



# KORAB RESOURCES LIMITED

KORAB HOUSE

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

12 September 2018

## ADDITIONAL INFORMATION - WINCHESTER MAGNESITE FEASIBILITY STUDY UPDATE

### Issued Capital

Issued Shares: 303 Mln  
Last Price: 3.3 cents  
Capitalisation: \$10 Mln

### Listing Codes

ASX: KOR  
BERLIN: C6S

### Directors

**Andrej K. Karpinski**  
Executive Chairman  
Director

**Rodney H. Skeet**  
Non-executive Director  
(Independent)

**Daniel A. Smetana**  
Non-executive Director  
(Independent)

**Anthony G. Wills**  
Non-executive Director  
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**Winchester**  
(Rum Jungle, NT)  
Magnesium carbonate  
(MgCO<sub>3</sub>)

**Batchelor**  
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Au, Ag, Zn, Pb, Ni, Cu, Co, Sc,  
Mn

**Geolsec**  
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Phosphate rock  
(P<sub>2</sub>O<sub>5</sub>)  
(Sub-leased to third party)

**Mt. Elephant**  
(Ashburton, WA)  
Au, Cu  
(Optioned for sale)

Korab Resources Ltd ("Korab", or "Company") (ASX: KOR) is pleased to provide the additional information regarding the earnings estimates contained within the presentation lodged with the ASX on 6 September 2018, which included estimates of potential additional revenue streams from production of caustic calcined magnesia (CCM) and dead burned magnesia (DBM).

This update concerns only the additional financial information as regards the potential earnings that would result from diverting a part or the whole of the raw magnesium carbonate rock to be produced by the quarry to the toll-treatment processing into CCM and/or DBM.

This update is based on the production target initially reported on 21 March 2018, in a report titled "*WINCHESTER MAGNESITE DIRECT SHIPPING ORE FEASIBILITY STUDY RESULTS (EARNINGS, NPV, EBITDA, CAPEX, AND OPEX)*".

The Company confirms that all the material assumptions underpinning the production target in the initial public report released on 21 March 2018 continue to apply and have not materially changed. The Company further confirms that, other than disclosed elsewhere in this report, all the material assumptions underpinning the forecast financial information derived from a production target in the initial public report released on 21 March 2018 continue to apply and have not materially changed.

This update, which includes the estimation of revenues and various additional material costs such as toll-treatment processing costs, haulage, handling, shipping, port charges, interest, debt repayment, royalties, overheads, etc. evaluated the economics of producing CCM and/or DBM on a toll-treatment basis in kilns operated by third parties, thus not requiring additional capital expenditure.

The estimates of annual output volumes from the quarry have not been changed materially. For the purposes of this evaluation, it was assumed that the quarry will operate in a way similar to that envisaged in the report released on 21 March 2018, with a possible minor adjustment of 30,000 tonnes to the annual estimated volumes to be produced in the first year of operations (from 600,000 tonnes to 630,000 tonnes). Following the review of various development options, it was determined that the initially reported production targets (21 March 2018) will be adequate to provide the feed material for the production of CCM and DBM by redirecting either a portion or all of the quarry output from the DSO stream to the production of CCM and/or DBM on a toll-treatment basis.

Consequently, should the rock from the quarry be used to produce DBM and/or CCM, there would be no material changes to the quarry scheduling, and no material changes to the capital expenditure (development CAPEX) and operating expenditure (OPEX) of the quarry. It is envisaged that the CCM and/or DBM processing would be undertaken by overseas third parties on a toll-treatment basis.

The Company is still assessing the feasibility of increasing the annual output of raw material from the quarry to 1,500,000-2,000,000 tonnes of magnesium carbonate rock, with the aim of achieving this with minimum changes to the quarry infrastructure, and site layout.

Please note that the estimates relating to production of CCM, and/or DBM are conceptual in nature and whilst they are based on plans which are currently being evaluated there is no guarantee that the production of CCM and/or DBM will take place.



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The update was completed by the Company using information collated and prepared by Golder Associates Pty Ltd, the Company, URS, Bateman Tenova, and Devmin Consultants. Although this is a feasibility level study, for risk management reasons the Company believed it would be prudent to continue using the original accuracy of the cost estimates of +/-30% and consequently a 30% contingency has been added to all capital and operating costs.

As previously stated in the report released on 21 March 2018, assumptions and inputs (mining work rates, excavation and earthmoving costs, labour costs, maintenance costs, equipment and consumables costs, loading, haulage, handling, port charges, shipping costs, selling costs, selling prices, processing costs, as well as other input variables) underpinning the study reported on 21 March 2018, which generated the NPV, gross earnings, EBITDA, cashflow, and capital and operating costs estimates, were sourced from appropriate consultants, contractors, and potential buyers and offtake partners. Whilst the aggregate estimates of all components of operating costs and capital costs are provided further in this report (see Table 5, Table 6, Table 7, and Table 8), the specific detailed work rates and prices, which were quoted by third parties are commercially sensitive and were not disclosed in the report.

The output from the quarry would consist of crushed magnesite rock with a waste stream consisting of magnesite fines, dolomite, talc, and waste rock (including polymetallic ores), which would be stored on site. The estimated ratio of coarse saleable magnesite rock to fines used in this study was 80%. The study revealed that there may be a market for magnesite fines, dolomite, talc, and other waste rock; however any potential revenue from sale of these has not been included in this study.

Winchester magnesium carbonate deposit is located south of Darwin in the Northern Territory, approximately 85km by road, less than a hundred meters from sealed road, and less than 5km from railway line. For location of the project please see Figure 1. The deposit is a shallow, flat laying body covered by up to 5 meters of unconsolidated soil and gravel overburden. Figure 3 shows the test mining of magnesium carbonate rock at Winchester. Surface (top of the overburden) and the top of the magnesium carbonate rock are clearly marked in the photo. Personnel are visible in the open pit setting the explosive charges. Blasted rock was then excavated using hydraulic excavators and moved to the pad using trucks.

### EARNINGS ESTIMATES FROM DSO OPERATION

Direct shipping ore (DSO) operation estimates of potential earnings before interest, tax, and amortisation but after payments for royalties, overheads etc., are shown in Table 1.

These estimates were initially reported on 21 March 2018.

The Company confirms that all the material assumptions underpinning the production target in the public report released on 21 March 2018 continue to apply and have not materially changed. The Company further confirms that, other than disclosed elsewhere in this report, all the material assumptions underpinning the forecast financial information derived from a production target in the public report released on 21 March 2018 continue to apply and have not materially changed. The estimated earnings are rounded to the nearest significant digit and are provided as ranges.

**Table 1 Project estimated EBITDA for production of DSO magnesium carbonate rock at US\$105/T magnesium carbonate price and US\$0.80 exchange rate**

	YEAR 1 (in \$ '000)	YEAR 2 (in \$ '000)	YEAR 3 (in \$ '000)	YEAR 4 (in \$ '000)	YEARS 5-8 (in \$ '000)	YEARS 9-12 (in \$ '000)	TOTAL (in \$ '000)
From	37,200	37,800	37,500	49,700	201,100	250,300	613,600
To	37,300	37,900	37,600	49,800	201,200	250,400	614,200



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### EARNINGS ESTIMATES FROM TOLL-TREATMENT PROCESSING

As reported on 16 August 2018, the spot prices for CCM and DBM are significantly higher than raw magnesium carbonate rock, with high purity CCM96 reaching US\$450/tonne and DBM prices reaching US\$1,050-\$1,400/tonne (depending on the grade). By comparison, raw magnesium carbonate rock sells for between US\$100/tonne and US\$135/tonne. The prices of CCM and DBM have increased rapidly over the last 18 months with DBM rising by between 300% and 400% depending on the grade. Above prices are based on quotes, and offers obtained from potential buyers including the trading houses, and end users.

Assumptions and inputs (toll-treatment processing costs, labour costs, maintenance costs, equipment and consumables costs, loading costs, haulage costs, handling costs, port charges, shipping costs, selling costs, selling prices, as well as other input variables) underpinning the EBITDA estimates shown in Table 2, Table 3, and Table 4, were sourced from appropriate consultants, contractors, and potential buyers and offtake partners. The specific detailed work rates and costs, which were quoted by third parties are commercially sensitive, were provided as commercial in confidence, and are not disclosed in this report.

Based on our discussion with the trading houses and end users, the potential first-year sales volumes of the two additional products are potentially in the range of 300,000 to 600,000 tonnes per annum for CCM, and 150,000 to 350,000 tonnes for DBM.

To assist in assessing the feasibility of diverting DSO quarry output to toll-treatment processing into CCM and/or DBM the Company estimated the potential revenue and earnings before interest, tax, and amortisation but after payments for royalties, overheads etc. (EBITDA).

Potential first-year EBITDA estimates from toll-treatment processing are shown in the following tables. Please note that these estimates are only covering the first full year of toll-treatment operation. This variant envisages that either a part or all of the output from the quarry would be processed on a toll-treatment basis in kilns owned and operated by third parties to maximise the overall revenue for the Company.

The actual split between DSO rock, CCM, and DBM would be determined as we would move closer to production and would depend on the pricing of pre-sales of products, and the final terms offered by the buyers. Selling prices shown below are the current spot prices for comparable products. Foreign exchange rates are based on the long term average rate. The estimated earnings are rounded to the nearest significant digit and are provided as ranges.

**Table 2 Toll-treatment estimated EBITDA for production of CCM96 at US\$440/tonne price and US\$0.80 exchange rate**

	150,000 tonnes (in \$ '000)	300,000 tonnes (in \$ '000)
From	20,000	40,000
To	25,000	50,000

**Table 3 Toll-treatment estimated EBITDA for production of DBM97 at US\$1,050/tonne price and US\$0.80 exchange rate**

	75,000 tonnes (in \$ '000)	150,000 tonnes (in \$ '000)
From	55,000	110,000
To	65,000	130,000



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**Table 4 Toll-treatment estimated EBITDA for production of DBM98 at US\$1,400/tonne price and US\$0.80 exchange rate**

	75,000 tonnes (in \$ '000)	150,000 tonnes (in \$ '000)
From	90,000	180,000
To	100,000	200,000

Production of 300,000 tonnes of CCM96 would require approximately 630,000 tonnes of DSO rock and would generate earning comparable to the earnings from sales of DSO rock. Given the additional work required and limited upside, this option appears to offer little advantage compared to sales of DSO rock directly to end buyers. However, the production of DBM97, and/or DBM98 offers significant revenue advantages compared to the sales of unprocessed DSO rock. Production of 300,000 tonnes of DBM products (150,000 tonnes of DBM97 and 150,000 tonnes of DBM98) would also require approximately 630,000 tonnes of DSO rock.

### TOLL-TREATMENT OPERATING COSTS

The toll-treatment operating cost include the cost of the sorted DSO rock, the processing costs (on a cost-plus basis), haulage, handling, loading, and shipping costs. The specific, detailed rates and prices, which were quoted by third parties are commercially sensitive and are not disclosed in this report.

### QUARRY OPERATING COST ESTIMATES

Estimated approximate quarry operating costs at various output capacities are shown in Table 5, Table 6, and Table 7. The estimated operating costs are rounded to the nearest significant digit and are provided as ranges. These estimates were originally reported on 21 March 2018. The Company confirms that all the material assumptions underpinning the production target in the public report released on 21 March 2018 continue to apply and have not materially changed. The Company further confirms that, other than disclosed elsewhere in this report, all the material assumptions underpinning the forecast financial information derived from a production target in the public report released on 21 March 2018 continue to apply and have not materially changed.

The quarry operating costs will not be affected by the potential processing of a part, or the whole of the quarry output into calcined, and/or dead burned magnesite as the processing (if any) will be undertaken on a toll-treatment basis by overseas third parties. Operating costs per tonne of sorted DSO material were used in estimating the cost of processed products (CCM and DBM) and for estimating the potential earnings from toll-treatment processing shown in previous section of the report.

**Table 5 Quarry estimated operating costs (shovel and truck, drill and blast) at 375KT/Y capacity**

Description	From	To
WATER MANAGEMENT (\$/YR.)	180,000	190,000
WASTE DUMPS (\$/YR.)	190,000	200,000
MINE AND CRUSHING (\$/YR.)	6,053,000	6,054,000
SUBTOTAL (\$/YR.)	6,423,000	6,444,000
CONTINGENCY (30%)	1,926,900	1,933,200
<b>TOTAL ESTIMATE</b>	<b>8,349,900</b>	<b>8,377,200</b>
CAPACITY OUTPUT ROM MAGNESITE (T/YR.)	375,000	375,000
SALEABLE COARSE MAGNESITE COST (\$/T)	27	28



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COARSE MAGNESITE/FINES	80%	80%
CAPACITY OUTPUT COARSE SALEABLE MAGNESITE (T/YR.)	300,000	300,000
CAPACITY OUTPUT FINES (T/YR.)	75,000	75,000

Table 6 Quarry estimated operating costs (shovel and truck, drill and blast) at 750KT/Y capacity

Description	From	To
WATER MANAGEMENT (\$/YR.)	180,000	190,000
WASTE DUMPS (\$/YR.)	190,000	200,000
MINE AND CRUSHING (\$/YR.)	10,078,000	10,079,000
SUBTOTAL (\$/YR.)	10,448,000	10,469,000
CONTINGENCY (30%)	3,134,400	3,140,700
<b>TOTAL ESTIMATE</b>	<b>13,582,400</b>	<b>13,609,700</b>
CAPACITY OUTPUT ROM MAGNESITE (T/YR.)	750,000	750,000
SALEABLE COARSE MAGNESITE COST (\$/T)	22	23
COARSE MAGNESITE/FINES	80%	80%
CAPACITY OUTPUT COARSE SALEABLE MAGNESITE (T/YR.)	600,000	600,000
CAPACITY OUTPUT FINES (T/YR.)	150,000	150,000

Table 7 Quarry estimated operating costs (shovel and truck, drill and blast) at 1,000KT/Y capacity

Description	From	To
WATER MANAGEMENT (\$/YR.)	180,000	190,000
WASTE DUMPS (\$/YR.)	190,000	200,000
MINE AND CRUSHING (\$/YR.)	12,997,000	12,998,000
SUBTOTAL (\$/YR.)	13,367,000	13,388,000
CONTINGENCY (30%)	4,010,100	4,016,400
<b>TOTAL ESTIMATE</b>	<b>17,377,100</b>	<b>17,404,400</b>
CAPACITY OUTPUT ROM MAGNESITE (T/YR.)	1,000,000	1,000,000
SALEABLE COARSE MAGNESITE COST (\$/T)	21	22
COARSE MAGNESITE/FINES	80%	80%
CAPACITY OUTPUT COARSE SALEABLE MAGNESITE (T/YR.)	800,000	800,000
CAPACITY OUTPUT FINES (T/YR.)	200,000	200,000

All variants shown above assumed standard shovel and truck mining method with limited drill and blasting.

### CAPITAL COST ESTIMATES

Capital costs of the Winchester project have been estimated at approximately \$2.4 million to \$2.5 million (including 30% contingency). Components of the capital costs of the project are shown in Table 8.

These estimates were originally reported on 21 March 2018. The Company confirms that all the material assumptions underpinning the production target in the public report released on 21 March 2018 continue to apply and have not materially changed. The Company further confirms that, other than disclosed elsewhere in this report, all the material assumptions underpinning the forecast



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financial information derived from a production target in the public report released on 21 March 2018 continue to apply and have not materially changed.

Results of the study reported on 21 March 2018 show that the main components of capital expenditure are not sensitive to output capacity and that the capacity is primarily the function of demand for the DSO magnesite rock (whether sold directly to buyers, or used as a feed-in for the off-site toll-treatment processing). The capacity of the project would therefore ultimately depend on any off-take and/or long term sale agreements. The study assumed that contractors would be used for majority of project operating tasks thus reducing capital costs by limiting the need for owner operated equipment. Capital cost has been estimated for the development of open pit operations with required access roads, bunding, pads, and other site infrastructure, waste and water management etc.

Several development variants were evaluated initially. In the end, a two-stage, bench-by-bench development was selected as the optimum variant for this feasibility study update. Under this variant, estimated capital costs to be borne prior to commencement of production and sale of magnesium carbonate rock were significantly reduced due to (among others) smaller volume of overburden to be removed prior to commencement of mining, no initial requirement for construction and maintenance of a diversion channel, and a reduced waste and water management requirements. Any additional costs (pit cut-backs, installation of additional equipment, further infrastructure) which are to be borne during subsequent years were included in the estimates of operating cashflows for the relevant periods.

The study was based on a conceptual mine that could operate at various capacity levels: 375,000T/y ROM capacity, 750,000T/y ROM capacity and 1,000,000T/y ROM capacity. These levels were selected on the basis of Korab's discussions with potential buyers of the magnesite rock. Korab is the sole marketing agent for all rock produced by Korab's wholly owned subsidiary AusMag Pty Ltd. AusMag Pty Ltd is the owner and operator of the Winchester Project.

The estimated quarry development capital costs are rounded to the nearest significant digit and are provided as ranges.

**Table 8 Project estimated capital costs (quarry development)**

SUMMARY	FROM	TO
WATER MANAGEMENT	390,000	400,000
SITE INFRASTRUCTURE	580,000	590,000
WASTE PRODUCTS DUMPS	100,000	110,000
QUARRY (REMOVAL OF OVERBURDEN)	810,000	820,000
SUBTOTAL	1,880,000	1,920,000
CONTINGENCY (30%)	564,000	576,000
TOTAL ESTIMATE	2,444,000	2,496,000

### CAUTIONARY STATEMENT

The feasibility study referred to in the report released on 21 March 2018 has been undertaken for the purpose of estimating approximate capital and operating costs of the Winchester Magnesium Carbonate Project. It is a preliminary technical and economic study of the potential viability of this Project. It is based on low level technical and economic assessments that are not sufficient to support the estimation of ore reserves. Further evaluation work and appropriate studies are required before the Company will be in a position to estimate any ore reserves or to provide any assurance of an economic development case.



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The study was based on the material assumptions outlined in the report released on 21 March 2018, and in prior reports released on 13 January 2015 and 10 March 2015. The Company confirms that, all the material assumptions underpinning the production target, or the forecast financial information derived from a production target, in the initial public reports (and which are not disclosed elsewhere in this report) continue to apply and have not materially changed. These include assumptions about the availability of funding. While the Company considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the feasibility study will be achieved.

To achieve the range of outcomes indicated in the feasibility study, funding in the order of \$3.5 million to \$4 million will likely be required. Investors should note that there is no certainty that the Company will be able to raise that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Korab's existing shares.

It is also possible that the Company could pursue other 'value realisation' strategies such as a joint venture, a partial sale, or a sale of the project. If it does, this could materially reduce Korab's proportionate ownership of the project.

As reported on 16 August 2018, Korab is in the process of evaluating various funding proposals for the Winchester quarry. These include:

1. forward sale which is essentially a prepayment for magnesite rock, or calcined magnesia, or dead burned magnesia (or a combination thereof) to be delivered once project is in production – this is the preferred option,
2. debt financing to be repaid out of sales revenue,
3. sale of a minority equity stake in the project,

The evaluation of the proposals is still continuing as are the discussions with interested parties. The discussions are incomplete. Whilst the detailed terms of funding being discussed are confidential, the general structure of the forward sale envisages a prepayment for approximately 100,000 tonnes of crushed magnesium carbonate rock which would be delivered in 2-3 shipments once the quarry is operational. The pre-sale of 100,000 tonnes of rock can be easily covered from the proposed 600,000-800,000 tonnes annual capacity of the quarry. The Company is also in discussions regarding a pre-sale of 1-2 shipments of approximately 15,000 tonnes of DBM each with the raw material rock feed easily covered by the proposed 600,000-1,000,000 tonnes annual capacity of the quarry

It is clear from the discussion and negotiations, that the funding of the project is most likely to be through forward sales, or a combination of forward sales, and a small bank loan. Given the balance sheets of the potential counterparties to the proposed offtakes, this option appears to be most advantageous to both sides.

Note that there can be no certainty that any agreement or agreements regarding the funding can be reached or that any transaction will eventuate. No commercial terms have been agreed between the parties. Accordingly, no investment decision should be made on the basis of this information. Korab will advise the market if and when an agreement or agreements have been reached.

Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the feasibility study.

### AVAILABILITY OF FUNDING

On 23 March 2016 the Company reported that it has entered into an agreement with Mr. Hong Wang (who represents interests associated with Chinese steel industry, banking and finance, construction and building materials) for a \$6 million development funding for the Winchester magnesium carbonate project. Under this agreement, the \$6 million development funding would be provided by



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# KORAB RESOURCES LIMITED

## KORAB HOUSE

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

### Issued Capital

Issued Shares: 303 Mln  
Last Price: 3.3 cents  
Capitalisation: \$10 Mln

### Listing Codes

ASX: KOR  
BERLIN: C6S

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Executive Chairman  
Director

**Rodney H. Skeet**  
Non-executive Director  
(Independent)

**Daniel A. Smetana**  
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**Anthony G. Wills**  
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**Winchester**  
(Rum Jungle, NT)  
Magnesium carbonate  
(MgCO<sub>3</sub>)

**Batchelor**  
(Rum Jungle, NT)  
Au, Ag, Zn, Pb, Ni, Cu, Co, Sc,  
Mn

**Geolsec**  
(Rum Jungle, NT)  
Phosphate rock  
(P<sub>2</sub>O<sub>5</sub>)  
(Sub-leased to third party)

**Mt. Elephant**  
(Ashburton, WA)  
Au, Cu  
(Optioned for sale)

way of funders and/or their nominees acquiring a direct 25%-30% equity interest in AusMag Pty Ltd (wholly owned subsidiary of Korab developing the Winchester project) and would be conditional on Korab (or AusMag) securing additional offtakes for magnesium carbonate rock. The parties are yet to finalise the funding documentation for this transaction including the subscription agreement and the management agreement. Korab decided to defer further discussion with Mr. Wang until alternative avenues of funding the quarry development and providing for working capital are fully assessed and evaluated.

The Company assumed for the purpose of this study that the funding may be sourced either under the above agreement, or in the alternative, as a combination of debt (by way of a forward sale) and equity (by way of an institutional placement, and/or a pro-rata share issue). In light of the information received from relevant counterparties, and given the relatively low CAPEX of the project, all of the above avenues appear feasible.

### TIMEFRAME FOR DEVELOPMENT AND PRODUCTION

The Company is aiming to commence the development of the project and the production of magnesium carbonate rock as soon as practicable. The Company intends to lodge a "Notice of intent to mine" with the Northern Territory Department of Primary Industry and Resources shortly.

The Company assumed that the funding for the project, completion of sales and/or offtakes of magnesium carbonate rock, and securing required governmental and regulatory project approvals will take approximately 12-14 months. This assumption is based on information obtained from our discussions with the relevant counterparties.

However, investors should note that the actual timeframe of the development and production will depend on the actual availability of funding for the project, completion of sales and/or offtakes of magnesium carbonate rock, securing required governmental and regulatory project approvals, access to transport, and market factors such as magnesium carbonate rock prices, energy prices, foreign exchange rates, etc. which are outside the control of the Company.

Should there be a delay with securing the funding, sales, or regulatory permits, or should there be an adverse change in any of the remaining aforementioned factors, it may impact on the development and production timeframe.

### PRODUCTION SCHEDULE

The Company used the following production schedule in this feasibility study.

Table 9 Project production schedule estimates

Year	Saleable Tonnage ('000 tonnes)	ROM Tonnage ('000 tonnes)	Cumulative ROM Production ('000 tonnes)	Resource Classification
1	600	750	750	indicated
2	600	750	1,500	indicated
3	600	750	2,250	indicated
4	800	1,000	3,250	indicated
5	800	1,000	4,250	indicated
6	800	1,000	5,250	indicated
7	800	1,000	6,250	indicated
8	800	1,000	7,250	indicated
9	1,000	1,250	8,500	indicated
10	1,000	1,250	9,750	indicated
11	1,000	1,250	11,000	indicated
12	960	1,200	12,200	indicated



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This production schedule was initially reported on 21 March 2018 and is based on mineral resource estimates contained in the same report released on 21 March 2018. The Company confirms that all the material assumptions underpinning the production target in the public report released on 21 March 2018 continue to apply and have not materially changed. The Company further confirms that, other than disclosed elsewhere in this report, all the material assumptions underpinning the forecast financial information derived from a production target in the initial public report released on 21 March 2018 continue to apply and have not materially changed.

Similarly to the Timeframe for Production and Development section; investors should note that the actual production schedule will depend on the availability of funding for the Project, finalised magnesium carbonate rock sales and/or offtakes, governmental and regulatory project approvals, access to transport, and other factors such as magnesium carbonate rock prices, energy prices, foreign exchange rates, etc. which are outside the control of the Company.

### ACCESS TO TRANSPORT

Sea transport is available from Darwin Port's East Arm which is located 93km to the north of the project. Bulk materials handling facility at East Arm includes an 850m rail spur, 1,500T/H rail bottom dump station, stockpiles, haul roads and a 2,000T/H travelling gantry shiploader. The shiploader is designed for Panamax class ships. Road transport by haulage trucks is available to the Darwin port and to South Australia, Victoria, New South Wales and Queensland via Batchelor road and then via Stuart Highway. Darwin to Adelaide railway line runs along Stuart Highway and is transected by Batchelor road approximately 5km from the deposit. Currently there are no rail loading facilities either at Batchelor or near the point where Batchelor road transects the railway line. On 8 November 2017, Korab reported that it has signed Heads of Agreement with the operator of Darwin port. HoA envisages exporting of 500,000tpa of magnesite rock through Darwin Port East Arm Wharf and includes sub-leasing of the land, access to various port facilities, and use of loaders, and other equipment. HoA provides the basis for the final port agreement which will allow for exporting the magnesium carbonate rock through Darwin.

### PROJECT APPROVALS

Winchester deposit is located on a granted mineral lease ML 30587 held by Korab's wholly owned subsidiary AusMag Pty Ltd. Before the quarry can be established, an appropriate Mine Management Plan (MMP) will need to be submitted to the Northern Territory Department of Primary Industry and Resources and AusMag will need to receive the authorisation to implement this MMP. Prior to lodging the MMP, AusMag will lodge a "Notice of intent to mine" to allow the Department to complete the preliminary assessment of the planned development.

Winchester quarry layout, pit design, site infrastructure design, and choice of equipment ensure that development and operation of the Winchester quarry will have very small footprint and low environmental impact.

Winchester deposit and the mineral lease are located wholly on freehold land and no native title approvals would be required to establish a quarry. However, any sacred sites and sites of anthropological or historical significance that are located within the project area would need to be protected. The Company will liaise and consult with all affected parties and various stakeholders to ensure that the project is well supported.

As part of the review of potential toll-treatment processing of magnesium carbonate rock into CCM, and/or DBM, Korab has been assessing potential changes to the site infrastructure plan, quarry production scheduling, and the relevant logistics to accommodate the possibly increased volumes of material leaving the site. The Company has previously sought input from other stakeholders with regard to the site planning and quarry scheduling and is waiting for some of the responses to incorporate them in the plan.



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It is expected that this assessment process will be completed shortly. Following the completion, after applying the changes (if any) Korab intends to submit the 'Notice of intent to mine' to the relevant departments.

### OTHER MODIFYING FACTORS

For material modifying factors and assumptions used in this study which are not disclosed elsewhere in this report please refer to **Table 10**.

### BACKGROUND INFORMATION

Winchester Magnesium Carbonate Project consists of a Mineral Lease ML30587, 100% held by AusMag Pty Ltd, a wholly owned subsidiary of Korab Resources Ltd. Korab is the sole marketing agent for the output from the Winchester quarry. The project is located 2km east from the town of Batchelor, some 70 km south of Darwin in the Northern Territory. Mineral Lease ML30587 covers an area of 352 ha.

The main use for magnesium carbonate rock is in production of various types of magnesium oxides such as calcined magnesia, fused magnesia, and dead burned magnesia. China and North Korea control majority of the economically viable magnesium carbonate resources in the world. Global magnesium oxide market is worth approximately US\$60 billion. The main sectors where magnesium oxide is used include: refractory bricks which are used to line the inside of steel and glass furnaces and cement kilns; production of flame retardants; production of fire resistant and moisture resistant building materials like mag wall, MgO board and mag cement; production of magnesium alloys used extensively in cars, airplanes, tanks, APC-s and other defence uses; hydrometallurgy of cobalt and nickel production; water purification and soil treatment and feedstock.

The potential game changer is the recent development of magnesium-ion batteries which have 8 to 12 times greater capacity than lithium-ion batteries and can be charged in as little as 36 minutes. Magnesium-ion battery's charge/discharge efficiency is 5 times higher than a lithium-ion battery. Another advantage of magnesium-ion battery is its ability to perform at temperatures as low as -30°C and as high as +55°C whereas lithium-ion batteries cease to function at around -15°C. Additional benefit of magnesium-ion batteries is that they do not use graphite and consequently are not dependant on supply of this relatively expensive material.

The variety of uses and the relative size of the magnesium oxide, and magnesium alloys markets are of obvious benefit to magnesium carbonate rock producers. By tonnage comparison, the magnesium oxide market is approximately 40 times bigger than the lithium carbonate market and approximately 22 times bigger than the graphite market.

### CONTACT:

Andrej K Karpinski, Executive Chairman - Australia: (08) 9474 6166, International: +61 8 9474 6166

### ABOUT KORAB RESOURCES

Korab Resources Ltd is an international mining and exploration company with operations in Australia and Europe. Korab's projects include Winchester magnesium carbonate deposit at Batchelor in the Northern Territory of Australia, Geolsec phosphate rock deposit also at Batchelor, and other gold, silver, copper, cobalt, nickel, and polymetallic projects in Australia and overseas. More information about Korab's projects can be sourced from Korab's website at [www.korab.com.au](http://www.korab.com.au). Korab's shares are traded on Australian Securities Exchange (ASX) and on the Berlin Stock Exchange (Berliner Börse) through Equiduct electronic trading platform.



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### DISCLAIMER AND CAUTIONARY STATEMENT

Forward-looking statements are statements that are not historical facts. Words such as "expect(s)", "expected", "feel(s)", "believe(s)", "will", "may", "anticipate(s)", "should", "envisage(s)" and similar expressions are intended to identify such forward-looking information. This information includes, but is not limited to statements regarding future exploration results, resources, or reserves, and production. Anyone reading this report is cautioned not to place undue reliance on these forward-looking statements. All of such statements are subject to risks and uncertainties (many of which are difficult to predict and which generally are beyond the control of the Company) that could cause actual results to differ materially from those expressed in, or implied or projected by, the forward-looking information and statements. These risks and uncertainties include, but are not limited to: those relating to the interpretation of exploration results (including drill results), the geology, grade and continuity of mineral deposits and conclusions of economic evaluations; risks relating to possible variations in reserves, grade, mining dilution, ore loss, and recovery rates; risks relating to changes in project financial and technical parameters; risks relating to the potential for delays in exploration programs, project evaluation/review, completion of feasibility studies and project development; risks related to commodity prices and foreign exchange rate fluctuations; risks related to failure to secure adequate financing on a timely basis and on acceptable terms; risks related to delays in obtaining governmental, or other permits and approvals; risks related to security of tenure; and other risks and uncertainties related to the Company's prospects, properties and business strategy. Any forward-looking information contained in this report is provided as of the date of this report. Except as required under applicable listing rules and securities laws, the Company does not intend, and does not assume any obligation, to update this forward-looking information. Pilbara East and Pilbara West projects are considered to be of early stage, grass roots exploration status.

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Table 10 Material modifying factors

MODIFYING FACTOR	COMMENTS
Legal	Winchester deposit is located within the granted Mineral Lease (mining licence) ML30587. ML30587 has an area of 352 ha and was granted up to 20 October 2040 prior to which date it can be renewed. The lease can be renewed multiple times. Savanna Minerals Pty Ltd is entitled to a royalty of 5% of net profits achieved after deduction of all operating costs, transportation and sales costs and all taxes, government charges and royalties, as well as marketing costs and fees on sales of magnesite rock mined from Winchester deposit. Korab's wholly owned subsidiary Melrose Gold Mines Pty Ltd owns rights to 100% of gold mineralisation within the project. Polymetallica Minerals Ltd owns 90% of rights to uranium mineralisation within the project.
Infrastructure	The deposit is located 2km east from the town of Batchelor along Batchelor road and 75km from Darwin port along Stuart Highway. Darwin to Adelaide rail line runs approximately 5km from the deposit. High voltage power runs along the Batchelor road next to the deposit. Additional high voltage power lines run across the project 2 km to the east of the deposit. Gas pipeline runs approximately 3 km east of the deposit. Potable water is available on site. Accommodation is available at Batchelor town, and the alternative accommodation is available in Darwin.
Transportation	Sea transport is available from Darwin Port's East Arm which is located 93km to the north of the project. Bulk materials handling facility at East Arm includes 850m rail spur, 1,500T/H rail bottom dump station, stockpiles, haul roads and a 2,000T/H travelling gantry shiploader. The shiploader is designed for Panamax class ships. Road transport by haulage trucks is available to the Darwin port and to South Australia, Victoria, New South Wales and Queensland via Batchelor road and then via Stuart Highway. Darwin to Adelaide railway line runs along Stuart Highway and is transected by Batchelor road approximately 5km from the deposit. Currently there are no rail loading facilities either at Batchelor or near the point where Batchelor road transects the railway line. On 8 November 2017, Korab reported that it has signed Heads of Agreement with the operator of Darwin port. HoA envisages exporting of 500,000tpa of magnesite rock through Darwin Port East Arm Wharf and includes sub-leasing of the land, access to various port facilities, and use of loaders, and other equipment. HoA provides the basis for the final port agreement which will allow for exporting the magnesium carbonate rock through Darwin.
Mineral Resources Classification	The mineral resources estimates that were used to underpin this report are classified as indicated mineral resources.
Marketing (Off-take or Sale Agreements)	Development of Winchester depends on one or more long-term sale, or off-take agreements being completed successfully. Korab is in discussions with number of parties regarding potential joint ventures, equity partnerships, off-take and long-term sales agreements.
Mine Permitting	Winchester deposit is located on granted mineral lease ML 30587 held by Korab's wholly owned subsidiary AusMag Pty Ltd. Before the quarry can be established, an appropriate Mine Management Plan (MMP) will need to be submitted to the Northern Territory Department of Mines and Energy and AusMag will need to receive the authorisation to implement this MMP.
Environmental studies	Environmental impact studies have been undertaken for the Winchester



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	magnesite project and the assessment shows that the magnesite quarry will have a minimal impact. This is primarily because the project would be developed as a magnesite rock quarry with no processing of the rock on-site other than crushing and screening. The quarry and associated infrastructure will have a very small footprint. Mobile equipment, including crushers and sorters will be utilised where possible. There are several rock quarries and mines in the vicinity of the town of Batchelor, some abandoned, and some in operation. Processing of rock (if any) into calcined magnesia or dead burned magnesia will be done off-site by way of toll-treating the rock in third party kilns.
Native Title	Winchester deposit and the mineral lease are located wholly on freehold land and no native title approvals would be required to establish a quarry. However, any sacred sites and sites of anthropological or historical significance that are located within the project area would need to be protected.
Social	Winchester mine would utilise contractors operating on a campaign basis. Other than contractor's staff, there would be a relatively small number of personnel directly employed by AusMag Pty Ltd involved in establishing and operating the mine (fewer than 10). In addition, Winchester magnesite quarry has a potential to generate significant royalties income for the Northern Territory government over the life of the project. In addition to providing revenue stream for the government, the quarry would also directly benefit Territorians by supporting local businesses and providing jobs. Whilst there is no legal requirement to utilise local contractors and labour, local businesses and labour would be given preference as long as this would not have negative impact on the viability of the project. The project will aim to utilise local contractors operating on a campaign basis. Other than contractor's staff, there would be a number of local staff involved in establishing and operating the quarry.



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(P<sub>2</sub>O<sub>5</sub>)  
(Sub-leased to third party)

**Mt. Elephant**  
(Ashburton, WA)  
Au, Cu  
(Optioned for sale)

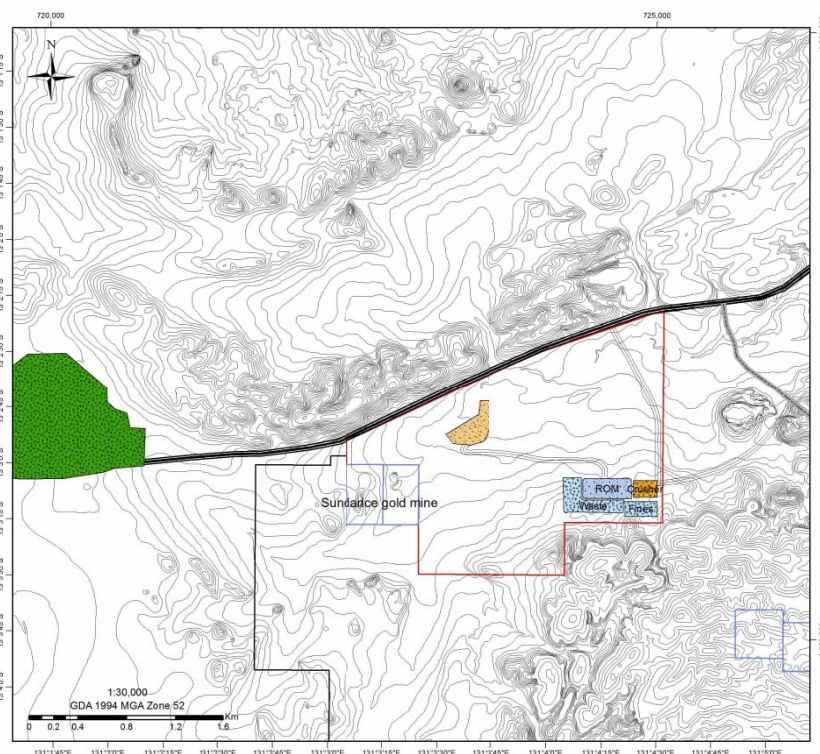


Figure 1 Site locality plan

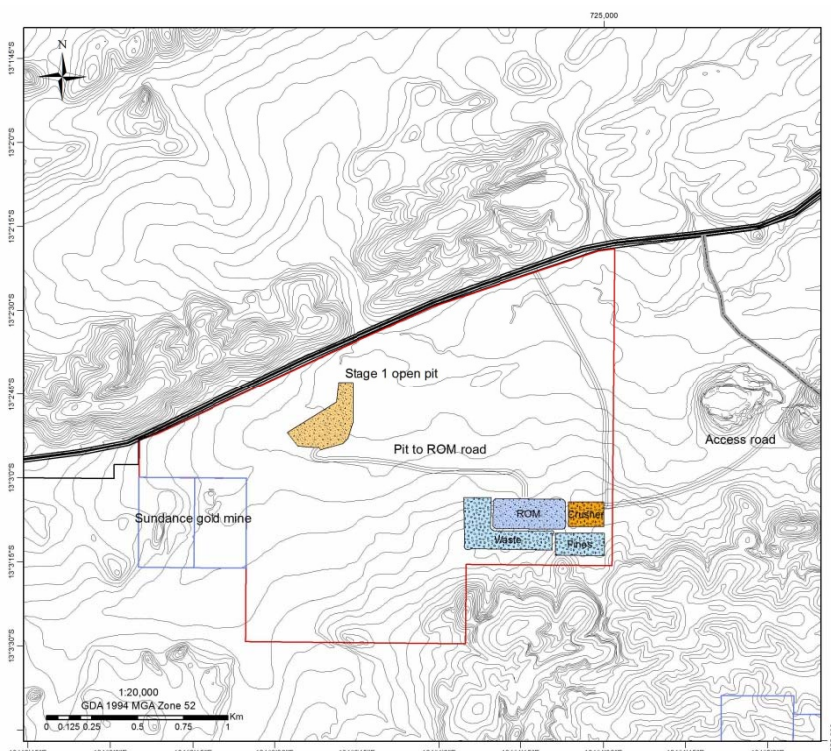


Figure 2 Conceptual layout at end of year 3 – two-stage, bench-by-bench development variant



20 PROWSE STREET, WEST PERTH, WA, 6005, AUSTRALIA  
PO BOX 1958, WEST PERTH, WA, 6872, AUSTRALIA  
TEL (08) 9474 6166 FAX (08) 9322 6333  
ACN 082 140 252







# KORAB RESOURCES LIMITED

KORAB HOUSE

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

## Issued Capital

Issued Shares: 303 Mln  
Last Price: 3.3 cents  
Capitalisation: \$10 Mln

## Listing Codes

ASX: KOR  
BERLIN: C6S

## Directors

**Andrej K. Karpinski**  
Executive Chairman  
Director

**Rodney H. Skeet**  
Non-executive Director  
(Independent)

**Daniel A. Smetana**  
Non-executive Director  
(Independent)

**Anthony G. Wills**  
Non-executive Director  
(Independent)

## Projects

**Winchester**  
(Rum Jungle, NT)  
Magnesium carbonate  
(MgCO<sub>3</sub>)

**Batchelor**  
(Rum Jungle, NT)  
Au, Ag, Zn, Pb, Ni, Cu, Co, Sc,  
Mn

**Geolsec**  
(Rum Jungle, NT)  
Phosphate rock  
(P<sub>2</sub>O<sub>5</sub>)  
(Sub-leased to third party)

**Mt. Elephant**  
(Ashburton, WA)  
Au, Cu  
(Optioned for sale)



Figure 3 Test mining of magnesium carbonate rock using drill-blasting.



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