



*Gemfields plc*  
*Market Update (Unaudited)*  
*27<sup>th</sup> October 2009*



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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)

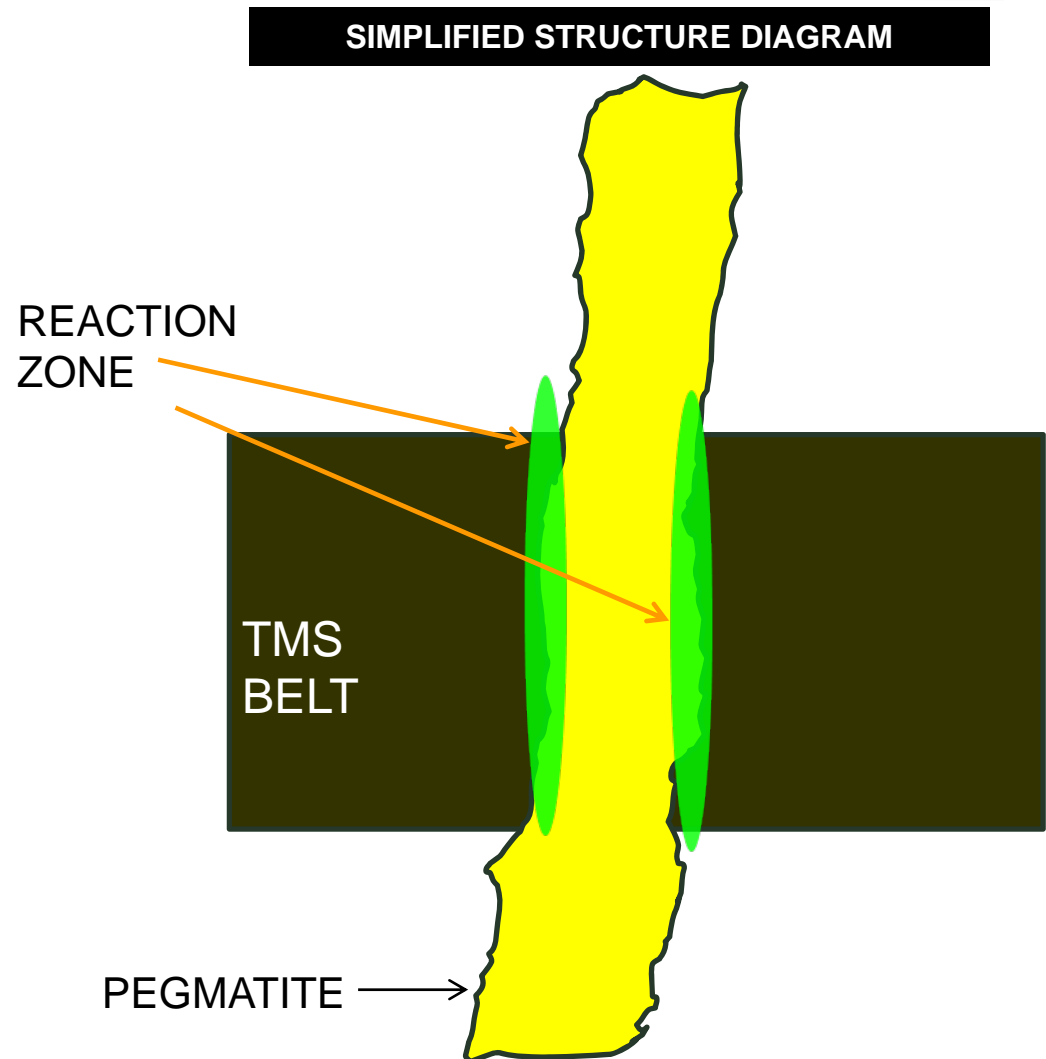
Fabergé Licence for  
Coloured Gemstones

Equity Stake in  
TanzaniteOne Ltd

(11%)

# *Emerald and Beryl Geology – The Basics*

1. 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 2009

KAGEM Quarterly Summary to 30 Sep 09	Quarter Ending:	30-Sep-08	31-Dec-08	31-Mar-09	30-Jun-09	30-Sep-09	TOTAL
Gemstone Production (Emerald+Beryl)	million carats	9.4	5.3	7.3	6.0	2.9	30.9
Ore Production (Reaction Zone)	'000 tonnes	21.4	18.7	17.8	22.3	16.0	96.2
Grade (Emerald+Beryl/Reaction Zone)	carats/tonne	438	286	409	268	182	321
Waste Mined (including TMS)	million tonnes	1.7	1.0	0.8	0.5	0.5	4.5
Stripping Ratio		81	53	43	22	33	47
Total Operating Cost	USD million	8.0	6.2	3.7	3.5	3.4	24.9
Unit Production Cost (per carat)	USD/carat	0.85	1.16	0.51	0.59	1.18	0.81
Unit Production Cost (per tonne of ore)	USD/tonne	372	332	210	159	215	259
Unit Cost (per tonne of rock moved)	USD/tonne	4.5	6.1	4.8	6.8	6.4	5.4

Note: All figures are unaudited

- While cost controls remained effective during the quarter ending 30 September 2009, Kagem experienced the lowest quarterly average grade (182 carats per tonne) since Gemfields acquired 75% of Kagem in June 2008.
- 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 326 carat per tonne.
- Kagem’s unaudited total operating costs for the five quarters ending 30 September 2009 totalled USD 24.9 million, implying an average production cost during that period of USD 0.81 per carat of emerald and beryl. Unaudited unit production costs for the quarter ending 30 September 2009 were USD 1.18 per carat.

# *Kagem Annual Summary*

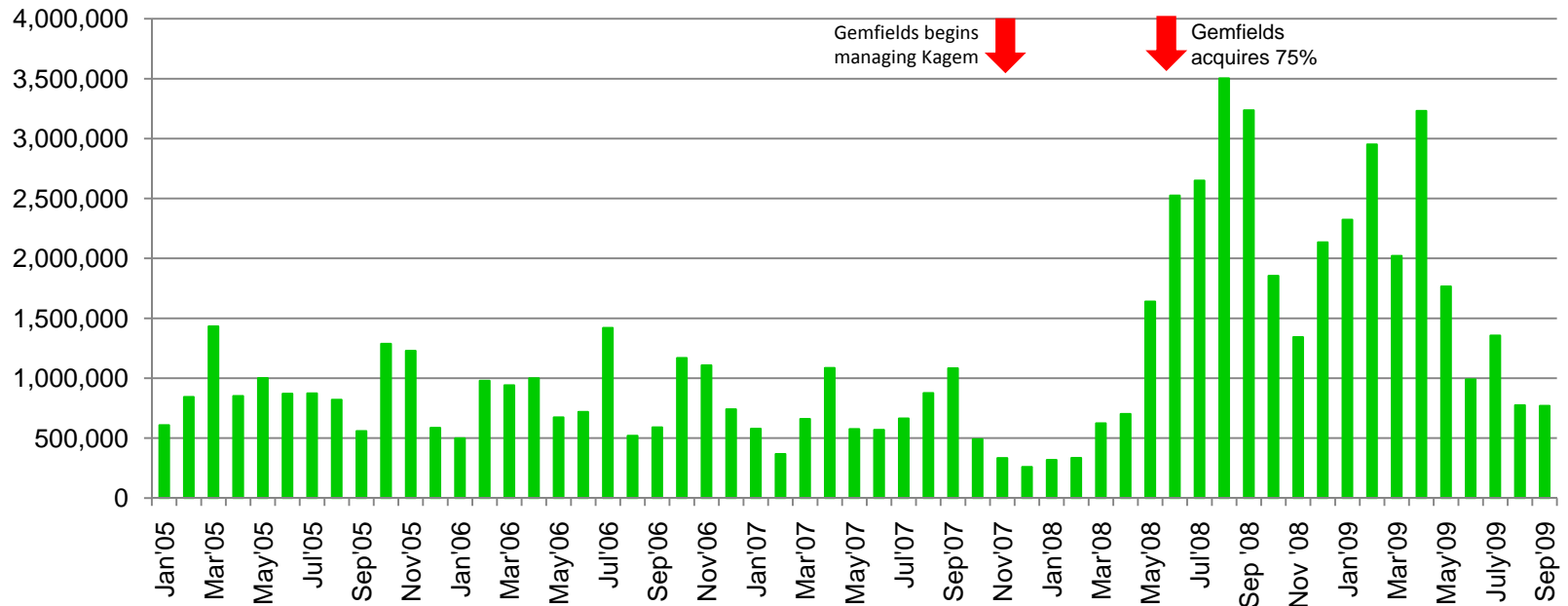
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<b>KAGEM Annual Production Summary</b>	<b>Units</b>	<b>Year to 30 Jun 06</b>	<b>Year to 30 Jun 07</b>	<b>Year to 30 Jun 08</b>	<b>Year to 30 Jun 09</b>
Gemstone Production (Emerald+Beryl)	million carats	10.2	9.4	9.9	28.0
Ore Production (Reaction Zone)	'000 tonnes	22	29	42	80
Grade (Emerald+Beryl/Reaction Zone)	carats/tonne	462	325	233	349
Waste Mined (including TMS)	million tonnes	1.8	2.8	5.1	4.0
Stripping Ratio		83	96	120	50

- Gemfields was contracted to manage Kagem in November 2007.
- 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.
- Ore grade in the year ending 30 June 2009 was broadly in line with the historic long term average.

# Kagem Monthly Gemstone Production

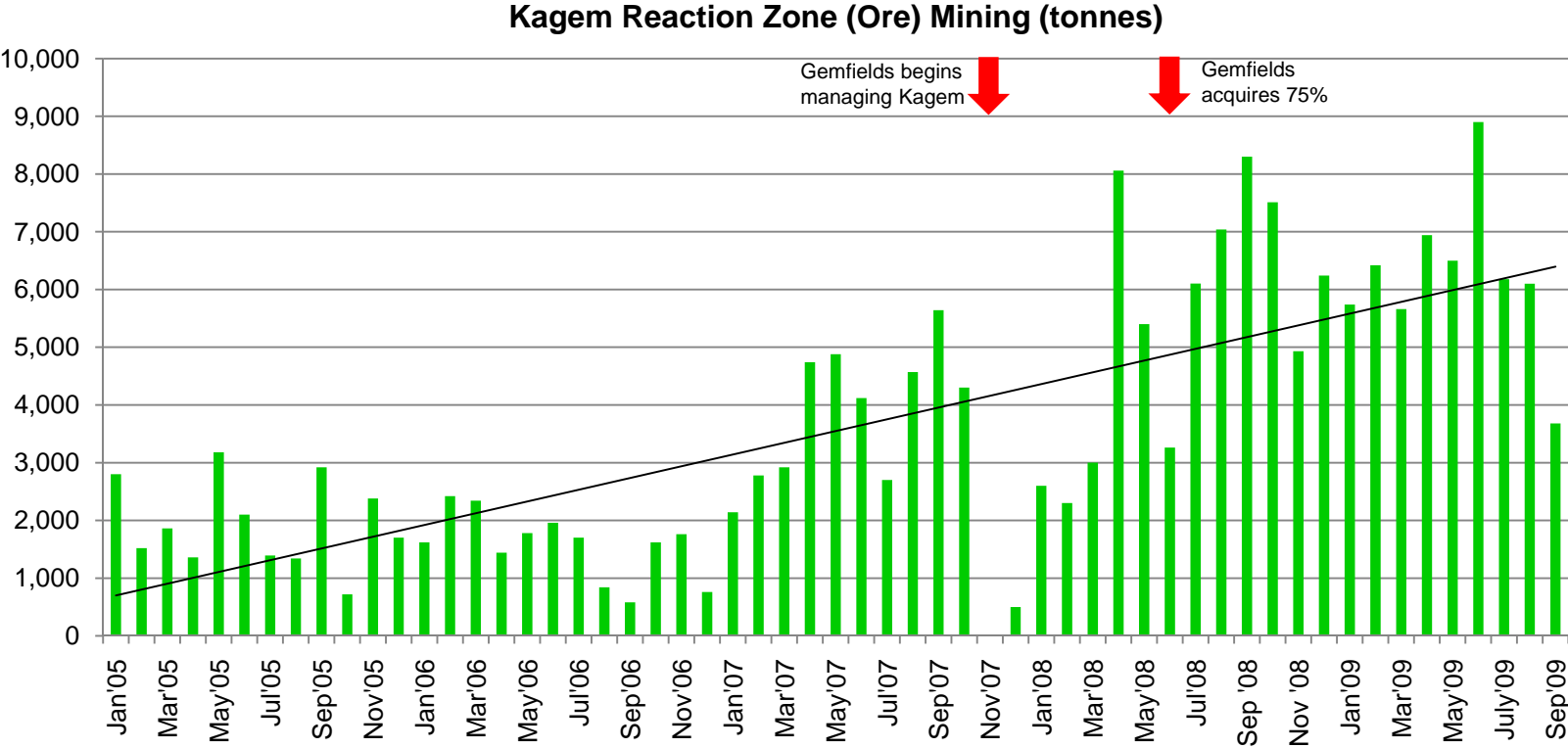
**Kagem Monthly Gemstone Production (carats)  
Emerald+Beryl**



- During Gemfields' period of ownership, gemstone production has averaged 2.1 million carats per month.
- Average monthly gemstone production in the quarter ending 30 September 2009 was 0.97 million carats (versus 2.0 million carats per month in the quarter ending 30 June 2009).



# Kagem Monthly Ore Mining

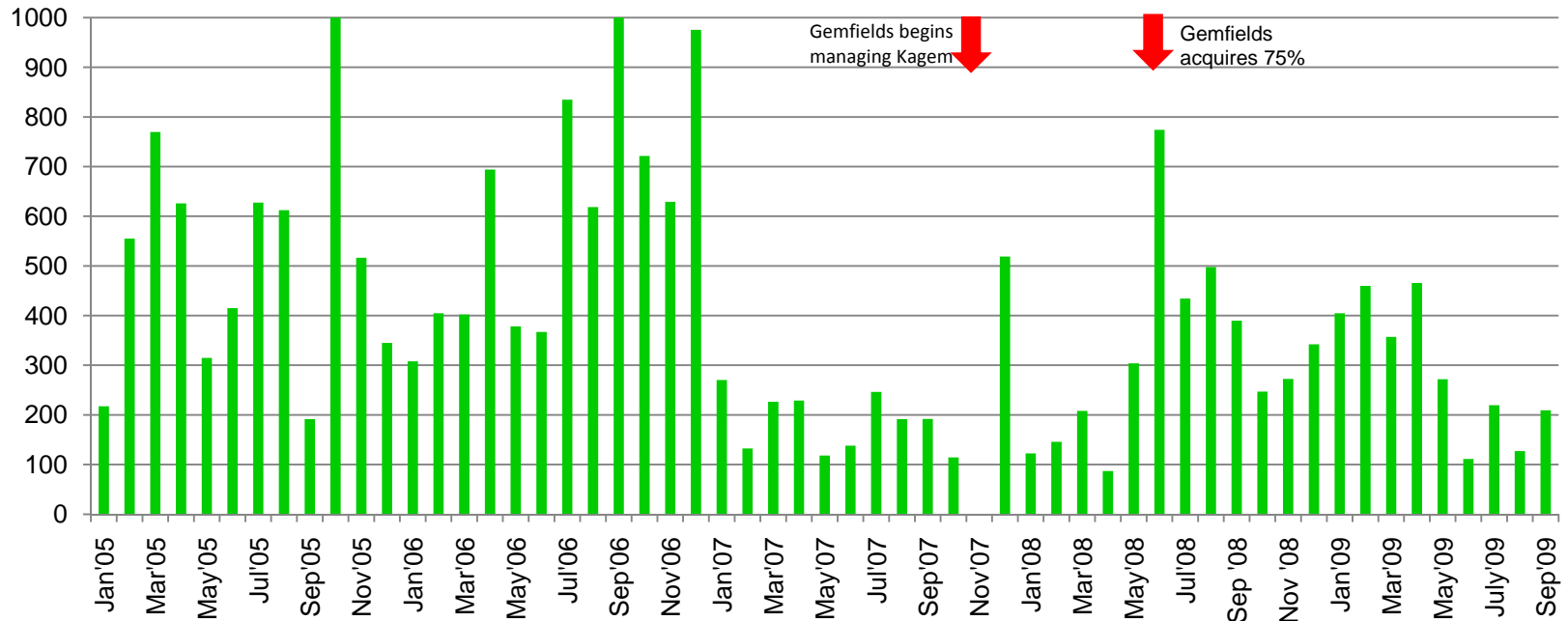


- Ore mining shows an encouraging trend despite significant reductions in monthly operating costs.



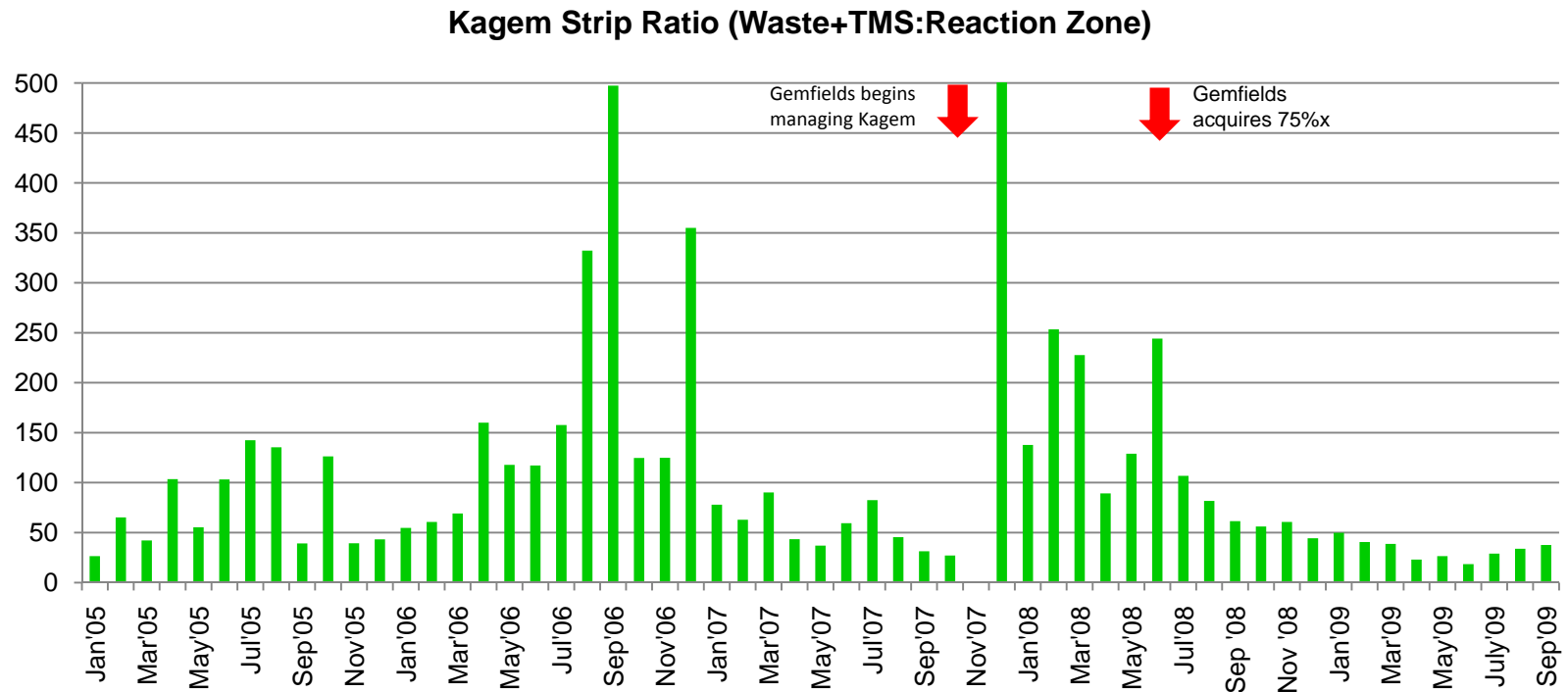
# Kagem Monthly Ore Grade

**Kagem Reaction Zone All-in Grade (carats per tonne)  
Emerald+Beryl**



- In the year ending 30 June 2009, the ore grade averaged 349 carats per tonne.
- Since January 2005, Kagem's cumulative grade is approximately 326 carats per tonne.
- The grade in the quarter ending 30 September 2009 averaged 182 carats per tonne, the lowest quarterly figure experienced since Gemfields acquired 75% of Kagem in June 2008.

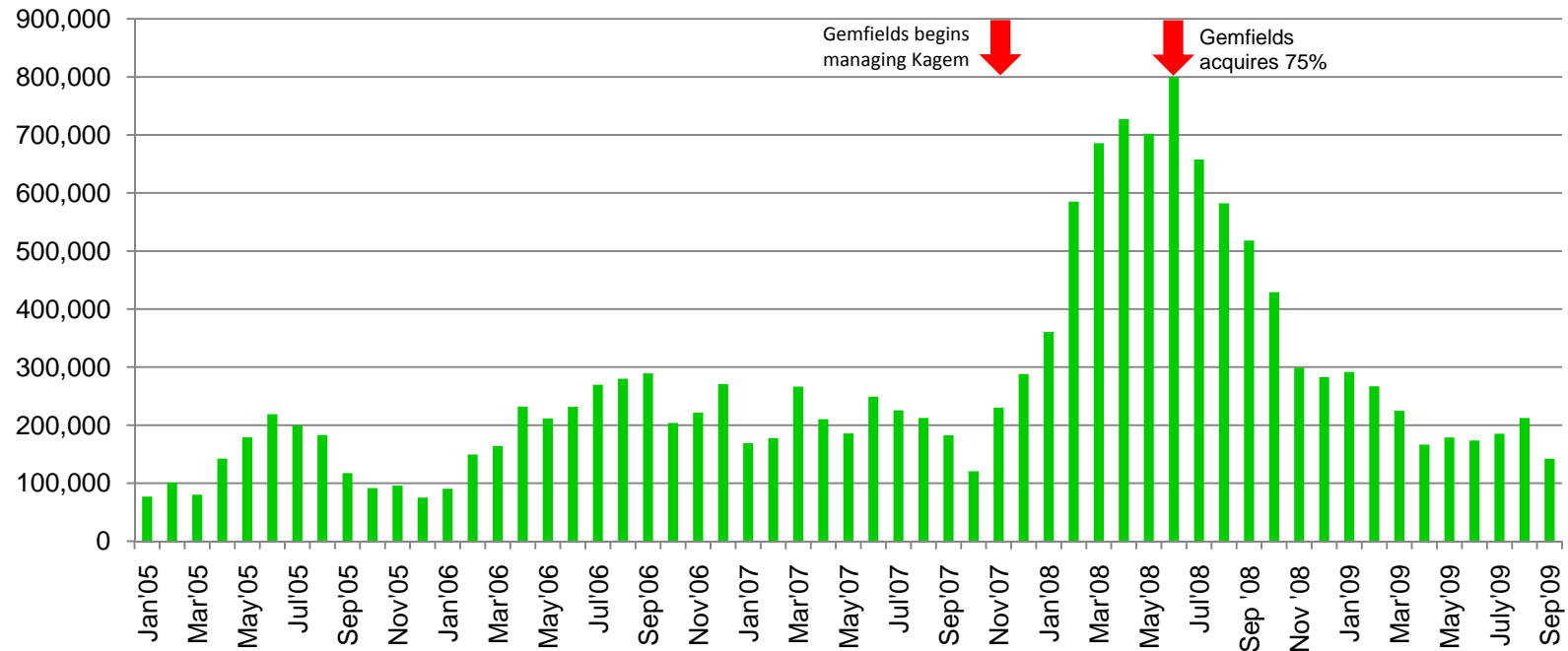
# Kagem Monthly Strip Ratio



- 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 toward the end of calendar year 2009. The collective stripping ratio from January 2005 through September '09 is 74:1.

# Kagem Total Monthly Rock Handling

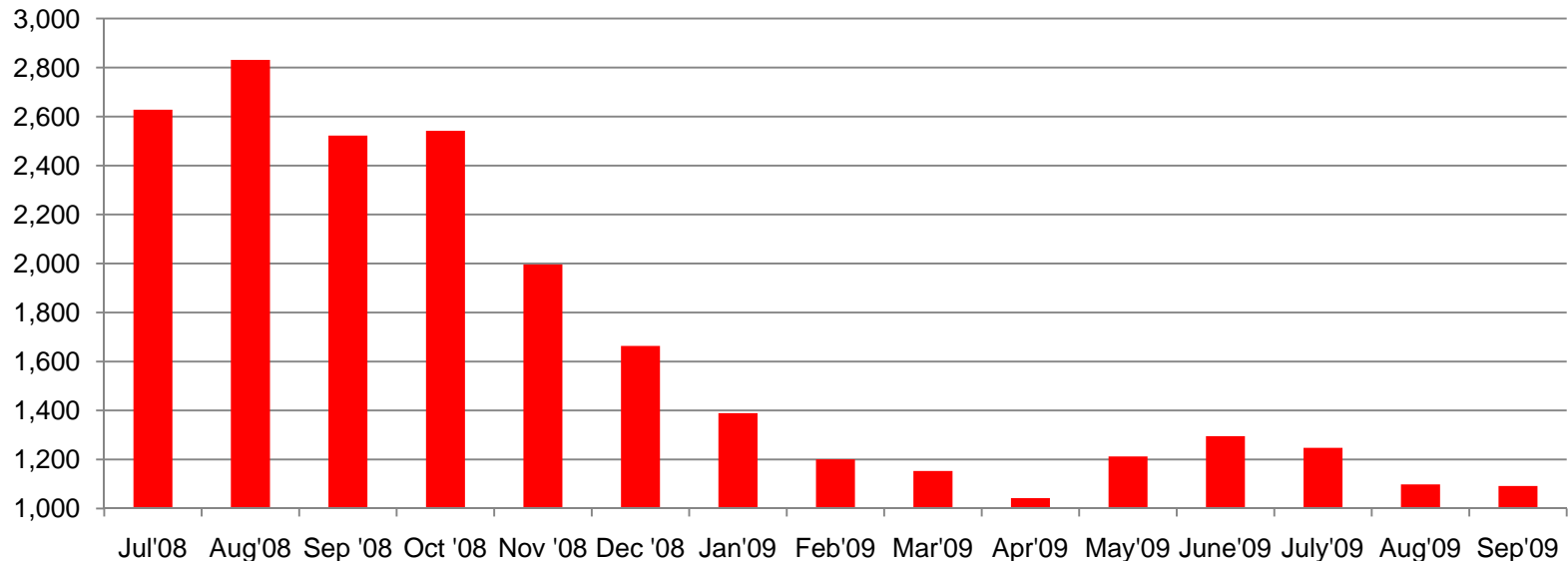
Kagem Total Rock Handling (tonnes)



- 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 toward the end of the calendar year as the stripping ratio rises.

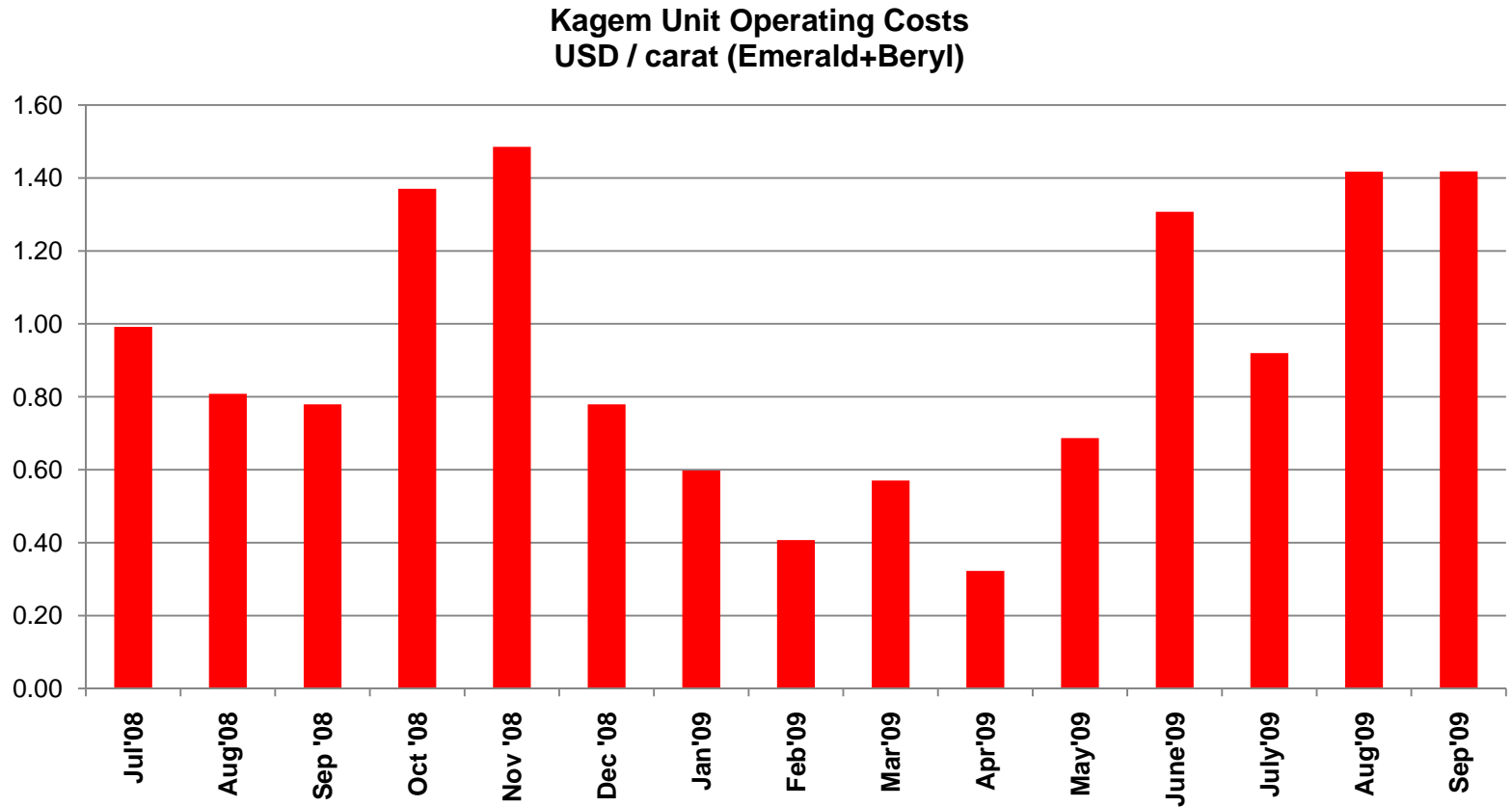
# *Kagem Total Monthly Operating Costs (unaudited)*

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



- Significant reductions in monthly operating costs have been achieved without materially affecting ore production.
- Operating costs may increase toward the end of the 2009 calendar year given the expected increase in stripping ratio.

# *Kagem Unit Operating Costs (unaudited)*



- Gemfields' average unit production cost during the five quarters ending 30 September 2009 was approximately USD 0.81 per carat (emerald + beryl).

## *Kagem Historic Unit Revenue (unaudited)*

- In its market updates in February and March 2009, Gemfields' management assumed an *estimated* (and unproven) revenue figure of USD 0.75 per carat across the blended production profile. The historically realised average value per rough carat (emerald + beryl) was tabled as:

<b>KAGEM Annual Summary</b>	<b>Year Ending:</b>	<b>Mar-03</b>	<b>Mar-04</b>	<b>Mar-05</b>	<b>Mar-06</b>	<b>Mar-07</b>	<b>Dec-07</b>
Carats produced (emerald+beryl)	carats million	13.5	6.4	9.1	10.5	9.5	5.9*
Revenue	USD million	4.4	4.5	6.4	9.5	12.7	8.5*
Revenue per carat	USD per carat	0.33	0.70	0.71	0.91	1.33	1.43

\*Note: due to a change in year-end, the period ending December 2007 is a nine month period

- Kagem's gemstone production profile varies widely in quality. Naturally, value falls off as quality decreases. Conversely, volume increases dramatically as quality decreases.
- Achievable values for rough emerald can vary widely from lower-quality to higher-quality material, ranging from USD 0.01 per carat through USD 500 per carat.
- Since Gemfields has not yet sold any meaningful quantities of lower quality material, it remains difficult to project the average per carat revenues that will be derived from Kagem's overall production profile.

*End*

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