

Resources and Reserves 2012

We do it better

Competent person's report on Mineral Resources and Mineral Reserves

The report is issued as the annual update of the Mineral Resources and Reserves to inform shareholders and potential investors of the mineral assets held by African Rainbow Minerals Limited (ARM).

Salient features F2012

ARM Ferrous

Khumani	Significant increase in King Measured and Indicated Resources from 376.46 to 481.18 million tonnes after drilling additional boreholes and remodelling.
Beeshoek	A total of 12.50 million tonnes on the contaminated ore dumps has been included in the Mine's Reserve inventory.
Nchwaning	Mineral Reserves increased by 4% to 110.34 million tonnes due to the increase in the mining cut from 3.5 to 4.5 metres for Nchwaning 3.
Gloria	The drilling of 27 new boreholes and remodelling of Seam 1 resulted in an increase of 37% in Mineral Reserves to 93.82 million tonnes.
Dwarsrivier	17% increase in Mineral Reserves to 39.15 million tonnes due to inclusion of 47 new boreholes in the Mineral Resources and Reserves update.

ARM Platinum

Two Rivers	UG2 Inferred Mineral Resources were upgraded to Indicated category following re-interpretation of the geological structures in the north-western part of the Mine.
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ARM Coal

Goedgevonden	Production increased by 8% to 6.4 million tonnes.
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ARM Copper

Lubambe	Mineral Reserves of 9.34 million tonnes covering a three year plan area have been declared.
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PCMZ plant, Nkomati Mine

F2012 Mineral Resources/Reserves summary

Platinum	Mineral Resources (Measured and Indicated)		Mineral Reserves (Proved and Probable)		
	Mt	Grade (g/t)	Mt	Grade (g/t)	Moz
Two Rivers					
UG2	57.82	4.55(6E)	35.14	3.52(6E)	3.98(6E)
Merensky	38.16	3.17(6E)			
Modikwa*					
UG2	143.24	5.89(4E)	54.78	4.71(4E)	8.30(4E)
Merensky	72.00	2.78(4E)			
Nkomati	281.01	0.86(4E)	128.61	0.93(4E)	3.85(4E)
Kalplats	69.91	1.48(3E)			

6E = Pt + Pd+ Rh+ Ru+ Ir+ Au; 4E = Pt + Pd+ Rh+ Au; 3E = Pt + Pd+ Au.

* Mineral Resources are exclusive of Mineral Reserves for Modikwa Mine.

Nickel	Mineral Resources (Measured and Indicated)		Mineral Reserves (Proved and Probable)	
	Mt	Ni%	Mt	Ni%
Nkomati MMZ+PCMZ	281.01	0.34	128.61	0.32

Manganese	Mineral Resources (Measured and Indicated)			Mineral Reserves (Proved and Probable)		
	Mt	Mn%	Fe%	Mt	Mn%	Fe%
Nchwaning						
Seam 1	142.38	43.9	9.0	110.34	43.9	9.0
Seam 2	180.80	42.4	15.5			
Black Rock						
Seam 1	43.60	40.6	18.1			
Seam 2	26.81	38.6	19.8			
Gloria						
Seam 1	126.79	37.6	4.7	93.82	37.6	4.7
Seam 2	29.40	29.9	10.1			

Iron ore	Mineral Resources (Measured and Indicated)		Mineral Reserves (Proved and Probable)	
	Mt	Fe%	Mt	Fe%
Beeshoek	117.45	63.73	54.00	64.05
Dumps			12.50	55.44
Khumani				
Bruce	227.79	64.53	168.73	64.15
King	481.18	64.13	344.13	64.61
Dumps			1.76	56.22

Chromite	Mineral Resources (Measured and Indicated)		Mineral Reserves (Proved and Probable)	
	Mt	Cr ₂ O ₃ %	Mt	Cr ₂ O ₃ %
Dwarsrivier	55.03	38.11	39.15	34.01
Nkomati	0.23	33.95	0.23	27.92

Coal	Mineral Resources	Mineral Reserves	
	(Measured and Indicated)	Proved and Probable	Saleable
	Mt	Mt	Mt
Goedgevonden	604.0	349.0	198.0

Copper	Mineral Resources (Measured and Indicated)		Mineral Reserves (Proved and Probable)	
	Mt	%TCu	Mt	%TCu
Lubambe	57.4	2.42	9.34*	2.33

* Mineral Reserves based on a three year plan area.

General statement

ARM's method of reporting Mineral Resources and Mineral Reserves conforms to the South African Code for Reporting Mineral Resources and Mineral Reserves (SAMREC Code) and the Australian Institute of Mining and Metallurgy Joint Ore Reserves Committee Code (JORC Code).

The convention adopted in this report is that Mineral Resources are reported inclusive of that portion of the total Mineral Resource converted to a Mineral Reserve, except for Modikwa Platinum Mine where the Mineral Resources are reported exclusive of the Mineral Reserves. Resources and reserves are quoted as at 30 June 2012. External consulting firms audit the resources and reserves of the ARM operations on a three-to-four year cycle basis.

Underground resources are in-situ tonnages at the postulated mining width, after deductions for geological losses. Underground Mineral Reserves reflect milled tonnages while surface Mineral Reserves (dumps) are in-situ tonnages without dilution. Both are quoted at the grade fed to the plant. Open-pit Mineral Resources are quoted as in-situ tonnages and Mineral Reserves are tonnages falling within an economic pit-shell.

The evaluation method is generally Ordinary Kriging with mining block sizes ranging from 10 x 10 metres to 100 x 100 metres to 250 x 250 metres in the plan view. The blocks vary in thickness from 2.5 to 10 metres. The evaluation process is fully computerised, generally utilising the Studio 3 software package.

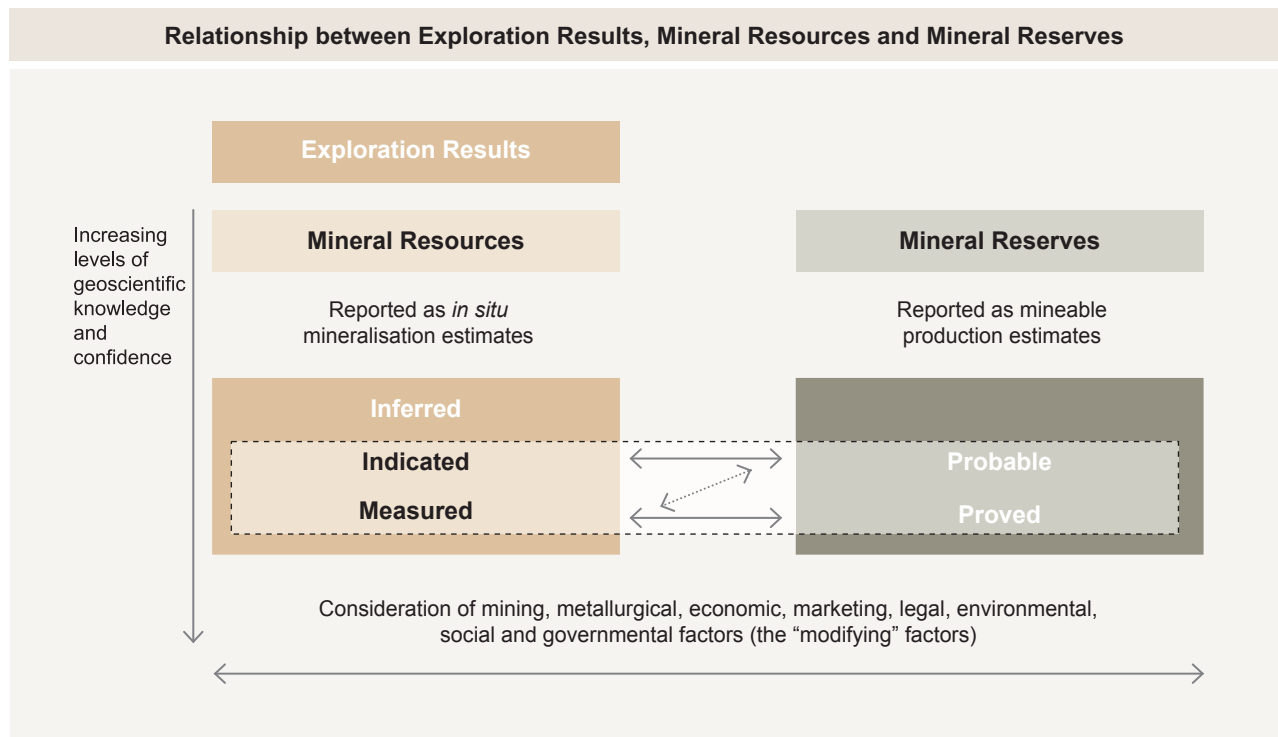
The classification into Measured, Indicated and Inferred Mineral Resources is done by means of geostatistical parameters such as kriging efficiency, kriging variance, slope of regression and a combination of the number of samples used and the dynamic search volume to inform a block. The spacing of boreholes as well as the geological structures are also considered in the classification.

The Mineral Resources and Mineral Reserves are reported on a total basis regardless of the attributable beneficial interest that ARM has on the individual projects or mines. When the attributable beneficial interest on a mine or project is less than 100%, the actual percentage of the attributable interest is specified.

Maps, plans and reports supporting resources and reserves are available for inspection at ARM's registered office and at the relevant mines.

In order to satisfy the requirements of the Minerals and Petroleum Resources Development Act, ARM's operations will have to obtain new mining rights for all properties required to support the planned operations over the next 30 years. The act was effective from 1 May 2004 and the new rights must be obtained within five years from then. The operations are at various stages of application, as detailed in the individual sections for the operations.

Rounding of figures may result in computational discrepancies on the Mineral Resource and Reserve tabulations.



Competence

The competent person with overall responsibility for the compilation of the Mineral Reserves and Resources report is Paul van der Merwe, Pr.Sci.Nat, an ARM employee. He consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

Paul van der Merwe graduated with a BSc (Hons) in Geology from Free State University. He spent four years as an exploration geologist for FOSKOR. He then joined the Uranium Resource Evaluation Group of the then Atomic Energy Corporation of South Africa for 12 years. While employed there he studied geostatistics and spent some time at the University of Montreal, Canada. In 1991 he joined Anglovaal Mining (now ARM) in the Geostatistics Department and evaluated numerous mineral deposit types for this group in Africa. In 2001, he was appointed as Mineral Resources Manager for the Group. He is registered with the South African Council for Natural Scientific Professions as a Professional Natural Scientist in the field of practice of geological science, Registration Number 400498/83, and as such is considered to be a Competent Person.

All competent persons at the operations have sufficient relevant experience in the type of deposit and in the activity for which they have taken responsibility. Details of the ARM's competent persons are available from the Company Secretary on written request.

The following competent persons were involved in the calculation of Mineral Resources and Reserves. They are employed by ARM or its subsidiaries and joint venture (JV) partners:

M Burger/ S v Niekerk	Pr.Sci.Nat Pr.Sci.Nat	Iron
B Ruzive	Pr.Sci.Nat	Manganese
A Pretorius*	Pr.Sci.Nat	Chrome
S Kadzviti	Pr.Sci.Nat	Chrome/ Manganese

M Davidson	Pr.Sci.Nat	Nickel
J Woolfe	Pr.Sci.Nat	Nickel/Platinum
R van Rhyn	Pr.Sci.Nat	Platinum
S Kadzviti	Pr.Sci.Nat	Nickel/Platinum
M Cowell	Pr.Sci.Nat	Platinum

AMEC*		Copper
P D Haken	S.A.I.M.M	Copper

* External consultants.

P J van der Merwe
24 Impala Road, Chislehurst, Sandton

16 October 2012



Two Rivers Platinum Mine silo's and conveyors

ARM Ferrous

Assmang Limited Operations

ARM's attributable beneficial interest in Assmang's operations is 50%. The other 50% is held by Assore Limited.

Manganese Mines

Locality

The manganese mines are situated in the Northern Cape province in South Africa, approximately 80 kilometres North-West of the town of Kuruman. Located at latitude 27°07'50"S and longitude 22°50'50"E, the site is accessed via the national N14 route between Johannesburg and Kuruman, and the provincial R31 road.

History

In 1940, ARM Ferrous acquired a manganese ore outcrop on a small hillock known as Black Rock. Several large properties underlain by ore were subsequently found and acquired. Today the Black Rock area is considered to be the largest and richest manganese deposit in the world. Manganese ore operations were extended and today include the Gloria and Nchwaning underground mines. Manganese ore is supplied locally to Assmang-owned smelters, but is mainly exported through Port Elizabeth as well as Durban and Richards Bay.

Mining authorisation

The Nchwaning mining lease (ML10/76) comprises an area of 1 986 hectares and is located on the farms Nchwaning (267), Santoy (230) and Belgravia (264). The Gloria mining lease (ML11/83) comprises an area of 1 713 hectares and is located on portion 1 of the farm Gloria (266). The new mining right was executed on 13 July 2011. Registration of right is in process.

Geology

The manganese ores of the Kalahari Manganese field are contained within sediments of the Hotazel Formation of the Griqualand West Sequence, a subdivision of the Proterozoic Transvaal Supergroup. At Black Rock, Belgravia and Nchwaning, the Hotazel, Mapedi and Lucknow Formations have been duplicated by thrusting. The thrustured ore bodies comprising Black Rock (Koppie), Belgravia 1 and Belgravia 2 are collectively known as Black Rock ore bodies. The average thickness of the Hotazel Formation is approximately 40 metres.

The manganese orebodies exhibit a complex mineralogy and more than 200 mineral species have been identified to date. The hydro-thermal upgrading has resulted in a zoning of the orebody with regard to fault positions. Distal areas exhibit more original and low-grade kutnohorite + braunite assemblages, while areas immediately adjacent to faults exhibit a very high-grade hausmannite ore. The intermediate areas exhibit a very complex mineralogy, which includes bixbyite, braunite and jacobsonite amongst a host of other manganese-bearing minerals. A similar type of zoning also exists in the vertical sense. At the top and bottom contacts it is common to have high iron (Fe) and low manganese (Mn) contents while the reverse is true towards the centre of the seam. This vertical zoning has given rise to a mining practice where only the centre 3.5 to 4.5 metre-high portion of the seam is being mined. At the Gloria Mine the intensity of faulting is much less, which also explains the lower grade.

Two manganese seams are present. The No 1 seam is up to 6 metres in thickness, of which up to 4.5 metres are mined, using a manganese marker zone for control. There is, therefore, minimum dilution. Limited mining of Nchwaning Seam 2 has been done while no mining has been undertaken on Gloria Seam 2.

Nchwaning Mineral Resources and Reserves

Mineral Resource classification at Nchwaning Mine is based on consideration of a number of parameters: kriging variance, kriging efficiency, regression slope, geological structures and quality of assay data. Each of these parameters contributes to the overall classification depending on weighting assigned to each of the parameters. Measured and Indicated Resources have been defined for Nchwaning. Geological losses are built into the grade models.

The Nchwaning Mine was diamond drilled from surface at 330 metre centres and the data is captured in a Geological Database Management System (GDMS) developed by CAE Mining. The core was logged and 0.5-metre-long, half-core, diamond-saw cut samples were submitted to Assmang's laboratory at Black Rock for X-ray fluorescence (XRF) analyses. Mn and Fe values were checked by Wet Chemical analyses. Several standards were used to calibrate XRF equipment, and results are compared with other laboratories on a regular basis.

At Nchwaning a total of 316 boreholes and 22 648 underground sample sections were considered in the grade estimation for Nchwaning Seam 1. The data was optimised over a thickness of 4.5 metres (Nchwaning 3) and 3.5 metres for the rest of Nchwaning, and exported into data files for computerised statistical and geostatistical manipulation to determine the grades of Mn, Fe, silica (SiO₂), calcium (CaO) and magnesium (MgO).

Ordinary Kriging interpolation within Studio 3 was used to estimate the grade of each 50 x 50 x 3.5/4.5 metre block generated within the geological model.

Sub-cell splitting of the 50 x 50 metre blocks was allowed to follow the geological boundaries accurately. The relative density of Nchwaning manganese ore was taken as 4.3 t/m³.

Trackless mechanised equipment is used in the board and pillar mining method. Mining in the eastern extremity of Nchwaning occurs at a depth of 200 metres while the deepest (current) excavations can be found at a depth of 519 metres below surface.

Ore from Nchwaning No 2 Mine is crushed underground before being hoisted to a surface stockpile via a vertical shaft. Similarly, ore from the Nchwaning No 3 Mine is crushed underground before being conveyed to a surface stockpile via a declined conveyor system. Ore is withdrawn from the surface stockpile and forwarded to two stages of crushing, dry screening and wet screening to yield lumpy and fine products.

At the plant the finer fractions are stockpiled while the coarser fractions are extracted from the respective product boxes into road haulers, sampled, weighed and stored on stacks ahead of despatch. Samples from each stack are analysed for chemical content and size distribution. This ensures good quality control and enables the ore control department to blend various stacks according to customer demand.

Nchwaning year-on-year change

Mineral Reserves for Nchwaning lower seam (Seam 1) increased by 4% to 110.34 million tonnes mainly due to increase in the optimised evaluation cut from 3.5 metres to 4.5 metres for Nchwaning 3. The Mineral Resources for Seam 1 increased from 126.69 to 142.38 million tonnes. Nchwaning Seam 2 Mineral Resources remained at 180.8 million tonnes.

Nchwaning Mine: Seam 1 Manganese Resources and Reserves

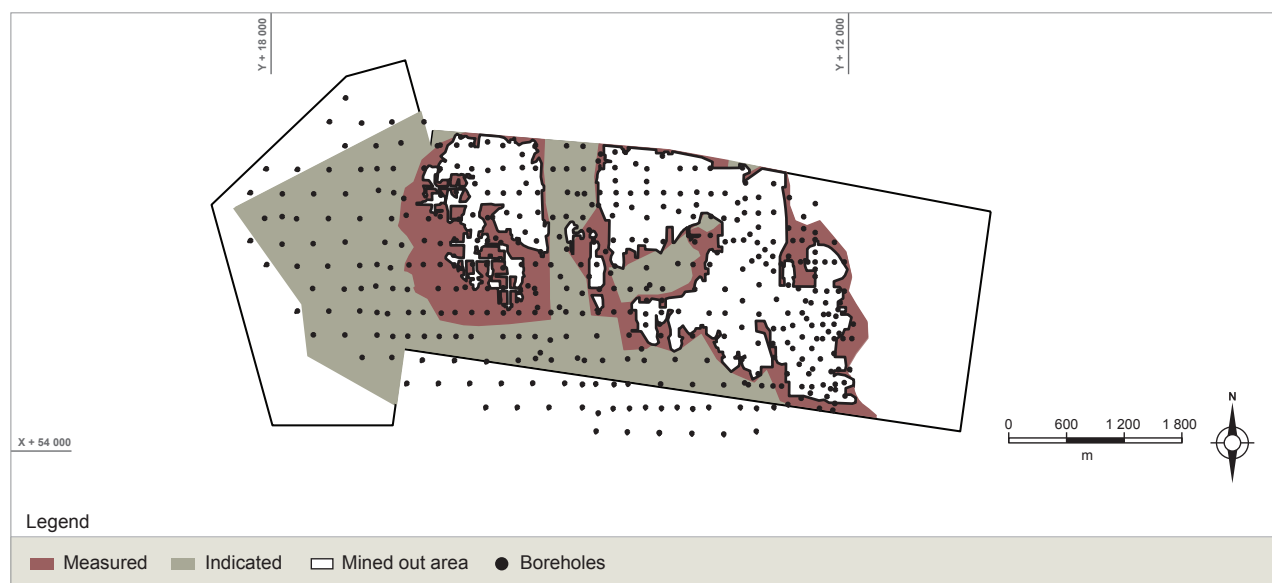
	Mineral Resources				Mineral Reserves		
	Mt	Mn%	Fe%		Mt	Mn%	Fe%
Measured	42.89	45.8	9.4	Proved	33.24	45.8	9.4
Indicated	99.49	43.1	8.8	Probable	77.10	43.1	8.8
Total Resources (Seam 1) 2012	142.38	43.9	9.0	Total Reserves (Seam 1) 2012	110.34	43.9	9.0
Total Resources (Seam 1) 2011	126.69	44.9	8.6	Total Reserves (Seam 1) 2011	106.28	44.9	8.6

Mineral Resources are inclusive of Mineral Reserves.

Totals are rounded off.

Modifying factors: pillar losses.

Nchwaning Seam 1 Mineral Resource Classification Map



Parsons plant, Khumani Iron Ore Mine



Gloria Manganese Mine plant

ARM Ferrous continued

Nchwaning Mine: Seam 2 Manganese Resources

Mineral Resources	Mt	Mn%	Fe%
Measured	53.37	42.0	16.3
Indicated	127.43	42.6	15.2
Total Resources (Seam 2) 2012	180.80	42.4	15.5
Total Resources (Seam 2) 2011	180.80	42.4	15.5

Totals are rounded off.

Black Rock Mineral Resources

The Black Rock ore bodies occur in the Black Rock (Koppie), Belgravia 1 and Belgravia 2 areas. They are all part of a large thrust complex. Modelling of these ore bodies was undertaken using 151 Nchwaning boreholes that intersected the thrust complex and 174 Black Rock infill boreholes. A 38% manganese cut-off was used in the modelling. Seam 1 and 2 were modelled at variable thicknesses.

Black Rock : Seam 1 Manganese Resources

Mineral Resources	Mt	Mn%	Fe%
Measured	9.03	40.3	18.1
Indicated	34.57	40.7	18.1
Total Resources (Seam 1) 2012	43.60	40.6	18.1
Total Resources (Seam 1) 2011	43.60	40.6	18.1

Totals are rounded off.

Black Rock: Seam 2 Manganese Resources

Mineral Resources	Mt	Mn%	Fe%
Measured	8.23	37.4	19.8
Indicated	18.58	39.2	19.8
Total Resources (Seam 2) 2012	26.81	38.6	19.8
Total Resources (Seam 2) 2011	26.81	38.6	19.8

Totals are rounded off.

Gloria Mineral Resources and Reserves

Procedures for drilling and assaying at Gloria Mine are the same as at Nchwaning. A total of 165 boreholes and 6 480 underground samples were considered in the evaluation of the Gloria Seam 1. The underground sampling values were used in evaluating areas close to current mining. The boreholes were optimised over an evaluation width of 3.5 metres and the relative density was taken as 3.8 t/m³. The seams were evaluated by means of statistical and geostatistical methods to determine the grades of Mn, Fe, SiO₂, CaO and MgO. Ordinary Kriging interpolation within Studio 3 was used to estimate the grade of each 50 x 50 x 3.5 metre block generated within the geological model. Sub-cell splitting of the 50 x 50 metre blocks was allowed to follow the geological boundaries. Mineral resource classification techniques are the same as for Nchwaning.

Gloria Mine is extracting manganese at depths that vary between 180 to 250 metres. Ore is crushed underground before being conveyed to surface stockpile via a decline shaft. Ore is withdrawn from the surface stockpile and forwarded to two stages of crushing, dry screening, and wet screening to yield lumpy and fine products. At the plant the ore is processed in a similar way as at Nchwaning.

Gloria year-on-year change

Remodelling of Gloria Seam 1 after drilling of 27 new boreholes resulted in a 7.8% increase in Measured Mineral Resources to 33.92 million tonnes and a 52.8% increase in Indicated Mineral Resources to 92.87 million tonnes. Inferred Resources decreased from 84.00 to 48.49 million tonnes due to upgrade to Indicated Mineral Resources. Mineral Reserves increased from 68.25 to 93.82 million tonnes. The Mineral Resources for Gloria Seam 2 remained the same. No markets exist for Gloria Seam 2 ore at this time.

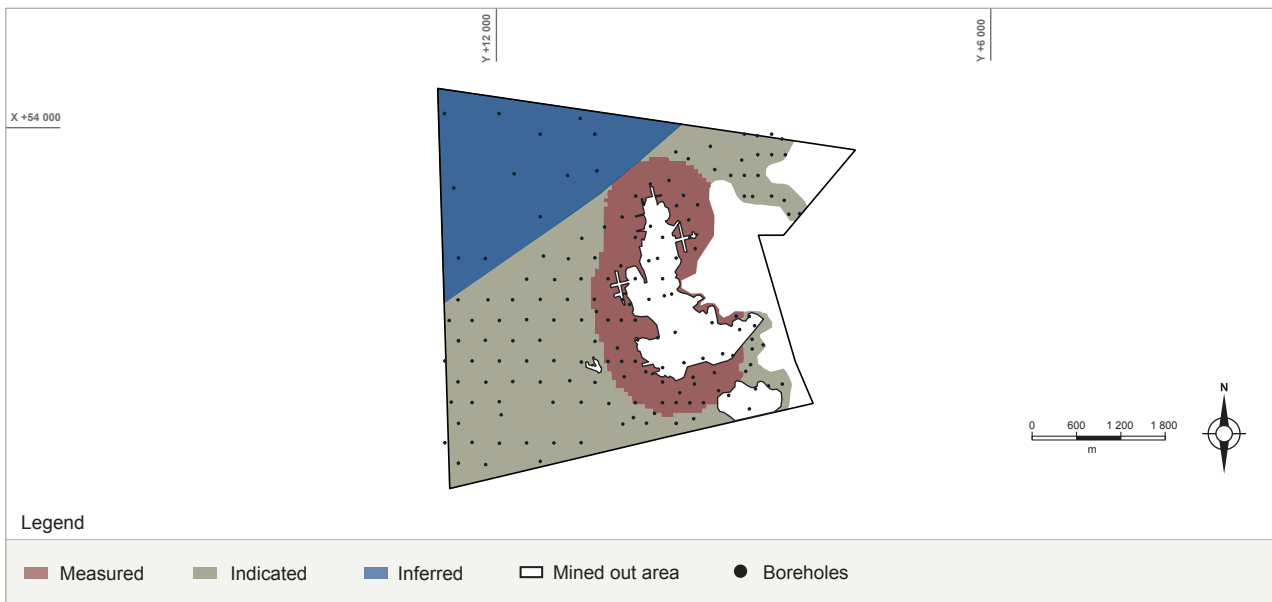
Gloria Mine: Seam 1 Manganese Resources and Reserves

	Mineral Resources				Mineral Reserves		
	Mt	Mn%	Fe%		Mt	Mn%	Fe%
Measured	33.92	37.7	4.9	Proved	25.10	37.7	4.9
Indicated	92.87	37.6	4.6	Probable	68.72	37.6	4.6
Total Resources (Seam 1) 2012	126.79	37.6	4.7	Total Reserves (Seam 1) 2012	93.82	37.6	4.7
Total Resources (Seam 1) 2011	92.23	37.8	4.9	Total Reserves (Seam 1) 2011	68.25	37.8	4.9
Inferred 2012	48.49	36.7	5.0				

Mineral Resources are inclusive of Mineral Reserves.

Totals are rounded off.

Modifying factors: pillar losses.

Gloria Seam 1 Mineral Resource Classification Map**Gloria Mine: Seam 2 Manganese Resources**

Mineral Resources	Mt	Mn%	Fe%
Measured			
Indicated	29.40	29.9	10.1
Total Resources (Seam 2) 2012	29.40	29.9	10.1
Total Resources (Seam 2) 2011	29.40	29.9	10.1
Inferred 2012	128.24		

Totals are rounded off.

Historical manganese production at Nchwaning and Gloria Mines

Saleable product	Nchwaning	Gloria
Year	Mt	Mt
2007/2008	2.71	0.41
2008/2009	2.63	0.51
2009/2010	1.30	0.67
2010/2011	2.35	0.70
2011/2012	2.46	0.84

ARM Ferrous continued

Iron Ore Mines

Locality

The iron ore division is made up of the Beeshoek Mine located on the farms Beeshoek 448 and Olynfontein 475, and the Khumani Mine situated on the farms Bruce 544, King 561 and Mokaning 560. All properties are in the Northern Cape approximately 200 kilometres west of Kimberley. The Beeshoek open-pit operations are situated 7 kilometres west of Postmasburg and the Khumani open pits are adjacent to, and south-east of, the Sishen mine, which is operated by Kumba Resources. Beeshoek and Khumani are located at latitude 28°30'00"S/longitude 23°01'00"E, and latitude 27°45'00"S/longitude 23°00'00"E respectively. Khumani Mine supplies iron ore to the export markets. Exports are railed to the iron ore terminal at Saldanha Bay. Beeshoek ore is mainly supplied to local customers, with some exported via Khumani.

History

Mining of iron ore (mainly specularite) was undertaken as early as 40 000 BC on the farm Doornfontein which is due north of Beeshoek. The potential of iron ore in this region was discovered in 1909, but, due to lack of demand and limited infrastructure, this commodity was given little attention. In 1929 the railway line was extended from Koopmansfontein (near Kimberley) to service a manganese mine at Beeshoek. In 1935 The Associated Manganese Mines of South Africa Limited (Assmang) was formed, and in 1964 the Beeshoek iron ore mine was established, with a basic hand sorting operation. In 1975 a full washing and screening plant was installed and production increased to 7 million tonnes over the years. The Khumani Iron Ore Mine was commissioned in 2007 and in 2012 produced nearly 12 million tonnes with expansion plans to 16 million tonnes per annum.

Mining authorisation

The Beeshoek mining lease (ML3/93) comprises an area of 5 686 hectares and is located on the farms Beeshoek (448) and Olynfontein (475). The converted mining right was executed on 16 March 2012. Registration of the right is in process.

The Khumani mining right comprises an area of 7 388 hectares and is located on the farms Bruce (544), King (561) and Mokaning (560). The mining right was executed on 25 January 2007 and was registered on 5 March 2007.

Geology

The iron ore deposits are contained within a sequence of early Proterozoic sediments of the Transvaal Supergroup deposited between 2 500 and 2 200 million years ago. In general two ore types are present, namely laminated hematite ore forming part of the Manganore Iron Formation and conglomerate ore belonging to the Doornfontein Conglomerate Member at the base of the Gamagara Formation.

The older laminated ore types occur in the upper portion of the Manganore Iron Formation as enriched high-grade hematite bodies. The boundaries of high-grade hematite orebodies crosscut primary sedimentary bedding, indicating that secondary hematitisation of the iron formation took place. In all of these, some of the stratigraphic and sedimentological features of the original iron formation are preserved.

The conglomeratic ore is found in the Doornfontein Conglomerate Member of the Gamagara Formation and is lenticular and not persistently developed along strike. It consists of stacked, upward fining conglomerate-gritstone-shale sedimentary cycles. The lowest conglomerates and gritstones tend to be rich in sub-rounded to rounded hematite ore pebbles and granules and form the main orebodies. The amount of iron ore pebbles decreases upwards in the sequence so that upper conglomerates normally consist of poorly sorted, angular to rounded chert and banded iron formation pebbles.

The erosion of the northern Khumani deposit is less than that in the southern Beeshoek area. The result is that Khumani is characterised by larger stratiform bodies and prominent hangingwall outcrops. The down-dip portions are well preserved and developed, but in outcrop the deposits are thin and isolated. Numerous deeper extensions occur into the basins due to karst development. A prominent north-south strike of the ore is visible. The southern Beeshoek orebodies were exposed to more erosion and are more localised and smaller. Outcrops are limited to the higher topography on the eastern side of the properties. Down dip to the west, the ore is thin and deep. The strike of the orebodies is also in a north-south direction, but less continuous.

Haematite is the predominant ore mineral, but limonite and specularite also occur.

Mining operations are all open pit, based on the conventional drill-and-blast, truck-and-shovel operations. Run-of-mine ore is crushed and stored as on or off grade on blending stockpiles. Ore from the stockpiles is either sent to the wash-and-screen plants or, if off grade, to the beneficiation plants. The washing and screening plants consist primarily of tertiary crushing, washing, screening, conveying and stacking equipment. The beneficiation plants consist of tertiary crushers; scrubbers; coarse and fine jigs; lumpy and fines product stockpiles; and a rapid load-out facility. No chemicals are being used in any of the treatment plants.

Mineral Resources and Reserves

Only Measured and Indicated Resources are converted to Proved and Probable Reserves respectively. Modifying factors were applied to these resources and financially optimised. The financial outline is used to define the optimal pit by means of the Lersch-Grossman algorithm. The resources within this mining constraint are defined as reserves. These are categorised into different product types, destined for the different plant processes and scheduled for planning.

The methodology followed to identify targets is initiated with geological mapping, followed by geophysics (ground magnetics and gravity). Percussion drilling is used to pilot holes through overlying waste rock down to the iron orebodies. Diamond drilling is the next phase, which is usually on a 200 x 200 metre grid. Further infill drilling is carried out at spacing ranging from 100 x 100 metres to 25 x 25 metres, depending on the complexity of the geological structures. Numerous exploration programmes have been completed in the last 40 years. A total of 2 832 holes (1 315 holes on Khumani and 1 517 holes on Beeshoek) have been drilled. Core samples are logged and split by means of a diamond saw and the half-core is sampled every 0.5 metres. Before submission for assaying, the half-cores are crushed, split and pulverised. Samples with values larger than 60 percent are included in the definition of the orebodies. Any lower-grade samples inside the orebody are defined as internal waste and modelled separately. Each zone is modelled per section, and then wireframed to get a three-dimensional (3D) model.

Ordinary Kriging interpolation within Studio 3 is used to estimate the grade of each 10 x 10 x 10 metre block generated within the geological model. Density in the resource model is calculated using a fourth degree polynomial fit applied to the estimated Fe grade. Densities range from 4.38 t/m³ (60 percent Fe) to 5.01 t/m³ (68 percent Fe). A default density of 3.2 t/m³ is used for waste.

At the Iron Ore Mines all blast holes are sampled per metre, but composited per hole. All holes are analysed for density and blast holes in ore are sampled and analysed for Fe, potassium oxide (K₂O), sodium oxide (Na₂O), silica (SiO₂), aluminium oxide (Al₂O₃),

phosphorus (P), sulphur (S), CaO, MgO, Mn and barium oxide (BaO). Every fifth blast hole is geologically logged per metre, which is used to update the geological model. The chemical results of these holes are used to update the ore block model. The major analytical technique for elemental analyses is XRF spectroscopy. Volumetric titration is used as verification method for the determination of total iron in the ore. International standards (e.g. SARM11) and in-house iron standards are used for calibration of the XRF spectrometer. The Khumani laboratory participates in a round robin group that includes eleven laboratories for verification of assay results.

Beeshoek Iron Ore Mine: Resources and Reserves

Pit/Area	Measured Resources		Indicated Resources		Inferred Resources		Total Resources Measured + Indicated		Proved Reserves		Probable Reserves		Total Reserves	
	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%
BN	22.44	63.30					22.44	63.30	12.79	63.53			12.79	63.53
HF/HB	16.00	64.10					16.00	64.10	6.87	64.27			6.87	64.27
BF	8.45	63.51	0.23	63.54	0.001	65.24	8.68	63.51	1.02	61.59			1.02	61.59
East Pit	8.91	64.63	0.04	64.23			8.95	64.63	6.16	64.43	0.01	63.64	6.17	64.43
Village	42.71	63.72	2.98	63.57	0.002	63.71	45.69	63.71	27.15	64.24			27.15	64.24
GF	3.13	63.81	0.09	61.80			3.22	63.75						
HH Ext	0.28	62.63					0.28	62.63						
HL	2.69	64.93	0.05	65.03			2.74	64.93						
West Pit	9.45	63.19			0.050	61.88	9.45	63.19						
Detrital*					2.500	60.00								
Total 2012	114.06	63.73	3.39	63.55	2.553	60.04	117.45	63.73	53.99	64.05	0.01	63.64	54.00	64.05
Total 2011	115.58	63.76	3.39	63.55	2.553	60.04	118.97	63.75	55.12	64.04	0.01	63.64	55.13	64.04

Mineral Resources are inclusive of Mineral Reserves.

Totals are rounded off.

Modifying factors: Economic pit design, customer product specifications.

* Detrital is loose fragmented material occurring in various areas at Beeshoek.

Beeshoek ROM Dumps

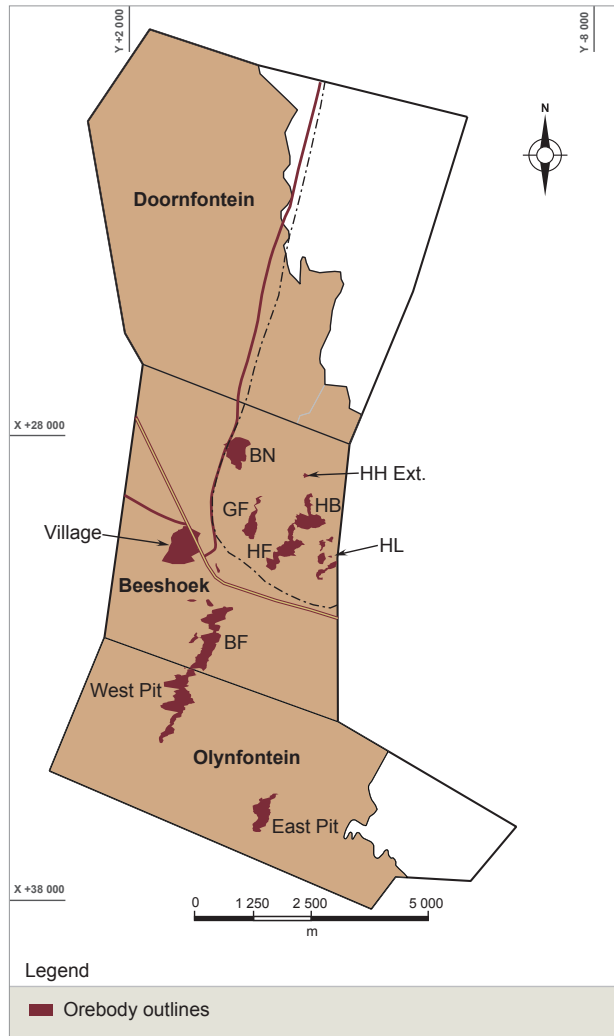
Area	Probable Reserves		Total Reserves	
	Mt	Fe%	Mt	Fe%
North Mine (B Dump)	0.60	60.00	0.60	60.00
North Mine (C Dump)	2.10	55.00	2.10	55.00
South Mine (B Dump)	0.50	60.00	0.50	60.00
South Mine (C Dump)	9.30	55.00	9.30	55.00
Total 2012 Dumps*	12.50	55.44	12.50	55.44

Totals are rounded off.

* Dumps are beneficiated to produce a saleable product.

ARM Ferrous continued

Beeshoek Orebody Locality Map



Beeshoek year-on-year change

Measured and Indicated resources for Beeshoek Mine decreased to 117.45 from 118.97 million tonnes, mainly due to mining depletion. Mineral Reserves also decreased from 55.13 to 54.00 million tonnes. A total of 12.50 million tonnes at 55.44% Fe of contaminated ore dumps have been declared as Probable Reserves. Beneficiation of the dumps results in a saleable product. A feasibility study for Village pit is still in progress.



Beeshoek Iron Ore Mine

Khumani Iron Ore Mine: Resources and Reserves

Pit/Area	Measured Resources		Indicated Resources		Inferred Resources		Total Resources Measured + Indicated		Proved Reserves		Probable Reserves		Total Reserves	
	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%	Mt	Fe%
Bruce A	79.79	64.63	36.72	64.36	0.07	64.11	116.51	64.54	64.83	64.36	26.95	63.76	91.78	64.18
Bruce B	74.73	64.50	20.60	63.90	7.79	64.95	95.33	64.37	59.08	64.17	9.38	63.15	68.46	64.03
Bruce C	11.35	65.40	4.60	65.54	0.30	62.88	15.95	65.44	7.66	64.78	0.83	64.95	8.49	64.80
King/Mokaning	311.03	64.40	170.15	63.65	11.70	62.18	481.18	64.13	202.93	64.72	141.20	64.44	344.13	64.61
Detrital*					4.00	60.00								
Total 2012	476.90	64.48	232.07	63.82	23.86	62.73	708.97	64.26	334.50	64.55	178.36	64.27	512.86	64.46
Total 2011	414.14	64.53	189.29	64.40	9.42	61.80	603.43	64.49	387.63	64.60	157.73	64.41	545.36	64.54

Mineral Resources are inclusive of Mineral Reserves.

Totals are rounded off.

Modifying factors: Economic pit design, customer product specifications.

* Detrital is loose fragmented material occurring in various areas at Khumani.

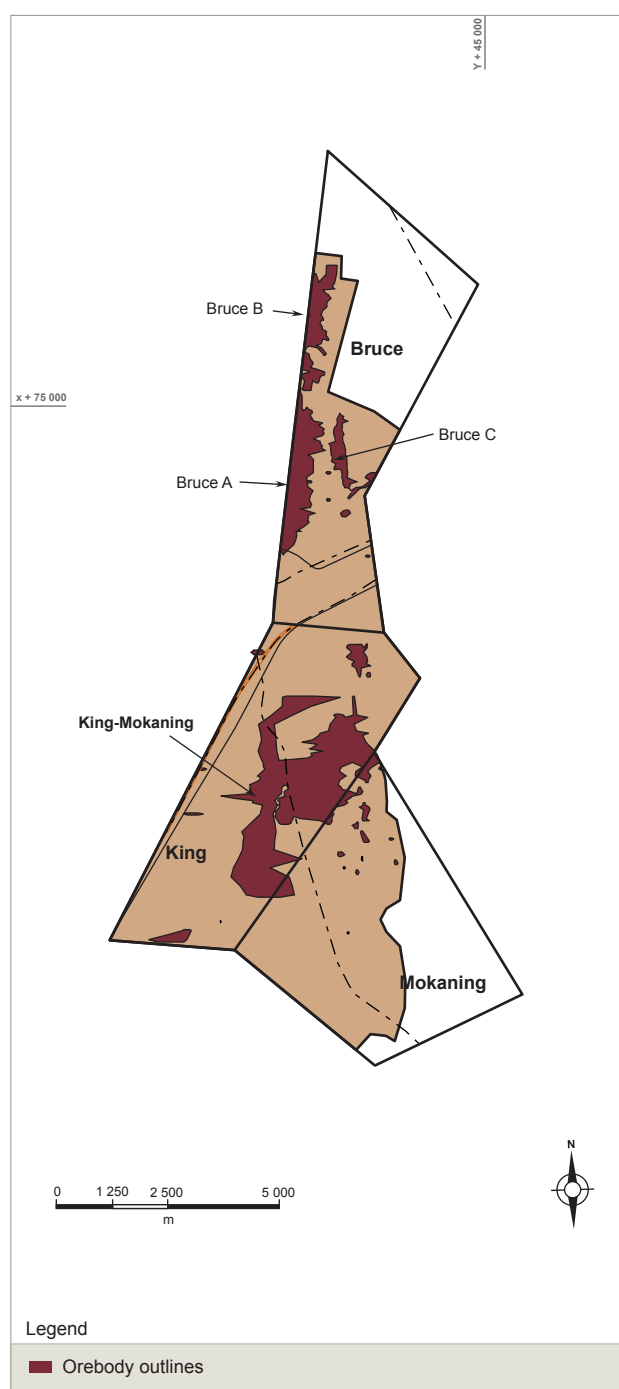
Khumani ROM Dumps

Area	Probable Reserves		Total Reserves	
	Mt	Fe%	Mt	Fe%
Bruce (Off-grade)	1.33	55.00	1.33	55.00
King (Detrital)	0.43	60.00	0.43	60.00
Total 2012 Dumps*	1.76	56.22	1.76	56.22

Totals are rounded off.

* Dumps are beneficiated to produce a saleable product.

Khumani Orebody Locality Map



Khumani year-on-year change

At Khumani Mine Measured and Indicated resources significantly increased from 603.43 to 708.97 million tonnes mainly due re-modelling of King which incorporated new borehole information. Conversion of these Mineral Resources to Reserves is in process. Total reserves decreased to 512.86 from 545.36 million tonnes in 2011 due to mining depletion. A total of 1.76 million tonnes of contaminated ore dumps at 56.22% Fe have been reported as Probable Reserves.

Historical production at Beeshoek and Khumani Mines (Saleable product)

Financial year	Beeshoek Mt	Khumani Mt
2007/2008	5.30	2.00
2008/2009	2.66	6.65
2009/2010	0.52	8.77
2010/2011	0.96	8.73
2011/2012	2.10	11.60



ARM Ferrous continued

Chromite Mine

Locality

Chromite operations at Dwarsrivier Mine form part of the chrome division of Assmang Limited. The mine is situated on the farm Dwarsrivier 372KT, approximately 30 kilometres from Steelpoort and 60 kilometres from Lydenburg, in Mpumalanga province in South Africa. Located at longitude 30°05'00"E/latitude 24°59'00"S, Assmang purchased the farm from Gold Fields Limited, together with all surface and mineral rights in October 1998.

History

Neighbouring properties to the north and south of Dwarsrivier had existing chrome mining operations at the time of purchase. The feasibility study of the plant, tailings dam and designs for the open pit and underground mines then commenced. After the completion of the feasibility study, approval to proceed with the final design and construction work was given in July 1999.

Chromite was obtained from the open pit mining areas at a rate of approximately 0.9 million tonnes a year and these areas were mined out within five years. Underground mining commenced in 2005 at a rate of 1.2 million tonnes ROM a year. Dwarsrivier Mine is specifically geared to deliver high quality metallurgical grade chromite to the Machadodorp smelter. In addition, the plant has been designed to produce chemical grade products for export.

Mining authorisation

An old order Mining Licence 21/99 was granted in October 1999. An application for the conversion to a new order mining right submitted in October 2007 is still pending.

Geology

Dwarsrivier Mine is situated in the eastern limb of the Bushveld Complex, which comprises persistent layers of mafic and ultramafic rocks, containing the world's largest known resources of platinum group metals, chromium and vanadium. The mafic rocks termed the Rustenburg Layered Suite, are approximately 8 kilometres thick in the eastern lobe, and are divided formally into five zones.

The rocks of the Marginal Zone at the base of the succession consist mainly of pyroxenites with some dunites and harzburgites. Above the Marginal Zone, the Lower Zone comprises mainly pyroxenites, harzburgites and dunite, and is present only in the northern part of the Eastern Lobe, and only as far south as Steelpoort. The appearance of chromitite layers marks the start of the Critical Zone, economically the most important zone. The layers are grouped into three sets termed the Lower, Middle and Upper groups. The sixth chromitite seam in the Lower Group (LG6), is an important source of chromite ore and is the orebody being mined at Dwarsrivier Mine. In the Eastern Lobe, in the vicinity of Dwarsrivier, the strike is nearly north-south, with a dip of approximately 10 degrees towards the west. Average thickness of the LG6 seam is about 1.86 metres in the Dwarsrivier area. Pipe-like dunite intrusions are evident in the area, as well as dolerite dykes that normally strike northeast-southwest. No significant grade variation is evident, especially not vertically in the ore seam in the Dwarsrivier resource.

Mineral Resources and Reserves

Mineral Resources were estimated from boreholes on 150 to 300 metre grid spacing.

All possible resources down to a mineable depth of 350 metres below surface have been considered.



Exploration geologist analysing samples at Khumani Iron Ore Mine

Vertical diamond drill holes are used for geological and grade modelling, except where information is needed to clarify large-scale fault planes. The Mineral Resources at Dwarsrivier Mine are based on a total of 284 diamond boreholes, inclusive of 47 new boreholes, that have been used for grade estimation and orebody modelling purposes. The drill core is NQ size and is geologically and geotechnically logged. The collar position of the drill holes is surveyed, but no down-hole surveys are done, and the holes are assumed to have minimal deflection.

The chromitite seam is bounded above and below by pyroxenites. As such, the ore horizon is clearly defined. The core is sampled from the top contact downwards at 0.5 metre intervals. The core is split and half is retained as reference material in the core sheds. The other half is crushed and split into representative samples, which are crushed and pulverised for chemical analysis. The samples are analysed using fusion/ICP-OES for chrome oxide (Cr_2O_3), SiO_2 , FeO , Al_2O_3 , MgO and CaO . Three laboratories, all ISO 17025 accredited for this method, are used. Every tenth sample is analysed in duplicate. The density for each sample is measured using a gas pycnometer.

Mineral Resources have been estimated using Ordinary Kriging, where Cr_2O_3 , FeO , Al_2O_3 , MnO and MgO -contents of the LG6 seam and densities were determined, using block sizes of 50 x 50 x 4 metres.

During mining, a slightly diluted run of mine ore inclusive of the 'false' hangingwall is fed to the beneficiation plant. In the dense media separation part of the plant, the coarse fraction is upgraded to 40 percent Cr_2O_3 , with a yield of 80 percent. In the spiral section of the plant the finer fraction is upgraded to 44 percent Cr_2O_3 , and 46 percent Cr_2O_3 respectively, for metallurgical grade fines and chemical grade fines. A 67 percent yield is achieved in the spiral circuit.

Dwarsrivier Chrome Mine: Chrome Resources and Reserves

	Mineral Resources		
	Mt	Cr ₂ O ₃ %	FeO%
Measured	20.43	38.45	22.62
Indicated	34.60	37.91	22.50
Total Measured and Indicated 2012	55.03	38.11	22.54
Total Measured and Indicated 2011	48.77	39.05	23.03
Inferred	48.17	38.35	22.96

	Mineral Reserves		
	Mt	Cr ₂ O ₃ %	FeO%
Proved	12.99	33.79	21.15
Probable	26.16	34.12	21.33
Total Reserves 2012	39.15	34.01	21.27
Total reserves 2011	33.44	35.69	22.03

Mineral Resources are inclusive of Mineral Reserves.

Totals are rounded off.

Modifying factors: pillar losses, mining losses.

Year-on-year change

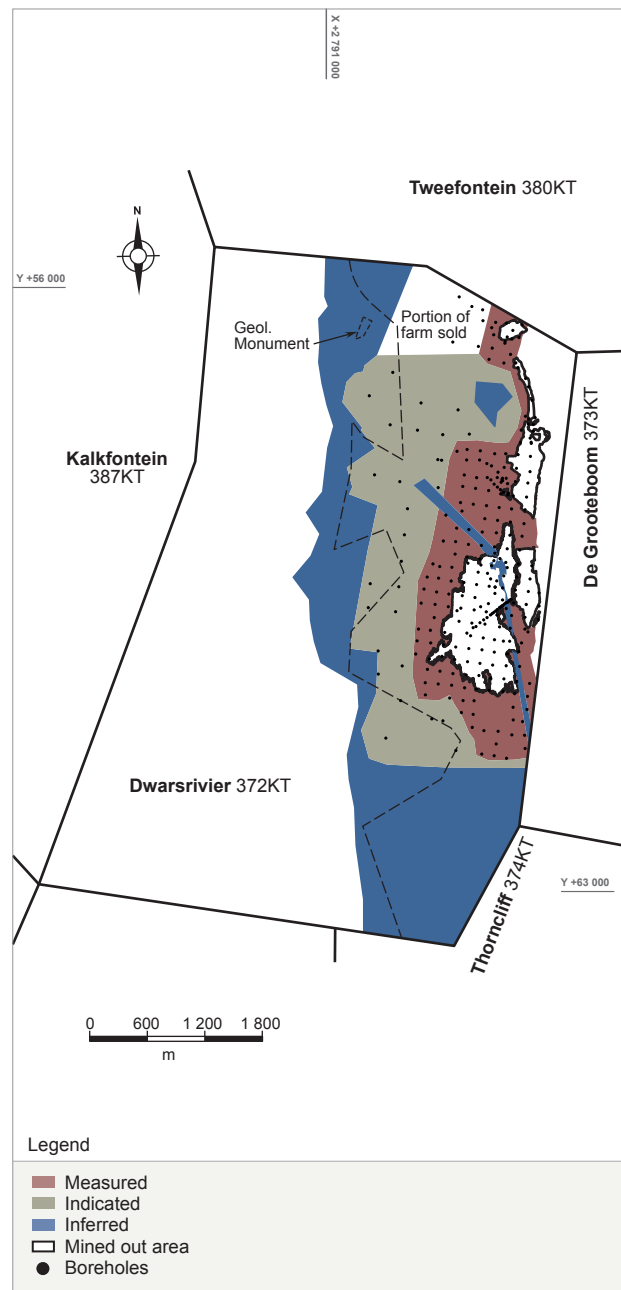
Significant increases have been reported in Measured and Indicated Resources mainly due to the new borehole data which increased resource confidence. An increase from 17.25 million tonnes at 39.20% Cr₂O₃ to 20.43 million tonnes at 38.45% Cr₂O₃ was realised for Measured Resources while Indicated Resources increased from 31.52 million tonnes at 38.97% Cr₂O₃ to 34.60 million tonnes at 37.91% Cr₂O₃. Mineral Reserves increased to 39.15 million tonnes at 34.01% Cr₂O₃ from 33.44 million tonnes at 35.69% Cr₂O₃.

Historical production at Dwarsrivier Chrome Mine (ROM)

Financial year	Mt
2007/2008	1.24
2008/2009	1.03
2009/2010	0.78
2010/2011	1.25
2011/2012	1.50



Dwarsrivier Chrome Mine

Dwarsrivier Mineral Resource Classification Map

ARM Platinum

Nkomati Nickel-Copper-Cobalt-PGM-Chromite Mine

ARM's attributable beneficial interest in Nkomati operations is 50%. The other 50% is held by Norilsk Nickel Africa (Pty) Limited.

Locality

The Nkomati Mine is situated some 300 kilometres east of Johannesburg in Mpumalanga province in South Africa. Situated at latitude 25°40'S and longitude 30°30'E, the site is accessed via the national N4 highway between Johannesburg and Machadodorp, the R341 provincial road and the R351 tarred road.

History

Nickel, copper, cobalt, PGM and chromite mineralisation is hosted by the Uitkomst Complex, a layered mafic-ultramafic, Bushveld satellite intrusion. The Uitkomst Complex outcrops on the farms Slaaihoek 540JT and Nkomati 770JT. In 1929, the mineral rights on Slaaihoek were purchased by ETC, an Anglovaal subsidiary, to mine gold at the old Mamre and Slaaihoek mines. In the early 1970s, an Anglo American/INCO joint venture began exploring Uitkomst for nickel. In 1990, Anglo American (AAC) completed a feasibility study on an open-pit operation exploiting the large disseminated sulphide resource on Uitkomst, with negative results. Exploration on Slaaihoek by Anglovaal began in earnest in 1989, and in 1991, the massive sulphide body (MSB) was discovered by surface drilling. In 1995, the Nkomati JV between Anglovaal and AAC was formed and in January 1997, underground production started on the MSB. In 2004, Anglovaal acquired AAC's interest and in 2005, a 50:50 JV was formed between ARM and LionOre, then a global nickel producer and owner of the Activox technology. In February 2006, Nkomati approved the Phase 1 expansion project to exploit the MMZ, one of the disseminated sulphide orebodies, by underground and open-pit mining at a rate of 100 000 tonnes per month of ore to maintain annual nickel production at approximately 5 000 tonnes in concentrate after output from the MSB started declining. The project was completed in 2007 and in the same year, Norilsk Nickel acquired LionOre, together with its 50% share in Nkomati. The MSB orebody has now been completely mined out.

The Phase 2a expansion project, increasing MMZ ore production to 375 000 tonnes per month with the construction of a new plant, was commissioned during 2010. The Phase 2b expansion, involving the upgrading of the 100 000 tonnes per month MMZ plant to a 250 000 tonnes per month PCMZ plant was completed during 2010/2011 year. The PCMZ, which will be mined only in the open pit, is a disseminated chromite-rich sulphide body within the PCR unit (overlying the MMZ), which has to be treated separately to liberate the chromite fines. At full production, Nkomati will produce approximately 20 500 tonnes of nickel in concentrate per year.

Nkomati has also been producing lumpy chromite, chips and fines since 2006 from the Oxidized Massive Chromitite, a layer which overlies the PCMZ orebody in the open pits. A chrome washing plant to treat the fines stockpile was commissioned in 2008. In addition, the Oxidized PCR, which is the highly weathered PCR unit immediately below the Oxidized Massive Chromitite, is being stockpiled for future processing for its chromite content.

Mining authorisation

Nkomati was granted Mining Rights 146 MR and 147 MR on 6 June 2012 over the area, and for the minerals, as previously held under its Old Order Mining Licences.

Geology

The Uitkomst Complex is a Bushveld-age layered, mafic ultramafic body intruded into the basal sediments of the Transvaal Supergroup, which lies unconformably on an Archean granitic basement. The complex is a long linear body, which outcrops in the Slaaihoek valley for approximately 8 kilometres and dips below an escarpment where it has been drilled at depth for an additional 4 kilometres. The complex, which dips at approximately 4 degrees to the northwest, is still open-ended.

From the base to top, the stratigraphy of the Uitkomst Complex comprises the Basal Gabbro Unit (up to 15 metres thick), the Lower Pyroxenite Unit (average 35 metres), the Chromititic Peridotite Unit (30 to 60 metres), the Massive Chromitite Unit (up to 10 metres), the Peridotite Unit (330 metres), the Upper Pyroxenite Unit (65 metres), the Gabbro-norite Unit (250 metres), and the Upper Gabbro Unit (50 metres). The complex and surrounding sediments are intruded by numerous diabase sills up to 30 metres in thickness.

There are five sulphide zones in the Uitkomst Complex: the MSB, situated at and below the base of the complex, but which has now been mined out; the BMZ within the Basal Gabbro; the MMZ, occurring within the Lower Pyroxenite, the PCMZ, which occurs with the Chromititic Peridotite (PCR), and the PRDMZ, which occurs in the Peridotite Unit, but which is not yet included in the mine's resource base. In addition, the Massive Chromitite Unit (MCHR), situated at the top of the PCR unit, is mined where it is fully oxidised (weathered) in the open-pit area. The dominant sulphide minerals are pyrrhotite, pentlandite and chalcopyrite; cobalt is mostly in solid solution in the pentlandite, and the PGMs occur as separate minerals, merenskyite being dominant.

Mineral Resources and Reserves

There have been numerous diamond, percussion and Reverse Circulation (RC) drilling campaigns since 1972 totalling approximately 185 000 metres in 1 250 boreholes. Consequently, various sampling and assaying protocols as well as varying standards of QA/QC have been used. Core sizes have been mainly NQ and TNW. Before 1990 (Anglo American holes), half core samples over widths ranging from 1 metre to 5 metres were taken. Samples were assayed at Anglo American Research Laboratory (AARL) for total nickel, copper and cobalt using AA and for "sulphide" nickel using a peroxide leach/AA finish. Composite samples were assayed for platinum and palladium by Pb-collection fire assay/ICP, S by combustion, and a range of major elements by fusion, and RD using the Archimedes bath method. Between 1990 and 1997 (Anglovaal holes), assays were carried out at the Anglovaal Research Laboratory (AVRL), with internal standard checks. Nickel analyses were also carried out by the partial digestion methods and comparisons between AARL and AVRL to ensure that the data was compatible. In 2003, a 50 metre spaced drilling programme was carried out in the shallow open pit area. Samples from this drilling were analysed at AVRL for nickel, copper cobalt using an aqua regia partial extraction/AA finish. Platinum, palladium, rhodium and gold were analysed by Pb collection fire-assay/AA finish. Analyses also included Cr₂O₃, MgO, FeO, S and RD. Duplicates

and internal standards were used and a suite of referee samples were analysed at Genalysis Laboratory in Perth. Comparisons indicated good correlations between laboratories. In 2005, it was decided to resample many of the Anglo American drill holes to improve the sample density for PGEs in the open pit area. Drill core was resampled (quarter core) at 1 metre intervals. Assays were carried out by SGS Laboratory in Johannesburg for Pt, Pd and Au by Pb-collection fire assay/AA and for Ni, Cu and Co by aqua regia leach/AA. Blanks, duplicates and AMIS standards were included.

In 2007/08, a 50 metre infill diamond drilling programme (116 holes – 18 000 metre's) was completed in the shallower part of Pit 3. In the Pit 2 area, another 44 holes (3 450 metre's) were added to the database. Half core samples from the Pit 3 drilling were analysed at Genalysis Laboratory Services in Perth for Ni, Cu, Co by aqua regia partial digestion/ICP; for Pt, Pd and Au by Pb collection fire assay/ICP; high chrome samples for Cr₂O₃ by fusion/ICP and SG by gas pycnometer. AMIS standards, duplicates and blank samples were used for internal QA/QC. Half core samples from the Pit 2 drilling were analysed at Nkomati's mine laboratory for Ni, Cu and Co by aqua regia partial digestion/AA.

The underground MMZ and PCMZ mineral resources are based on surface and underground diamond drilling. Surface boreholes in the open pit area are at 100 metre spacing other than those areas where 50 metre infill diamond drilling has been undertaken. Underground holes are spaced 10 to 20 metres apart and the drill core is sampled at 1 metre intervals. The Nkomati mine laboratory

analyses samples for Ni, Cu and Co using aqua regia leach/ICP, while the PGE assays are carried out by SGS and Mintek Laboratories in Johannesburg. Both laboratories use blanks, standards and check assays for quality control.

Geological wireframe models are generated from the entire bore-hole database in Studio 3 but only diamond drill holes are used for the variography and grade estimation is by ordinary kriging. Block sizes for the resource model is 50 metres x 50 metres x 2.5 metres for the open pit and underground resource model while the massive chromitite resource is based on 10 metres x 10 metres x 1 metre blocks. Mineral Resource classification is based on borehole spacing and geological continuity of the ore body. The area with infill drilling 50 metres x 50 metres was classified as measured and where the drilling spacing was up to 100 metres x 100 metres was classified as indicated. Downdip portion of the underground model with up to 500 metres x 100 metre borehole spacing was classified as inferred.

The open pit resources are based on the 2009 resource model while the underground resources and reserves are based on the model generated in 2010.

Mining operations to date comprise a mechanised underground and open pit mining operation which feeds two concentrators producing concentrate containing PGMs, nickel, copper and cobalt. Final products are transported to various third parties for toll treatment. Chrome products from oxidized massive chromitite and the PCMZ are sold to local and export markets.

Nkomati Mine: Resources

	Measured Resources						Indicated Resources						Inferred Resources						Total Resources (Measured and Indicated)					
	Mt	Ni%	Cu%	Co%	4E g/t	Cr ₂ O ₃ %	Mt	Ni%	Cu%	Co%	4E g/t	Cr ₂ O ₃ %	Mt	Ni%	Cu%	Co%	4E g/t	Cr ₂ O ₃ %	Mt	Ni%	Cu%	Co%	4E g/t	Cr ₂ O ₃ %
Underground Mine MMZ (Cut-off 0.30% Ni)	6.42	0.58	0.23	0.03	1.18		43.54	0.48	0.21	0.03	1.08		1.84	0.36	0.24	0.02	0.80		49.96	0.49	0.21	0.03	1.09	
Underground Mine PCMZ (Cut-off 0.30% Ni)	2.27	0.36	0.12	0.02	0.83	13.96	26.91	0.38	0.13	0.02	0.83	9.75	52.14	0.37	0.12	0.02	0.90	11.06	29.18	0.38	0.13	0.02	0.83	10.08
Open Pit MMZ Pit 3 (Cut-off 0.16% Ni)	22.26	0.41	0.18	0.02	1.00		67.60	0.37	0.17	0.02	0.94								89.86	0.38	0.17	0.02	0.95	
Open Pit PCMZ Pit 3 (Cut-off 0.16% Ni)	16.01	0.27	0.08	0.01	0.80	12.95	96.00	0.22	0.07	0.01	0.66	13.80							112.01	0.23	0.07	0.01	0.68	13.68
Total 2012 Mineral Resources	46.96	0.38	0.15	0.02	0.95		234.05	0.33	0.13	0.02	0.84		53.98	0.37	0.12	0.02	0.90		281.01	0.34	0.13	0.02	0.86	
Total 2011 Mineral Resources	52.99	0.37	0.13	0.02	0.92		237.60	0.33	0.13	0.02	0.84		53.90	0.37	0.12	0.02	0.90		290.59	0.34	0.13	0.02	0.85	

4E = platinum + palladium + rhodium + gold.

Mineral Resources are inclusive of Mineral Reserves.

Totals are rounded off.

ARM Platinum continued

Oxidised Massive Chromitite Resources

	Measured Resources		Indicated Resources		Inferred Resources		Total Resources (Measured and Indicated)	
	Mt	Cr ₂ O ₃ %	Mt	Cr ₂ O ₃ %	Mt	Cr ₂ O ₃ %	Mt	Cr ₂ O ₃ %
Total 2012 Chromitite Resources (Cut-off 20% Cr₂O₃)	0.23	33.95					0.23	33.95
Total 2011 Chromitite Resources (Cut-off 20% Cr ₂ O ₃)	1.43	31.59					1.43	31.59

Mineral Resources are inclusive of Mineral Reserves.
Totals are rounded off.

Oxidised Chromititic Peridotite (PCR) Resources

	Measured Resources		Indicated Resources		Inferred Resources	
	Mt	Cr ₂ O ₃ %	Mt	Cr ₂ O ₃ %	Mt	Cr ₂ O ₃ %
Total 2012 Oxidized PCR Pit 3					0.41	16.58
Total 2011 Oxidized PCR					0.80	15.70

Nkomati Mine: Reserves

	Proved Reserves					Probable Reserves					Total Reserves				
	Mt	Ni%	Cu%	Co%	4E g/t	Mt	Ni%	Cu%	Co%	4E g/t	Mt	Ni%	Cu%	Co%	4E g/t
Underground Mine MMZ (underground) Cut-off 0.35% Ni)						11.16	0.46	0.21	0.03	1.17	11.16	0.46	0.21	0.03	1.17
Open Pit MMZ Pits 3 (Cut-off 0.16% Ni)	19.72	0.39	0.17	0.02	0.98	42.22	0.34	0.17	0.02	0.93	61.94	0.36	0.17	0.02	0.95
PCMZ Pits 3 (Cut-off 0.16% Ni)	14.60	0.27	0.08	0.01	0.79	40.91	0.23	0.07	0.01	0.89	55.51	0.24	0.07	0.01	0.86
Total 2012 Mineral Reserve	34.32	0.34	0.13	0.02	0.90	94.29	0.31	0.13	0.02	0.94	128.61	0.32	0.13	0.02	0.93
Total 2011 Mineral Reserve	40.67	0.34	0.13	0.02	0.88	94.22	0.32	0.13	0.02	0.85	134.89	0.33	0.13	0.02	0.85

4E = platinum + palladium + rhodium + gold.

Totals are rounded off.

Modifying factors: Economic pit design, mining losses, mining dilution, metallurgical, geotechnical.

Oxidised Massive Chromitite Reserves

	Proved Reserves		Probable Reserves		Total Reserves	
	Mt	Cr ₂ O ₃ %	Mt	Cr ₂ O ₃ %	Mt	Cr ₂ O ₃ %
Total 2012 Chromitite Reserves (Cut-off 20% Cr₂O₃)	0.23	27.92			0.23	27.92
Total 2011 Chromitite Reserves (Cut-off 20% Cr ₂ O ₃)	1.16	27.57			1.16	27.57

Totals are rounded off.

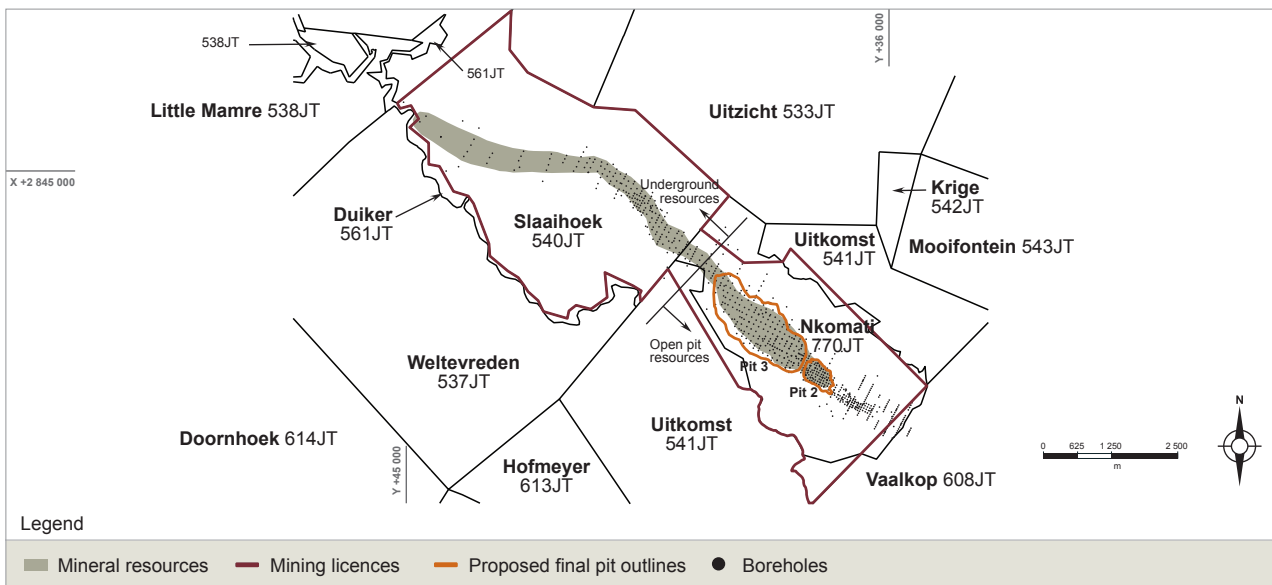
Modifying factors: Economic pit design, mining losses, mining dilution, metallurgical, geotechnical.

Chromite Stockpile Reserves

	Proved Reserves		Total Reserves	
	Mt	Cr ₂ O ₃ %	Mt	Cr ₂ O ₃ %
PCR stockpile	2.16	19.20	2.16	19.20
ROM Chromite stockpile	0.21	35.43	0.21	35.43
Chromite fines stockpile	0.04	28.85	0.04	28.85
2012 Total stockpiles Reserves	2.41	20.77	2.41	20.77
2011 Total stockpiles Reserves	2.02	20.54	2.02	20.54

Totals are rounded off.

Nkomati Mine Mineral Resource Locality Map



Year-on-year change

The Mineral Reserves decreased from 134.89 million tonnes at 0.33% Ni to 128.61 at 0.32% Ni mainly due to depletion by mining while the Measured and Indicated Resources decreased from 290.59 million tonnes at 0.34% Ni to 281.01 million tonnes at 0.34% Ni. The oxidized massive chromitite reserves decreased from 1.16 to 0.23 million tonnes due to depletion by mining.

Historical production at Nkomati Nickel Mine

Financial year	Tonnes Ni ore milled
2007/2008	1 070 000
2008/2009	1 258 818
2009/2010	3 308 142
2010/2011	5 259 288
2011/2012	6 388 224



Nkomati open pit operations

ARM Platinum continued**Two Rivers Platinum Mine**

ARM's attributable beneficial interest in Two Rivers operations is 55%. The other 45% is held by Impala Platinum.

Mining operations to date comprise a mechanised underground and open pit mining operation which feeds two concentrators producing concentrate containing PGMs, nickel, copper and cobalt. Final products are transported to various third parties for toll treatment.

Locality

Two Rivers Platinum Mine is located within the southern sector of the eastern limb of the Bushveld complex, on the farm Dwarsrivier 372KT. It is situated at longitude 30°07'00E and latitude 24°59'00S. The UG2 and Merensky reefs are present on the farm.

History

Exploration, development and production history in the area dates from the early 1920s. During 1929, Lydenburg Platinum Areas Limited started mining activity. No records are available. Following the acquisition by Gold Fields Mining and Development Limited, exploration started up again in 1987 and was mainly directed at the Merensky Reef. Assmang Limited acquired the farm in September 1998 primarily to exploit the LG6 Chromitite. During 2001, Avmin acquired the PGE rights on the Dwarsrivier farm from Assmang and targeted the UG2 Reef.

In June 2005, following a full feasibility study and a period of trial underground mining, the joint venture announced the release of a 220 000 ounce-per-year PGM mine. As a result an underground mine was established. The plant was commissioned in July 2006.

Mining authorisation

An application for a new order conversion of the Two Rivers mining licence was submitted in July 2007. The application has been approved but not yet executed.

Geology

The UG2 Reef outcrops in the Klein Dwarsrivier valley over a north-south strike length of 7.5 kilometres, dipping to the west at between 7 and 10 degrees. The extreme topography results in the UG2 occurring at a depth of 935 metres on the western boundary.

The following reef facies have been defined for the UG2 at Two Rivers:

- UG2 Normal reef facies characterised by a 100-120 centimetre thick chromitite which is overlain by up to three chromitite 'leaders' collectively termed the UG2A chromitites.
- UG2 Split Reef facies in the southern, west-central and north-eastern parts, characterised by a chromitite seam that is separated by a layer of a fine to medium grained internal pyroxenite unit.
- The UG2 Multiple Split reef facies represented by multiple splitting of the UG2 chromitite by internal pyroxenite.

The UG2 is usually bottom loaded with peak PGM values occurring in the basal 10-centimetre sample.

The Merensky Reef consists mainly of orthopyroxene with lesser amounts of plagioclase and clinopyroxene. Thin chromitite layers,

usually 1 to 4 millimetres thick, occur near the upper and lower contacts of the reef.

Mineral Resources and Reserves

The majority of resources at Two Rivers are classified as Indicated Mineral Resources, and it is only the areas around the North and the Main decline that are classified as Measured Resources due to the more closely spaced drilling in this area. Measured resources were also defined up to 250 metres beyond current mining faces. An inferred block previously defined in the north west corner of Two Rivers was upgraded to Indicated resource category due to re-interpretation of the structural geology.

A total of 233 surface diamond boreholes drilled at Two Rivers have intersected the UG2. The boreholes have an average spacing grid of 500 metres over the whole property and 250-metre grid spacing in some areas. The drill hole spacing in the area of the proposed open pit is 50 metres on dip and 100 metres on strike.

The holes were halved by diamond saw and the half-core sampled at 20 centimetres. Samples were crushed and split and submitted for assaying. All samples were assayed by Ni-sulphide collection fire-assay with an ICP-MS finish to determine Pt, Pd, Rh, Ru, Ir and Au values. Base metals (Ni, Cu, Co) were also assayed by aqua regia digestion/OES finish. Duplicate samples and check analyses were carried out. The earlier Gold Fields and Assmang samples were assayed by Pb-collector fire-assay with gravimetric finish. In order to combine the data, some of the original core samples were re-assayed by means of Ni-sulphide collection fire-assay and a regression equation was derived at, to re-cast the original Pb-collection data as Ni-sulphide assay 'equivalents'. The Merensky Reef resource is based on a total of 96 surface diamond drill holes. The same sampling protocol was used as for the UG2, but assays were carried out by Pb-collection fire-assay with ICP-MS finish for Pt, Pd Rh and Au, except for recently drilled boreholes where the Ni-sulphide collection method was used.

Ordinary Kriging interpolation within Studio 3 was used to estimate the grade of each 50 x 50 x 1-metre block generated within the geological model. The UG2 was wireframed and estimated as two units based on the Pt:Pd ratio. Sub-cell splitting of blocks was allowed to follow the geological boundaries accurately. Relative density was calculated for each sample and determined by Kriging in the resource model.

Total in-situ resources were reduced by 30 percent to account for geological losses due to potholes, faults, dykes and replacement pegmatoids.

The resource to reserve conversion was done using the Mine 2-4D optimisation software package to select the optimum economic cut subject to the geological, geotechnical and trackless mining constraints.

UG2 and Merensky geological and grade models generated in 2010 have been used in the current mineral resource and reserve statements.

UG2 Mineral Resources

Mineral Resources	(UG2 + Internal Pyroxenite)								
	Mt	Pt g/t	Pd g/t	Rh g/t	Au g/t	4E g/t	6E g/t	Pt Moz	6E Moz
Measured	12.53	2.56	1.45	0.48	0.04	4.54	5.45	1.03	2.20
Indicated	45.29	1.99	1.19	0.37	0.04	3.58	4.30	2.89	6.26
Total (Measured and Indicated) 2012	57.82	2.11	1.24	0.40	0.04	3.79	4.55	3.92	8.45
Total (Measured and Indicated) 2011	59.33	2.13	1.26	0.40	0.04	3.82	4.58	4.06	8.73

4E = platinum + palladium + rhodium + gold; **6E** = platinum + palladium + rhodium + iridium + ruthenium + gold.

Mineral Resources are inclusive of Mineral Reserves.

Totals are rounded off.

UG2 Mineral Reserves

Mineral Reserves	(UG2 + Internal Pyroxenite)								
	Mt	Pt g/t	Pd g/t	Rh g/t	Au g/t	4E g/t	6E g/t	Pt Moz	6E Moz
Proved	7.99	1.88	1.02	0.36	0.03	3.29	3.95	0.48	1.02
Probable	27.15	1.58	0.92	0.30	0.03	2.82	3.40	1.38	2.96
Total Reserves 2012	35.14	1.65	0.94	0.31	0.03	2.93	3.52	1.86	3.98
Total Reserves 2011	39.03	1.64	0.95	0.32	0.03	2.95	3.54	2.06	4.44

4E = platinum + palladium + rhodium + gold; **6E** = platinum + palladium + rhodium + iridium + ruthenium + gold.

Totals are rounded off.

Modifying factors: Mining losses, mining dilution, metallurgical and geotechnical.



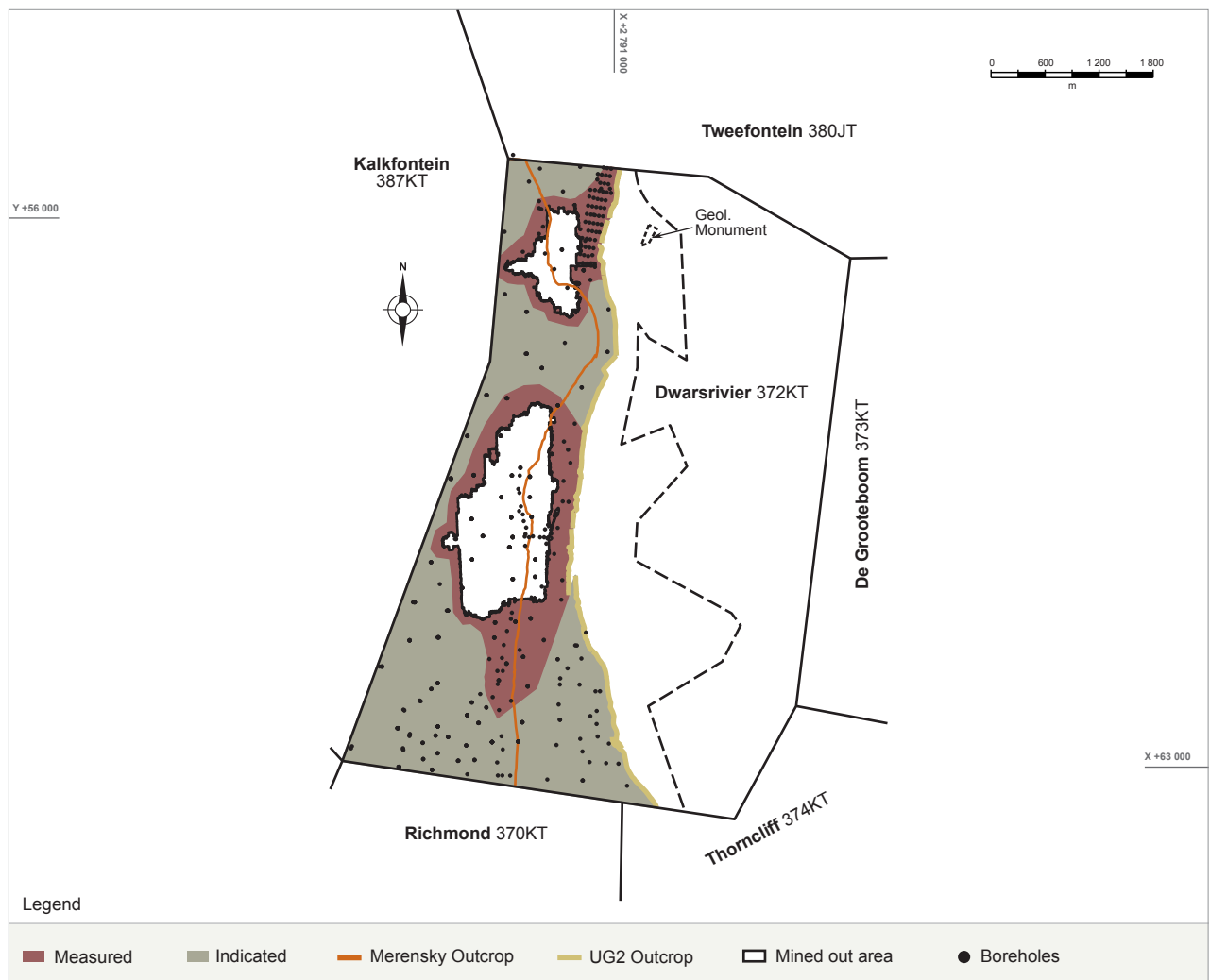
Main portal underground ore pass to conveyor station, Two Rivers Platinum Mine

ARM Platinum continued



Merensky portal, Two Rivers Platinum Mine

Two Rivers Mine UG2 Resource Classification Map

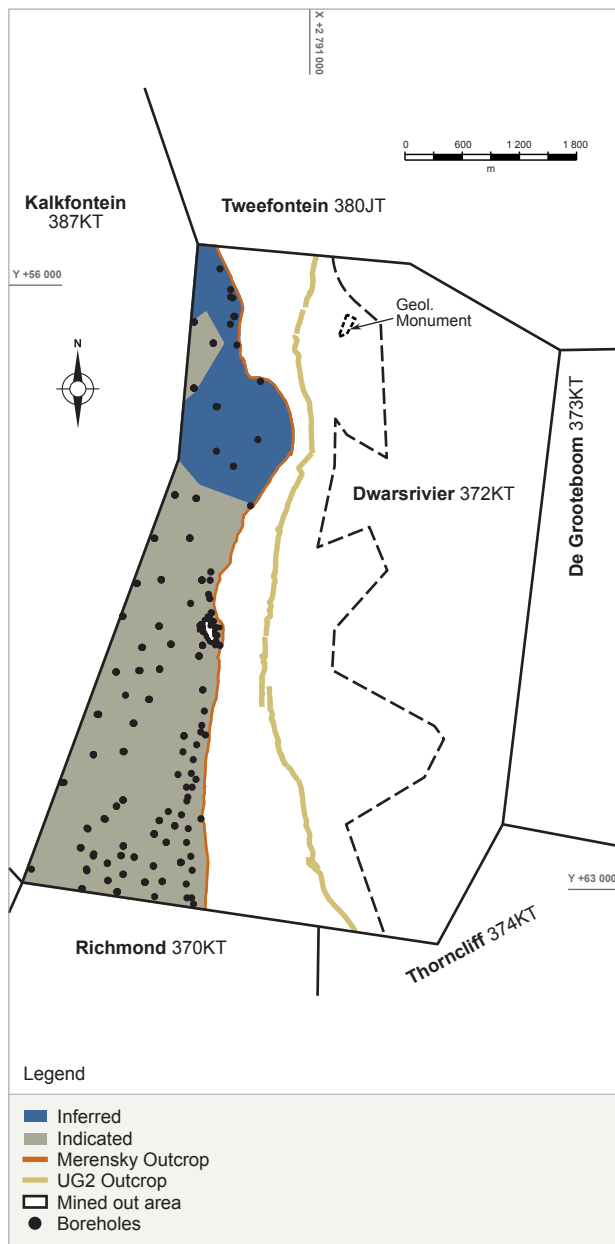


Merensky Reef Mineral Resources

Mineral Resources	Mt	Pt g/t	Pd g/t	Rh g/t	Au g/t	4E g/t	6E g/t	Pt Moz	6E Moz
Measured									
Indicated	38.16	1.73	0.96	0.10	0.20	2.98	3.17	2.12	3.89
Total (Measured and Indicated) 2012	38.16	1.73	0.96	0.10	0.20	2.98	3.17	2.12	3.89
Total (Measured and Indicated) 2011	38.36	1.73	0.96	0.10	0.20	2.98	3.17	2.13	3.91
Inferred 2012	10.39	1.64	0.88	0.11	0.18	2.81	2.99	0.55	1.00

4E = platinum + palladium + rhodium + gold; 6E = platinum + palladium + rhodium + iridium + ruthenium + gold.
 Mineral Resources are inclusive of Mineral Reserves.
 Totals are rounded off.

Two Rivers Mine Merensky Resource Classification Map



Year-on-year change

The 2012 UG2 Measured Mineral Resources marginally decreased from 12.68 to 12.53 million tonnes due to the mining depletion of 2.68 million tonnes which was largely offset by the upgrade of 2.53 million tonnes from the Indicated Resources. A total of 1.17 million tonnes was upgraded from Inferred to Indicated Mineral Resources due to the re-interpretation of the geological structures in the north-western portion of Two Rivers.

The Merensky Indicated Resources changed slightly to 38.16 million tonnes at 3.17 g/t (6E) due to the trial mining on the Merensky reef. The Inferred Resources remained at 10.39 million tonnes.

Historical production at Two Rivers Platinum Mine (Milled)

Financial year	Mt
2007/2008	2.33
2008/2009	2.69
2009/2010	2.92
2010/2011	2.95
2011/2012	3.10



Underground workshops, Two Rivers Platinum Mine

ARM Platinum continued

Modikwa Platinum Mine

ARM's attributable beneficial interest in Modikwa's operations is 41.5%, 8.5% is held by the Modikwa Communities and 50% is held by Anglo American Platinum.

Locality

Modikwa platinum underground mine is situated some 15 kilometres north of Burgersfort and 15 kilometres North West of Steelpoort, along the border between the Mpumalanga and Limpopo provinces in South Africa. Located at longitude 30°10'E and latitude 24°40'S, the site is accessed via the R37 road between Polokwane and Burgersfort.

History

Exploration in the area started in the mid 1920s with the discovery of the Merensky Reef. During the late 1980s further drilling was completed on the UG2 and Merensky reefs. In the late 1990s a feasibility study was completed on the exploitation of the UG2. During 2001 a 50:50 JV agreement was signed between Rustenburg Platinum Mines and ARM Mining Consortium Limited. ARM's effective stake in Modikwa is 41.5 percent, through its 83 percent ownership of ARM Mining Consortium. The other 8.5 percent is held by the Mampudima and Matimatjati community companies through their 17 percent shareholding in ARM Mining Consortium.

Mining authorisation

The application for new order rights was submitted on 31 March 2009. The approval of the application is still pending.

Geology

The igneous layering at Modikwa mine is north-northwest striking with an average dip of 10 degrees to the west. Both the UG2 and Merensky reefs are present. The UG2 occurs as a chromitite layer with average thickness of approximately 60 centimetres. Three leader chromitites occur above the main seam. Gentle undulations of the UG2 with amplitudes of less than 2 metres are pervasively developed across the mine area. Potholes of varying size appear to be randomly distributed within the North shaft area. Potholes are less abundant in the South shaft area, which is more disturbed by faulting. The Onverwacht Hill area is characterised by the presence of several large ultramafic pegmatoid intrusions that disrupt and locally replace the UG2.

Mineral Resources and Reserves

The Mineral Resource classification is based on data constraints, information risk assessments, geological, geostatistical considerations and review by the Competent Persons Team.

The mineral resource is based on 1 815 surface diamond drillhole intersections and 4 118 underground sample sections. These logs and values are kept in separate electronic databases and combined for estimation purposes after rigorous data validation. Samples are submitted to Anglo Platinum Laboratories (AR) and Mintek Laboratories (primary laboratories) and to Genalysis (check laboratory) for analysis.

The UG2 Resource Cut is divided into three units comprising the UG2 Reef and dilution cuts in the hangingwall and footwall to make up the mining cut. Estimation of the three sub-units in the mining cut is carried out separately and independently. Two-dimensional block models with block sizes of 125 metre x 125 metre, 250 metre x 250 metre and 500 metre x 500 metre, depending on the drillhole/sample section spacing are created. The Pt, Pd, Rh, Au, Cu and Ni grades, width and density are interpolated using Ordinary Kriging. Resources are reported after deduction of geological losses and exclude resources converted to reserves. The geological losses account for losses due to pegmatoid intrusions, faults, dykes and potholes. Part of the Resources are converted to Mineral Reserves by applying appropriate mining, metallurgical and economic factors, i.e. "modifying factors".

A minimum mining cut of 102 centimetres is used to calculate the amount of footwall waste that is included in the mining cut. Where the hangingwall and the main seam thickness are greater than 102 centimetres, an additional 5 centimetres of footwall waste is included. The basal contact of the UG2 layer is typically high-grade and it is important that this contact is not left in the footwall during mining. The UG2 is accessed via two primary declines from surface. Mining consists of mechanised development and conventional stoping. Run-of-mine tonnage is processed at the Modikwa concentrator and the PGE rich concentrate is transported to Anglo Platinum's Polokwane smelter and refining facilities.

UG2 Mineral Resources and Reserves

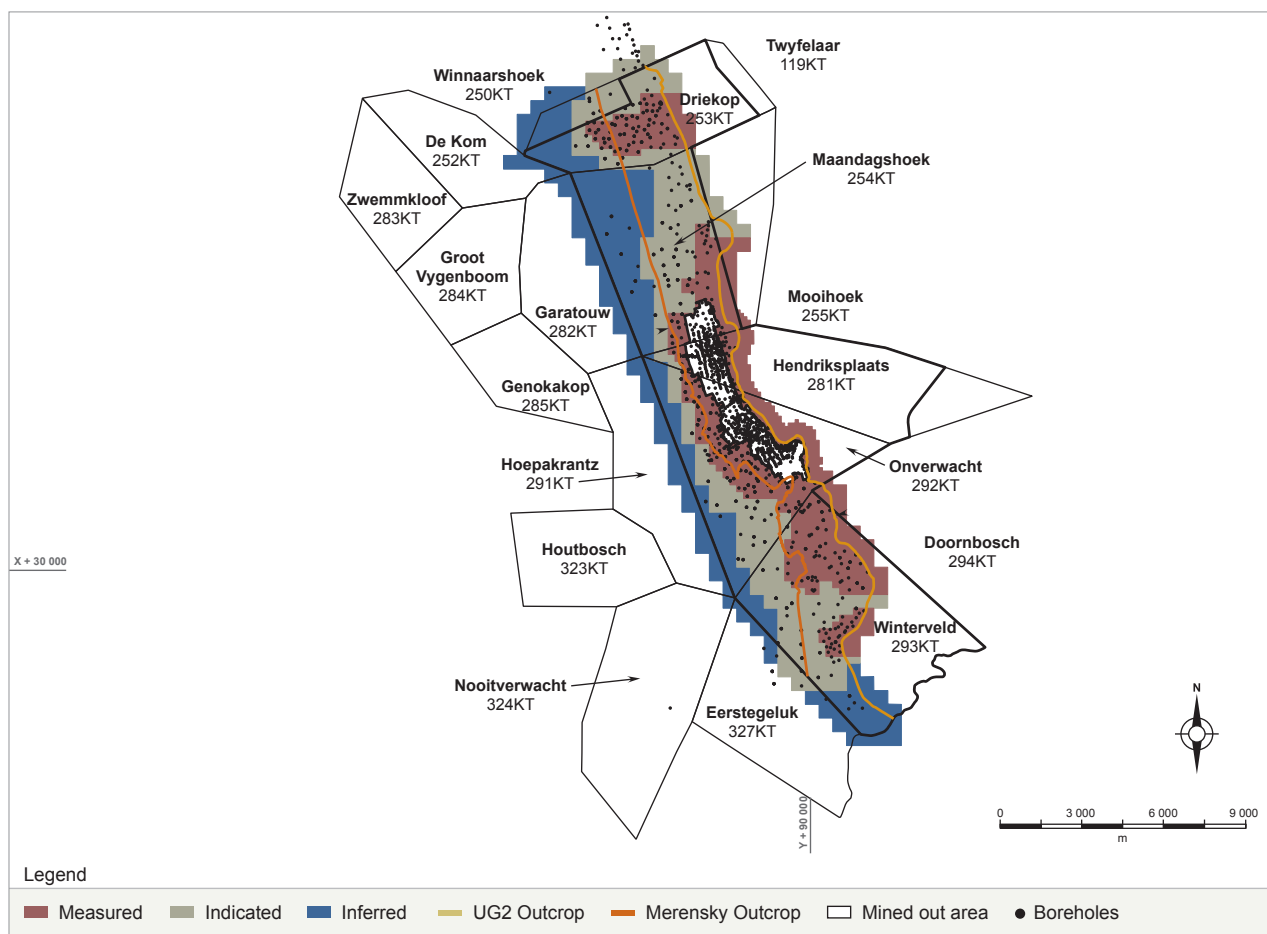
	Mineral Resources				Mineral Reserves		
	Mt	4E g/t	4E Moz		Mt	4E g/t	4E Moz
Measured	50.98	5.90	9.67	Proved	17.61	4.76	2.70
Indicated	92.26	5.89	17.47	Probable	37.17	4.69	5.60
Total Measured and Indicated 2012	143.24	5.89	27.14	Total Reserves 2012	54.78	4.71	8.30
Total Measured and Indicated 2011	141.20	5.89	26.70	Total Reserves 2011	55.43	4.86	8.65
Inferred 2012	76.33	6.19	15.20				

4E = platinum + palladium + rhodium + gold.

Mineral Resources are exclusive of Reserves.

Totals are rounded off.

Modikwa Mine UG2 Resource Classification Map



Merensky Reef Mineral Resources

	Mineral Resources		
	Mt	4E g/t	4E Moz
Measured	17.95	2.94	1.70
Indicated	54.05	2.73	4.74
Total Measured and Indicated 2012	72.00	2.78	6.44
Total Measured and Indicated 2011	72.00	2.78	6.44
Inferred 2012	136.84	2.65	11.66

4E = platinum + palladium + rhodium + gold.
Totals are rounded off.

Year-on-year change

The Mineral Reserves at Modikwa decreased to 54.8 million tonnes when compared with the 2011 statement, as a result of revised mining cut density used to include dilution. The Measured and Indicated Mineral Resources increased from 141.2 to 143.2 million tonnes due to upgrade of Inferred to Indicated Resources.

Historical production at Modikwa Mine (Milled)

Financial year	Mt
2007/2008	2.26
2008/2009	2.45
2009/2010	2.27
2010/2011	2.30
2011/2012	2.18

ARM Platinum continued**Kalplats Platinum Projects**

Kalplats PGM Project – ARM Platinum's attributable beneficial interest is currently 78%. Platinum Australia Limited (PLA) holds 12% and Anglo American Prospecting Services 10%.

Kalplats Extended Project – ARM Platinum's attributable beneficial interest is 50%. The other 50% is held by PLA.

Locality

The Kalplats Platinum Projects are situated 330 kilometres west of Johannesburg and some 90 kilometres southwest of Mafikeng in the North West Province of South Africa. Situated at latitude 26°30'S and longitude 24°50'E, the project areas are accessed from Stella on the N14 national road linking Mafikeng and Vryburg.

History

Anglo American discovered the Kalplats platinum deposits in the early 1990's and Harmony Gold Mining Company Limited acquired the project from Anglo in 1999. Subsequently ARM acquired the project as part of the merger of the Anglovaal, ARM and Harmony assets in 2004. Pre-2004, exploration comprised a combination of rotary air blast (RAB), reverse circulation (RC) and diamond drilling. Anglo drilled a total of 6 000 metres in 133 holes, while Harmony drilled a total of 35 640 metres in 399 holes. Harmony commissioned a feasibility study in 2003 and excavated a 500 tonne bulk sample for metallurgical test work. The study assessed the viability of both an open pit and underground mining operation. The feasibility study was completed early in 2004.

In 2005, ARM Platinum entered into two joint venture agreements with PLA, one over the "Kalplats PGM Project", which provides for PLA to earn up to 49 percent by completing a bankable level feasibility study and making the Panton metallurgical process available at no cost. The other joint venture agreement covers the "Kalplats Extended Project" (Extended Project) in which ARM Platinum and PLA each has a 50% share and contributes equally to the exploration expenditure. Both projects are managed by PLA.

PLA commenced drilling in 2006 with a combination of diamond and RC drilling focusing on extending the resources on the Vela, Scorpio, Sirius, Mira, Serpens North, Serpens South and Crux deposits. PLA completed 683 drill holes for a total of 92,529 metres. Late in 2009, PLA completed a pre-feasibility study on a 1.5 million tonne of ore per year open pit mining operation thereby earning a 12% interest in the project. In 2010, PLA completed a Definitive Feasibility Study.

Limited drilling was carried out on a soil geochemical anomaly in the Extended Project area with initial positive results.

Prospecting rights

In September 2006, ARM Platinum was granted a new order prospecting right (PR492 of 2006) over the Kalplats Project covering portions of the farms Groot Gewaagd 270, Gembok Pan 309, Koodoos Rand 321 and Papiesvlakte 323 (approximately 3,810 hectares). The prospecting right was renewed until 26 July 2012 when it lapsed. ARM Platinum has applied for a Retention Permit of the Kalplats Project area.



Nkomati open pit operations

In April 2007, a new order prospecting right (DME1056) (approximately 62,985 hectares) was granted to ARM Platinum over the Extended Project area which covers an additional 20 kilometre of strike to the north and 18 kilometres to the south of the Kalplats Project area.

Geology

PGE mineralisation is hosted mainly by magnetite-rich gabbros within the Stella Layered Intrusion (SLI), a 3.0 billion year old layered complex intruded into the Kraaipan Greenstone Belt. Mineralisation is contained in eight separate, subvertically dipping zones known as Crater, Orion, Vela, Sirius, Mira, Serpens North and Serpens South and Crux, each with strike lengths of between approximately 500 and 1 000 metres and widths of between 15 and 45 metres. In addition, drilling has outlined at least three additional deposits known as Scorpio, Tucana and Pointer.

Three main sub-parallel reef packages within each zone have been recognised. They are the Main Reef (the highest grade reef), Mid Reef and LG Reef. The area is structurally complex, and thrusting has caused duplication of reefs in some cases.

Mineral Resources

Geological modelling and resource estimation was done by Coffey Mining on all eight major deposits in the Kalplats PGM Project.

Resources have been calculated to a depth of 200 metres below surface at a cut of grade of 0.5 g/t 3E. Tonnages and grades are reported only for the entire thickness of a package of seven reefs, namely the UM, UUM, LM, MR, LG, MMW and the Main Reef Residual layers.

Kalplats Mineral Resources

Deposit	Measured Resources		Indicated Resources		Total Measured and Indicated Resources			Inferred Resources		Total Mineral Resources		
	Mt	3E g/t	Mt	3E g/t	Mt	3E g/t	3E Moz	Mt	3E g/t	Mt	3E g/t	3E Moz
Crater	1.34	1.89	6.22	1.85	7.55	1.86	0.45	18.66	2.11	26.22	2.04	1.72
Orion	4.20	1.57	4.01	1.56	8.21	1.57	0.41	3.64	1.61	11.86	1.58	0.60
Crux	7.70	1.55	10.88	1.40	18.58	1.46	0.87	9.46	1.35	28.04	1.42	1.28
Sirius	0.80	1.52	5.31	1.49	6.11	1.49	0.29	3.38	1.27	9.48	1.41	0.43
Mira			2.71	1.42	2.71	1.42	0.12	3.93	1.44	6.63	1.43	0.31
Vela			21.79	1.36	21.79	1.36	0.95	14.87	1.32	36.66	1.34	1.58
Serpens N			4.96	1.41	4.96	1.41	0.22	2.74	1.47	7.70	1.43	0.35
Serpens S								10.76	1.34	10.76	1.34	0.46
Total 2012	14.04	1.59	55.88	1.46	69.91	1.48	3.33	67.44	1.57	137.36	1.53	6.74
Total 2011	14.04	1.59	55.88	1.46	69.91	1.48	3.33	67.44	1.57	137.36	1.53	6.74

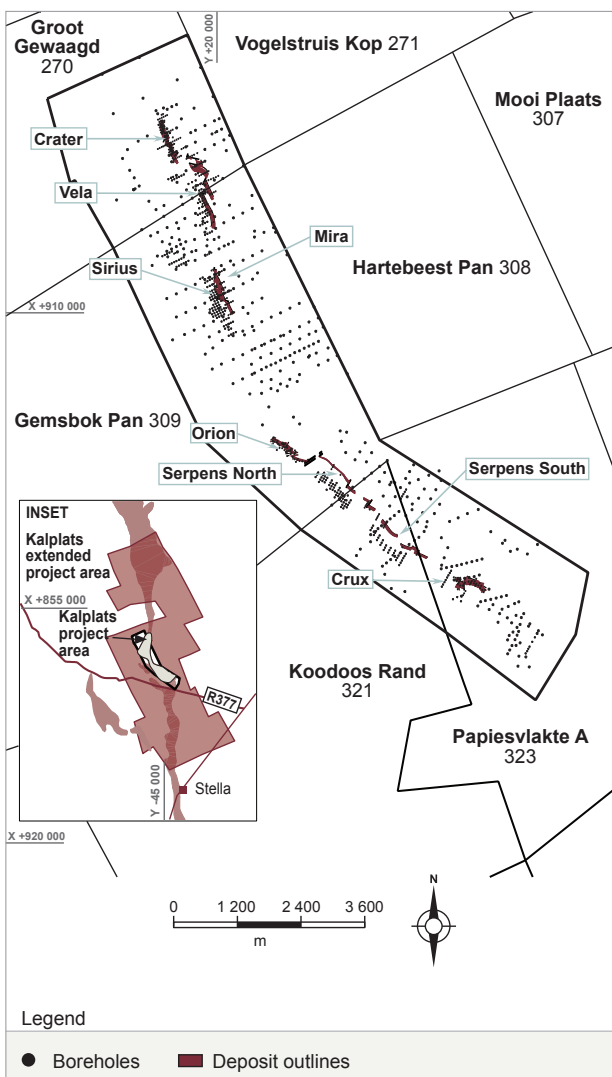
3E = platinum + palladium + gold.

Totals are rounded off.

Resources include UM, UUM, LM, MR, LG, MMW and the Main Reef Residual layers, which is the total mineralized width for all seven layers.

Cut off grade of 0.5 g/t 3E has been applied.

Kalplats Platinum Projects Deposits Locality Map



Year-on-year change

Total Measured and Indicated Resources are 69.91 million tonnes at 1.48 g/t (3E), while the total resources (including Inferred) remain at 137.36 million tonnes at 1.53 g/t (3E).



ARM Coal

Goedgevonden Coal Mine

ARM's attributable beneficial interest in Goedgevonden's operations is 26%. The other 74% is held by Xstrata. The Joint Venture with Xstrata also includes Xstrata Coal Operations in South Africa, Participating Coal Business (PCB) in which ARM has an economic interest of 20.2%.

Locality

The Goedgevonden Mine is situated in the Witbank Coalfield about 7 kilometres south of the town of Ogies in Mpumalanga province in South Africa.

History

A total of 548 surface diamond boreholes were drilled during 1964 to 2004 by Duiker Mining and Xstrata SA. Anglo Coal supplied an additional 102 boreholes for the Zaaiwater area. Most boreholes were drilled down to basement to define the seam locality and basement topography. Owing to the different campaigns, the database had to be validated to produce a consistent set of data.

Mining authorisation

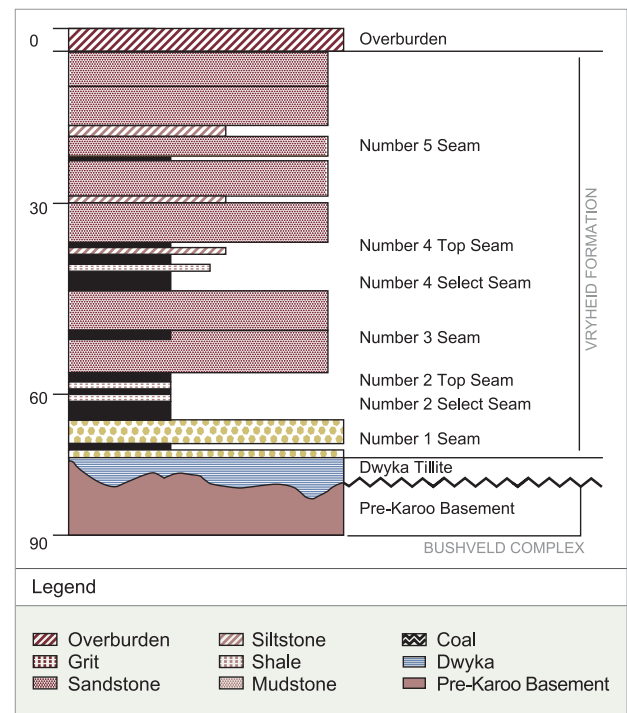
New order mining rights were granted and subsequently registered on 22 August 2008.

Geology

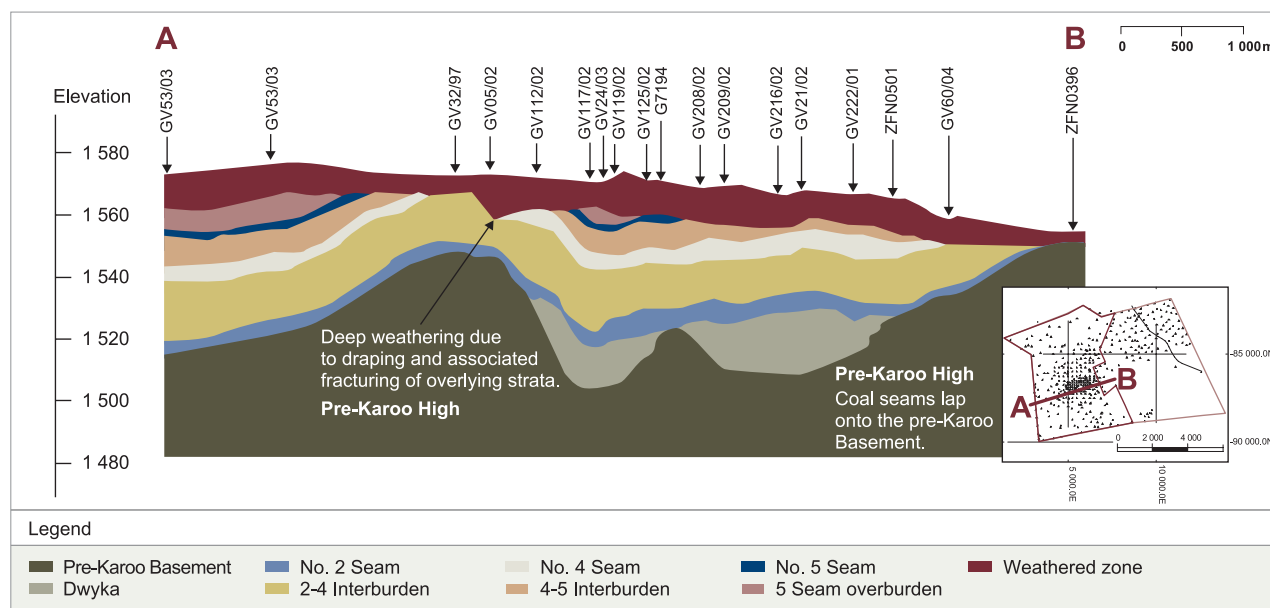
The stratigraphy of the Witbank Coalfield consists of five seams numbered from oldest to youngest: No 1 to No 5 seam. The seams vary in thickness from less than 0.5 metres to over 6 metres and do not exceed 300 metres in depth from surface. The coal seams dip at less than 5 degrees. However, coal seam morphology and qualities may be locally influenced by basement topography, surface weathering and intrusion of dolerite dykes and sills. The coal qualities vary both within and between individual coal seams. Low quality coals, suitable for the local steam coal market, have a calorific value of between 18 to 22Mj/kg, whereas the high quality export steam coal has a calorific value of greater than 27Mj/kg. The Goedgevonden open-cut mine is expected to produce about 3.2 million additional tonnes annually for export and 3.4 million tonnes a year for domestic thermal generation coal. The planned stripping ratio is between 3.35:1 and 1.85:1 in the early years of production. Using a mining contractor, Xstrata SA started mining on the Goedgevonden property at a rate of 1 million tonnes a year (run-of-mine), which has been steadily increasing.

All five coal seams are developed on Goedgevonden (See Figure). The No 1 seam is of low quality, thin and only developed in paleolow areas. The No 2 seam is extensively developed and is of good quality and is, on average, 5.5 metres thick. The No 3 seam at Goedgevonden is of good quality but, with an average thickness of only 0.3 metres, is uneconomic. The No 4 seam, being closer to surface and although of the same thickness as the No 2 seam, is influenced by weathering and is not as extensively developed. The No 5 seam is of good quality, but is preserved as erosional remnants on the high ground only and thus not extensively developed over the area. No major faults, structural disturbances or intrusives were observed in the boreholes drilled to date.

Wireframes for the seam composites for the No 2, 4 and 5 seams were generated in Datamine. Two-dimensional block models were generated with block sizes of 50 x 50 metres. All estimations of the individual blocks were done using inverse distance cubed with an isotropic search. Other software packages used in the evaluation are 'Washproduct' and 'Xpac'.



Section showing Goedgevonden Coal seams



The following table shows the Goedgevonden Coal Resources and Reserves obtained from Xstrata, reflecting the status as at 31 December 2011. Mineral Resources and Reserves of the Xstrata mines are the responsibility of the Xstrata SA Resources and Reserves team. No ARM employee is involved in the compilation of Xstrata SA's Mineral Resources and Reserves. The Mineral Resources and Reserves for PCB are not stated in the report but can be obtained from Xstrata.

Goedgevonden Resources and Reserves

	Measured Mt	Indicated Mt	Measured and Indicated Mt	Proved Mt	Probable Mt	Total Reserves Mt	Saleable Mt
Total 2012	580.0	24.0	604.0	273.0	76.0	349.0	198.0
Total 2011	566.6	41.4	608.0	357.7	6.1	363.8	206.2



Goedgevonden Coal Mine

Historical production at Goedgevonden

Financial year	Mt
2007/2008	1.6
2008/2009	2.5
2009/2010	2.7
2010/2011	5.9
2011/2012	6.4

ARM Copper

The Lubambe Copper Project

ARM's attributable beneficial interest in the Lubambe Copper Project is 40%. Vale owns 40% of the project and ZCCM 20%.

Locality

The Lubambe Copper Project is located within the Greater Konkola Area of the Zambian Copperbelt in close proximity to the town of Chililabombwe.

History

Prospective outcrop at the Lubambe Copper Project was discovered in 1924. Since then, exploration drilling and production have been undertaken at Lubambe by companies such as Bancroft Mines Limited and ZCCM. On 27 August 2010, Vale/ARM JV announced the release of Lubambe Copper Mine. The mine's design is 2.5 million tonnes of ore per annum to produce 45 000 tonnes of contained copper in concentrate to be toll refined in Zambia.

Mining authorization

The revised mining licence for the Lubambe Copper Project was issued in April 2011. The mining licence is bound by the Zambia/DRC border to the west, north and east and the Vedanta's Konkola Copper Mine mining licence is adjacent to the south.

Geology

The Lubambe copper deposit is one of approximately thirty major Copper/Cobalt deposits occurring within the Central African Copperbelt. It is located at the northwestern extremity of the Zambian portion of the Copperbelt. The deposit is hosted within sediments which accumulated in an intracratonic rift, which was subsequently closed during the Lufilian Orogeny. The Lubambe Copper Project area mineralisation is defined as the ore shale (OS) type of mineralisation. Copper mineralisation is largely hosted within the OS1 Member, whose true thickness varies from 3 to 14 metres. Mineralisation occurs as finely disseminated sulphides along bedding planes and cleavage, in thin veinlets, and in lenticles and stringers, comprising of chalcocite, chalcopyrite, bornite, digenite, covellite, pyrite and carrollite. A large proportion of the non-sulphide copper minerals occur along fractures and veins and consist of malachite, pseudomalachite, chrysocolla, cuprite, azurite and native copper.

Mineral Resources and Reserves

Mineral Resources at Lubambe Project are stated at a 1% total copper (TCu) cut-off grade.

The Lubambe Copper Project Mineral Resources

Mineral Resources	Mt	%TCu	Mt Contained Cu
Measured South Limb	1.1	2.48	0.03
Indicated South Limb	35.7	2.32	0.83
Total South Limb	36.8	2.32	0.86
Measured East Limb	4.0	2.64	0.11
Indicated East Limb	16.6	2.58	0.43
Total East Limb	20.6	2.59	0.53
Total Measured and Indicated 2012	57.4	2.42	1.39
Total Measured and Indicated 2011	57.4	2.42	1.39
Inferred South and East Limb	23.9	2.23	
Inferred Area A	219.5	2.64	

Mineral Resources are inclusive of Mineral Reserves.
Totals are rounded off.

The Lubambe Copper Project Mineral Reserves

Mineral Reserves	Mt	%TCu	Mt Contained Cu
Proved South Limb	0.76	2.49	0.02
Probable South Limb	1.99	2.11	0.04
Total Reserves South Limb	2.75	2.22	0.06
Proved East Limb	1.88	2.34	0.04
Probable East Limb	4.71	2.39	0.11
Total Reserves East Limb	6.59	2.38	0.16
Total Reserves 2012	9.34	2.33	0.22
Total Reserves 2011			

Totals are rounded off.
Modifying factors: Mining losses, mining dilution and metallurgical.
The Mineral Reserves cover a 3 Year Plan Area.

Gold: Harmony

ARM owns 14,7% of Harmony's issued share capital. Harmony, South Africa's third largest gold producer, is separately run by its own management team. Resources and Reserves of the Harmony mines are the responsibility of the Harmony team and are published in Harmony's Annual Report.

Definitions

The definitions of Mineral Resources and Reserves, quoted from the SAMREC Code, are as follows:

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, or estimated from specific geological evidence, sampling and knowledge interpreted from an appropriately constrained and portrayed geological model. Mineral Resources are subdivided, and must be so reported, in order of increasing confidence in respect of geoscientific evidence, into Inferred, Indicated or Measured categories.

An 'Inferred Mineral Resource'

is that part of a Mineral Resource for which volume or tonnage, grade and mineral content can be estimated with only a low level of confidence. It is inferred from geological evidence and sampling and assumed but not verified geologically 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 in scope 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 information from exploration, sampling and testing of material gathered from locations such as outcrops, trenches, pits, workings and drill holes. The locations are too widely or inappropriately spaced to confirm geological 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 information from exploration, sampling and testing of material from locations such as outcrops, trenches, pits, workings and drill holes. The locations are spaced closely enough to confirm geological and grade continuity.

A 'Mineral Reserve'

is the economically mineable material derived from a Measured or Indicated Mineral Resource or both. 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 and a Life-of-Mine Plan for an operation must have been completed, 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 Mineral Reserve'

is the economically mineable material derived from a Measured or Indicated Mineral Resource or both. It is estimated with a lower level of confidence than a Proved Mineral 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 'Proved Mineral 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.