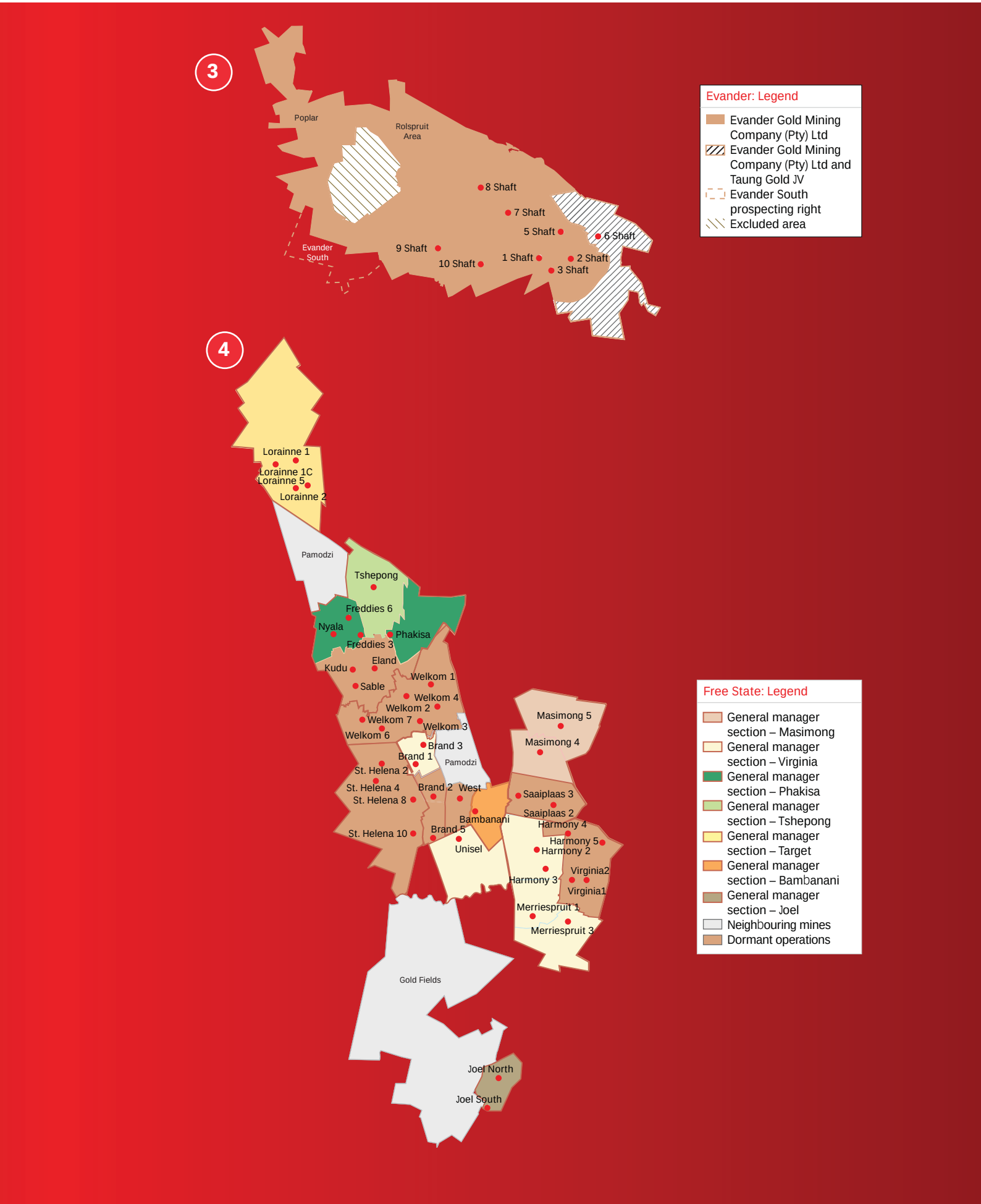
Mineral resources and ore reserves cont.

2009

South Africa – Mineral resources and ore reserves


3
Poplar
Rolspruit Area
8 Shaft
7 Shaft
5 Shaft
6 Shaft
9 Shaft
10 Shaft
1 Shaft
2 Shaft
3 Shaft
Evander South
Evander: Legend
Evander Gold Mining Company (Pty) Ltd
Evander Gold Mining Company (Pty) Ltd and Taung Gold JV
Evander South prospecting right
Excluded area
4
Lorainne 1
Lorainne 1C
Lorainne 5
Lorainne 2
Pamodzi
Tshepong
Freddies 6
Nyala
Phakisa
Freddies 3
Eland
Kudu
Sable
Welkom 1
Welkom 4
Welkom 2
Welkom 7
Welkom 3
Welkom 6
Brand 3
Brand 1
Pamodzi
St. Helena 2
St. Helena 4
St. Helena 8
Brand 2
West
St. Helena 10
Brand 5
Unisel
Bambanani
Masimong 5
Masimong 4
Saaiplaas 3
Saaiplaas 2
Harmony 4
Harmony 5
Harmony 2
Harmony 3
Virginia2
Virginia1
Merriespruit 1
Merriespruit 3
Gold Fields
Joel North
Joel South
Free State: Legend
General manager section – Masimong
General manager section – Virginia
General manager section – Phakisa
General manager section – Tshepong
General manager section – Target
General manager section – Bambanani
General manager section – Joel
Neighbouring mines
Dormant operations

Mineral resources and ore reserves cont.

Free State

Geology: The Harmony Free State Operations are located on the south-western corner of the Witwatersrand Basin, between the towns of Allanridge, Welkom, Theunissen and Virginia. The basin, situated on the Kaapvaal Craton, has been filled by a 6-kilometre thick succession of sedimentary rocks, which extends laterally for hundreds of kilometres.

The Free State goldfield is divided into two sections, cut by the north-south striking De Bron Fault. This major structure has a vertical displacement of about 1 500m in the region of Bambanani, as well as a lateral shift of 4km. This lateral shift can allow a reconstruction of the orebodies of Unisel to the west of the De Bron and Merriespruit to the east. A number of other major faults (Stuirmanspan, Dagbreek, Arrarat and Eureka) lie parallel to the De Bron Fault.

To the west of the De Bron, the currently operating mines are Target, Tshepong, Phakisa, Nyala, Unisel, Brand, Bambanani and Joel operations. Dips are mostly towards the east, averaging 30 degrees but become steeper approaching the De Bron Fault. To the east of the fault lie Merriespruit 1 and 3, Harmony 2 and Masimong mines. These mostly dip towards the west at 20 degrees, although Masimong is structurally complex and dips of up to 40 degrees have been measured. Between these two blocks lies the uplifted horst block of West Rand Group sediments with no reef preserved.

The western margin area is bound by synclines and reverse thrusts faults and is structurally complex. Towards the south and east, reefs sub-crop against overlying strata, eventually cutting out against the Karoo to the east of the lease area

Most of the Ore Resource tends to be concentrated in reef bands located on one or two distinct unconformities. A minority of the Mineral Resource is located on other unconformities. Mining that has taken place is mostly deep-level underground mining, exploiting the narrow, generally shallow dipping tabular reefs.

The Basal Reef is the most common reef horizon and is mined at all shafts except Target and Joel. It varies from a single pebble lag to channels on more than 2m thick. It is commonly overlain by shale, which thickens northwards. Tshepong has resorted to undercutting of its mining panels to reduce the effect of shale dilution.

The second major reef is the Leader Reef, located 15-20m above the Basal Reef. This is mostly mined at the shafts to the south – Unisel, Harmony 2, Merriespruit 1 and Merriespruit 3. Further north, it becomes poorly developed with erratic grades. The reef consists of multiple conglomerate units, separated by thin quartzitic zones, often totalling up to 4 metres thick. A selected mining cut on the most economic horizon is often undertaken.

The B Reef is a highly channelised orebody located 140m stratigraphically above the Basal Reef. Because of its erratic nature, it has only been mined at Masimong and Tshepong. Within the channels, grades are excellent, but this falls away to nothing outside of the channels. Consequently, both shafts have undertaken extensive exploration to locate these pay channels.

The A Reef is also a highly channelised reef, located some 40m above the B Reef. This is currently only mined at Harmony 2 and Brand, although an extensive channel lies along the western margin from Nyala to Lorraine. It consists of multiple conglomerate bands of up to 4m thick and a selected mining cut is usually required to optimise the orebody.

Joel Mine, located 30km south of Welkom, is the only Harmony Free State operation to mine the Beatrix Reef. This varies from a single-pebble lag to a multiple conglomerate, often showing mixing of the reef with some of the overlying lower grade VS5 (mixed pebble conglomerate) material. None of the other reefs are present this far south, having sub-cropped against the Beatrix Reef.

The Target operations are located at the northern extent of the Free State Goldfields, some 20km north of Welkom. The reefs currently exploited are the Elsburg-Dreyerskuil conglomerates, which form a wedge-shaped stacked package, comprising 35 separate reef horizons, often separated by quartzite beds. The Elsburg Reefs are truncated by an unconformity surface at the base of the overlying Dreyerskuil Member. Below the sub-crop, the Elsburg dips steeply to the east, with dips becoming progressively shallower down dip. Close to the sub-outcrop, the thickness of the intervening quartzites reduces, resulting in the Elsburg Reefs coalescing to form composite reef packages that are exploited by massive mining techniques at the Target mine. The Dreyerskuil also consists of stacked reefs dipping shallowly to the east. These reefs tend to be less numerous, but more laterally extensive than the underlying Elsburg Reefs.

Free State – Gold mineral resources

	Measured				Indicated				Inferred				Total			
Operations	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz
Underground																
Bambanani	11.4	11.20	127	4 087	6.4	9.67	62	1 993	3.8	9.02	34	1 101	21.6	10.36	223	7 181
Joel	4.3	6.44	28	895	3.9	6.82	27	855	12.3	6.50	80	2 580	20.5	6.55	135	4 330
Masimong	14.0	7.55	106	3 401	14.9	6.51	97	3 128	100.3	6.69	671	21 576	129.2	6.76	874	28 105
Phakisa																
Phakisa	0.2	9.72	2	65	22.1	12.29	272	8 745	57.8	7.02	405	13 036	80.1	8.48	679	21 846
Nyala	4.4	6.91	31	985	3.9	4.76	18	592	–	–	–	–	8.3	5.91	49	1 577
Total	**4.6**	**7.03**	**33**	**1 050**	**26.0**	**11.17**	**290**	**9 337**	**57.8**	**7.02**	**405**	**13 036**	**88.4**	**8.24**	**728**	**23 423**
Target*	6.3	9.81	62	1 991	13.9	7.65	106	3 412	5.2	6.26	32	1 043	25.4	7.90	200	6 446
Tshepong	14.0	11.03	154	4 949	14.3	11.32	162	5 211	13.8	8.85	122	3 922	42.1	10.42	438	14 082
Virginia																
Harmony 2	10.2	4.75	48	1 559	7.1	3.30	24	757	77.1	3.67	282	9 082	94.4	3.76	354	11 398
Merriespruit 1	8.5	5.20	45	1 421	3.8	5.25	20	635	39.6	4.19	166	5 334	51.9	4.43	231	7 390
Merriespruit 3	8.8	5.25	46	1 491	2.8	4.91	14	436	7.0	4.08	29	917	18.6	4.76	89	2 844
Unisel	11.2	5.56	62	1 989	12.0	4.73	56	1 828	20.6	4.65	97	3 086	43.8	4.90	215	6 903
Brand 3	4.1	6.78	28	892	4.1	6.91	29	916	10.0	5.15	51	1 650	18.2	5.91	108	3 458
Total	**42.8**	**5.35**	**229**	**7 352**	**29.8**	**4.77**	**143**	**4 572**	**154.3**	**4.05**	**625**	**20 069**	**226.9**	**4.39**	**997**	**31 993**
Total Underground	**97.4**	**7.58**	**739**	**23 725**	**109.2**	**8.12**	**887**	**28 508**	**347.5**	**5.67**	**1 969**	**63 327**	**554.1**	**6.49**	**3 595**	**115 560**
Surface																
Phoenix	130.8	0.27	36	1 148	–	–	–	–	5.3	0.26	1	44	136.1	0.27	37	1 192
St Helena	289.6	0.25	72	2 327	–	–	–	–	–	–	–	–	289.6	0.25	72	2 327
Other	421.8	0.22	93	2 984	142.0	0.33	47	1 500	195.2	0.23	45	1 444	759.0	0.24	185	5 928
Total surface	**842.2**	**0.24**	**201**	**6 459**	**142.0**	**0.33**	**47**	**1 500**	**200.5**	**0.23**	**46**	**1 488**	**1 184.7**	**0.25**	**294**	**9 447**
GRAND TOTAL	**939.6**		**940**	**30 184**	**251.2**		**933**	**30 008**	**548.0**		**2 015**	**64 815**	**1 738.8**		**3 889**	**125 007**

* Target's mineral resources are stated as work in progress – the process has been independently reviewed by SRK.

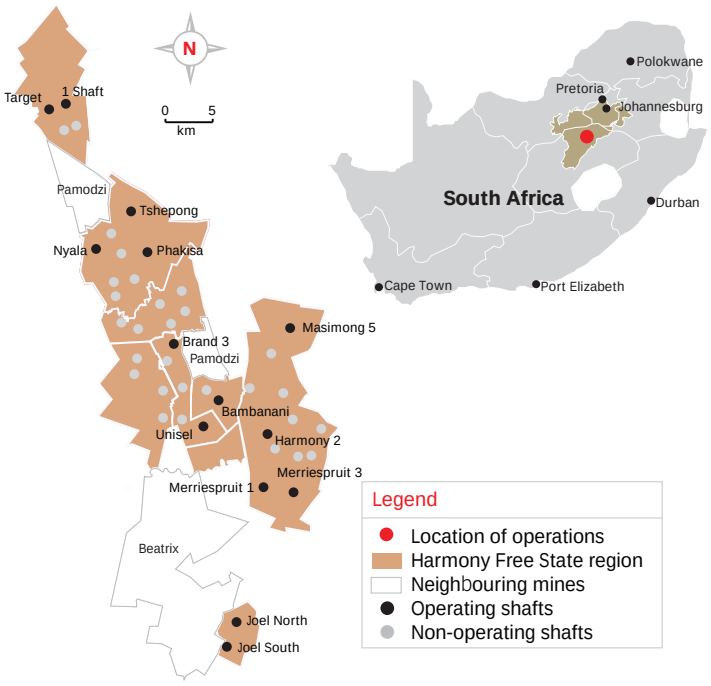
Modifying factors

Operations	MCF (%)	SW (cm)	MW (cm)	PRF (%)
Bambanani	78	200	218	96
Joel	93	150	198	96
Masimong	67	130	154	95
Phakisa	81	100	129	95
Nyala	87	150	191	94
Tshepong	65	105	142	97
Harmony 2	69	154	178	95
Merriespruit 1	75	162	205	95
Merriespruit 3	67	218	246	95
Unisel	80	175	193	95
Brand 3	94	193	229	96

MCF = Mine call factor MW = Milling width SW = Stoping width
PRF = Plant recovery factor

Operations	MCF (%)	Dilution (%)	PRF (%)
Target	95	5	96
Phoenix	100	_	47
St Helena	100	_	47
Other	100	_	47

MCF = Mine call factor PRF = Plant recovery factor



Mineral resources and ore reserves cont.

Free State – Gold ore reserves

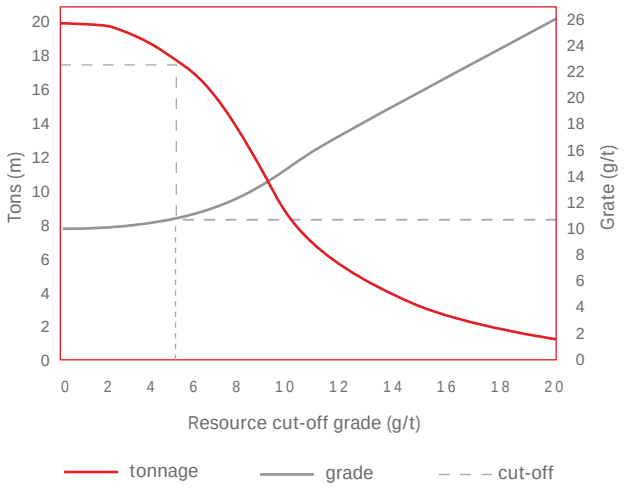
	Proven				Probable				Total			
Operations	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)
Underground												
Bambanani	3.5	8.48	30	965	1.2	10.90	13	420	4.7	9.09	43	1 385
Joel	0.9	5.74	5	161	2.2	5.52	13	404	3.1	5.58	18	565
Masimong	4.5	5.20	24	751	1.4	5.27	7	233	5.9	5.22	31	984
Phakisa												
Phakisa	0.3	5.38	1	43	20.1	8.12	163	5 234	20.4	8.08	164	5 277
Nyala	0.1	4.01	1	13	0.0	3.37	0	5	0.1	3.82	1	18
Total	**0.4**	**4.98**	**2**	**56**	**20.1**	**8.11**	**163**	**5 239**	**20.5**	**8.05**	**165**	**5 295**
Target*	4.8	6.10	29	942	9.0	5.60	50	1,617	13.8	5.77	79	2 559
Tshepong	12.8	5.30	68	2 184	11.5	5.78	66	2 130	24.3	5.53	134	4 314
Virginia												
Harmony 2	0.9	3.56	3	103	0.1	3.28	0	9	1.0	3.53	3	112
Merriespruit 1	1.2	4.55	6	183	0.6	4.45	2	86	1.8	4.52	8	269
Merriespruit 3	0.9	3.69	3	102	0.2	2.80	1	16	1.1	3.54	4	118
Unisel	3.0	4.95	15	482	1.8	4.85	9	276	4.8	4.91	24	758
Brand 3	0.6	3.92	2	70	0.1	4.42	1	20	0.7	4.02	3	90
Total	**6.6**	**4.43**	**29**	**940**	**2.8**	**4.56**	**13**	**407**	**9.4**	**4.47**	**42**	**1 347**
Total Underground	**33.5**	**5.57**	**187**	**5 999**	**48.2**	**6.75**	**325**	**10 450**	**81.7**	**6.27**	**512**	**16 449**
Surface												
Phoenix	130.8	0.27	36	1 148	–	–	–	–	130.8	0.27	36	1 148
St Helena	289.6	0.25	72	2 326	–	–	–	–	289.6	0.25	72	2 326
Other	421.8	0.22	93	2 985	101.7	0.26	26	845	523.5	0.23	119	3 830
Total Surface	**842.2**	**0.24**	**201**	**6 459**	**101.7**	**0.26**	**26**	**845**	**943.9**	**0.24**	**227**	**7 304**
GRAND TOTAL	**875.7**		**388**	**12 458**	**149.9**		**351**	**11 295**	**1 025.6**		**739**	**23 753**

* Target's ore reserves are stated as work in progress – the process has been independently reviewed by SRK.

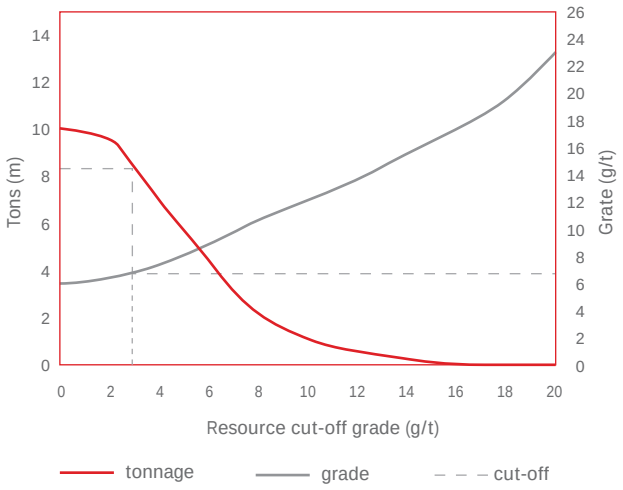
Free State – Uranium mineral resources

	Measured				Indicated				Inferred				Total			
Operations	Tonnes (Mt)	Kg/t	U_3O_8 (M kg)	U_3O_8 (M lbs)	Tonnes (Mt)	kg/t	U_3O_8 (M kg)	U_3O_8 (M lbs)	Tonnes (Mt)	kg/t	U_3O_8 (M kg)	U_3O_8 (M lbs)	Tonnes (Mt)	kg/t	U_3O_8 (M kg)	U_3O_8 (M lbs)
Surface	**358.8**	**0.09**	**33**	**72**	**36.5**	**0.10**	**4**	**8**	**68.4**	**0.07**	**5**	**11**	**463.7**	**0.09**	**42**	**91**

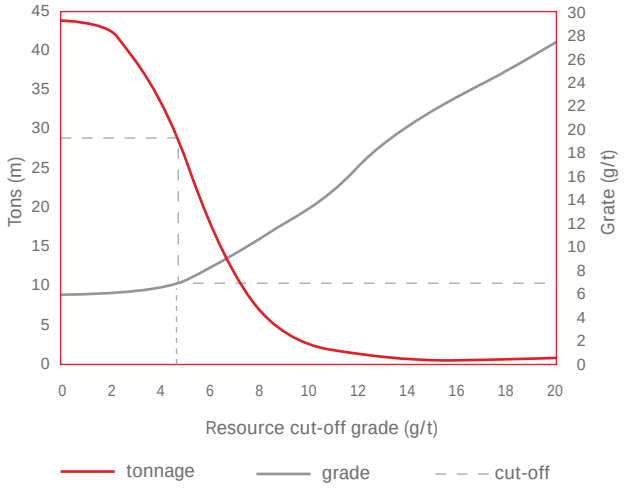
Bambanani: grade tonnage curve
(measured and indicated resources)



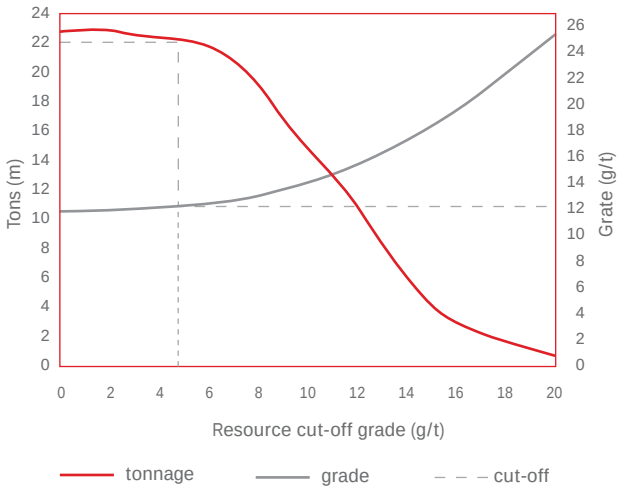
Joel: grade tonnage curve
(measured and indicated resources)



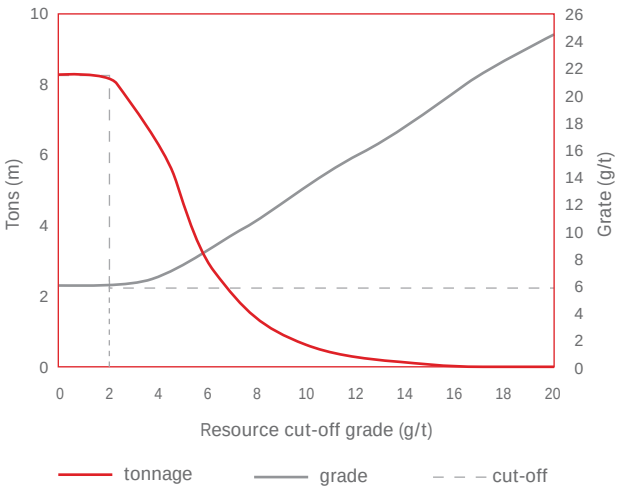
Masimong: grade tonnage curve
(measured and indicated resources)



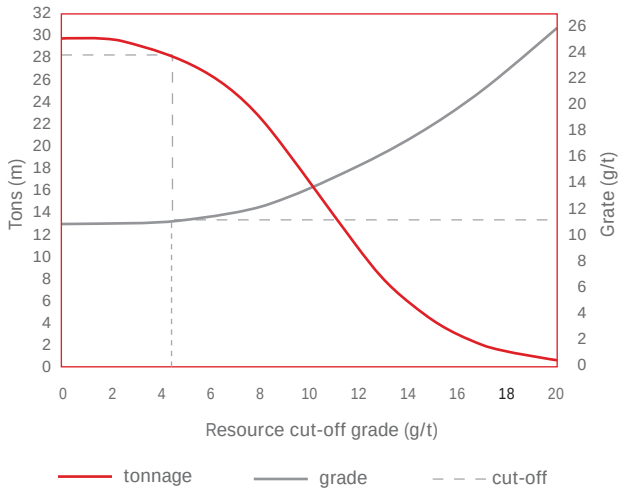
Phakisa: grade tonnage curve
(measured and indicated resources)



Nyala: grade tonnage curve
(measured and indicated resources)



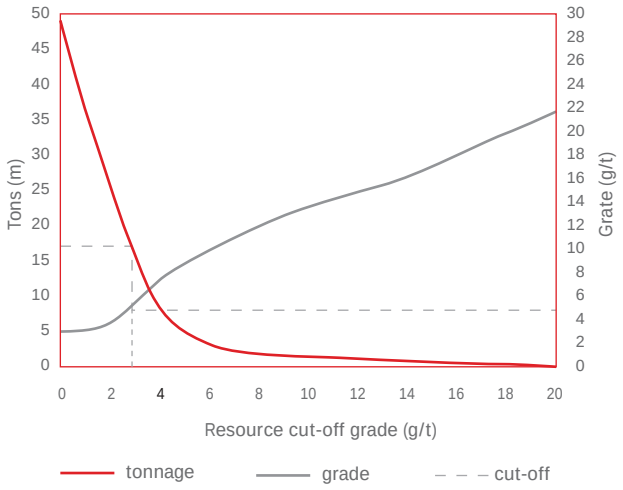
Tshepong: grade tonnage curve
(measured and indicated resources)



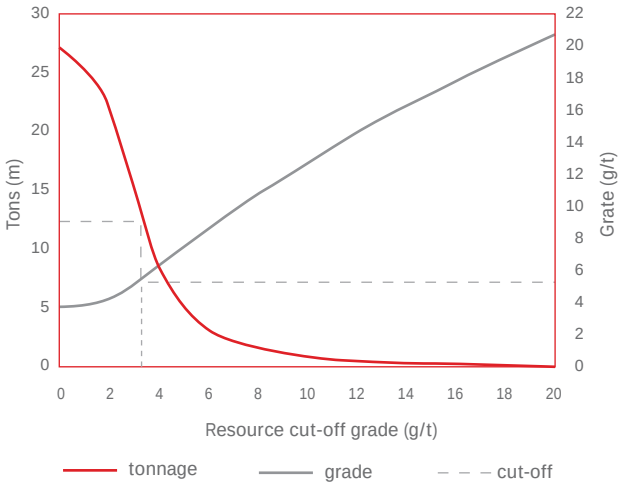
Mineral resources and ore reserves cont.

2009

Harmony 2: grade tonnage curve
(measured and indicated resources)

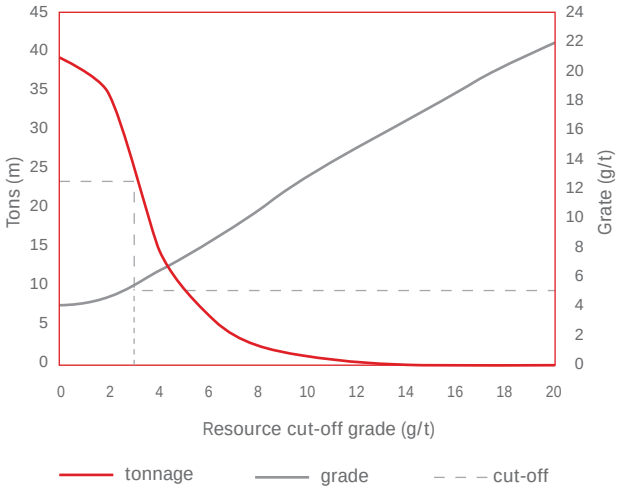


Merriespruit 1: grade tonnage curve
(measured and indicated resources)

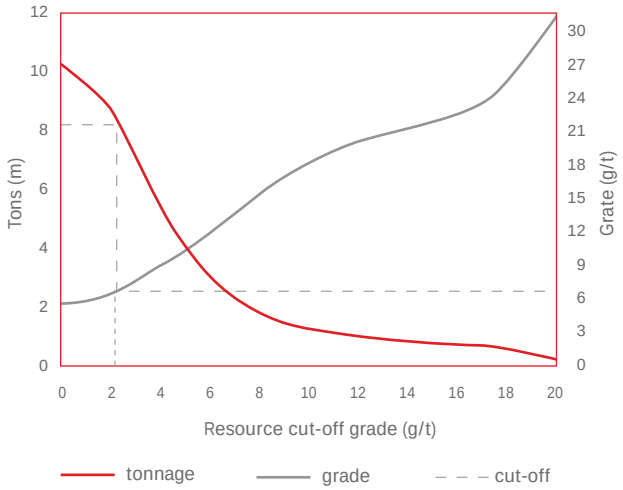


Merriespruit 3: grade tonnage curve
(measured and indicated resources)

Unisel: grade tonnage curve
(measured and indicated resources)

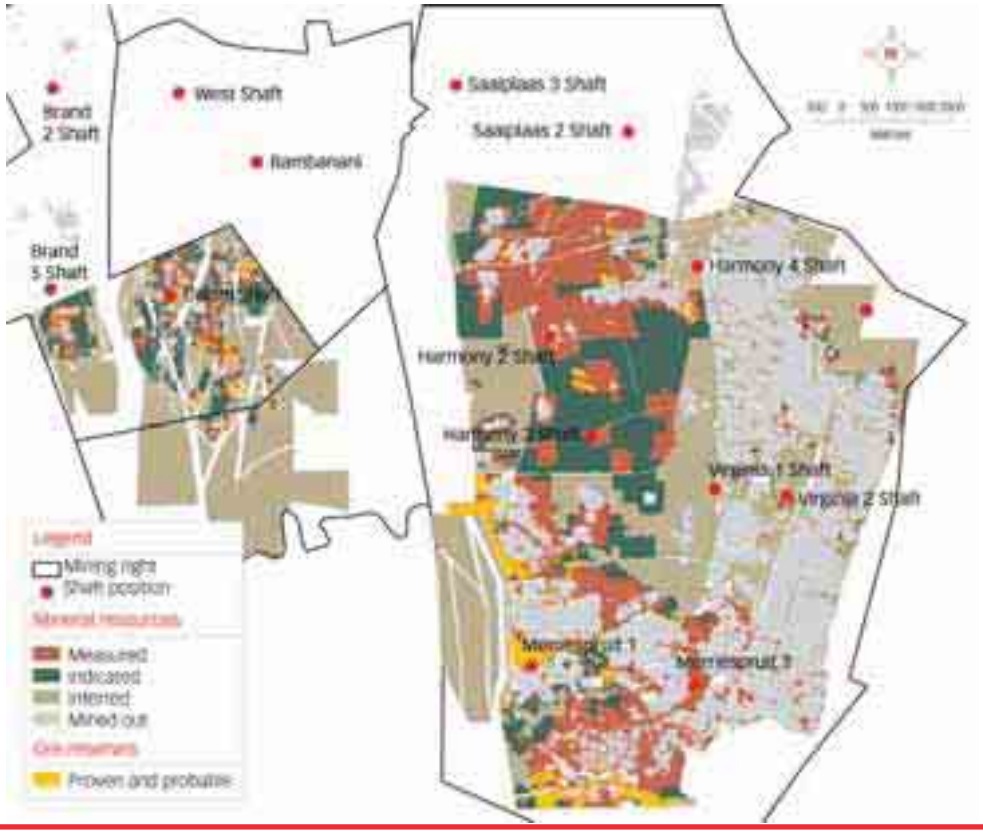


Brand 3: grade tonnage curve
(measured and indicated resources)



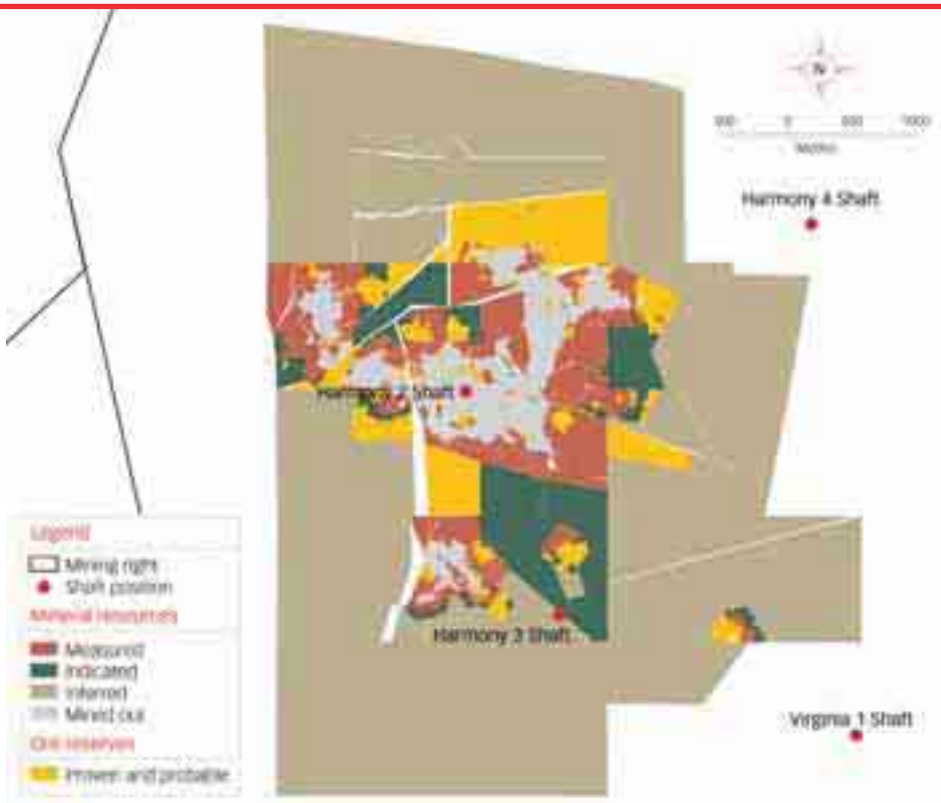
Virginia operations: Harmony 2, Merriespruit 1, Merriespruit 3 and Unisel shafts

Leader Reef



Virginia operations: Harmony 2 shaft

A Reef

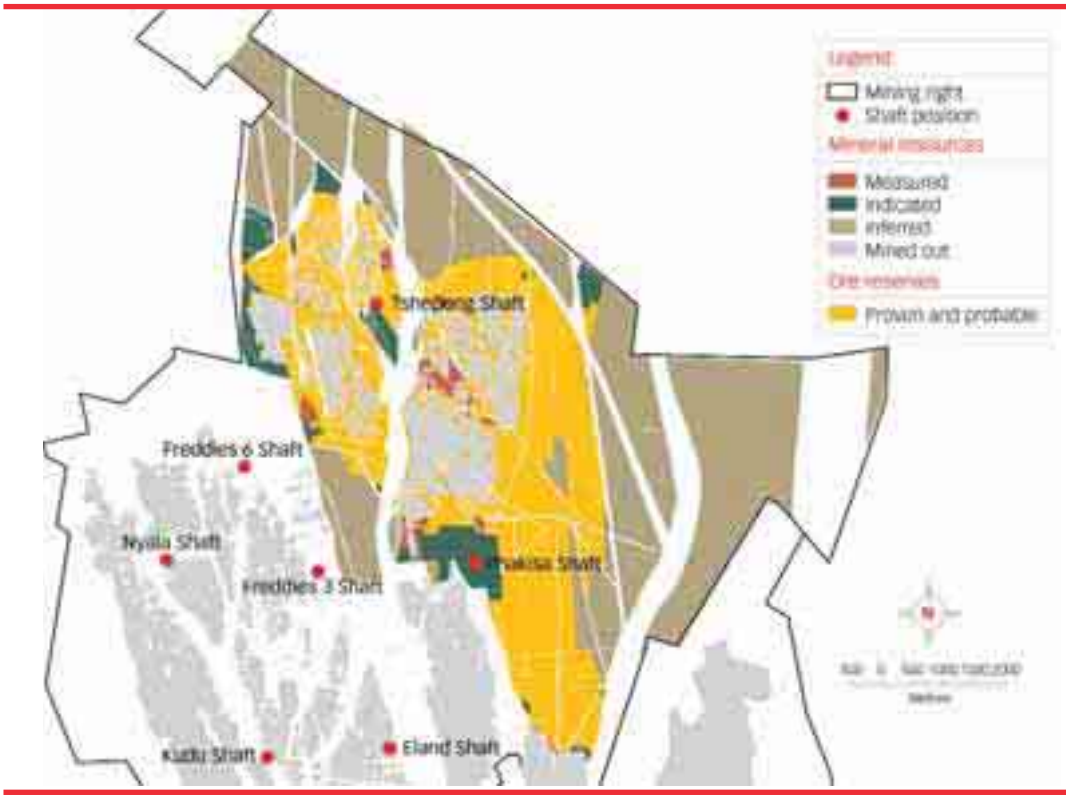


Mineral resources and ore reserves cont.

2009

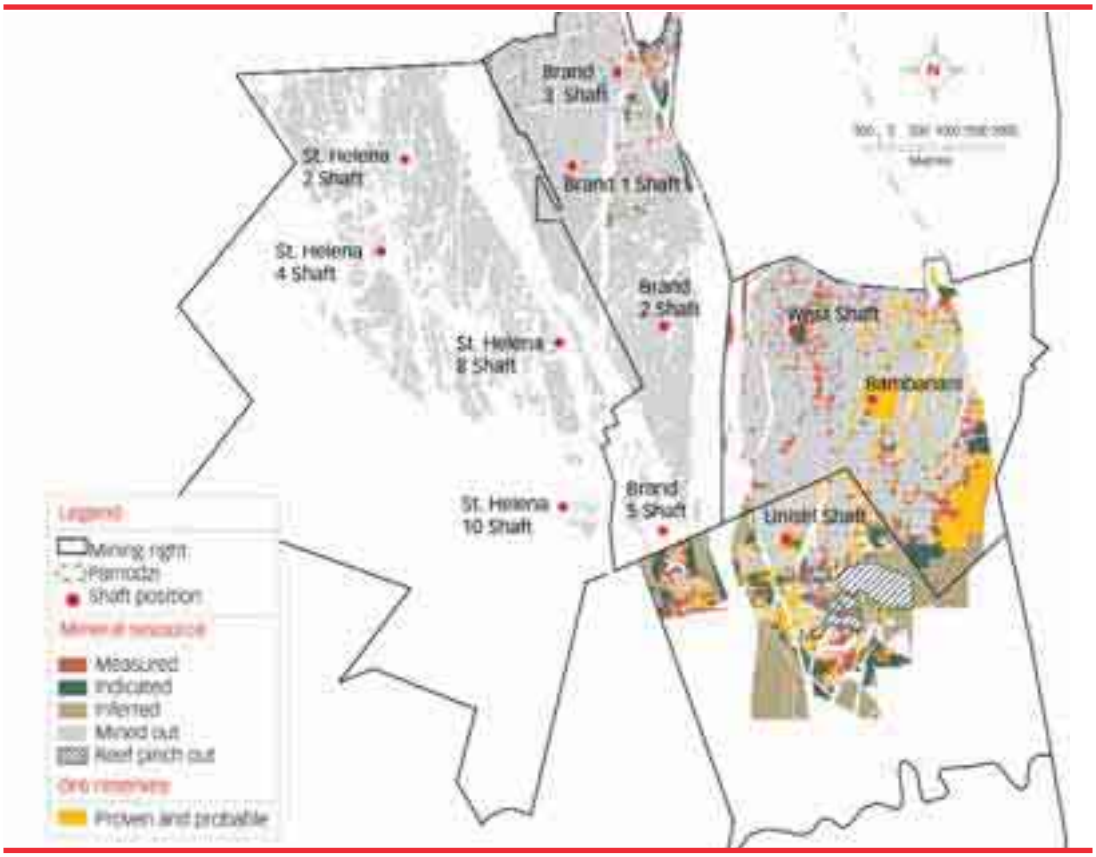
Tshepong shaft, Phakisa shaft

Basal Reef



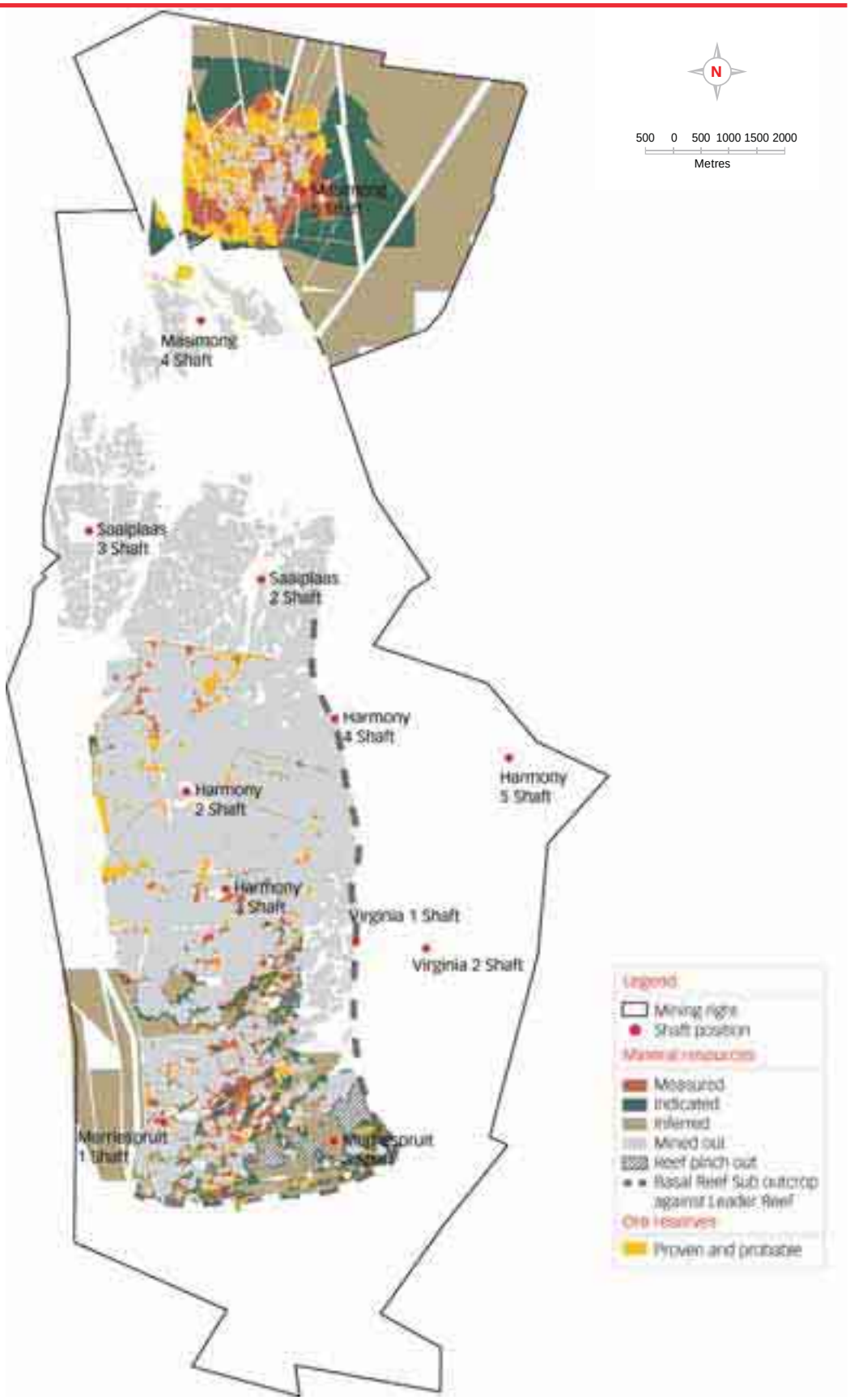
Brand 1 and 3 shafts, Bambanani and Unisel shafts

Basal Reef



Merriespruit 1 and 3, Harmony 2 and Masimong 4 and 5 shafts

Basal Reef

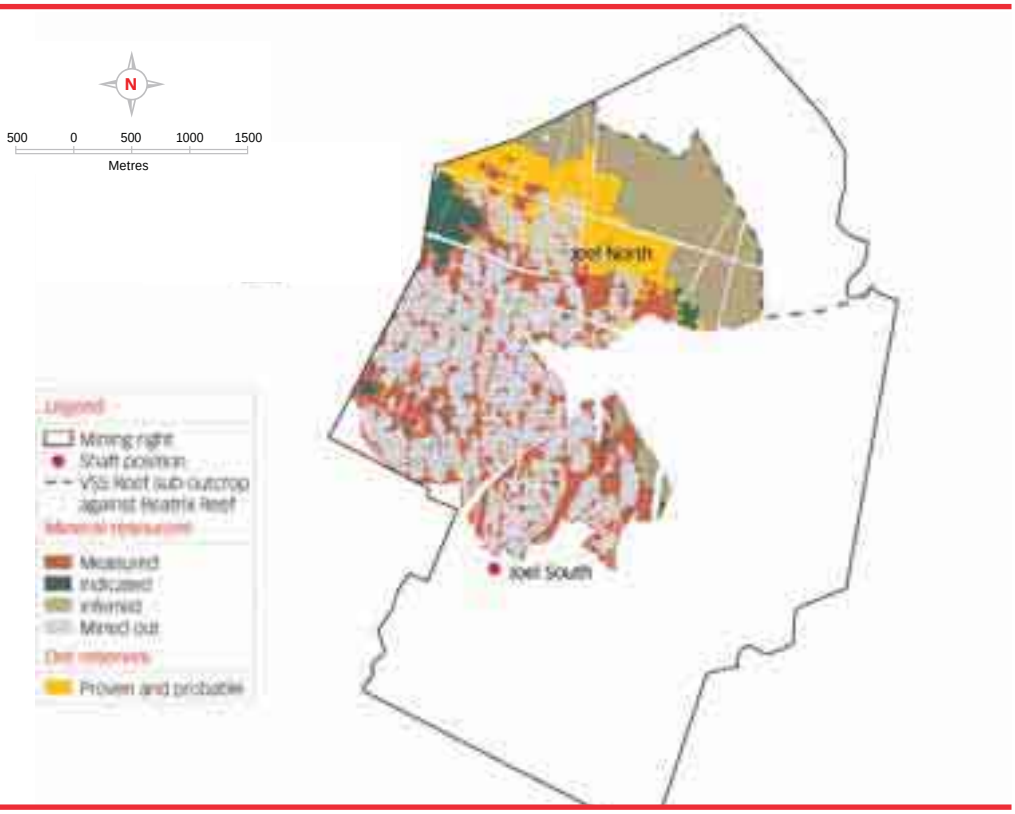


Mineral resources and ore reserves cont.

2009

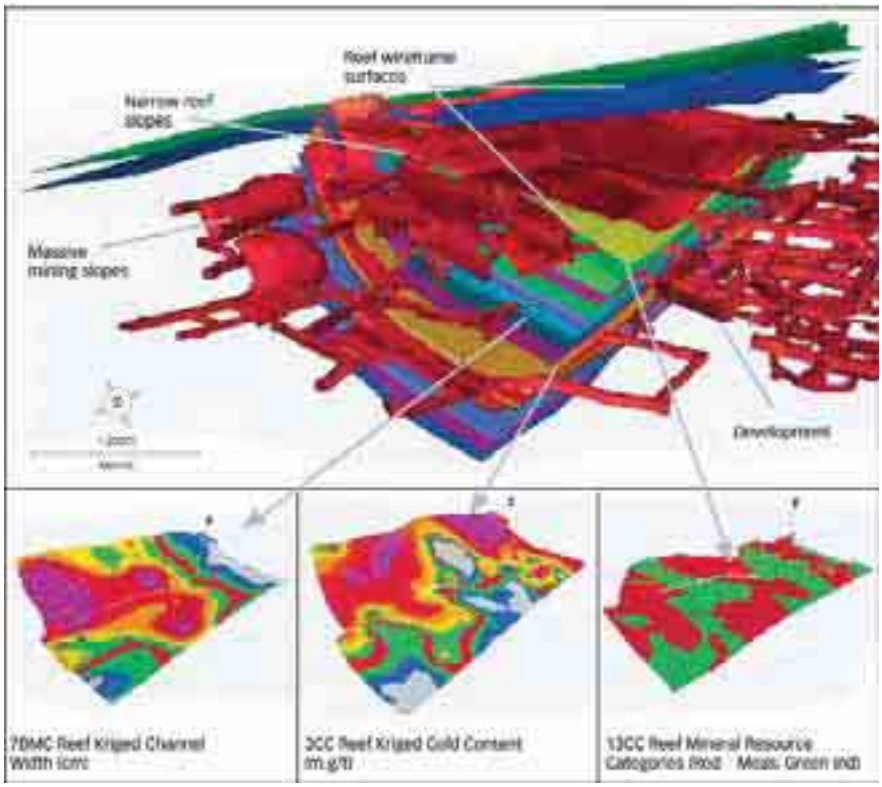
Joel

Beatrix Reef



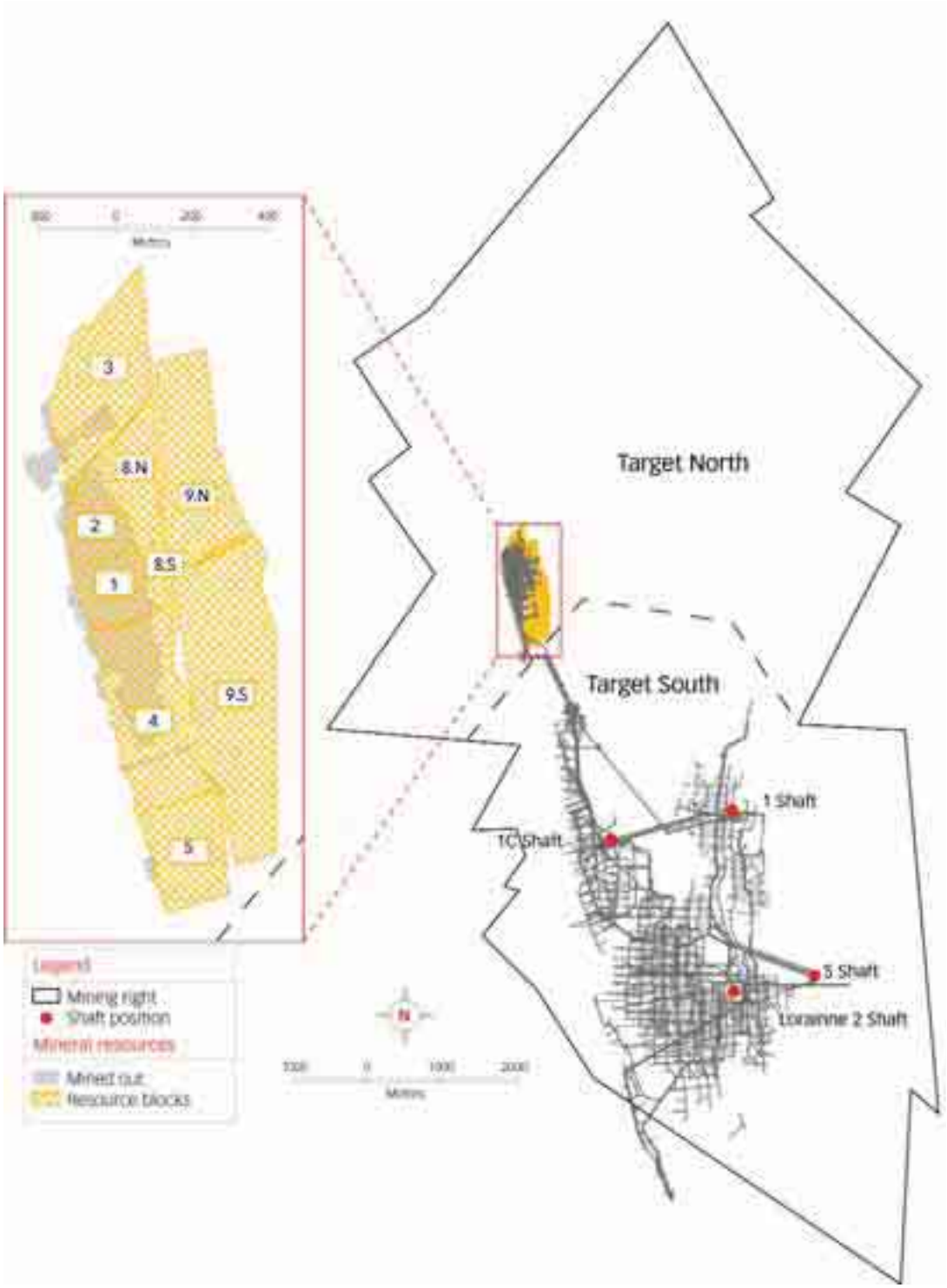
Target mine

Elsburg and Dreyerskuil Reefs



Target mine resource blocks

Elsburg and Dreyerskuil Reefs



Mineral resources and ore reserves cont.

Elandsrand

Geology: The structure of the orebody on the Far West Rand is dominated by a series of east-trending normal faults with throws of up to 40m, as well as a series of north-north-east striking normal faults with generally smaller displacements in the north-west. Faulting is generally less prevalent than in other Witwatersrand Basin goldfields. The primary reefs exploited are the Ventersdorp Contact Reef (VCR) and the Carbon Leader, separated by 900 to 1 300 metres, increasing from east to west. Secondary targets are the Middelvlei Reef (50 to 75 metres above the Carbon Leader) and the Mondeor Conglomerate Reef Zone, which sub-crops beneath the VCR at Deelkraal and on the western side of Elandsrand.

Mineral Resource

	Measured				Indicated				Inferred				Total			
Operations	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)
Underground																
Elandsrand	11.6	8.87	103	3 313	28.2	8.63	243	7 812	1.4	9.28	13	431	41.2	8.72	359	11 556
GRAND TOTAL	**11.6**	**8.87**	**103**	**3 313**	**28.2**	**8.63**	**243**	**7 812**	**1.4**	**9.28**	**13**	**431**	**41.2**	**8.72**	**359**	**11 556**

Modifying factors

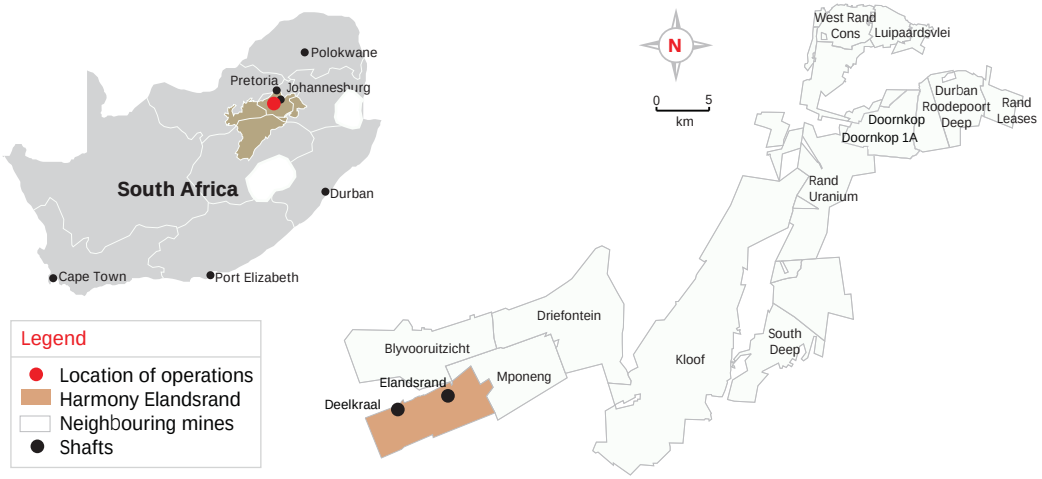
Operations	MCF (%)	SW (cm)	MW (cm)	PRF (%)
Elandsrand	87	129	160	96

MCF = Mine call factor MW = Milling width SW = Stoping width

PRF = Plant recovery factor

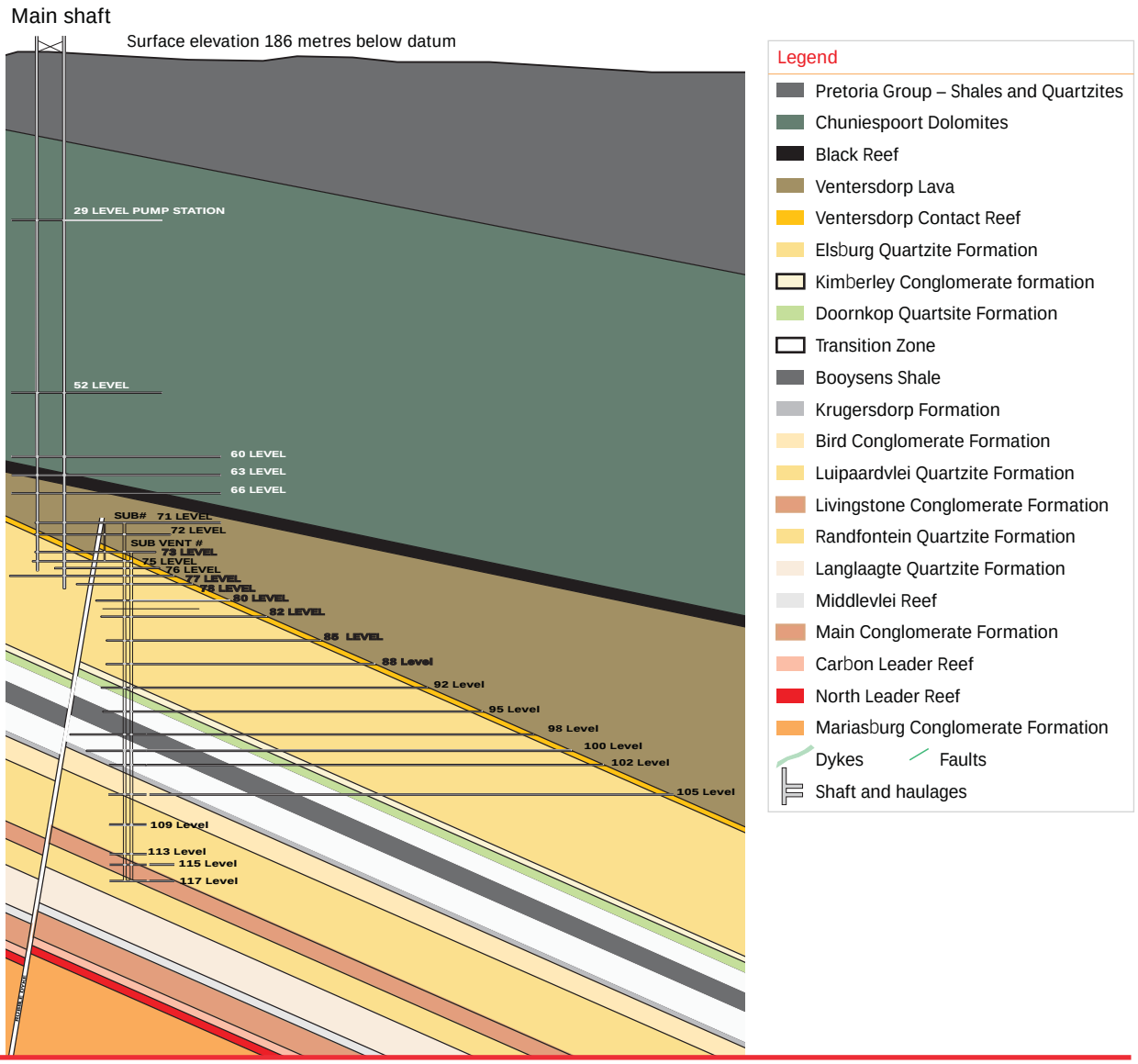
Ore reserves

	Proven				Probable				Total			
Operations	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)
Underground												
Elandsrand	11.5	6.50	74	2 395	26.2	6.11	160	5 146	37.7	6.23	234	7 541
GRAND TOTAL	**11.5**	**6.50**	**74**	**2 395**	**26.2**	**6.11**	**160**	**5 146**	**37.7**	**6.23**	**234**	**7 541**

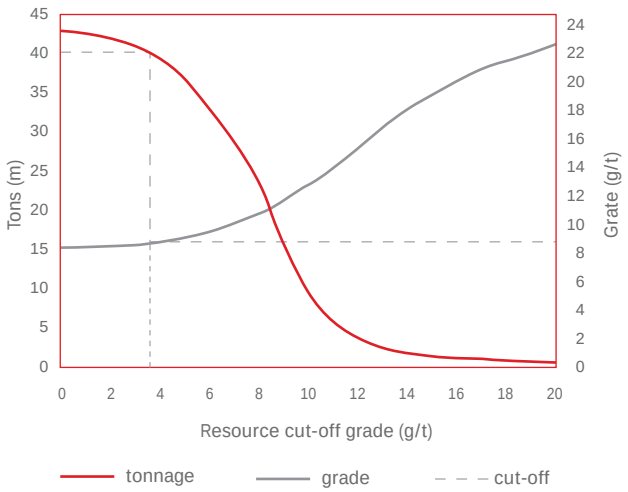


Elandsrand – Section through main shaft and sub-shaft looking east

Not to scale



Elandsrand: grade tonnage curve (measured and indicated resources)



Mineral resources and ore reserves cont.

2009

Elandsrand shaft

Ventersdorp Contact Reef (VCR)

Doornkop

Geology: The structure of the West Rand goldfield is dominated by the Witpoortjie and Panvlakte Horst blocks, which are superimposed over broad folding associated with the south-east plunging West Rand syncline. At the Doornkop mine, both the Kimberley Reef and the South Reef are exploited.

The Doornkop shaft lease area is bounded by and lies to the south-east of the major north-easterly striking Roodepoort Fault, which dips to the south and constitutes the southern edge of the Witpoortjie Horst Block or Gap. This Horst Block is comprised of the stratigraphically older sediments of the West Rand Group, the overlying Central Rand Group sediments having been removed by erosion. A number of other faults, forming part of and lying southeast of the Roodepoort Fault, including the Saxon Fault, also constitute conspicuous structural breaks. A second major fault, the Doornkop Fault, which trends in an east west direction occurs towards the southern portion of the lease area. This fault dips to the south and has an up-throw to the north.

Nearly the entire upper Witwatersrand section is present in the lease area and therefore all the major zones are present, though due to the distance of the area from the fan head, the number of economic bands and their payability is limited. Eight of the well-known reefs are present in the area, but only the Kimberley Reef and South Reef are considered viable at this stage.

The resource is concentrated in the Kimberley and South Reefs. The Kimberley Reef is contained in the Vlakfontein Member of the Westonaria Formation. This reef, also known as the K9 Reef horizon, rests on an unconformity and is a complex multi-pulse conglomerate, which can be separated into four facies or cycles. All four cycles consist on average of an upper conglomerate and a lower quartzite. The characteristics of every cycle are area-dependent and the grades are variable within each cycle.

The South Reef is approximately 900 metres below the current Kimberley Reef mining, and between 7.5 and 60 metres above the Main Reef horizon. The hanging wall to the South Reef consists of siliceous quartzites with non-persistent bands of “blue-shot” grit and thin argillite partings. The footwall to the South Reef is a light coloured and fairly siliceous quartzite. Secondary conglomerate bands and stringers in the hanging wall and footwall of the South Reef may contain sporadic gold values.

The general strike of the reef is east-west, with a dip from 10 to 20 degrees. The orebody at Doornkop has a strike length of 4km and a width of 4 km from west to east.

Mineral resources

	Measured				Indicated				Inferred				Total			
Operations	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)
Underground																
Doornkop																
Kimberley Reef	9.1	3.27	30	960	6.8	2.64	18	574	159.7	2.51	401	12 893	175.6	2.56	449	14 427
South Reef	0.6	5.99	3	113	1.3	6.23	8	265	22.5	8.63	194	6 239	24.4	8.44	205	6 617
GRAND TOTAL	**9.7**	**3.43**	**33**	**1 073**	**8.1**	**3.23**	**26**	**839**	**182.2**	**3.27**	**595**	**19 132**	**200.0**	**3.27**	**654**	**21 044**

Modifying factors

Operations	MCF (%)	SW (cm)	MW (cm)	PRF (%)
Doornkop				
Kimberley Reef	95	405	450	95
South Reef	75	124	140	95

MCF = Mine call factor MW = Milling width SW = Stoping width

PRF = Plant recovery factor

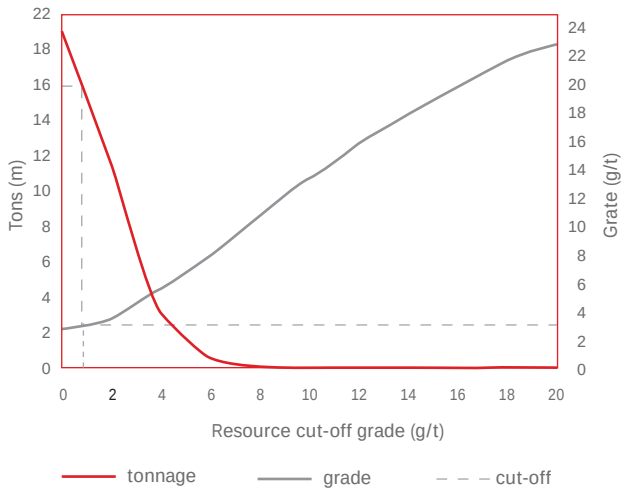
Ore reserves

	Proven				Probable				Total			
Operations	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)
Underground												
Doornkop												
Kimberley Reef	0.3	2.48	1	20	0.3	2.57	1	25	0.6	2.53	2	45
South Reef	0.4	4.30	2	50	0.9	4.27	4	128	1.3	4.28	6	178
GRAND TOTAL	**0.7**	**3.55**	**3**	**70**	**1.2**	**3.85**	**5**	**153**	**1.9**	**3.75**	**8**	**223**

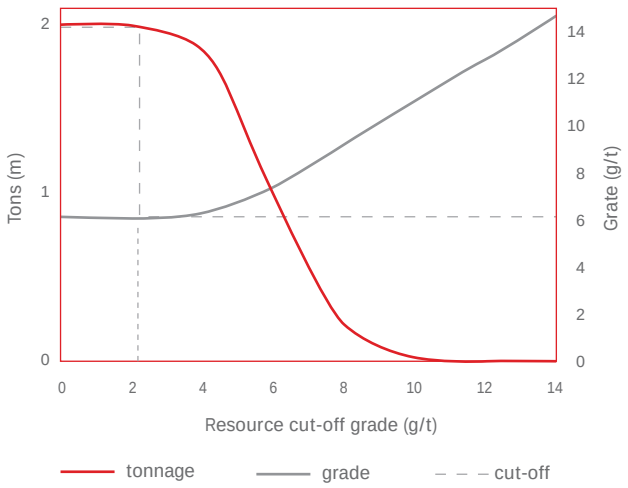
Mineral resources and ore reserves cont.

2009

Doornkop Kimberley Reef: grade tonnage curve (measured and indicated resources)

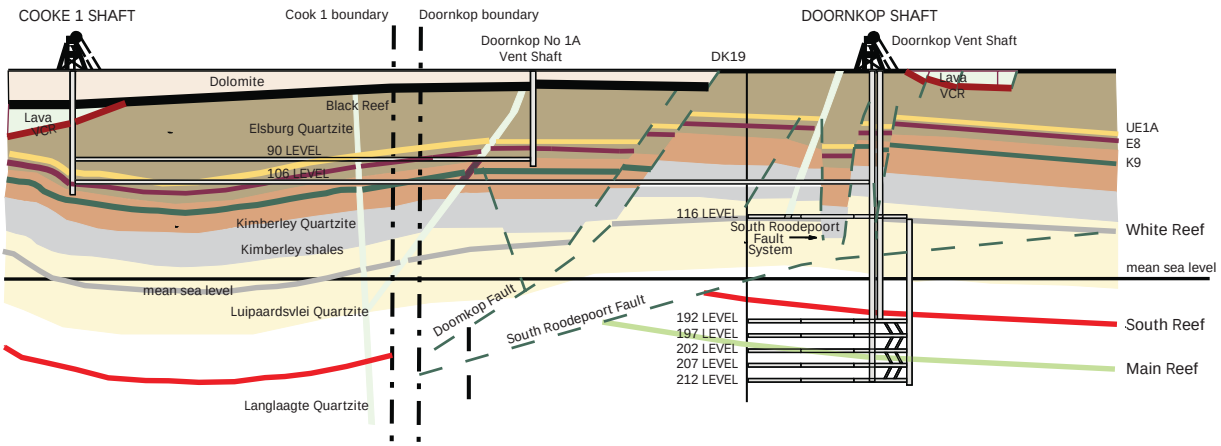


Doornkop South Reef: grade tonnage curve (measured and indicated resources)

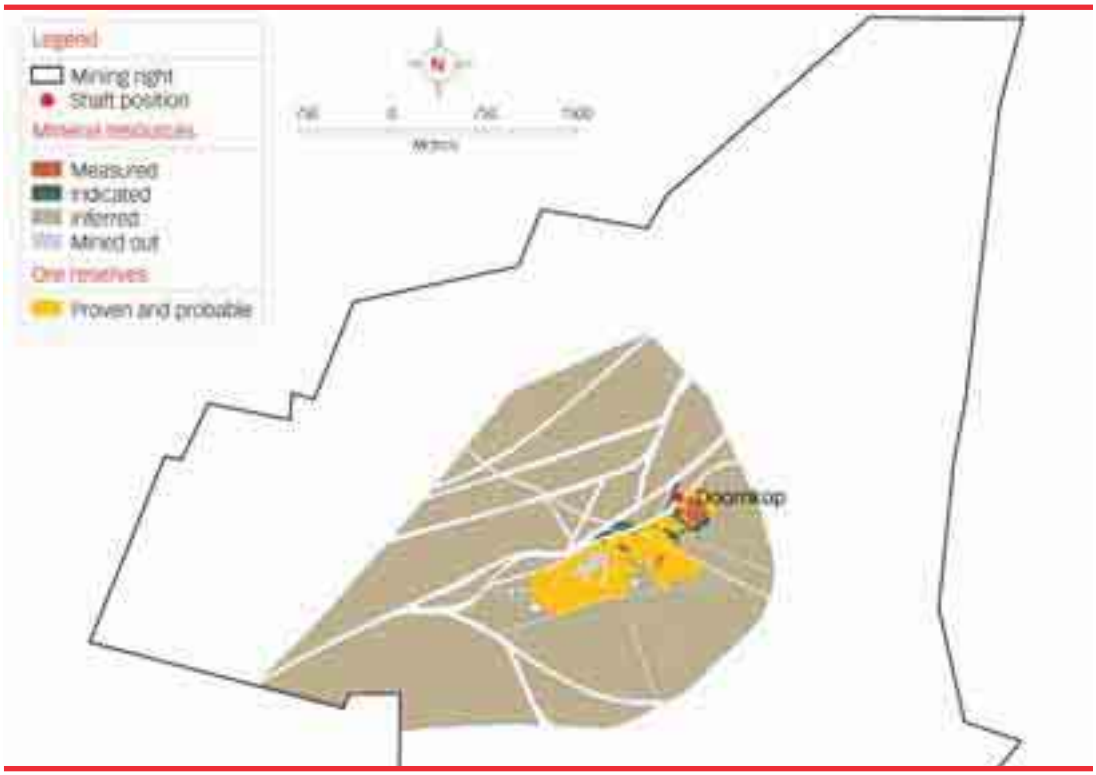


Cooke 1/Doornkop geological section looking west

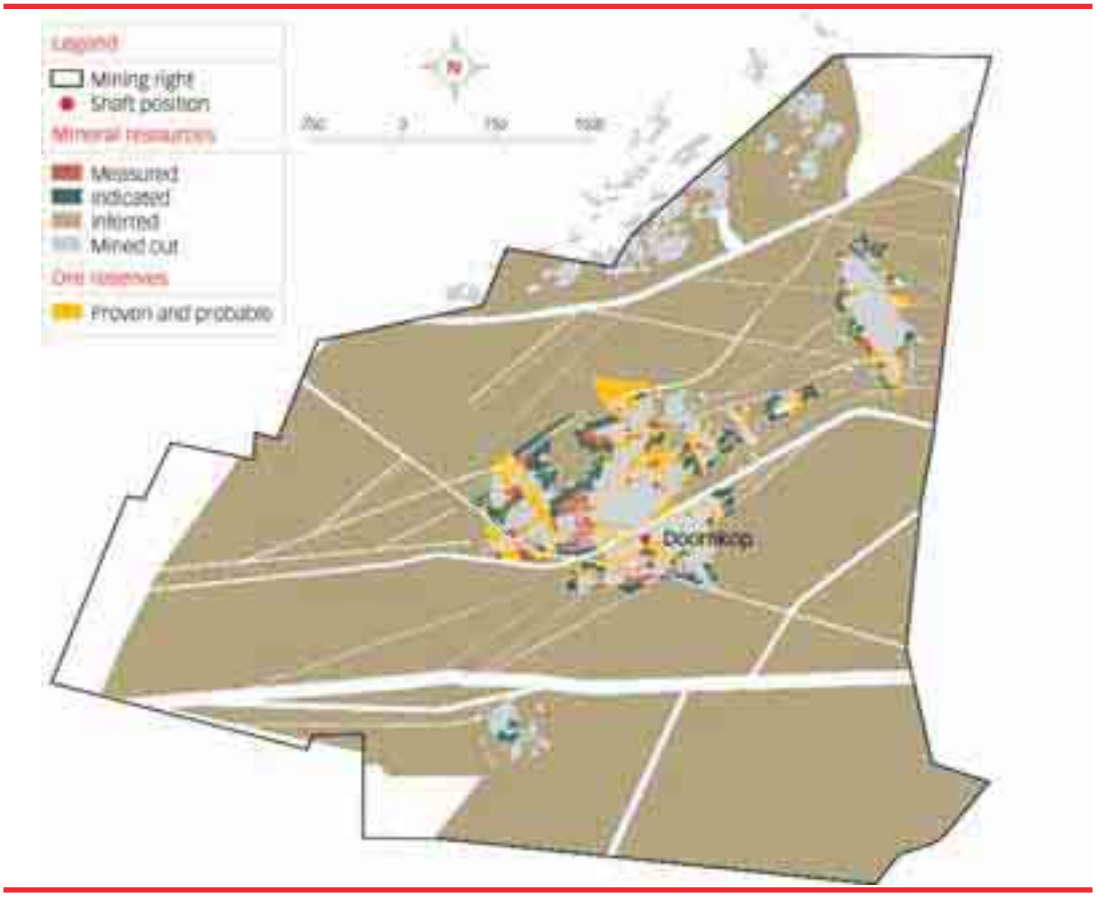
Not to scale



Doornkop shaft
South Reef



Doornkop shaft
Kimberley Reef



Mineral resources and ore reserves cont.

Evander operations

Geology: The Evander Basin is a tectonically preserved sub-basin outside the main Witwatersrand Basin and forms an asymmetric syncline, plunging to the north-east. It is structurally complex with a series of east-north-east striking normal faults. At the south-east margin of the basin, vertically to locally overturned reef is present. The only economic reef horizon exploited in the Evander Basin is the Kimberley Reef. The Intermediate Reef is generally poorly mineralised, except where it erodes the sub-cropping Kimberley Reef in the south and west of the basin.

Mineral resources

	Measured				Indicated				Inferred				Total			
Operations	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz
Underground																
Evander 2/5	7.7	10.62	81	2 618	2.0	10.47	21	678	6.5	11.36	75	2 386	16.2	10.90	177	5 682
Evander 7	1.9	12.08	23	754	0.1	9.28	1	44	13.9	10.91	151	4 857	15.9	11.04	175	5 655
Evander 8	3.7	11.96	44	1 404	9.2	11.37	105	3 361	14.3	11.79	169	5 424	27.2	11.67	318	10 189
Total	**13.3**	**11.20**	**148**	**4 776**	**11.3**	**11.18**	**127**	**4 083**	**34.7**	**11.36**	**395**	**12 667**	**59.3**	**11.29**	**670**	**21 526**
Projects – Below Infrastructure																
Evander South	–	–	–	–	21.1	5.46	115	3 696	33.8	3.98	135	4 326	54.9	4.55	250	8 022
Rolspruit	–	–	–	–	29.1	11.59	337	10 847	4.9	5.69	28	902	34.0	10.74	365	11 749
Poplar	–	–	–	–	15.6	10.21	159	5 123	–	–	–	–	15.6	10.21	159	5 123
Total	**–**	**–**	**–**	**–**	**65.8**	**9.30**	**611**	**19 666**	**38.7**	**4.19**	**163**	**5 228**	**104.5**	**7.41**	**774**	**24 894**
GRAND TOTAL	**13.3**	**11.20**	**148**	**4 776**	**77.1**	**9.58**	**738**	**23 749**	**73.4**	**7.58**	**558**	**17 895**	**163.8**	**8.81**	**1 444**	**46 420**

Modifying factors

Operations	MCF (%)	SW (cm)	MW (cm)	PRF (%)
Evander 2/5	67	143	190	98
Evander 7	85	159	368	97
Evander 8	70	120	181	97
Evander South	88	100	131	97
Rolspruit	80	110	129	97
Poplar	80	100	116	97

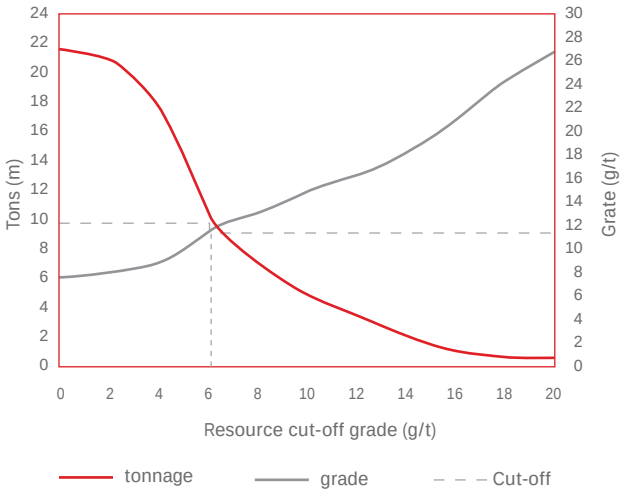
MCF = Mine call factor MW = Milling width SW = Stoping width

PRF = Plant recovery factor

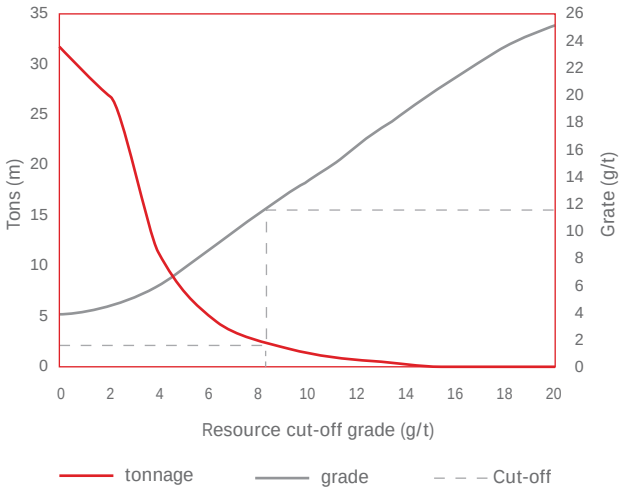
Ore reserves

	Proven				Probable				Total			
Operations	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)
Underground												
Evander 2/5	0.8	6.35	5	163	0.2	6.17	1	38	1.0	6.32	6	201
Evander 7	0.2	4.64	1	27	0.0	8.48	0	2	0.2	4.81	1	29
Evander 8	1.8	5.66	10	332	7.0	6.21	43	1 394	8.8	6.09	53	1 726
Total	**2.8**	**5.79**	**16**	**522**	**7.2**	**6.21**	**44**	**1 434**	**10.0**	**6.09**	**60**	**1 956**
Projects – Below Infrastructure												
Evander South	–	–	–	–	11.5	4.80	55	1 773	11.5	4.80	55	1 773
Rolspruit	–	–	–	–	24.4	8.71	213	6 842	24.4	8.71	213	6 842
Poplar	–	–	–	–	13.5	7.45	101	3 234	13.5	7.45	101	3 234
Total	**–**	**–**	**–**	**–**	**49.4**	**7.45**	**369**	**11 849**	**49.4**	**7.45**	**369**	**11 849**
GRAND TOTAL	**2.8**	**5.79**	**16**	**522**	**56.6**	**7.30**	**413**	**13 283**	**59.4**	**7.22**	**429**	**13 805**

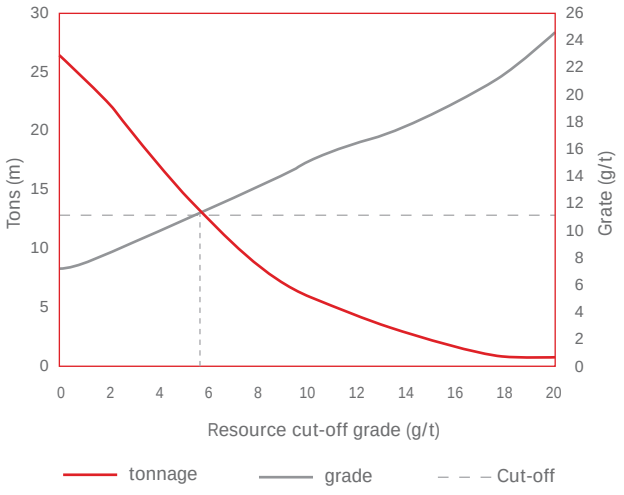
Evander 2 and 5: grade tonnage curve
(measured and indicated resources)



Evander 7: grade tonnage curve
(measured and indicated resources)



Evander 8: grade tonnage curve
(measured and indicated resources)

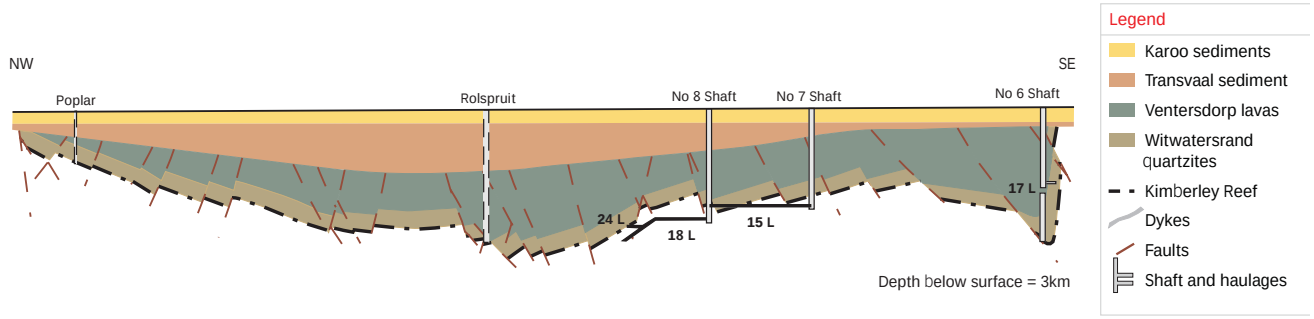


Mineral resources and ore reserves cont.

2009

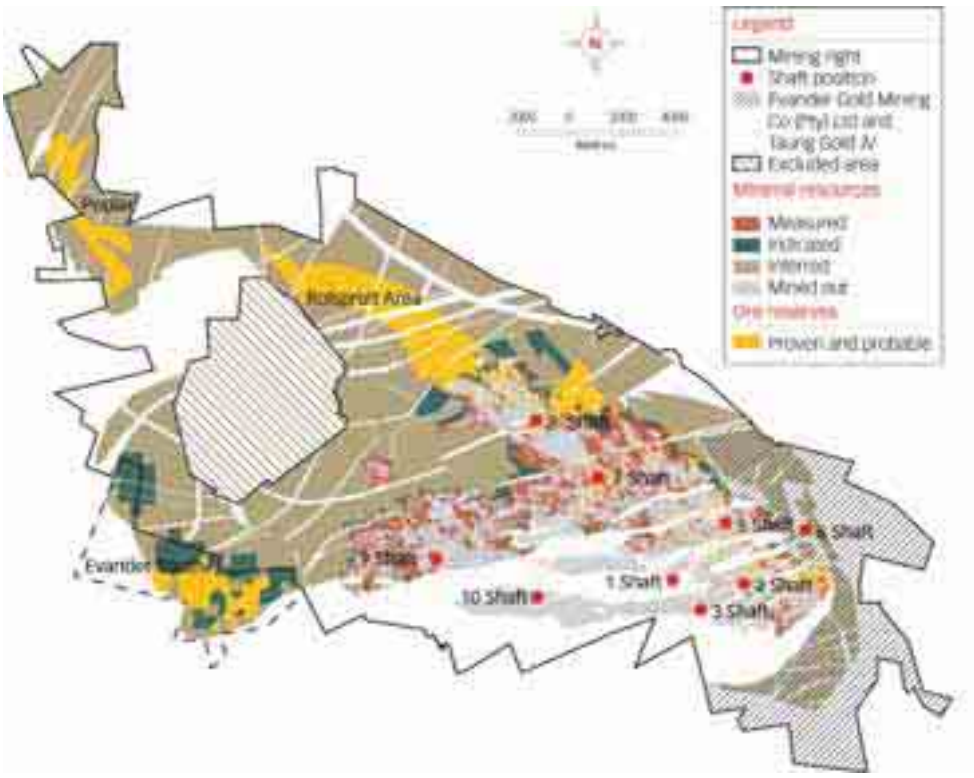
Section across Evander Basin

Not to scale



Evander, 2, 5, 6, 8 and 9 Shafts. Poplar and Rolspruit areas

Kimberley Reef



Kalgold

Geology: The Kalgold operation is located within the Kraaipan Greenstone Belt, 60km south of Mafikeng. This is part of the larger Amalia-Kraaipan Greenstone terrain, consisting of north trending linear belts of Archaean meta-volcanic and metasedimentary rocks, separated by granitoid units. Mineralisation occurs in shallow dipping quartz veins, which occur in clusters or swarms, within the steeply dipping magnetitechert banded iron formation. Disseminated sulphide mineralisation, dominated mostly by pyrite, occurs around and between the shallow dipping quartz vein swarms. The D Zone is the largest orebody encountered and has been extensively mined within a single open-pit operation, along a strike length of 1 300m. Mineralisation has also been found in the Mielie Field Zone (adjacent to the D Zone), the A Zone and A Zone West (along strike to the north of the D Zone), and the Watertank and Windmill areas to the north of the A Zone.

Mineral resources

	Measured				Indicated				Inferred				Total			
Operations	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz
Kalgold	34.5	0.93	32	1 037	66.0	0.94	62	2 002	28.4	0.95	27	871	128.9	0.94	121	3 910
GRAND TOTAL	**34.5**	**0.93**	**32**	**1 037**	**66.0**	**0.94**	**62**	**2 002**	**28.4**	**0.95**	**27**	**871**	**128.9**	**0.94**	**121**	**3 910**

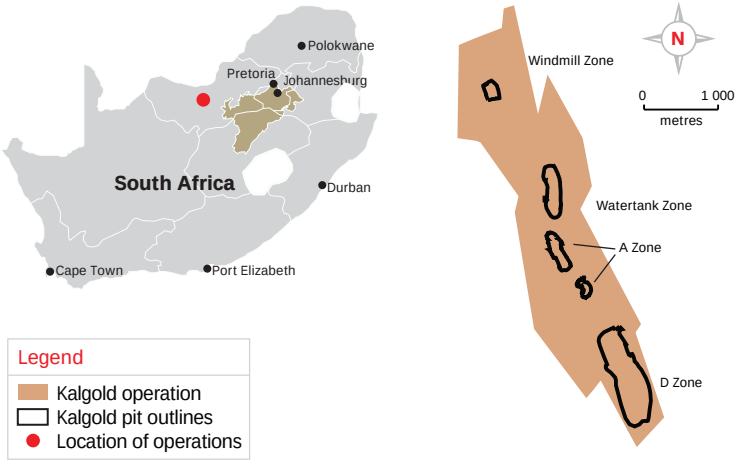
Modifying factors

	MCF (%)	Dilution (%)	PRF (%)
Kalgold	100	2	90

MCF = Mine call factor PRF = Plant recovery factor

Ore reserves

	Proven				Probable				Total			
Operations	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)
Underground												
Kalgold	15.5	0.84	13	425	9.0	1.07	10	307	24.5	0.93	23	732
GRAND TOTAL	**15.5**	**0.84**	**13**	**425**	**9.0**	**1.07**	**10**	**307**	**24.5**	**0.93**	**23**	**732**



Mineral resources and ore reserves cont.

2009

Kalgold mining operations

Kimberley Reef