15	14%	128.07	0.90	0.95
Phosco Project (Phillips Kraal, Duyker Eiland)	South Africa	Oct-11	Motero Mining and Exploration Ltd	Eurozone Investments Limited	0.82	32.80	7%	2.35	0.35	0.29
Yichang Maple Leaf Chemicals	China	Jan-12	Hong Tang Vision Ltd	Spur Ventures Inc	18.00	60.26	25%	14.79	1.22	0.99
Petril Phosphate limited	Angola	Dec-16	Minbos Resources Limited	Petril Phosphate limited	20.74	606.40	9%	56.79	0.37	0.40
GB Minerals	Guinea- Bissau	Dec-17	Itafos	GB Minerals Ltd	84.09	143.20	28%	40.44	2.08	3.03
Farim	Guinea- Bissau	Feb-13	Plains Creek Phosphate Corp	Investor Group	13.40	128.00	30%	38.17	0.35	0.29
Farim	Guinea- Bissau	Feb-11	Plains Creek Phosphate Corp	Investor Group	24.48	128.00	30%	38.17	0.64	0.70
Bayovar (5-8) Property	Peru	Feb-16	Americas Potash Peru S.A.	Peruvian Group	24.67	430.20	14%	59.55	0.41	0.39
Baobab project	Senegal	Apr-15	Minemakers Limited	Investor group	6.70	68.00	22%	14.96	0.45	0.46
Baobab project	Senegal	Nov-15	Mimran Natural Resources	Minemakers Limited	78.00	68.00	22%	14.96	5.21	4.56
Bayovar project	Peru	Mar-10	Mitsui	Vale S.A.	1,199.86	239.00	17%	41.32	29.04	44.24
Baobab project	Senegal	Jul-19	Investor group	Avenira Limited	7.71	207.90	19%	39.50	0.20	0.20
Bayovar project	Peru	Mar-10	Mosaic	Vale S.A.	2,052.68	239.00	17%	41.32	49.68	75.68

## Notes:

Where only exploration targets had been reported, the midpoint of the tonnes and grade has been used to provide comparable datasets for analysis.

**Table B-2: Phosphate transactions with no Mineral Resources (Exploration tenure only)**

Project	Country	Date	Vendor	Purchaser	Consideration (100% basis) (A\$ M)	Total area (km <sup>2</sup> )	Transaction Area multiple (\$A/km <sup>2</sup> )	Transaction Area multiple Normalised (\$A/km <sup>2</sup> )
Busumbu project	Uganda	Jun-18	North Atlantic Mining Associates Ltd	Hipo Resources Limited	7.89	48.10	164,045	209,324
Mejillones project	Chile	Jan-18	Handa Mining Corporation	Buccaneer Holdings Ltd.	4.60	82.00	56,096	84,482
Arapua fertilizer project	Brazil	Sep-14	Triunfo Mineracao do Brasil Ltda	Undisclosed seller	1.07	149.46	7,139	8,385
Rio Grande	Brazil	Jul-11	Agua Resources Ltd	Cia Brasileira De Cobre	3.91	28.85	135,346	137,503
Itouk Lake property	Canada	Mar-15	Glen Eagle Resources Inc.	Investor group	0.28	35.53	7,834	7,247
Picnic phosphate property	Canada	Apr-14	Jourdan Resources Inc.	Satori Resources Inc	1.82	11.60	156,684	195,220
Hache property	Canada	Oct-13	Jourdan Resources Inc.	Private investor - Gene Leong	0.27	87.00	3,142	5,268
Nathalie	Canada	Mar-13	Randsburg International Gold Corp	Private interest	0.08	25.50	2,987	2,910
Dandaragan	Australia	Mar-11	Dempsey Minerals Ltd	Kimba Resources Pty Ltd	0.30	295.00	1,017	1,083

## **Appendix C: Peer Analysis**

Table C-1: Peer Analysis – Global Phosphate Developers to early Producers

Company	Project	Interest	Stage Complete	Country	Listing	EV AS\$m	Market Cap AS\$m	Attributable			Targeted Production		CAPEX US\$m	Capital Intensity US\$/tpa	Opex US\$/t	Received Price US\$/t	Margin %	EVt P <sub>2</sub> O <sub>5</sub>	
								Resource Mt	Grade %P <sub>2</sub> O <sub>5</sub>	Reserve Mt	Grade %P <sub>2</sub> O <sub>5</sub>	Mtpa						Grade	Resource
Aguia Resources	Total	100%	DFS	Brazil	TSXV	25.4	26.1	162.95	4.83%	43.6	4.30%	30.1/32.7%	75.6	252	82	133	38%	3.23	13.55
	Rio Grande	100%	DFS	Brazil				107.81	4.03%	43.6	4.30%	30.1/32.7%	75.6	252	82	133	38%		
	Lucena	100%	Resource	Brazil				55	6.40%	NA	NA	NA	NA	NA	NA	NA	NA		
Ariarne Phosphate	Lac a Paul	100%	FS	Canada	TSXV	98.9	68.6	1343	6.70%	617.49	6.80%	3	1,214.70	405	93.7	176	47%	1.10	2.43
Celamin Holdings NL	Chaketma	51%	Scoping	Tunisia	ASX	9.3	10.2	66.3	20.50%	NA	NA	1.5	364.2	242.8	55	165	67%	0.68	
Centrex Metals Ltd	Ardmore	100%	DFS	Australia	ASX	32.8	34.7	16.2	26.80%	10.1	30.20%	0.8	63.70	85.9	99	154	36%	7.55	10.75
Chatham Rock Phosphate	Chatham Rise	100%	Resource	NZ	NZC	4.6	4.9	80	NA	NA	NA	NA	NA	NA	NA	NA	NA		
CROPS Inc	Bayovar 12	70%	PFS	Peru	TSXV	9.6	1.5	230.6	13.10%	41.2	12.90%	1	167.70	168	69.83	150	60%	0.32	1.81
Fengro Industries	Bonfim	100%	Expansion	Brazil	TSXV	2.5	1.1	12.77	6.24%	NA	NA	0.1	1.20	15	18.47	57.5	68%	3.14	
Fertoz	Wapiti/Femie	100%	Construct	Canada	ASX	17.6	20.6	1.54	21.60%	NA	NA	0.08	2.20	27.5	\$169-\$201	204.4	32%	52.91	
Gibb River Diamonds	Highland Plains	100%	PFS	Australia	ASX	3.9	5.4	53	16.00%	NA	NA	3	385.50	128.5	NA	NA	NA	0.46	
Great Quest Fertilizer	Tilemsi	94%	PEA	Mali	TSXV	6.9	6.4	46.99	24.30%	NA	NA	0.04	265.10	6627.5	\$168-\$177	\$262-\$350	NA	0.60	
GroMax Resources Corp	Bayovar	92%	PEA	Peru	TSXV	-9.6	19.8	560.37	13.25%	NA	NA	1	557.00	557	\$94	\$137	31%	-0.13	
Harvest Minerals	Arupua	100%	PEA	Brazil	AIM	4.8	16.7	13.1	2.50%	NA	NA	0.32	0.80	2.5	\$7.90	62	88%	14.66	
Italcos	Total	Various	Various	Various	TSXV	466.6	221	903.23	14.19%	186.13	16.88%	3.897	633.00	NA	NA	NA	41%	3.64	15.03
	Conda	100%	Production	US				33.13	25.10%	15.13	25%	0.547	Fertilisers	NA	430	NA	NA		
	Arrais	100%	Production	Brazil				91.7	4.80%	64.8	5.10%	0.5	17.5	NA	140	180	22%		
	Paris Hills	100%	FS	US				104.1	25.10%	16.7	29.50%	0.9	121	134	69.49	165	56%		
	Farim	100%	FS	G-Bissau				143.2	28.20%	44	30%	1.32	205.3	156	67	109.7	39%		
	Santana	100%	FS	Brazil				87	10.10%	45.5	12.90%	0.51	393	771	161	260	50%		
	Araxa	100%	PFS	Brazil				28.3	8.00%	NA	NA	NA	NA	NA	NA	NA	NA		
	Maniara	100%	PFS	Peru				415.8	9.10%	NA	NA	1.25	NA	NA	NA	NA	NA		
KROPZ PLC	Total	Various	Various	Various	AIM	101.6	80.1	743.8	9.70%	448	10.80%	1.67	111.30	67	54.5	100	45%	1.41	2.10
	Elandsfontein	74%	Restart	South Africa				74.8	7.70%	47.1	9.60%	0.785	13.6	17	59.94	97.2	38%		
	Hinda	99%	DFS	R-Congo				669	10.00%	400.9	11	1.1	102.3	93	51.85	101.5	49%		
Mitbox Resources	Total	Various	FS	Various	ASX	2.9	5.7	224.32	9.89%	NA	NA	0.8	157.10	196	57.22	119.9	52%	0.13	
	Cabinda	50%	FS	Angola				195.65	9.26%	NA	NA	0.8	157.1	196	57.22	119.9	52%		
	Kanzi	49%		DRC				28.66	14.20%	NA	NA	NA	NA	NA	NA	NA	NA		
Montero Mining and Exploration Limited	Duyker Eiland	44%	PEA	South Africa	TSXV	1.9	1.9	14.4	7.15%	NA	NA	0.49	129.50	264	81.53	100	18%	1.85	
Parkway Minerals NL	Dandaragan Trough	100%	Scoping	Australia	ASX	3.5	3.9	910	1.28%	NA	NA	0.4	204.50	511	132.82	224	41%	0.30	
Revival Gold	Diamond Mountain	80%	Resource	USA	TSXV	29.5	29.8	48.8	19.67%	NA	NA	NA	NA	NA	NA	NA	NA	3.07	
										Average								5.0	7.6
										Median								1.1	6.6
										Weighted average								1.27	4.55

## Peer Companies

SRK notes that as part of its analysis, the following companies were considered. However, not all companies were analysed as initial review highlighted a materially different development level to that at Baobab; hence these were excluded from future analysis.

Agua Resources	Agua Resources Limited is a fertiliser company engaged in the exploration and development of resource projects in the resources sector. The company's projects include Lucena Phosphate Project and Rio Grande Project. The company's Rio Grande deposit consists of the Tres Estradas, Joca Tavares, and Porteira carbonatite-hosted phosphate and the Cerro Preto sediment-hosted phosphate deposits.
Arianne Phosphate	Arianne Phosphate Inc., formerly Arianne Resources Inc., is a Canada-based development-stage phosphate mining company. The company is engaged in the acquisition and exploration of mining properties in Quebec, Canada. The company operates through the segment of acquisition, exploration and development of mining properties. The company is focused on developing a phosphate mine by concentrating its resources on the Lac a Paul phosphate rock project.
Celamin Holdings NL	Celamin Holdings Ltd, formerly Celamin Holdings NL, is an Australia-based company, which focuses on exploration and evaluation of phosphate projects in Tunisia. The company is an investor in a JV company, which operates as an explorer for phosphate and minerals with exploration activities being performed in Tunisia. The company focuses on the Chaketma phosphate project, which is held in partnership by Celamin Limited and Tunisian Mining Services S.A. (TMS). The Chaketma phosphate project is located approximately 210 km southwest of Tunis.
Centrex Metals Ltd	Centrex Metals Limited is an Australia-based fertiliser mine developer with two primary projects, the Ardmore phosphate rock project in northwest Queensland and the Oxley potassium nitrate project in Western Australia.
Chatham Rock Phosphate	Chatham Rock Phosphate Ltd, formerly Antipodes Gold Limited, is a New Zealand-based development-stage company. The company is an exploration and development company, which intends to become a diversified phosphate explorer and developer. The company operates through the gold exploration segment. The company's subsidiaries include Glass Earth (New Zealand) Limited, HPD New Zealand Limited, Glass Earth Mining Limited, Glass Earth Geothermal Limited and others.
Crops Inc.	Crops Inc. is a Canada-based company engaged in agricultural chemicals development business sector. The company is developing the Bayovar 12 phosphate deposit in northern Peru. Bayovar 12 is a source of reactive sedimentary phosphate rock a key raw material input for phosphate fertilisers. Reactive phosphate rock from Sechura is a natural source of phosphorus that can be applied directly to crops. Additionally, elemental phosphorus from Bayovar 12 can be used in various industrial applications.
Fengro Industries Corp	Fengro Industries Corp, formerly known as DuSolo Fertilizers Inc. is a Canada-based company. The company is a vertically integrated producer of phosphate-based fertilisers in Brazil. The company owns three agro-mineral projects, Bomfim, Ruth and Samba, all of which are located within the Cerrado.
Fertoz	Fertoz Limited is an Australia-based phosphate marketing and development company that markets a range of fertiliser products in North America and Australia. The company's principal activities are phosphate exploration and development in British Columbia, Canada and marketing of phosphate-based fertiliser in Australia. The company's operating segments include Australia, Canada and USA. The company's projects include Wapiti East project, Crow's Nest phosphate project, Barnes Lake phosphate project and the Marten project.
Gibb River Diamonds	Gibb River Diamonds Ltd, formerly POZ Minerals Limited, is a multi-commodity resources company. The company is primarily involved in phosphate exploration, and also explores for gold, manganese, iron and uranium. The company holds interests in various projects, such as Blina diamond project (Blina) in Ellendale, Western Australia; Highland Plains phosphate project in the Northern Territory; Laverton gold project in Western Australia; Mt Monger gold project in Western Australia, and the Horse Well gold project in Wiluna, Western Australia.
Glen Eagle Resources Inc.	Glen Eagle Resources Inc. is engaged in the acquisition, exploration and the evaluation of mining properties. The company operates through three segments: acquisition, exploration and evaluation; development of mineral properties, and recovery of gold from tailings and recovery of gold from rocks. It operates through Glen Eagle Resources (Canada), Sandgold S.A. (Nicaragua) and CobraOro De Honduras S.A. (Honduras)

	<p>segments in Canada and Central America. Its projects include the Authier lithium project, gold projects in Nicaragua and Honduras and Moose Lake phosphate project. The Authier lithium project is located in Quebec. Its Lac Lisette, Moose Lake and Itouk Lake are phosphate properties. The Moose Lake phosphate property is located approximately 150 km south of Lisette Lake. The Moose Lake phosphate property has approximately 90 claims.</p>
Great Quest	<p>Great Quest Fertilizer Ltd., formerly Great Quest Metals Ltd, is a resource development company. The company's principal activities include the acquisition, exploration and development of agriculturally related minerals for regional markets. Its operations consist of the exploration and development of mineral concessions in Mali and Canada. It holds phosphate and gold mineral resource projects located principally in Mali, West Africa. Its exploration office in Bamako, Mali, is carried out through the company's subsidiary, Great Quest (Barbados) Limited, which owns Great Quest Mali S.A. (GQ Mali). All interests in mineral properties in Mali are held by Great Quest Mali S.A. Its Tilemsi phosphate project is located in Mali, West Africa and serves Mali and West Africa. Its Tilemsi phosphate project encompasses 1,206 km<sup>2</sup> in the Tilemsi valley of eastern Mali, prospective for phosphate mineralisation. The project consists of three properties, Tilemsi, Tarkint Est and Aderfoul.</p>
GroMax Resources Corp.	<p>GrowMax Resources Corp., formerly Americas Petrogas Inc., is a Canada-based company that focuses on the exploration and development of phosphate and potassium-rich brine resources on its Bayovar property. The company's Bayovar property is located in the Sechura Desert in northwestern Peru, approximately 900 km north of Lima, and approximately 200 km south of the Ecuador border. GrowMax Resources Corp. owns approximately 94.5% of GrowMax Agri Corp., a private company that wholly owns the Bayovar property, which covers approximately 227,000 gross acres. The Indian Farmers Fertiliser Co-operative Limited (IFFCO) and its affiliates own approximately 5.5% of GrowMax Agri Corp.</p>
Harvest Minerals	<p>Harvest Minerals Limited is a mineral exploration company. The company holds exploration projects in Brazil. Its Capela potash project in the Sergipe State, Brazil, hosts deposits of sylvinitite and carnallitite. The Capela potash project consists of eight mineral properties. Its Sergipe potash project is located in the Sergipe Basin. Its Mandacaru phosphate project is located in Ceara state, Brazil. Its Arapua fertiliser project is located in the State of Minas Gerais, approximately 400 km south east of Brasilia. The Arapua fertiliser project consists of over eight mineral properties divided into three blocks, the Arapua, Pindaibas and Maxixe blocks.</p>
Itafos	<p>Itafos is a phosphate fertilisers and specialty products company. It owns and operates Itafos Conda, which is a phosphate fertiliser business engaged in manufacturing monoammonium phosphate, superphosphoric acid, merchant grade phosphoric acid and ammonium polyphosphate and is located in Idaho, United States. Itafos Arrais is a phosphate fertiliser business which produces single superphosphate and is located in Tocantins, Brazil. Itafos Paris Hills is its phosphate mine project located in Idaho, United States. Itafos Farim is the company's phosphate mine project located in Farim, Guinea-Bissau. Itafos Santana is its phosphate fertiliser project located in Para, Brazil. Itafos Araxa is a phosphate and rare earth oxide mine project located in Minas Gerais, Brazil. Itafos Mantaro is its phosphate mine project located in Junin, Peru.</p>
Kropz PLC	<p>Kropz PLC is a United Kingdom-based plant nutrient producing company. The company is a mine developer and miner of fertiliser feed minerals, focused on developing vertically integrated fertiliser manufacturing capability to produce plant nutrients for the sub-Saharan African agricultural industry. The company operates three mining projects in Africa, which include Aflao, which is under review and is located in Ketu South District; Hinda, this project consists of sedimentary hosted phosphate deposit located approximately 40 km northwest of the city of Pointe-Noire in the Republic of Congo; and Elandsfontein, South, which is a robust and substantially de-risked mining project.</p>
Minbos Resources	<p>Minbos Resources Limited is an exploration company. The company is focused on the development of phosphate-bearing ore in the Cabinda Province of Angola and the adjoining areas of the far western Democratic Republic of the Congo (DRC). Through its subsidiaries and joint ventures, the company is focusing on the development of the high-grade Cacata project in Cabinda while growing its resource base in incremental stages on the remaining deposits in Angola. The company holds a concession area of approximately 400,000 ha in the Congo Basin running from Cabinda, Angola to Western DRC. The company's other projects include the Western Australia phosphate project, which has approximately two mining tenements prospective for phosphate. The Cabinda licence area covers an area of approximately 200,000 ha.</p>

Montero Mining and Exploration Ltd	Montero Mining and Exploration Ltd is a Canada-based company engaged in the identification, evaluation, acquisition, evaluation, exploration and development of mineral properties in Africa. The company operates through the exploration and evaluation of mineral resources segment. The company also focuses on the development of rare earth elements (REEs) and phosphates in Tanzania and South Africa, respectively. The company's properties include the Phosco phosphate project (South Africa), the Greenflash phosphate project (South Africa) and the Wigu Hill REE project (Tanzania).
Nutrien Ltd	Nutrien Ltd is Canada-based crop nutrient producer and distributor of potash, nitrogen and phosphate products for agricultural, industrial and feed customers worldwide. The company is focused on retail, potash, nitrogen and phosphate mining and processing operations. The company's retail operations serve growers in a number of countries across the United States, Canada, South Africa, Australia and South America. The company operates six potash mines in Saskatchewan and has a mine in New Brunswick in care-and-maintenance mode. The company operates integrated phosphate mining and processing facilities, as well as a number of smaller upgrading plants in the United States.
Parkway Minerals	Parkway Minerals NL, formerly Potash West NL, is an Australia-based exploration company. The company focuses on developing greensand deposits in Western Australia's Perth Basin. The company is engaged in the exploration for minerals, namely phosphate and potash. The company's Dandaragan Trough Project focuses on exploiting a shallow deposit of greensand, which contains both rock phosphate and glauconite. The company is advancing its Dinner Hill potash and phosphate deposit, north of Perth in Western Australia. The Dinner Hill project covers two horizontal greensand formations: the Poison Hill Greensand and the Molecap Greensand.
PhosAgro PAO	PhosAgro PAO is a Russia-based global vertically integrated phosphate-based fertiliser producer. The company focuses on the production of phosphate-based fertilisers, feed phosphate and high-grade phosphate rock, as well as ammonia and nitrogen-based fertilisers. PhosAgro PAO operates through three plants located domestically in Kirovsk, Cherepovets and Balakovo. It has numerous subsidiaries, including FosAgro-Trans AO, PhosAgro-Region OOO and Metachem AO. The Company is active on the territory of the Russian Federation and abroad, including: Asia, Europe, Africa and the Commonwealth of Independent States (CIS) countries, among others.
Phosphate Holdings Inc.	Phosphate Holdings Inc. and its wholly owned subsidiary, Mississippi Phosphates Corporation, are engaged in the production and marketing of diammonium phosphate, or DAP, a phosphate fertiliser. The company's production facilities are located on a deep-water channel at Pascagoula, Mississippi with direct access to the Gulf of Mexico. Its manufacturing facilities consist of two sulphuric acid plants, a phosphoric acid plant and a DAP granulation plant. The DAP granulation plant has a maximum annual production capacity of approximately 850,000 t. Its sulphuric acid plants produce sulphuric acid sufficient for annual DAP production of approximately 600,000–640,000 t. Phosphate Holdings Inc.'s product is DAP fertiliser. Phosphate rock and sulphuric acid, which are manufactured at the plant, or purchased, are combined to form phosphoric acid, which is then mixed with ammonia to produce DAP, a dry granular product.
Revival Gold Inc.	Revival Gold Inc., formerly Strata Minerals Inc, is a Canada-based growth focused gold exploration and development company. The company holds rights to a 100% interest in the Arnett Creek gold project in Lemhi County, Idaho. In addition to its interests in Arnett Creek, the company is pursuing other gold exploration and development opportunities and holds a 51% interest in the Diamond Mountain phosphate project in Uintah County, Utah.
The Mosaic Company	The Mosaic Company is a producer and marketer of concentrated phosphate and potash crop nutrients. The Company operates through three segments, phosphates, potash and international distribution. The company is a supplier of phosphate- and potash-based crop nutrients and animal feed ingredients. The phosphates segment owns and operates mines and production facilities in Florida, which produce concentrated phosphate crop nutrients and phosphate-based animal feed ingredients, and processing plants in Louisiana, which produce concentrated phosphate crop nutrients. The potash segment mines and processes potash in Canada and the United States, and sells potash in North America and internationally. The international distribution segment markets phosphate-, potash- and nitrogen-based crop nutrients and animal feed ingredients, and provides other ancillary services to wholesalers, cooperatives, independent retailers and farmers in South America and the Asia-Pacific regions.

## **Appendix D: Estimation of Base Acquisition Cost**

SRK has considered the likely Base Acquisition Cost (BAC) for Senegal based on a build up from first principles, namely estimation using the following assumptions:

- Under Senegalese mineral legislation, an exploration licence is valid for a maximum period of 3 years renewable twice for up to a further 3 years. At the time of each renewal, the perimeter is reduced by one quarter. It is assumed that the average age of Exploration Licences in Senegal is 3 years.
- Based on data from S&P Global, the average size of an Exploration Licence in Senegal is 425 km<sup>2</sup>.
- A deemed cost to identify an area of interest of US\$20,000 was assumed, as well as US\$5,000 for the cost of landholder notices, negotiations, legal costs and compensation.
- Under existing legislation, the current fees payable for granting, renewal, extensions or other modification of an Exploration licence is FCFA 2,500,000 (US\$4,287.50).
- An annual mining royalty or rent is also payable which is FCFA 5,000/km<sup>2</sup> (US\$8.57/km<sup>2</sup>) in the first term, FCFA 6,500/km<sup>2</sup> (US\$11.15/km<sup>2</sup>) and FCFA 8,000/km<sup>2</sup> (US\$13.72/km<sup>2</sup>) in the third term.
- Based on these costs, it is assumed the average cost for an Exploration Licence in Senegal is US\$7,930.
- Fees and cost rates were sourced from: <https://iclg.com/practice-areas/mining-laws-and-regulations/senegal>
- A minimum exploration work program expenditure of US\$150/km<sup>2</sup> has been assumed for the exploration activities, based on these costs it's assumed that an average program is US\$63,750/km<sup>2</sup> per year for a total of US\$191,250 per term.
- Ongoing administrative costs of US\$10,000 per licence per year were assumed.

Altogether these assumptions provide for an assumed BAC for an average Senegalese Exploration Licence of approximately US\$615/ km<sup>2</sup> or A\$880/km<sup>2</sup>.

## SRK Report Client Distribution Record

Project Number: AVE001

Report Title: Independent Specialist Report on the mineral assets held by Avenira Limited

Date Issued: 15 August 2019

Name/Title	Company
Nadine Marke	RSM Australia Pty Ltd

Rev No.	Date	Revised By	Revision Details
0	25/07/2019	Jeames McKibben	Draft Report
1	26/07/2019	Jeames McKibben	Redacted Draft Report
2	15/08/2019	Jeames McKibben	Final Report

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## E. PROFORMA NET ASSETS POST PROPOSED TRANSACTION

A\$000's	30-Jun-19 Management	Eliminate BFA / BMCC	Eliminate Baobab	Add Consideration	Total Pro forma	Wonarah Project Low Value	Wonarah Project High Value	Wonarah Project Preferred Value
<b>Current assets</b>								
Cash and cash equivalents	301	(22)	-	4,134	4,413	4,413	4,413	4,413
Trade and other receivables	425	(381)	-	-	43	43	43	43
Inventories	1,497	(1,497)	-	-	-	-	-	-
<b>Total Current Assets</b>	<b>2,222</b>	<b>(1,901)</b>	<b>-</b>	<b>4,134</b>	<b>4,456</b>	<b>4,456</b>	<b>4,456</b>	<b>4,456</b>
<b>Non-current assets</b>								
Trade and other receivables	1,482	-	-	-	1,482	1,482	1,482	1,482
Investment in equity instruments	16	-	-	-	16	16	16	16
Plant and equipment	1,058	(1,053)	-	-	5	5	5	5
Capitalised exploration and evaluation expenditure	10,804	-	(4,826)	-	5,978	6,010	16,020	9,010
Capitalised mine development expenditure	50,238	-	(50,238)	-	-	-	-	-
Intangible assets	123	(79)	-	-	44	44	44	44
Other assets	674	(674)	-	-	-	-	-	-
<b>Total Non-Current Assets</b>	<b>64,394</b>	<b>(1,806)</b>	<b>(55,064)</b>	<b>-</b>	<b>7,524</b>	<b>7,556</b>	<b>17,566</b>	<b>10,556</b>
<b>Total Assets</b>	<b>66,617</b>	<b>(3,706)</b>	<b>(55,064)</b>	<b>4,134</b>	<b>11,980</b>	<b>12,012</b>	<b>22,022</b>	<b>15,012</b>
<b>Current liabilities</b>								
Trade and other payables	4,071	(3,427)	-	(405)	239	239	239	239
Provisions	203	(60)	-	-	143	143	143	143
Loans and borrowings	4,289	(2,971)	-	(1,318)	-	-	-	-
<b>Total Current Liabilities</b>	<b>8,563</b>	<b>(6,459)</b>	<b>-</b>	<b>(1,723)</b>	<b>382</b>	<b>382</b>	<b>382</b>	<b>382</b>
<b>Non-current liabilities</b>								
Provisions	1,884	(595)	-	-	1,290	1,290	1,290	1,290
Loans and borrowings	5,932	(5,932)	-	-	-	-	-	-
Deferred tax liabilities	2,231	(2,231)	-	-	-	-	-	-
<b>Total Non-Current Liabilities</b>	<b>10,048</b>	<b>(8,758)</b>	<b>-</b>	<b>-</b>	<b>1,290</b>	<b>1,290</b>	<b>1,290</b>	<b>1,290</b>
<b>Total Liabilities</b>	<b>18,611</b>	<b>(15,217)</b>	<b>-</b>	<b>(1,723)</b>	<b>1,671</b>	<b>1,671</b>	<b>1,671</b>	<b>1,671</b>
<b>Net Assets</b>	<b>48,006</b>	<b>11,510</b>	<b>(55,064)</b>	<b>5,857</b>	<b>10,309</b>	<b>10,341</b>	<b>20,351</b>	<b>13,341</b>

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## PROXY FORM

APPOINTMENT OF PROXY  
AVENIRA LIMITED  
ACN 116 296 541

### ANNUAL GENERAL MEETING

I/We

of

being a Shareholder entitled to attend and vote at the Meeting, hereby

appoint

Name of proxy

OR

the Chair as my/our proxy

or failing the person so named or, if no person is named, the Chair, or the Chair's nominee, to vote in accordance with the following directions, or, if no directions have been given, and subject to the relevant laws as the proxy sees fit, at the Meeting to be held at DLA Piper, Level 31, Central Park, 152 - 158 St Georges Terrace, Perth Western Australia, and at any adjournment thereof.

#### CHAIR'S VOTING INTENTION IN RELATION TO UNDIRECTED PROXIES

The Chair intends to vote undirected proxies in favour of all Resolutions. In exceptional circumstances the Chair may change his/her voting intention on any Resolution. In the event this occurs an ASX announcement will be made immediately disclosing the reasons for the change.

#### Voting on business of the Meeting

Resolution 1 – Approval for Transaction of Main Undertaking

FOR

AGAINST

ABSTAIN

Resolution 2 – Selective Buy-Back

**Please note:** If you mark the abstain box for a particular Resolution, you are directing your proxy not to vote on that Resolution on a show of hands or on a poll and your votes will not be counted in computing the required majority on a poll.

If two proxies are being appointed, the proportion of voting rights this proxy represents is

Signature of Shareholder(s):

Date: \_\_\_\_\_

Individual or Shareholder 1

Shareholder 2

Shareholder 3

Sole Director/Company Secretary

Director

Director/Company Secretary

Contact Name: \_\_\_\_\_ Contact Ph (daytime): \_\_\_\_\_

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## INSTRUCTIONS FOR COMPLETING PROXY FORM

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1. **(Appointing a proxy):** A Shareholder entitled to attend and cast a vote at the Meeting is entitled to appoint a proxy to attend and vote on their behalf at the Meeting. If a Shareholder is entitled to cast 2 or more votes at the Meeting, the Shareholder may appoint a second proxy to attend and vote on their behalf at the Meeting. However, where both proxies attend the Meeting, voting may only be exercised on a poll. The appointment of a second proxy must be done on a separate copy of the Proxy Form. A Shareholder who appoints 2 proxies may specify the proportion or number of votes each proxy is appointed to exercise. If a Shareholder appoints 2 proxies and the appointments do not specify the proportion or number of the Shareholder's votes each proxy is appointed to exercise, each proxy may exercise one-half of the votes. Any fractions of votes resulting from the application of these principles will be disregarded. A duly appointed proxy need not be a Shareholder.
2. **(Direction to vote):** A Shareholder may direct a proxy how to vote by marking one of the boxes opposite each item of business. The direction may specify the proportion or number of votes that the proxy may exercise by writing the percentage or number of Shares next to the box marked for the relevant item of business. Where a box is not marked the proxy may vote as they choose subject to the relevant laws. Where more than one box is marked on an item the vote will be invalid on that item.
3. **(Signing instructions):**
  - **(Individual):** Where the holding is in one name, the Shareholder must sign.
  - **(Joint holding):** Where the holding is in more than one name, all of the Shareholders should sign.
  - **(Power of attorney):** If you have not already provided the power of attorney with the registry, please attach a certified photocopy of the power of attorney to this Proxy Form when you return it.
  - **(Companies):** Where the company has a sole director who is also the sole company secretary, that person must sign. Where the company (pursuant to Section 204A of the Corporations Act) does not have a company secretary, a sole director can also sign alone. Otherwise, a director jointly with either another director or a company secretary must sign. Please sign in the appropriate place to indicate the office held. In addition, if a representative of a company is appointed pursuant to Section 250D of the Corporations Act to attend the Meeting, the documentation evidencing such appointment should be produced prior to admission to the Meeting. A form of a certificate evidencing the appointment may be obtained from the Company.
4. **(Attending the Meeting):** Completion of a Proxy Form will not prevent individual Shareholders from attending the Meeting in person if they wish. Where a Shareholder completes and lodges a valid Proxy Form and attends the Meeting in person, then the proxy's authority to speak and vote for that Shareholder is suspended while the Shareholder is present at the Meeting.
5. **(Return of Proxy Form):** To vote by proxy, please complete and sign the enclosed Proxy Form and return by:

<b>Online</b>	At <a href="http://www.investorvote.com.au">www.investorvote.com.au</a>
<b>By mail</b>	Share Registry – Computershare Investor Services Pty Limited, GPO Box 242, Melbourne Victoria 3001, Australia
<b>By fax</b>	1800 783 447 (within Australia) +61 3 9473 2555 (outside Australia)
<b>By mobile</b>	Scan the QR Code on your proxy form and follow the prompts
<b>Custodian</b>	For Intermediary Online subscribers only (custodians) please visit
<b>Voting</b>	<a href="http://www.intermediaryonline.com">www.intermediaryonline.com</a> to submit your voting intentions,

so that it is received not less than 48 hours prior to commencement of the Meeting.

**Proxy Forms received later than this time will be invalid.**