

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

REFERENCE NUMBER: FS 30/5/1/2/2/10045 MR



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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 Programme Report (EMPR) 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 weeds according to the National Environmental Biodiversity Act [NEMBA] (Act No. 10 of 2004) Alien and Invasive Species Regulation GNR 598 and 599 of 2014 Species regarded as 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 3.509.877,32

## TABLE OF CONTENTS

EXECUTIVE SUMMARY .....	2
1. INTRODUCTION .....	4
2. QUANTUM CALCULATION.....	4
2.1 Mine type and saleable mineral by-product .....	5
2.2 Primary Risk Class .....	5
2.3 Environmental sensitivity of the mine area .....	5
2.4 Level of information .....	5
2.5 Identification of closure components .....	5
2.6 Unit rates for closure components .....	6
2.7 Determine weighting factors .....	7
2.8 Calculation of Closure Costs .....	8
3. CONCLUSION .....	10
4. SITE LAYOUT MAP .....	10

## 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 Inzalo Crushing and Aggregates (Pty) Ltd to undertake the annual review of the financial provision calculations for the Bloemhof Quarry.

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>

Component No.	Main description	Applicability of closure components (Circle Yes or No)	
		Open-cast Mine	
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	-	NO
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	YES	-

## 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.

Component No.	Main description	Master rate	Multiplication factor
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	225 186	0.04

Component No.	Main description	Master rate	Multiplication factor
	and ramps		
7	Sealing of <b>shafts, adits and inclines</b>	-	-
8(A)	Rehabilitation of <b>overburden and spoils</b>	150 124	1.00
8(B)	Rehabilitation of <b>processing waste deposits and evaporation ponds (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	118 924	1.00
11	<b>River diversions</b>	-	-
12	<b>Fencing</b>	-	-
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>	15 826	1.00

## 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							
Mine:		Bloemhof Quarry			Location:		Parys
Evaluators:		Y Coetzee			Date:		13/07/2018
	Description	A Quantity	B rate	Master	C Multiplication factor	D Weighting factor 1	E=A *B*C*D Amount (rands)
1	Dismantling of processing plant and related structures (including overland conveyors and power lines)	0	15		1	1	R 0,00
2(A)	Demolition of steel buildings and structures	0	215		1	1	R 0,00
2(B)	Demolition of reinforced concrete buildings and structures	0	317		1	1	R 0,00
3	Rehabilitation of access roads	0	38		1	1	R 0,00
4(A)	Demolition and rehabilitation of electrified railway lines	0	373		1	1	R 0,00
4(B)	Demolition and rehabilitations of non-electrified railway lines	0	203		1	1	R 0,00
5	Demolition of housing and/or administration facilities	0	430		1	1	R 0,00
6	Opencast rehabilitation including final voids and ramps	8,7	225.186		0,04	1	R 78.364,73
7	Sealing of shaft, audits and inclines	0	115		1	1	R 0,00
8(A)	Rehabilitation of overburden and spoils	6,6	150.124		1	1	R 990.818,40
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing waste)	0	186.977		1	1	R 0,00
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste)	0	543.069		0,51	1	R 0,00
9	Rehabilitation of subsided areas	0	125.706		1	1	R 0,00
10	General surface rehabilitation	8,7	118.924		1	1	R 1.034.638,80
11	River diversions		118.924		1	1	R 0,00
12	Fencing		136		1	1	R 0,00
13	Water Management		45.218		0,17	1	R 0,00
14	2 to 3 years of maintenance and aftercare	25,4	15.826		1	1	R 401.980,40
	Specialists study					1	R 0,00
	Specialists study						R 0,00



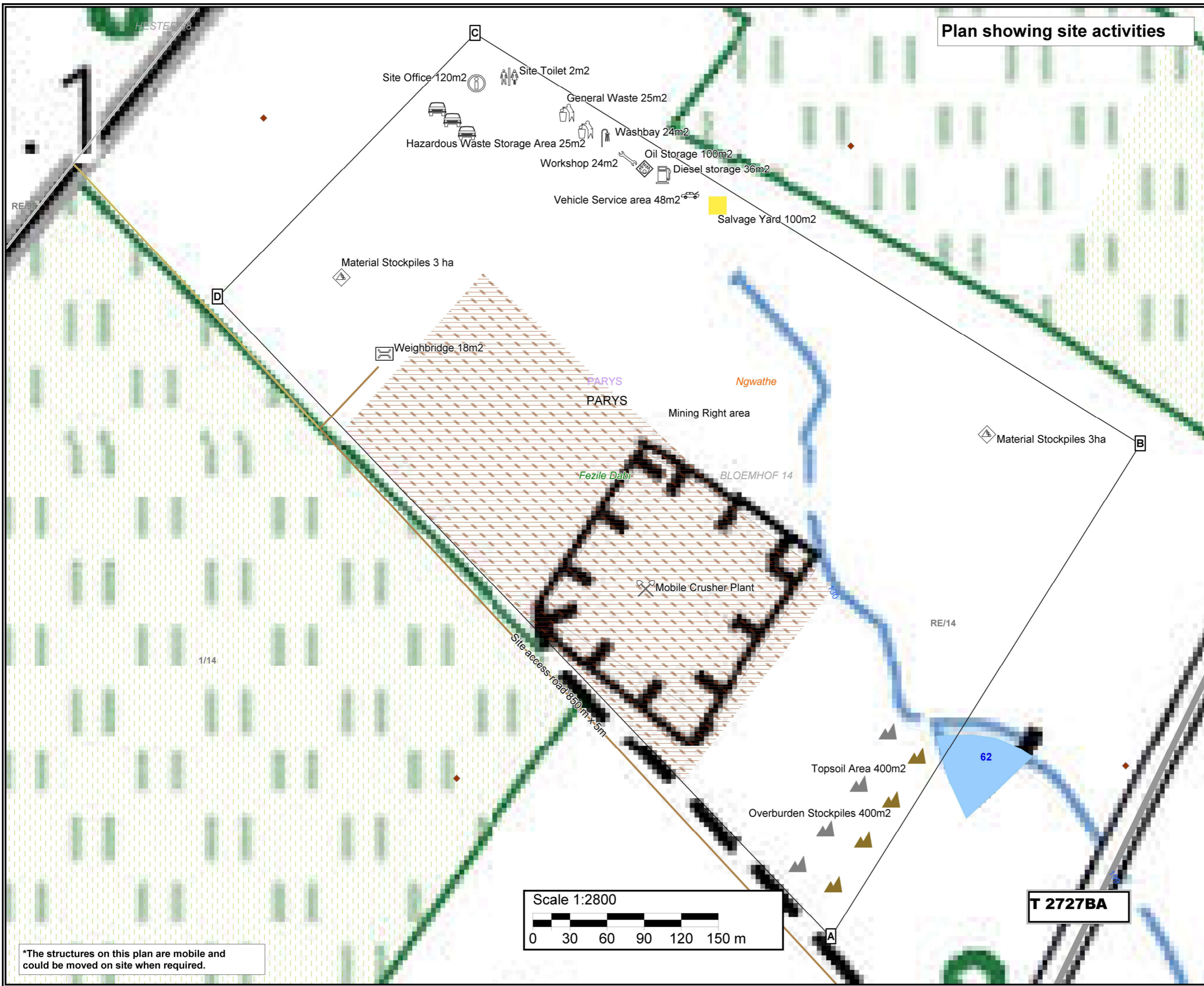
						R 2.505.802,33
	Multiply Sum of 1-15 by Weighting factor 2 (Step 4.4)		1,05		<b>Sub Total 1</b>	R 2.631.092,44
	Preliminary and General	6%				R 157.865,55
	Contingency		10.0% of Subtotal 1			R 263.109,24
	(Subtotal 1 plus management and contingency)				<b>Sub Total 2</b>	R 3.052.067,24
	Vat (15%)				<b>Sub Total 3</b>	R 457.810,09
	(Subtotal 3 plus VAT)				<b>GRAND TOTAL</b>	R 3.509.877,32

### **3. CONCLUSION**

In view of the above calculations the financial provision to be provided to DMR by Bloemhof Quarry for 2018 amounts to R 3.509.877,32

### **4. SITE LAYOUT MAP**

# Plan showing site activities



- Legend**
- Mining Area and Surrounds
  - Surrounds
  - Artificial surfaces
  - EXCAVATION
  - Buildings
  - HOUSE
  - Inland water
  - DAM
  - River
  - NON-PERENNIAL CENTER LINE
  - PERENNIAL CENTER LINE
  - Roads
  - MAIN ROAD
  - N1
  - OTHER ACCESS
  - Vegetation
  - CULTIVATED LAND
  - TREE
  - Water source
  - WINDPUMP
  - Property Details
  - Remaining Extent of the farm Bloemhof 14
  - Free State Province
  - Parent farms
  - Magisterial districts: PARYS
  - Farm portions
  - Administrative region: PARYS
  - Ngwathe Local Municipality
  - Fezile Dabi District Municipality
  - 1:50000 scanned sheets
  - Site Activities
  - Stockpile areas total size 6.8ha
  - Material Stockpiles 3ha each
  - Topsoil Stockpile - 200m2
  - Overburden Stockpile - 500m2
  - Quarry area total size 10 ha
  - Quarry area - 10ha
  - Mobile Crusher plant (Included in the quarry size)
  - Offices and workshops total size 1.2ha
  - Salvage yard - 100m2
  - Waste Storage Area - 25m2
  - Oil storage area (bunded) - 100m2
  - Diesel Storage area - 36m2
  - Mobile site office - 120m2
  - Temporary Wash Bay - 24m2
  - Workshop Area 24m2
  - Vehicle service area - 48m2
  - Site toilet - 4 in total
  - General surface and roads total size 7.4 ha
  - Site access road 850 m x 5m
  - Weighbridge - 18m2
  - Parking area
  - Dust Bucket

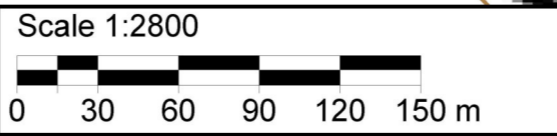
**Proposed mining area coordinates:**  
 A27.0548894°S; 27.5625444°E  
 B27.0513029°S; 27.5650583°E  
 C27.0483198°S; 27.5596529°E  
 D27.0502365°S; 27.5575594°E  
 A27.0548894°S; 27.5625444°E

A27°3'17.6018"S; 27°33'45.1598"E  
 B27°3'4.6904"S; 27°33'54.2099"E  
 C27°2'53.9513"S; 27°33'34.7504"E  
 D27°3'0.8514"S; 27°33'27.2138"E  
 A27°3'17.6018"S; 27°33'45.1598"E

Mining right application area:  
 25.4 ha  
**Client:**



**Consultant:**



\*The structures on this plan are mobile and could be moved on site when required.

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