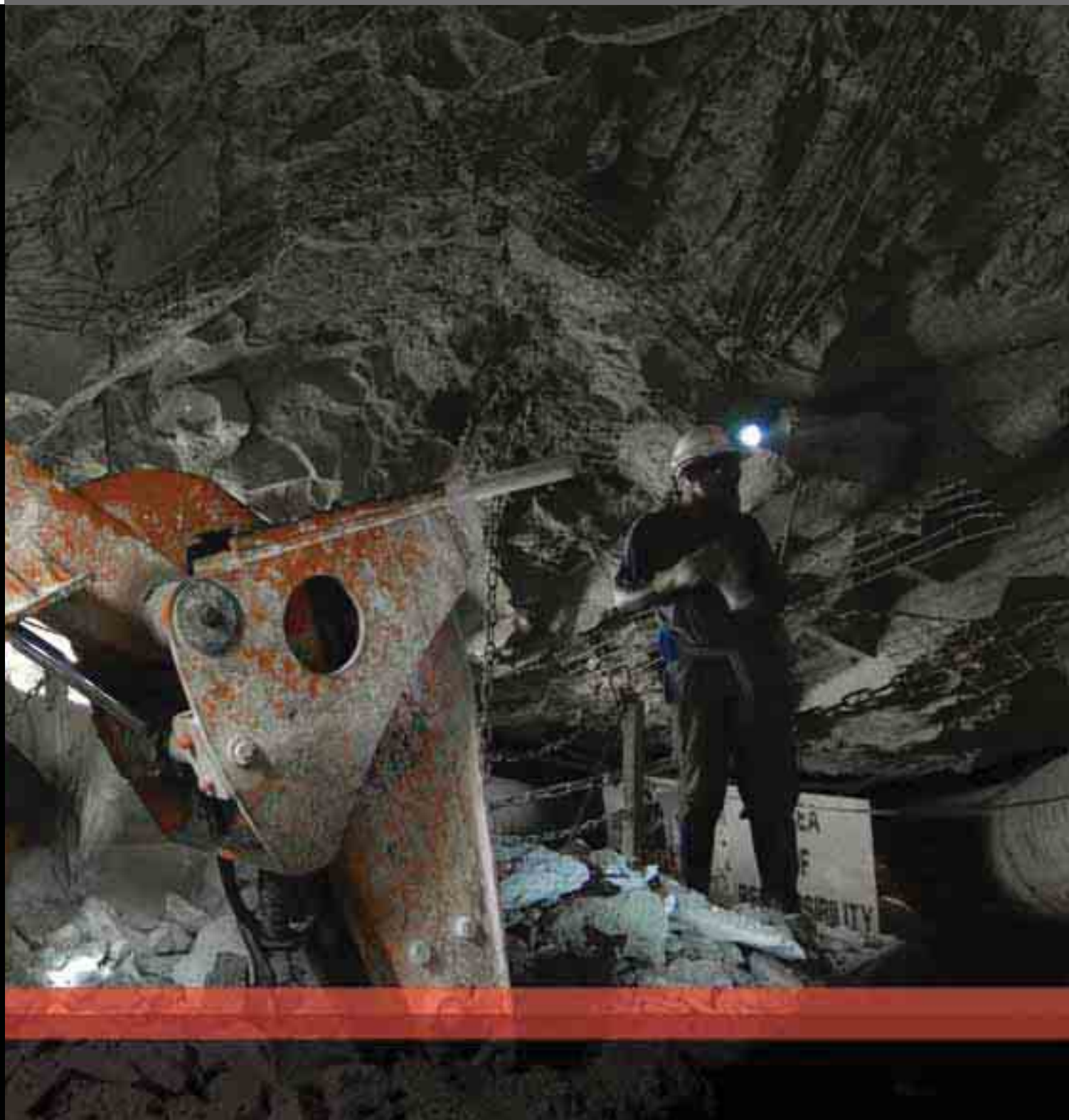
Mineral resources and ore reserves 2009



Mineral resources and ore reserves

As of 30 June 2009, Harmony reported ore reserves of 48.2 million ounces and mineral resources of 215.7 million ounces. The Measured and Indicated mineral resources are inclusive of those resources modified to produce the ore Reserves. Ore reserves are reported as mill delivered tonnes at the grade delivered to the mill. Of the company's 48.2 million ounces of ore reserves, 11.8 million ounces are classified as being below infrastructure, i.e. capital expenditure for the development of these has yet to be approved.

We use certain terms in this report such as 'measured', 'indicated' and 'inferred' resources, which the SEC guidelines strictly prohibit US-registered companies from including in their filings with the SEC. US investors are urged to consider closely the disclosure in our Form 20-F.

Commodity prices

A gold price of US$750/oz was used for the conversion of mineral resources to ore reserves at our South African and Papua New Guinea operations. An exchange rate of R9.33/U$ for South Africa and A$/US$0.75 for Papua New Guinea has been used, resulting in a gold price of R225 000/kg and A$1000/oz respectively.

Auditing

The Harmony mineral resources and ore reserves have been comprehensively audited by a team of internal competent persons that operates independently of the operating units. The internal audit team verifies compliance with the Harmony Code of Resource blocking, valuation, classification, cut-off calculations, development of life-of-mine plans and SAMREC sheets which support Harmony's Annual Mineral Resource and Ore Reserve statement. This audit process is specifically designed to comply with the requirements for internationally recognised procedures and standards such as:

- South African Code for Reporting Mineral Resources and Mineral Reserves – SAMREC Code
- Australian Code for Reporting Mineral Resources and Ore Reserves – JORC Code
- Industry Guide 7 of the United States Securities Exchange Commission
- Sarbanes-Oxley requirements

In addition to the internal audits, Harmony made use of SRK Consulting to review the gold mineral resources and reserves at all its South African operations.

Competent person's declaration

Harmony employs an ore reserve manager at each of its operations who takes responsibility for the reporting of the mineral resources and ore reserves of the mines for which they are responsible. The competent person responsible for the overall preparation and reporting of the company's mineral resources and ore reserves in South Africa is Jaco Boshoff (BSc (Hons), MSc (Geology), MBA. Pri.Sci.Nat), who has 14 years' relevant experience, and is registered with the South African Council for Natural Scientific Professions (SACNASP).

The competent person responsible for Papua New Guinea and Australia is Greg Job (BSc, MSc (Min Econ), MAusIMM). Greg has 21 years' experience in mine and resource geology, and is a member of the Australian Institute of Mining and Metallurgy.

Jaco Boshoff

Greg Job

Mineral resources and ore reserves cont.

2009

Reconciliation FY08/FY09

Mineral resources

Year-on-year, the mineral resources had a negative variance of 40.6 million ounces. This was mainly as a result of the equity adjustment for Papua New Guinea (69.9% down to 50% attributable to Harmony) as well as stating the mineral resources for the South African underground operations at a gold price of R350 000/kg and not at a resource cut-off of 250cmg/t.

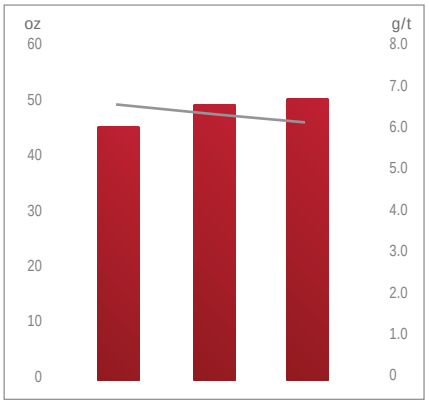
Ore reserves

There was a year-on-year negative variance of 2.3 million ounces with respect to the ore reserves. As indicated in the table below, Harmony's ore reserves as at 30 June 2009 reflected a year-on-year depletion of 1.6 million ounces. The equity adjustment at Papua New Guinea from 69.9% to 50% attributable to Harmony resulted in a further decrease of 0.9 million ounces. The net effect of positive changes at the South African operations accounted for an addition of 0.2 million ounces.

Ore reserve reconciliation: FY08 to FY09

	Gold (tonnes)	Gold (Moz)
Balance as at June 2008	**1 570**	**50.5**
Reductions		
Mined during FY2009	(50)	(1.6)
Equity adjustment (PNG)	(28)	(0.9)
Geology and scope changes	(78)	(2.5)
Additions		
Surface sources	34	1.1
Other adjustments	50	1.6
Balance as at June 2009	**1 499**	**48.2**

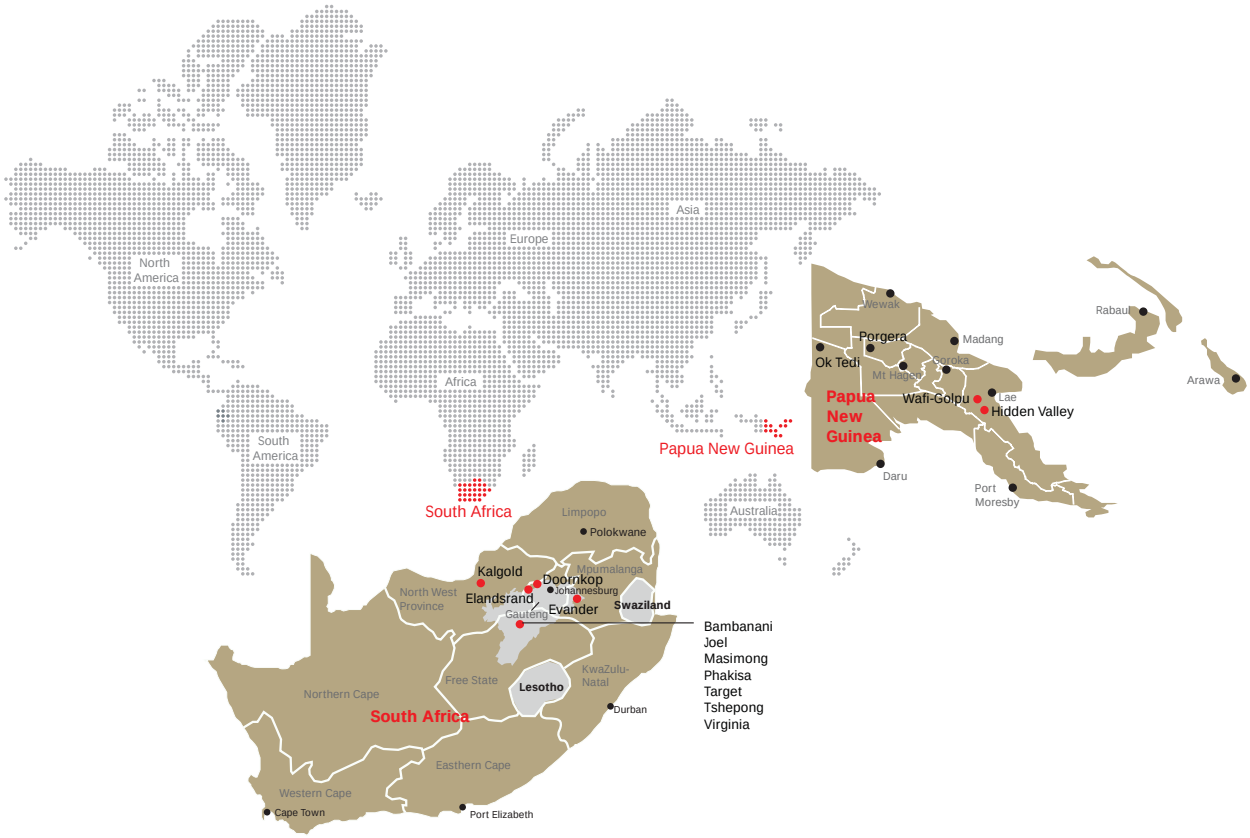
Ore reserve sensitivities



	R195,000	R225,000	R255,000
Gold oz (million)	44.60	48.15	49.04
g/t SA underground excluding below infrastructure	6.44	6.21	6.04

The graph above illustrates ore reserve sensitivities, inclusive of projects below infrastructure and surface sources, to a changing gold price below and above R225 000/kg. Note that these sensitivities are approximations only and based on the orebodies in the current life of mine plans and pre-feasibility studies. Accordingly, at different gold prices, alternative mining strategies may be pursued, including the addition of more secondary reef horizons into reserves.

Location of Harmony's South African and PNG assets



Summary tables: Harmony's mineral resources and ore reserves

South Africa underground (excluding below infrastructure)

Increasing level of geoscientific knowledge and confidence

Mineral resources (total)

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
854.6	6.18	5 278	169 686

Reported as in situ mineralisation estimates

Ore reserves (total)

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
131.3	6.21	814	26 169

Reported as mineable production estimates

Inferred

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
565.8	5.25	2 972	95 557

Indicated

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
156.8	8.18	1 283	41 242

Probable

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
82.8	6.46	534	17 183

Measured

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
132.0	7.75	1 023	32 887

Proven

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
48.5	5.78	280	8 986

Consideration of mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the modifying factors).

Mineral resources and ore reserves cont.

2009

Summary tables: Harmony's mineral resources and ore reserves cont.

South Africa projects (below infrastructure)

Increasing level of geoscientific knowledge and confidence

Mineral resources (total)

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
104.5	7.41	774	24 894

Reported as in situ mineralisation estimates

Ore reserves (total)

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
49.4	7.45	369	11 849

Reported as mineable production estimates

Inferred

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
38.7	4.19	163	5 228

Indicated

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
65.8	9.30	611	19 666

Probable

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
49.4	7.45	369	11 849

Measured

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
–	–	–	–

Proven

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
–	–	–	–

Consideration of mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the modifying factors).

South Africa surface (including Kalgold)

Increasing level of geoscientific knowledge and confidence

Mineral resources (total)

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
1 313.6	0.32	415	13 357

Reported as in situ mineralisation estimates

Ore reserves (total)

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
968.4	0.26	250	8 036

Reported as mineable production estimates

Inferred

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
228.9	0.32	73	2 359

Indicated

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
208.0	0.52	109	3 502

Probable

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
110.7	0.32	36	1 152

Measured

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
876.7	0.27	233	7 496

Proven

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
857.7	0.25	214	6 884

Consideration of mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the modifying factors).

Papua New Guinea*

Increasing level of geoscientific knowledge and confidence

Mineral resources (total)

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
198.5	1.22	243	7 790

Reported as in situ mineralisation estimates

Ore reserves (total)

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
56.4	1.16	65	2 096

Reported as mineable production estimates

Inferred

Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)
92.8	1.00	93	2 979

Indicated

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
102.7	1.40	144	4 604

Probable

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
54.9	1.12	62	1 984

Measured

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
3.0	2.16	6	207

Proven

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
1.5	2.32	3	112

Consideration of mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the modifying factors).

** Represents Harmony's equity portion of 50%*

Total underground and surface (including below infrastructure)

Increasing level of geoscientific knowledge and confidence

Mineral resources (total)

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
2 471.2	2.72	6 710	215 727

Reported as in situ mineralisation estimates

Ore reserves (total)

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
1 205.5	1.24	1 498	48 150

Reported as mineable production estimates

Inferred

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
926.2	3.56	3 301	106 123

Indicated

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
533.3	4.03	2 147	69 014

Probable

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
297.8	3.36	1 001	32 168

Measured

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
1 011.7	1.25	1 262	40 590

Proven

Tonnes (Mt)	Grade g/t	Gold (000kg)	Gold (000oz)
907.7	0.55	497	15 982

Consideration of mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the modifying factors).

Mineral resources and ore reserves cont.

2009

Gold – Mineral resources statement (Metric)

	Measured			Indicated			Inferred			Total		
SA Underground	Tonnes (Mt)	Grade g/t	Gold (000kg)	Tonnes (Mt)	Grade g/t	Gold (000kg)	Tonnes (Mt)	Grade g/t	Gold (000kg)	Tonnes (Mt)	Grade g/t	Gold (000kg)
Bambanani	11.4	11.20	127	6.4	9.67	62	3.8	9.02	34	21.6	10.36	223
Joel	4.3	6.44	28	3.9	6.82	27	12.3	6.50	80	20.5	6.55	135
Masimong	14.0	7.55	106	14.9	6.51	97	100.3	6.69	671	129.2	6.76	874
Phakisa												
Phakisa	0.2	9.72	2	22.1	12.29	272	57.8	7.02	405	80.1	8.48	679
Nyala	4.4	6.91	31	3.9	4.76	18	–	–	–	8.3	5.91	49
Total	**4.6**	**7.03**	**33**	**26.0**	**11.17**	**290**	**57.8**	**7.02**	**405**	**88.4**	**8.24**	**728**
Target	6.3	9.81	62	13.9	7.65	106	5.2	6.26	32	25.4	7.90	200
Tshepong	14.0	11.03	154	14.3	11.32	162	13.8	8.85	122	42.1	10.42	438
Virginia												
Harmony 2	10.2	4.75	48	7.1	3.30	24	77.1	3.67	282	94.4	3.76	354
Merriespruit 1	8.5	5.20	45	3.8	5.25	20	39.6	4.19	166	51.9	4.43	231
Merriespruit 3	8.8	5.25	46	2.8	4.91	14	7.0	4.08	29	18.6	4.76	89
Unisel	11.2	5.56	62	12.0	4.73	56	20.6	4.65	97	43.8	4.90	215
Brand 3	4.1	6.78	28	4.1	6.91	29	10.0	5.15	51	18.2	5.91	108
Total	**42.8**	**5.35**	**229**	**29.8**	**4.77**	**143**	**154.3**	**4.05**	**625**	**226.9**	**4.39**	**997**
Doornkop												
Doornkop Kimberley Reef	9.1	3.27	30	6.8	2.64	18	159.7	2.51	401	175.6	2.56	449
Doornkop South Reef	0.6	5.99	3	1.3	6.23	8	22.5	8.63	194	24.4	8.44	205
Total	**9.7**	**3.43**	**33**	**8.1**	**3.23**	**26**	**182.2**	**3.27**	**595**	**200.0**	**3.27**	**654**
Elandsrand	**11.6**	**8.87**	**103**	**28.2**	**8.63**	**243**	**1.4**	**9.28**	**13**	**41.2**	**8.72**	**359**
Evander												
Evander operations												
Evander 2/5	7.7	10.62	81	2.0	10.47	21	6.5	11.36	75	16.2	10.90	177
Evander 7	1.9	12.08	23	0.1	9.28	1	13.9	10.91	151	15.9	11.04	175
Evander 8	3.7	11.96	44	9.2	11.37	105	14.3	11.79	169	27.2	11.67	318
Sub-total	**13.3**	**11.20**	**148**	**11.3**	**11.8**	**127**	**34.7**	**11.36**	**395**	**59.3**	**11.29**	**670**
Evander (below infrastructure)												
Evander South	–	–	–	21.1	5.46	115	33.8	3.98	135	54.9	4.55	250
Rolspruit	–	–	–	29.1	11.59	337	4.9	5.69	28	34.0	10.74	365
Poplar	–	–	–	15.6	10.21	159	–	–	–	15.6	10.21	159
Sub-total	**–**	**–**	**–**	**65.8**	**9.30**	**611**	**38.7**	**4.19**	**163**	**104.5**	**7.41**	**774**
Total	**13.3**	**11.20**	**148**	**77.1**	**9.58**	**738**	**73.4**	**7.58**	**558**	**163.8**	**8.81**	**1 444**
Total SA Underground	**132.0**	**7.75**	**1 023**	**222.6**	**8.51**	**1 894**	**604.5**	**5.19**	**3 135**	**959.1**	**6.31**	**6 052**
SA Surface												
Kalgold	34.5	0.93	32	66.0	0.94	62	28.4	0.95	27	128.9	0.94	121
Free State Surface												
Phoenix	130.8	0.27	36	–	–	–	5.3	0.26	1	136.1	0.27	37
St Helena	289.6	0.25	72	–	–	–	–	–	–	289.6	0.25	72
Other	421.8	0.22	93	142.0	0.33	47	195.2	0.23	45	759.0	0.24	185
Total	**842.2**	**0.24**	**201**	**142.0**	**0.33**	**47**	**200.5**	**0.23**	**46**	**1 184.7**	**0.25**	**294**
Total SA Surface	**876.7**	**0.27**	**233**	**208.0**	**0.52**	**109**	**228.9**	**0.32**	**73**	**1 313.6**	**0.32**	**415**
Total SA	**1 008.7**		**1 256**	**430.6**		**2 003**	**833.4**		**3 208**	**2 272.7**		**6 467**
Papua New Guinea [1]												
Hidden Valley and Kaveroi	2.8	2.16	6	23.1	1.89	44	14.8	1.53	23	40.7	1.78	73
Hamata	0.2	2.20	–	3.9	2.34	9	0.6	2.58	2	4.7	2.37	11
Wafi	–	–	–	31.9	1.97	63	19.8	1.73	34	51.7	1.88	97
Golpu	–	–	–	43.8	0.63	28	37.7	0.49	18	81.5	0.57	46
Nambonga	–	–	–	–	–	–	19.9	0.79	16	19.9	0.79	16
Total Papua New Guinea	**3.0**	**2.16**	**6**	**102.7**	**1.40**	**144**	**92.8**	**1.00**	**93**	**198.5**	**1.22**	**243**
GRAND TOTAL	**1 011.7**		**1 262**	**533.3**		**2 147**	**926.2**		**3 301**	**2 471.2**		**6 710**

Uranium – Mineral resources statement (Metric)

	Measured			Indicated			Inferred			Total		
Operations	Tonnes (million)	Grade (kg/t)	U_3O_8 kg (million)	Tonnes (million)	Grade (kg/t)	U_3O_8 kg (million)	Tonnes (million)	Grade (kg/t)	U_3O_8 kg (million)	Tonnes (million)	Grade (kg/t)	U_3O_8 kg (million)
Free State Surface												
Free State	358.8	0.09	33	36.5	0.10	4	68.4	0.07	5	463.7	0.09	42
Total SA Surface	**358.8**	**0.09**	**33**	**36.5**	**0.10**	**4**	**68.4**	**0.07**	**5**	**463.7**	**0.09**	**42**

Silver – Mineral resources statement (Metric)

	Measured			Indicated			Inferred			Total		
Operations	Tonnes (million)	Grade (g/t)	Silver kg (000)	Tonnes (million)	Grade (g/t)	Silver kg (000)	Tonnes (million)	Grade (g/t)	Silver kg (000)	Tonnes (million)	Grade (g/t)	Silver kg (000)
Papua New Guinea [1]												
Hidden Valley and Kaveroi	2.8	40.52	114	23.1	33.95	785	14.8	27.38	406	40.7	32.01	1 305

Copper – Mineral resources statement (Metric)

	Measured			Indicated			Inferred			Total		
Operations	Tonnes (million)	Grade (%)	Cu kg (million)	Tonnes (million)	Grade (%)	Cu kg (million)	Tonnes (million)	Grade (%)	Cu kg (million)	Tonnes (million)	Grade (%)	Cu kg (million)
Papua New Guinea [1]												
Golpu	–	–	–	43.8	1.39	609	37.7	0.72	272	81.5	1.08	881
Nambonga	–	–	–	–	–	–	19.9	0.21	42	19.9	0.21	42
Total	**–**	**–**	**–**	**43.8**	**1.39**	**609**	**57.6**	**0.54**	**314**	**101.5**	**0.91**	**923**

Molybdenum – Mineral resources statement (Metric)

	Measured			Indicated			Inferred			Total		
Operations	Tonnes (million)	Grade (ppm)	Mo kg (million)	Tonnes (million)	Grade (ppm)	Mo kg (million)	Tonnes (million)	Grade (ppm)	Mo kg (million)	Tonnes (million)	Grade (ppm)	Mo kg (million)
Papua New Guinea [1]												
Golpu	–	–	–	43.8	110.00	5	37.7	157.00	6	81.5	131.75	11

[1] Represents Harmony's equity portion of 50%

Note: 1 tonne = 1 000 kg = 2 204 lbs

Mineral resources and ore reserves cont.

2009

Gold – Mineral resources statement (Imperial)

	Measured			Indicated			Inferred			Total		
SA Underground	Tons (million)	Grade (oz/ton)	Gold oz (000)	Tons (million)	Grade (oz/ton)	Gold oz (000)	Tons (million)	Grade (oz/ton)	Gold oz (000)	Tons (million)	Grade (oz/ton)	Gold oz (000)
Bambanani	12.5	0.327	4 087	7.1	0.282	1 993	4.2	0.263	1 101	23.8	0.302	7 181
Joel	4.8	0.188	895	4.3	0.199	855	13.6	0.190	2 580	22.7	0.191	4 330
Masimong	15.4	0.220	3 401	16.5	0.190	3 128	110.6	0.195	21 576	142.5	0.197	28 105
Phakisa												
Phakisa	0.2	0.285	65	24.4	0.358	8 745	63.7	0.205	13 036	88.3	0.247	21 846
Nyala	4.9	0.201	985	4.3	0.139	592	–	–	–	9.2	0.172	1 577
Total	**5.1**	**0.205**	**1 050**	**28.7**	**0.326**	**9 337**	**63.7**	**0.205**	**13 036**	**97.5**	**0.240**	**23 423**
Target	7.0	0.286	1 991	15.3	0.223	3 412	5.7	0.182	1 043	28.0	0.230	6 446
Tshepong	15.4	0.322	4 949	15.8	0.330	5 211	15.2	0.258	3 922	46.4	0.304	14 082
Virginia												
Harmony 2	11.2	0.139	1 559	7.9	0.096	757	84.9	0.107	9 082	104.0	0.110	11 398
Merriespruit 1	9.4	0.152	1 421	4.1	0.153	635	43.7	0.122	5 334	57.2	0.129	7 390
Merriespruit 3	9.7	0.153	1 491	3.1	0.143	436	7.7	0.119	917	20.5	0.139	2 844
Unisel	12.3	0.162	1 989	13.3	0.138	1 828	22.7	0.136	3 086	48.3	0.143	6 903
Brand 3	4.6	0.198	892	4.5	0.201	916	11.0	0.150	1 650	20.1	0.172	3 458
Total	**47.2**	**0.156**	**7 352**	**32.9**	**0.139**	**4 572**	**170.0**	**0.118**	**20 069**	**250.1**	**0.128**	**31 993**
Doornkop												
Doornkop Kimberley Reef	10.1	0.095	960	7.4	0.077	574	176.0	0.073	12 893	193.5	0.075	14 427
Doornkop South Reef	0.6	0.175	113	1.5	0.181	265	24.8	0.252	6 239	26.9	0.246	6 617
Total	**10.7**	**0.100**	**1 073**	**8.9**	**0.094**	**839**	**200.8**	**0.095**	**19 132**	**220.4**	**0.095**	**21 044**
Elandsrand	**12.8**	**0.259**	**3 313**	**31.0**	**0.252**	**7 812**	**1.6**	**0.270**	**431**	**45.4**	**0.254**	**11 556**
Evander												
Evander operations												
Evander 2/5	8.5	0.310	2 618	2.2	0.305	678	7.2	0.331	2 386	17.9	0.318	5 682
Evander 7	2.1	0.353	754	0.2	0.268	44	15.3	0.318	4 857	17.6	0.322	5 655
Evander 8	4.0	0.349	1 404	10.1	0.332	3 361	15.8	0.344	5 424	29.9	0.340	10 189
Sub-total	**14.6**	**0.327**	**4 776**	**12.5**	**0.326**	**4 083**	**38.3**	**0.331**	**12 667**	**65.4**	**0.329**	**21 526**
Evander (below infrastructure)												
Evander South	–	–	–	23.2	0.159	3 696	37.3	0.116	4 326	60.5	0.133	8 022
Rolspruit	–	–	–	32.1	0.338	10 847	5.4	0.166	902	37.5	0.313	11 749
Poplar	–	–	–	17.2	0.298	5 123	–	–	–	17.2	0.298	5 123
Sub-total	**–**	**–**	**–**	**72.5**	**0.271**	**19 666**	**42.7**	**0.122**	**5 228**	**115.2**	**0.216**	**24 894**
Total	**14.6**	**0.327**	**4 776**	**85.0**	**0.279**	**23 749**	**81.0**	**0.221**	**17 895**	**180.6**	**0.257**	**46 420**
Total SA Underground	**145.5**	**0.226**	**32 887**	**245.5**	**0.248**	**60 908**	**666.4**	**0.151**	**100 785**	**1 057.4**	**0.184**	**194 580**
SA Surface												
Kalgold	38.1	0.027	1 037	72.7	0.028	2 002	31.3	0.028	871	142.1	0.028	3 910
Free State Surface												
Phoenix	144.1	0.008	1 148	–	–	–	5.9	0.008	44	150.0	0.008	1 192
St Helena	319.2	0.007	2 327	–	–	–	–	–	–	319.2	0.007	2 327
Other	465.0	0.006	2 984	156.5	0.010	1 500	215.1	0.007	1 444	836.6	0.007	5 928
Total	**928.3**	**0.007**	**6 459**	**156.5**	**0.010**	**1 500**	**221.0**	**0.007**	**1 488**	**1 305.8**	**0.007**	**9 447**
Total SA Surface	**966.4**	**0.008**	**7 496**	**229.2**	**0.015**	**3 502**	**252.3**	**0.009**	**2 359**	**1 447.9**	**0.009**	**13 357**
Total SA	**1 111.9**		**40 383**	**474.7**		**64 410**	**918.7**		**103 144**	**2 505.3**		**207 937**
Papua New Guinea [1]												
Hidden Valley and Kaveroi	3.1	0.063	195	25.5	0.055	1 409	16.3	0.045	730	44.9	0.052	2 334
Hamata	0.2	0.064	12	4.2	0.068	291	0.7	0.075	50	5.1	0.069	353
Wafi	–	–	–	35.1	0.057	2 017	21.8	0.050	1 099	56.9	0.055	3 116
Golpu	–	–	–	48.3	0.018	887	41.6	0.014	595	89.9	0.016	1 482
Nambonga	–	–	–	–	–	–	21.9	0.023	505	21.9	0.023	505
Total Papua New Guinea	**3.3**	**0.063**	**207**	**113.1**	**0.041**	**4 604**	**102.3**	**0.029**	**2 979**	**218.7**	**0.036**	**7 790**
GRAND TOTAL	**1 115.2**		**40 590**	**587.8**		**69 014**	**1 021.0**		**106 123**	**2 724.0**		**215 727**

Uranium – Mineral resources statement (Imperial)

	Measured			Indicated			Inferred			Total		
Operations	Tons (million)	Grade (lbs/ton)	U_3O_8 lbs (million)	Tons (million)	Grade (lbs/ton)	U_3O_8 lbs (million)	Tons (million)	Grade (lbs/ton)	U_3O_8 lbs (million)	Tons (million)	Grade (lbs/ton)	U_3O_8 lbs (million)
Free State surface												
Free State	395.5	0.182	72	40.3	0.195	8	75.4	0.140	11	511.2	0.177	91
Total SA Surface	**395.5**	**0.182**	**72**	**40.3**	**0.195**	**8**	**75.4**	**0.140**	**11**	**511.2**	**0.177**	**91**

Silver – Mineral resources statement (Imperial)

	Measured			Indicated			Inferred			Total		
Operations	Tons (million)	Grade (oz/ton)	Silver oz (000)	Tons (million)	Grade (oz/ton)	Silver oz (000)	Tons (million)	Grade (oz/ton)	Silver oz (000)	Tons (million)	Grade (oz/ton)	Silver oz (000)
Papua New Guinea[1]												
Hidden Valley and Kaveroi	3.1	1.182	3 668	25.5	0.990	25 246	16.3	0.799	13 054	44.9	0.934	41 968

Copper – Mineral resources statement (Imperial)

	Measured			Indicated			Inferred			Total		
Operations	Tons (million)	Grade (%)	Cu lbs (million)	Tons (million)	Grade (%)	Cu lbs (million)	Tons (million)	Grade (%)	Cu lbs (million)	Tons (million)	Grade (%)	Cu lbs (million)
Papua New Guinea[1]												
Golpu	–	–	–	48.3	1.261	1 343	41.6	0.653	599	89.9	0.980	1 942
Nambonga	–	–	–	–	–	–	21.9	0.191	92	21.9	0.191	92
Total	**–**	**–**	**–**	**48.3**	**1.261**	**1 343**	**63.5**	**0.493**	**691**	**111.8**	**0.825**	**2 034**

Molybdenum – Mineral resources statement (Imperial)

	Measured			Indicated			Inferred			Total		
Operations	Tons (million)	Grade (lbs/ton)	Mo lbs (million)	Tons (million)	Grade (lbs/ton)	Mo lbs (million)	Tons (million)	Grade (lbs/ton)	Mo lbs (million)	Tons (million)	Grade (lbs/ton)	Mo lbs (million)
Papua New Guinea[1]												
Golpu	–	–	–	48.3	0.220	11	41.6	0.314	13	89.9	0.263	24

[1] Represents Harmony's equity portion of 50%

Note: 1 ton = 907 kg = 2 000 lbs

Mineral resources and ore reserves cont.

2009

Gold – Ore reserves statement (Metric)

	Proven Reserves			Probable Reserves			Total Reserves		
SA Underground	Tonnes (million)	Grade (g/t)	Gold[1] (000kg)	Tonnes (million)	Grade (g/t)	Gold[1] (000kg)	Tonnes (million)	Grade (g/t)	Gold[1] (000kg)
Bambanani	3.5	8.48	30	1.2	10.90	13	4.7	9.09	43
Joel	0.9	5.74	5	2.2	5.52	13	3.1	5.58	18
Masimong	4.5	5.20	24	1.4	5.27	7	5.9	5.22	31
Phakisa									
Phakisa	0.3	5.38	1	20.1	8.12	163	20.4	8.08	164
Nyala	0.1	4.01	1	0.0	3.37	–	0.1	3.82	1
Total	**0.4**	**4.98**	**2**	**20.1**	**8.11**	**163**	**20.5**	**8.05**	**165**
Target	4.8	6.10	29	9.0	5.60	50	13.8	5.77	79
Tshepong	12.8	5.30	68	11.5	5.78	66	24.3	5.53	134
Virginia									
Harmony 2	0.9	3.56	3	0.1	3.28	–	1.0	3.53	3
Merriespruit 1	1.2	4.55	6	0.6	4.45	2	1.8	4.52	8
Merriespruit 3	0.9	3.69	3	0.2	2.80	1	1.1	3.54	4
Unisel	3.0	4.95	15	1.8	4.85	9	4.8	4.91	24
Brand 3	0.6	3.92	2	0.1	4.42	1	0.7	4.02	3
Total	**6.6**	**4.43**	**29**	**2.8**	**4.56**	**13**	**9.4**	**4.47**	**42**
Doornkop									
Doornkop Kimberley Reef	0.3	2.48	1	0.3	2.57	1	0.6	2.53	2
Doornkop South Reef	0.4	4.30	2	0.9	4.27	4	1.3	4.28	6
Total	**0.7**	**3.55**	**3**	**1.2**	**3.85**	**5**	**1.9**	**3.75**	**8**
Elandsrand	**11.5**	**6.50**	**74**	**26.2**	**6.11**	**160**	**37.7**	**6.23**	**234**
Evander									
Evander operations									
Evander 2/5	0.8	6.35	5	0.2	6.17	1	1.0	6.32	6
Evander 7	0.2	4.64	1	0.0	8.48	–	0.2	4.81	1
Evander 8	1.8	5.66	10	7.0	6.21	43	8.8	6.09	53
Sub-total	**2.8**	**5.79**	**16**	**7.2**	**6.21**	**44**	**10.0**	**6.09**	**60**
Evander (below infrastructure)									
Evander South	–	–	–	11.5	4.80	55	11.5	4.80	55
Rolspruit	–	–	–	24.4	8.71	213	24.4	8.71	213
Poplar	–	–	–	13.5	7.45	101	13.5	7.45	101
Sub-total	**–**	**–**	**–**	**49.4**	**7.45**	**369**	**49.4**	**7.45**	**369**
Total	**2.8**	**5.79**	**16**	**56.6**	**7.30**	**413**	**59.4**	**7.22**	**429**
Total SA Underground	**48.5**	**5.78**	**280**	**132.2**	**6.83**	**903**	**180.7**	**6.55**	**1 183**
SA Surface									
Kalgold	15.5	0.84	13	9.0	1.07	10	24.5	0.93	23
Free State Surface									
Phoenix	130.8	0.27	36	–	–	–	130.8	0.27	36
St Helena	289.6	0.25	72	–	–	–	289.6	0.25	72
Other	421.8	0.22	93	101.7	0.26	26	523.5	0.23	119
Total	**842.2**	**0.24**	**201**	**101.7**	**0.26**	**26**	**943.9**	**0.24**	**227**
Total SA Surface	**857.7**	**0.25**	**214**	**110.7**	**0.32**	**36**	**968.4**	**0.26**	**250**
Total SA	**906.2**		**494**	**242.9**		**939**	**1 149.1**		**1 433**
Papua New Guinea[2]									
Hidden Valley and Kaveroi	1.4	2.34	3	17.6	1.99	35	19.0	2.02	38
Hamata	0.1	2.05	–	1.9	2.69	5	2.0	2.66	5
Golpu	–	–	–	35.4	0.61	22	35.4	0.61	22
Total Papua New Guinea	**1.5**	**2.32**	**3**	**54.9**	**1.12**	**62**	**56.4**	**1.16**	65
GRAND TOTAL	**907.7**		**497**	**297.8**		**1 001**	**1 205.5**		**1 498**

Silver – Ore reserves statement (Metric)

	Proven Reserves			Probable Reserves			Total Reserves		
Operations	Tonnes (million)	Grade (g/t)	Silver[1] (000kg)	Tonnes (million)	Grade (g/t)	Silver[1] (000kg)	Tonnes (million)	Grade (g/t)	Silver[1] (000Kg)
Papua New Guinea[2]									
Hidden Valley and Kaveroi	1.4	39.00	55	17.6	36.70	646	19.0	36.87	701

Copper – Ore reserves statement (Metric)

	Proven Reserves			Probable Reserves			Total Reserves		
Operations	Tonnes (million)	Grade (%)	Cu kg[1] (million)	Tonnes (million)	Grade (%)	Cu kg[1] (million)	Tonnes (million)	Grade (%)	Cu kg[1] (million)
Papua New Guinea[2]									
Golpu	–	–	–	35.4	1.13	400	35.4	1.13	400

Molybdenum – Ore reserves statement (Metric)

	Proven Reserves			Probable Reserves			Total Reserves		
Operations	Tonnes (million)	Grade (ppm)	Mo kg[1] (million)	Tonnes (million)	Grade (ppm)	Mo kg[1] (million)	Tonnes (million)	Grade (ppm)	Mo kg[1] (million)
Papua New Guinea[2]									
Golpu	–	–	–	35.4	121.00	4	35.4	121.00	4

1. Metal figures are fully inclusive of all mining dilutions and gold losses, and are reported as mill delivered tonnes and head grades. Metallurgical recovery factors have not been applied to the reserve figures.
2. Represents Harmony's equity portion of 50%

Note: 1 tonne = 1 000 kg = 2 204 lbs

Mineral resources and ore reserves cont.

2009

Gold – Ore reserves statement (Imperial)

	Proven Reserves			Probable Reserves			Total Reserves		
SA Underground	Tons (million)	Grade (oz/t)	Gold[1] (000oz)	Tons (million)	Grade (oz/t)	Gold[1] (000oz)	Tons (million)	Grade (oz/t)	Gold[1] (000oz)
Bambanani	3.9	0.247	965	1.3	0.318	420	5.2	0.265	1 385
Joel	1.0	0.168	161	2.5	0.161	404	3.5	0.163	565
Masimong	4.9	0.152	751	1.5	0.154	233	6.4	0.152	984
Phakisa									
Phakisa	0.3	0.158	43	22.1	0.237	5 234	22.4	0.236	5 277
Nyala	0.1	0.114	13	0.1	0.101	5	0.2	0.110	18
Total	**0.4**	**0.145**	**56**	**22.2**	**0.236**	**5 239**	**22.6**	**0.235**	**5 295**
Target	5.3	0.178	942	9.9	0.163	1 617	15.2	0.168	2 559
Tshepong	14.1	0.154	2 184	12.6	0.169	2 130	26.7	0.161	4 314
Virginia									
Harmony 2	1.0	0.104	103	0.1	0.091	9	1.1	0.103	112
Merriespruit 1	1.4	0.133	183	0.7	0.130	86	2.1	0.132	269
Merriespruit 3	1.0	0.107	102	0.2	0.080	16	1.2	0.103	118
Unisel	3.3	0.144	482	1.9	0.142	276	5.2	0.143	758
Brand 3	0.6	0.114	70	0.2	0.131	20	0.8	0.117	90
Total	**7.3**	**0.129**	**940**	**3.1**	**0.133**	**407**	**10.4**	**0.130**	**1 347**
Doornkop									
Doornkop Kimberley Reef	0.3	0.072	20	0.3	0.076	25	0.6	0.074	45
Doornkop South Reef	0.4	0.126	50	1.0	0.125	128	1.4	0.125	178
Total	**0.7**	**0.104**	**70**	**1.3**	**0.113**	**153**	**2.0**	**0.110**	**223**
Elandsrand	**12.6**	**0.190**	**2 395**	**28.9**	**0.178**	**5 146**	**41.5**	**0.182**	**7 541**
Evander									
Evander operations									
Evander 2/5	0.9	0.185	163	0.2	0.179	38	1.1	0.184	201
Evander 7	0.2	0.133	27	0.0	0.203	2	0.2	0.137	29
Evander 8	2.0	0.165	332	7.7	0.181	1 394	9.7	0.178	1 726
Sub-total	**3.1**	**0.169**	**522**	**7.9**	**0.181**	**1 434**	**11.0**	**0.177**	**1 956**
Evander (below infrastructure)									
Evander South	–	–	–	12.7	0.140	1 773	12.7	0.140	1 773
Rolspruit	–	–	–	26.9	0.254	6 842	26.9	0.254	6 842
Poplar	–	–	–	14.9	0.217	3 234	14.9	0.217	3 234
Sub-total	**–**	**–**	**–**	**54.5**	**0.217**	**11 849**	**54.5**	**0.217**	**11 849**
Total	**3.1**	**0.169**	**522**	**62.4**	**0.213**	**13 283**	**65.5**	**0.211**	**13 805**
Total SA Underground	**53.3**	**0.169**	**8 986**	**145.7**	**0.199**	**29 032**	**199.0**	**0.191**	**38 018**
SA Surface									
Kalgold	17.3	0.025	425	9.8	0.031	307	27.1	0.027	732
Free State Surface									
Phoenix	144.1	0.008	1 148	–	–	–	144.1	0.008	1 148
St Helena	319.2	0.007	2 326	–	–	–	319.2	0.007	2 326
Other	465.0	0.006	2 985	112.2	0.008	845	577.2	0.007	3 830
Total	**928.3**	**0.007**	**6 459**	**112.2**	**0.008**	**845**	**1 040.5**	**0.007**	**7 304**
Total SA Surface	**945.6**	**0.007**	**6 884**	**122.0**	**0.009**	**1 152**	**1 067.6**	**0.008**	**8 036**
Total SA	**998.9**		**15 870**	**267.7**		**30 184**	**1 266.6**		**46 054**
Papua New Guinea [2]									
Hidden Valley and Kaveroi	1.5	0.068	105	19.4	0.058	1 126	20.9	0.059	1 231
Hamata	0.2	0.064	7	2.1	0.078	164	2.3	0.078	171
Golpu	–	–	–	39.0	0.018	694	39.0	0.018	694
Total Papua New Guinea	**1.7**	**0.068**	**112**	**60.5**	**0.033**	**1 984**	**62.2**	**0.034**	**2 096**
GRAND TOTAL	**1 000.6**		**15 982**	**328.2**		**32 168**	**1 328.8**		**48 150**

Silver – Ore reserves statement (Imperial)

	Proven Reserves			Probable Reserves			Total Reserves		
Operations	Tons (million)	Grade (oz/t)	Silver oz[1] (million)	Tons (million)	Grade (oz/t)	Silver oz[1] (million)	Tons (million)	Grade (oz/t)	Silver oz[1] (million)
Papua New Guinea[2]									
Hidden Valley and Kaveroi	1.5	1.137	1 755	19.4	1.070	20 767	20.9	1.075	22 522

Copper – Ore reserves statement (Imperial)

	Proven Reserves			Probable Reserves			Total Reserves		
Operations	Tons (million)	Grade (%)	Cu lbs[1] (million)	Tons (million)	Grade (%)	Cu lbs[1] (million)	Tons (million)	Grade (%)	Cu lbs[1] (million)
Papua New Guinea[2]									
Golpu	–	–	–	39.0	1.025	882	39.0	1.025	882

Molybdenum – Ore reserves statement (Imperial)

	Proven Reserves			Probable Reserves			Total Reserves		
Operations	Tons (million)	Grade (lbs/t)	Mo lbs[1] (million)	Tons (million)	Grade (lbs/t)	Mo lbs[1] (million)	Tons (million)	Grade (lbs/t)	Mo lbs[1] (million)
Papua New Guinea[2]									
Golpu	–	–	–	39.0	0.231	9	39.0	0.231	9

1. Metal figures are fully inclusive of all mining dilutions and gold losses, and are reported as mill delivered tonnes and head grades. Metallurgical recovery factors have not been applied to the reserve figures.

2. Represents Harmony's equity portion of 50%

Note: 1 ton = 907 kg = 2 000 lbs

Mineral resources and ore reserves cont.

2009

South Africa – Mineral resources and ore reserves

3

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

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.

2009

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

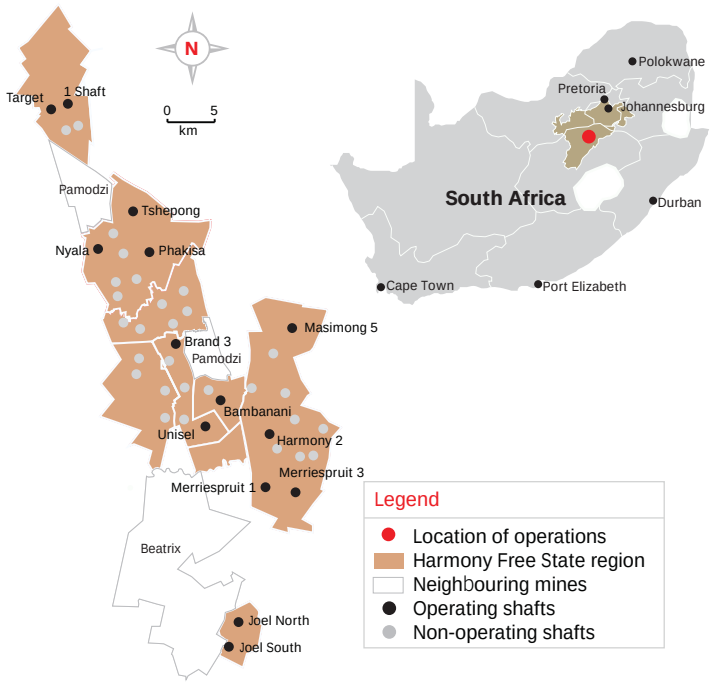
Operations	MCF (%)	SW (cm)	MW (cm)	PRF (%)
Bambanani	78	200	218	96
Joel	93	150	198	96
Masimong	67	130	154	95
Phakisa	81	100	129	95
Nyala	87	150	191	94
Tshepong	65	105	142	97
Harmony 2	69	154	178	95
Merriespruit 1	75	162	205	95
Merriespruit 3	67	218	246	95
Unisel	80	175	193	95
Brand 3	94	193	229	96

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.

2009

Free State – Gold ore reserves

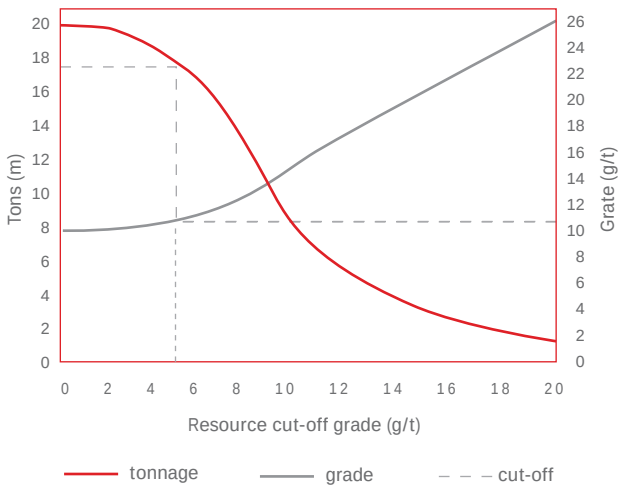
	Proven				Probable				Total			
Operations	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)	Tonnes (Mt)	g/t	Gold (000kg)	Gold (000oz)
Underground												
Bambanani	3.5	8.48	30	965	1.2	10.90	13	420	4.7	9.09	43	1 385
Joel	0.9	5.74	5	161	2.2	5.52	13	404	3.1	5.58	18	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.

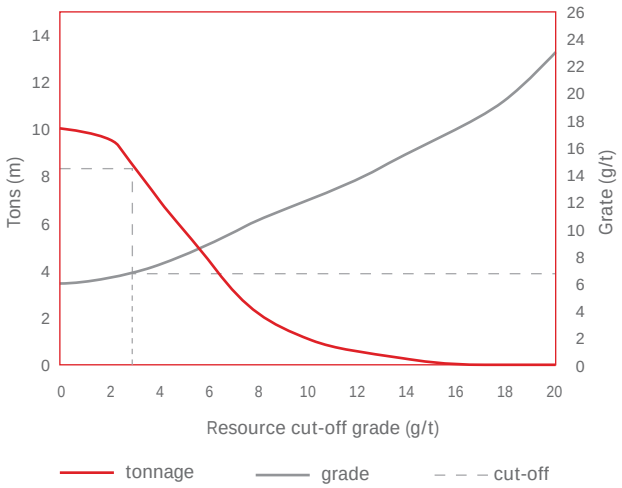
Free State – Uranium mineral resources

	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**

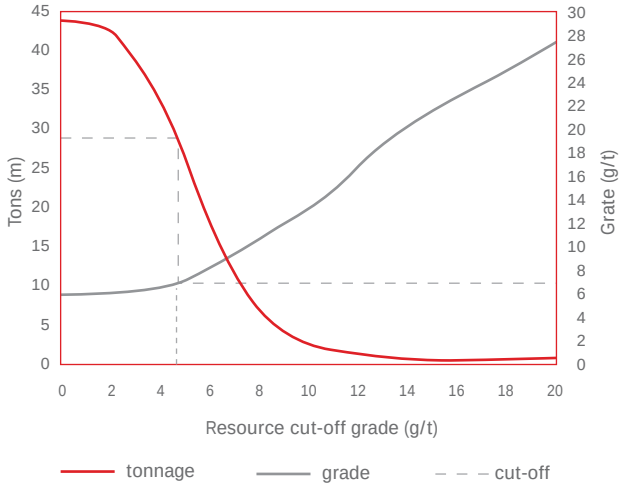
Bambanani: grade tonnage curve
(measured and indicated resources)



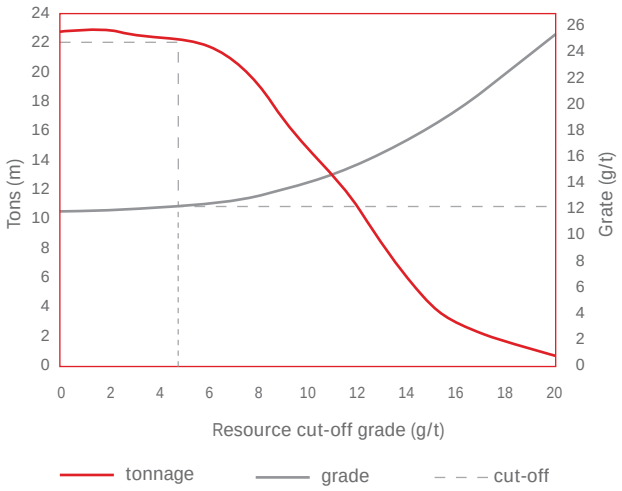
Joel: grade tonnage curve
(measured and indicated resources)



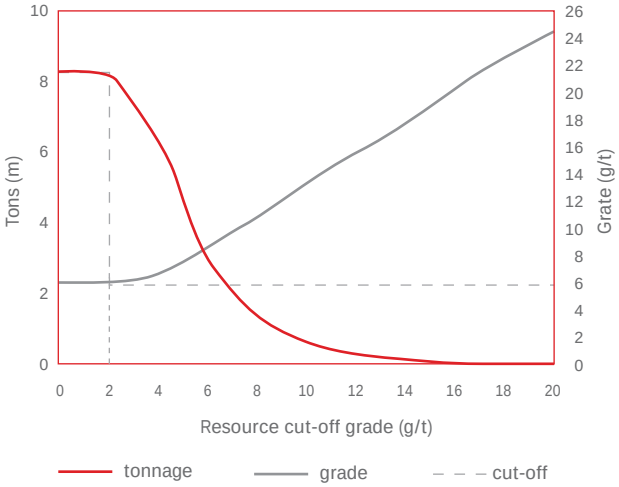
Masimong: grade tonnage curve
(measured and indicated resources)



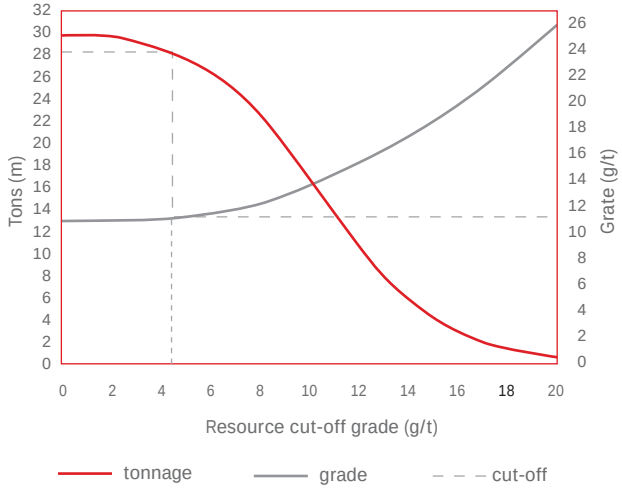
Phakisa: grade tonnage curve
(measured and indicated resources)



Nyala: grade tonnage curve
(measured and indicated resources)



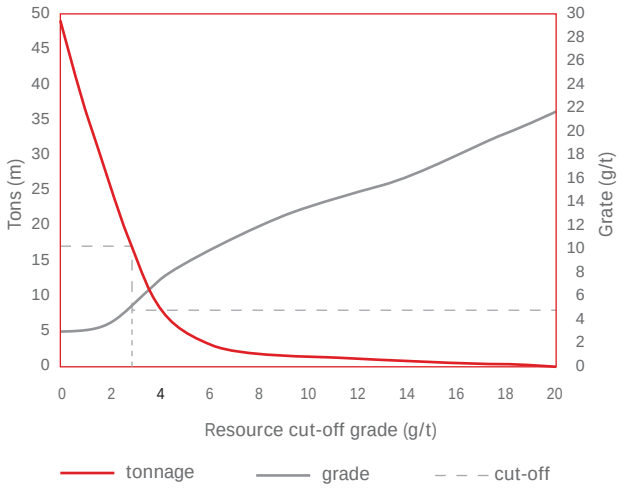
Tshepong: grade tonnage curve
(measured and indicated resources)



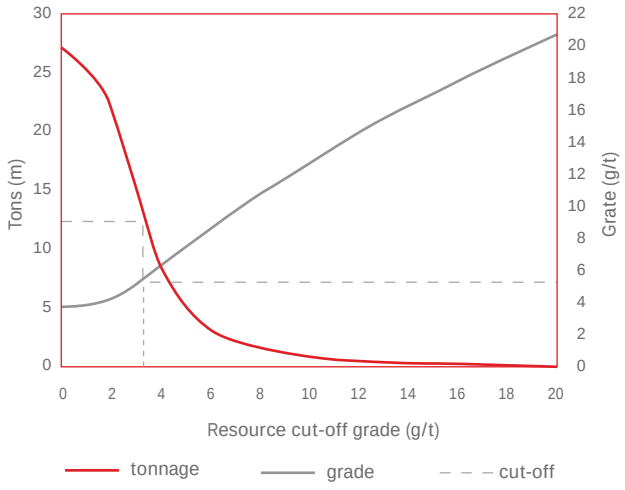
Mineral resources and ore reserves cont.

2009

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

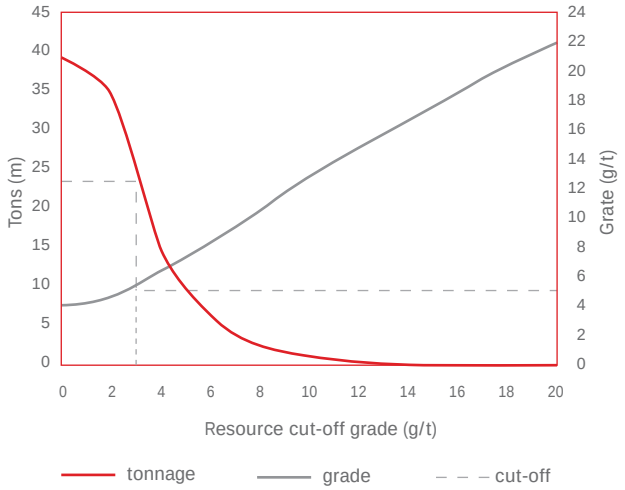


Merriespruit 1: grade tonnage curve
(measured and indicated resources)

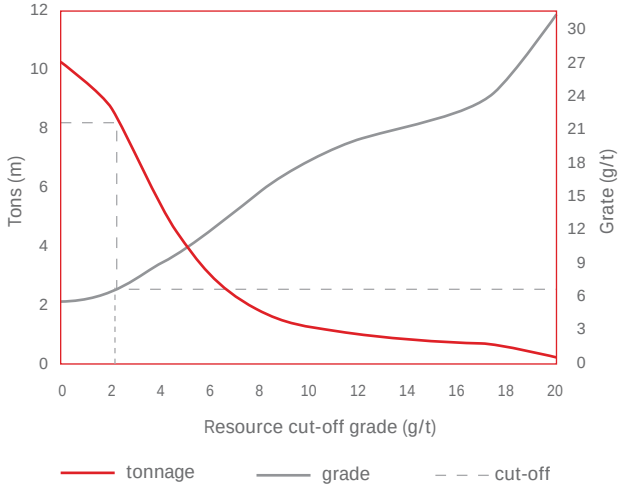


Merriespruit 3: grade tonnage curve
(measured and indicated resources)

Unisel: grade tonnage curve
(measured and indicated resources)

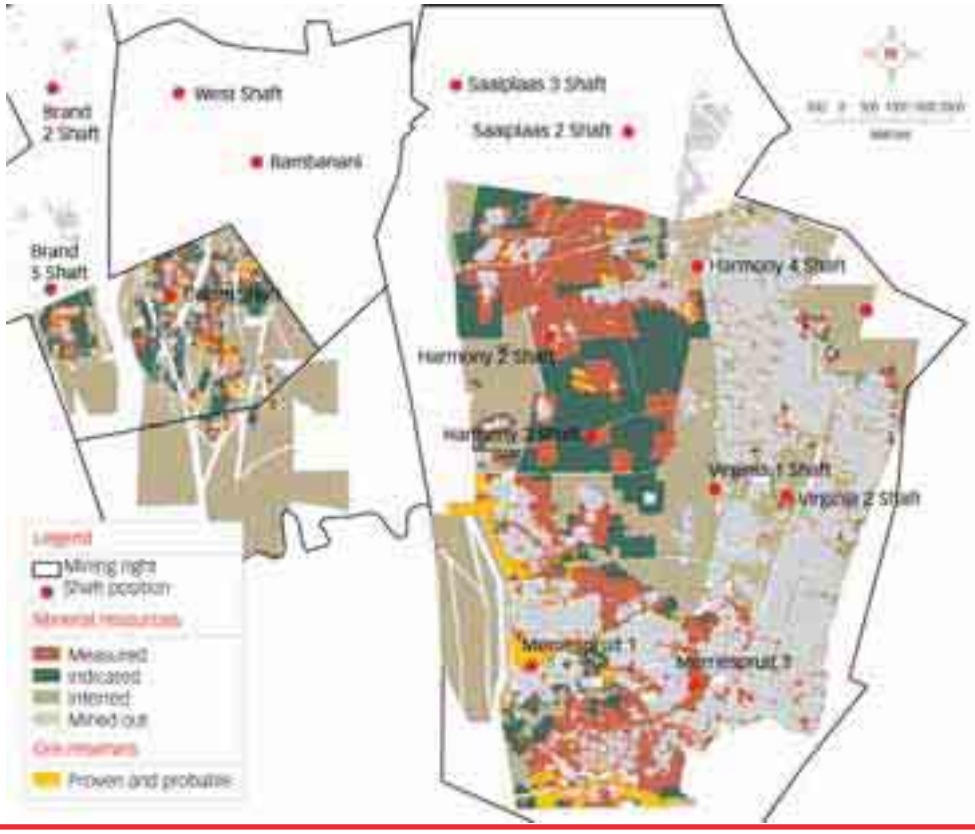


Brand 3: grade tonnage curve
(measured and indicated resources)



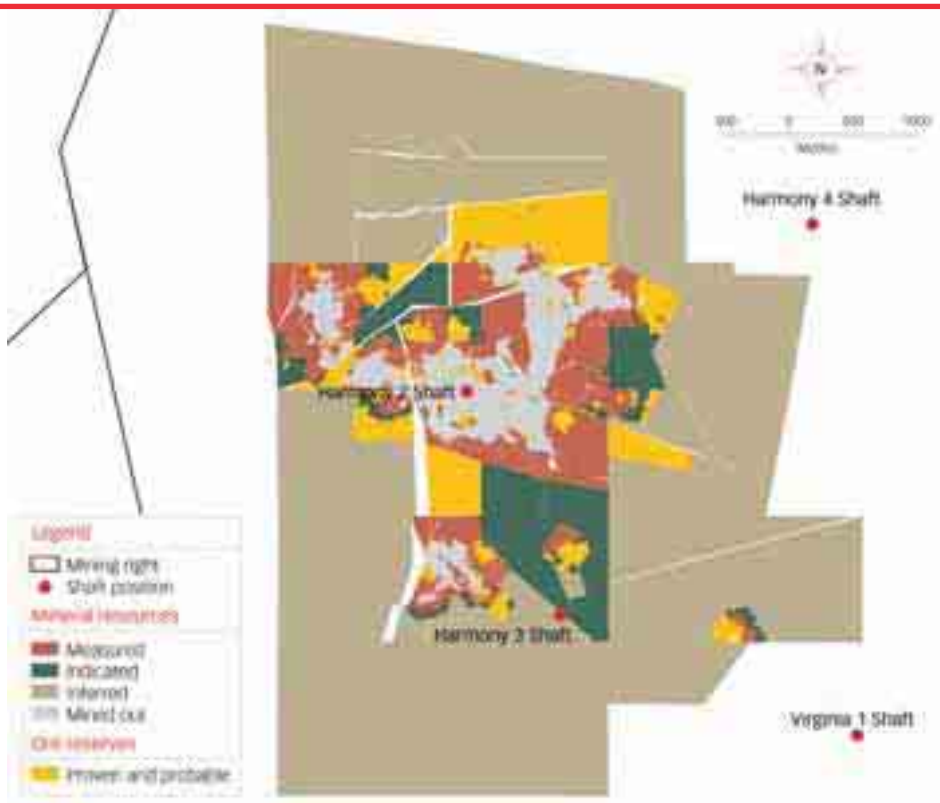
Virginia operations: Harmony 2, Merriespruit 1, Merriespruit 3 and Unisel shafts

Leader Reef



Virginia operations: Harmony 2 shaft

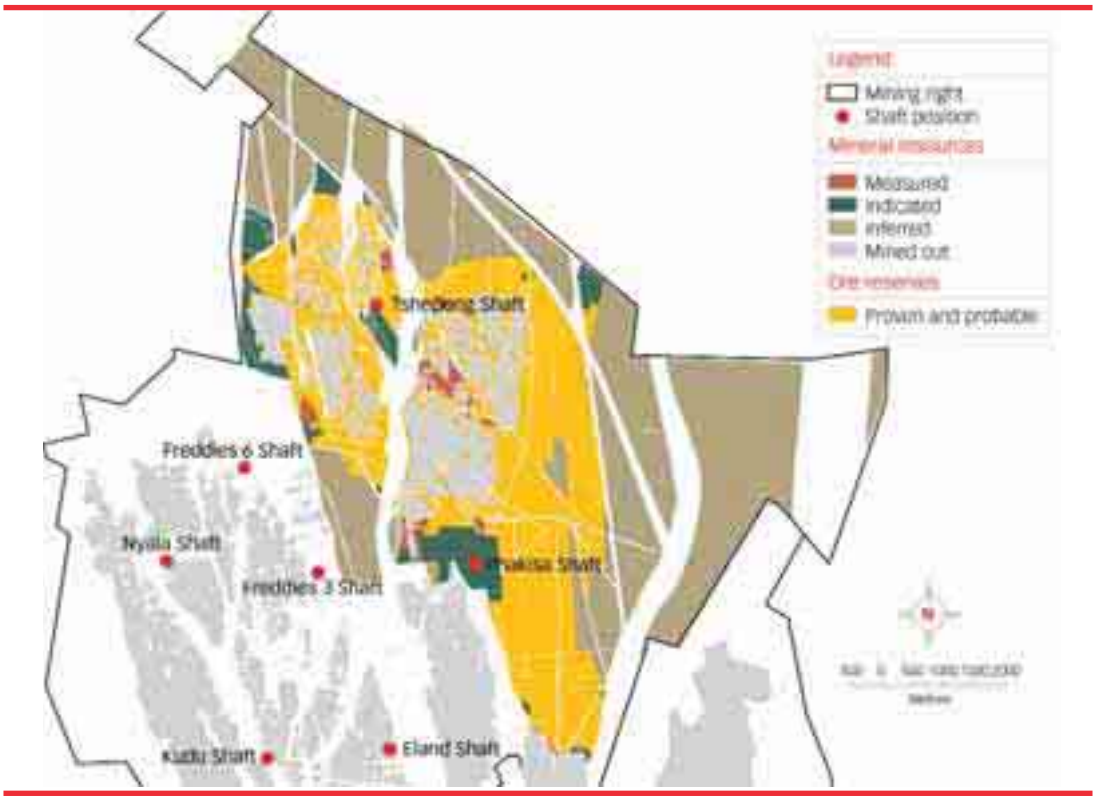
A Reef



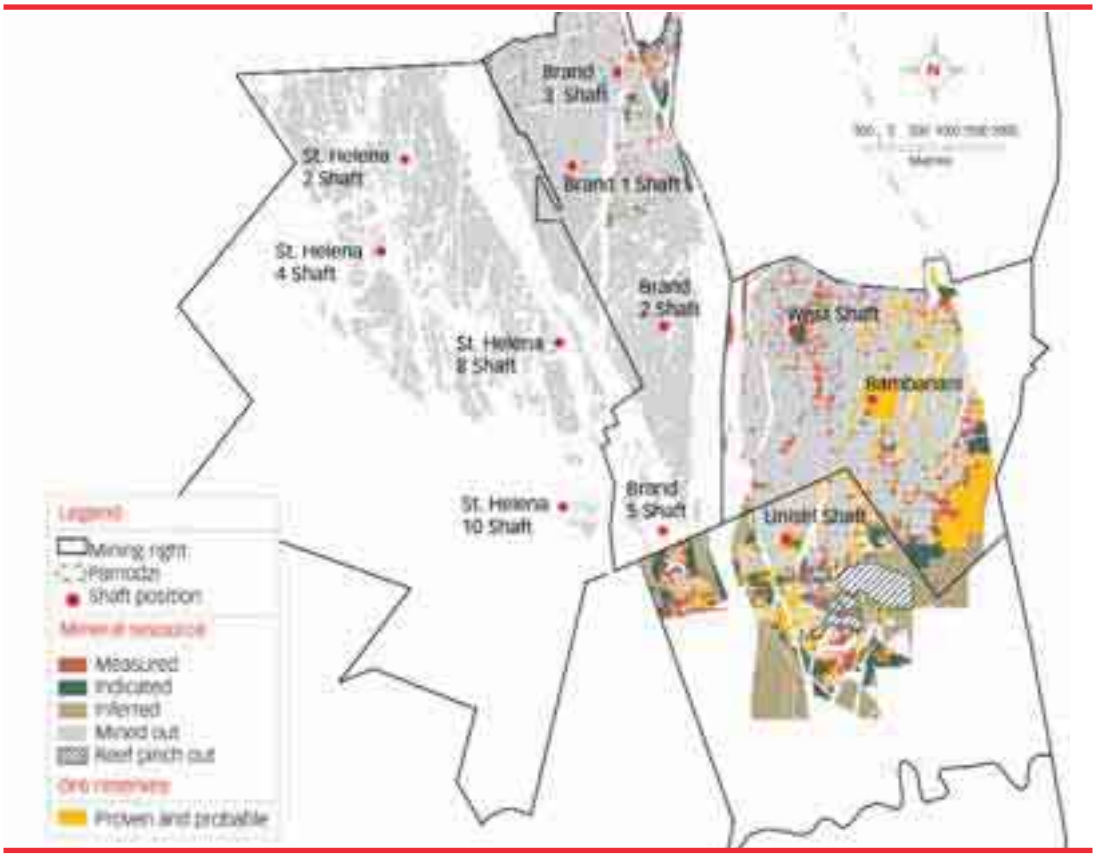
Mineral resources and ore reserves cont.

2009

Tshepong shaft, Phakisa shaft
Basal Reef

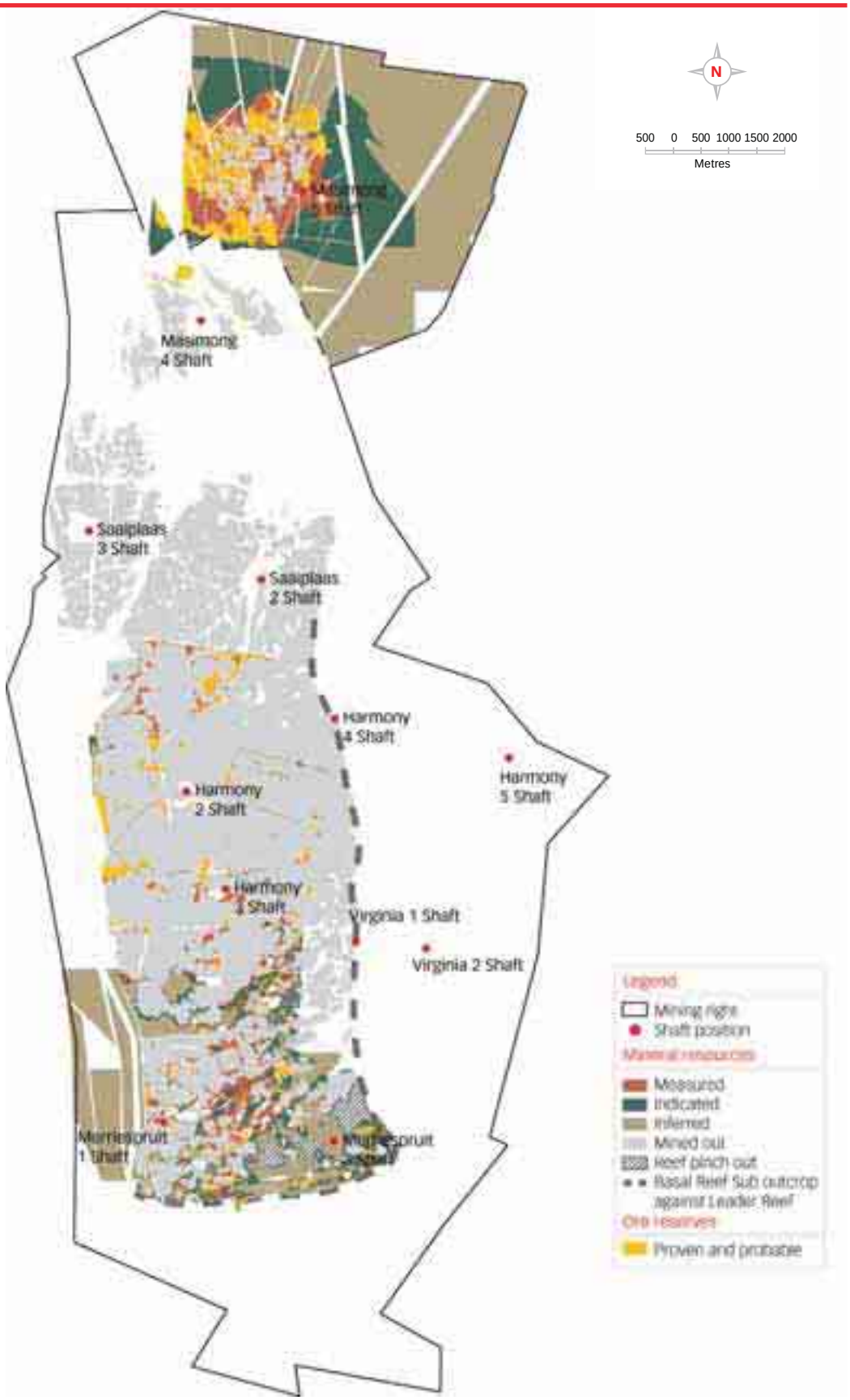


Brand 1 and 3 shafts, Bambanani and Unisel shafts
Basal Reef



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

Basal Reef

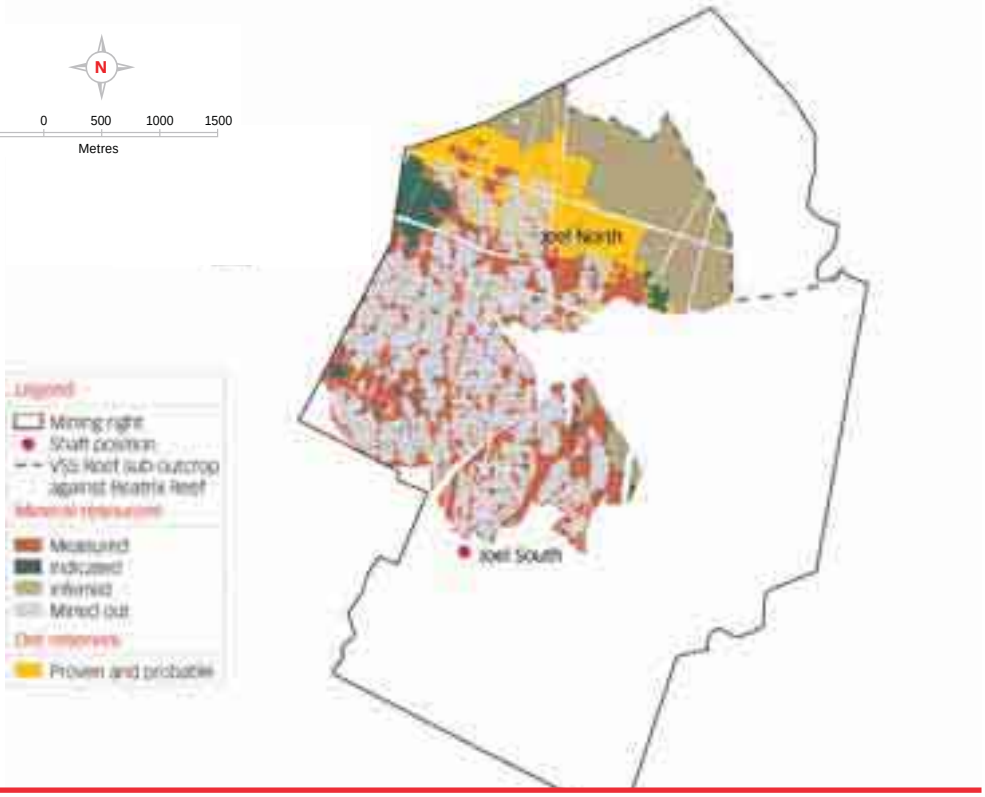


Mineral resources and ore reserves cont.

2009

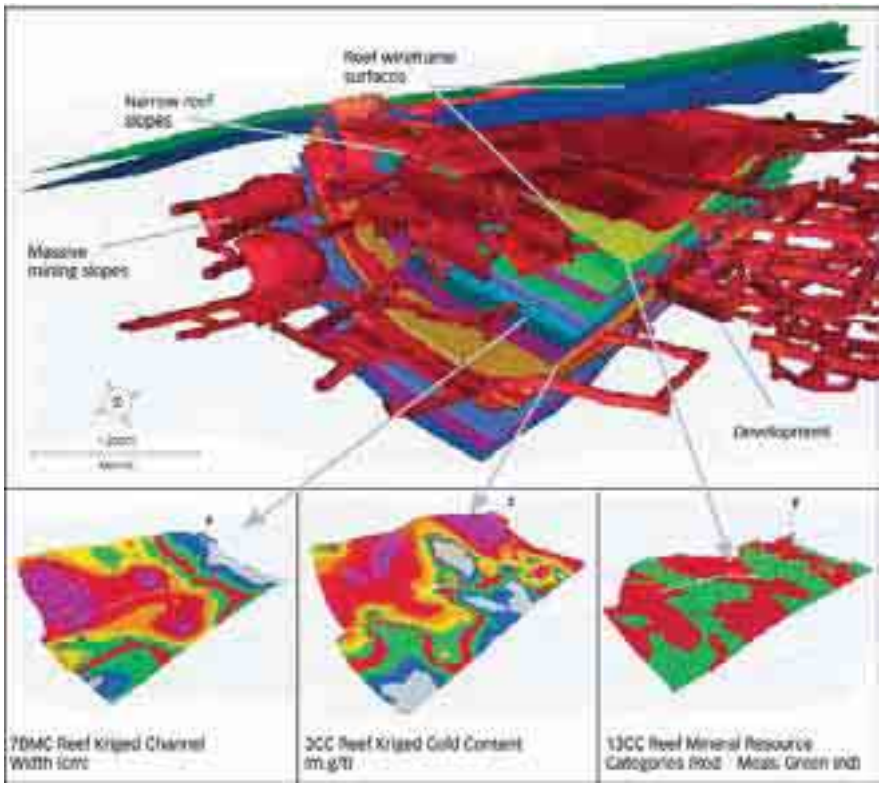
Joel

Beatrix Reef



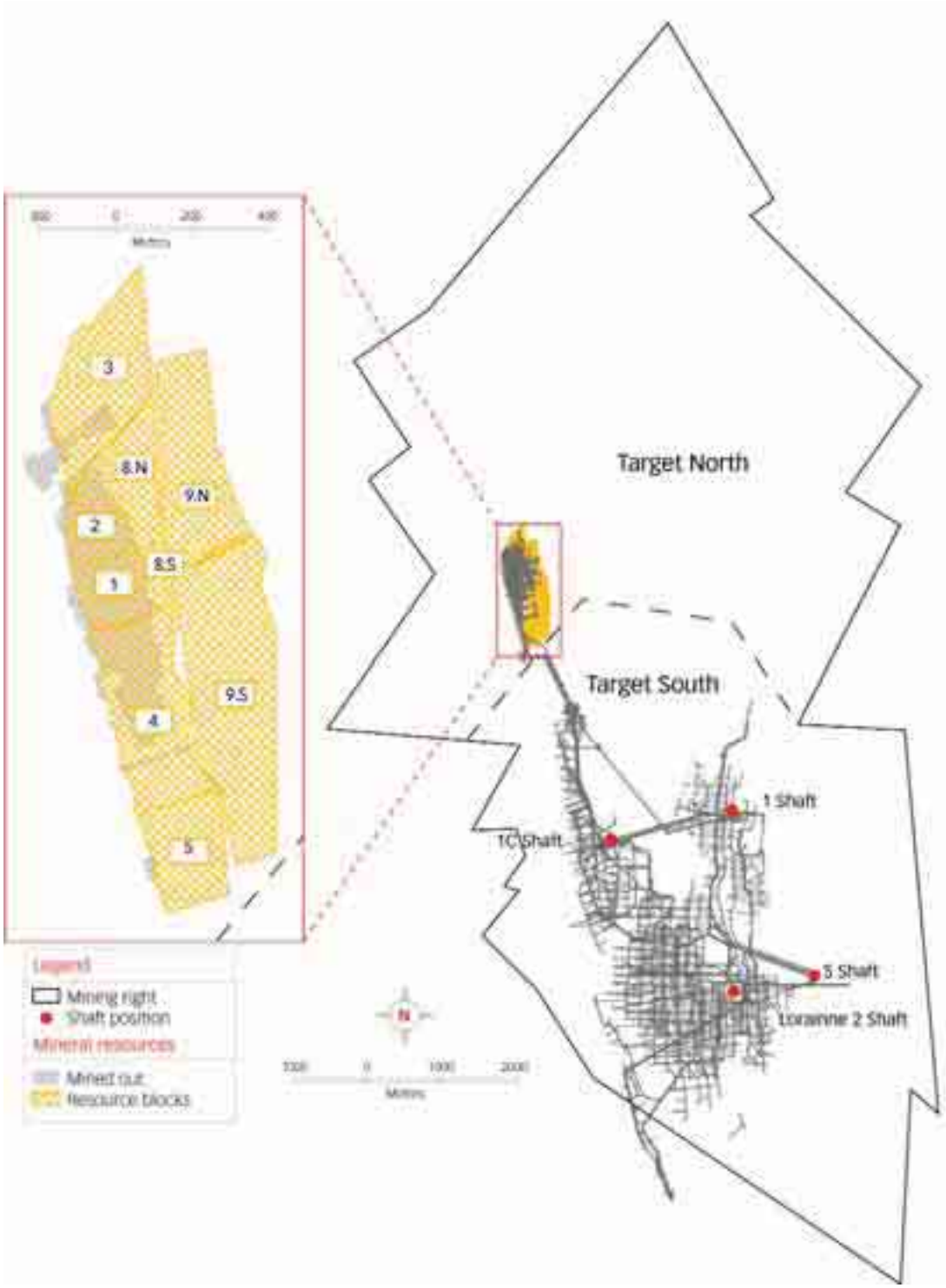
Target mine

Elsburg and Dreyerskuil Reefs



Target mine resource blocks

Elsburg and Dreyerskuil Reefs



Mineral resources and ore reserves cont.

2009

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**

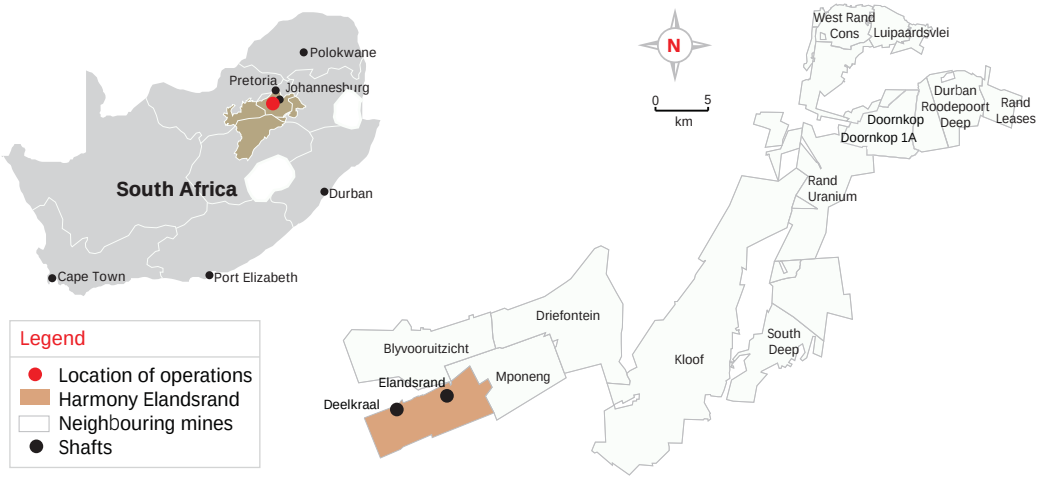
Modifying factors

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

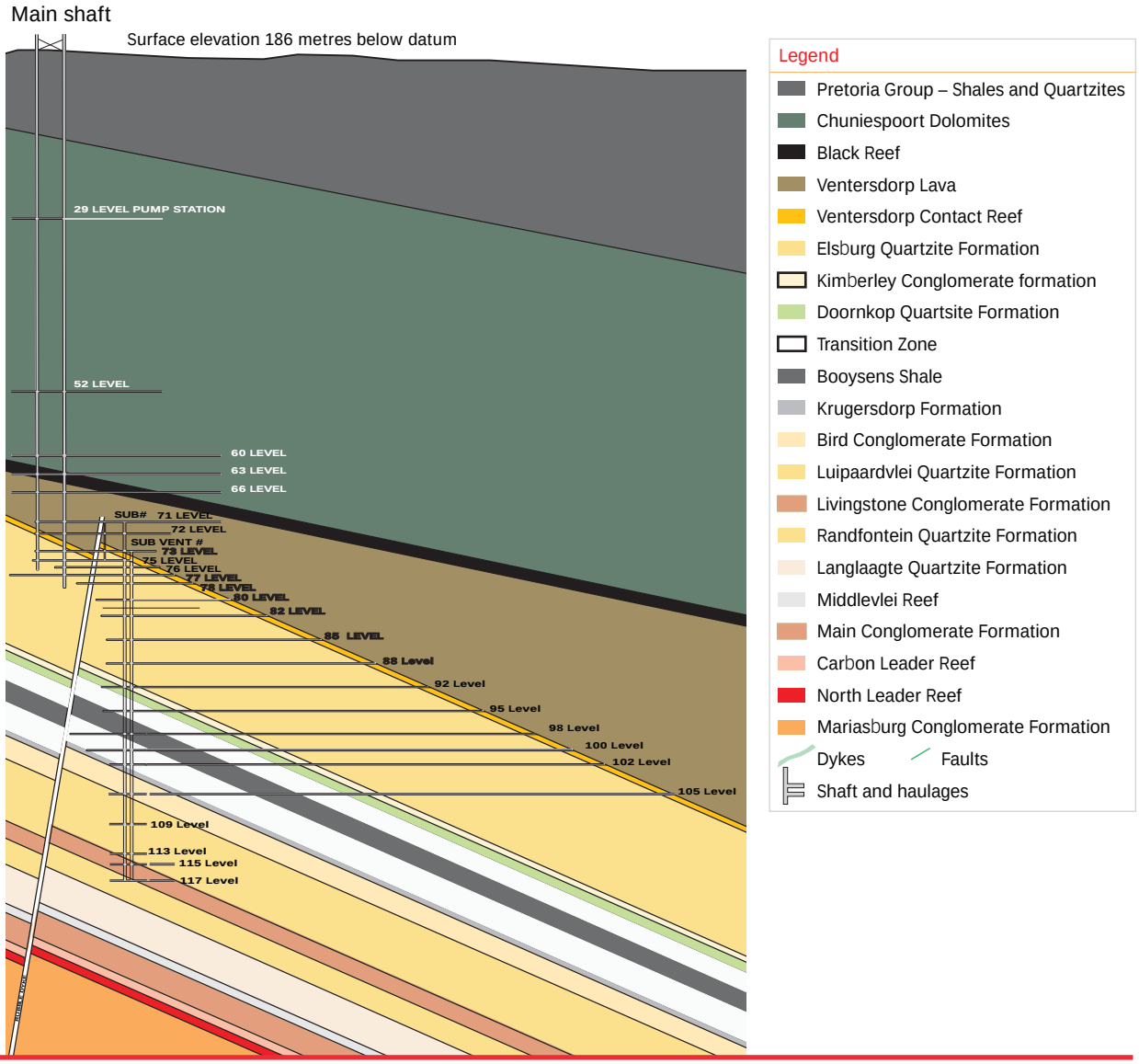
Ore reserves

	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**

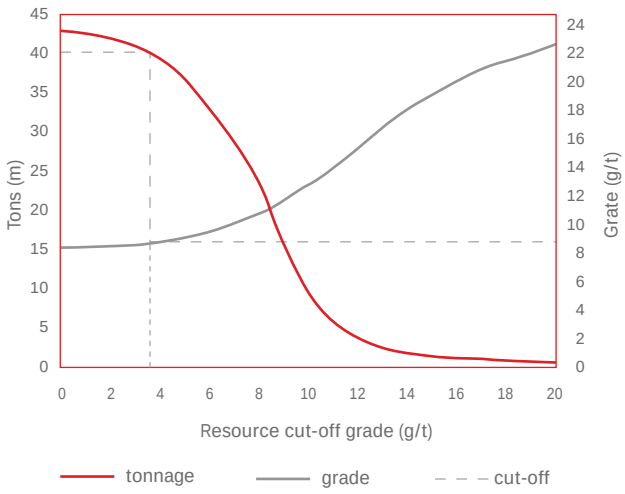


Elandsrand – Section through main shaft and sub-shaft looking east

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

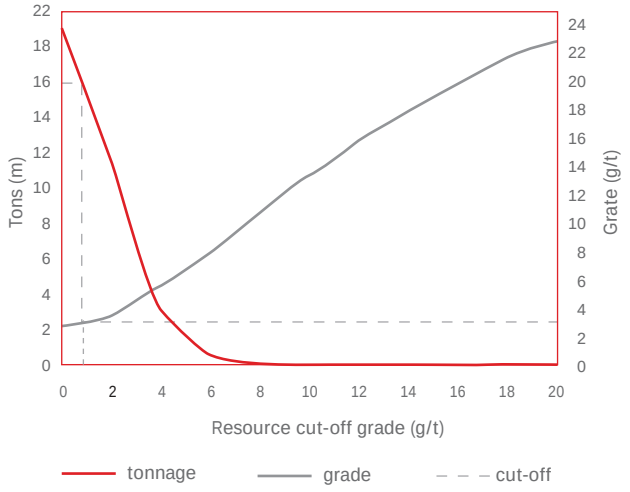
Ore reserves

	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**

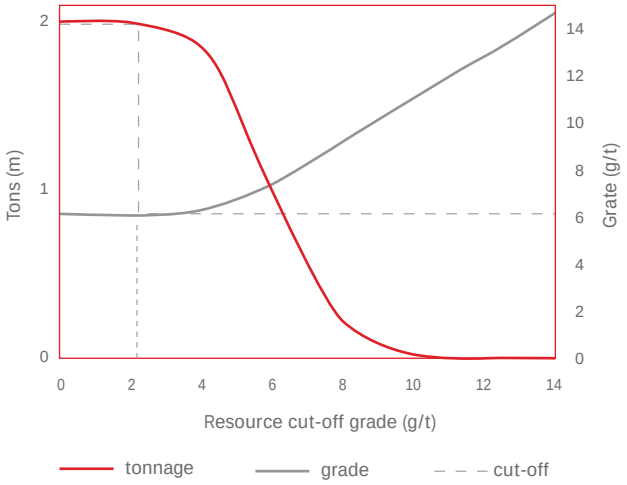
Mineral resources and ore reserves cont.

2009

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

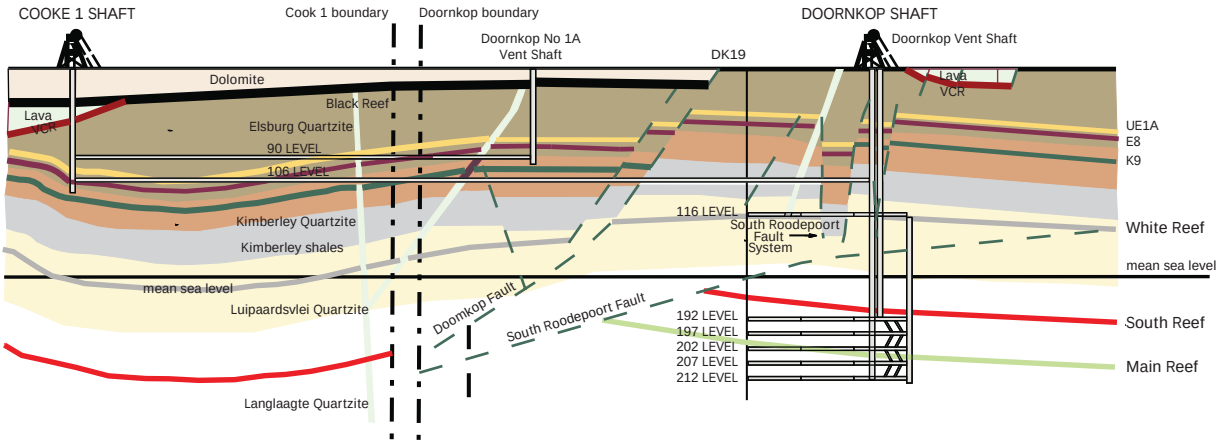


Doornkop South Reef: grade tonnage curve (measured and indicated resources)

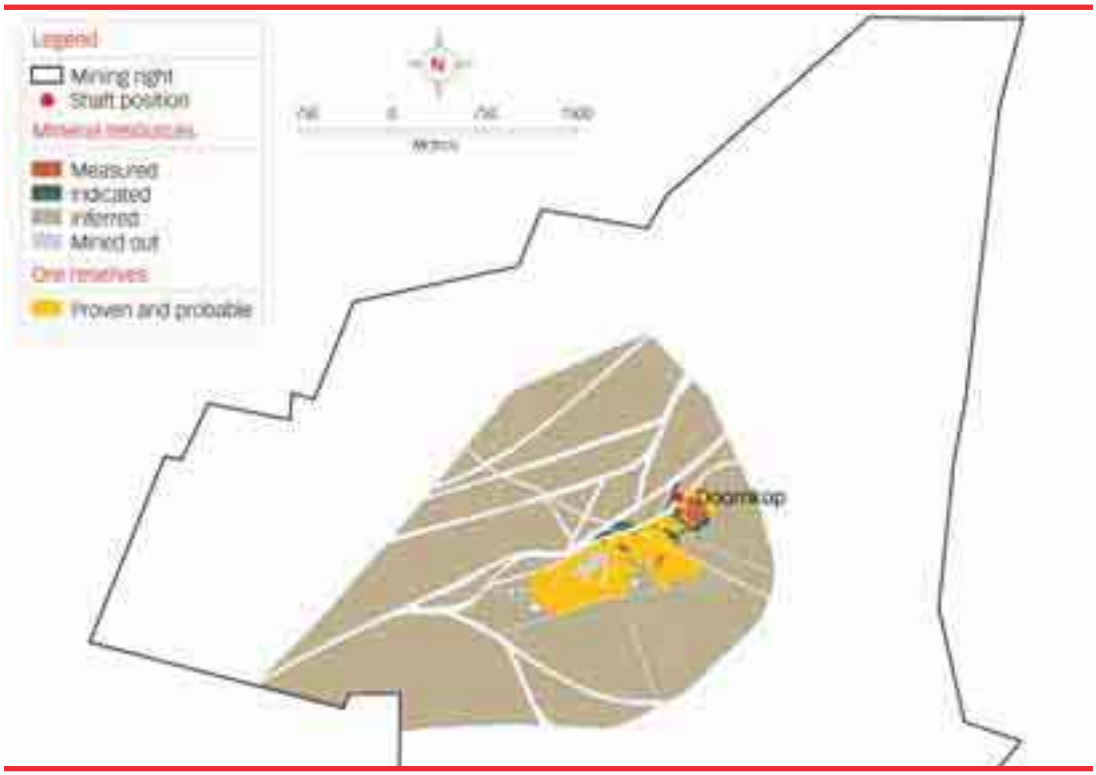


Cooke 1/Doornkop geological section looking west

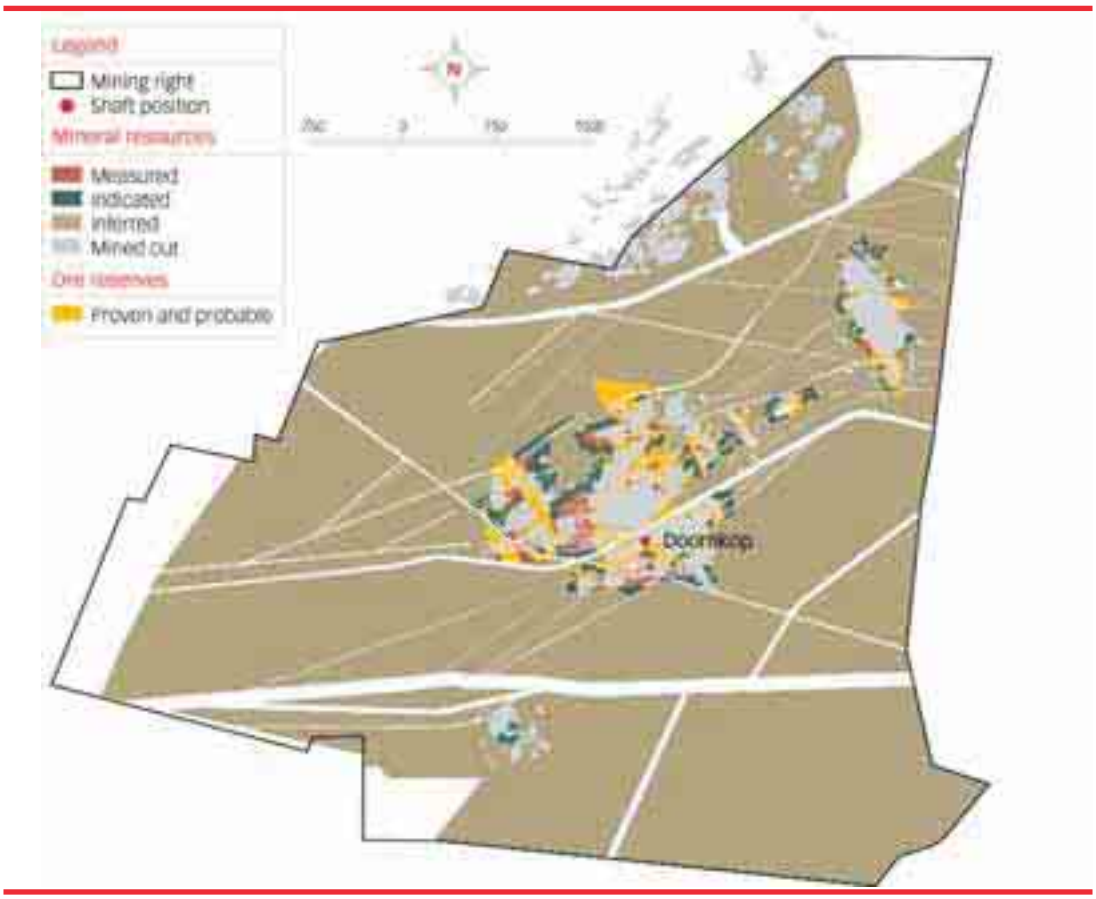
Not to scale



Doornkop shaft
South Reef



Doornkop shaft
Kimberley Reef



Mineral resources and ore reserves cont.

2009

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

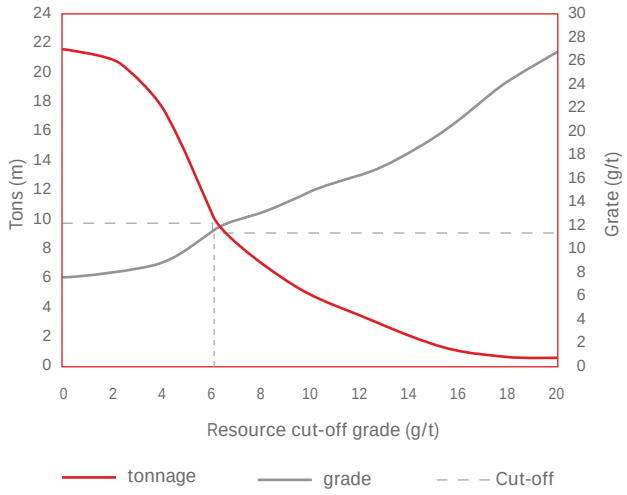
MCF = Mine call factor MW = Milling width SW = Stoping width

PRF = Plant recovery factor

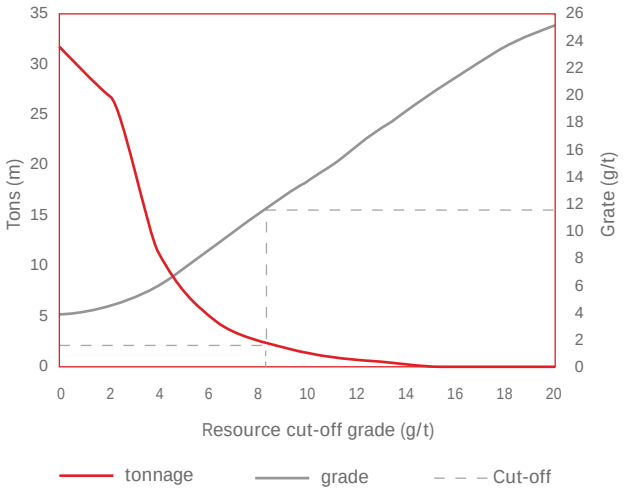
Ore reserves

	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**

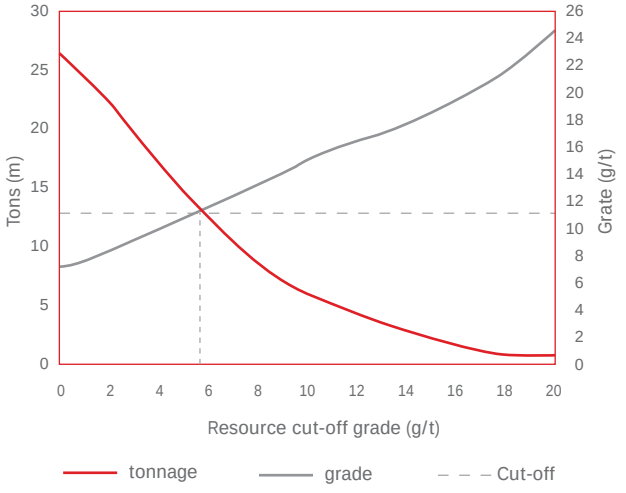
Evander 2 and 5: grade tonnage curve
(measured and indicated resources)



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



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

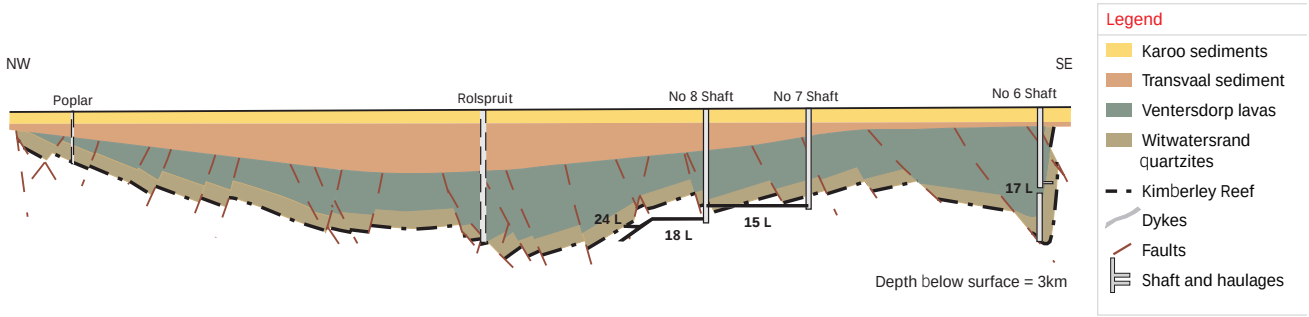


Mineral resources and ore reserves cont.

2009

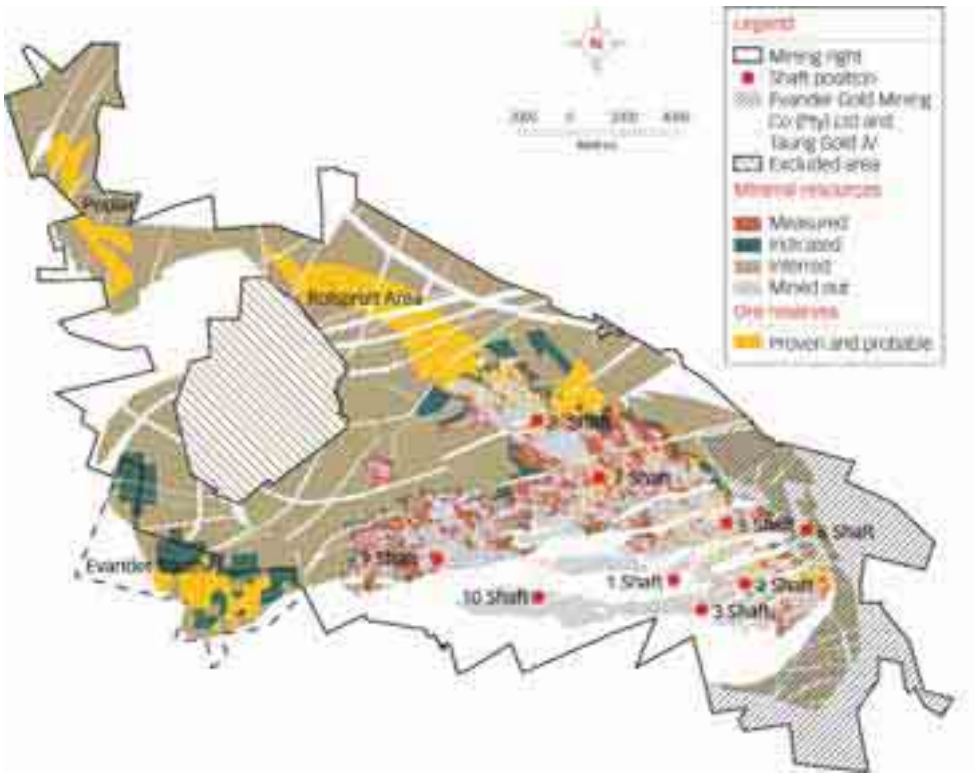
Section across Evander Basin

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**

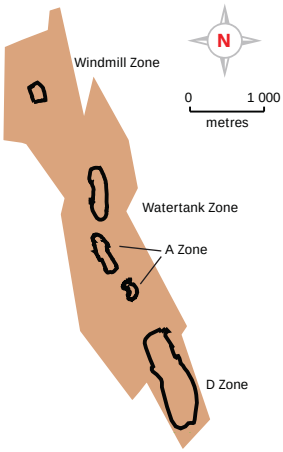
Modifying factors

	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**



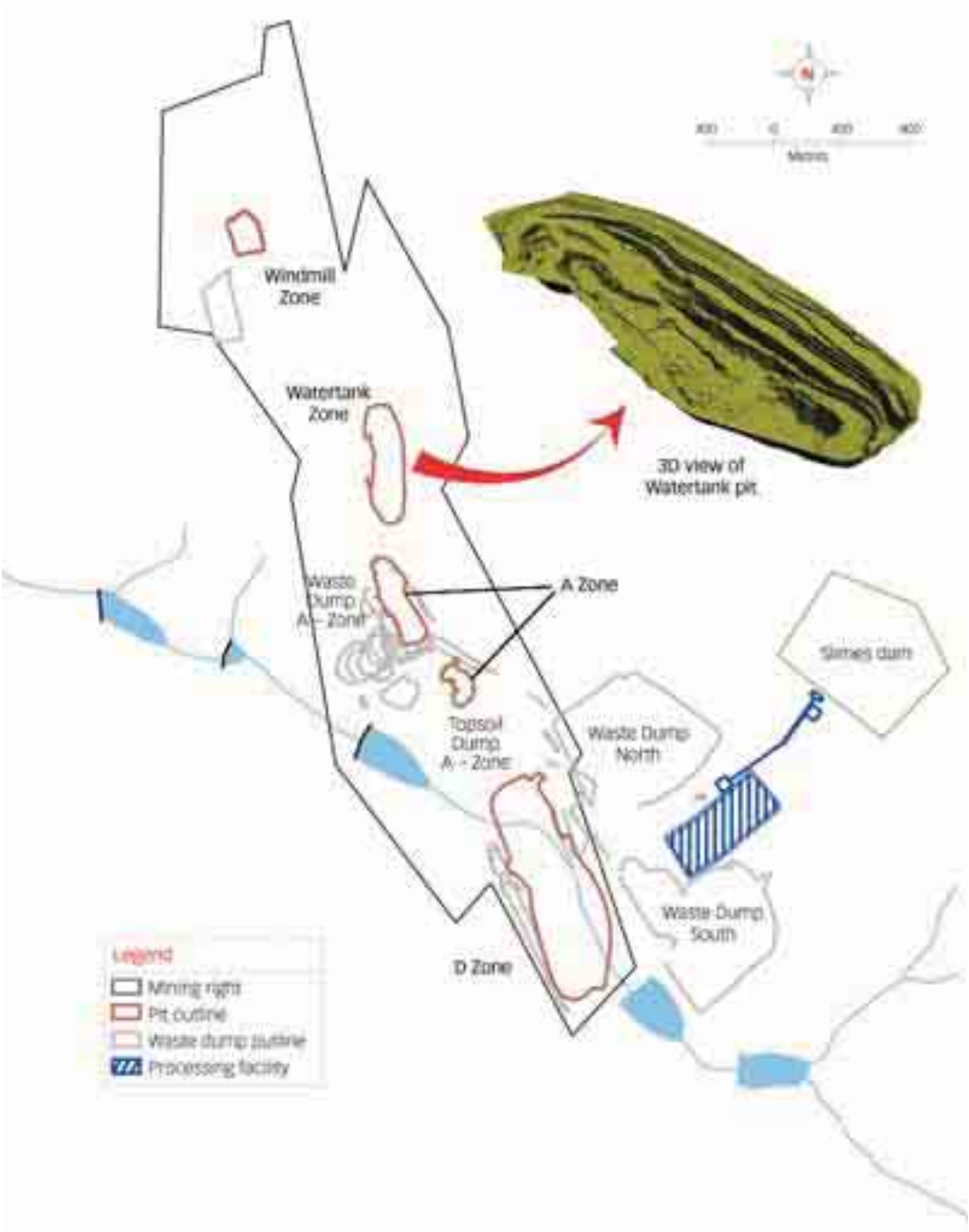
Legend
- Kalgold operation
- Kalgold pit outlines
- Location of operations

Mineral resources and ore reserves cont.

2009

Kalgold mining operations

Kimberley Reef



Papua New Guinea – Mineral resources and ore reserves

Geology: Papua New Guinea (PNG) lies at the northern end of the Australian Plate and has three major components: a continental cratonic platform, an arc of volcanic islands and a central collisional fold belt, consisting of Mesozoic sediments, ophiolite sequences, tertiary sediments and diorite intrusions. During collision, the Wau Graben, the host of major gold and silver deposits, was formed in the fold belt. It coincided with a phase of volcanic activity, resulting in precious and base metals deposits being formed. These include epithermal gold deposits at Hidden Valley, Hamata, Kerimenge and Wafi and porphyry-style copper deposits such as Golpu. Numerous other gold and copper-gold prospects, which are at various stages of exploration and evaluation, occur on Harmony's lease areas.

Note: The mineral resources and ore reserves detailed in the following tables represent Harmony's 50% equity portion of the Morobe Mining Joint Ventures.

Gold – Mineral resources

Gold	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)
Hidden Valley & Kaveroi	2.8	2.16	6	195	23.1	1.89	44	1 409	14.8	1.53	23	730	40.7	1.78	73	2 334
Hamata	0.2	2.20	–	12	3.9	2.34	9	291	0.6	2.58	2	50	4.7	2.37	11	353
Wafi	–	–	–	–	31.9	1.97	63	2 017	19.8	1.73	34	1 099	51.7	1.88	97	3 116
Golpu	–	–	–	–	43.8	0.63	28	887	37.7	0.49	18	595	81.5	0.57	46	1 482
Nambonga	–	–	–	–	–	–	–	–	19.9	0.79	16	505	19.9	0.79	16	505
GRAND TOTAL	**3.0**	**2.16**	**6**	**207**	**102.7**	**1.40**	**144**	**4 604**	**92.8**	**1.00**	**93**	**2 979**	**198.5**	**1.22**	**243**	**7 790**

Modifying factors

Operations	MCF (%)	PRF (%)
Hidden Valley & Kaveroi	95	93
Hamata	95	93
Golpu	100	56

MCF = Mine call factor PRF = Plant recovery factor

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)
Hidden Valley & Kaveroi	1.4	2.34	3	105	17.6	1.99	35	1 126	19.0	2.02	38	1 231
Hamata	0.1	2.05	0	7	1.9	2.69	5	164	2.0	2.66	5	171
Golpu	–	–	–	–	35.4	0.61	22	694	35.4	0.61	22	694
GRAND TOTAL	**1.5**	**2.32**	**3**	**112**	**54.9**	**1.12**	**62**	**1 984**	**56.4**	**1.16**	**65**	**2 096**

Silver – Mineral resources

Silver	Measured				Indicated				Inferred				Total			
Operations	Tonnes (Mt)	g/t	Silver (000kg)	Silver (000oz)	Tonnes (Mt)	g/t	Silver (000kg)	Silver (000oz)	Tonnes (Mt)	g/t	Silver (000kg)	Silver (000oz)	Tonnes (Mt)	g/t	Silver (000kg)	Silver (000oz)
Hidden Valley & Kaveroi	2.8	40.52	114	3 668	23.1	33.95	785	25 246	14.8	27.38	406	13 054	40.7	32.01	1 305	41 968
GRAND TOTAL	**2.8**	**40.52**	**114**	**3 668**	**23.1**	**33.95**	**785**	**25 246**	**14.8**	**27.38**	**406**	**13 054**	**40.7**	**32.01**	**1 305**	**41 968**

Modifying factors

Operations	MCF (%)	PRF (%)
Hidden Valley & Kaveroi	95	81

MCF = Mine call factor PRF = Plant recovery factor

Mineral resources and ore reserves cont.

2009

Silver – Ore reserves

	Proven				Probable				Total			
Operations	Tonnes (Mt)	g/t	Silver (000kg)	Silver (000oz)	Tonnes (Mt)	g/t	Silver (000kg)	Silver (000oz)	Tonnes (Mt)	g/t	Silver (000kg)	Silver (000oz)
Hidden Valley & Kaveroi	1.4	39.00	55	1 755	17.6	36.70	646	20 767	19.0	36.87	701	22 522
Grand Total	**1.4**	**39.00**	**55**	**1 755**	**17.6**	**36.70**	**646**	**20 767**	**19.0**	**36.87**	**701**	**22 522**

Copper – Mineral resources

	Measured				Indicated				Inferred				Total			
Operations	Tonnes (Mt)	%	Cu (M kg)	Cu (M lbs)	Tonnes (Mt)	%	Cu (M kg)	Cu (M lbs)	Tonnes (Mt)	%	Cu (M kg)	Cu (M lbs)	Tonnes (Mt)	%	Cu (M kg)	Cu (M lbs)
Golpu	–	–	–	–	43.8	1.39	609	1 343	37.7	0.72	272	599	81.5	1.08	881	1 942
Nambonga	–	–	–	–	–	–	–	–	19.9	0.21	42	92	19.9	0.21	42	92
Grand Total	**–**	**–**	**–**	**–**	**43.8**	**1.39**	**609**	**1 343**	**57.6**	**0.54**	**314**	**691**	**101.4**	**0.91**	**923**	**2 034**

Modifying factors

Operations	MCF (%)	PRF (%)
Golpu	100	88

MCF = Mine call factor PRF = Plant recovery factor

Copper – Ore reserves

	Proven				Probable				Total			
Operations	Tonnes (Mt)	%	Cu (M kg)	Cu (M lbs)	Tonnes (Mt)	%	Cu (M kg)	Cu (M lbs)	Tonnes (Mt)	%	Cu (M kg)	Cu (M lbs)
Golpu	–	–	–	–	35.4	1.13	400	882	35.4	1.13	400	882
Grand Total	**–**	**–**	**–**	**–**	**35.4**	**1.13**	**400**	**882**	**35.4**	**1.13**	**400**	**882**

Molybdenum – Mineral resources

	Measured				Indicated				Inferred				Total			
Operations	Tonnes (Mt)	ppm	Mo (M kg)	Mo (M lbs)	Tonnes (Mt)	ppm	Mo (M kg)	Mo (M lbs)	Tonnes (Mt)	ppm	Mo (M kg)	Mo (M lbs)	Tonnes (Mt)	ppm	Mo (M kg)	Mo (M lbs)
Golpu	–	–	–	–	43.8	110.00	5	11	37.7	157.00	6	13	81.5	131.75	11	24
Grand Total	**–**	**–**	**–**	**–**	**43.8**	**110.00**	**5**	**11**	**37.7**	**157.00**	**6**	**13**	**81.5**	**131.75**	**11**	**24**

Modifying factors

Operations	MCF (%)	PRF (%)
Golpu	100	36

MCF = Mine call factor PRF = Plant recovery factor

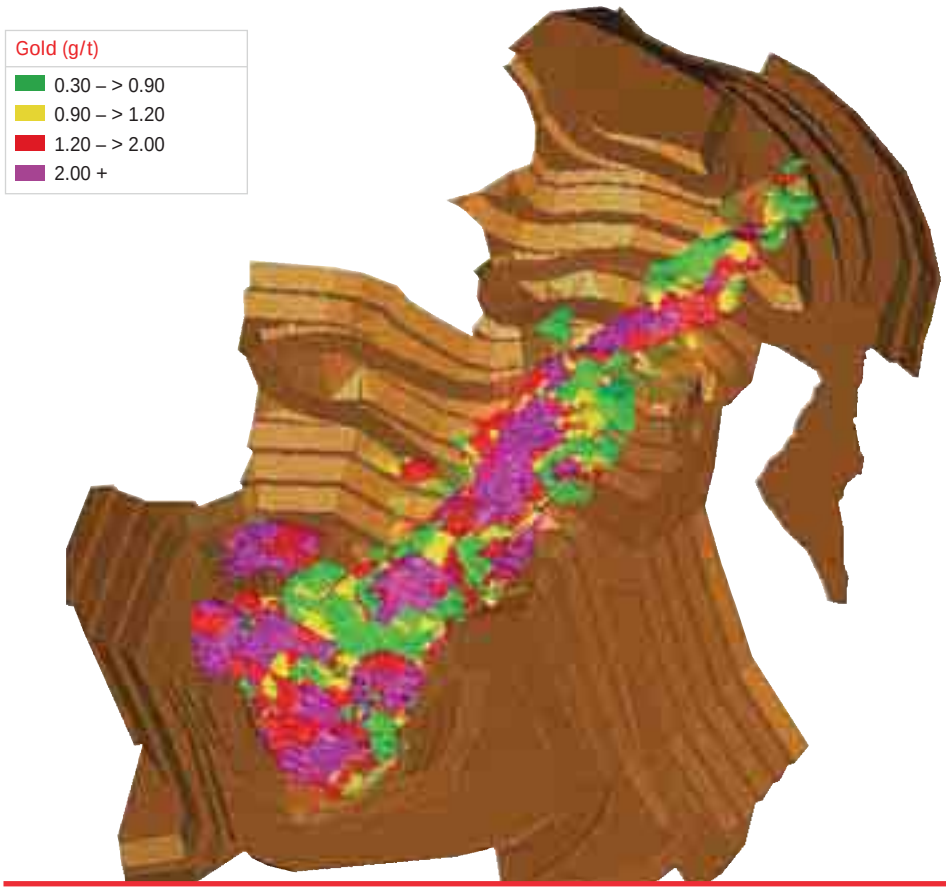
Molybdenum – Ore reserves

	Proven				Probable				Total			
Operations	Tonnes (Mt)	ppm	Mo (M kg)	Mo (M lbs)	Tonnes (Mt)	ppm	Mo (M kg)	Mo (M lbs)	Tonnes (Mt)	ppm	Mo (M kg)	Mo (M lbs)
Golpu	–	–	–	–	35.4	121.00	4	9	35.4	121.00	4	9
Grand Total	**–**	**–**	**–**	**–**	**35.4**	**121.00**	**4**	**9**	**35.4**	**121.00**	**4**	**9**

Mineral resources and ore reserves cont.

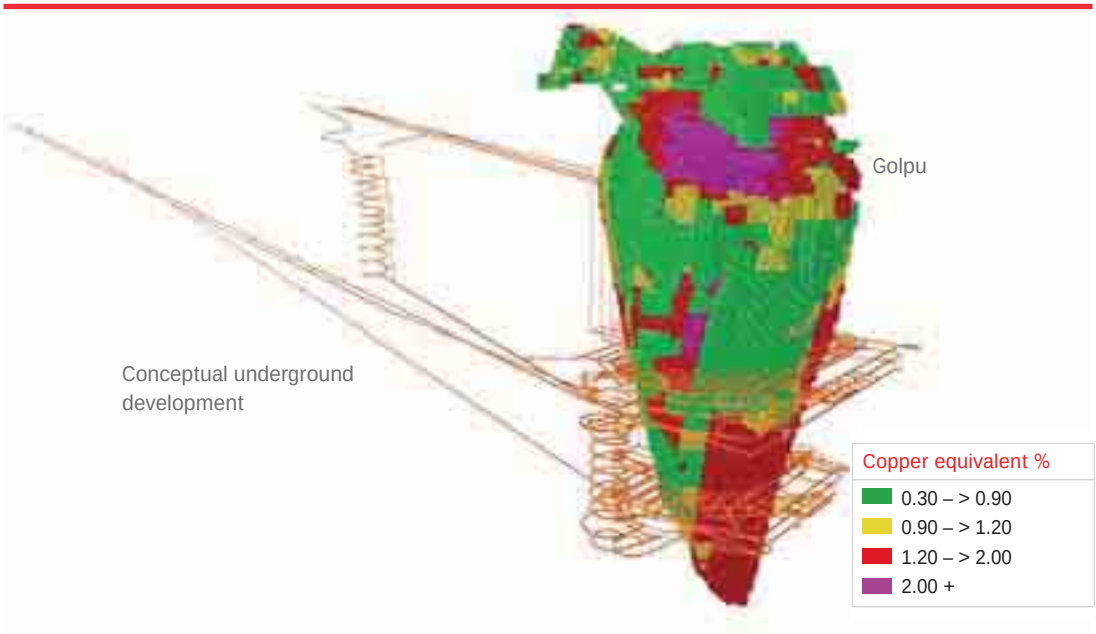
2009

Hamata open pit
Hidden Valley



Wafi-Golpu project

Golpu block cave, Wafi Project



Mineral resources and ore reserves cont.

2009

Appendix

Reporting Code

Harmony uses the South African Code for the Reporting of Exploration Results, mineral resources and ore reserves (SAMREC Code), which sets out the internationally recognised procedures and standards for reporting of mineral resources and ore reserves in South Africa. This code was developed by the South African Institute of Mining and Metallurgy and is the recommended guideline for reserve and resource reporting for companies listed on the JSE Limited. Harmony's reporting of its Australian and PNG mineral resources and ore reserves also complies with the Australian Code for the Reporting of mineral resources and ore reserves (JORC code) of the Australian Institute of Mining and Metallurgy. This code is materially the same as the SAMREC code. In reporting reserves, distinct cognisance has also been taken of Industry Guide 7 of the United States Securities Exchange Commission. Harmony uses the term 'ore reserves,' which has the same meaning as 'mineral reserves', as defined in the SAMREC code.

Definitions as per the SAMREC code

Mineral resources

A mineral resource is a concentration (or occurrence) of material of economic interest in or on the earth's crust in such form, quality and quantity that there are reasonable and realistic prospects for eventual economic extraction. The location, quantity, grade, continuity and other geological characteristics of a mineral resource are known, estimated from specific geological evidence and knowledge, or are interpreted from a well constrained and portrayed geological model.

Mineral resources are sub-divided in order of increasing confidence in respect of geoscientific evidence into inferred, indicated and measured categories. An **inferred mineral resource** is that part of a mineral resource for which tonnage, grade and mineral content can be estimated with a low level of confidence. It is inferred from geological evidence and sampling, and assumed but not verified geologically and/or through analysis of grade continuity. It is based on information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that may be limited or of uncertain quality and reliability.

An **indicated mineral resource** is that part of a mineral resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a reasonable level of confidence. It is based on exploration, sampling and the testing of information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are too widely or inappropriately spaced to confirm geological and/or grade continuity but are spaced closely enough for continuity to be assumed.

A **measured mineral resource** is that part of a mineral resource for which tonnage, densities, shape, physical characteristics, grade and mineral content can be estimated with a high level of confidence. It is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes. The locations are spaced closely enough to confirm geological and grade continuity.

Ore reserves

An ore reserve is the economically mineable material derived from a measured and/or indicated mineral resource. It includes diluting and contaminating materials and allows for losses that are expected to occur when the material is mined. Appropriate assessments to a minimum of a pre-feasibility study for a project, or a life of mine plan for an operation, must have been carried out, including consideration of, and modification by, realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors (the modifying factors). Such modifying factors must be disclosed.

A **probable ore reserve** is the economically mineable material derived from a measured and/or indicated mineral resource. It is estimated with a lower level of confidence than a proved ore reserve. It includes diluting and contaminating materials and allows for losses that are expected to occur when the material is mined. Appropriate assessments to a minimum of a pre-feasibility study for a project, or a life of mine plan for an operation, must have been carried out, including consideration of, and modification by, realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. Such modifying factors must be disclosed.

A **proven ore reserve** is the economically mineable material derived from a measured mineral resource. It is estimated with a high level of confidence. It includes diluting and contaminating materials and allows for losses that are expected to occur when the material is mined. Appropriate assessments to a minimum of a pre-feasibility study for a project, or a life of mine plan for an operation, must have been carried out, including consideration of, and modification by, realistically assumed mining, metallurgical, economic, marketing, legal, environmental, social and governmental factors. Such modifying factors must be disclosed.

Harmony reporting in compliance with SAMREC

In order to meet the requirements of the SAMREC code that the material reported as a mineral resource should have "reasonable and realistic prospects for eventual economic extraction", Harmony has determined an appropriate cut-off grade which has been applied to the quantified mineralised body according to a process incorporating a long-term view on future economic modifying factors. In applying this process, Harmony uses a gold price of R350 000/kg at a derived cut-off grade to determine the mineral resources at each of its South African underground operations. Mineral resources have been estimated on the basis of geoscientific knowledge with input from the company's ore reserve managers, geologists and geostatistical staff. Each mine's mineral resources are categorised blocked-out and ascribed an estimated value. At most mines computerised geostatistical estimation processes are used.

In order to define that portion of a measured and indicated mineral resource that can be converted to a proven and probable ore reserve, Harmony applies the concept of a cut-off grade. At our underground South African mines, this is done by defining the optimal cut-off as the lowest grade at which an orebody can be mined such that the total profits, under a specified set of mining parameters, are maximised. The cut-off grade is determined using the company's Optimiser computer programme which requires the following as input: the database of measured and indicated resource blocks (per shaft section); an assumed gold price which, for this ore reserve statement, was taken as R225 000/kg; planned production rates; the mine recovery factor (MRF) which is equivalent to the mine call factor (MCF) multiplied by the plant recovery factor (PRF); and planned cash operating costs (rand per tonne). Rand per tonne cash operating costs are historically based but take cognisance of distinct changes in the cost environment such as restructuring, right-sizing, and other cost reduction initiatives, and for below infrastructure ounces, an estimate of capital expenditure.

The block cave reserve at Golpu in PNG uses the PCBC computer programme to define the optimal mine plan and sequencing. The open-pit reserve at Hidden Valley in PNG is constrained by the capacity of the tailings storage facility with the Whittle optimisation programme guiding the most efficient mine design given this constraint.

The ore reserves represent that portion of the measured and indicated resources above cutoff in the life-of-mine plan and have been estimated after consideration of the factors affecting extraction, including mining, metallurgical, economic, marketing, legal, environmental, social, and governmental factors.

A range of disciplines which includes geology, survey, planning, mining engineering, rock engineering, metallurgy, financial management, human resources management and environmental management have been involved at each mine in the life-of-mine planning process and the conversion of resources into reserves.

The modifying factors related to the oreflow used to convert the mineral resources to ore reserves through the life-of-mine planning process are stated for each individual shaft. For these factors, historical information is used, except if there is a valid reason to do otherwise. As a result of the depth at which mining occurs and the resulting rock engineering requirements at our South African underground mines, some shafts design stope support pillars into their mining layouts which accounts for discounts of 7% to 10%. A further 15% discount is applied as a life-of-mine factor to provide for unpay and off-reef mining. In general, life-of-mine plan extraction factors do not exceed 85% and are reflected in the ore reserves.

Glossary of geological terms

Below infrastructure: That part of a company's ore reserve that can only be accessed following certain capital expenditure which has yet to be approved.

Craton: A part of the earth's crust that has attained stability and has been little deformed for a long period of geological time.

Diorite: A group of plutonic rocks intermediate in composition between acidic and basic.

Felsic: An igneous rock having abundant light coloured minerals.

Graben: A block of rock that lies between two faults, and has moved downward to form a depression between two adjacent fault blocks.

Greenstone: A field term for any compact dark green altered or metamorphosed basic igneous rock that owes its colour to chlorite.

Horst: A block of rock that lies between two faults and has moved upward relative to the two adjacent fault blocks.

Kaapvaal Craton: The ancient protocontinental basement of South Africa.

Lacustrine: Pertaining to sediments formed in lakes.

Mafic: An igneous rock composed chiefly of dark, ferromagnesium minerals.

Ophiolite: A group of mafic and ultramafic igneous rocks derived by metamorphism, whose origin is associated with an early phase of the development of a geosyncline.

Plunge: The inclination of a fold axis or other linear feature, measured in the vertical plane.

Sub-outcrop: A rock stratum that unconformably underlies another rock stratum.

Syncline: Concave fold in stratified rock, in which strata dip down to meet in a trough.

Witwatersrand Basin: A sedimentary basin in South Africa.