

Department of Mineral Resources

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PRESENTATION TO THE PORTFOLIO COMMITTEE OF MINERAL RESOURCES

22 FEBRUARY 2017



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PRESENTATION OUTLINE

1. Introduction
2. Objectives
3. Derelict and Ownerless (D&O) Mine Sites
 - Distribution of the D&O Mine Sites
 - Financial Support
 - Asbestos Mines Rehabilitation Progress
 - Sealing of Dangerous Holings
4. Government consolidated efforts in dealing with Acid Mine Drainage (AMD)
 - Ingress Control
 - Pumping and treating of AMD
5. Conclusion



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INTRODUCTION

- ❑ Derelict and ownerless mines refer to mines whose owners or mining rights or lease holders have abandoned, and are not operating nor maintaining to mitigate and manage their associated health and environmental impacts as well as those mines whose owners or operators can no longer be traced.
- ❑ These would comprise of mines sites that were operational during the period when environmental management at the mining was not well regulated.



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OBJECTIVES

The objectives for the management of the D & O mine sites are to address the following:

1. Public Health and Safety impacts. The risks include:
 - ☐ Cavities and subsidence features;
 - ☐ Human and animals falling into shafts; and
 - ☐ Illegal mining.
2. Environmental Impacts on both surface and ground water.
3. Air quality impacts.



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DERELICT AND OWNERLESS MINE SITES

Distribution

PROVINCE	TOTAL NUMBER OF D&O's
EASTERN CAPE	326
FREE STATE	229
GAUTENG	360
KwaZULU NATAL	410
LIMPOPO	886
MPUMALANGA	794
NORTH WEST	1040
NORTHERN CAPE	1065
WESTERN CAPE	866
TOTAL	5976



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DERELICT AND OWNERLESS MINE SITES

Database Verification And Management

PROVINCE	HIGH PRIORITY	MODERATE PRIORITY	LOW PRIORITY	NO REHAB APPEARS NECESSARY	VISTED BUT NO ACCESS	OPERATIONAL	TOTAL
EASTERN CAPE	0	0	16	248	20	42	326
FREE STATE	1	7	10	113	36	62	229
GAUTENG	39	27	18	193	39	44	360
KwaZULU NATAL	18	19	38	227	66	42	410
LIMPOPO	43	34	78	372	267	92	886
MPUMALANGA	41	48	51	316	161	177	794
NORTH WEST	9	15	67	436	301	212	1040
NORTHERN CAPE	36	18	73	378	342	218	1065
WESTERN CAPE	5	15	27	593	115	111	866
TOTAL	192	183	378	2876	1347	1000	5976

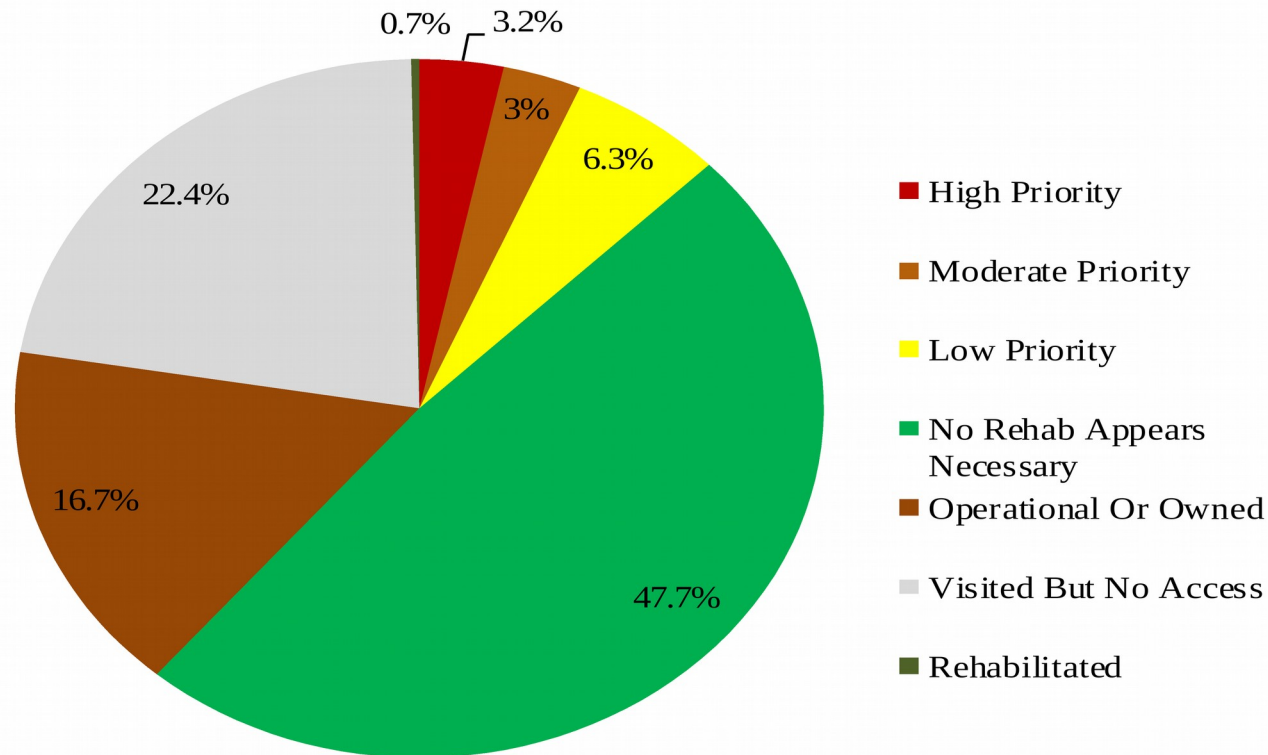


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DERELICT AND OWNERLESS MINE SITES

Database Verification And Management



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DERELICT AND OWNERLESS MINE SITES

Valuation of the Liability

- ❑ Asbestos mines are estimated to be 245 of the total estimated figure of 5976.
- ❑ The fair value of the liability in relation to rehabilitation of former Asbestos mining sites is estimated at R2 billion as at 31 March 2016. R199.6 million of this liability is disclosed as a provision and the balance of R 1.8 billion is disclosed as a contingent liability.
- ❑ The best estimate present value of the closure cost of other derelict and abandoned mines is estimated at R45.9 billion as at 31 March 2015, consisting of R44.7 billion for Class A mines and R1.2 billion for Class B & C mines.

DERELICT AND OWNERLESS MINE SITES

Financial Support

	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	Total
	R'000	R'000	R'000	R'000	R'000	R'000	R'000
Department	22,063	26,095	10,390	23,000	37,000	41,740	160,288
Mintek	30,000	30,000	30,000	50,000	55,000	60,000	255,000
Council for Geoscience	-	-	20,000	20,000	20,000	20,921	80,921
Total	52,063	56,095	60,390	93,000	112,000	122,661	496,209



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DERELICT AND OWNERLESS MINE SITES

Asbestos Mines Rehabilitation Progress

PROVINCE	MINE NAME	DESCRIPTION
Northern Cape	Buisvlei North Asbestos Mine	Mine Dumps
	Masaneng Asbestos Mine	Shafts/Adits
	Buisvlei South Asbestos Mine	Mine Dumps
	Strelley	Mine Dumps
	Langley Mine	Mine Dumps
	Prieska Old Hospital	Shafts/Adits
	Heuningvlei	Mine Dumps
	Vergenoegd	Mine Dumps
	Ga-lotolo	Mine Dumps
	Prieska Parkland Creation	Mine Dumps
	Buisvlei North Asbestos Mine	Mine Dumps
	Buisvlei South Asbestos Mine	Mine Dumps And Shafts
	Masaneng Asbestos Mine	Mine Dumps And Shafts



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DERELICT AND OWNERLESS MINE SITES

Asbestos Mines Rehabilitation Progress

PROVINCE	MINE NAME	DESCRIPTION
Limpopo	Motsane Asbestos mine	Mine dumps and shafts
	Mafefe Penge	Mine dumps and shafts
	Ditabogong	Mine dumps and shafts
	Mahlatjane	Mine dumps and shafts
	Ga-madiba	Mine dumps and shafts
	Betle	Mine dumps and shafts
	Mang le mang	Mine dumps and shafts
KwaZulu Natal	Klip river	Mine dumps and shafts
	Sithilo	Mine dumps and shafts



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DERELICT AND OWNERLESS MINE SITES

Asbestos Mines Rehabilitation Progress



Ga-Madiba (Limpopo) – After



During Construction



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DERELICT AND OWNERLESS MINE SITES

Sealing Of Dangerous Holings Progress

PROVINCE	NUMBER OF SEALED HOLINGS
Limpopo	47
Gauteng	178
Mpumalanga	42

DERELICT AND OWNERLESS MINE SITES

Progress on Sealing of Dangerous Holings



**Grootvlei Ventilation
Shaft (Before)**



**Grootvlei Ventilation
Shaft (After)**



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EMPLOYMENT AND JOB OPPORTUNITIES FROM D&O PROJECTS (2016/17)

Project Name	Budget	Total Number of Work Opportunities	Number of adult male Employed	Number of adult women Employed	Number of Youth Employed
Kwa-Mhlanga Shafts	R 1,700,000	10		5	5
Greylingstad	R 2,000,000	14	7	3	4
Motsana	R 3,500,000	21	6	5	10
Giyani Shafts Closure	R 3,000,000	40	14	11	15
Masaneng	R 2,000,000	10	4	1	5
Buisvlie North	R 1,700,000	10	3	2	5
Buisvlie South	R 4,000,000	20	6	4	10
Heinningsvlie	R 7,000,000	55	14	7	34
Closure of seven abandoned mines	R 2,653,469	9	5	1	3
Totals	R 27,553,469	189	59	39	91
					Mpumalanga
					Limpopo
					Northern Cape
					Gauteng



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GOVERNMENT CONSOLIDATED EFFORTS IN DEALING WITH AMD

- ❑ In the year 2010 a Team of Experts was instructed by government, chaired by the Directors-General of Mineral Resources and Water and Sanitation to advise the Inter Ministerial Committee (IMC) on dealing with AMD, comprising the Ministers of Mineral Resources, Water and Sanitations and Science, and Technology and the Minister in the Presidency: National Planning Commission.
- ❑ The IMC produced a report which intent to guide the management of AMD in the Witwatersrand Basin.



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GOVERNMENT CONSOLIDATED EFFORTS IN DEALING WITH AMD (CONT...)

- ❑ The Report recommended that:
 - i. Steps be implemented to reduce and stop the ingress of water into the underground workings as far as is possible. This will reduce the volumes of water which need to be pumped and treated to more acceptable levels and consequently reduce the operational costs of AMD management.
 - ii. The acid mine water be pumped and treated to reduce the mine water contribution to the salinity of major river systems (e.g. Vaal River System).

GOVERNMENT CONSOLIDATED EFFORTS IN DEALING WITH AMD

Central Rand Ingress Volumes And Costs

Gold Field	Project	Costs (ZAR)	Volume (ML per Day)
Central Rand	Amalgam Canal	R8 016 367	2ml/d
Central Rand	DRD Canal	R98 774 635	5.62
Central Rand	Boksburg Canal	R33 043 865	11.23
Central Rand	City Deep Mine Canal	R61 775 404	6.92



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GOVERNMENT CONSOLIDATED EFFORTS IN DEALING WITH AMD

East Rand Ingress Volumes And Costs

Gold Field	Project	Costs (ZAR)	Volume (ML per Day)
East Rand	South Blesbokspruit	R457 187	5.7
East Rand	Central Blesbokspruit	R7 759 199	3.9
East Rand	North Blesbokspruit	R8 016 367	2.1
East Rand	Cowles Dam Ingress ERB	R36 511 198	5.6
East Rand	Van Rhyn ponding- Repair canal	R45 492 970	1.4

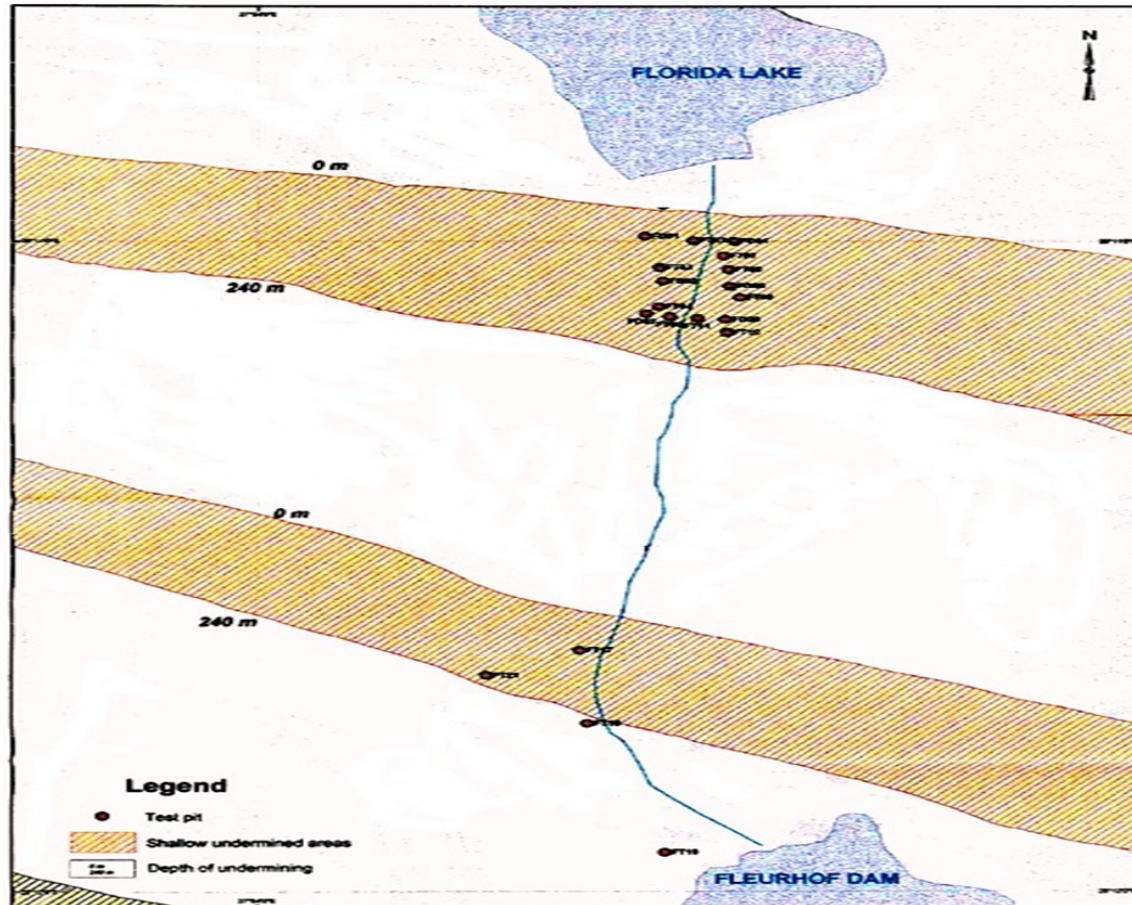


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GOVERNMENT CONSOLIDATED EFFORTS IN DEALING WITH AMD

Florida Lake Canal (Ingress Control)



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GOVERNMENT CONSOLIDATED EFFORTS IN DEALING WITH AMD

Florida Lake Canal (Ingress Control)

Construction



Completed



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GOVERNMENT CONSOLIDATED EFFORTS IN DEALING WITH AMD

Pumping And Treating Short term solution: Wits Basins

➤ Western Basin

- Old Rand Uranium AMD treatment plant upgraded to 36ML per day.
- Project has mostly eradicated surface decant with the exception of sporadic decants during high rainfall.
- Neutralised AMD released to Tweelopiespruit.
- Project further augmented by new clarifiers and new pump station.

➤ Central Basin

- Constructed a new AMD treatment plant in January 2013 next to South West Vertical Shaft (capacity 84 ML/day).
- Operational since May 2014.
- 72 ML AMD daily in the long term.
- Treated water released into Elsburgspruit.



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GOVERNMENT CONSOLIDATED EFFORTS IN DEALING WITH AMD

Pumping And Treating

➤ **Eastern Basin**

- New HDS plant next to Grootvlei No 3 shaft - 110ml/d.
- Operational since Aug 2016.
- Treated water released into Blesbokspruit.

➤ **Total cost for all three Basins is R2,8 billion.**



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CONCLUSION

- ❑ The Department will continue with the rehabilitation of derelict and ownerless mines to enhance on public health and safety and the environment.
- ❑ The Department is:
 - ✓ finalising the verification process of D&O mine sites.
 - ✓ Updating the State Contingent Liability to reflect current developments.
 - ✓ Engaging both National Treasury and the Department of Water and Sanitation with a view to the implementation of ingress control initiatives.
- ❑ The implementation of ingress control initiatives will reduce the amount of pumping and treating AMD.

A decorative background image on the left side of the slide, featuring industrial structures like a large wheel and metal frameworks, possibly part of a mine or power plant, set against a warm, orange-toned sky.

Thank You.



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