



# GEMFIELDS

## Market Update

Quarter ending 30 September 2010  
(unaudited)

22<sup>nd</sup> November 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

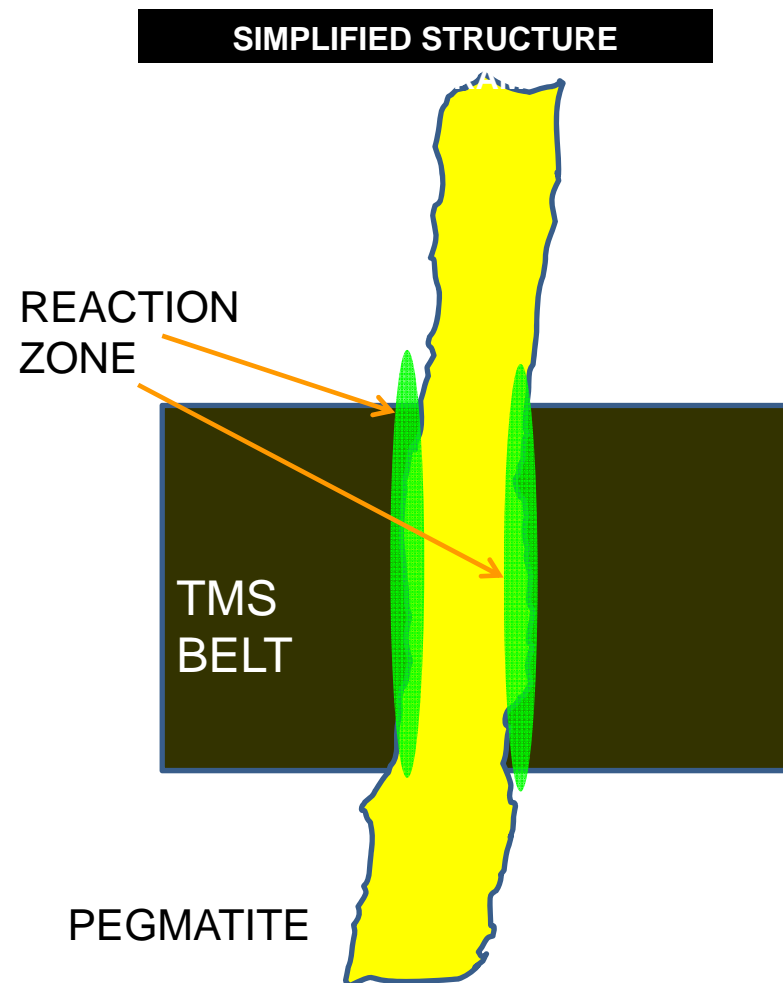
(care & maintenance)

Fabergé Licence for  
Coloured Gemstones

Equity Stake in  
TanzaniteOne Ltd  
(10.1%)

## 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 30 September 2010

KAGEM Quarterly Summary	Quarter End:	30-Sep-08	31-Dec-08	31-Mar-09	30-Jun-09	30-Sep-09	31-Dec-09	31-Mar-10	30-Jun-10	30-Sep-10	TOTAL
Gemstone Production (Emerald+Beryl)	million carats	9.4	5.3	7.3	6.0	2.9	4.9	3.4	6.1	12.8	58.2
Ore Production (Reaction Zone)	'000 tonnes	21.4	18.7	17.8	22.3	16.0	13.5	12.5	18.9	19.2	160.2
Grade (Emerald+Beryl/Reaction Zone)	carats/tonne	438	286	410	268	182	365	277	323	668	363
Waste Mined (including TMS)	million tonnes	1.7	1.0	0.8	0.5	0.5	0.7	0.6	0.7	0.9	7.5
Stripping Ratio		81	53	43	22	33	49	51	38	49	47
Total Operating Cost	USD million	8.0	6.2	3.7	3.5	3.3	3.1	3.0	3.4	3.3	37.5
Unit Production Cost (per carat)	USD/carat	0.85	1.16	0.51	0.59	1.13	0.63	0.87	0.55	0.26	0.64
Unit Production Cost (per tonne of ore)	USD/tonne	372	332	210	159	205	230	241	179	173	234
Unit Cost (per tonne of rock moved)	USD/tonne	4.5	6.1	4.8	6.8	6.1	4.6	4.6	4.6	3.5	4.9

Note: All figures are unaudited

- Ore grade (at 668 carats per tonne) showed a marked improvement when compared with the previous quarter. The combination of higher grade and good cost control resulted in a unit production cost of USD 0.26 per carat for the quarter, the lowest on record.
- 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 350 carat per tonne.
- Kagem’s unaudited total operating costs for the nine quarters ending 30 September 2010 totalled USD 37.5 million, implying an average production cost during that period of USD 0.64 per carat of emerald and beryl.

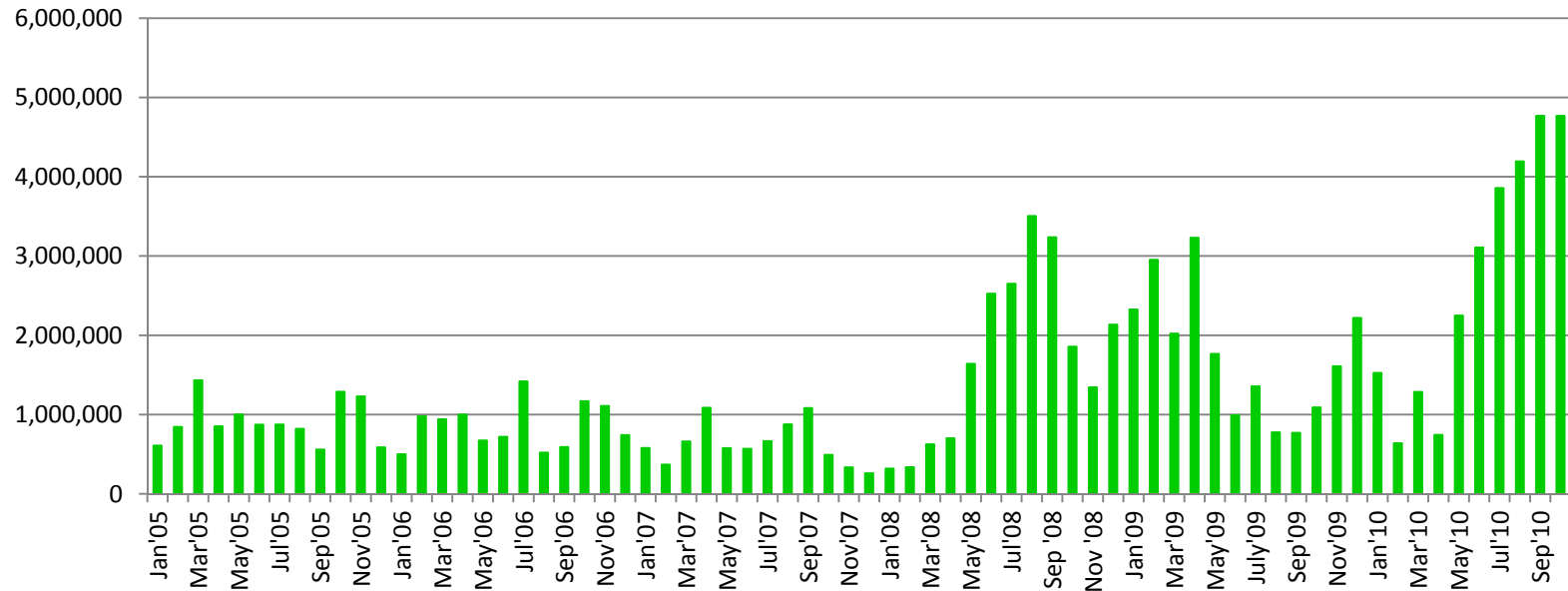
## Kagem Annual Summary

Kagem Annual Production Summary	UNITS	YEAR to 30 Jun 2006	YEAR to 30 Jun 2007	YEAR to 30 Jun 2008	YEAR to 30 Jun 2009	YEAR to 30 Jun 2010	2010 versus 2009
Gemstone Production (Emerald+Beryl)	million carats	10.2	9.4	9.9	28.0	17.4	-38%
Ore Production (Reaction Zone)	000 tonnes	22	29	42	80	61	-24%
Grade (Emerald+Beryl/Reaction Zone)	carats/tonne	462	325	233	349	286	-18%
Waste Mined (incl. TMS)	million tonnes	1.8	2.8	5.1	4.0	1.9	-53%
Waste+ TMS: Reaction Zone	strip ratio	83	96	120	50	42	-16%
Total Rock Handling	million tonnes	1.8	2.8	5.1	4.1	2.6	-37%

1. 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.
2. In the year ending 30 June 2010, Gemfields annual gemstone production was 17.4 million carats (37% less than the prior year).
3. A combination of lower grade (286 carats per tonne) and lower levels of ore mining resulted in lower gemstone production in the year ended 30th June 2010.

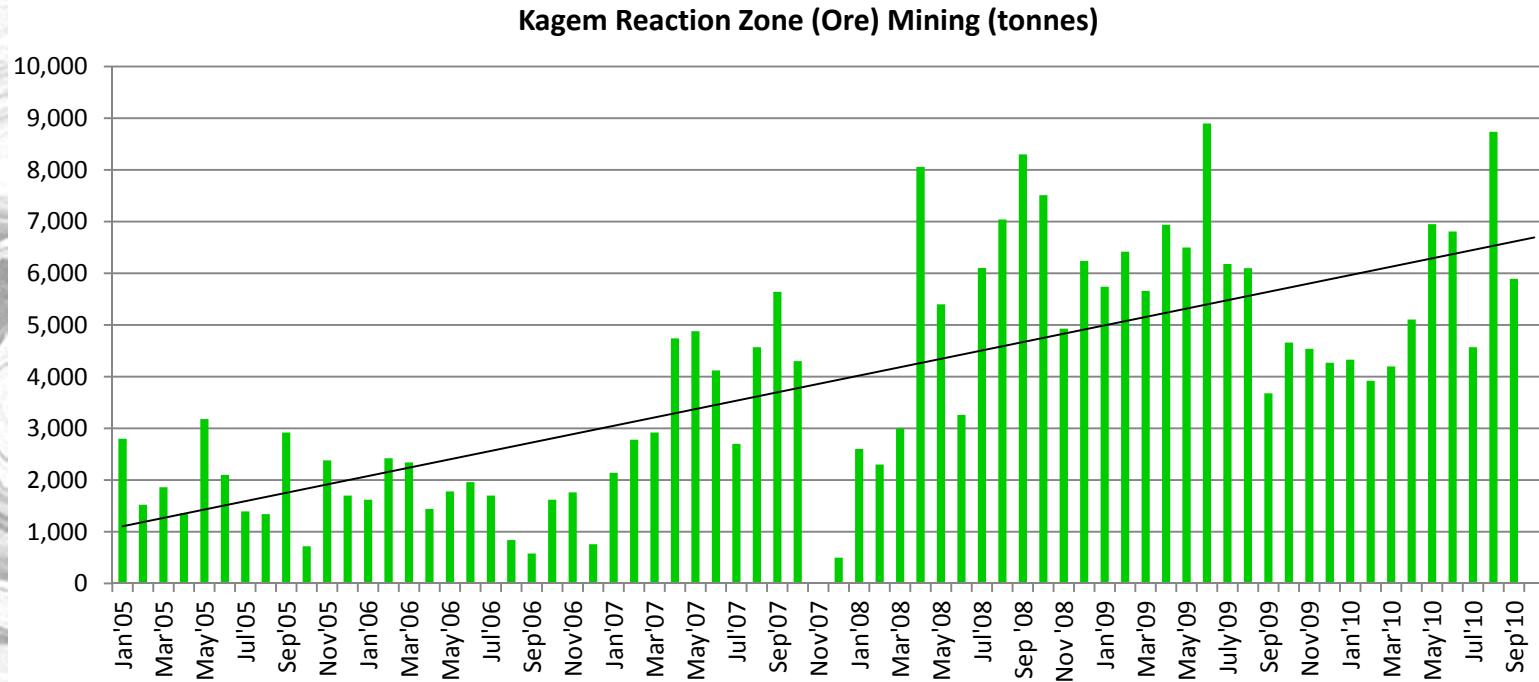
## Kagem Monthly Gemstone Production

Kagem Monthly Gemstone Production (carats)  
Emerald+Beryl



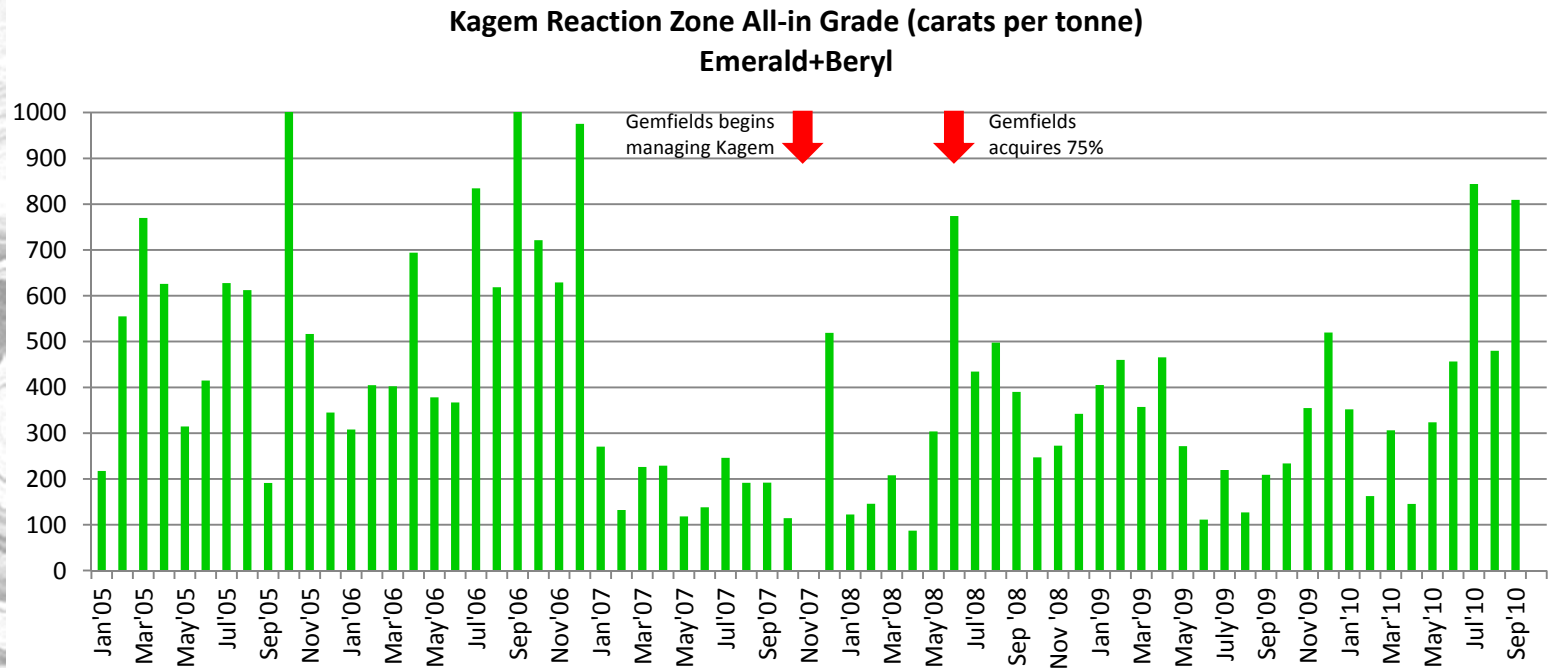
1. During Gemfields' period of ownership (which commenced June 2008), gemstone production has averaged 2.15 million carats per month.
2. Average monthly gemstone production in the quarter ending 30 September 2010 was 4.2 million carats (versus 2.0 million carats per month in the quarter ending 30 June 2010).

## Kagem Monthly Ore Mining



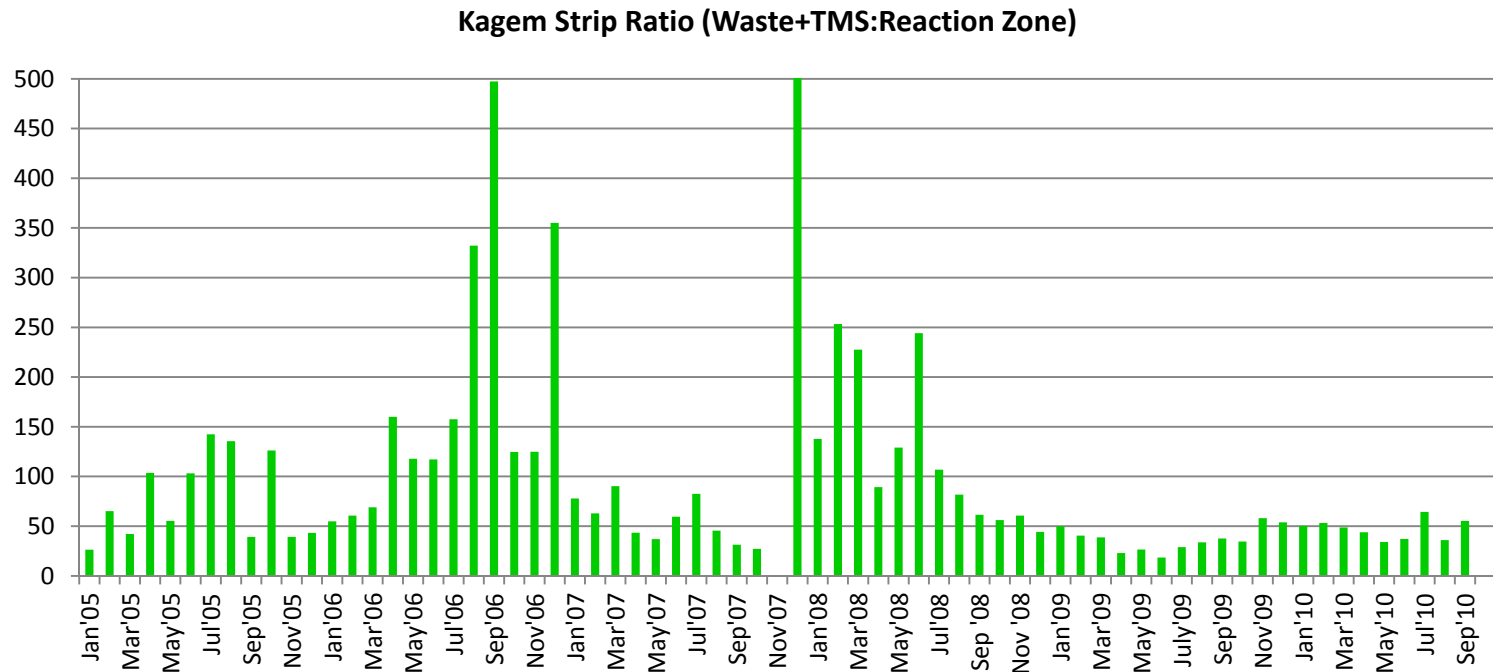
- Ore (Reaction Zone) mining at Kagem has improved in the quarter ended 30 September 2010 to 6,400 tonnes per month versus 6,288 tonnes per month in prior quarter.

## Kagem Monthly Ore Grade



1. For the quarter ending 30 September 2010, the ore grade averaged 667 carats per tonne (compared with 323 carats per tonne in the quarter to 30 June 2010).
2. Since January 2005, Kagem's cumulative grade is approximately 350 carats per tonne.

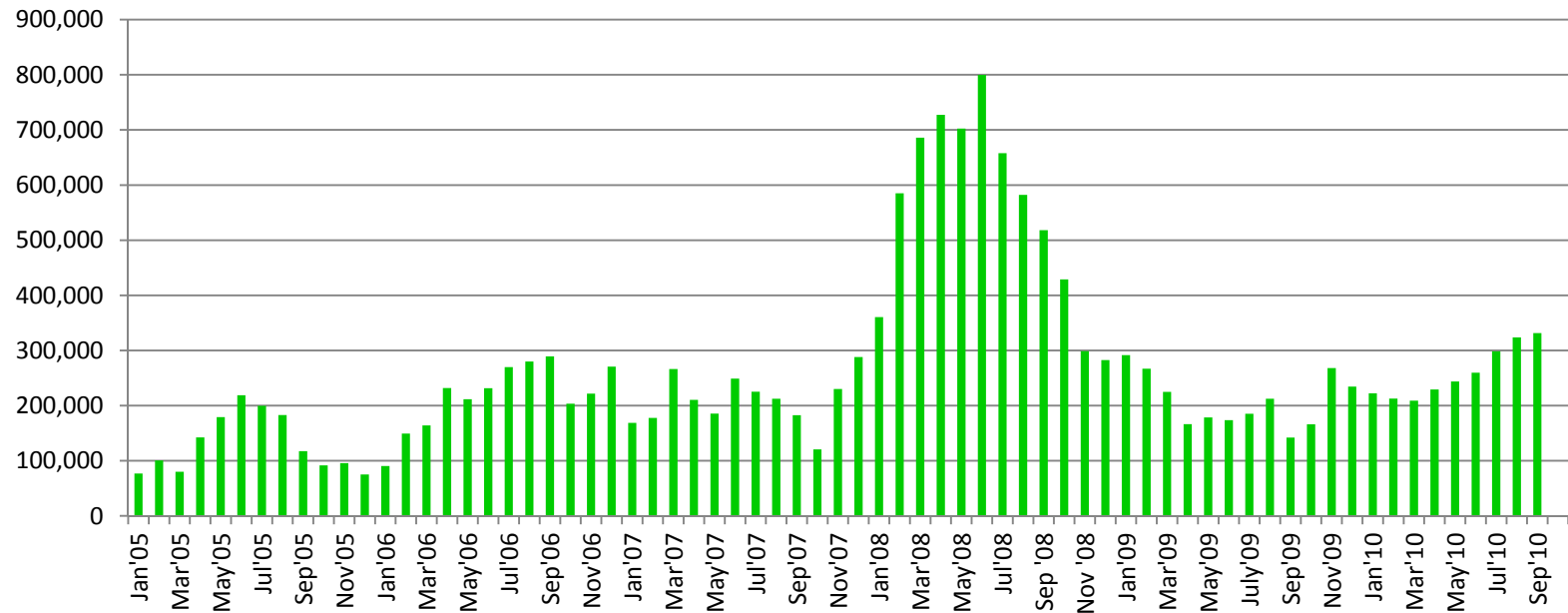
## Kagem Monthly Strip Ratio



1. The early stage of Gemfields' management of Kagem was characterised by the removal of a backlog of waste to open ore areas for future production.
2. The stripping ratio is expected to rise considerably in the short to medium term. The collective stripping ratio from January 2005 through September 2010 is 67:1.

## Kagem Total Monthly Rock Handling

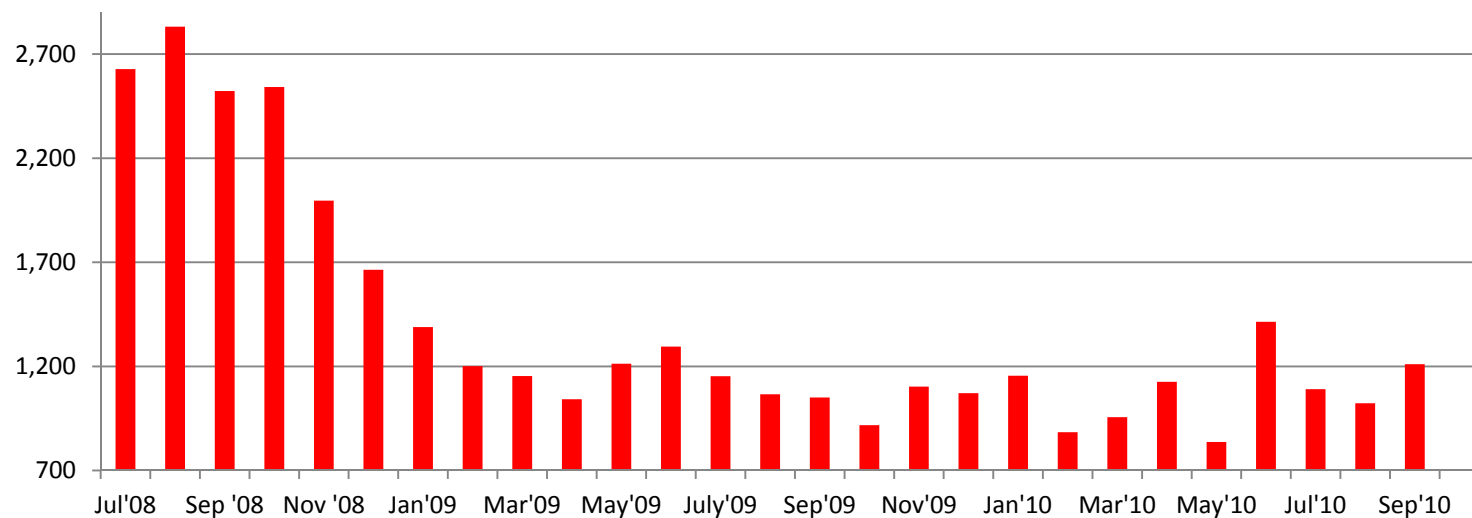
Kagem Total Rock Handling (tonnes)



1. Significant volumes of rock were handled in the early months after Gemfields took over management of Kagem (in November 2007) to open new production areas.
2. Rock handling levels are expected to increase in the short to medium term as the stripping ratio rises.

## Kagem Total Monthly Operating Costs (unaudited)

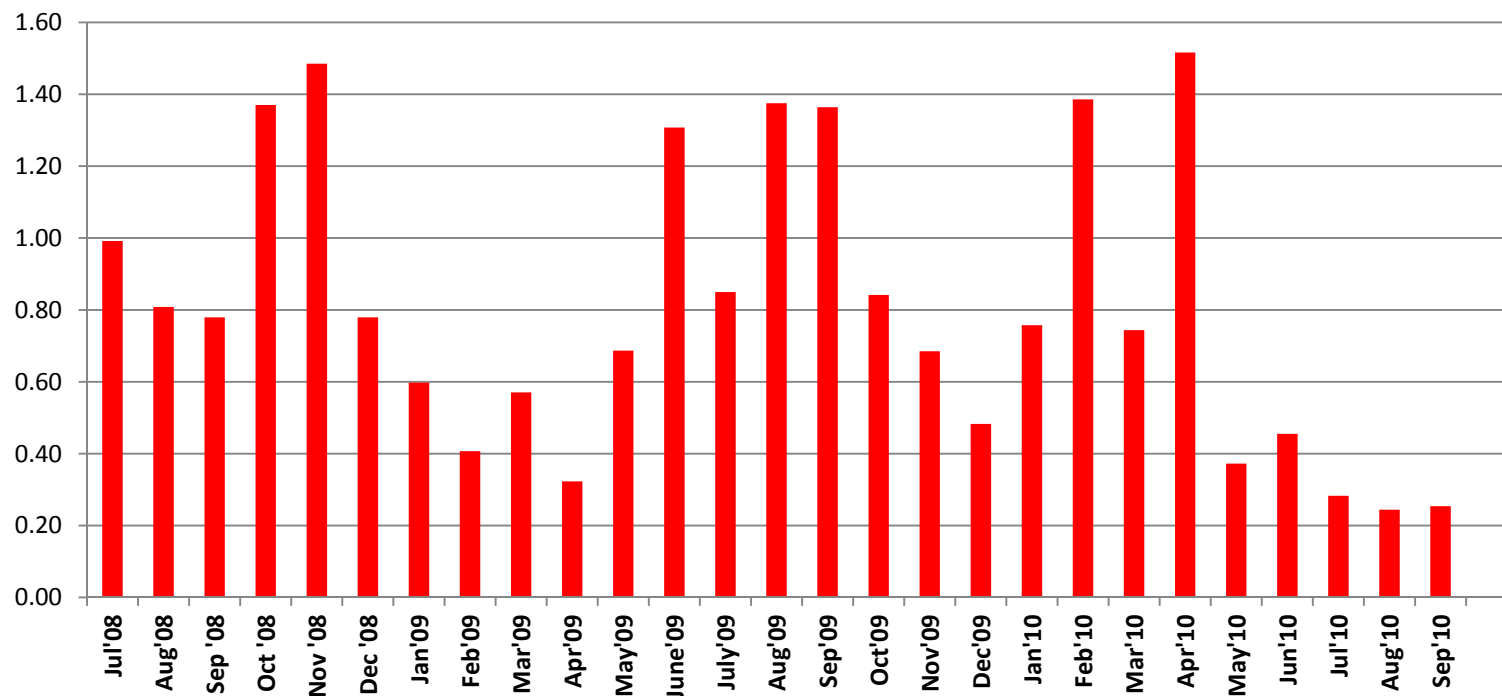
KAGEM's TOTAL MONTHLY OPERATING COSTS  
USD '000 (UNAUDITED)



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

## Kagem Unit Operating Costs (unaudited)

Kagem Unit Operating Costs  
USD / carat (Emerald+Beryl)



1. Due primarily to the high grade experienced, Kagem's average unit production cost during the quarter ending 30 September 2010 was just USD 0.26 per carat, the lowest on record.
2. The unit production cost in the year ending 30 June 2010 was USD 0.73 per carat.
3. Kagem's average unit production cost during the nine quarters ending 30 June 2010 was approximately USD 0.64 per carat (emerald + beryl).

[www.GEMFIELDS.co.uk](http://www.GEMFIELDS.co.uk)