



GEMFIELDS

Market Update
(unaudited)

28th January 2010

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GEMFIELDS' Existing Assets

Gemfields plc

Kagem Emerald Mine
(Zambia)
75%

Mbuva-Chibolele
Emerald Mine (Zambia)
100% (mothballed)

Kamakanga
Emerald Mine
(Zambia)
100% (mothballed)

Kariba Amethyst Mine
(Zambia)
50%

15 Madagascar exploration
licences (rubies, sapphires
and emeralds)

Zambian emerald
exploration licences

Cutting and Polishing
Facility in Jaipur, India
(being scaled down)

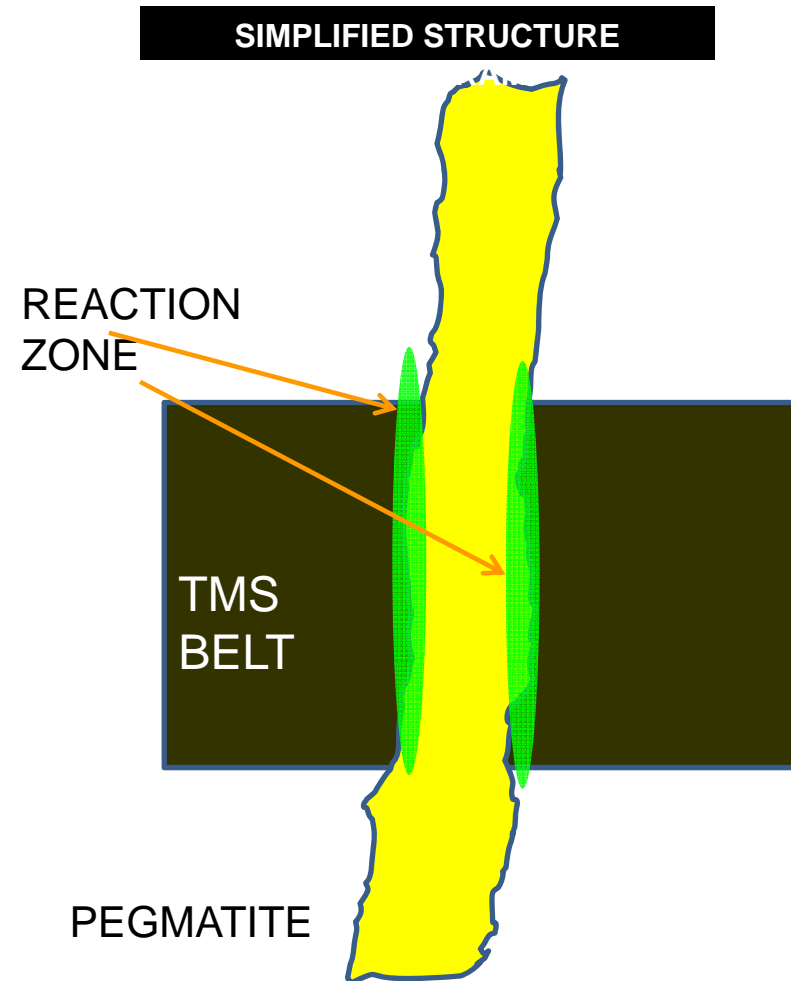
Fabergé Licence for
Coloured Gemstones

Equity Stake in
TanzaniteOne Ltd
(10%)



Emerald and Beryl Geology - The Basics

1. Emerald ore, known as Reaction Zone ("RZ"), is created when a pegmatite cuts through a layer or belt of talc-magnetite-schist ("TMS").
2. A complex reaction between the pegmatite and the TMS results in a layer of RZ of varying thickness and quality. This reaction gives rise to emerald and beryl crystals.
3. RZ contains emeralds and beryl. Both TMS and pegmatite are essentially devoid of emeralds and beryl.
4. TMS belts are typically 10-40 metres thick.
5. Pegmatites vary from a few centimetres to tens of metres thick.



Kagem Quarterly Production to 31st December 2009

KAGEM Quarterly Summary to 31 Dec 09	Quarter Ending:	30-Sep-08	31-Dec-08	31-Mar-09	30-Jun-09	30-Sep-09	31-Dec-09	TOTAL
Gemstone Production (Emerald+Beryl)	million carats	9.4	5.3	7.3	6.0	2.9	4.9	35.8
Ore Production (Reaction Zone)	'000 tonnes	21.4	18.7	17.8	22.3	16.0	13.5	109.7
Grade (Emerald+Beryl/Reaction Zone)	carats/tonne	438	286	409	268	182	365	327
Waste Mined (including TMS)	million tonnes	1.7	1.0	0.8	0.5	0.5	0.7	5.2
Stripping Ratio		81	53	43	22	33	49	47
Total Operating Cost	USD million	8.0	6.2	3.7	3.5	3.3	3.1	27.9
Unit Production Cost (per carat)	USD/carat	0.85	1.16	0.51	0.59	1.13	0.64	0.78
Unit Production Cost (per tonne of ore)	USD/tonne	372	332	210	159	205	232	254
Unit Cost (per tonne of rock moved)	USD/tonne	4.5	6.1	4.8	6.8	6.1	4.7	5.3

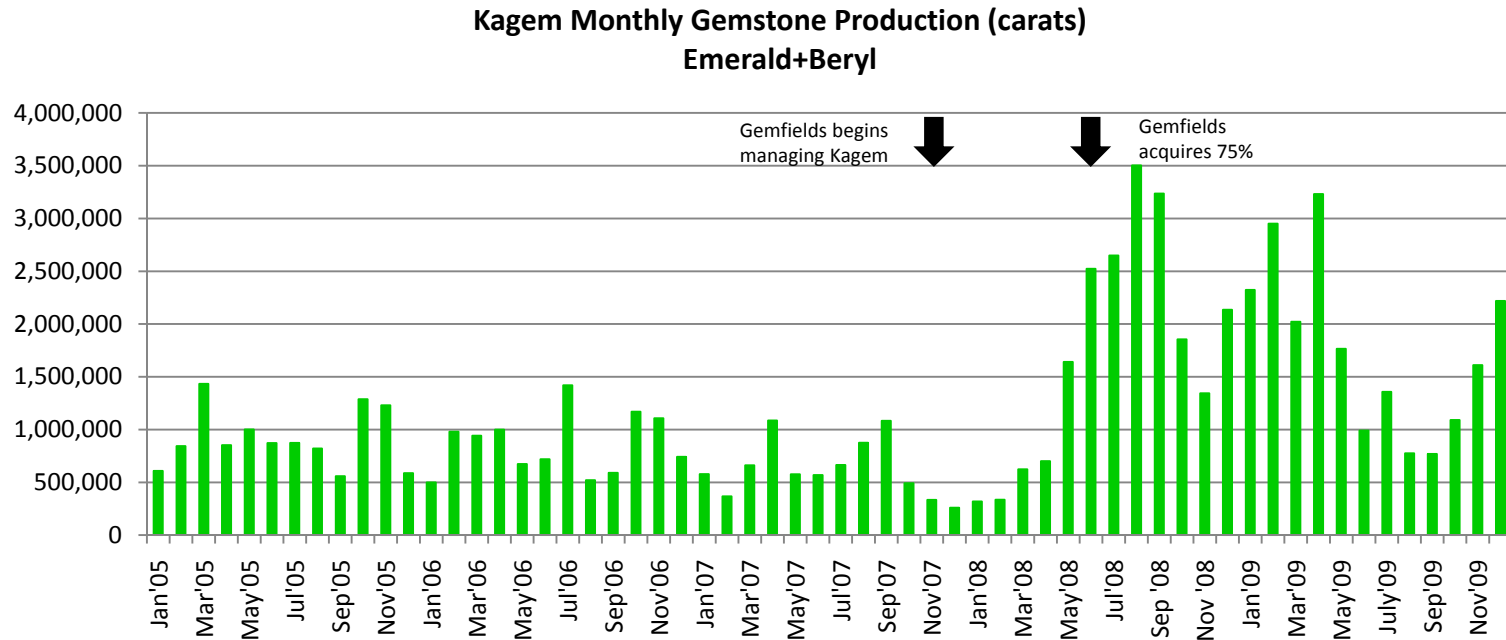
- Cost controls remained effective during the quarter ending 31 December 2009 and ore grade showed a marked improvement when compared with the previous quarter. This combination resulted in a unit production cost of USD 0.64 per carat.
- Given their “pockety” nature, it is not unusual for coloured gemstone deposits to display significant and periodic grade variation. Kagem’s cumulative grade since January 2005 is approximately 328 carat per tonne.
- Kagem’s unaudited total operating costs for the six quarters ending 31 December 2009 totalled USD 27.9 million, implying an average production cost during that period of USD 0.78 per carat of emerald and beryl. Unaudited unit production costs for the quarter ending 31 December 2009 were USD 0.64 per carat.

Kagem Annual Summary

Kagem Annual Production Summary	UNITS	YEAR	YEAR	YEAR	YEAR	HALF YEAR
		to 30 Jun 2006	to 30 Jun 2007	to 30 Jun 2008	to 30 Jun 2009	to 31 Dec 2009
Gemstone Production (Emerald+Beryl)	million carats	10.2	9.4	9.9	28.0	7.8
Ore Production (Reaction Zone)	000 tonnes	22	29	42	80	29
Grade (Emerald+Beryl/Reaction Zone)	carats/tonne	462	325	233	349	266
Waste Mined (incl. TMS)	million tonnes	1.8	2.8	5.1	4.0	1.2
Waste+TMS:Reaction Zone	strip ratio	83	96	120	50	40

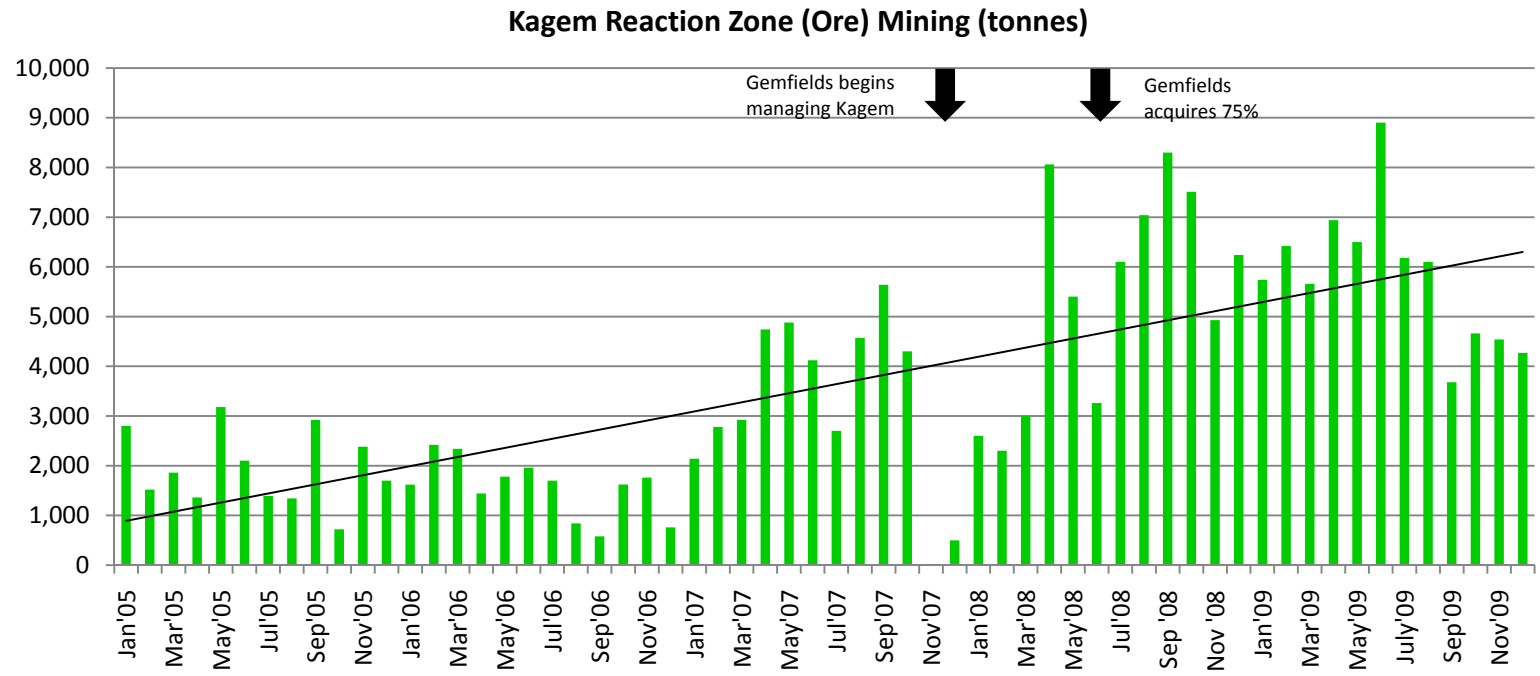
- Gemfields was contracted to manage Kagem in November 2007 and Gemfields acquired 75% of Kagem in June 2008. The remaining 25% is owned by the Government of the Republic of Zambia.
- In the year ending 30 June 2009, Gemfields was successful in increasing annual gemstone production approximately three-fold and experienced a grade of 349 carats per tonne.
- During the first half of the current financial year, a combination of lower grade (266 carats per tonne) and lower levels of ore mining (caused primarily by the Zambian rainy season), resulted in gemstone production of 7.8 million carats.

Kagem Monthly Gemstone Production



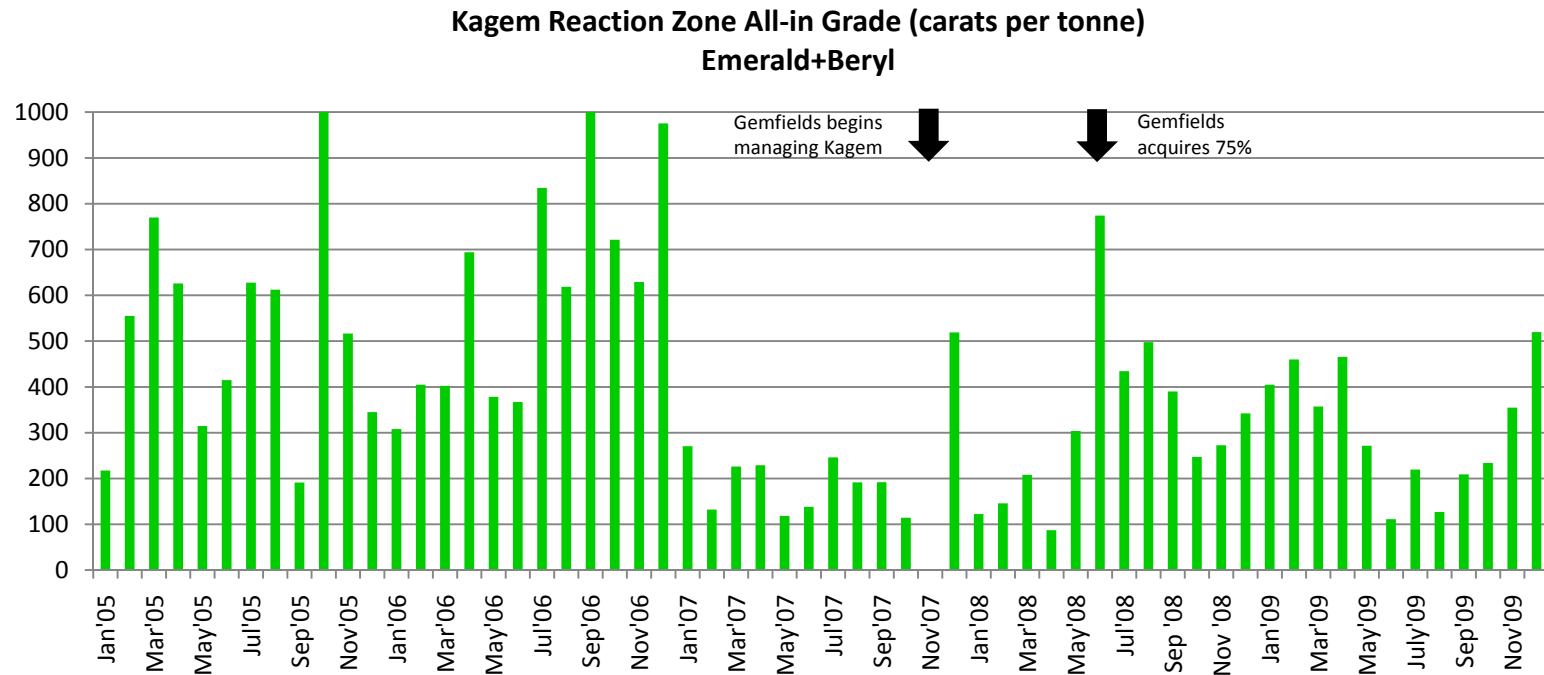
- During Gemfields' period of ownership, gemstone production has averaged 2.0 million carats per month.
- Average monthly gemstone production in the quarter ending 31 December 2009 was 1.64 million carats (versus 0.97 million carats per month in the quarter ending 30 September 2009).

Kagem Monthly Ore Mining



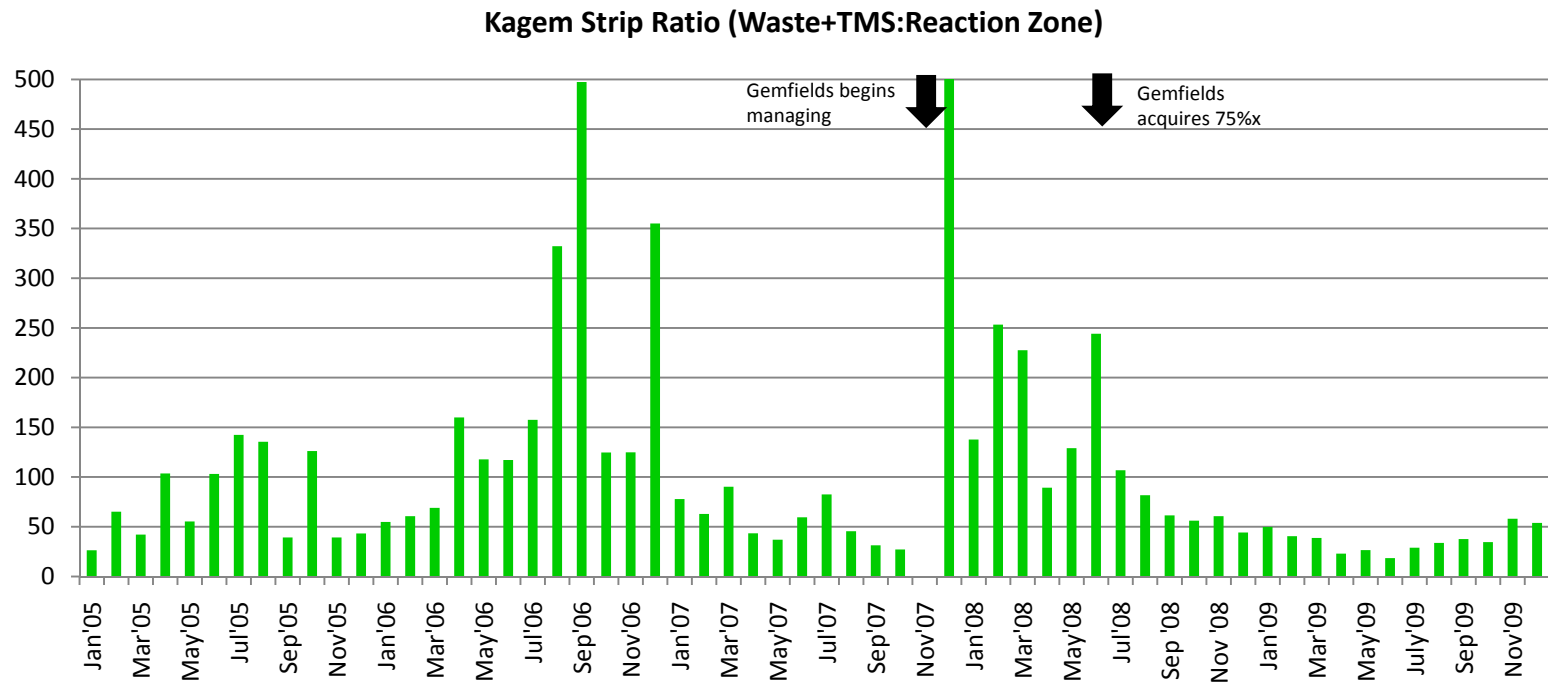
- During the last 4 months, ore mining at Kagem has fallen below targeted levels primarily due to the Zambian rainy season.

Kagem Monthly Ore Grade



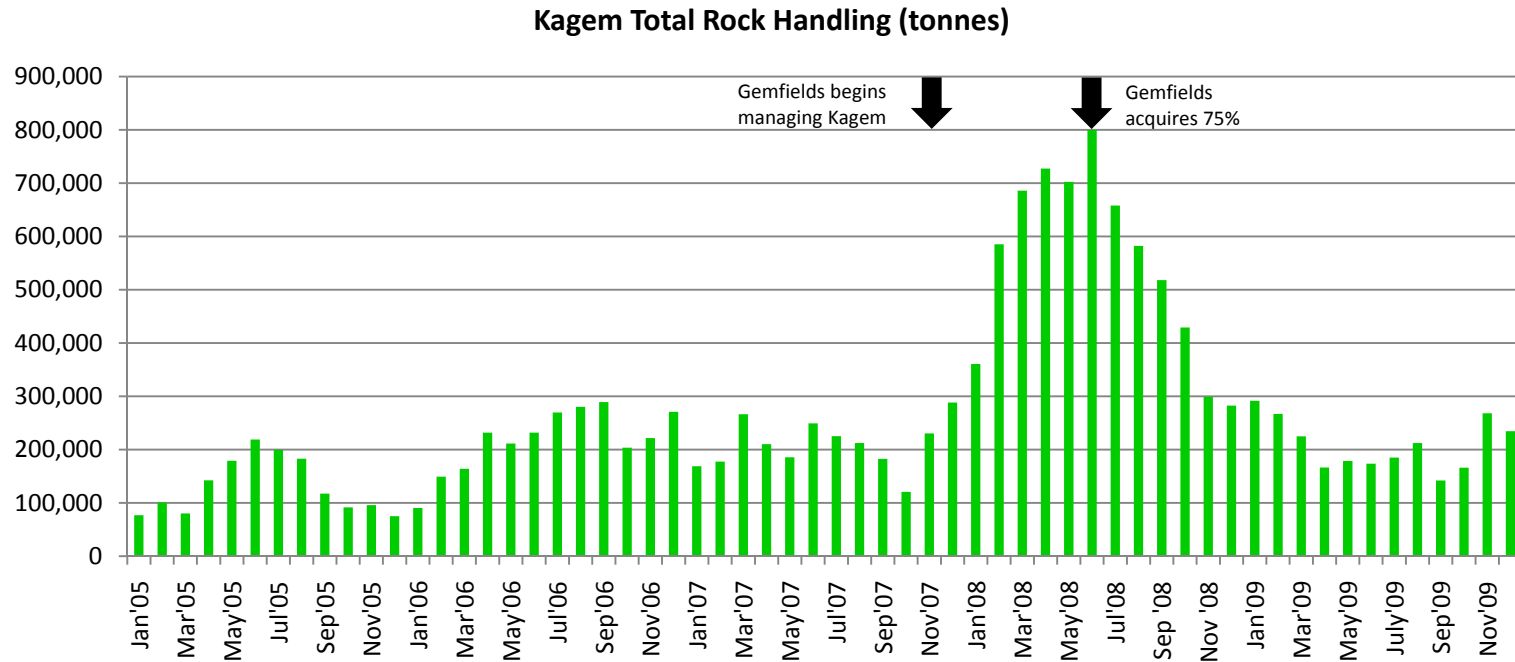
- In the financial year ending 30 June 2009, the ore grade averaged 349 carats per tonne.
- Since January 2005, Kagem's cumulative grade is approximately 328 carats per tonne.
- The grade in the quarter ending 31 December 2009 averaged 365 carats per tonne, compared with just 182 carats per tonne in the previous quarter.

Kagem Monthly Strip Ratio



- The early stages of Gemfields' management of Kagem was characterised by the removal of a backlog of waste to open ore areas for future production.
- The stripping ratio is expected to rise considerably in the short to medium term. The collective stripping ratio from January 2005 through December 2009 is 72:1.

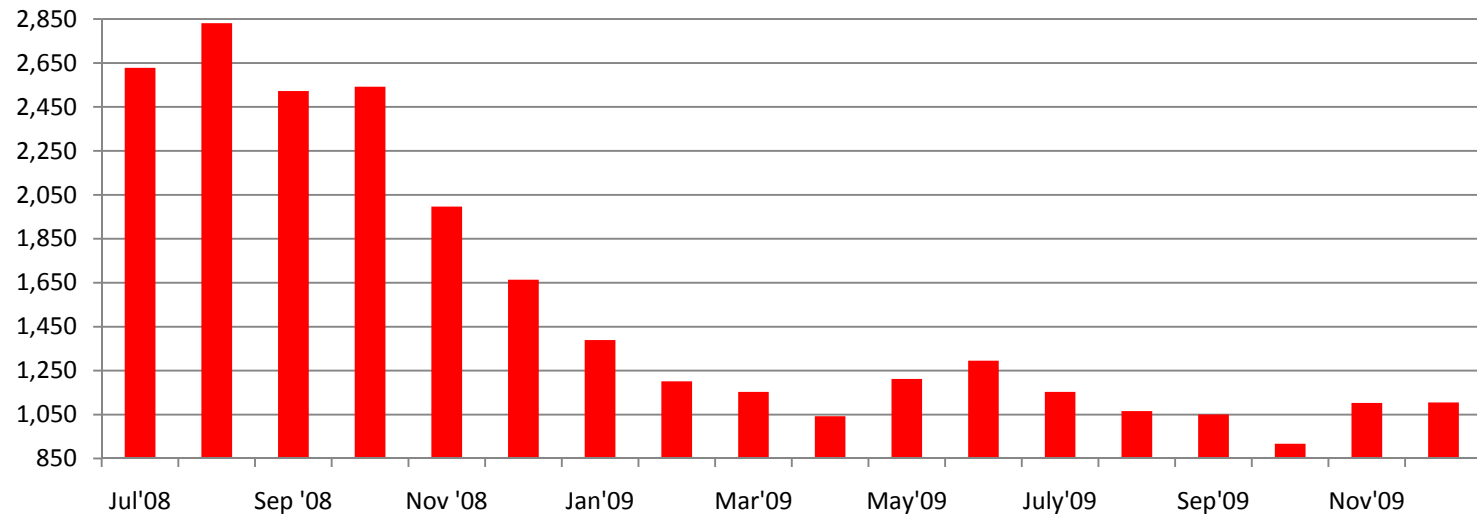
Kagem Total Monthly Rock Handling



- Significant volumes of rock were handled in the early months after Gemfields took over management to open new production areas.
- Rock handling levels are expected to increase in the short to medium term as the stripping ratio rises.

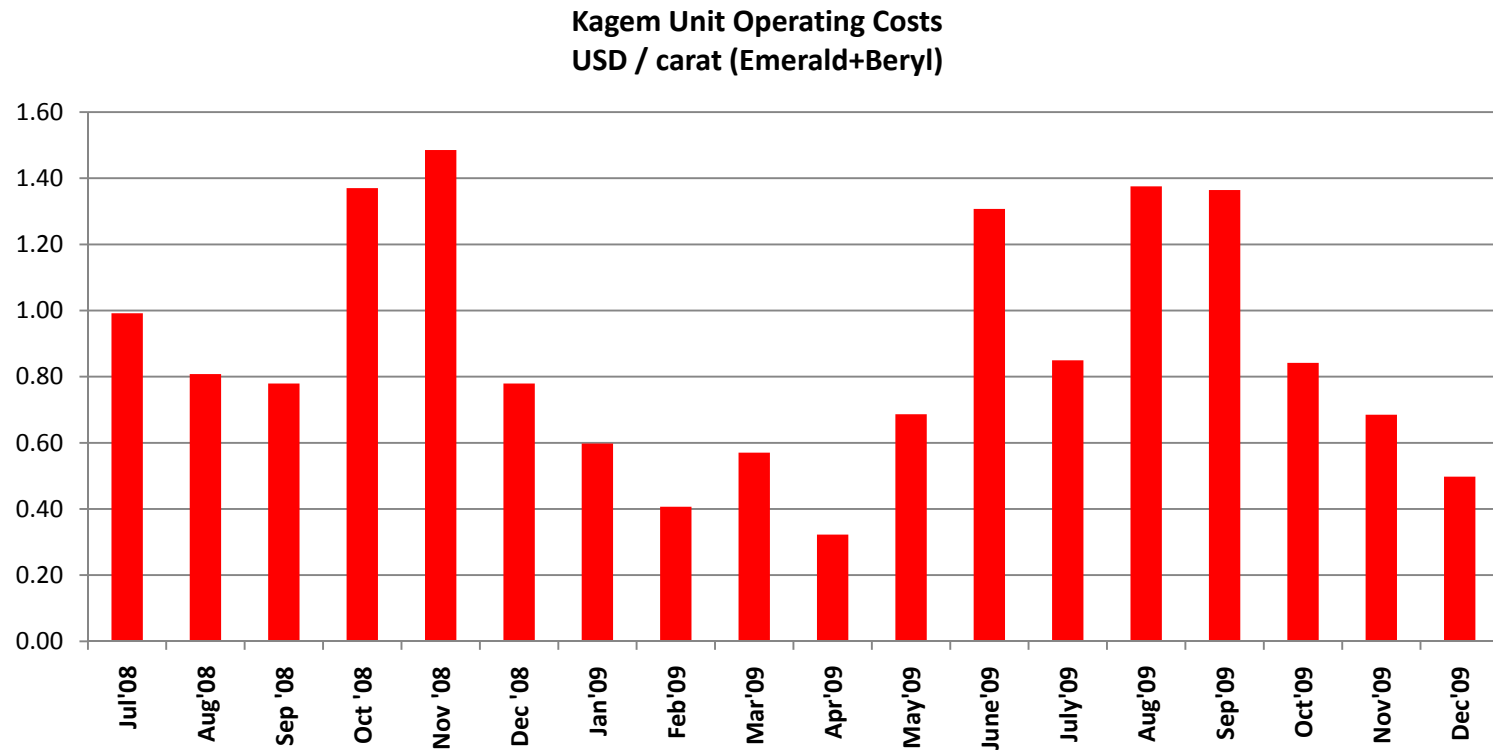
Kagem Total Monthly Operating Costs (unaudited)

KAGEM'S TOTAL MONTHLY OPERATING COSTS
USD '000 (UNAUDITED)



- Significant reductions in monthly operating costs have been achieved, primarily through a reduction in the stripping ratio and improved operating efficiencies.
- Operating costs may increase in the short to medium term given the expected increase in stripping ratio.

Kagem Unit Operating Costs (unaudited)



- Gemfields' average unit production cost during the six quarters ending 31 December 2009 was approximately USD 0.78 per carat (emerald + beryl).