



SUSTAINABILITY
DATA TABLES 2013

Occupational health and safety

Operational safety performance table

Operations	SHEQ certification	LTIFR			Achievements in F2013
		F2013	F2012	F2011	
Ferrous Division					
Beeshoek Mine	ISO 8001, ISO 14001, OHSAS 18001	0.07	0.00	0.17	Achieved 2.3 million fatality-free shifts
Black Rock Mine	ISO 9001, ISO 14001, OHSAS 18001 certification in progress	0.33	0.19	0.40	Achieved 2.3 million fatality-free shifts
Cato Ridge Works	ISO 9001, ISO 14001, OHSAS 18001	0.10	0.52	0.23	Achieved 1.5 million fatality-free shifts
Dwarsrivier Mine	ISO 9001, ISO 14001, OHSAS 18001	0.87	0.76	1.26	Achieved 1.9 million fatality-free shifts
Khumani Mine	Integrated certification of ISO 9001, ISO 14001 and OHSAS 18001. SANS 16001: 2007	0.22	0.11	0.27	Achieved 3.4 million fatality-free shifts
Machadodorp Works	ISO 9001, ISO 14001, OHSAS 18001	0.00	0.16	0.68	Achieved 672 000 fatality-free shifts Zero lost time injuries in F2013
Platinum Division					
Modikwa Mine	ISO 9001, ISO 14001 and OHSAS 18001 certification put on hold due to financial constraints.	1.16	0.81	0.37	Achieved 1.8 million fatality-free shifts
Nkomati Mine	ISO 9001, ISO 14001, OHSAS 18001	0.11	0.25	0.26	Achieved 3.2 million fatality-free shifts
Two Rivers Platinum Mine	Aligning SHEQ systems with ISO 14001 and OHSAS 18001. Training Centre is ISO 9001 certified	0.33	0.29	0.62	Achieved 1.1 million fatality-free shifts
Copper Division					
Lubambe Copper Mine	Aligning SHEQ systems with ISO 14001 and OHSAS 18001. Training Centre is ISO 9001 certified	0.16	0.22	–	Achieved 1.4 million fatality-free shifts

Section 54 and Section 55 Notices

	Section 54 Notices			Shifts/days lost		
	F2013	F2012	F2011	F2013	F2012	F2011
Ferrous Division						
Beeshoek Mine	1	1	–	6	–	–
Khumani Mine	3	2	–	2	–	–
Black Rock Mine	4	1	3	5	–	5
Dwarsrivier Mine	5	4	2	3	14	5
Platinum Division						
Nkomati Mine	☒	–	–	☒	–	–
Two Rivers Platinum Mine	☒	3	2	☒	17	5
Modikwa Mine	☒	5	8	☒	19	22
Total	13	16	15	16	50	37

	Section 55 Notices			Shifts/days lost		
	F2013	F2012	F2011	F2013	F2012	F2011
Ferrous Division						
Beeshoek Mine	☒	1	–	☒	13	–
Khumani Mine	☒	–	–	☒	–	–
Black Rock Mine	4	4	2	☒	–	–
Dwarsrivier Mine	7	–	–	☒	–	–
Platinum Division						
Nkomati Mine	☒	1	1	☒	–	–
Two Rivers Platinum Mine	☒	3	1	☒	–	–
Modikwa Mine	☒	4	1	☒	–	–
Total	11	13	5	☒	13	–

Occupational health and wellness

Chronic medical conditions

Medical condition	Newly diagnosed	Existing	Total of employees with condition	Percentage of total workforce affected
F2013				
Hypertension	476	1 287	1 763	7.0
Diabetes Type 1	30	75	105	0.4
Diabetes Type 2	186	224	410	1.6
Epilepsy	4	93	97	0.4
Urinary Tract Infection (URTI)			8 539	33.8

Noise – Induced Hearing Loss

	Number of employees	Percentage of total workforce
PLH shift		
F2013		
PLH >2.5% to <5%	556	2.2
PLH >5% to <7.5%	346	1.4
PLH >7.5% to <10%	314	1.2
F2012		
PLH >2.5% to <5%	585	2.6
PLH >5% to <7.5%	236	1.0
PLH >7.5% to <10%	118	0.5
F2011		
PLH >2.5% to <5%	856	4.0
PLH >5% to <7.5%	257	1.2
PLH >7.5% to <10%	180	0.8

Audiometric examinations

	F2013	F2012	F2011	F2010
Number of tests performed	44 163	40 710	38 945	37 734
Number of tests referred	81	113	160	143
Percentage of total (referred/performed)	0.18	0.28	0.41	0.38
Number of tests submitted for compensation	56	45	33	58
Percentage of total (compensation submitted/performed)	0.13	0.11	0.08	0.15
Number of cases compensated	12			
Percentage of total (compensated/referred)	14.81			

Noise – Induced Hearing Loss per operation

Operation	F2013		F2012		F2011	
	Referred	Submitted for compensation	Referred	Submitted for compensation	Referred	Submitted for compensation
Beeshoek Mine	1	0	5	1	2	5
Khumani Mine	12	3	9	11	2	0
Black Rock Mine	10	6	3	2	3	0
Dwarsrivier Mine	2	1	7	0	2	2
Cato Ridge Works	5	0	5	0	107	0
Machadodorp Works	15	4	2	1	0	0
Nkomati Mine	15	11	4	5	21	7
Two Rivers Platinum Mine	6	1	16	4	9	4
Modikwa Mine	15	30	62	21	14	15
Total	81	56	113	45	160	33

Environmental sustainability

The table below provides a summary of biodiversity activities at our various operations.

Overview of biodiversity

Operation	Is the operation in close proximity to area of high biodiversity or protected area?	Biodiversity study completed	Details of red data or protected species	Status of Biodiversity Action Plan (BAP)	Strategies for addressing impact
ARM Platinum Division					
Modikwa Mine					
494 hectares were disturbed and are not yet rehabilitated. No communities were resettled in F2013.	No.	Yes.	<p>Protected: Aloe cryptopoda, Aloe fosteri, Balanites maughamii, Elaeodendron transvaalensis, Sclerocarya birrea subsp. Africana</p> <p>Declining: Elaeodendron transvaalensis</p> <p>Endemic: Aloe fosteri, Euclea sekhukhuniensis, Rhoicissus sekhukhuniensis, Rhoicissus spes. nov, Rhus batophylla, Rhus sekhukhuniensis</p> <p>Lower risk ☒ near threatened: Jamesbrittenia macrantha</p> <p>Rare: Rhus sekhukhuniensis</p> <p>Vulnerable: Pavetta zeyheri, Rhus batophylla</p> <p>Fauna species: Manis temminckii, Rhinolophus blasii, Gyps coprotheres, Polemaetus belicosus, Python natalensis</p> <p>Wetland: Two Red Data listed plant species, namely <i>Searsia batophylla</i> and <i>Catha cassinoides</i>, have been found within the wetland area, which increases the conservation importance of the system in terms of biodiversity maintenance. The plant species, <i>Vitex obovata</i>, which is a food source for the rare cycad species, <i>Pycna Sylvia</i>, also occurs within the wetland boundaries (Moopetsi River ecosystem).</p> <p>Evidence of the presence of the Cape clawless otter, <i>Aonyx capensis</i>, has been found within the wetland area, which increases the conservation importance of the system in terms of biodiversity maintenance and faunal species migration.</p>	BAP has been completed. As a requirement in terms of the guideline, Modikwa has to engage the community/landowner to agree on the conservation principles and actions prior to the implementation of any of the proposed strategies. Following agreement, the BAP will be implemented.	<p>Following agreement between the mine and land owners/trust on the BAP, a Biodiversity Implementation Plan and survey will be performed.</p> <p>Establishing a nursery of 1000 indigenous plants for re-planting on areas distributed by mining. Priority will be given to the South Shaft 2 area and planting will be done by resources from the local community.</p> <p>A comprehensive biodiversity assessment study is underway, which is expected to be completed during 2014. The purpose of the study is to update the current Biodiversity Action Plan and revise long-term strategies to manage the biodiversity in the area earmarked for mining activities.</p>

Overview of biodiversity *continued*

Operation	Is the operation in close proximity to area of high biodiversity or protected area?	Biodiversity study completed	Details of red data or protected species	Status of Biodiversity Action Plan (BAP)	Strategies for addressing impact
ARM Platinum Division					
Two Rivers Platinum Mine					
<p>180 hectares were disturbed and are not yet rehabilitated. No communities were resettled in F2013.</p>	<p>Yes, high biodiversity. The mine is located within the Sekhukhuneland Centre for Plant Endemism.</p>	<p>Yes.</p>	<p>Priority red data plants: <i>Gladiolus</i> sp.nov, <i>Resnova</i> sp.aff.megaphylla, <i>Zantedeschia pentlandi</i> while protected fauna are cicada (<i>Pycna Sylvia</i>), <i>Dromica honesta</i></p> <p>Other conservations: Important invertebrates confirmed during field work are scorpion species such as <i>Hadogenes polytrichobothrius</i> (flat rock scorpion), <i>Opisthophthalmus gladifrons</i>, <i>Parabuthus transvaalicus</i>, <i>Uroplectes triangulifer</i> and <i>Pseudolychas</i>. A newly described protected mite species called <i>Zambedania</i> sp.n (<i>Heterostigmae</i>) associated with a certain spider species (inhabiting under round shaped stones that are fairly deeply buried up to 1/3 or 1/2 of their depth) called <i>Harpactrella flavipilosa</i></p> <p>Ant species confirmed and potentially undescribed, collected during the invertebrate survey, include undescribed <i>Tetramonium</i>, undescribed <i>Camponotus</i>, undescribed <i>Anilomyrma</i>, possible undescribed <i>Meranoplus</i>, possibly undescribed <i>Aenictus</i></p> <p>The property is dominated by thick leafed plants, most of which only occur in the Sekhukhuneland Centre for Plant Endemism (area of ecological importance within which Two Rivers is located). Woodlands dominant within the property are:</p> <ul style="list-style-type: none"> – <i>Lydenburgia-Euclea</i> Open Woodland – within which the protected <i>Lydenburgia cassinoides</i> plant specimens are dominant; – <i>Sclerocarya</i> – <i>Bolusanthus</i> Open Woodland within which <i>Sclerocarya birrea</i> subsop.caffra (Marula tree) is dominant; – <i>Combretum erythphyllum</i> Riverine Woodland within which <i>Combretum</i> specimens are dominant; and – <i>Phragmites</i> – <i>Imperata</i> Marsh wherein <i>Phragmites</i> species are dominant. 	<p>BAP has been completed and implementation is underway – the mine is divided into five biodiversity units wherein two of the five units are no-go areas (that is, the slopes and the plateau), two for moderate land use whilst one (plains) are for intensive land use.</p>	<p>The mine licensed area is divided into biodiversity units or blocks (i.e. mountain slopes and plateaus, riparian, plains, current mining area, proposed mining area) wherein there are areas earmarked for intensive land use development, and moderate and no-go areas for conservation purposes.</p> <p>An environmental control site bearing similar ecological features to the proposed open cast site is identified and is being monitored at the north part of the property adjacent to the proposed north open-cast area.</p> <p>Another environmental control site with ecological characteristics similar to the proposed South Opencast mining area has been identified and a baseline assessment survey is currently underway on both the proposed South Opencast mining area and the control site.</p> <p>Hence, there are in total four areas on which terrestrial invertebrate assessment surveys are currently and continuously conducted – namely:</p> <ol style="list-style-type: none"> 1. the proposed North Open Pit mining area; 2. the proposed North Open environmental control site; 3. the proposed South Open Pit mining area; and 4. the proposed South Open Pit environmental control site. <p>The terrestrial invertebrate baseline assessment surveys are done to complement the fauna part of the existing Biodiversity Baseline Assessment Survey – to ensure that it becomes comprehensive and cross-cutting from flora and fauna components of the terrestrial ecology of the mine's ecosystem.</p>

Overview of biodiversity *continued*

Operation	Is the operation in close proximity to area of high biodiversity or protected area?	Biodiversity study completed	Details of red data or protected species	Status of Biodiversity Action Plan (BAP)	Strategies for addressing impact
ARM Platinum Division					
Nkomati Mine					
10 980 hectares were disturbed and not yet rehabilitated. No communities were resettled in F2013.	No. The mine is located among commercial forestry operations.	Yes.	No red data species.	In terms of the BAP, priority actions completed and in progress, include: – installation of four 1.2 metre diameter concrete pipes to ensure free flow of water and to minimise the build-up of silt at the haul road crossing is complete; – a continuous program for removal of alien invasive plants is in place; and – rehabilitation of a designated waste rock area is in progress.	Integration into local municipal policy and plans as well as relevant Spatial Development Plans; integration into existing Group policy and management systems, including the Biodiversity and Land Management Plan, Closure Plan and Environmental Management Plan; identification and liaison with stakeholders and neighbouring properties especially with respect to weed/invaser and erosion control action plans; post closure land use; and available budget and manpower for implementation, management and maintenance. In terms of water management, a geo-hydrological model and update of the surface water management plan and water balance are on track for completion early in 2013.
ARM Ferrous Division					
Beeshoek Mine					
980 hectares disturbed and not yet rehabilitated. The increase in disturbed land is due to the road diversion for the planned Village Open Pit. No communities were resettled in F2013.	No.	Yes.	Seven endemic and near-endemic plant species identified. Various aloes, boschia trees and camel thorn trees.	The BAP process will be started in 2014.	Continuous monitoring of impacted areas. Off-set and relocation of plants in terms of the road diversion has been completed. For the Village Pit mining area, an off-set area and relocation plan for protected species is currently being negotiated with authorities and stakeholders.

Overview of biodiversity *continued*

Operation	Is the operation in close proximity to area of high biodiversity or protected area?	Biodiversity study completed	Details of red data or protected species	Status of Biodiversity Action Plan (BAP)	Strategies for addressing impact
ARM Ferrous Division					
Khumani Mine					
2 830 hectares disturbed and not yet rehabilitated. Significant increase in land disturbed due to the development of the King open pit, diversion of the railway line and associated infrastructure. No communities were resettled in F2013.	No.	Yes.	Harpagophytum procumbens, Hoodia gordonii Acacia eriloba, Acacia haematoxylon, Aloe grandidentata, Aloe claviflora, Aloe hereroensis Ammocharis coranica, Anacampseros cf. subnuda Babiana hypogaea, Boscia albitrunca, Boophane disticha, Crinum bulbispermum, Fockea angustifolia, Huerniopsis decipiens Lithops aucampiae ssp.; Aucampiae Mestoklema arboriforme, Nerine laticoma, Orbeopsis lutea and Stapelia olivacea.	Completed.	Impact managed in terms of commitments of the EMP. Plants removed before mining. Consultation regarding a biodiversity off-set area is still ongoing.
Black Rock Mine					
1 450 hectares disturbed and not yet rehabilitated. No communities were resettled in F2013.	No.	Yes.	Camel Thorn (Acacia Erioloba), Grey camel thorn (Acacia Haematoxylon), Shepherd's tree (Boscia albitrunca), Karoo lily (Ammocaris coranica) and Devil's claw (Harpagophytum procumbens). The only threatened mammal species found is bats.	Completed as part of the EIA and EMP amendment process for the planned Expansion Project.	An agreement is being finalised in terms of a financial contribution towards nature conservation in lieu of an off-set area.
Dwarsrivier Mine					
178 hectares disturbed and not yet rehabilitated. The small increase in disturbed land reflects the development of the North Shaft and the newly constructed tailings dam. No communities were resettled in F2013.	Yes. The mine is located within the Sekhukhuneland Centre for Plant Endermism.	Yes.	Sekhukhune Bushman's Tea, Blue Shield Fruit, Marula and Shepherd Trees.	Completed.	The BAP is being implemented and a game conservation park has been established.

Overview of biodiversity *continued*

Operation	Is the operation in close proximity to area of high biodiversity or protected area?	Biodiversity study completed	Details of red data or protected species	Status of Biodiversity Action Plan (BAP)	Strategies for addressing impact
ARM Ferrous Division					
Machadodorp Works					
<p>No additional land disturbed during 2013. A detailed contaminated land assessment has been done and the total disturbed land is 142 hectares.</p> <p>No communities were resettled in F2013.</p>	<p>Yes. The smelter is within the proposed Lydenburg Centre of Endemism.</p>	<p>Yes.</p>	<p>None.</p>	<p>The biodiversity action plan was completed in 2011. Monitoring was done during the summer of 2012 and the Biodiversity Action Plan was updated accordingly. The updated plan indicated an improvement in the ecological state in one of the four management units.</p>	<p>Implementation of the BAP is in progress. Contaminated land assessment as per the requirements of the Waste Act and closure and rehabilitation plan, has been completed and the findings have been incorporated into the biodiversity plan.</p> <p>A contract has been signed with the land user (lessee) in terms of alien and invasive plant management.</p> <p>A change management procedure has been developed to address any expansion proposals that are likely to affect 'greenfield' areas.</p> <p>Further studies in terms of erosion management are planned for the next financial year.</p> <p>Grazing management and greening of the works is an ongoing process and is assessed as part of the annual biodiversity action plan update.</p>
Cato Ridge Works					
<p>86 hectares disturbed and not yet rehabilitated.</p> <p>The increase in disturbed land is due to the new slag dump, dust and slurry facility, new storage area and new access road.</p> <p>No communities were resettled in F2013.</p>	<p>Yes. The new access road disturbed approximately 20 hectares of the protected Ngonigoni grasslands, which is south and southeast of the operations.</p>	<p>Yes.</p>	<p>Protected Ngonigoni grassland.</p> <p>A biodiversity study which was undertaken, indicated that none of the red data species which could potentially occur in the region actually occur on site.</p>	<p>Completed.</p> <p>A biodiversity impact study confirmed that no significant impact to the Ngonigoni grassland would be caused due to historic and current disturbance by activities such as cattle grazing. A memorandum of agreement was signed between Cato Ridge Works, the Wildlands Trust and the e-Thekwini Municipality whereby Cato Ridge Works will financially sponsor the Wildlands Trust to conserve grasslands in the Inanda dam area.</p>	<p>Implementation of the BAP is in progress. Currently aligning with contaminated land assessment as per the requirements of the Waste Act and closure and rehabilitation plan.</p>

Carbon footprint (tCO₂e): Scope 1 and 2 on an attributable basis

ARM	Source	F2013	F2012*	F2011	F2010	F2009
Scope 1	Fuel	145 101	148 068	96 991	73 203	76 252
	Direct emissions	171 791	332 352	289 240	254 510	234 837
Scope 2	Electricity	913 111	1 329 785	1 200 816	997 620	875 080
Scope 3	Air travel	Not yet available	192	323	336	463
	Road (Business)		456	6 800	1 668	1 653
	Road (Material)		15 828	177 476	23 673	10 758
	Rail		42 426	169 440	167 612	120 406
	Ocean		137 452	39 063	26 839	8 156
Total		1 230 002	2 006 559	1 980 150	1 545 461	1 327 604
Total Scope 1 and 2		1 230 002	1 810 205	1 587 048	1 325 333	1 186 169

* Restated to externally verified figures.

Carbon footprint (tCO₂e): Scope 1 and 2 on an attributable basis

	F2013	F2012*	F2011	F2010	F2009
Beeshoek Mine	39 869	26 375	18 426	17 730	32 470
Khumani Mine	132 022	126 656	82 478	65 117	41 146
Black Rock Mine	52 477	69 692	54 485	44 981	47 775
Dwarsrivier Mine	26 796	25 097	22 950	15 495	15 133
Cato Ridge Works	416 344	538 080	414 081	383 713	353 074
Machadodorp Works	145 695	623 954	622 349	475 432	428 108
Nkomati Mine	203 299	191 577	161 198	112 527	57 371
Two Rivers Platinum Mine	103 630	100 027	93 995	91 359	84 378
Modikwa Mine	102 573	103 885	116 136	118 610	126 418
Lubambe Mine	6 894	4 459			
Corporate Office	402	403	952	370	297
ARM total	1 230 002	1 810 205	1 587 048	1 325 333	1 186 169
Ferrous Division	813 204	1 409 854	1 214 767	1 002 467	917 706
Platinum Division	409 501	395 489	371 329	322 496	268 166
Copper Division	6 894	4 459			
Corporate Office	402	403	952	370	297
ARM total	1 230 002	1 810 205	1 587 048	1 325 333	1 186 169

* Restated to externally verified figures.

Overview of biodiversity *continued*Electricity (kWh) \times 100% basis

	F2013	F2012*	F2011	F2010	F2009
Beeshoek Mine	40 339	33 166	33 756	33 529	42 710
Khumani Mine	166 156	158 562	101 078	87 720	44 207
Black Rock Mine	99 016	114 955	105 183	87 613	88 406
Dwarsrivier Mine	51 653	49 185	44 660	29 759	27 813
Cato Ridge Works	608 353	743 054	588 410	533 183	517 260
Machadodorp Works	223 680	1 014 567	1 002 462	753 961	645 107
Nkomati Mine	341 829	309 533	268 380	179 113	75 130
Two Rivers Platinum Mine	188 859	181 854	172 797	169 580	155 927
Modikwa Mine	244 637	247 608	232 048	241 327	258 680
Lubambe Mine	78 509	13 190			
Corporate Office	360	360	1 008	386	310
ARM total	2 043 390	2 866 033	2 549 783	2 116 171	1 855 549
Ferrous Division	1 189 196	2 113 488	1 875 549	1 525 765	1 365 502
Platinum Division	775 325	738 995	673 225	590 020	489 737
Copper Division	78 509	13 190	–	–	–
Corporate Office	360	360	1 008	386	310
ARM total	2 043 390	2 866 033	2 549 783	2 116 171	1 855 549

* Restated to externally verified figures.

Diesel consumption (000 litres) \times 100% basis

	F2013	F2012	F2011
Beeshoek Mine	15 004	7 549	2 048
Khumani Mine	40 389	37 838	27 535
Black Rock Mine	4 289	4 355	4 119
Dwarsrivier Mine	1 629	1 402	1 429
Cato Ridge Works	559	492	524
Machadodorp Works	844	1 273	1 501
Nkomati Mine	31 219	33 449	27 875
Two Rivers Platinum Mine	3 664	3 851	3 637
Modikwa Mine	6 442	6 152	4 891
Lubambe Mine	4 902		
ARM total	108 941	96 360	73 559
Ferrous Division	62 714	52 909	37 156
Platinum Division	41 326	43 451	36 403
Copper Division	4 902		
ARM total	108 941	96 360	73 559

Water Consumption (m³) \times 100% basis

	F2013	F2012	F2011
Beeshoek Mine	7 964 901	6 190 014	4 611 620
Khumani Mine	4 041 671	3 772 149	2 611 648
Black Rock Mine	1 015 952	862 842	857 030
Dwarsrivier Mine	133 912	129 990	362 522
Cato Ridge Works	376 054	395 083	374 163
Machadodorp Works	192 954	142 928	130 620
Nkomati Mine	2 924 876	2 643 966	2 733 000
Two Rivers Platinum Mine	1 102 135	1 648 073	1 137 564
Modikwa Mine	1 941 339	2 206 903	2 273 191
Lubambe Mine	857 580		
ARM total	20 551 374	17 991 948	15 091 358
Ferrous Division	13 725 444	11 493 006	8 947 603
Platinum Division	5 968 350	6 498 942	6 143 755
Copper Division	857 580		
ARM total	20 551 374	17 991 948	15 091 358