Gemfields Group

GEMSTONE RESOURCES AND GEMSTONE RESERVES REPORT - MARCH 2023

GEMFIELDS

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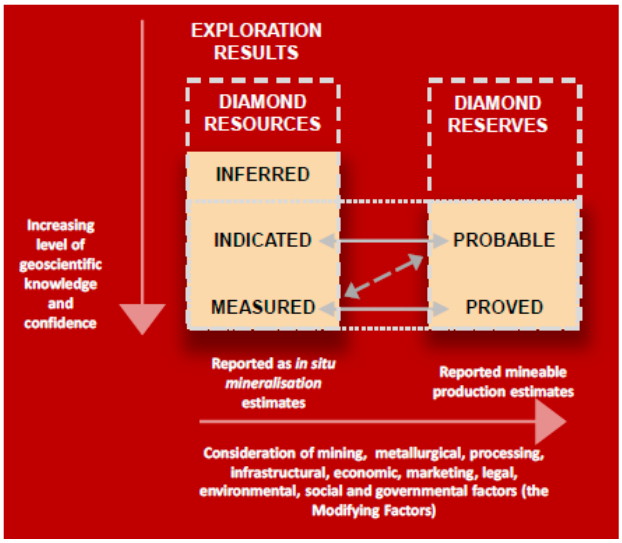
SECTION 1 - OVERVIEW

INTRODUCTION

Gemfields Group Limited ("GGL") through its wholly-owned subsidiary Gemfields Ltd ("Gemfields") holds 75% attributable interests in Kagem Mining Ltd which operates the Kagem Emerald Mine ("Kagem") in Zambia, and in Montepuez Ruby Mining Limitada which operates the Montepuez Ruby Mine ("MRM") in Mozambique. *[12.13(i)(2)]*

This annual Gemstone Resources and Gemstone Reserves Report deals with Kagem and MRM only, and excludes any other coloured gemstone interests held by Gemfields. This annual report details the location, geology, mining, processing and operational statistics at Kagem and MRM.

The Gemstone Resources and Gemstone Reserves have been prepared and reported in compliance with and according to the requirements of The South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (the SAMREC Code or SAMREC), 2016 Edition, with special reference to sections 60 to 72 of SAMREC related to the reporting of results for diamond and other gemstone properties. *[12.13(i)(4)]*



Relationship between Gemstone Resources and Gemstone Reserves (SAMREC Code, 2016)

The Gemstone Resources and Gemstone Reserves presented in this report are based on a Competent Persons Report ("CPR") for Kagem and MRM with an effective date of 1 July 2019, which have then been depleted by mining production for the period 1 July 2019 to 31 December 2022. The Gemstone Resources are reported inclusive of the Gemstone Reserves, both correct on 31 December 2022, the Effective Date of this Gemstone Resources and Gemstone Reserves report. *[12.10(a)]*

At the Effective Date of 31 December 2022, GGL had total attributable Gemstone Resources of 1,331 Mct of combined emerald and beryl at an average value of USD5.22/ct, and 501.5 Mct of ruby and corundum at an average value of USD20.74/ct (average 2014-2022).

Operations at Kagem were resumed in a phased manner from March 2021, reached normal capacity in the financial year 2022. Operations at MRM were suspended in April 2020 and saw a phased resumption from March 2021, reaching normal capacity by the end of May 2021. The suspension of operations at both MRM and Kagem were due to Covid-19.

CORPORATE GOVERNANCE – COMPLIANCE *[12.13(i)(4)]*

GGL's attributable Gemstone Resources and Gemstone Reserves are reported in compliance with Section 12 of the JSE Rules, the SAMREC Code (2016 edition) and SAMREC Code Table 1 and Appendices. Shorthand references to the JSE Rules and SAMREC Table 1 are shown where applicable, for example:

- *[12.10(a)]* – in Chapter 12 of JSE Rules which deals with the effective date;
- *[12.13(i)(2)]* – in section 12.13, contents of annual report, which deals with attributable beneficial interest;
- *[SR2.1(i)]* – in Table 1, describe the regional geology; and
- *[SR11.3(iv)]* – in Table 1, describe the top and bottom sieve cut-off sizes.

COMPETENT PERSONS AND CONSENT *[12.13(i)]*

The Competent Persons ("CPs") in terms of SAMREC who take responsibility for the reporting of Gemstone Resources and Gemstone Reserves for Kagem and MRM in this report are respectively:

- Murlidhar Gautam, Head of Geology, MRM, MTech (Applied Geology), MAusIMM, is the competent person responsible for reporting Gemstone Resources and Gemstone Reserves at MRM in this report. Murlidhar Gautam was Head of Production and Exploration with Kagem Mining Ltd until October 2021 before transferring to MRM. He has over 21 years' experience in Exploration and Mining of different commodities Diamond, Emerald, Copper, Bauxite and Ruby. He has relevant experience in this style of mineralisation.

The Competent Person's address is Montepuez Ruby Mining Lda, Avenida Eduardo Mondlane, No. 178, Edifico Cruz Vermelha, Cidade De Pemba, Cabo Delgado, Mozambique.

- Hemant Azad, Head of Geology, Kagem, PE & MSc (Geology), MAusIMM, & MAIG is the Competent Person responsible for reporting of Gemstone Resources and Gemstone Reserves at Kagem in this

report. Hemant was Head of Geology with Montepuez Ruby Mining Limitada until October 2021 before transferring to Kagem. He has more than five years' relevant experience in this style of mineralisation.

The Competent Person's address is Kagem Mining Ltd, PO Box 21657, Plot 6374, Corner Dr. Aggrey and Kariba Roads, Light Industrial Area, Kitwe, Zambia. *[12.13(i)(5)]*

The address of the Australasian Institute of Mining and Metallurgy is Ground/204 Lygon St, Carlton VIC 3053, Australia. *[12.13(i)(5)]*

The CPs have confirmed to GGL in writing that the contents of this report are consistent with the CPR for Kagem and MRM and operational records for the period 1 July 2019 to 31 December 2022 and comply with the requirements of Section 12 of the JSE Rules and the SAMREC Code. *[12.13(i)(6)]*

The CPs further consent to the disclosure of the 2022 Gemstone Resource and Gemstone Reserve Statement in the form and context in which it is presented. *[12.13(i)(6)]*

This report contains statements of a forward-looking nature which involve various uncertainties that may cause the actual results to differ materially from those presented.

Rounding-off of figures in this report may result in minor computational discrepancies. Where these occur, the CPs do not consider them to be material.

SECTION 2 - OPERATIONS

KAGEM

Location *[SR1.2(i)]*

Kagem is in the Ndola Rural Emerald Restricted Area ("NRERA") within the Kafubu area of the Zambian Copperbelt Province (Figure K1). Kagem is the world's single-largest producing emerald mine.

Located at latitude 13°04'S and longitude 28°08'E at an elevation of 1,200 m above mean sea level (msl), the site is some 31 km south-southwest of the Copperbelt town of Kitwe. The licence is bisected by the administrative boundary between the Ndola Rural District and Luanshya District.

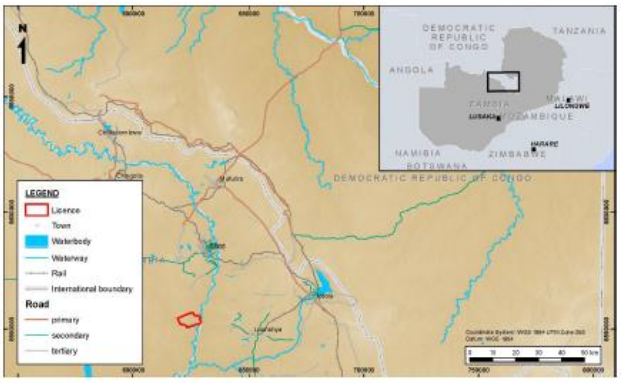


Figure K1: Kagem Mine Location

Legal Entitlement *[SR1.5(i)] [12.13(iii)(5)]*

Kagem operates in terms of a large-scale gemstone licence 14105HQ LSGL (Figure K2) over an area of 42.4 km^2 issued on 27 April 2010. The licence was renewed on 10 December 2019 for a further 25 years, which is then valid until 26 April 2045.

A large-scale mining licence 8749HQ LML for the Chibolele mine was renewed on 30 August 2019 for 25 years and transferred to Kagem on 1 October 2019.

Gemfields holds a 75% interest in the Kagem Mine, with the remaining 25% held by the Government of the Republic of Zambia ("GRZ").

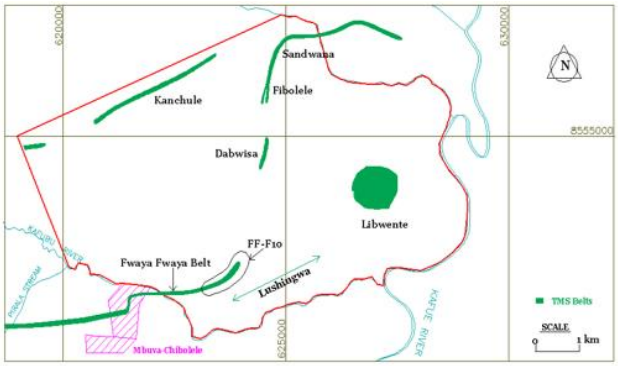


Figure K2: Licence Extents

Geological Setting *[SR2.1(i)(ii)] [SR11.1(i)]*

Emerald mineralisation in the Kafubu area, including the Kagem deposits, belongs to a group referred to as "schist-hosted emeralds", relating to the interaction of Be-bearing fluids relating to pegmatite dykes or granitic rocks, with Cr -rich mafic and ultramafic schists or weakly metamorphosed ultramafic rocks (Figure K3).

Kagem's Chama, Libwente, Fibolele and Chibolele deposits form part of a semi-regional scale tight-isoclinal fold system, which trends northeast or east-northeast, ranging in dip from near flat-lying to up to 60° to the southeast or south-southeast, and is locally offset by a series of predominantly north-northwest striking structures.

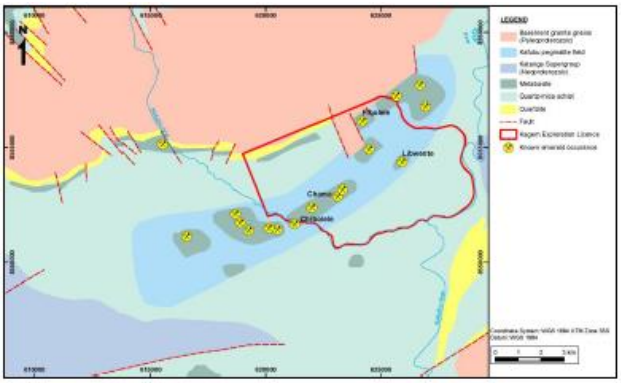


Figure K3: Simplified Geology of Kafubu Emerald Area

The emerald deposits are hosted by talc-magnetite schists ("TMS") of the Muva Supergroup. The stratigraphy of the Chama and Chibolele deposits is broadly described (from bottom to top) in terms of a footwall mica schist, overlain by TMS, amphibolite ("AMP") and quartz-mica schist of the Muva Supergroup. The whole sequence is intruded by steeply dipping discordant and locally concordant quartz-feldspar pegmatite ("PEG") dykes and quartz-tourmaline veins (Figure K4). The stratigraphic sequences at Fibolele and Libwente are largely similar to that described for Chama, except for local differences in the average thickness of individual units. Some key distinctions exist, where the AMP horizon in the hanging wall of the TMS unit is absent at Fibolele, while at Libwente the distribution of the ultramafic schists is more irregular, with at least two distinct TMS bands and additional minor satellite bodies with AMP in the hangingwall, footwall or both.

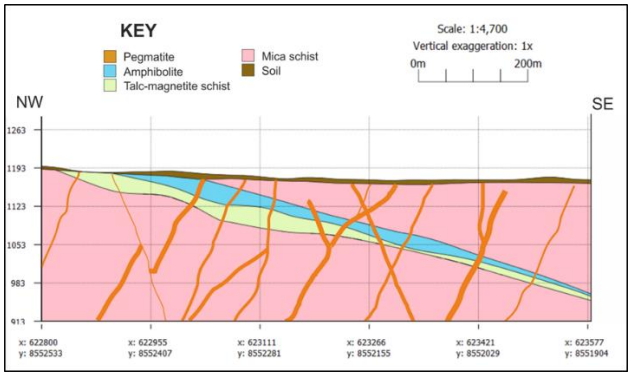


Figure K4: Chama -Schematic NW to SE cross-section

The suite of PEG dykes and quartz-tourmaline veins that intrude the stratigraphic succession throughout the Kagem

deposits occupy a range of trends, both concordant and discordant to the local stratigraphy. At Chama and Chibolele, most discordant dykes strike north or north-northwest, dipping at around 50° to sub-vertical towards the east or east-northeast. The discordant dykes and veins at Libwente and Fibolele occupy the same trend set, striking north-northwest, but with a steeper, typically sub-vertical dip.

The emerald mineralisation is hosted by the ultramafic TMS unit, with three main styles of mineralisation recognised:

- discordant reaction zone ("RZ") material adjacent to the PEG and quartz-tourmaline vein contacts;
- concordant RZ material concentrated along the footwall and rarely the hanging wall contacts of the TMS unit; and
- discordant RZ hosted by brittle structures within the TMS unit distal to the PEG and quartz-tourmaline veins.

The RZ is laterally discontinuous and varies in thickness from a few centimetres to more than 2 m (Figure K5).

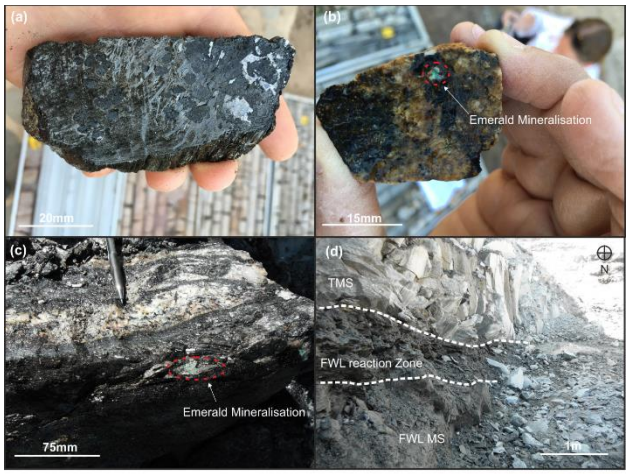


Figure K5: Reaction Zone material at the Kagem Mine

Exploration Activities *[12.13(iii)(1)] [SR3.1(i)] [SR11.2(i)]*

The main exploration methods employed at Kagem included airborne geophysical survey maps, diamond drilling, geological mapping and bulk sampling from trial pits, most of which was undertaken since 1998. Diamond drilling is primarily aimed at determining the nature and geometry of the TMS units and PEG / quartz-tourmaline veins. The main exploration tool used to determine emerald and beryl grade and quality is through current open-pit mining operations at Chama, Chibolele and Fibolele, and trial mining at Libwente. The grade of each deposit is determined through recovered emerald quantity and quality data from the sort house.

In Chama, the recent oriented diamond drilling comprises of 11 drillholes, for a total meterage of 1562 m with the majority of holes were drilled pre-collar with HQ and followed by NQ. The drillholes were drilled with reference to previously drilled holes to minimize the wide spacing interval to close spacing of less than 40-50 m drill interval section lines, over approximately 600-700 m strike length. (Figure K6 & K7). The maximum vertical depth is approximately 160 m below the pre-mining surface. The drill holes vary in inclination from 70° to 80°.

In Chibolele, the recent oriented diamond drilling comprises of 7 drillholes, for a total meterage of 1258.8 m with the majority of holes drilled pre-collar with HQ and followed by NQ. The drillholes were drilled with reference to previously drilled holes to minimize the wide spacing interval to close spacing of less than 50m drill interval section lines, over approximately 600-700 m strike length. (Figure K6 & K7). The maximum vertical depth is approximately 265 m below the pre-mining surface. The drill holes vary in inclination from 60° to 70°.

Figure K6: Oriented diamond drilling campaign at Kagem

Drilling to date, across the four deposit areas in question comprise 776 drill holes for a total meterage of 74,879 m. This includes 359 holes for 37,333 m at Chama, 58 holes for 5,861 m at Chibolele, 117 holes for 9,875 m at Fibolele and 242 holes for 21,810 m at Libwente. All drill holes are diamond core holes. Downhole survey data exists for roughly 35% of the total number of holes drilled.

Drill spacing at Chama varies from approximately 25 x 25 m in the northeast around the surface expression of the TMS unit to highly variable down-dip loosely described as a 100 x 200 m grid decreasing to approximately 50 x 50 m in places (Figure K6). Most holes were drilled perpendicular to the TMS unit, at an average dip of 70° to northwest and west.

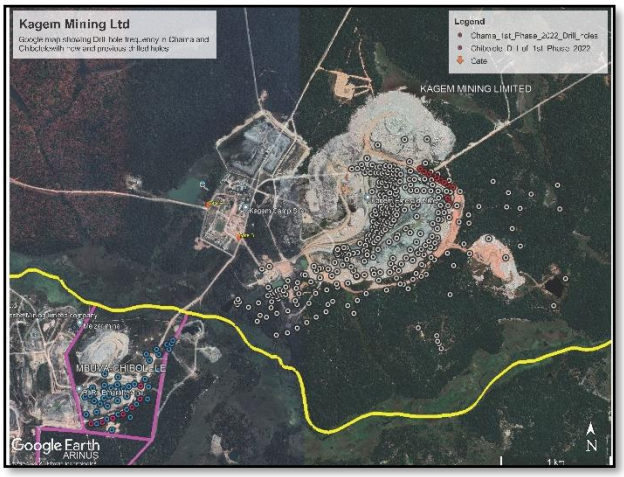


Figure K7: Chama & Chibolele collar locations

Drilling at Chibolele was completed prior to 2006, with no drilling since. Drilling was carried out over 1,000 m of strike

length, at 50 m strike intervals in the southwest and 100 m strike intervals in the northeast (Figure K8). Most holes were drilled perpendicular to the TMS unit, at an average dip of 70° to northwest and west.

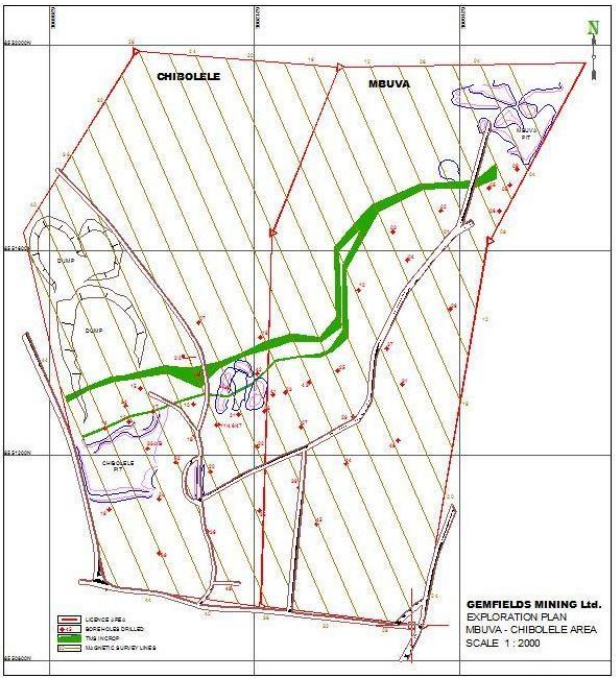


Figure K8: Chibolele collar locations

Fibolele is drilled on 50 m sections, with an on-section collar spacing of 50 m. Infill drilling at 25 x 25 m has been completed in a small area to the south (Figure K9). Most holes were drilled perpendicular to the TMS unit, at an average dip of 70° towards the west and west-northwest.

Drilling at Libwente has been completed on a variable grid of 100 x 100 m, 100 x 50 m, or 50 x 50 m, decreasing to 25 x 25 m in places (Figure K10). Almost all the Libwente holes are drilled vertically to target the shallow dipping TMS unit.

Most holes start at HQ diameter, switching to NQ diameter core once into competent rock. Most holes extend ca. 20 m beyond the TMS unit into footwall mica schist before being terminated.

Figure K9: Fibolele collar locations

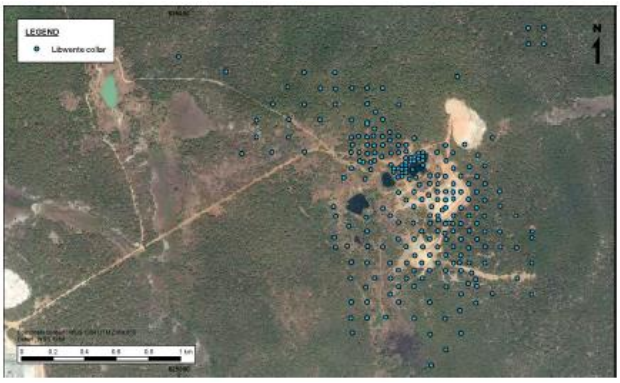


Figure K10: Libwente collar locations

The approximate expenditure incurred on exploration during FY-22 is USD0.5 million. The approximate expenditure incurred on exploration up to December 2022 is USD3.24 million. No significant exploration nor feasibility studies have been undertaken since June 2018 till December 2021.

Exploration work at Chibolele involved continuous mapping of the veins and faces of the developing mine on a weekly basis, which gave high confidence on grade and continuity for 50 m. Coupled to a detailed analysis of the existing drill hole database and bulk sample data from 217 kt of ore mined from Chibolele up to December 2022, part of the Inferred Gemstone Resource was upgraded to Measured and Indicated categories.

Face mapping and blast hole probing will continue in 2023, together with a more detailed drilling and sampling programme. Any further drilling is operational in nature and provided for in the sustaining capital provision and/or operating costs.

Emerald Mineralization and classification system *[SR11.2(xi)]*

Emeralds are a member of the beryl group of minerals which have the chemical formula $Be_3Al_2(SiO_3)_6$. Emerald is the deep green translucent variety of beryl and results from the substitution of Cr, Fe^{2+} or V for Al in the crystal lattice. Images of emerald and beryl at the Kagem Mine are displayed in Figure K11.

The Libwente bulk sample material and the Chama, Chibolele and Fibolele open pit production is processed through the wash plant, and the recovered gemstones are subsequently sorted by hand to provide emerald grade and quality values for each pit.

Three reference sets, which define each quality designation, are held at the sort house at Kagem, in London and in India and used to ensure consistent grading of gemstone production.

Figure K11: Emerald mineralization at Kagem

After cleaning, the gemstones are sorted by hand into four broad quality designations, before being further subdivided (resulting in 216 quality splits) as outlined in Table K1.

Table K1: Kagem emerald/beryl classification system

Category	Description
Premium Emerald	Strong green/blue-green colour, vivid saturation, very good clarity, high brilliance, very high carat yields once cut. Green or blue-green fractions, five quality designations (A-E), six size categories. (60 premium emerald grades)
Emerald	Variable green/blue-green colour, variable clarity, variable yield after cutting. Green or blue-green fractions, various quality designations (F-M for green stones, Fc-Nc for blue-green stones), various size categories (118 emerald grades)
Beryl-1	Bluish colour, clarity translucent to opaque, highly included, low cut recovery. Two sizes: -16 mm and +16 mm
Beryl-2	Greyish/brownish colour, no lustre or transparency

Quality Assurance/Quality Control *[SR11.6(vii)]*

The logging and sampling procedures in place are consistent with normal industry practice for this commodity type.

Geochemical assaying of the drill core for a suite of elements is used to assist in interpreting the geometry of the TMS unit and RZ which host the emerald and beryl mineralization. The bulk of the geochemical assay data is supplied by handheld Niton XRF analysis, validated by laboratory assays in selected drillholes.

Laboratory assays are carried out at either Alfred H Knight laboratory in Kitwe, Shiva Analyticals in Bangalore, India, or the SGS laboratory in Kalalushi. All three laboratories are accredited to ISO/IEC 15025:2005 standard.

Methods for estimation and classification of Gemstone Resources and Gemstone Reserves *[12.13(iii)(2)] [SR11.4, SR11.5]*

The exploration drilling at Chibolele and Chama was done during the financial year -2022 with an objective to upgrade the measured & indicated resource to prove reserve. The evaluation of resource & reserve was done in-house in Surpac based on the same modality applied by SRK as described below.

Gemstone Resource models were earlier constructed, estimated and classified independently for the Chama, Chibolele, Fibolele and Libwente areas. All geological modelling was undertaken in ARANZ Leapfrog Geo software, with grade and tonnage estimates being completed in either GEMS or Datamine as relevant.

Geological modelling for each deposit followed the following process:

1. Construction of a TMS model, through sectional polyline interpretations of the TMS footwall and hanging wall. TMS and RZ logging codes were used as an explicit control on the TMS model geometry, with downhole Niton XRF chromium grades used to refine the contact surfaces where appropriate.
2. Development of a discordant PEG model. At Fibolele and Libwente this was completed through a manual process of creating interval selections of PEG / quartz-tourmaline vein intersections considered to form part of individual dykes or veins, and subsequent modelling using the Leapfrog vein tool. At Chama and Chibolele, the discordant PEG model was generated using a Leapfrog indicator interpolation of all discordant PEG intersections, applying a trend guided by a series of surfaces based on downhole PEG trends and geological mapping within the open pit. The discordant PEG models were cut from the TMS solids.
3. Construction of two RZ domains: one to define the TMS footwall RZ (concordant), and another based on areas where the PEG model is in contact with the TMS model (discordant).

To define the basis for the footwall RZ model, all logged RZ intervals at the base of the TMS solid volumes were manually selected and assigned a footwall RZ code. RZ hanging wall surfaces were then generated from the hanging wall points of the footwall RZ interval selection, using the TMS modelled surface as a framework to guide the trend of the model. The Fibolele concordant RZ model (Figure K12) comprises solid volumes at both the footwall and hanging wall of the TMS unit, whilst the Chama (Figure K13), Chibolele and Libwente concordant RZ models only comprise a footwall volume.

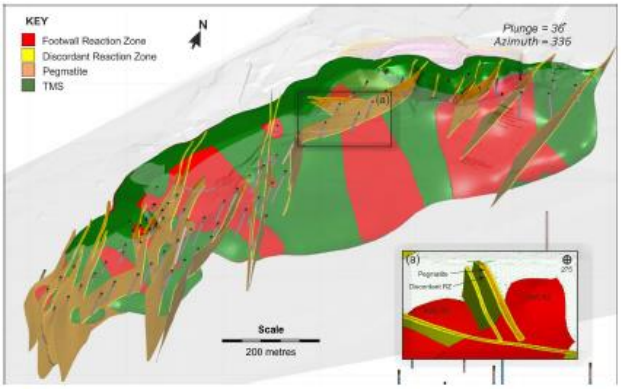


Figure K12: Fibolele TMS, quartz-tourmaline vein and concordant and discordant RZ models

The discordant RZ models were created as a buffer around the discordant PEG models and within the TMS unit. The discordant RZ thickness was adjusted on a deposit basis for the ratio of combined concordant and discordant RZ volume relative to modelled TMS volume above the most

recent pit survey wireframes to reflect the RZ to TMS ratio in the Gemfields production analysis for each pit to date.

A block model was used to quantify the volume, tonnage, and grade of the modelled RZs. The volumes of the discordant and concordant RZs were defined from the geological model. The tonnage was estimated using an average density value of 2.85 g/cm^3. The anticipated grade of emerald and beryl and their relative importance is based on the extrapolation of the recovery of these minerals from the tonnage of RZ processed during the period covered by the historical mining production statistics. The minimum size (bottom cut-off) of stone which can be recovered from the wash plant is 3 mm. Given the complexity associated with the estimation of RZ tonnage as well as the concentration of emerald and beryl within the RZ, the Gemstone Resource estimate was based on appropriately factored production and bulk sampling data combined with the geological interpretation of the TMS, PEG, and RZ lithological units.

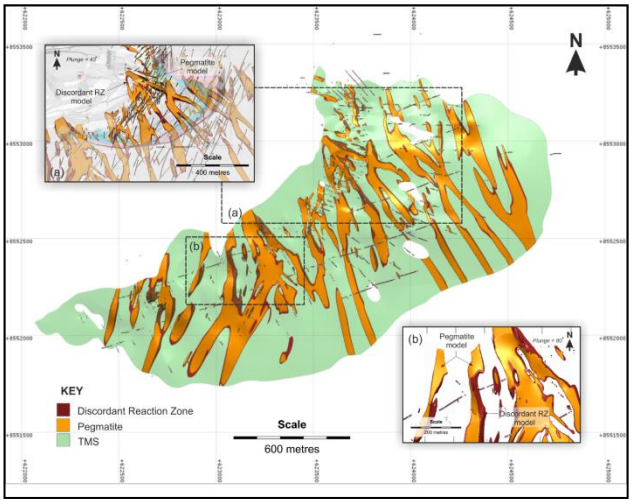


Figure K13: Chama TMS, PEG and discordant RZ models

The exploration and production activities completed by Gemfields have significantly improved the geological knowledge and understanding of the deposits. The derivation of Gemstone Resources is dependent on the availability of historical production statistics or the results of bulk samples. This provides the confidence in the grade of the individual deposit, and therefore the contained gemstones in the estimate.

The classification scheme for the Gemstone Resources at Kagem takes the following factors into account:

- quantity and quality of the underlying data, the level of geological understanding for each deposit, and across the property as a whole;
- confidence in the geological continuity of the TMS, PEG, and RZ;
- confidence in the grades, as derived from the production/bulk sampling, and the understanding of the grade variation at a given production scale;
- the stage of development for each deposit (such as exploration, production, care and maintenance, etc.);
- the perceived level of risk associated with deviations from the assumptions made; and
- reasonable prospects for eventual economic extraction.

The Gemstone Resources are reported within an optimized pit shell using the same input parameters as those in the mining study, but with a 30% mark-up on the anticipated prices to reflect an optimistic view. All grades quoted reflect beryl and emerald, expressed as carats per ton.

Type of Mining, Mining Activities *[12.13(iii)(3)]*

Kagem Mining Ltd conducted limited mining from 1984 until GRZ assumed management control in 1990. Hagura UK Ltd (the one JV partner) regained management control in 1996 and via various agreements increased its stake to 75% in Kagem. Gemfields acquired Hagura in October 2007 and implemented an expansion and redevelopment plan, with production commencing in November 2007.

Conventional open pit mining using drill-blast-load-haul methods is done with Kagem-owned in-house fleet and contractor-provided labour. The mining fleet comprises 20 excavators feeding 40 articulated dump trucks (“ADTs”) with additional supporting ancillary equipment. Ore stockpiling has been introduced to cater for variable ore production.

Open pit optimizations determined the economic pit shells, which were used for mine design and production scheduling.

Table K2: Pit Optimization Parameters

Parameters	Units	Base Case
Geotechnical		
Chama Overall Slope Angle	(°)	46°
Chibolele Overall Slope Angle	(°)	53°
Fibolele Overall Slope Angle	(°)	50°
Mining Factors		
Dilution	(%)	15%
Bench height	(m)	10.0
Mining Recovery	(%)	100%
Processing		
Plant Recovery	(%)	100%
Operating Costs		
Mining Cost	(USD/t_{rock})	2.67
G&A (mining)	(USD/t_{rock})	0.39
Processing Cost	(USD/t_{ore})	4.50
Selling Costs		
Mineral Royalties	(%)	9.0%
Management & Auction Fees	(%)	12.5%
Marketing & Advertising	(USD/ct)	N/A
Product Price		
P+E (HQA)	(USD/ct)	65.42
E (LQA)	(USD/ct)	4.05

The steeply dipping reaction zones (RZs) are mined using manual intensive methods with the assistance of hydraulic excavators under close supervision during daylight hours. All large and high-quality coloured gemstones are hand-sorted at the mining face and are placed in a drop safe-type container that is tagged and closed with security-controlled locks. The remaining RZ material is loaded into trucks and transported directly to the processing facility.

The Chama pit at 31 December 2022 relative to the surface and geology is shown in Figure K14. The scale of the operations at the Chama Pit can be seen in Figure K15.

The Fibolele bulk sampling pit at 31 December 2022 relative to the surface and geology is shown in Figure K16.

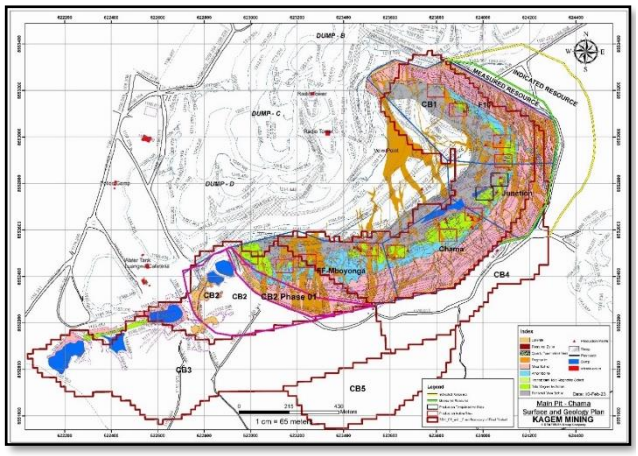


Figure K14: Chama Main Pit, surface and geology plan at 31 December 2022

Figure K15: Panoramic view of Chama Main Pit.

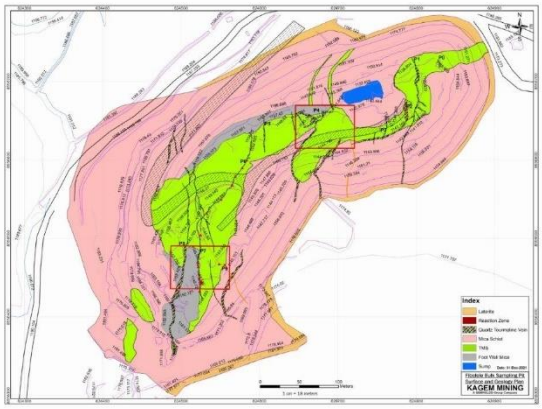


Figure K16: Fibolele Bulk Sampling Pit, surface and geology plan on 31 December 2022

The Chibolele operation comprises two historically mined open pits, the Mbuva and Chibolele pits, with most of the production coming from Chibolele. Production is targeted from three production points, M1, M2 and M3 (Figure K17).

Historical Production *[12.13(iii)(3)] [SR1.4(iv)]*

Historical production for 2018 to 2022 is summarized in Table K3. The mine was opened in a phased manner after the one-year suspension of operations due to the Covid impact. Proper ore mining only started in April 2021 once housekeeping activities, such as pit cleaning, desilting, road construction, dump stabilization and opening of production points, had been completed.

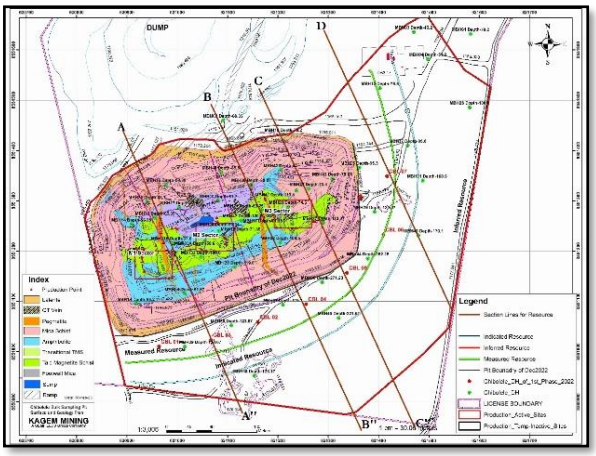


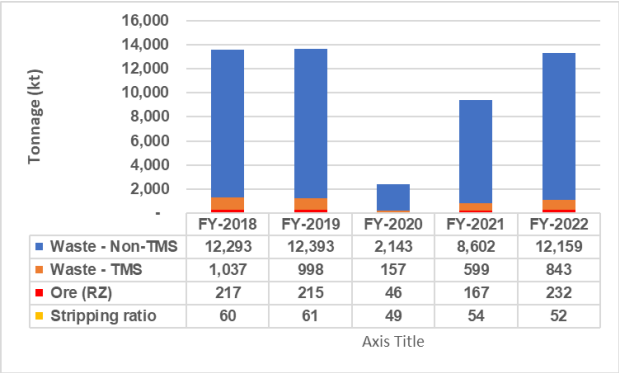
Figure K17: Chibolele bulk sampling pit, surface and geology plan at 31 December 2022

Table K3: Kagem summary production data

Item	Units	2018	2019	2020	2021	2022
Waste mined						
Chama	(Mt)	11.2	11.7	1.6	7.9	10.5
Fibolele	(Mt)	0.4	0.5	0.1	-	-
Chibolele	(Mt)	1.4	0.9	0.5	1.1	1.4
Total	(Mt)	13.1	13.1	2.3	9.0	12.1
RoM ore						
Chama	(kt)	162	138	34	130	170
Fibolele	(kt)	12	11	4	-	-
Chibolele	(kt)	42	66	8	38	61
Total	(kt)	217	215	46	168	231
B&E Grade						
Chama	(ct/t)	194	226	229	218	167
Fibolele	(ct/t)	346	284	31	-	-
Chibolele	(ct/t)	128	125	173	100	144
Total	(ct/t)	190	198	202	191	161
Recovered gemstones	(Mct)	41.1	42.5	9.4	32.0	37.2

* Mining operations suspended between March 2020 and March 2021 due to Covid-19.

The historical mined tonnages of waste and ore and the average strip ratio for 2018 to 2022 is shown in Figure K18. Waste stripping was below target for 2021 due to the delayed start in mining operations, whereas the operations resumed to full swing in 2022 and maintained the strip ratio better than budget.



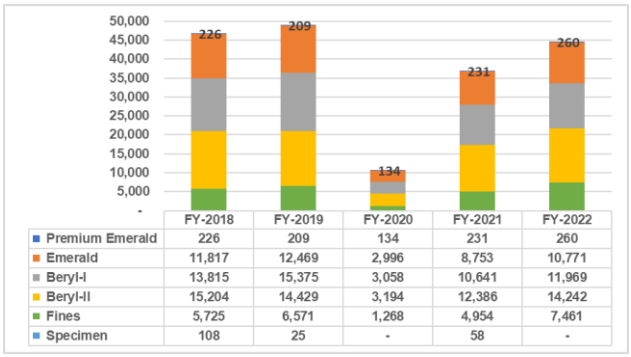
* mining operations suspended between March 2020 and March 2021 due to Covid-19.

Figure K18: Kagem historical mined tonnage and strip ratio

The cash rock handling unit cost for 2022 of USD4.30/t ore (USD3.48/t in 2021) reflects the return to normal operating conditions relative to the Covid-19 lockdown restrictions between March and April 2021, which halted all operations.

Mining activities at Libwente and Fibolele pits remained closed since 2020.

Historical recovered gemstone data for 2018 to 2022 are set out in Figure K19.



	FY-2018	FY-2019	FY-2020	FY-2021	FY-2022
Premium Emerald	226	209	134	231	260
Emerald	11,817	12,469	2,996	8,753	10,771
Beryl-I	13,815	15,375	3,058	10,641	11,969
Beryl-II	15,204	14,429	3,194	12,386	14,242
Fines	5,725	6,571	1,268	4,954	7,461
Specimen	108	25	-	58	-

* mining operations suspended between March 2020 and March 2021 due to Covid-19.

Figure K19: Kagem historical recovered gemstones

Auction Results – 2021 and 2022 *[SR11.4(xx)]*

The auction results of RoM parcels for 2021 and 2022 realised USD 69.1 million and USD 73.8 million from the sale of 0.52 Mct and 0.68 Mct higher-quality emeralds respectively (Table K6).

Table K6: Higher quality auction results

Item	Units	Apr'21	Dec'21	May'22	Nov'22
Carats sold	(Mct)	0.27	0.25	0.278	0.401
Sales realised	(USDm)	31.4	37.8	43.1	30.7
Av. Sales value	(USD/ct)	116	151	155.92	76.67

The auction of commercial quality emeralds results for 2021 and 2022 realized USD 23.1 million and USD 74.9 million from the sale of 3.5 Mct and 8.17 Mct respectively (Table K7).

Table K7: Commercial quality auction results

Item	Units	Aug'21	Apr-22	Sep-22
Carats sold	(Mct)	3.5	4.52	3.65
Sales realised	(USDm)	23.1	42.1	32.7
Av. Sales value	(USD/ct)	6.61	9.35	8.99

The Kafubu Cluster, a colossal 37,555-gram cluster of emeralds, a special interest piece, set a record as the most expensive single emerald item ever sold by Gemfields (which was mined at Kagem on March 2020 (Figure K19).

Figure K20: The Kafubu Cluster, a colossal 37,555-gram cluster of emeralds, recovered in March 2020

Processing Plant *[SR5.3(iii)]*

The processing plant (capacity 330 ktpa ore) processes RZ material mined directly from the open pit through a simple series of comminution, screening, washing and sorting facilities (Figure K21). Two sets of grizzlys split the plant feed into three fractions - +300 mm (stockpiled), -100 mm (sent to double deck screen) and -300 +100 mm (sent to primary crusher). The double-deck screen separates the material into three streams: +60 mm (secondary crusher in open circuit), -3 mm fines (fines, to valley storage area) and -60 +3 mm (triple deck screen splits into three product streams for hand picking).

The washing plant products, together with the high-quality product recovered directly from the mine, are essentially hand-sorted in a secure sort house facility where gemstones are upgraded using manual methods to produce emerald (subdivided into premium emerald and emerald) and beryl (subdivided into beryl-1, beryl-2, specimen and fines categories).

The processing plant processed 180 kt of ore during 2022, with actual plant availability and utilisation of 94% and 93% respectively.

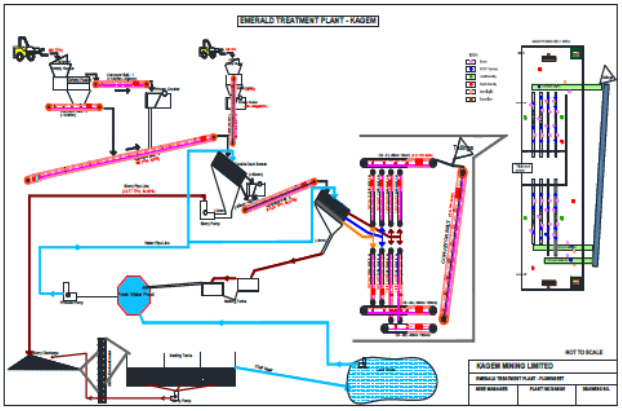


Figure K21: Kagem washing plant schematic flowsheet.

Production Forecast *[12.13(iii)(4)]*

The LoM plan provides for plant feed of 146 ktpa with an average feed grade of 201 ct/t through to 2044 Figure K22. Kagem forecasts to recover 750 Mct over the LoM.

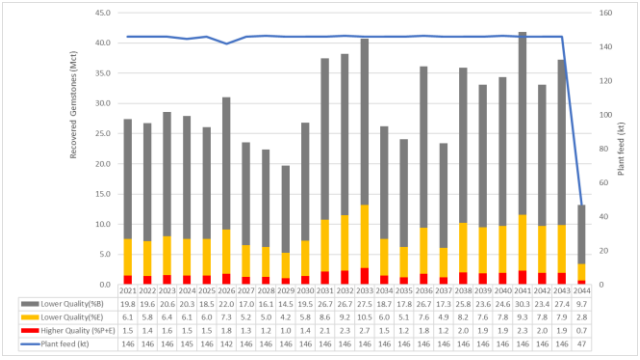


Figure K22: Kagem projected plant feed and recovered gemstones for LoM

Gemstone Resources and Gemstone Reserves *[12.13(iii)(6)(8)(9)] [SR11.5]*

Gemstone Resource and Gemstone Reserve Estimate on 31 December 2022

The Kagem Gemstone Resources and Gemstone Reserves estimate (75% basis) for 31 December 2022 is set out in Table K4. Gemstone Resources are reported at a bottom screen cut-off of 3 mm and are inclusive of the Gemstone Reserves.

No Inferred Gemstone Resources are included in the LoM plans, which support the Gemstone Reserve declaration.

Table K4: Kagem Attributable Gemstone Resource and Gemstone Reserve Estimate at 31 December 2022

Gemstone Resource table to GGL	Tonnage (kt)	B+E Grade (ct/t)	Contained B+E (Mct)	Gemstone Reserves Attributable to GGL	Tonnage (kt)	B+E Grade (ct/t)	Contained B+E (Mct)
Chama				**Chama**			
Measured	170	282	48	Proved	136	188	26
Indicated	3,188	270	861	Probable	2,550	227	579
Total Measured + Indicated	**3,357**	**269**	**909**	**Total Gemstone Reserve**	**2,686**	**225**	**605**
Inferred							
Fibolele				**Fibolele**			
Measured				Proved	-	-	-
Indicated	92	160	14	Probable	69	139	10
Total Measured + Indicated	**92**	**160**	**14**	**Total Gemstone Reserve**	**69**	**139**	**10**
Inferred	900	160	144				
Libwente							
Measured							
Indicated							
Total Measured + Indicated	**0**	**0**	**0**				
Inferred	150	46	7				
Stockpiles				**Stockpiles**			
Measured	417	139	58	Proved	417	139	58
Indicated				Probable	-	-	-
Total Measured + Indicated	**417**	**139**	**58**	**Total Gemstone Reserve**	**417**	**139**	**58**
Inferred							
Chibolele				**Chibolele**			
Measured	442	160	71	Proved	354	128	45
Indicated	259	180	47	Probable	207	160	33
Total Measured + Indicated	**701**	**167**	**117**	**Total Gemstone Reserve**	**561**	**139**	**78**
Inferred	413	200	83				
Total M+I Gemstone Resources	4,567	240	1,098	**Total Gemstone Reserves**	**3,732**	**201**	**750**
Total Inf Gemstone Resources	1,463	160	233				

Gemstone Resource Grade and Value	Recovered Grade in 2022 (ct/t)				2022 RoM Parcel Value (USD/ct)
	Chama	Fibolele	Chibolele	Libwente	
Premium Emerald	1.44	-	0.24	-	138.29
Emerald	52.21	-	30.87	-	9.68
Beryl-1	55.2	-	42.02	-	0.11
Beryl-2	58.14	-	70.61	-	0.01

Note: The 'Emerald' category is sold via three sales channels: Higher-quality auctions, Commercial-Quality auctions, and Direct Sales. This price is the weighted average of (a) auction revenue per carat for 'Emerald' lots at Higher-Quality auctions, (b) auction revenue per carat for 'Emerald' lots at Commercial-Quality auctions, and (c) Export prices per carat for Direct Sale 'Emerald' grades, whereas weighted average of Direct Sale export prices per carat for Beryl-1 (<16mm) and Beryl-1 (>16mm) & Beryl-2. Kagem assumes an allowance of three months between a stone coming out of the ground and becoming available for auction (cleaning, grading, quality control, shipping, viewing, etc.), hence we have used the auction revenue figures for the 12-month period from October 2021 to September 2022.

The comparative Kagem Gemstone Resource and Gemstone Reserve statement attributable to GGL (75% basis) at 31 December 2022 is set out below. The key differences between the 2021 and 2022 attributable Gemstone Resource and Gemstone Reserve estimates are explained as follows:

Gemstone Resources:

- The base data used of mining and production at Chama, where RZ (405 Kt) mined and produced carats (82 million carats) from July 2019 to Dec 2022, which cater confidence and reference for resource upgradation, a material value for a conservative consideration.

- The base data used was actual bulk sampling mining and production at Chibolele, where RZ (217 Kt) mined and produced carats (28 million carats) from Dec 2017 to Dec 2022, which cater confidence and reference for resource upgradation, a material value for a conservative consideration.
- Upgrade in Gemstone Resource category at Chama and Chibolele due to additional oriented drilling as recommended; and
- Small increase in Measured Gemstone Resources in surface stockpiles.

Gemstone Reserves:

- Small Upgradation in Proved Gemstone Reserves at F10 sector of Chama and Chibolele due additional oriented drilling.
- Maiden declaration of Proved & Probable Gemstone Reserves at Chama & Chibolele. Drilling conducted to confirm the geological understanding and the Measured Resources converted into Proved Reserves; and
- Small increase in Proved Gemstone Reserves in surface Stockpiles.

Table K5: Kagem Attributable Gemstone Resource and Gemstone Reserve Estimate at 31 December 2021

Gemstone Resource (Attributable to GGL)	Tonnage (kt)	B+E Grade (ct/t)	Contained B+E (Mct)	Gemstone Reserves (Attributable to GGL)	Tonnage (kt)	B+E Grade (ct/t)	Contained B+E (Mct)
Chama				**Chama**			
Measured	183	282	52	Proved	113	187	21
Indicated	2,783	270	746	Probable	2,130	218	465
Total Measured + Indicated	2,966	269	797	Total Gemstone Reserve	2,243	217	486
Inferred							
Fibolele				**Fibolele**			
Measured				Proved	-	-	-
Indicated	92	160	14	Probable	69	139	10
Total Measured + Indicated	92	160	14	Total Gemstone Reserve	69	139	10
Inferred	900	160	144				
Libwente							
Measured							
Indicated							
Total Measured + Indicated	0	0	0				
Inferred	150	46	7				
Stockpiles				**Stockpiles**			
Measured	245	138	34	Proved	245	138	34
Indicated				Probable	-	-	-
Total Measured + Indicated	245	138	34	Total Gemstone Reserve	245	138	34
Inferred							
Chibolele				**Chibolele**			
Measured	223	160	35	Proved			
Indicated	133	180	24	Probable	177	160	29
Total Measured + Indicated	356	166	59	Total Gemstone Reserve	177	160	29
Inferred	156	200	32				
Total M+I Gemstone Resources	3,657	247	905	**Total Gemstone Reserves**	**2,733**	**204**	**558**
Total Inf Gemstone Resources	1,206	151	182				

Gemstone Resource Grade and Value	Recovered Grade in 2021 (ct/t)				2021 RoM Parcel Value (USD/ct)
	Chama	Fibolele	Chibolele	Libwente	
Premium Emerald	1.7	-	0.1	-	59.84
Emerald	62.4	-	17.2	-	4.01
Beryl-1	74.6	-	25.4	-	0.11
Beryl-2	79.0	-	56.7	-	0.01

Note: The sales for 2021 were skewed as only three auctions (two higher-quality and one commercial-quality) were held, instead of the usual four auctions, due to the company's focus on sales recovery. One lot of low-quality goods was not offered for auction. The average parcel values from 2020 have been retained for reporting purposes.

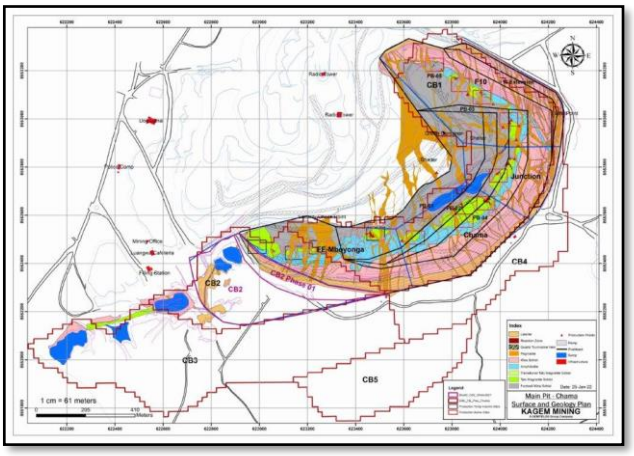


Figure K23: Kagem planned pushbacks at Chama.

The planned pushbacks in the LoM plan for Chama pit are shown in Figure K23.

Material Risk Factors *[12.13(iii)(10)]*

The principal risk factors for Kagem are as follows:

- Gemstone Resource and Gemstone Reserve estimation risk [Medium risk rating]: The presence and proportion of premium or higher quality gemstones may be more erratic than indicated from the mining and bulk sampling undertaken to date. The total B&E ct/t grade may also be more variable than indicated to date. Further sampling of mining blocks prior to mining to predict future production more accurately is recommended.
- Reputational risk [Medium risk rating]: Kagem has developed initiatives to address the poorly developed on-site management systems. Commitments regarding biodiversity management / sustainability and a comprehensive biodiversity assessment have yet to be implemented.
- Environmental and social risks [Medium risk rating]: The socio-economic and cultural impacts set out in the EIS are not being fully addressed through the identified mitigation measures. No formal systems for stakeholder engagement/consultation and logging and/or addressing community grievances are in place. Social monitoring plans and systems are required to be able to report on the effectiveness of community interventions with respect to the strategic aims of the Sustainable Development Goal;
- Legislative/Country risk [Medium risk rating]: changes in relevant government regulations, particularly environmental tax health and safety regulations and new legislation affecting water, mining, mineral rights and business ownership;
- Artisanal miners [Medium risk rating]: The understanding of the dynamics of the artisanal mining presence in the area and proactive dialogue with this group needs to be improved;
- Covid-19 [Medium risk rating]: resurgence of new infections may result in operations being suspended again;
- Water management [Low risk rating]: careful day-to-day management is necessary to ensure that zero discharge of silty water to the environment is maintained and the impact of dewatering on water resources used by the local community is minimised.

Legal Proceedings / Material Conditions that may impact on Company's activities *[12.13(iii)(11)]*

The Directors of GGL and Kagem are not aware of any legal proceedings that may have an influence on the rights to explore or mine for gemstones.

The Directors of GGL have confirmed that no significant legal issue exists which would affect the likely viability of Kagem and/or on the estimation and classification of the Gemstone Resources and Gemstone Reserves.

Environmental Management and Funding *[12.13(iii)(13]*

Kagem continues to mine and manage its operations in an environmentally sustainable manner, by ensuring environmental protection and conservation programmes are incorporated in its operational processes.

A total of 10,000 indigenous trees have been planted at dumps covering an approximate area of 17,635sqm. Water sampling is done monthly and Kagem is compliant with the set effluent and water standards.

A project for reducing environmental cost for effluent sampling and analysis was implement and a cost reduction by 75% was achieved. Air Quality real time monitoring equipment was installed, and the air quality results have been satisfactory pose no health risks.

In March 2021, Kagem successfully renewed all applicable environmental management licences in terms of the Environmental Management Regulations (SI 112 of 2013) and is fully committed to complying with its conditions.

In January of 2022, a biodiversity study within the Kagem concession was completed by a team from the Copperbelt University.

Kagem has embarked on a programme that promotes progressive rehabilitation of its waste dumps and several initiatives to improve management of domestic waste and hazardous waste.

In June 2022, Kagem was certified to ISO 14001:2015 Environmental Management System by Bureau Veritas. This is a demonstration that Kagem does not only aim at complying with legal requirements but goes beyond compliance by implementing the industry best practice.

Kagem obtained a financial guarantee number 061-02-0003891 for USD 1,095,074.71 for the rehabilitation of land disturbed by mining (Execution of decommissioning, closure, and post-closure).

Sustainability and Corporate Responsibility

The sustainability and corporate responsibility activities aim to position Kagem in good standing with local communities, and to ensure that its policies impact positively on people and complement Government efforts in reducing poverty levels and suffering amongst people. Kagem's approach is community engagement and participation consistent with Government policy.

Kagem continued the engagement and management of strategic partners and key stakeholders in the area. During

the period under review, Kagem signed MOUs with two Chiefs, Chief Nkana and Chief Lumpuma.

Kagem employed a sectoral approach to support the community with the new projects, as illustrated below:

Education

Kagem continued supporting the education sector during the year.

- The company was able to hand over three classroom blocks as well as two teacher's houses at Masasa primary School.

Figure K24: Kagem handed Masasa Primary School

- Kagem also started a project to construct a computer laboratory and rehabilitate the existing blocks at Kapila Primary School. Figure K24.
- Gemfields Foundation has also bought new computers for the Chapula Secondary School computer laboratory.
- Kagem also signed MOUs with University of Zambia and Copperbelt University to sponsor and support best performing students in the Schools of Mining Engineering and Geology. Figure K25.

***Figure K25:* MOUs with University of Zambia and Copperbelt University.**

Kagem participated in contributing to the water sanitation, health, and environment (WASHE) programmes for the community by installing a water borehole in Pilala.

The company further contributed to the education sector by donating hygiene and other related items to the District Education Board Secretary (DEBS)'s office for further distributions among schools in the Lufwanyama District. Among the items donated were hand sanitizers, face masks, and washing buckets.

Health

Kagem continued supporting the health sector by making various donations including Covid prevention materials, a submersible pump to Nkana Health Centre as well as refurbishment of an ambulance for the District Health Administration to assist community members to have access to quality health care.

Agriculture

Kagem continued supporting agriculture through various cooperatives as a way of sustaining livelihoods for the community members. Through agriculture, community members are able to realise legitimate income leading to increased household incomes to sustain themselves and their families. Agriculture also contributes to the reduction in incidences of illegal mining by proving alternative income generating activities.

During 2022, Kagem established two new cooperatives, The Lumpuma Multipurpose Cooperative Society, ("LMPCS") which is a youth focused cooperative, and the Kafwaya Women's Multipurpose Cooperative which focuses on livestock and is comprised of women. Figure 26.

Figure K26: Kagem supported community through Multipurpose Cooperative Society in farming.

Kagem facilitated training for all the cooperatives it is supporting during the pre-farming season to make them more efficient and effective. Kagem also provided inputs such as fertilizer to all the cooperatives.

Nature conservation and Environment

Kagem made a donation to the Frankfurt Zoological Society (FZS) of the North Luangwa Conservation Program towards the Rhino Conservation Project. These are part of the proceeds from the sale of the iconic gemstone dubbed the 'Chipembele'. Figure 27.

Figure K27: Kagem supports nature conservation

OGM

Kagem started the establishment of an Operational Grievance Mechanism (“OGM”) in August 2022. The OGM was operationalised and subsequently launched on 11th November 2022 and is currently operational.as part of its ongoing commitment to engage with the local community.

Kagem asked business and human rights consultants to conduct extensive stakeholder engagement in order to design an OGM which could resolve grievances in an effective and efficient manner in compliance with the United Nations Guiding Principles (“UNGPs”). An Independent Monitor will perform independent external reviews of the Kagem OGM to ensure its effectiveness under the UNGPs.

CORPORATE GOVERNANCE

Kagem has continued its practice of compliance to the good corporate governance principles as enshrined in various statutes and policies. It has continued meeting its statutory obligations, holding of quarterly Board meetings, adherence to labour and other laws, etc.

During the period under review, Kagem renewed its various licences incidental to its operations that needed renewing. Kagem maintains a compliance register and compliance checklist.

MONTEPUEZ

Location *[SR1.2(i)]*

The Montepuez Ruby Mine is located in Cabo Delgado province in north-eastern Mozambique, approximately 170 km west of Pemba (Figure M1). MRM is the world's single-largest producing ruby mine.

Located at latitude 13°10'S and longitude 39°20'E at an average elevation of 450 msl, the site is some 30 km east of the regional town of Montepuez. The nearest village is Namanhumbir, less than 1 km from the project camp and approximately 6.6 km from the mining areas. The main office has been shifted from MRM camp residential area to mine operational area, while the accommodation remains at the Namanhumbir mine camp. The camp is accessed via a 1.2 km long dirt road from the regional Route 242, which connects Pemba and Montepuez.

MRM recovers gemstones from a series of shallow pits at Mugloto, Glass and Maninge Nice. The main surface infrastructure, gemstone recovery plant and ruby sorting house are located at the Maninge Nice block.

Figure M1: Montepuez Mine Location

Legal Entitlement *[SR1.5(i)] [12.13(iii)(5)]*

The single mining licence 4703C Ref. 1588/CM/INAMI/2015 (combining the two initial licences 4702 and 4703) covering an area of 34,996 ha was issued by the Government of Mozambique to MRM in December 2015, valid until 11 November 2036 (Figure M2). The original licences were granted in November 2011, valid for 25 years.

Gemfields holds a 75% interest in the Montepuez Mine, with the remaining 25% held by Mwiriti Limitada, the original titleholder.

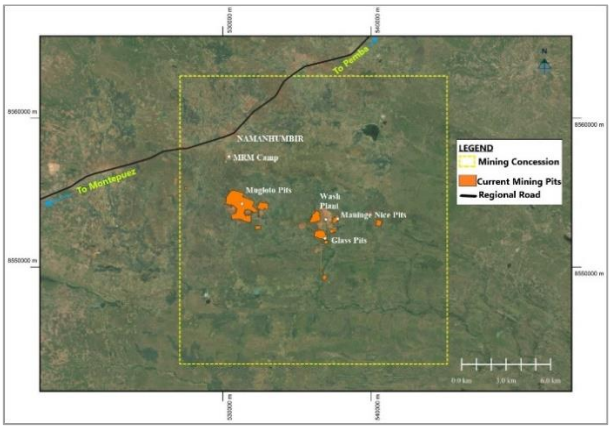


Figure M2: Licence Extent and Site Layout Plan

Geological Setting *[SR2.1(i)(ii)] [SR11.1(i)]*

The Montepuez ruby deposit is hosted by the Montepuez Complex, a strongly ductile-deformed, wedge-shaped, metamorphic terrane. The Montepuez Complex is composed of orthogneisses ranging from granitic to amphibolitic in composition, and para gneisses comprising quartzite, meta-arkose, marble lenses, quartz-feldspar gneiss, and biotite gneiss (Figure M3). These metamorphosed sedimentary rocks have been intruded by granite, granodiorite, and tonalite.

Intense deformation has resulted in a highly complex structural framework, with the local units folded into tight and isoclinal folds dissected by a suite of mainly northeast to southwest trending shear zones.

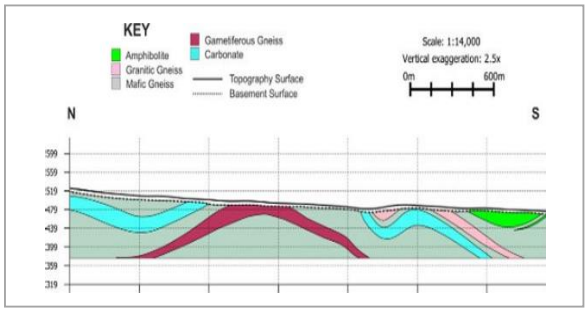


Figure M3: Central Mugloto area – north-south section

The Montepuez Complex is bounded by thrust faults to the north by the Nairoto Complex, the oldest rocks in the region composed of ductile-deformed metamorphosed intrusives, and to the west by volcano-sedimentary meta-suites of the Xixano Complex.

Ruby and corundum mineralisation is found in two styles: primary amphibolite, and a secondary gravel bed. The main source of rubies and corundum is secondary mineralisation, although mining has also occurred from the primary mineralisation. The secondary gravel bed horizon comprises variably rounded quartz and clastic fragments, forming a semi-continuous horizon, at or near the basement contact. The gravel bed horizon is generally less than 2 m thick, with an average thickness of 0.45 m. The

primary mineralisation is associated with a variably weathered amphibolite unit, which is being mined in the Maninge Nice area.

Within the gravel bed unit, the quality and quantity of ruby gemstones varies significantly across the deposit. The grade and type of ruby encountered also varies across the secondary mineralisation (Figure M4). MRM attributes this to the variability of the primary host lithology, the geomorphology of the area, and the nature of the physical and chemical weathering during deposition of the secondary mineralisation.

Differences in the grade and quality of stones recovered from Mugloto and Glass are attributed to different primary sources. Geochemical analyses and XRF studies indicate that the ruby/corundum recovered from Glass are typically higher in Cr and V, and lower in Fe than stones from Mugloto.

Figure M4: Montepuez primary and secondary mineralisation

The Maninge Nice secondary deposits lie very close to the underlying primary amphibolite deposits, resulting in a higher number of carats per ton being recovered. These are associated with a high incidence of ruby/corundum, when compared to the secondary deposits at Mugloto and Glass. The ruby/corundum at Maninge Nice tend to be more platy in shape, indicating reduced transportation distances. The stones at Maninge Nice are typically tabular hexagonal crystals, highly fractured and included with a strong basal cleavage.

The stones recovered from Glass are similar to those at Maninge Nice, except the secondary mineralisation does not overly the primary source. The stones indicate a higher transportation distance, are more rounded, meaning the number of stones recovered is reduced. The stones recovered from the Glass area typically have a better pink colour than those in Mugloto.

Stones recovered from Mugloto are relatively high in Fe content. The primary source for these stones is thought to lie outside the area currently delineated by exploration drilling and pitting. The stones are typically dark red in colour, more transparent with fewer inclusions, and often rounded or tumbled in shape.

Exploration Activities *[12.13(iii)(1)] [SR3.1(i)] [SR11.2(i)]*

Exploration and mining have been underway at Montepuez since 2012. The main exploration methods employed at Montepuez deposit include auger and diamond drilling, small-scale exploration pits, bulk sampling, and mining. This key data is supplemented by limited geological mapping, satellite imagery and geophysical and soil geochemistry surveys. Exploration expenditure to December 2022 amounted to approximately USD 5.1 million, of which almost half was for drilling.

Any further drilling is operational in nature and provided for in the capital provision of USD 0.7 million per year.

Exploration of the Montepuez deposit can be broadly defined in terms of two phases, viz. Phase 1 completed prior to Q2 2015, Phase 2 completed post Q2 2015 and Phase 3 completed Q4 2022. Auger drilling and exploration pitting is used primarily to determine the thickness and nature of the secondary mineralization in the gravel bed and the overlying material. Diamond drilling has been used to determine the nature of the basement geology, with the aim of defining the primary mineralization at Maninge Nice. The main exploration tool used to determine ruby grade and quality is through bulk sampling (Figure M5), and later, production.

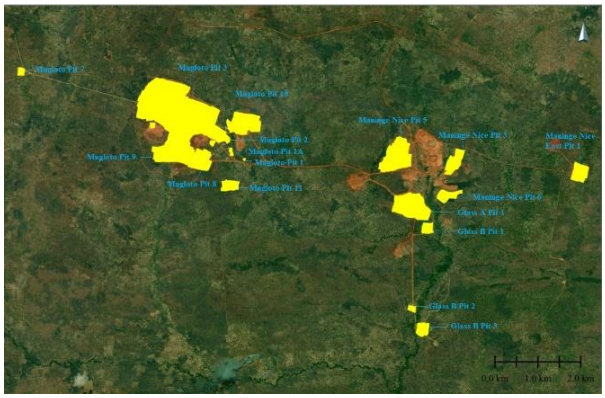


Figure M5: Montepuez bulk sampling / production pit outlines

Various geophysical surveys have been conducted: high-resolution radiometric survey (November 2012), ground-penetrating radar and electromagnetic surveys (April 2013) and airborne geophysical survey (October/November 2015).

During FY'2022, 59 (3,021 m) diamond drill holes and 527 (2749 m) auger holes, were completed respectively within this annual budget, whilst in 2021, a total of 21 (2,498 m) diamond drill holes were completed.

Exploration drilling mainly comprises auger holes and diamond drilling holes. Since, inception 3,499 auger holes (23,969 m) and 1202 diamond holes (63,102 m) with a variable drill hole spacing across the Mugloto and Maninge Nice areas (Figure M6). The auger drilling is primarily on an approximate 140 m grid, with several small pockets of close-spaced drilling on a 30-40 m grid in the Mugloto area.

The distribution of diamond drill holes is relatively sporadic and confined to the Maninge Nice and Mugloto area, varying from a drill spacing of 5 m to 75 m, to 200 m. The auger and diamond holes were drilled to an average depth

of 7.1 m and 52.5 m respectively. All the auger holes were drilled vertically while a few diamond drill holes were drilled inclined as well. Drilled holes have not been surveyed.

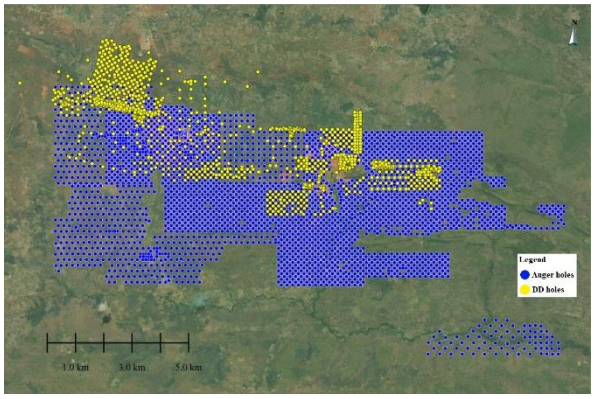


Figure M6: Diamond (yellow) and auger (blue) drill hole collar locations

Some exploration pitting typically 1 m2 in cross section and average 3.9 m deep was focused on the central Mugloto and Maninge Nice areas (Figure M7). A total of 823 exploration pits (3,224 m) were completed in 2012-2013, at grid spacings of 50 x 50 m, 100 x 50 m and 200 x 100 m. Due to various technical difficulties, 175 pits were terminated prior to reaching the planned depth, and have been excluded from the database for modelling.

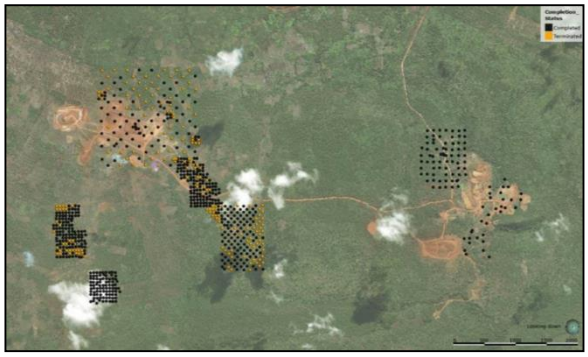


Figure M7: The completed (black) and terminated (orange) exploration pit collar locations

The X and Y coordinates for the drill hole and pit collars were surveyed with standard hand-held GPS equipment, whilst the elevation is taken from the SRTM geophysical topography surface.

Ruby grade and quality distribution at Montepuez is determined from mine production records. The mined material is processed through the onsite processing plant, with a bottom cut of 1.6 mm.

Ruby Mineralisation and classification system *[SR11.2(xi)]*

The material recovered from the wash plant is initially split by hand into three categories, viz. waste, garnet, and rubies/corundum.

Montepuez uses a classification scheme for the recovered gemstones, classified on the size and quality of the individual ruby/corundum (Table M1).

Once split into these broad quality categories, the gemstones are further subdivided into various groups based on clarity, colour, size, weight, and shape, resulting in several hundred final subdivisions (Table M1).

Table M1: Montepuez ruby/corundum classification system

Category	Description
Waste	Discarded
Garnets	Stockpiled for future use
Ruby/corundum:	
Fines	Sieved, -2.8 mm
<4.6 mm	Sieved, +2.8 mm -4.6 mm
Premium Ruby	Rough >0.5 g, desirable shape, clarity, and red colour
Ruby	<0.5 g, desirable shape, clarity, red colour; rough >0.5 g, rough included or pink colour affecting recovery or appearance
Low Ruby	Gemstones with pinkish red to red colour, translucent with significant inclusions
Corundum	Opaque non-gem quality rough
Sapphire	Very light pink to pink gemstones of variable shape and clarity.

Quality Assurance/Quality Control *[SR11.6(vii)]*

The logging and sampling procedures in place are generally consistent with normal industry practice for this commodity type.

Key geological information logged includes lithology, mineralogy, weathering, alteration, colour, grain size, structure/texture, and intrusive features. The presence of key minor or trace minerals including rubies, corundum, garnet, and pyrite are recorded.

17 samples of Amphibolite (mineralised) were collected from 5 different bore holes to access the quality of mineralisation.

Methods for estimation and classification of Gemstone Resources and Gemstone Reserves *[12.13(iii)(2)] [SR11.4, SR11.5]*

The auger and diamond drilling and exploration pit data were used to model the secondary, overburden unit and primary bedrock lithologies (Figure M8). Topographic and basement contact surfaces are also modelled. The 3D volumetric model of the secondary gravel bed is based on the top and bottom contacts from the logged auger holes and exploration pits and follows the geometry of the modelled basement contact between drill holes.

A gravel bed “skin” model was created to reflect the mining dilution included by the mining operation. This entails expanding the gravel bed model by 0.3 m on the footwall and hanging wall directions or set to a standard 1.5 m thickness where the gravel bed model is <0.9 m thick.

The Maninge Nice amphibolite body was modelled through sectional polyline interpretations, based on logged amphibolite in diamond holes and exploration pits, cropped to the modelled basement surface.

A watershed analysis of the modelled basement surface using Global Mapper software showed that the gravel bed appears to be present more consistently near the paleo-drainage channels; the modelled ruby grade is typically higher near the paleo-drainage channels, while areas of consistent lower grade are distal to the major channels.

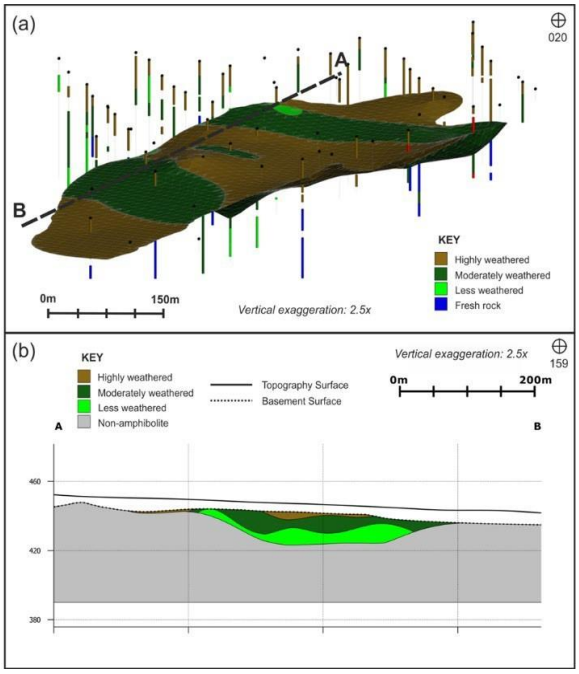


Figure M8: Oblique (a) and sectional (b) views of the Maninge Nice amphibolite model coloured by degree of weathering

To reflect the variation in ruby grade and quality throughout the gravel bed, the gravel bed model is divided into ten spatial domains based on auger/pit grade populations and geological control (Figure M9), in which 2 domains Nakete and Nathepo are added in FY 2022. The domain outlines are of similar grade and controlled by the major paleo-drainage channels.

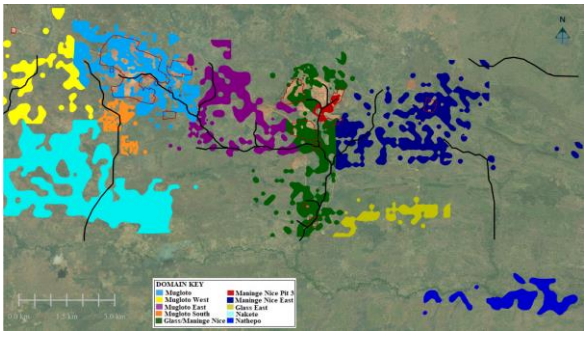


Figure M9: Gravel bed model, coloured by domain relative to drainage channels (in black) and extent of production pits (red outlines)

The grades from ongoing production provide the most reliable data source, which details the stone quality subdivisions and various quality types. The production grades for the secondary mineralisation are factored to remove the dilution effect by a thickness ratio of modelled gravel bed to gravel bed plus skin.

The tonnage estimates are derived from averaged drill core density measurements assigned separately to the various domains.

The classification scheme for the Gemstone Resources at Montepuez (Figure M10) considers the following factors:

1. Quantity and quality of the underlying data, the level of geological understanding for each type of mineralisation across the property as a whole;
2. Confidence in the geological continuity of the host mineralisation.
3. Confidence in the grades, as derived from the production and the understanding of the grade variation at a given production scale; and
4. The perceived level of risk associated with deviations from the assumptions made.

The Gemstone Resources statement is split into the mineralisation types (primary and secondary), as well as the different geographical areas. The statement presented is based on the geological modelling of the two mineralisation styles (gravel bed and amphibolite), and the application of factors derived from production.

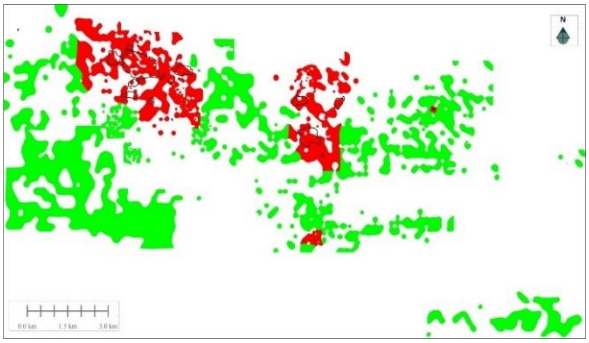


Figure M10: Block model classification of Gemstone Resources (red=Indicated, green=Inferred). Black outlines show extent of gravel extraction in production pits

In presenting this Gemstone Resource, the following apply:

- Gemstone Resources for the gravel bed are reported inclusive of dilution, at a 1.5 m minimum mining width;
- Gemstone Resources for Maninge Nice Pit 3 primary amphibolite are reported as undiluted;
- The block model has been depleted to the relevant pit surveys to reflect the 31 December 2022 effective date.
- The average value reported in the Gemstone Resource statement is USD 20.74/ct (this is the average parcel value for 2014 to 2022, see Table M4);
- Premium ruby and normal ruby are presented individually whilst other classes (low ruby, corundum, sapphire, and -4.6 mm mixed ruby/corundum) are combined. A total grade for all classes is also presented for clarity;
- Gemstone Resource grades are quoted with a bottom cut-off stone size of 1.6 mm;
- All figures are rounded to reflect the relative accuracy of the estimate.

MRM maintains stockpiles of both the primary and secondary mineralisation types to manage the expected variability in the gemstone grading distribution and impact of the wet season on productivity. The strategy provides more than six months of production stockpiled near the wash plant. The stockpiles are monitored to account for

addition of RoM material added during production, material moved to the processing plant, and surveyed monthly. The stockpile balances are based on the production data.

Type of Mining, Mining Activities *[12.13(iii)(3)]*

The Montepuez deposits were discovered in 2009, where there was a large influx of artisanal miners to the area. Gemfields signed a joint venture agreement with Mwiriti Lda in 2011. Bulk sampling started in August 2012 and an initial wash plant and sort house was commissioned in November 2012.

Mining is carried out at the Mugloto, Maninge Nice and Glass areas as a conventional open-pit gravel operation with excavators, loaders, and trucks (Figure M11). All material is 'free dig' with some of the harder laterite needing to be ripped by a bulldozer. all equipment is owned and operated by the mine. Mining operations working shift schedule now have been adopted from 3 x 8-hour shift to 2 x 12-hour shift, since August 2022.

The Maninge Nice blocks target primary amphibolite and secondary gravel bed mineralisation, whereas the Mugloto and Glass areas contain only secondary gravel bed mineralisation.

Mining in Mugloto and Maninge Nice varies in depth between 5 m and 8 m. Waste mining is undertaken in 2.5 m flitches. The flitch heights are reduced as the excavation approaches the gravel bed horizon, as directed by site geologists. Small equipment sizes allow for highly selective mining. Complete extraction of the gravel is ensured by mining a minimum thickness of 1.5 m.

Grade control is constrained to visual inspection and mining of the mineralised zones is only undertaken during daylight hours. Geologists on site direct the mechanical loader from within the pit area to ensure that the gravel bed is mined correctly (Figure M11).

Figure M11: Systematic and selective mining under Geology supervision

MRM recovers gemstones from a series of shallow pits at Mugloto, Glass and Maninge Nice (examples shown in Figure M12, M13 and M14 respectively).

MRM has included an ore stockpiling strategy to manage the expected variability in the gemstone grading distribution as well as the impacts of the wet season on productivity. The stockpiling strategy provides more than six months of production stockpiled near the wash plant. Ore is fed to the plant either from these stockpiles or directly from the pits.

Figure M12: Mugloto Pits (3, 5, 8, 9 and 10)

Figure M13: Glass A Pit 1

Figure M14: Maninge Nice Pit 3

Considerations for stripping ratio, thicknesses and mineralisation type were the main drivers for the LoM plan. Economic potential was tested in a financial model by considering:

- Long-term macro-economics and prices;
- Revenue-based deductions (e.g., royalties, auction fees);
- Operating costs; and
- Modifying factors.

Modifying factors applicable to the derivation of Gemstone Reserves comprise estimates for the selective mining unit. Mining dilution for secondary mineralisation is the greater of 0.3 m skin on top and bottom contacts, or a minimum total thickness of 1.5 m. Grade capping has been applied to the Mugloto secondary mineralisation to limit the grade of the higher value gemstone based on historical results.

No mining losses are applied to the secondary material due to the nature in which dilution was modelled. A small mining loss of 1.4% was implied in the modelling of the primary material.

The backfilling of the Maninge Nice pits is only possible in areas, which do not overlie the primary mineralisation.

External waste rock dumps are required. Concurrent backfilling of the pits at Mugloto (Figure M15) and Glass is possible as mining is focused on secondary material.

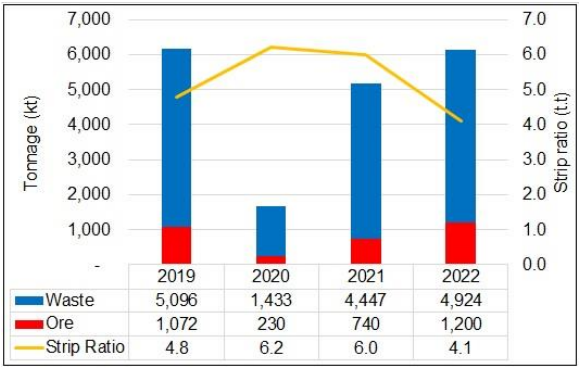
Figure M15: In-pit backfilling at Mugloto Pit 3E

The current LoM plan production requires a ramp-up from 7.9 Mtpa total ore and waste to 16 Mtpa by 2026, with ore mining increasing to 3.3 Mtpa by 2026 and is projected to extend to 2030 (LoM of 8 years). The future LoM plan expects to achieve an overall stripping ratio of 4.3 over the LoM. The mining sequence targets areas to balance lower stripping ratios, proximity to wash plant and areas with historically high premium rubies.

An owner-operated fleet undertakes all material movement. The primary excavators are CAT336D hydraulic excavators with CAT730C ADTs for waste mining and TATA2523 tipper trucks for ore mining. Equipment replacement cycles are set at 18,000 engine hours for all primary equipment, except the TAT2523 trucks set at 10,000 engine hours.

Historical Production *[12.13(iii)(3)] [SR1.4(iv)]*

The historical mined tonnages of waste and ore and the average strip ratio for 2019 to 2022 is shown in Figure M16.



* Mining operations suspended between April 2020 and March 2021 due to Covid-19.

Figure M16: MRM historical mined tonnage and strip ratio

Based on auger exploration findings, two new Bulk sampling pits were opened in FY'2022, Mugloto Pit 11 and Maninge-Nice Pit 6, pit development plan is ongoing. Mugloto Pit 11 ore was processed and has produced encouraging results, and in Maninge-nice Pit 6 ore mining will take place in first quarter of FY'2023.

Ore and waste tonnage mined actual 6.1 million tonnes against a target of 6.5 million tonnes. Overall stripping ratio achieved 4.1 against a target of 4.4.

Historical production data for 2019 to 2022 is tabulated in Table M2.

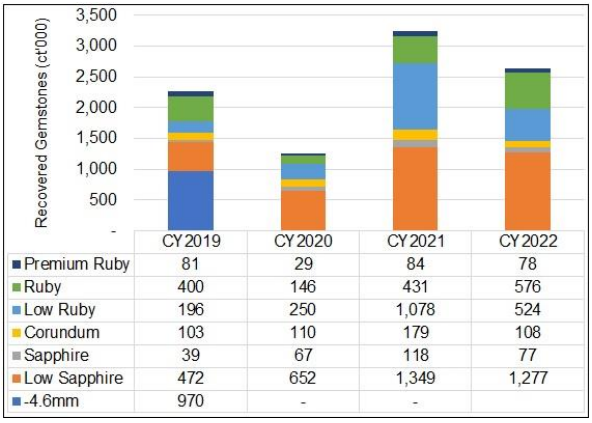
Table M2: MRM summary production data

Item	Units	2019	2020	2021	2022
Tonnage Mined					
Mugloto Secondary	(kt)	819.5	204.2	585.9	1150.2
Maninge Nice Primary	(kt)	0	0	0	-
Maninge Nice Secondary	(kt)	38.1	25.4	119.4	35.5
Glass Secondary	(kt)	214	0	34.6	14.10
Total ore mined	(kt)	1,071.6	229.6	739.9	**1199.8**
Tonnage Processed					
Mugloto Secondary	(kt)	807.3	346.4	859	1,002.0
Maninge Nice Primary	(kt)	3.3	-	-	9.0
Maninge Nice Secondary	(kt)	40.3	-	132.7	135.9
Glass Secondary	(kt)	-	-	9.8	191
Head feed	**(kt)**	**850.9**	**346.4**	**1,001.50**	**1147.15**
Recovered Grade					
Mugloto Secondary	(ct/t)		3.62	3.56	1.41
Maninge Nice Primary	(ct/t)	158.2		0	113.5
Maninge Nice Secondary	(ct/t)	5.6		1.21	1.5
Glass Secondary	(ct/t)			2.06	12.3
Aggregated grade	(ct/t)	2.66	3.62	3.23	2.3
Recovered Gemstones	(Mct)	2.26	1.25	3.24	2.63

* Mining operations suspended between April 2020 and March 2021 due to Covid-19.

The cash rock handling unit cost was USD 6.57/t and 6.20/t in 2022 & 2021 respectively. The high cost per ton reflects commodity prices inflation impacted post Covid-19.

Historical data for recovered gemstones for 2019 to 2022 are shown graphically in Figure M17.



* Mining operations suspended between April 2020 and March 2021 due to Covid-19.

Figure M17: MRM historical recovered gemstones

Auction Results – 2021 and 2022 *[SR11.4(xx)]*

The auction results from the sales of mixed- and commercial-quality rubies in 2021 and 2022 are set out in Table M3. Total three auctions were held during 2022, one commercial grade and two mixed grade.

Table M3: Auction Results 2021 and 2022

Item	Units	Mar'21	Dec'21	Jun'22	Sep'22	Dec'22
Carats sold	(Mct)	0.34	0.67	0.39	18.09	0.43
Sales realised	(USDm)	58.9	88.4	95.6	4.2	66.8
Av. Sales value	(USD/ct)	171.3	132.5	246.7	0.2	154.9

Processing *[SR5.3(iii)]*

A process plant including a scrubber, rated at 200 tph of RoM feed, and a dense medium separation plant ("DMS"), rated at 83 tph of washed -25 mm+1.6 mm material, was commissioned in December 2016 (Figure M18). A new thickener has been installed in 2019-20 to meet the operating capacity.

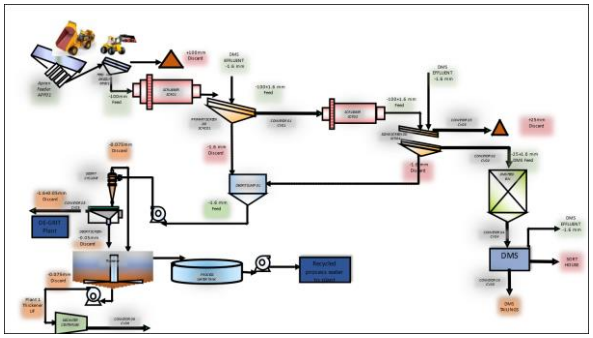


Figure M18: Montepuez plant flow sheet

An apron feeder has provided the operational flexibility for feed rate control and thus stabilize the downstream operation. It has helped to minimize process downtime due to uncontrolled plant feed rate and maintain the feed rate at 150 tph.

The wash plant flowsheet incorporates wet scrubber screening to remove -1.6 mm solids, followed by a log washer to break up clay balls and a double deck, wet screen to remove +25 mm stone fraction and -1.6 mm fines.

Several waste streams are produced in the plant. Coarse +25 mm material is separated and stockpiled. DMS rejects are removed to waste after sample testing. The -1.6 mm fines are pumped to the tailings circuit where they are classified into two fractions:

- A coarser -1.6 mm+75 µm fraction is dewatered by screen and sent to the dump; and
- The -75 µm fraction is thickened and pumped to settling paddocks where it consolidates and dries prior to transfer to permanent storage in old workings.

Slime treatment plant comprising Decanter Centrifuge Technology was installed and commissioned in July 2022. This ecofriendly disposal of slime cake technology has helped in reducing the load on tailing dam and improve process water recirculation in plant circuit.

After washing and separation in the plant, the resulting gravity concentrate is sorted by hand in the high-security area under strict supervision incorporating automatic colour sorting machines (Figure M19).

Figure M19: State-of-the-art recovery house uses UV-light to recover rubies

The processing plant processed 1.15 Mt of ore during 2022. The actual plant availability and utilization of 84.8% and 93.5% respectively were achieved.

After removal of fines, the remaining gemstones are then subdivided into five broad quality categories (described above), and then further subdivided into various groups based on clarity, colour, size, weight, and shape (see example in Figure M20).

Figure M20: A Grade D + 5 gm ruby recovered at MRM

Gemstone Resource and Gemstone Reserve Estimates *[12.13(iii)(6)(8)(9)] [SR11.5]*

The MRM Gemstone Resources and Gemstone Reserves estimate attributable to GGL (75% basis) at 31 December 2022 is set out in Table M4. Gemstone Resource grades are quoted with a bottom cut-off stone size of 1.6 mm and are inclusive of Gemstone Reserves. The stockpile grades are derived from the reported grades for the respective source materials.

No Inferred Gemstone Resources are included in the LoM plans, which support the Gemstone Reserve declaration.

Table M4: MRM Attributable Gemstone Resource and Gemstone Reserve Estimate at 31 December 2022

Gemstone Resource (Attributable to GGL)	Tonnage (kt)	Recovered Grade (ct/t)	Contained (Mct)	Gemstone Reserves (Attributable to GGL)	Tonnage (kt)	Recovered Grade (ct/t)	Contained (Mct)
Maninge Nice				**Maninge Nice**			
Indicated - Primary	855	99.5	85.0	Probable - Primary	843	99.5	83.8
Indicated - Secondary	294	54.3	15.9	Probable - Secondary	294	53.8	15.8
Total Indicated	**1,148**	**87.9**	**100.9**	**Total Probable Reserve**	**1,137**	**87.6**	**99.7**
Inferred - Primary	180	97.9	17.6				
Inferred - Secondary	9,994	12.7	127.0				
Inferred - Total	10,174	14.2	144.7				
Mugloto				**Mugloto**			
Indicated - Primary	0	0.0	0.0	Probable - Primary	0	0	0
Indicated - Secondary	7,275	2.8	20.5	Probable - Secondary	7,182	2.7	19.5
Total Indicated	**7,275**	**2.8**	**20.5**	**Total Probable Reserve**	**7,182**	**2.7**	**19.5**
Inferred - Secondary	13,800	14.8	203.6				
Glass				**Glass**			
Indicated - Secondary	5,093	2.4	12.2	Probable - Secondary	5,087	2.2	11.2
Total Indicated	**5,093**	**2.4**	**12.2**	**Total Probable Reserve**	**5,087**	**2.2**	**11.2**
Inferred - Secondary	5,670	0.9	5.1				
Stockpiles				**Stockpiles**			
Indicated – Primary	23	91.8	2.1	Probable – Primary	23	91.8	2.1
Indicated – Secondary [1]	514	9.6	5.0	Probable – Secondary [1]	514	9.6	5.0
Total Indicated	**537**	**13.2**	**7.1**	**Total Probable Reserve**	**537**	**13.2**	**7.1**
Total Indicated Gemstone Resources	**14,054**	**10.0**	**140.8**	**Total Probable Gemstone Reserves**	**13,944**	**9.9**	**137.5**
Nakete							
Inferred - Secondary	18,167	0.3	5.3				
Nathepo							
Inferred - Secondary	3,915	0.5	2.0				
Total Inf Gemstone Resources	**51,726**	**7.0**	**360.7**				

1 Combination of material from Maninge Nice, Mugloto and Glass.

Gemstone Grade and Value	Recovered Grade (ct/t)			Av. Parcel Value (2014-2022) [1]	Av. Parcel Value 2022
	Maninge Nice	Mugloto	Glass [1]	(USD/ct)	(USD/ct)
Premium Ruby	0.053	0.071	0.000	1,172.87	1,196.51
Ruby	0.650	0.480	0.316	51.75	60.07
Low Ruby	2.395	0.176	1.319	3.56	1.26
Corundum	0.391	0.051	0.577	0.96	0.91
Sapphire	0.327	0.030	1.550	0.24	0.27
Low Sapphire	4.665	0.598	8.501	0.08	0.05
-4.6mm	-	-	-	10.55	0.00
Reject with some Low Sapphire	n/r	n/r	n/r	0.05	0.00
Weighted Average Value (USD/ct)				20.74	8.81

1 Average parcel value for 2014 to 2022 applied.

The comparative MRM Gemstone Resource and Gemstone Reserve statement attributable to GGL (75% basis) at 31 December 2022 is set out below. The key differences between the 2021 and 2022 Gemstone Resource and Gemstone Reserve estimates are explained as follows:

- **Gemstone Resources:**
  - The Maninge Nice Primary material is unchanged, whereas the Secondary material tonnes decreased but grade increased, due to mining depletion and processing more tonnage of comparatively lower grade Maninge Nice Pit 5 ore;
  - A reduction in tonnage, grade and contained gemstones in Indicated Gemstone Resources at Mugloto, due to mining depletion;
  - No change in tonnage, grade or contained gemstones from the Inferred Gemstone Resources of Maninge nice and Mugloto;

- A small increase in tonnage and contained carats of Glass Indicated Resources due to upgrade in inferred resource;
- Addition in tonnage and contained gemstones for combined inferred Gemstone Resources is due to the inclusion of Nakete and Nathepo areas in Gemstone Resource inventory;

- **Gemstone Reserves:**
  - Maninge Nice grade increased slightly since only secondary material at lower grade was mined;
  - A reduction in tonnage and contained gemstones in Probable Gemstone Reserves at Mugloto, due to mining depletion mainly from secondary material;
  - A small decrease in tonnage and contained gemstones at Glass is due to the mining depletion;
  - The calculation of mined ore in Stockpiles was changed to reflect the difference between total ore mined and total ore processed for the financial year, with a small addition recorded. Total contained carat of stockpile reduced despite tonnage addition, due to a changed split of primary and secondary stockpiled material;

Table M5: MRM Attributable Gemstone Resource and Gemstone Reserve Estimate at 31 December 2021

Gemstone Resource (Attributable to GGL)	Tonnage (kt)	Recovered Grade (ct/t)	Contained (Mct)	Gemstone Reserves (Attributable to GGL)	Tonnage (kt)	Recovered Grade (ct/t)	Contained (Mct)
Maninge Nice				**Maninge Nice**			
Indicated - Primary	855	99.5	85.0	Probable - Primary	843	99.5	83.8
Indicated - Secondary	320	49.9	16.0	Probable - Secondary	321	49.4	15.9
Total Indicated	**1,175**	**86.2**	**101.0**	**Total Probable Reserve**	**1,164**	**85.7**	**99.7**
Inferred - Primary	180	97.9	17.6				
Inferred - Secondary	9 994	12.7	127.0				
Inferred - Total	10,174	14.2	144.6				
Mugloto				**Mugloto**			
Indicated - Primary	0	0	0	Probable - Primary	0	0	0
Indicated - Secondary	8,143	2.7	21.7	Probable - Secondary	8,050	2.6	20.7
Total Indicated	**8,143**	**2.7**	**21.7**	**Total Probable Reserve**	**8,050**	**2.6**	**20.7**
Inferred - Secondary	13,800	14.8	203.6				
Glass				**Glass**			
Indicated - Secondary	5,067	2.4	12.1	Probable - Secondary	5,098	2.2	11.2
Total Indicated	**5,067**	**2.4**	**12.1**	**Total Probable Reserve**	**5,098**	**2.2**	**11.2**
Inferred - Secondary	5,708	0.9	5.0				
Stockpiles				**Stockpiles**			
Indicated – Primary	30	96.1	2.9	Probable – Primary	30	96.1	2.9
Indicated – Secondary [(1)]	463	10.5	4.9	Probable – Secondary [(1)]	463	10.5	4.9
Total Indicated	**493**	**16.9**	**7.8**	**Total Probable Reserve**	**493**	**16.9**	**7.8**
Total Indicated Gemstone Resources	**14,877**	**9.6**	**142.6**	**Total Probable Gemstone Reserves**	**14,804**	**9.4**	**139.4**
Total Inf Gemstone Resources	**29,682**	**11.9**	**353.2**				

1 Combination of material from Maninge Nice, Mugloto and Glass.

Gemstone Grade and Value	Recovered Grade (ct/t)			Average Parcel Value (2014-2021) [(1)]	Average Parcel Value 2021
	Maninge Nice	Mugloto	Glass [(1)]	(USD/ct)	(USD/ct)
Premium Ruby	0.048	0.090	0.026	1 167	1 175
Ruby	0.293	0.454	0.228	50.31	73.92
Low Ruby	0.261	1.201	1.175	3.91	6.64
Corundum	0.166	0.182	0.072	0.98	-
Sapphire	0.042	0.130	0.063	0.21	-
Low Sapphire	0.398	1.504	0.494	0.15	-
-4.6mm	-	0.000	-	10.55	-
Reject with some Low Sapphire	n/r	n/r	-	0.05	-
Weighted Average Value (USD/ct)				29.90	145.69

1 Average parcel values per 2014 to 2021 applied..

Production Forecast *[12.13(iii)(4)]*

The plant feed tonnage and gemstones recovered for the LoM through to 2030 are forecast as shown in Figure M21.

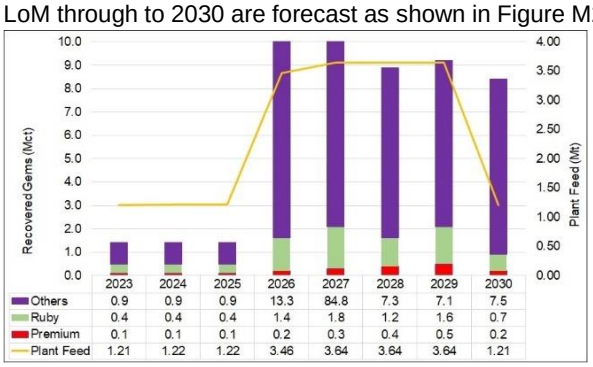


Figure M21: Forecast production and gemstones recovered

This LoM assumes the second processing plant is fully operational from 2026. MRM continues to work on plans to build a second processing plant. The design phase for the new plant has largely been completed and finalisation of the tender process is expected during the first half of 2023.

Material Risk Factors *[12.13(iii)(10)]*

The principal risk factors for MRM are as follows:

- Legislative and permitting risk [Low risk rating]; the good relations with government should be maintained, to ensure permits are approved in a timely manner and to lobby against any negative changes to the mining fiscal regime;
- Gemstone Reserve risk [Medium risk rating]: The presence of premium quality gemstones may be more erratic than indicated from the bulk sampling and production undertaken to date. Certain parts of the deposits may be richer than. The market for lower quality stones could be overestimated;
- Water management [Low risk rating]: water availability, water use, and potential vulnerability of the operation to climate change impacts are not fully understood;
- Environmental and social risks [Medium risk rating]: MRM is in line with the terms and conditions of the approved EIA. Two phases of Bio diversity study is completed in 2019 & 2021 for dry seasons and 3rd Phase study for wet season is planned in Q1 2023. Air quality, dust, and gases monitoring around in the communities and villages around the mining areas is planned in Q1 2023;
- Covid-19 [Medium risk rating]: resurgence of new infections may result in operations being suspended again;
- Insurgency [High risk rating]: Insurgent activities in 2022 moved closure to MRM operations, with attacks in Ancuabe district in June 2022 and moving further south to Nampula province. In Oct 2022 an insurgent attack was recorded at neighbouring mine Gem-rock, leading to the closure of Gem-rock operations and temporary suspension of MRM operations, within 3 days operations were resumed at MRM phase wise. Since then attacks have moved further North of Mozambique. To mitigate the risk, additional private armed personal protection unit have been deployed, government of Mozambique has deployed additional military inside and outside of operational areas, construction of Airstrip for emergency evacuation, deployment of armed vehicles for the transportation of personals through high risk areas;
- Artisanal miners [Medium risk rating]: The understanding of the dynamics of the artisanal mining presence in the area and proactive dialogue with this group needs to be improved (Figure M22).

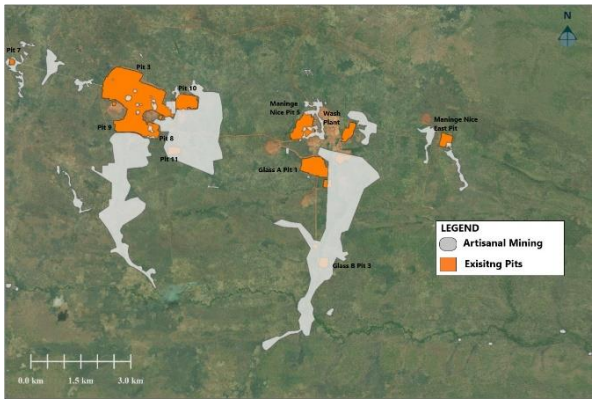


Figure M22: Areas affected by artisanal excavation (in grey) relative to MRM operations

Legal Proceedings / Material Conditions that may impact on Company's activities *[12.13(iii)(11)]*

The Directors of GGL and MRM are not aware of any legal proceedings that may have an influence on the rights to explore or mine for gemstones.

The Directors of GGL have confirmed that no significant legal issue exists which would affect the likely viability of MRM and/or on the estimation and classification of the Gemstone Resources and Gemstone Reserves.

Environmental Management and Funding *[12.13(iii)(13]*

The discovery of gemstones in the area brought with it an influx of artisanal miners from within Mozambique and other parts of Africa. The majority of these operate illegally.

MRM has now been actively exploring and mining for eight years across its licence areas.

MRM holds a valid approval for its Resettlement Action Plan ("RAP"), an authorised land use permit ("DUAT") valid until 2036 and a Category "A" Environmental Licence for the mine site and an industrial park in Maputo valid until August 2024 and April 2023 respectively.

Water management is the most significant issue to address on an on-going basis. The potential vulnerability of the operation to climate change impacts or extreme drought or flood conditions is not fully understood. A comprehensive understanding of its water balance and implementation of a water quality and quantity monitoring programme is required. Flow meters on water supply boreholes feed information into the site water balance monitoring system.

Environmental management at MRM comprises the following key activities:

- Comply with the formal management system which was implemented in terms of GGL's health and safety, social and environmental ("HSE") policy;
- Ensure that water from processing operations laden with silt does not reach local water courses; in Addition the water from slime pond is recovered and re-used for the processing. MRM processing plant has installed Decanter Centrifuge for treatment of thickener Silt, which separates water from silt. Recovered water is again used in the plant for processing.
- Improve oil and industrial waste management as the level of activity increases;
- Manage domestic waste associated with the MRM camp; and
- Reclamation and rehabilitation of mined out areas.

The costs of on-going rehabilitation for mined out areas are included in the financial model projections for MRM. In addition, MRM has created a provision for mine closure. This is to cover the cost of removal of all equipment from the site, rehabilitation of all the remaining disturbed areas on site and pay staff retrenchment costs.

Sustainability and Corporate Responsibility

MRM's community interventions, through CSR, are aligned with Mozambican policies and supplement of the Government's efforts to improve the quality of life of the households.

In 2022, MRM expanded its geographic area for CSR projects, from seven to eight targeted villages, by adding Nsembia.

These projects included equipment and inauguration of Namanhumbir Community Radio (94.1FM), inauguration of RAP Village, Implementation of OGM, Awareness against illegal mining, animal husbandry (more than 10000 chickens and 178 goats), improvement and scaling-up of community conservation agriculture benefiting 9 Farms Associations and 500 individual farmers; conducting 2 agricultural fairs; humanitarian support for IDP due to insurgency, Vocational Training Center, Namanhumbir Clean-Up, provision of sports equipment and kits for local school children; provision of health care services in 10 remote villages, promotion of sport (COPA Namanhumbir Soccer Tournament), construction of 10 classrooms and 1 computer lab for Internally Displaced People (IDP); rehabilitation of Nanune, Nsewe and Mpene Schools and construction of sport-fields at schools.

Within the scope of the conservation agriculture project implementation, MRM approved 11,123,000.00 MZN to support 500 families (9 associations) around the administrative post of Namanhumbir in the villages of Namanhumbir, Nsewe, Npene, Nanune, RAP Village, Nanhupo A and Nanhupo B.

Operational Grievance Mechanism (OGM)

MRM has established an operational stakeholder engagement plan and an operational grievance mechanism ("OGM"). The OGM went into pilot phase in October 2020 and was officially launched in February 2021 with an objective for the Management of social issues comprising:

- Maintain the operational stakeholder engagement plan and the OGM;
- Provide employees with secure jobs and range of social benefits such as schooling and healthcare;
- Invest in key local projects including schools, agriculture and provision of a mobile clinic;
- Implement an artisanal and small-scale miner ("ASM") management strategy according to the recommendations from a 2015 study; and
- Work with the local authorities and police to manage the illegal miners who regularly access the Montepuez concession to carry out artisanal mining activities.

One year after its establishment, a workshop was conducted in Maputo from 3rd to 5th May, that aimed to reflect on the OGM's performance. The workshop was attended by MRM; Independent Panel, Appeal Panel; Fact-finding team and Secretariat Administrator.

Following an agreement between MRM and the Independent Panel, two OGM Case Studies were conducted related to:

- Burning of infrastructure in community of Nthoro; and,
- Sexual abuse.

Sociedade & Território Consultoria, Lda (S&T) was hired to carry-out whose final reports were submitted on August 6th.

Synergy Global Consulting (Pty) Ltd submitted the second Independent Monitor report (the report focuses on the period from the 1st of December 2021 to the 1st of June 2022).

Resettlement Action Plan (RAP)

In December 2020, the last 105 households from the Nthoro village were resettled in a RAP village at Namanhumbir.

RAP Village, now named Wikhupuri, was inaugurated on August 25th 2022 by Cabo Delgado's Secretary of State, António Njanje Taimo Supeia. The ceremony was attended by relevant stakeholders from National, Province, District and local levels, including 105 householders resettled, government sectors, community leaders and members of host communities.

Each resettled family received from Mozambican State right for land use (DUAT) for an area of 5,000 m2, which

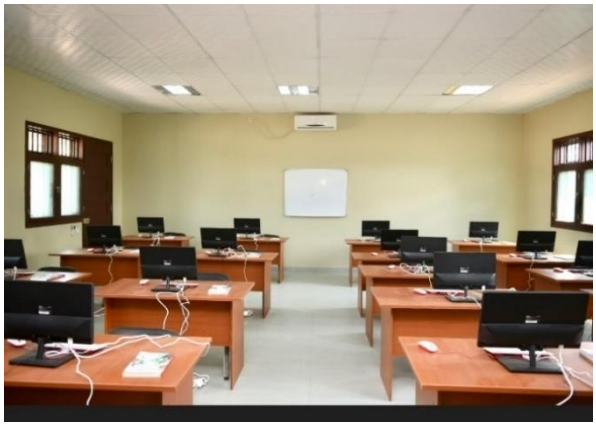
includes the main house, all auxiliary infrastructure, and two hectares of agricultural production.

The Wikhupuri village have all the necessary social infrastructure such as a new school with library, administration buildings, police office, religious facilities and market, all fully equipped for the resettled households.

MRM will select one implementing partner for Livelihood Restauration Program to benefit resettled and local residents.

EDUCATION

As part of its ongoing support for local communities, MRM partnered with the Government to provide a Vocational Training Centre ("VTC") in Namanhumbir, teaching local men and women in civil construction, carpentry, electricity, painting, plumbing and other competencies.



In 2022 two vocational training cycles were completed, with the third running from November 2022 to March 2023. A total of 213 trainees from surrounding of MRM mining areas were enrolled, in which 88 passed the training course from 1st & 2nd batches. MRM approved and invested budget, i.e., 8,395,140.27MZN for VTC in 2022.

MRM funded a total of 21,429,225 MZN for the rehabilitation of Nanune, Nsewe and Mpene Primary Schools with multi-sport fields. Also, MRM funded the construction of total 10 classrooms at Nanhupo B, Montepuez secondary, Cuirio Primary, and Mararange Primary schools. A computer lab was built at Montepuez secondary school.

HEALTH

In 2022 MRM did 34,795 consultations benefiting vulnerable people living in 10 remote villages of Namanhumbir Administrative Post, namely Ujamá, Namahaca, Nsembia, Nanhupo A, Nassimoja, Nsewe, Mpene, Nanhupo B (including IDP center), Chimoio and Mpuho. Basic services provided include external consultations, vaccination and Maternal and child health.

Most diseases are related to Malaria, Diarrhoea, scabies and Acute Malnutrition.

Health intervention programme was started in 2017, and since then a total of 205,017 consultations have been performed by using two ambulance vehicles (Mobile Clinics) under the MoU signed between MRM and the District Service of Health, Women and Social Affairs (SDSMAS) of Montepuez.

OTHER NON-MATERIAL PROJECTS

Gemfields holds interests in various other projects that are still at various stages of exploration and are not relevant for purposes of this report, as no Gemstone Resources have been estimated. These include the following partnerships:

- Megaruma Mining Limitada (MML), Mozambique (75% interest), which holds two ruby exploration licences each sharing a boundary with the MRM licence, covering approximately 190 km^2 and 150 km^2 respectively;
- Eastern Ruby Mining Limitada, Mozambique (75% interest), which holds exploration licence No. 5061L covering 116 km^2 and sharing its western boundary with MML's southern licence;
- Campos de Joia Lomitada (CDJ), Mozambique (75% interest), which holds four licence areas totalling 452 km^2.
- Oriental Mining SARL, Madagascar (100% interest), which holds eleven exploration licences for emeralds, rubies, sapphires, tourmalines and garnets;
- Web Gemstone Mining plc, Ethiopia (75% interest), an emerald exploration licence covering approximately 200 km^2.

SECTION 3 – SUPPLEMENTARY INFORMATION

The South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (the SAMREC Code, 2016 Edition) was prepared by the SAMREC Committee of the SAMCODES Standards Committee ("SSC") under the joint auspices of the Southern African Institute of Mining and Metallurgy ("SAIMM") and the Geological Society of South Africa ("GSSA").

SAMREC CODE DEFINITIONS

The SAMREC Code provides definitions for the reporting of Diamond Resources and Diamond Reserves, and other Gemstones, as set out below. The definitions for Resources and Reserves are as extracted from the Diamond Guidelines within the SAMREC Code, replacing Diamond with Gemstone wherever it occurs to avoid any confusion.

An '**Inferred Gemstone Resource**' is that part of a Gemstone Resource for which quantity, grade and average Gemstone value are estimated on the basis of limited geological evidence and sampling. Geological evidence is sufficient to imply, but not verify, geological and grade continuity. An Inferred Gemstone Resource has a lower level of confidence than that applying to an Indicated Gemstone Resource and must not be converted to a Gemstone Reserve. It is reasonably expected that the majority of Inferred Gemstone Resources could be upgraded to Indicated Gemstone Resources with continued exploration.

An '**Indicated Gemstone Resource**' is that part of a Gemstone Resource for which quantity, grade or value, density, shape and physical characteristics of the deposit are estimated with sufficient confidence to allow the application of Modifying Factors in sufficient detail to support mine planning and evaluation of the economic viability of the deposit. Geological evidence is derived from adequately detailed and reliable exploration, sampling and testing and is sufficient to assume geological and grade continuity between points of observation. An Indicated Gemstone Resource has a lower level of confidence than that applying to a Measured Gemstone Resource and may only be converted to a Probable Gemstone Reserve.

A '**Measured Gemstone Resource**' is that part of a Gemstone Resource for which quantity, grade or value, density, shape, and physical characteristics of the deposit are estimated with sufficient confidence to allow the application of Modifying Factors to support detailed mine planning and final evaluation of the economic viability of the deposit. Geological evidence is derived from detailed and reliable exploration, sampling and testing and is sufficient to confirm geological and grade continuity between points of observation. A Measured Gemstone Resource has a higher level of confidence than that applying to either an Indicated Gemstone Resource or an Inferred Gemstone Resource. It may be converted to a Proved Gemstone Reserve or to a Probable Gemstone Reserve.

A '**Probable Gemstone Reserve**' is the economically mineable part of an Indicated, and in some circumstances, a Measured Gemstone Resource. The confidence in the Modifying Factors applying to a Probable Gemstone Reserve is lower than that applying to a Proved Gemstone Reserve.

A '**Proved Gemstone Reserve**' is the economically mineable part of a Measured Gemstone Resource. A Proved Gemstone Reserve implies a high degree of confidence in the Modifying Factors.

Other principles from the SAMREC Code that are relevant to this summary report are listed here.

A Gemstone Resource or Gemstone Reserve shall not be stated without an estimate of the average Gemstone value/revenue. The average Gemstone grade and value shall not be reported without specifying the bottom cut-off screen size.

Transparency: The reader of a Public Report must be provided with sufficient information, the presentation of which is clear and unambiguous, to understand the report and not be misled.

Materiality: A Public Report contains all the relevant information that investors and their professional advisors would reasonably require, and expect to find, for the purpose of making a reasoned and balanced judgement regarding the Exploration Results, Gemstone Resources or Gemstone Reserves being reported.

Competency: The Public Report is based on work that is the responsibility of suitably qualified and experienced persons who are subject to an enforceable Professional Code of Ethics.

A '**Competent Person**' is a person who is registered with SACNASP, ECSA or SAGC, or is a Member or Fellow of the SAIMM, the GSSA, IMSSA or a Recognized Professional Organisation ("RPO"). These organizations have enforceable disciplinary processes including powers to suspend or expel a member.

A Competent Person must have a minimum of five years relevant experience in the style of mineralisation or type of deposit under consideration and in the activity which that person is undertaking.

The CPs for this report confirm that the AusIMM is recognized as a RPO by the SSC, as listed on the SSC website.

GLOSSARY OF TERMS, ABBREVIATIONS, UNITS

Term	Meaning
3D	three-dimensional
Al	aluminium
AMP	amphibolite
amsl	above mean sea level
ASM	Artisanal and small-scale miner
B&E	Beryl and emerald
Be	beryllium
Cr	chrome
ct	carat (5 ct = 1 gram)
ct/t	carat per tonne
CP	Competent Person
CPR	Competent Persons' Report
DMS	Dense medium separation
DUAT	Authorised land use permit
ECSA	Engineering Council of South Africa
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
EPF	Environmental Protection Fund
Fe	iron
g/cm^3	Grams per cubic centimetre
GGL	Gemfields Group Limited (formerly Pallinghurst Resources Ltd)
GSSA	Geological Society of South Africa
GRZ	Government of Republic of Zambia
HSE	Health and safety, social and environmental
ha	hectare (10 000 m^2)

Term	Meaning
IMSSA	Institute of Mine Surveyors of South Africa
JSE	Johannesburg Stock Exchange (JSE) Limited
Kagem	Kagem Emerald Mine
kg	kilogram (= 1 000 g)
km	kilometre
km^2	square kilometre
kt	thousand tonnes
ktpa	thousand tonnes per annum
LoM	life of mine
m	metre
m^2	square metre
µm	micrometre, or micron (1 000 000 µm = 1 m)
mm	millimetre (1 000 mm = 1 m)
MAusIMM	Member of the Australasian Institute of Mining and Metallurgy
Mct	million carats
MRM	Montepuez Ruby Mine
Mt	million tonnes
Mct	Million carats
Mtpa	million tonnes per year
OGM	Operational Grievance Mechanism
PEG	pegmatite
RAP	Resettlement Action Plan
RoM	run of mine
RZ	Reaction zone
SACNASP	South African Council for Natural Scientific Professions
SAGC	South African Geomatics Council
SAIMM	Southern African Institute of Mining and Metallurgy
SAMREC	The South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (the SAMREC Code), 2016 Edition
SSC	SAMCODES Standards Committee
t	metric tonne (= 1 000 kg)
TMS	Talc-magnetite schists
tpd	tonnes per day
tph	tonnes per hour
t/t	tonne per tonne, stripping ratio
V	vanadium
USD	United States Dollar
USD/ct	US Dollar per carat
USDm	million US Dollars
USD/t	US Dollar per tonne
ZEMA	Zambian Environmental Management Agency

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