

17 February 2020

Corp

Ticker **GEM:AIM**

Mining

Shares in issue (m) 1,267.5
Next results FY Mar

Price **11.7p**

Target price 42.0p
Upside 259%

Market cap **£148.3m**

Net debt/(cash) -£133.7m
Other EV adjustments £0.0m
Enterprise value £14.6m

What's changed? **From To**

Adjusted EPS - 2.0
Target price - 42.0

%	1M	3M	12M
Actual	550.0	680.0	515.8

Company description

The company mines rubies at Montepuez in Mozambique and emeralds at Kagem in Zambia.

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► Gemfields*

Rubies and Emeralds in Africa

Gemfields is a unique business offering exposure to high-value coloured gemstones and a recovering luxury goods brand. The company has been comprehensively repositioned from its previous existence as multi-commodity investor Pallinghurst, and is now re-engaging with international investors following its admission to AIM. The company's world-class ruby and emerald mines are both in steady state operation, supported by strong markets for coloured gemstones. We see considerable upside from this point, driven by the continuing development of the mines, the potential for developing new mines, the ongoing turnaround of the Fabergé brand and, not least, the return of the business to the London market. We initiate coverage with a 42p price target.

- **Gemfields is now a highly profitable gemstone business with two world-class mines in steady state operation and a dominant position in the supply of high-quality gemstones to the global markets.** There is significant potential for growth, underpinned by the very substantial defined resources at both mines. Indeed, the main factor that could set the limits for growth is the capacity of the global market to absorb the company's production without any significant erosion of demand and hence price. So far, there are no signs that this limit has been reached.
- **The company's innovative and proprietary gemstone classification and sorting systems have gained wide market acceptance.** This has translated into a trend of increased volumes and higher average prices for both emeralds and rubies.
- **Gemfields benefits from high quality management with very substantial experience in the coloured gemstone market.** This should enable it to identify and commercialise other opportunities within the sector as they become apparent.
- **The company is free cashflow positive, with the small amount of remaining debt covered by cash.** As a result, the company may soon be in a position to start returning some surplus cash to shareholders.
- **We are basing our projections and valuation on essentially flat prices for both rubies and emeralds.** However, the reality is that prices for high-quality emeralds in particular recently achieved a record high within a rising trend. Ruby demand and prices have also held up well, with the most recent sale being the second best in terms of income since Montepuez started production.

Key estimates		2017A	2018A	2019E	2020E	2021E
Year end:		Dec	Dec	Dec	Dec	Dec
Revenue	\$m	81.7	206.1	215.5	215.5	221.0
Adj EBITDA	\$m	30.5	58.9	83.4	92.3	94.5
Adj EBIT	\$m	8.3	28.2	50.4	57.3	57.5
Adj PBT	\$m	6.3	24.7	54.1	61.5	63.1
Adj EPS	c	-1.1	0.9	2.0	2.3	2.3
DPS	c	0.0	0.0	0.0	0.0	0.0

Key valuation metrics		2017A	2018A	2019E	2020E	2021E
EV/EBIT (adj)	x	2.3	0.7	0.4	0.3	0.3
P/E (adj)	x	-14.2	16.4	7.8	6.8	6.6
Dividend yield	%	0.0%	0.0%	0.0%	0.0%	0.0%
Free cash yield	%	-0.1%	-15.8%	2.2%	22.9%	22.9%
Pre-tax ROCE	%	1.2%	4.7%	8.4%	9.5%	9.1%

Income statement		2018A	2019E	2020E	2021E
Year end:		Dec	Dec	Dec	Dec
Sales	\$m	206.1	215.5	215.5	221.0
Gross profit	\$m	115.7	124.7	133.4	135.5
EBITDA (adjusted)	\$m	58.9	83.4	92.3	94.5
EBIT (adjusted)	\$m	28.2	50.4	57.3	57.5
Associates/other	\$m	5.3	5.0	5.0	5.0
Net interest	\$m	-8.8	-1.3	-0.8	0.6
PBT (adjusted)	\$m	24.7	54.1	61.5	63.1
Total adjustments	\$m	-78.6	-3.5	-3.5	-3.5
PBT (stated)	\$m	-53.9	50.6	58.0	59.6
Tax charge	\$m	-6.5	-20.2	-23.2	-23.9
Minorities	\$m	-1.8	-5.5	-6.3	-6.4
Reported earnings	\$m	-62.2	24.9	28.5	29.3
Adjusted earnings	\$m	16.4	28.4	32.0	32.8
Shares in issue (year end)	m	1,316.6	1,267.5	1,267.5	1,267.5
EPS (stated)	c	-4.7	2.0	2.3	2.3
EPS (adjusted, fully diluted)	c	0.9	2.0	2.3	2.3
DPS	c	0.0	0.0	0.0	0.0

Cash flow		2018A	2019E	2020E	2021E
Year end:		Dec	Dec	Dec	Dec
EBITDA	\$m	58.9	83.4	92.3	94.5
Net change in working capital	\$m	-29.7	-19.5	0.0	-5.3
Other operating items	\$m	0.3	0.0	0.0	0.0
Cash flow from op. activities	\$m	29.5	63.9	92.3	89.2
Cash interest	\$m	-4.4	-2.3	-1.8	-0.4
Cash tax	\$m	-24.4	-25.0	-25.0	-25.0
Capex	\$m	-31.3	-32.4	-21.3	-19.6
Free cash flow	\$m	-30.6	4.2	44.2	44.2
Acquisitions / disposals	\$m	64.3	17.8	0.0	0.0
Dividends	\$m	0.0	0.0	0.0	0.0
Shares issued	\$m	0.0	0.0	0.0	0.0
Other	\$m	3.3	5.0	5.0	5.0
Net change in cash flow	\$m	37.1	27.0	49.2	49.2
Opening net cash (debt)	\$m	-27.2	9.8	36.8	86.0
Closing net cash (debt)	\$m	9.8	36.8	86.0	135.2

Balance sheet		2018A	2019E	2020E	2021E
Year end:		Dec	Dec	Dec	Dec
Tangible fixed assets	\$m	365.0	360.4	346.7	329.3
Goodwill & other intangibles	\$m	130.0	105.4	105.4	105.4
Other non current assets	\$m	14.7	19.2	19.2	19.2
Net working capital	\$m	133.2	144.4	144.4	148.1
Other assets	\$m	0.0	0.8	0.8	0.8
Other liabilities	\$m	-102.6	-109.2	-109.2	-109.2
Gross cash & cash equivs	\$m	63.0	76.6	95.8	135.2
Capital employed	\$m	603.3	597.6	603.1	628.8
Gross debt	\$m	53.2	39.8	9.8	0.0
Net pension liability	\$m	0.0	0.0	0.0	0.0
Shareholders equity	\$m	550.1	557.8	593.3	628.8
Minorities	\$m	0.0	0.0	0.0	0.0
Capital employed	\$m	603.3	597.6	603.1	628.8

Growth analysis		2018A	2019E	2020E	2021E
Year end:		Dec	Dec	Dec	Dec
Sales growth	%	152.4%	4.6%	0.0%	2.6%
EBITDA growth	%	93.1%	41.6%	10.7%	2.4%
EBIT growth	%	239.4%	78.4%	13.8%	0.3%
PBT growth	%	291.0%	119.3%	13.8%	2.7%
EPS growth	%	186.6%	111.4%	14.7%	2.8%
DPS growth	%	n/m	n/m	n/m	n/m

Profitability analysis		2018A	2019E	2020E	2021E
Year end:		Dec	Dec	Dec	Dec
Gross margin	%	56.1%	57.8%	61.9%	61.3%
EBITDA margin	%	28.6%	38.7%	42.8%	42.8%
EBIT margin	%	13.7%	23.4%	26.6%	26.0%
PBT margin	%	12.0%	25.1%	28.5%	28.6%
Net margin	%	8.0%	13.2%	14.9%	14.9%

Cash flow analysis		2018A	2019E	2020E	2021E
Year end:		Dec	Dec	Dec	Dec
Cash conv'n (op cash / EBITDA)	%	50.1%	76.6%	100.0%	94.4%
Cash conv'n (FCF / EBITDA)	%	-52.0%	5.0%	47.9%	46.8%
U/lying FCF (capex = depn)	\$m	-29.9	3.6	30.5	26.8
Cash quality (u/l FCF / adj earn)	%	-182.5%	12.6%	95.2%	81.6%
Investment rate (capex / depn)	x	1.0	1.0	0.6	0.5
Interest cash cover	x	6.7	28.0	51.3	251.0
Dividend cash cover	x	n/a	n/m	n/m	n/m

Working capital analysis		2018A	2019E	2020E	2021E
Year end:		Dec	Dec	Dec	Dec
Net working capital / sales	%	64.6%	67.0%	67.0%	67.0%
Net working capital / sales	days	236	245	245	245
Inventory (days)	days	176	183	183	183
Receivables (days)	days	110	117	117	117
Payables (days)	days	50	55	55	55

Leverage analysis		2018A	2019E	2020E	2021E
Year end:		Dec	Dec	Dec	Dec
Net debt / equity	%	net cash	net cash	net cash	no debt
Net debt / EBITDA	x	net cash	net cash	net cash	no debt
Liabilities / capital employed	%	8.8%	6.7%	1.6%	0.0%

Capital efficiency & intrinsic value		2018A	2019E	2020E	2021E
Year end:		Dec	Dec	Dec	Dec
Adjusted return on equity	%	3.0%	5.1%	5.4%	5.2%
RoCE (EBIT basis, pre-tax)	%	4.7%	8.4%	9.5%	9.1%
RoCE (u/lying FCF basis)	%	-5.0%	0.6%	5.1%	4.3%
NAV per share	c	41.8	44.0	46.8	49.6
NTA per share	c	31.9	35.7	38.5	41.3

Investment case

Gemfields offers exposure to a unique coloured gemstone mining business and a recognised luxury goods brand. The principal assets are the Montepuez ruby mine in Mozambique and the Kagem emerald mine in Zambia. Both mines benefit from substantial reserves and are producing in steady state following recent capital investment at both operations. Gemfields produces nearly 10% of the world's coloured gemstones by value, and is by far the largest single producer of emeralds and rubies.

- **The company's innovative gemstone classification and sorting systems are a substantial value driver for Gemfields.** In order to maximise profit from jewellery manufacture, the market needs consistent supplies of gemstones that are similar in terms of both size and quality. The introduction by Gemfields of its systems has addressed this issue which has, in turn, translated into keen buying competition at the auctions and hence improved selling prices. Recent trials of making some of the gemstones fully traceable by making use of nanotags is another development of this overall strategy.
- **The Fabergé brand offers the opportunity to add further value to the gemstones by promoting them in a similar way to the link between De Beers and diamonds.** Fabergé continues to focus on reducing its cash requirement from the Group through tight cost control. Gemfields puts considerable investment into promoting coloured gemstones, both directly and through the Fabergé brand.
- **As part of its social licence to operate, Gemfields puts a significant effort into making a positive investment into the local communities that live in the vicinity of its mines.** In Zambia, the area around the Kagem mine is managed directly by the Zambian Government as an effective exclusion zone in order to minimise disruption from artisanal miners. As a result, Gemfields has been investing in local communities around the periphery of the zone. In Mozambique, the company supports local health, education and farming efforts and has also constructed a new village, built to a high standard, to house those that may be affected by planned mining activities. However, given that the area around the Montepuez mine supports a substantial artisanal gemstone mining industry, there is a requirement to sensitively manage security at the mine and in the immediate surrounding area.
- **We have used DCF methodology with appropriate risk discounts to set our target price of 42p.** This is some 259% above the current price of the stock.
- **We see considerable upside from our target price, with the following being the principal drivers:**

 - Continued strength in emerald prices driving up volumes and margins at Kagem, together with the potential for improved recoveries by automating the recovery process;
 - Adding further capacity to the Montepuez ruby recovery plant;
 - Turning the Fabergé brand into a profitable business and using it to add further value to the coloured gemstones; and
 - Developing other opportunities in the coloured gemstone space, bringing further value to the business and diluting the impact of the heavy G&A spend, tax and minority liabilities.

Valuation and target price

We have derived a valuation for Gemfields using DCF methods for the Kagem and Montepuez mines and a carrying value for Fabergé. We calculate an unrisks post-tax value for Gemfields' assets of US\$849.5m, equivalent to 51.6p per share. After applying appropriate risk discounts and rounding the result, we arrive at a target price of 42p.

We have used average prices achieved at auction for the company's rubies and emeralds for the past three years as the base case in our valuations.

We have used an 8% discount rate for our base-case unrisks valuations.

We have assumed a GBP/USD exchange rate of 1.30.

We have limited our valuation to include the next ten years of operations only.

The most recent balance sheet (30 June 2019) shows that the company had net current assets (including inventory) less debt of US\$174.0m, equivalent to 9.5p per share. We have separated the carried value of the Fabergé inventory from this.

Summary of valuation of Gemfields' assets (unrisks)

	US\$m	£m	p/share
Kagem (75%)	340.8	262.2	20.7
Montepuez (75%)	334.7	257.4	20.3
Fabergé (100%)	36.2	27.8	2.2
Exploration	0	0	0
Sedibelo	0	0	0
Balance Sheet	137.8	106.0	8.4
Total	849.5	653.5	51.6

Source: finnCap

Target price

To move from our undiscounted valuation to a target price, we have applied risk discounts where appropriate. The discounts are our entirely subjective estimates of project delivery risk.

The net current assets on the balance sheet are essentially stocks of gemstones, retail goods in the Fabergé business, and cash; we assume that the gemstones are realisable at the carried value, although we have discounted the Fabergé inventory by 50%. In reality, the gemstones should fetch considerably more than the book value as they are carried at cost of production.

In terms of country risk, we have discounted the valuation of both Montepuez and Kagem by 15% over and above the normal DCF discount. This is because both Mozambique and Zambia have significant inherent country risk over and above what is normal for the global mining sector. This mostly has an impact in the form of unexpected changes to the fiscal regime.

The Montepuez ruby mine has now been in operation since 2012 and is now in steady state operation with a modern, 'hands off' recovery plant. However, the mine has an unusual security risk in that it is operating in an area where artisanal mining is the main source of income for the local population. Managing this risk is a delicate operation. We add an additional 10% discount for this reason.

The Kagem open-pit emerald mine is also a well established operation with a business case covering the next two decades of operation and more. We see no specific need to risk-adjust our valuation for technical risk reasons. In contrast to Montepuez, Kagem's operations lie within an exclusion zone that is closely controlled by Zambian authorities.

At this point in time we assign no value to the other mining prospects. The emerald exploration property in Ethiopia in particular shows considerable promise, although we consider that this is unlikely to be realisable until the local security situation can be stabilised to the point where work on the ground can safely resume.

The other issue is the Fabergé luxury goods brand. This business has been loss-making since it was acquired and is expected to continue to be so for the next two to three years at least. There is no guarantee that it can be converted to a profitable business within an acceptable time span.

The holding in unlisted Sedibelo is relatively small in comparison with the rest of the Gemfields asset portfolio. It is in our view unrealistic to assign a specific value to this asset and therefore, as we do not need it for our investment case, we assign no value to it.

We round the sum of the discounted parts to arrive at our new target price of 42p per share.

Summary of valuation of Gemfields' assets (risk discounted)

	Undiscounted valuation (p/share)	Risk discount	Discounted valuation (p/share)
Kagem (75%)	20.7	15%	17.6
Montepuez (75%)	20.3	25%	15.2
Fabergé (100%)	2.2	50%	1.1
Sedibelo	0		0
Exploration	0		0
Balance sheet	8.4		8.4
Total	51.6		42.3

Source: finnCap

Background

Gemfields is a Guernsey-registered company with significant operating subsidiaries mining coloured gemstones in Zambia and Mozambique. The business was originally incorporated as a closed-end investment fund with a focus on investing in the mining industry under the name of Pallinghurst Resources Ltd. Pallinghurst was listed on the Johannesburg and Bermuda stock exchanges.

One of Pallinghurst's significant investments was a controlling shareholding in Gemfields plc. Gemfields plc was an AIM-quoted company that had been admitted to trading in London in 2005. Gemfields plc initially invested in emeralds in Zambia and in 2008 acquired a 75% interest in Kagem, Zambia's largest emerald mine. In 2012, Gemfields plc acquired a 75% interest in the Montepuez ruby project in Mozambique. Montepuez has been developed from an artisanal operation into a modern mechanised mine. In early 2013, Gemfields plc acquired the Fabergé luxury goods brand.

In May 2017, Pallinghurst launched an on-market bid to acquire the outstanding shares in Gemfields plc that it did not already own. This deal was completed in July 2017, following which Gemfields plc delisted from AIM and became a wholly-owned subsidiary of Pallinghurst. In parallel, Pallinghurst was repositioned from a closed-end investment fund into an operating mining company.

In mid-2018, Pallinghurst changed its name to Gemfields Group Ltd and commenced a process of disposing of its shareholdings in companies that are not associated with the coloured gemstone businesses. The entire holding in ASX-listed Jupiter Mines has recently been sold. At this point in time, the company retains a 6.54% interest in unlisted Sedibelo Platinum Mines Ltd. Sedibelo owns and operates the Pilanesberg open pit platinum mine in South Africa. Gemfields intends to sell its remaining interest in Sedibelo when an opportunity to do so occurs.

Coloured gemstones

The global coloured gemstone industry generates revenue of cUS\$2.5bn on an annual basis; this is about one-fifth of the size of the diamond industry in terms of the value of uncut stones. There are many different coloured gemstones of value, but the sector is dominated by emerald, ruby and sapphire.

In contrast to the highly industrialised diamond mining sector, mining of coloured gemstones has been dominated by generally small and widely dispersed artisanal operations, typically located in remote areas of developing countries. This lack of visibility has led to some parts of the industry being used in conjunction with criminal activity.

A second problem that stems from the highly fragmented nature of the coloured gemstone sector is that it makes for a very inconsistent flow of product to the market. This causes problems for jewellery manufacturers as they need to find consistent sources of supply if they are going to engage in commercial manufacture of jewellery incorporating coloured gemstones for the mass markets. Gemfields' underlying business plan is to address this issue by making available large quantities of consistently graded emeralds and rubies.

Ruby

Ruby is a variety of the mineral corundum, an aluminium oxide. The typical red colour is caused by the presence of small quantities of chromium. Other coloured varieties of corundum are generally classified as sapphire; this comes in many colours in addition to the classic blue gemstone. Corundum has a relative hardness of 9.0, making it one of the hardest natural materials known; only diamond and moissanite are harder. The price of a ruby is primarily determined by colour; the highest-quality stones are a deep and consistent red. Clarity is also important but most stones contain small quantities of rutile.

The main historical source of ruby was the Mogok valley in Burma, although it is also found in several other countries in south-east Asia including Thailand, Cambodia, India, Afghanistan and Pakistan. More recently, deposits have been found in Africa, principally in Kenya and Mozambique and in Madagascar. In recent years, Mozambique has overtaken Burma in terms of production volume and is now the dominant producer.

Emerald

Emerald is a variety of the mineral beryl, essentially beryllium aluminium silicate. Beryl is a hard mineral with a relative hardness of 7.5 to 8.0 and a specific gravity of 2.65 to 2.80. Emerald is the deep green translucent variety of beryl and results from the substitution of chromium and ferrous iron for aluminium in the crystal lattice.

The great majority of emeralds are produced from just three countries: Colombia, Zambia and Brazil. Colombia is by far the largest producer, although the actual quantity produced varies considerably from year to year. Zambia is the second-largest producer, followed by Brazil.

Montepuez ruby mine – Mozambique (75% interest)

The Montepuez ruby mine is the world's largest ruby mine. It is located in Cabo Delgado province in the far north east of Mozambique. The actual deposits mined by Gemfields are located c30 km east of the town of Montepuez, to the south of the village of Namanhumbir and c140 km west of the port of Pemba. The company's initial licence covers an area of c340 km², which makes it potentially the largest ruby mining concession in the world. This licence is valid until 2036. Three more licences covering a further 460 km² to the east, south and west of the original licence have been added to the portfolio, although as yet little work has been done on these. These licences are more or less in the centre of the Montepuez ruby fields.

Corundum was first identified in Mozambique in colonial times, although little was known about the potential for rubies and sapphires. However, in 2008 and 2009 a massive increase in the quantity of rubies from Mozambique was seen in the international market. Initially, most of the stones were heavily fractured and of poor quality, although this changed with the discovery of the Montepuez deposits in 2009. By 2010, Montepuez rubies were dominating supply from Mozambique. The Montepuez area was licensed to a local company, Mwiriti, but it had no experience of gem mining. In reality, the great majority of the rubies were recovered by artisanal miners who had invaded the area as word of its richness spread.

Mwiriti is a company controlled by a retired Mozambican General and was originally set up to manage the Montepuez area as a private hunting reserve. In June 2011, Mwiriti entered into a partnership with Gemfields plc in which the latter acquired a 75% controlling interest in exchange for US\$2.5m and a commitment to expand the business into a fully commercial ruby mine. A 25-year mining and exploration rights licence was issued to the joint venture company (Montepuez Ruby Mining) by the Mozambique government in February 2012.

The Montepuez mine lies within the Montepuez Complex, a geological system that consists of metamorphosed gneiss, amphibolite schists and quartzite, intruded by granite, granodiorite and tonalite. The rubies in primary mineralisation are found within amphibolites and narrow veins (up to 20cm in width) that originally consisted of pegmatites and aplites but have weathered to clay near the surface within it. The overlying eluvial material can also contain considerable quantities of ruby. The previously mined area at Maninge Nice is typical of this type of mineralisation. The rubies found within the veins are typically tabular hexagonal crystals although the stones found within the secondary eluvial deposits can exhibit some abrasion features.

The most important deposits in terms of current operations are the alluvial deposits in the Mugloto area. The alluvial deposits typically consist of a single gravel bed with an average thickness of 0.45m though it can go up to 2m in some places. This gravel bed lies at or very close to the basement rock contact and consists of quartz and clastic fragments. Interestingly, the proportion of gem-quality ruby is much higher within the alluvial deposits than it is within the primary deposits. This is because most poor-quality and heavily included stones are broken up by the alluvial process, leaving the more durable (and higher quality) stones behind. The primary source of the rubies within the alluvial deposits has not yet been found; it could lie outside the current licence areas. The primary ruby mineralisation that has been mined and tested is significantly different in terms of chemistry to the alluvial mineralisation.

The mineral resource, as summarised in the following table, has been divided into primary and secondary mineralisation. In essence, the secondary mineralisation (both eluvial and alluvial) is by far the most important in terms of both tonnage and contained carats. It is much lower in terms of grade (carats per tonne of ore) than the primary mineralisation but this is more than offset by the much higher quality of the contained rubies.

Montepuez mineral resource (100% basis July 2019)

Resource Class	Tonnes Mt	Grade Ct/t	Contained Mct
Primary			
Indicated	1,100	97.9	108
Inferred	240	97.9	24
Stockpiles	43	47.7	2
Total	1,383	96.3	133
Secondary			
Indicated	18,900	3.8	72
Inferred	39,800	11.3	449
Stockpiles	797	4.6	4
Total	59,497	8.8	524

Source: finnCap, adapted from Gemfields CPR

Gemfields conducts exploration and bulk sampling at Montepuez with a view to properly understanding the controls on and locations of the ruby mineralisation. This work included shallow drilling and pitting on a regular grid and has continued to the present.

Mining at Montepuez showing target alluvial gravel bed

Source: finnCap

Mining is currently concentrated on the higher value alluvial material. Very little primary mineralisation is currently being exploited, although it has been mined in the recent past. Mining is by means of very shallow open-pit methods using excavators loading into 25-tonne capacity ADTs (Articulated Dump Trucks). ADTs are able to work in muddy conditions that would preclude the use of conventional rigid framed trucks. No explosives are required. The mine exploits a single layer of gravel that lies close to surface and is easily identified visually. Several pits are worked on a campaign basis in order to better understand the ruby distribution. Waste material is for the most part backfilled into worked out areas of the various pits as they do not generally lie over primary mineralisation. The only exception is the Maninge Nice pit, where both eluvial and primary mineralisation occur. Once the mined areas have been backfilled, they are rehabilitated by planting indigenous trees.

Waste backfilling at Montepuez following extraction of gravels

Source: finnCap

Montepuez mineral reserve (100% basis July 2019)

Resource Class	Tonnes Mt	Grade Ct/t	Contained Mct
Primary			
Mineralisation	1,084	97.88	106.1
Stockpiles	43	97.88	4.2
Secondary			
Mineralisation	18,844	3.81	71.8
Stockpiles	797	4.67	3.7
Total			
Mineralisation	19,928	8.93	178.0
Stockpiles	840	9.45	7.9
Total	20,768	8.95	185.9

Source: finnCap, adapted from Gemfields CPR

The original ruby recovery plant was very basic in that it used jigs to do a rough gravity sort followed by hand picking to recover the rubies. This proved to be inflexible in terms of feed rates and so the jig section was replaced in late 2016 by a modern DMS (dense media separation) plant.

The recovery plant has recently been further updated, with hand sorting being replaced by UVF sorting machines – using the fluorescent property of rubies as a sorting tool. The new plant has considerably improved recoveries, in part by reducing losses from misidentification but also by improving security as now it is essentially an automated ‘hands-off’ process.

The plant generally operates with a ROM stockpile equivalent to around six months of mining. This allows smoothing of the inevitable grade variability but also gives a buffer as mining and hauling can be slowed by poor ground and digging conditions in the wet season.

Ruby recovery plant, Montepuez

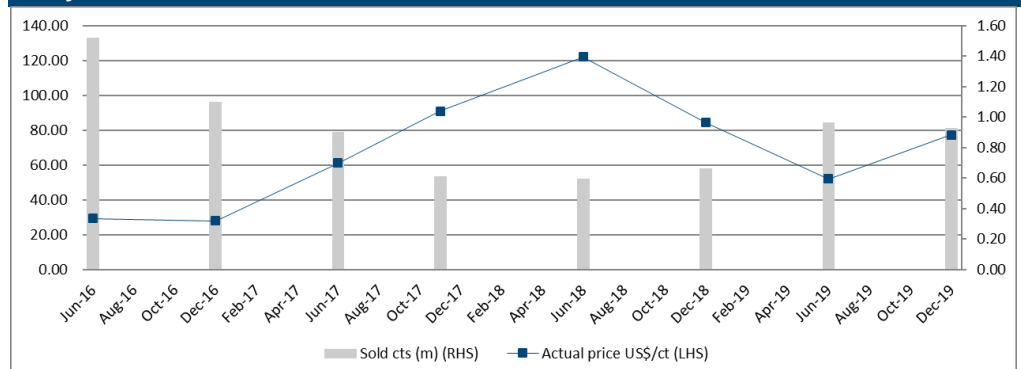


Source: finnCap

Ruby sales

A comprehensive grading and sorting system has been developed, similar to that originally developed for Kagem. This system has proved to be highly popular with buyers, essentially for the same reason as the Kagem system. In essence, the system is used to sort rubies into auction lots with consistent grades and sizes. These are intended to appeal to the bulk jewellery manufacturers that need consistency of supply. This has translated into a considerable improvement in the average price for rubies at Gemfields' sales. Experience with the market has shown that the actual sales contain sorted parcels of both higher quality and lower quality rubies, as for the most part the buyers are interested in a range of qualities. All of the ruby auctions are conducted in Singapore as this is convenient for the buyers; the great majority of rubies are cut and polished in SE Asia.

Ruby auction results



Source: finnCap, adapted from Gemfields data

Kagem emerald mine – Zambia (75% interest)

Kagem is the world's largest emerald mine. It is located within the Copperbelt Province in northern Zambia, c30 km to the south of the copper mining town of Kitwe and 260 km north of Lusaka. Kagem exploits a series of deposits within the Kafubu emerald field, where it has a licence covering some 41km². The mining licence for Kagem was recently renewed for a period of 25 years ending in April 2045.

The landscape is best described as tropical savannah, with low rolling hills covered with grasslands and trees. Aside from mining activities, the area supports typical African subsistence farming. The Kagem site is reasonably well served by infrastructure, with all-weather surfaced roads within 25 km of the site and normally reliable grid power available.

The emerald fields of Zambia were first discovered in 1931, although exploitation of the deposits did not begin until 1967. The industry was nationalised in 1971, although informal artisanal mining continued to operate in parallel with the state operations. The number of people working at the informal mines grew rapidly to the point where in 1978 the government had to completely close off and clear the area. Security over the whole of the emerald field is now closely controlled by the Zambian authorities.

The Kafubu emerald deposits are located to the west of the Zambian Copperbelt in rocks of the Muva Supergroup. These rocks consist of quartzites and quartz-mica schists which are sandwiched between granite gneisses of the Basement Complex and meta-sediments of the Katangan Supergroup – these latter rocks host the copper-cobalt deposits that form the Zambian Copperbelt. The Muva Supergroup also includes amphibolite and ultramafic rocks which have been altered by metamorphism and hydrothermal activity into talc-chlorite tremolite magnetite schist (known locally as TMS) or talc biotite schist (known as TBS).

The Kafubu beryls and emeralds are found within the TMS unit where this unit has been intersected by pegmatitic dykes and quartz-tourmaline veins and are only rarely found outside this unit. The beryls found at Kafubu are typically white to yellowish or bluish white, whereas the emeralds have a moderate to strong green colour.

Gemfields plc first became involved in May 2004 when it acquired a 51% interest in the Mbuva mine within the Kafubu emerald field. It acquired the remaining 49% in May 2005 to give it full control of the mine. In 2008, Gemfields acquired a controlling interest in the Kagem emerald property and so the Mbuva mine was put on care and maintenance and all the equipment was moved to the nearby Chama pit in the Fwaya-Fwaya area at Kagem. Since then, the Chama pit has been the principal mining asset of Gemfields' emerald business.

The Kagem licence area hosts several areas of emerald mineralisation, as follows:

- ▶ The main area of emerald mining is the Fwaya-Fwaya belt. This hosts a drilled strike length of 2.1 km of the TMS with a width varying from 5m to 44m and a dip of between 10° and 22° to the south. Five small pits worked the western end of the belt but were abandoned more than a decade ago. The large active Chama open-pit mine is located towards the north-eastern end of the belt, immediately adjacent to Grizzly Mining's Lufwanyama mine.
- ▶ The Libwente area hosts a considerable quantity of TMS to the north-east of the main Fwaya-Fwaya belt. It was mined in five open pits, although operations ceased in 2007. The area is considered to have additional potential because it hosts a thick central pegmatite and the surrounding rocks have been intensely altered. The Libwente pit is currently being tested by means of bulk samples.
- ▶ The Fibolele-Dabwisa belt hosts the Fibolele, Dabwisa and Sandwana Deposits. These are aligned in a broad north-north-east direction and are centred on a single pegmatite body. This area has been the subject of substantial open-pit mining efforts, although all have now ceased production. The Fibolele pit is also currently being tested by means of bulk samples.

- The Kanchule belt lies in the north of the licence area and hosts some small pegmatites that intersect the steeply dipping TMS.

Experience has shown that the most favourable location for emeralds in the case of the Chama pit is the triple intersection between steep dipping pegmatite dykes, concordant footwall dykes and the TMS unit itself. Thick pegmatite dykes are most likely to develop thick reaction zones and good quantities of emerald.

A resource statement was most recently prepared for the Kagem operations in July 2019. The carats and grade are for total emerald and beryl.

Kagem mineral resource (100% basis July 2019)

Resource Class	Tonnes	Grade	Contained
	Mt	Ct/t	Mct
Measured	775	210	163
Indicated	3,840	265	1,015
Inferred	1,400	145	201
Total	6,015	229	1,379

Source: finnCap, adapted from Gemfields CPR

The emeralds at Kagem have so far been mined by open-pit methods using relatively small mobile equipment for excavation and rock haulage. Given that the mineralised zones are essentially tabular in nature, the mining method generally involves pre-stripping overlying waste followed by mining the ore. Depending on the depth and hardness of the rocks encountered, they are either dug using mechanical excavators or drilled and blasted. Ore and waste are both loaded using excavators and hauled out of the pit using 25-tonne articulated dump trucks (ADTs) to either the process plant or waste dumps.

Chama open pit at Kagem



Source: finnCap

Most waste rock is currently being dumped in worked-out areas of the pit, thus minimising the environmental impact of the operation. Access to the pit is by means of graded ramps inclined to suit the optimal operating characteristics of the trucks. Pit slope angles are dictated by the stability of the rock; this generally improves with depth although can be modified by discontinuities such as faults. The ultimate pit depth is normally dictated by the economic limit of a particular mining area.

Kagem mineral reserve (100% basis July 2019)

Resource Class	Tonnes	Grade	Contained
	Mt	Ct/t	Mct
Proven	681	179	122
Probable	2,940	215	633
Total	3,621	209	755

Source: finnCap, adapted from Gemfields CPR

Given the high value of the emeralds, those within the high-grade areas are recovered by hand within the pits using hammers and chisels. These hand-worked areas are only worked in daylight and are the subject of close security supervision. These recovered emeralds are placed directly into secure boxes for transport to the high security storage facilities.

Mining high-grade area using hand tools

Source: finnCap

The lower-grade mechanically dug ore is processed using simple mechanical systems followed by hand picking. The ore is crushed and screened to generate several size fractions, with fines below 2 mm being discarded as having no value. The sized products are sent to picking belts where the emeralds and beryl are manually picked off and placed in secure containers similar to those used in the hand-mined areas of the open pit. The emeralds are subjected to a light cleaning process before being hand sorted into the various grade and quality categories. These are then dried and dressed with oil before recording ahead of sale. The company is considering introducing automatic sorting machines similar to those recently installed at Montepuez to replace the manual picking belts.

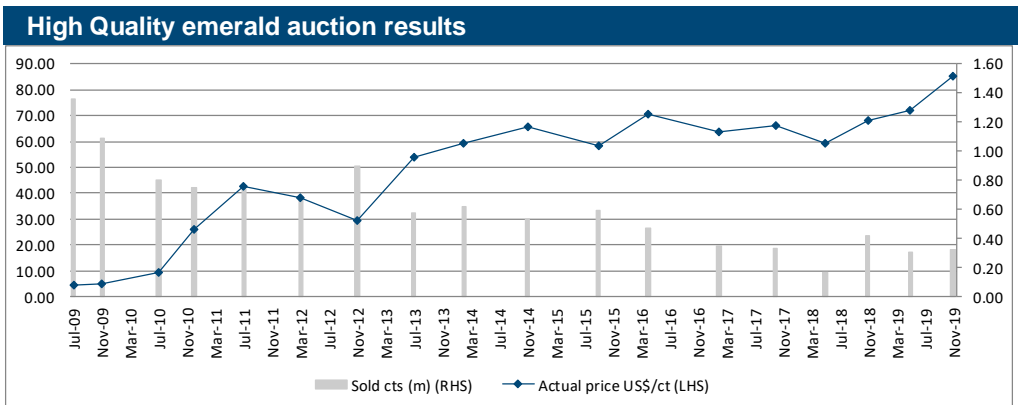
Some of the higher-quality stones are now being labelled using nanotags; at this point in time this is experimental, but should enable the origins of any specific stone to be proven at any stage up to the point of sale and beyond.

Emerald sales

By value, the great majority of emeralds recovered at the Kagem mine are sold by sealed bid auction. The emerald product is divided into Higher Quality (HQ) and Commercial Quality (CQ) categories, as these generally have different markets. In addition, a very low quality beryl product is recovered and periodically sold in bulk.

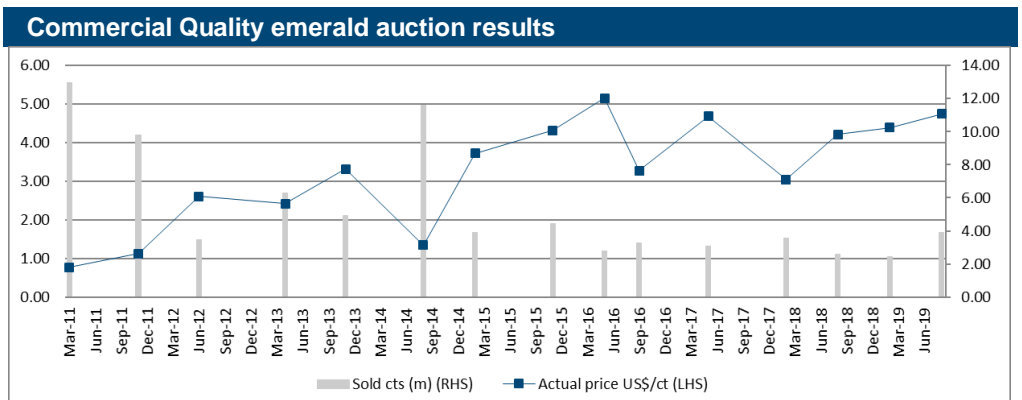
In the early years of Gemfields' ownership of Kagem, the HQ category was auctioned in London, Johannesburg or occasionally in Singapore, whereas the CQ was sold at Jaipur in India, where most of the mass market emerald cutters are located. However, the company has now settled into a routine where the HQ material is sold in either Lusaka or Singapore whereas the CQ material is sold in Jaipur or Lusaka.

It will be noted that the average price received is currently on an improving trend after a couple of years of essentially flat pricing. This is thought to be a reflection of the continuing improvements made to the auction mechanism but also could be a fashion switch towards coloured gemstones and, in particular, emerald.



Source: finnCap, adapted from Gemfields data

The following chart summarises the sales of commercial-quality emerald. The August 2014 auction stands out as anomalous; this was because a larger quantity of particularly low-quality material was sold with a low unit price. The most recent auction, which did not include the sale of significant quantities of beryl, shows that the generally positive average price trend has been maintained.



Source: finnCap, adapted from Gemfields data

Other mineral properties

Web Gemstone Mining (75% interest)

Web Gemstone Mining is a joint venture that was established in 2015 to explore for emeralds in Ethiopia. Emeralds were originally discovered more than a decade ago in the Dubuluk area some 520 km to the south of Addis Ababa and 75 km north of the border with Kenya.

Geological mapping and drilling work identified a 'Schist type' emerald deposit, similar to that of Kagem. The initial drilling campaign comprised 45 holes and defined sufficient mineralisation for the project to be taken forward to a bulk sampling programme starting in August 2017. This was designed to mine and process some 1.2 million tonnes of ore, spread over a two-year period. Significant quantities of beryl and lower quality crystalline emerald were recovered from the bulk sampling and good progress was being made with the intention of defining and quantifying a first pass resource estimate and hence an opinion about the economic potential of the project.

However, in June 2018 the project site was overrun by an armed mob that looted the accumulated emerald and beryl stocks and destroyed the pilot processing plant and the project camp and offices. Gemfields had to immediately evacuate the project site and has been unable to return. Gemfields has maintained its licences covering the area and is hopeful that at some point it will be able to return and resume its work programme.

Other assets

In addition to the mines and the project in Ethiopia, Gemfields also has exploration licences in Madagascar and elsewhere in Mozambique and Zambia. None of these are the subject of any significant current work programmes.

Gold in Mozambique (75% interest)

Gemfields has recently agreed a joint venture with Mwitiri (the same JV partner as for the principal ruby properties at Montepuez) to explore on several licences to the north of Montepuez around the village of Nairoto. The licences are considered to be prospective for gold and also in places for ruby. Little is known of the geological potential other than occurrences of alluvial gold; the area may host extensions to the known Montepuez ruby belt. Initial ground work has started, including the establishment of an exploration camp, access roads and a communications network.

Fabergé

Fabergé is a luxury brand with origins in 1842 as a Russian jeweller closely linked with the last of the Russian Tsars. Peter Carl Fabergé became jeweller and goldsmith to the Russian Imperial Court, creating exquisite jewels and objects, including the lavish and ingenious Imperial Easter Eggs.

In 1917, the Russian Revolution brought a violent end not only to the Romanov dynasty but also to the House of Fabergé. The Fabergé workshops and their treasures were confiscated, all production was closed down and the Fabergé family fled from Russia.

The Fabergé family lost the rights to the Fabergé name and brand in 1951 and it then passed through the hands of several owners, ending up as part of Unilever where it became dormant. The brand was acquired by Brian Gilbertson's Pallinghurst in October 2007 and was subsequently sold to Gemfields plc.

Fabergé was re-launched in September 2009 with three new jewellery collections. The business is now focused on re-establishing itself as a high-end luxury goods brand with a focus on marketing jewellery containing coloured gemstones sourced primarily from Gemstone's mines. As Gemstone can prove the origin of these stones, it is able to market them as being responsibly sourced – a claim that no other significant producer is currently able to make. In essence, Gemfields intends to use the Fabergé brand to market coloured gemstones in the same way that the De Beers brand was used to market diamonds.

The relaunch of Fabergé has included several major advertising campaigns, marketing new ranges of jewellery made by leading jewellery designers.

The business has recently been focussing on expanding the wholesale footprint through third-party retailers and on reducing costs including the closure of some of its more expensive shops. The business has been loss-making since its acquisition by Gemfields but on the current trend it is hopeful of reaching breakeven in the foreseeable future.

Directors

Executive

Sean Gilbertson – Chief Executive Officer

Sean Gilbertson graduated as a mining engineer from Wits University in South Africa having spent time in the country's deep-level gold and platinum mines. Mr Gilbertson worked as project financier for Deutsche Bank in Frankfurt and London, specialising in independent power projects and public/private partnerships.

In 1998, Mr Gilbertson co-founded globalCOAL, a company that played a central role in the commoditisation of the thermal coal industry, and was appointed Chief Executive Officer in 2001 when the business was acquired by industry players, including Anglo American plc, BHP Billiton plc, Glencore International AG and Rio Tinto plc. He was also co-founder of the pioneering Spectron eMetals trading platform for category I and II members of the London Metals Exchange.

Mr Gilbertson is a director of both Gemfields Ltd and Fabergé as well as assorted related companies. Mr Gilbertson is a British and South African citizen.

David Lovett – Chief Financial Officer

David Lovett graduated from Birmingham University's Business School in 2005, with a Bachelor of Commerce focused on Economics and Marketing. He then joined Grant Thornton in the UK, working across advisory and tax services, becoming a chartered accountant with the ICAEW.

Mr Lovett joined Gemfields' finance team in 2008. He has acted as a senior financial manager across a number of Gemfields' operating subsidiaries during his nine-year tenure and has a thorough understanding of the group's activities, including Fabergé. Mr Lovett is a director of Gemfields Ltd and Fabergé Ltd, as well as assorted related companies. Mr Lovett is a British citizen.

Non-Executive

Martin Tolcher – Chairman

Martin Tolcher has been involved within the fund administration industry in Guernsey for over 25 years.

Mr Tolcher has worked at senior levels for three Guernsey subsidiaries of Bermudan and Canadian international banks, gaining considerable experience in a wide variety of offshore fund and private equity structures.

Mr Tolcher joined Legis Fund Services Limited in 2005 and was appointed Managing Director at the beginning of 2007, a position he held until the end of 2010. Mr Tolcher remained a director of that company until September 2011.

Since November 2011, Mr Tolcher has been self-employed as an independent non-executive director, and holds directorships within other fund structures domiciled in Guernsey, including a number listed on the London Stock Exchange and Channel Islands Securities Exchange.

Mr Tolcher is a Chartered Fellow of the Chartered Institute for Securities & Investment. Mr Tolcher is a British citizen and is a resident of Guernsey.

Christo Wiese

Christo Wiese is chairperson of Pepkor Holdings (Pty) Limited and Shoprite Holdings Limited, respectively Africa's largest clothing and food retailers with a total portfolio of approximately 6,000 stores in 24 countries and employing more than 150,000 people.

Dr Wiese is a significant shareholder in a range of businesses throughout the world. Dr Wiese is the largest shareholder in Steinhoff International Holdings Limited (which recently acquired the Pepkor Group) and also holds large and controlling stakes in Brait

SE (an investment holding company), Tradehold Ltd (UK based property investment company) and Invicta Holdings Ltd, all listed on the JSE. Dr Wiese has served on the boards of many listed companies over the years and is a past director of the SA Reserve Bank and former chairman of the Industrial Development Corporation of SA Ltd.

During 2015, Dr Wiese was awarded lifetime achievement honours at the Sunday Times Top 100 Companies awards and the All Africa Business Leaders Awards as well as being inducted into the World Retail Hall of Fame.

Dr Wiese owns Lourensford Wine Estate, a producer of internationally acclaimed wines, and is the owner of a large game reserve in the Kalahari.

Lumkile Mondli

Lumkile Mondli is a Senior Lecturer at the School of Economics and Business Science of the University of the Witwatersrand in Johannesburg, South Africa. Mr Mondli is a strategist, economist and a leader. He has worked extensively in the African continent undertaking his responsibilities at the Industrial Development Corporation (IDC), where he was an executive for eleven years. He also serves on the boards of Aerosud and GAIA Infrastructure Capital Limited and is the chairman of Musa Group and Thelo Rolling Stock Leasing. He has previously served on the board of ArcelorMittal South Africa.

Mr Mondli has more than 20 years of postgraduate experience and over seven years working in financial markets in interest rate derivatives and asset and liability management. Mr Mondli is also involved in the BRICS think tanks in institutional strengthening and coordination. He has presented and participated in various conferences worldwide, including the UN, World Bank, BNDES and OECD.

Mr Mondli has travelled extensively throughout the world bringing innovation in his work for a better world for all. Mr Mondli is a South African citizen.

Kwape Mmela

Kwape Mmela has more than 22 years' of experience in both the public and private sectors. This includes working for the Constitutional Assembly during the drafting of the South Africa's constitution post-Apartheid, and serving as a director of JSE-listed Platmin Limited (now Sedibelo Platinum Mines Limited) for almost ten years. He is a founder and chairman of his family investment entities: ShepherdTree Holdings Limited and Hlamogolo Capital Proprietary Limited.

Mr Mmela is a trained lawyer (LLB) at The University of the North in South Africa where he also completed a BProc. He also holds an MPhil in Business Research from Monarch Business School. Mr Mmela is a South African citizen.

Carel Malan

Carel Malan started his career at Ernst & Young where he received his first exposure to the mining industry. After three years with the firm in Gauteng he requested a transfer to Bermuda, where he spent a further year.

Mr Malan joined Tshipi in January 2012 and was appointed CFO in May 2014. In October 2015, he resigned from Tshipi to pursue other interests; however, his interest in mining and in-depth knowledge and experience of Tshipi's business model brought him back to the company where he was reappointed as CFO. He was part of the executive team growing the Tshipi asset to become the largest exporter of manganese ore from South Africa. In 2018 he was part of the team that listed Jupiter Mines on the ASX, which was flagged as the biggest IPO in the last decade on the ASX.

Mr Malan is a Chartered Accountant and a South African citizen.

Rubies and Emeralds in Africa

Income statement		2017A	2018A	2019E	2020E	2021E
Year end:		Dec	Dec	Dec	Dec	Dec
Sales	\$m	81.7	206.1	215.5	215.5	221.0
Cost of sales	\$m	-22.2	-90.4	-90.9	-82.1	-85.5
Gross profit	\$m	59.5	115.7	124.7	133.4	135.5
Operating expenses	\$m	-29.0	-56.9	-41.3	-41.1	-41.0
EBITDA (adjusted)	\$m	30.5	58.9	83.4	92.3	94.5
Depreciation	\$m	-22.2	-30.6	-33.0	-35.0	-37.0
Amortisation	\$m	0.0	0.0	0.0	0.0	0.0
EBIT (adjusted)	\$m	8.3	28.2	50.4	57.3	57.5
Associates/other	\$m	0.0	5.3	5.0	5.0	5.0
Net interest	\$m	-2.0	-8.8	-1.3	-0.8	0.6
PBT (adjusted)	\$m	6.3	24.7	54.1	61.5	63.1
<i>restructuring costs</i>	<i>\$m</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
<i>share based payments</i>	<i>\$m</i>	<i>-2.7</i>	<i>-4.2</i>	<i>-3.5</i>	<i>-3.5</i>	<i>-3.5</i>
<i>other adjustments</i>	<i>\$m</i>	<i>49.0</i>	<i>-74.4</i>	<i>0.0</i>	<i>0.0</i>	<i>0.0</i>
Total adjustments	\$m	46.3	-78.6	-3.5	-3.5	-3.5
PBT (stated)	\$m	52.6	-53.9	50.6	58.0	59.6
Tax charge	\$m	-7.6	-6.5	-20.2	-23.2	-23.9
<i>tax rate</i>	<i>%</i>	<i>14.4</i>	<i>n/a</i>	<i>40.0</i>	<i>40.0</i>	<i>40.0</i>
Minorities	\$m	-7.2	-1.8	-5.5	-6.3	-6.4
Reported earnings	\$m	37.9	-62.2	24.9	28.5	29.3
Tax effect of adjustments / other	\$m	0.0	0.0	0.0	0.0	0.0
Adjusted earnings	\$m	-8.4	16.4	28.4	32.0	32.8
<i>shares in issue (year end)</i>	<i>m</i>	<i>1,039.0</i>	<i>1,316.6</i>	<i>1,267.5</i>	<i>1,267.5</i>	<i>1,267.5</i>
<i>shares in issue (weighted average)</i>	<i>m</i>	<i>1,039.0</i>	<i>1,316.6</i>	<i>1,267.5</i>	<i>1,267.5</i>	<i>1,267.5</i>
<i>shares in issue (fully diluted)</i>	<i>m</i>	<i>1,039.0</i>	<i>1,316.6</i>	<i>1,267.5</i>	<i>1,267.5</i>	<i>1,267.5</i>
EPS (adjusted, fully diluted)	c	-1.1	0.9	2.0	2.3	2.3
EPS (stated)	c	3.6	-4.7	2.0	2.3	2.3
DPS	c	0.0	0.0	0.0	0.0	0.0

Growth analysis (adjusted basis where applicable)						
Sales growth	%	n/m	152.4%	4.6%	0.0%	2.6%
EBITDA growth	%	n/m	93.1%	41.6%	10.7%	2.4%
EBIT growth	%	n/m	239.4%	78.4%	13.8%	0.3%
PBT growth	%	n/m	291.0%	119.3%	13.8%	2.7%
EPS growth	%	n/m	186.6%	111.4%	14.7%	2.8%
DPS growth	%	n/m	n/m	n/m	n/m	n/m

Profitability analysis (adjusted basis where applicable)						
Gross margin	%	72.9%	56.1%	57.8%	61.9%	61.3%
EBITDA margin	%	37.3%	28.6%	38.7%	42.8%	42.8%
EBIT margin	%	10.2%	13.7%	23.4%	26.6%	26.0%
PBT margin	%	7.7%	12.0%	25.1%	28.5%	28.6%
Net margin	%	-10.3%	8.0%	13.2%	14.9%	14.9%

Rubies and Emeralds in Africa

Cash flow		2017A	2018A	2019E	2020E	2021E
Year end:		Dec	Dec	Dec	Dec	Dec
EBITDA	\$m	30.5	58.9	83.4	92.3	94.5
Net change in working capital	\$m	-9.7	-29.7	-19.5	0.0	-5.3
Share based payments	\$m	2.7	4.2	3.5	3.5	3.5
Profit/(loss) on sale of assets	\$m	0.0	0.0	0.0	0.0	0.0
Net pensions charge	\$m	0.0	0.0	0.0	0.0	0.0
Change in provision	\$m	0.0	0.0	0.0	0.0	0.0
Other items	\$m	2.2	-3.9	-3.5	-3.5	-3.5
Cash flow from operating activities	\$m	25.8	29.5	63.9	92.3	89.2
Cash interest	\$m	-2.3	-4.4	-2.3	-1.8	-0.4
Tax paid	\$m	-11.0	-24.4	-25.0	-25.0	-25.0
Capex	\$m	-12.7	-31.3	-32.4	-21.3	-19.6
Free cash flow	\$m	-0.2	-30.6	4.2	44.2	44.2
Disposals	\$m	0.0	64.4	17.8	0.0	0.0
Acquisitions	\$m	33.4	-0.1	0.0	0.0	0.0
Dividends on ord shares	\$m	0.0	0.0	0.0	0.0	0.0
Other cashflow items	\$m	5.9	3.3	5.0	5.0	5.0
Issue of share capital	\$m	0.0	0.0	0.0	0.0	0.0
Net change in cash flow	\$m	39.1	37.1	27.0	49.2	49.2
Opening net cash (debt)	\$m	-66.3	-27.2	9.8	36.8	86.0
Closing net cash (debt)	\$m	-27.2	9.8	36.8	86.0	135.2

Cash flow analysis						
Cash conversion (op cash flow / EBITDA)	%	84.6%	50.1%	76.6%	100.0%	94.4%
Cash conversion (free cash flow / EBITDA)	%	-0.7%	-52.0%	5.0%	47.9%	46.8%
Underlying free cash flow (capex = depreciation)	\$m	-9.7	-29.9	3.6	30.5	26.8
Cash quality (underlying FCF / adjusted earnings)	%	114.3%	-182.5%	12.6%	95.2%	81.6%
Investment rate (capex / depn)	x	0.6	1.0	1.0	0.6	0.5
Interest cash cover	x	11.1	6.7	28.0	51.3	251.0
Dividend cash cover	x	n/a	n/a	n/m	n/m	n/m

Rubies and Emeralds in Africa

Balance sheet		2017A	2018A	2019E	2020E	2021E
Year end:		Dec	Dec	Dec	Dec	Dec
Tangible fixed assets	\$m	378.0	365.0	360.4	346.7	329.3
Goodwill	\$m	0.0	0.0	0.0	0.0	0.0
Other intangibles	\$m	246.8	130.0	105.4	105.4	105.4
Other non current assets	\$m	14.8	14.7	19.2	19.2	19.2
<i>inventories</i>	<i>\$m</i>	<i>118.8</i>	<i>99.2</i>	<i>107.8</i>	<i>107.8</i>	<i>110.5</i>
<i>trade receivables</i>	<i>\$m</i>	<i>27.5</i>	<i>62.1</i>	<i>69.0</i>	<i>69.0</i>	<i>70.7</i>
<i>trade payables</i>	<i>\$m</i>	<i>-21.2</i>	<i>-28.2</i>	<i>-32.3</i>	<i>-32.3</i>	<i>-33.2</i>
Net working capital	\$m	125.1	133.2	144.4	144.4	148.1
Other assets	\$m	0.0	0.0	0.8	0.8	0.8
Other liabilities	\$m	-122.0	-102.6	-109.2	-109.2	-109.2
Gross cash & cash equivalents	\$m	37.8	63.0	76.6	95.8	135.2
Capital employed	\$m	680.6	603.3	597.6	603.1	628.8
Gross debt	\$m	63.5	53.2	39.8	9.8	0.0
Net pension liability	\$m	0.0	0.0	0.0	0.0	0.0
Shareholders equity	\$m	617.1	550.1	557.8	593.3	628.8
Minorities	\$m	0.0	0.0	0.0	0.0	0.0
Capital employed	\$m	680.6	603.3	597.6	603.1	628.8
Leverage analysis						
Net debt / equity	%	4.2%	net cash	net cash	net cash	no debt
Net debt / EBITDA	x	0.8	net cash	net cash	net cash	no debt
Liabilities / capital employed	%	9.3%	8.8%	6.7%	1.6%	0.0%
Working capital analysis						
Net working capital / sales	%	153.3%	64.6%	67.0%	67.0%	67.0%
Net working capital / sales	days	559	236	245	245	245
Inventory (days)	days	531	176	183	183	183
Receivables (days)	days	123	110	117	117	117
Payables (days)	days	95	50	55	55	55
Capital efficiency & intrinsic value						
Adjusted return on equity	%	-1.4%	3.0%	5.1%	5.4%	5.2%
RoCE (EBIT basis, pre-tax)	%	1.2%	4.7%	8.4%	9.5%	9.1%
RoCE (underlying free cash flow basis)	%	-1.4%	-5.0%	0.6%	5.1%	4.3%
NAV per share	c	59.4	41.8	44.0	46.8	49.6
NTA per share	c	35.6	31.9	35.7	38.5	41.3

Rubies and Emeralds in Africa

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