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MEMORANDUM

To: Karl Lindsay Park

Cc: Patrick Maher, Graham Jeffress

Date: 12 May 2014

From: Joan Bath

Ref: GMRVAL01

Report Number: R181.2014

Re: Kulgera Mineral Sands Project – Globe Mineral Resources Investments

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1 Introduction

Globe Mineral Resources Investments are exploring the Kulgera heavy mineral sands deposit located in the Northern Territory of Australia, adjacent to the South Australian border, approximately 150 km south west of the Kulgera Roadhouse. Access to the project area from Alice Springs is south for approximately 300km to the Mulga Park Road turn-off, 1 km north of the South Australia border, then a further 120km west on the unsealed road.

Mineral Resource estimates for the project have been reported by CSA Global Pty Ltd (CSA) in Report R366.2013 for a geological domain based on average downhole Heavy Mineral (HM) content above 4% (Blue Domain).

Table 1. Kulgera Mineral Resource, December 2013, Blue Domain

Classification	Tonnes (Mt)	HM %	Slimes %	Over Size %
Measured	-	-	-	-
Indicated	210.7	6.5	10.4	8.8
Sub- Total	210.7	6.5	10.4	8.8
Inferred	135.2	6.0	11.6	10.6
Total	346.0	6.3	10.9	9.5

The Mineral Resources were also estimated for a Red Domain based on average downhole HM content above 6% and are given in Table 2.

Table 2. Kulgera Mineral Resource, December 2013, Red Domain

Classification	Tonnes (Mt)	HM %	Slimes %	Over Size %
Measured	-	-	-	-
Indicated	110.7	7.4	9.5	6.8
Sub- Total	110.7	7.4	9.5	6.8
Inferred	39.7	6.8	10.7	10.1
Total	150.4	7.2	9.8	7.7

Mr Karl Lindsay Park has prepared a simple financial model as a 'proof of concept' for the project. To provide an independent check of the model, CSA has benchmarked the main assumptions in the model and prepared an independent cash flow estimate.

2 Summary

The financial model has been benchmarked against similar types of projects from the CSA database. The model underestimated the mining and processing tonnages required for a given product level. The mining tonnages increased by approximately 17% for typical mineral sand operation recovery and dilution values.

Product pricing used was in line with available ilmenite and iron ore fines predicted long term prices. No value was assigned to the non-ilmenite product stream.

The financial model developed costs from first principles, whereas the benchmarking was done as unit rates from various other projects, as such exact comparisons between the various cost components were not made.

The project shows a positive annual cash flow of between $14M to $40 million, dependent on throughput rates, for long term commodity prices and exchange rates. At commodity prices in place in late 2013, the annual project cash flow would be in the range of $26M to $64M. These cash flow estimates excluded all taxes and royalties.

The main project driver at this level of study appears to be the cost of product transport from site to China.

To add value to this project, the following recommendations are made:

- Undertake further metallurgical testwork on the non-ilmenite product stream to determine the processibility and marketability of the included valuable minerals.
- Further investigate suitable mining methods to reduce costs. The use of a mobile hopper being fed by an excavator or FEL, with output being transported by slurry pipeline or conveyor to a mobile WPC has the potential to reduce operating costs by approximately $1.00/t, increasing project value by $14M to $28M per annum.

Other recommendations to advance the project include:

- Confirmation of product transport costs.

- Confirmation of metallurgical testwork and process flow sheet development, particularly in relation to product specifications, recoveries and marketability.

3 Production Schedule

The financial model presents the following production scenarios, assuming a head grade of 7% HM. The financial model schedule is approximate, aimed to indicate the project potential, rather than an exact achievable schedule. No account has been taken of mining and process recoveries, mine dilution and the % HM in the HM concentrate (HMC).

Table 3. Financial Model Production Schedule

Scenario	Mining Rate	Product		Stockpile
		Ti (40%)	Ti (18%)	Low Value HMC
	Mtpa	ktpa	ktpa	ktpa
A	12	420	210	210
B	18	630	315	315
C	24	840	420	420

Although the effect of recoveries and dilution are unlikely to be significant, they should be considered when comparing production costs for a given product tonnage as mine recovery means that more material needs to be mined for a given plant feed tonnage; mine dilution decreases the head feed grade as waste material of lower or zero grade is included in the plant feed; process recovery will increase the tonnes required to be processed for a given product tonnage; and %HM in HMC will increase the HMC required to produce a given product tonnage..

The following assumptions are typical for studies at ‘proof of concept’ stage for deposits similar to Kulgera.

- Mining Dilution – waste material that reports to process plant feed - 3 to 5 %
- Mining Recovery – mineralized material which reports to waste – 95%
- Screening of Oversize – 8% of tonnage at average % HM
- Process Recovery – 95% of contained HM, based on available process test-work
- HMC quality – approximately 90 to 95% HM in HMC.

Applying the above assumptions, the following production levels would be required for the product levels indicated in Table 3.

Wet Plant Feed Grade = Resource Grade * Mine Recovery/(Mine Recovery + Mine Dilution)

Wet Plant Feed Grade = 7%HM *0.95/(0.95+.03) = 6.8%HM

Table 4. Benchmarking Production Schedule

Scenario	Mining Rate	Oversize	Wet Separation					Dry Products		
			Plant Feed	Head Grade	Tails	HMC		Ti 40%	Ti 18%	Other
	Mtpa	Mtpa	Mtpa	% HM	Mtpa	kt	HM kt	kt	kt	kt
A	14.1	1.1	13.0	6.8	12.1	933	840	420	210	303
B	21.2	1.7	19.5	6.8	18.1	1400	1260	630	315	455
C	28.2	2.2	26.0	6.8	24.1	1867	1680	840	420	607

4 Mining Costs

4.1 Mining Method

The deposit occurs as sand dunes up to 12m high, 300 to 400m wide and 10-15 km in length. The dunes are not free running, rather they are compacted, with some vegetation cover. The mineralisation is enriched at the base, typical of most Heavy Mineral sand deposits. It will be important that the mining method chosen can effectively recover the high grade material and it may be necessary to allow for blending of higher grade and lower grade material to provide a more uniform head grade to the wet processing plant (WPC).

Figure 1 has been sourced from the Caterpillar Handbook and demonstrates the effective haul distances for various mining equipment. Excavators or wheel loaders feeding direct into a mobile screen and hopper could also be considered. The undersize from the screens would be transported to the WPC by either conveyor or slurry pipeline.

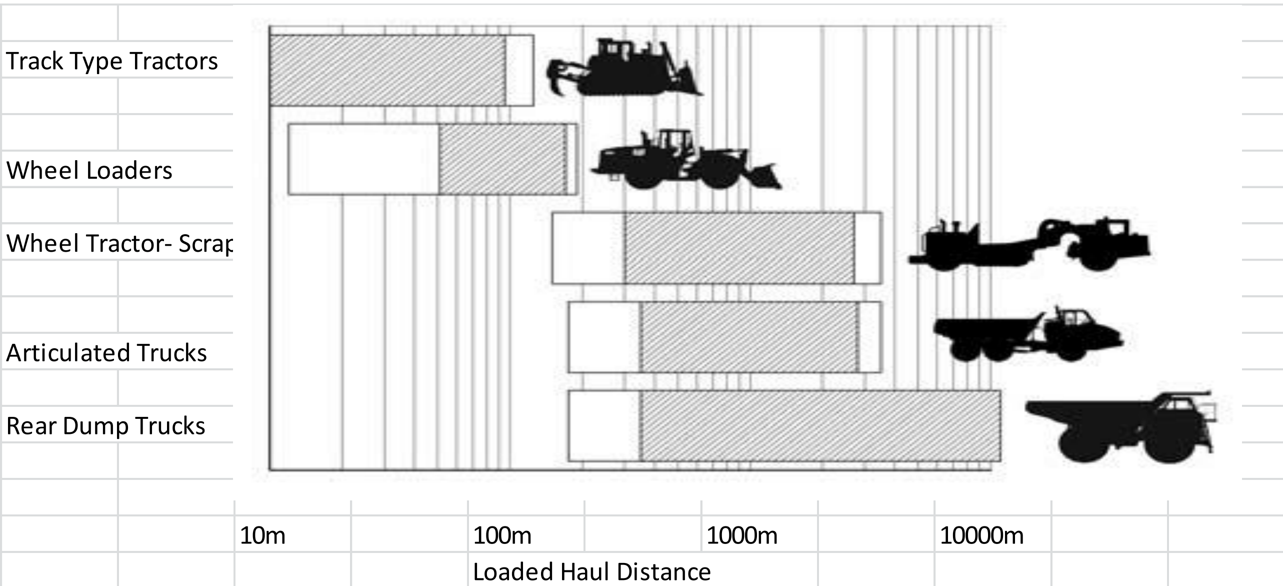

Figure 1. General Loaded Haul Distances for Mobile Systems

Dependent on the location of the WPC, any mining method could be used for this deposit, however the use of rear dump trucks will incur greater costs for the construction and ongoing maintenance of suitable haul roads.

4.2 Benchmark Mining Costs

Benchmark mining costs for the various methods are presented in Table 5.

Table 5. Benchmark Mining Costs

Mining Method	Cost	Mining Rate	Location	Comment
	$/t mined	Mtpa		
Dozer Trap	$1.55	7.8	Mid west WA	First principles calculation
Front End Loader (FEL) to Hopper	$1.59	7.8	Mid west WA	First principles calculation
Excavator to hopper	$0.85	13 to 14	Indonesia	Adjusted for Australian labour rates and inflation from 2011
Scraper	$2.90	7.8	Mid west WA	First principles calculation
FEL/ Excavator and 40t Articulated Trucks	$2.25	~6.5	Indonesia	Adjusted for Australian Labour
FEL/Excavator and Rear Dump Trucks	$4.67	~8	Goldfields WA	Numerous small pits, includes $0.67/t for long distance ore haulage to ROM, D&B excluded
	$2.46 - $2.78	~35	Goldfields WA	Based on contractor budget quotes, D&B excluded
	$2.08	2	Goldfields, WA	
Mixed Fleet – Scrapers, Excavators, FEL,	Fixed $1.76 Variable $2.37 Total $4.13	3.5	North of Perth	Earthmoving contractor quote for Feasibility Study, includes all topsoil movement, tails management and rehabilitation

The most comparable and potentially reliable cost above is for the mixed fleet. Adjusting the fixed costs for the higher mining rates gives unit costs of $2.81 to $2.59/t for scenarios to A to C respectively.

The financial model estimates mining costs, including labour and on-costs, but excluding rehabilitation at $1.52 to $1.90/t mined, which is considerably lower than the first principles scraper cost.

5 Processing Plant

Comparative processing costs for a spiral based wet plant, including tails return, are as follows.

Table 6. Process Plant Benchmark Costs

Location	Throughput	Cost	Comment
	Mtpa	$/t	
North of Perth	3.0	Fixed $2.03 Variable $2.73 Total $4.76	Feasibility level study
Mid West	7.8	1.21	Includes hopper and slurry unit and slurry pumping to plant

The financial model mill costs, including labour and 30% on-costs, range from $0.97 to $1.01/t. These are in agreement with the mid-west WA example above for gravity separation only. It is assumed that the dewatering/ drying and magnetic separation are included in these unit costs.

6 Product Transport

It is expected that the ilmenite products will be transported 120 km by road train to the rail head, then approximately 1500km by train to port.

Comparable road, rail and port transport costs are shown below in Table 7.

Table 7. Benchmark Transport Costs

Transport	Cost		Tonnage	Location	Distance	Comment
	$/t	$/tkm	ktpa			
Road	$14.23	$0.12	~200	Mid-west WA	Approx. 100 km	Sealed road, total price includes loading
Road	$13.12 + $0.59 maintenance		2,000	Gold fields WA	Approx 120 km	Unsealed road, required major capital upgrade work.
Road	$35		10,000	Mid west WA	Approx. 165 km	Unsealed road
Rail	$16.50		2,000	Goldfields WA	Approx 500km	Existing rail network, does not include loading and unloading
Rail	$19.85/t		10,000	Mid west WA	Approx 600 km	Includes rail loadout and $3.00/t access charge
Rail	$14.25		2,000	Darling Ranges	Approx 100 km	
Port	$10.02			Geraldton, WA		Includes ship loading, transport from local dry mill and storage
Port	$7.44		2,000	Esperance		Iron ore
Port	$3.90		10,000	Oakagee		Iron Ore, includes rehandling, port handling and ship loading
Port	$10.70 to $7.26		1,000 to 5,000	Guinea		Kamsar – 30 km bargeing to offshore loading
Shipping	No Australian benchmark readily available					
Shipping	$25/t Guinea to China on Cape Size vessels					

The financial model has included a trucking quote of $10/t, but it is not indicated whether this includes a loading cost. It is suggested that a mid-range cost is used, based on $10/t trucking plus $1.50/t loading for all scenarios.

The financial model has sourced ocean freight costs from Chinese shippers of $10/t. Insurance on ocean freight is 0.07% of the value of the goods, equivalent to $0.11/t. VAT is 17%, however this study has excluded all royalties and taxes.

Suggested freight costs for benchmarking purposes are recommended below.

Table 8. Recommended Freight Costs

Scenario	Tonnage ktpa	Road	Rail	Port	Shipping	Total	
		$/t	$/t	$/t	$/t	$/t	AU$ Mpa
A	630	11.50	16.85	10	10.11	48.5	30.5
B	945	11.50	16.85	8.75	10.11	47.2	44.6
C	1260	11.50	16.85	7.50	10.11	46.0	58

7 Tailings Return and Rehabilitation

These costs are generally included in mining and processing costs. As such, separate benchmark figures have not been sourced.

8 Camp

A 2012 estimate for a 100 person in a remote area of WA was $19/person day for camp management and $45/person day for messing, however this excluded power and water supply. The financial model is significantly higher, mainly due to power supply costs. The financial model assumptions should be used for this proof of concept.

9 Water Supply

No details are available to estimate water requirements or potential supply. It is assumed that these are included in process operating costs.

10 General and Administration

All projects include different costs into General and Administration Costs. A rule of thumb is to allocate 3% of revenue for these costs.

11 Revenue

The financial model uses the following assumptions for commodity prices and exchange rates.

Table 9. Financial Model Revenue Assumptions

	Sep-13	Sep-14	Sep-15
$US 54% TiO2	$260	$226	$225
Exchange Rate $AU: $US	0.85	0.85	0.85
$AU 54% TiO2	$305.88	$265.88	$264.71
Our Product 42% TiO2	$214.12	$186.12	$185.29
Our Product 18% TiO2*	$120	$120	$120
* Iron ore spot price			

Published Ilmenite prices for a project being developed in Western Australian indicated Ilmenite prices of $275/t for November 2013 and a long term price forecast of $225. The financial model assumptions are comparable. Long term iron ore prices for a hematite fines project were $120/t so once again the financial model assumptions are comparable.

Table 10 indicates the annual revenue predicted in this benchmarking study. No value has been allocated to the non-ilmenite product, which is assumed to be stockpiled at the plant. This product contains zircon, and requires further work to determine future processing and value.

Table 10. Annual Revenue

Scenario	Ti40%	Ti 18%	Sep '13			Sept '14			Sept '15		
	kt	kt	Ti40%	Ti18%	Total	Ti40%	Ti18%	Total	Ti40%	Ti18%	Total
			AU$ M	AU$M	AU$ M	AU$ M	AU$M	AU$ M	AU$ M	AU$ M	AU$ M
A	420	210	89.93	25.2	115.13	78.17	25.2	103.37	77.82	25.20	103.02
B	630	315	134.90	37.8	172.70	117.26	37.8	155.06	116.73	37.80	154.53
C	840	420	179.86	50.4	230.26	156.34	50.4	206.74	155.64	50.40	206.04

No allowance has been made for Royalty payments.

12 Project Summary

Table 11 summarises the costs and revenue on an annual basis for the three throughput scenarios, using the recommended benchmarking values. All taxes and royalty payments have been excluded from this cash flow estimate.

Table 11. Project Summary

Scenario	Item	Throughput		Rate	Cost/ Revenue		
					Sept 2013	Sept 2014	Sept 2015
				$/t	k$	k$	k$
A	Mining (Incl. Rehab)	14.1	Mtpa	2.81	39621	39621	39621
	Processing	13.0	Mtpa	1.01	13130	13130	13130
	Concentrate Transport	630	Ktpa	48.5	30555	30555	30555
	Camp				4017	4017	4017
	G&A				2051	1815	1808
	Total Cost				89374	89138	89131
	Revenue				115129	103369	103024
	Project Cash Flow				**25756**	**14231**	**13892**
B	Mining (Incl. Rehab)	21.2	Mtpa	2.70	57240	57240	57240
	Processing	19.5	Mtpa	0.99	19305	19305	19305
	Concentrate Transport	945	ktpa	47.2	44604	44604	44604
	Camp				5242	5242	5242
	G&A				3075	2723	2713
	Total Cost				129466	129114	129103
	Revenue				172694	155054	154535

	Project Cash Flow				**43228**	**25940**	**25432**
C	Mining (Incl. Rehab)	28.2	Mtpa	2.59	73038	73038	73038
	Processing	26	Mtpa	0.97	25220	25220	25220
	Concentrate Transport	1260	ktpa	46	57960	57960	57960
	Camp				6378	6378	6378
	G&A				4101	3631	3617
	Total Cost				166697	166227	166213
	Revenue				230259	206739	206047
	Project Cash Flow				**63562**	**40512**	**39834**

13 Conclusions and Recommendations

The financial model developed as a 'proof of concept' for the Kulgera deposit by Mr Karl Lindsay-Park has been benchmarked against similar types of projects from the CSA database.

The model underestimated the mining and processing tonnages required for a given product level as recoveries and dilution effects had not been included. The mining tonnages increased by approximately 17% for typical mineral sand operation recovery and dilution values.

Product pricing used was in line with available ilmenite and iron ore fines predicted long term prices.

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No taxes or royalties have been included in the cash flow estimates.

The main project driver at this level of study appears to be the cost of product transport from site to China.

To add value to this project, the following recommendations are made:

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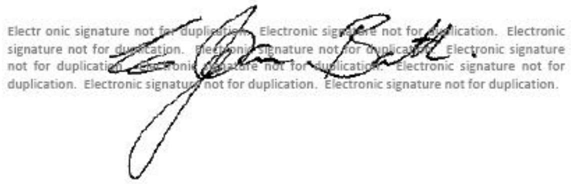

Joan Bath
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