

# REASSESSMENT OF THE FINANCIAL PROVISION FOR BLOEMHOF QUARRY, PARYS, FREE STATE PROVINCE

MINING PERMIT: 07/2012

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## EXECUTIVE SUMMARY

According to Section 41(3) of the Mineral and Petroleum Resources Development Act (MPRDA), (Act No. 28 of 2002) a holder of a mining permit must annually assess his or her environmental liability and increase his or her financial provision to the satisfaction of the Minister.

The following rehabilitation activities have been stipulated in the Environmental Management Plan (EMP) in order to successfully rehabilitate Bloemhof Quarry upon closure of the site:

- The slopes of the pit will be graded for closure to blend with the natural topography of the area.
- Rehabilitation of the surface area shall entail landscaping, levelling, top dressing, land preparation, seeding (if required) and maintenance, and weed / alien clearing.
- All infrastructure, equipment, plant, temporary housing and other items used during the mining period will be removed from the site (section 44 of the MPRDA).
- Waste material of any description, including receptacles, scrap, rubble and tyres, will be removed entirely from the mining area and disposed of at a recognized landfill facility. It will not be permitted to be buried or burned on the site.
- Weed / Alien clearing will be done in a sporadic manner during the life of the mining activities. Species regarded as Category 1 weeds according to CARA (Conservation of Agricultural Recourses Act, 1983 – Act 43; Regulations 15 & 16 (as amended in March 2001) need to be eradicated from the site on final closure.
- Final rehabilitation shall be completed within a period specified by the Regional Manager.

The financial provision required to rehabilitate Bloemhof Quarry in accordance with the Guideline Document for the Evaluation of the Quantum of Closure-related Financial Provision by a Mine and as prescribed in terms of Regulation 54 (1) is R 330 471.20.

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## ABBREVIATIONS

DMR	-	Department of Mineral Resources
EMPR	-	Environmental Management Programme
MPRDA	-	Minerals and Petroleum Resources Development Act 28 of 2002

## **1. INTRODUCTION**

Greenmined Environmental was appointed by B&E International (Pty) Ltd to undertake the annual review of the financial provision calculations for the Bloemhof Quarry.

The previous calculations was undertaken by Greenmined Environmental in 2016 and the financial provision value that was submitted by the mining permit holder to the Department of Mineral Resources for the rehabilitation of the site amounted to R 311 936.54.

This document provides an assessment and review of the quantum of financial provision submitted as being sufficient to cover the environmental liability at the time and for closure of the mine at that time, and was compiled in accordance with the Guideline Document for the Evaluation of the Quantum of Closure-related Financial Provision by a Mine as published by the Department of Mineral Resources.

## **2. QUANTUM CALCULATION**

The Mineral and Petroleum Resources Development Act (MPRDA), (Act No. 28 of 2002) and its Regulations was promulgated on 1 May 2004. Financial provision for environmental rehabilitation and closure requirements of mining operations forms an integral part of the MPRDA. Section 41 of the MPRDA and Regulations 53 and 54 promulgated in terms of the MPRDA deal with financial provision for mine rehabilitation and closure.

The holder of a mining permit must provide the DMR with sufficient financial provision. Officials in the DMR Regional Offices are required to assess, review and approve the quantum of financial provision submitted (that is, the monetary value of the financial provision that has been computed by the holder of a mining permit during the annual review) as being sufficient to cover the environmental liability at that time and for closure of the mine at that time.

Following, a calculation of the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the guideline document prescribed in terms of Regulation 54 (1), is presented.

The calculation of the quantum for financial provision was according to Section B of the working manual for the determination of the quantum.

## 2.1 Mine type and saleable mineral by-product

According to Tables B.12, B.13 and B.14

<b>Mine type</b>	Aggregate
<b>Saleable mineral by-product</b>	None

## 2.2 Primary Risk Class

According to Tables B.12 or B.13

<b>Primary risk ranking</b>	Class C
<b>Revised risk ranking</b>	N/A

## 2.3 Environmental sensitivity of the mine area

According to Table B.4

<b>Environmental sensitivity of the mine</b>	Low
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## 2.4 Level of information

According to Step 4.1

<b>Level of information available</b>	Extensive
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## 2.5 Identification of closure components

According to Table B.5 and site-specific conditions

<b>Component No.</b>	<b>Main description</b>	<b>Applicability of closure components (Circle Yes or No)</b>	
		<b>Open-cast Mine</b>	
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	-	<b>NO</b>
2(A)	Demolition of steel buildings and structures	-	<b>NO</b>
2(B)	Demolition of reinforced concrete buildings and structures	-	<b>NO</b>
3	Rehabilitation of access roads	-	<b>NO</b>
4(A)	Demolition and rehabilitation of electrified railway lines	-	<b>NO</b>

4(B)	Demolition and rehabilitation of non-electrified railway lines	-	NO
5	Demolition of housing and facilities	-	NO
6	Opencast rehabilitation including final voids and ramps	YES	-
7	Sealing of shafts, adits and inclines	-	NO
8(A)	Rehabilitation of overburden and spoils	YES	-
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing)	-	NO
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich)	-	NO
9	Rehabilitation of subsided areas	-	NO
10	General surface rehabilitation, including grassing of all denuded areas	YES	-
11	River diversions	-	NO
12	Fencing	YES	-
13	Water management (Separating clean and dirty water, managing polluted water and managing the impact on groundwater)	-	NO
14	2 to 3 years of maintenance and aftercare	-	NO

## **2.6 Unit rates for closure components**

According to Table B.6 master rates and multiplication factors for applicable closure components. The master rate from the DMR Master Rates table for financial provision of 2017 has been used.

<b>Component No.</b>	<b>Main description</b>	<b>Master rate</b>	<b>Multiplication factor</b>
1	Dismantling of <b>processing plant and related structures</b> (including overland conveyors and power lines)	-	-
2(A)	Demolition of <b>steel buildings and structures</b>	-	-
2(B)	Demolition of <b>reinforced concrete buildings and structures</b>	-	-
3	Rehabilitation of <b>access roads</b>	-	-
4(A)	Demolition and rehabilitation of <b>electrified railway lines</b>	-	-
4(B)	Demolition and rehabilitation of <b>non-electrified railway lines</b>	-	-
5	Demolition of <b>housing and facilities</b>	-	-
6	<b>Opencast rehabilitation</b> including final voids and ramps	212 440	0.04
7	Sealing of <b>shafts, adits and inclines</b>	-	-
8(A)	Rehabilitation of <b>overburden and spoils</b>	141 626	1.00
8(B)	Rehabilitation of <b>processing waste deposits and evaporation ponds</b>	-	-

	<b>(basic, salt-producing)</b>		
8(C)	Rehabilitation of <b>processing waste deposits and evaporation ponds (acidic, metal-rich)</b>	-	-
9	Rehabilitation of <b>subsided areas</b>	-	-
10	<b>General surface rehabilitation</b> , including grassing of all denuded areas	112 192	1.00
11	<b>River diversions</b>	-	-
12	<b>Fencing</b>	128	1.00
13	<b>Water management</b> (Separating clean and dirty water, managing polluted water and managing the impact on groundwater)	-	-
14	2 to 3 years of <b>maintenance and aftercare</b>	-	-

## 2.7 Determine weighting factors

According to Tables B.7 and B.8

<b>Weighting factor 1: Nature of terrain/accessibility</b>	1.00 (Flat)
<b>Weighting factor 2: Proximity to urban area where goods and services are to be supplied</b>	1.05 (Peri-Urban)

## 2.8 Calculation of Closure Costs

Table B.10 Template for Level 2: "Rules-based" assessment of the quantum for financial provision

CALCULATION OF THE QUANTUM							
<b>Mine:</b>	Bloemhof Quarry			<b>Location:</b>	Parys		
<b>Evaluators:</b>	C Fouche			<b>Date:</b>	01-08-2017		
No	Description	Unit	A	B	C	D	E = A*B*C*D Amount (rands)
			Quantity Step 4.5	Master rate Step 4.3	Multiplication factor Step 4.3	Weighting factor 1 Step 4.4	
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	m <sup>3</sup>	0	15	1.00	1.00	R 0.00
2(A)	Demolition of steel buildings and structures	m <sup>2</sup>	0	203	1.00	1.00	R 0.00
2(B)	Demolition of reinforced concrete buildings and structures	m <sup>2</sup>	0	299	1.00	1.00	R 0.00
3	Rehabilitation of access roads	m <sup>2</sup>	0	36	1.00	1.00	R 0.00
4(A)	Demolition and rehabilitation of electrified railway lines	m	0	352	1.00	1.00	R 0.00
4(B)	Demolition and rehabilitations of non-electrified railway lines	m	0	192	1.00	1.00	R 0.00
5	Demolition of housing and/or administration facilities	m <sup>2</sup>	0	405	1.00	1.00	R 0.00
6	Opencast rehabilitation including final voids and ramps	ha	1.3	212 440	0.04	1.00	R 11 046.88
7	Sealing of shaft, audits and inclines	m <sup>3</sup>	0	109	1.00	1.00	R 0.00
8(A)	Rehabilitation of overburden and spoils	ha	0.2	141 626	1.00	1.00	R 28 325.20
8(B)	Rehabilitation of processing	ha	0	176 393	1.00	1.00	R 0.00



	waste deposits and evaporation ponds (basic, salt-producing waste)						
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste)	ha	0	512 329	0.51	1.00	R 0.00
9	Rehabilitation of subsided areas	ha	0	118 591	1.00	1.00	R 0.00
10	General surface rehabilitation	ha	1.2	112 192	1.00	1.00	R 134 630.40
11	River diversions	ha	0	112 192	1.00	1.00	R 0.00
12	Fencing	m	500	128	1.00	1.00	R 64 000.00
13	Water Management	ha	0	42 659	0.17	1.00	R 0.00
14	2 to 3 years of maintenance and aftercare	ha	0	14 930	1.00	1.00	R 0.00
15(A)	Specialists study	Sum	0	-	-	-	R 0.00
15(B)	Specialists study	Sum	0	-	-	-	R 0.00
Sum of items 1 to 15 above							R 238 002.48
Multiply Sum of 1-15 by Weighting factor 2 (Step 4.4)		1.05		R 238 002.48	<b>Sub Total 1</b>		R 249 902.60

1	Preliminary and General	6% of Subtotal 1 if Subtotal 1 <R100 000 000.00		R 14 994.16
		12% of Subtotal 1 if Subtotal 1 >R100 000 000.00		-
2	Contingency	10.0% of Subtotal 1		R 24 990.26
<b>Sub Total 2</b> (Subtotal 1 plus management and contingency)				R 289 887.02
<b>Sub Total 3</b> Vat (14%)				R 40 584.18
<b>GRAND TOTAL</b> (Subtotal 3 plus VAT)				<b>R 330 471.20</b>

### 3. CONCLUSION

In view of the above calculations the financial provision to be provided to DMR by Bloemhof Quarry for 2017 amounts to R 330 471.20.

### 4. SITE LAYOUT MAP

