

**MINING APPLICATION FOR BORROW PITS ASSOCIATED WITH THE UPGRADING OF
APPROXIMATELY 20KM OF DISTRICT ROAD DR08035 FROM THE
INTERSECTION WITH THE N2 TO THE INTERSECTION WITH THE R61, CLARKEBURY,
EASTERN CAPE, SOUTH AFRICA**

QUANTUM CALCULATION FOR FINANCIAL PROVISION

DMRE REF: Pending

Prepared for:



Eastern Cape Department of Transport
Indwe House, Old Pick n Pay, Bhisho
Private Bag X0023, Bhisho,
5605

Prepared by:



COASTAL & ENVIRONMENTAL SERVICES
39 Harewood Drive
Nahoon Mouth
East London
5214

Also in Grahamstown, Port Elizabeth, East London, Cape Town and Maputo
(Mozambique)

www.cesnet.co.za | www.eoh.co.za

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1. BACKGROUND TO THE STUDY

The Eastern Cape Department of Transport (ECDT) requires three (3) borrow pits (mining sites) for the provision of the necessary material for the upgrading of the DR08035 road for 20km between Clarkebury and the Mjanyana Hospital in the Eastern Cape. The proposed mining sites have been identified along this stretch of road in the general Clarkebury area within the Mbashe and Engcobo Local Municipalities. Authorisations for the upgrading of the road and traversing of watercourses have been applied for to the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) and the Department of Water and Sanitation (DWS) respectively. The Environmental Authorisation for the DR08035 road upgrade was subsequently issued on the 28th of June 2020 (ec121&ec137/ho/ln1&3/m/02-2019). The issuance of the Water Use Licence for the affected watercourses has been received (WU15287).

In terms of Section 106 of the Mineral and Petroleum Resources Development Act (Act No. 28 of 2002; MPRDA) the Department of Transport is exempted from the application for a Mining Right/Permit but is not exempted from the application for environmental authorisation for the borrow pits. The Department of Mineral Resources & Energy (DMRE) is the competent authority that will consider this application and the Basic Assessment Report (BAR).

Should the ECDT obtain an Environmental Authorisation (EA) they may commence with mining following the approved submission of an EMPr and financial provision for rehabilitation to DMRE as regulated by the Minerals & Petroleum Resources Development Act (MPRDA, Act 28 of 2002).

The extent of the mining activities and infrastructure at each site is listed in Table 1.1 below. The mining areas and associated infrastructure will cover an area of 6.09 ha during the construction and operational phases. The total footprint is calculated as follows:

Table 1.1: Proposed mining and associated infrastructure footprint calculations.

SITE	FOOTPRINTS (HA)		
	MINING	ACCESS ROADS	TOTAL
Borrow Pits (BP)			
BP A	3.55	0.02	3.56
BP B	1.2	0.06	1.26
BP C	1.25	0.02	1.27
TOTAL FOOTPRINT (HA)	6	0.09	6.09

2. QUANTUM CALCULATION FOR FINANCIAL PROVISION

This calculation is based on the DMRE “Guideline Document for the Evaluation of the Quantum of Closure-Related Financial Provision Provided by a Mine, January 2005” (summarised in Table 2.1). The relevant closure components are outlined in

Table 2.2. A summary of the subtotal and grand total quantum amounts is provided in Table 2.3 and the detailed the quantum calculations are provided in Appendix A.

Table 2.1: Procedure for determining the quantum for financial provision (as per the DMRE guideline document, 2005).

STEP NO.	DESCRIPTION	DMR GUIDELINE 2005 TABLE REFERENCE	COMMENTS
1	Determine mineral mined and saleable by-products	B.13	Sandstone and dolerite: BP A – Sandstone BP B, BP C – Dolerite
2 A	Determine primary risk class	B.13	Class C (open cast mine): All borrow pits
2 B	Revise primary risk class (if applicable) based on saleable by-products.	B.14	N/A
3	Determine environmental sensitivity of mine area.	B.4	Low: BP A, BP B, BP C
4.1	Determine the level of information available.		Limited information: All borrow pits
4.2	Identify closure components.	Section 4.2 and Table B5	Refer to Table 2.2 and quantum calculation tables.
4.3	Identify unit rates for closure components.	Table B.6	Refer to quantum calculation tables.
4.4	Identify and apply weighting factors.	Table B.7 and B.8	Weighting factor 1.1 = 10% (Undulating): BP A, BP B, BP C
4.5	Identify areas of disturbance.	Topographical plans or site visits.	Refer to quantum calculation tables.
4.6	Identify closure costs from specialist studies.	Table B.9	Refer to quantum calculation tables.
4.7	Calculate closure costs.	Table B.10	Refer to quantum calculation tables.

Table 2.2: Identification of closure components.

COMPONENT NO.	MAIN DESCRIPTION	APPLICABILITY
1	Dismantling of processing plant and structures	Yes BP A, BP B, BP C
2(A)	Demolition of steel buildings and structures	No
2(B)	Demolition of reinforced concrete buildings and structures	No
3	Rehabilitation of access roads	Yes BP A, BP B, BP C
4(A)	Demolition and rehabilitation of electrified railway lines	No
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 BP A, BP B, BP C
7	Sealing of shafts, adits and inclines	No
8(A)	Rehabilitation of overburden and spoils	Yes BPA, BP B, BP C
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic, salt-producing waste)	No
8(C)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste)	No
9	Rehabilitation of subsided areas	No
10	General surface rehabilitation, including grassing of denuded areas	Yes BP A, BP B, BP C
11	River diversions	No
12	Fencing	Yes BP A, BP B, BP C
13	Water management (Separating clean and dirty water, managing polluted water and managing the impact on groundwater, including treatment, when required)	No
14	2 to 3 years of maintenance and after care	Yes BP A, BP B, BP C
15	Specialist studies	No

Table 2.3: Summary of quantum amounts for all borrow pits

SITE	SUBTOTAL 1	SUBTOTAL 2	VAT (15%)	GRAND TOTAL
BPA	R1 091 169.48	R300 071.61	R208 686.16	R1 599 927.25
BPB	R422 839.38	R116 280.83	R80 868.03	R619 988.24
BPC	R609 665.76	R167 658.08	R116 598.58	R893 922.42
TOTAL	R2 123 674.62	R584 010.52	R406 152.77	R3 113 837.91

3. APPENDIX A - QUANTUM CALCULATION FOR FINANCIAL PROVISION

Appendix A1: Borrow Pit A Quantum Calculation

No	Description	Unit	A Quantity	B Master rate	C Multiplication factor	D Weighting factor	E=A*B*C*D Amount	2021
1	Dismantling of processing plant and related structures	m ²	0	R18.36	1	1.1	R0.00	R18.36
3	Rehabilitation of access roads	m ²	200	R45.78	1	1.1	R10 070.97	R45.78
6	Opencast rehabilitation including final voids and ramps	ha	3.3	R260 391.13	0.04	1.1	R37 808.79	R260 391.13
8(A)	Rehabilitation of overburden and spoils	ha	0.25	R178 800.11	1	1.1	R49 170.03	R178 800.11
10	General surface rehabilitation	ha	3.55	R141 639.85	1	1.1	R553 103.61	R141 639.85
12	Fencing	m	1 022	R161.57	1	1.1	R181 709.33	R161.57
14	2 to 3 years of maintenance and aftercare	ha	12.2475	R18 849.41	1	1.1	R253 943.96	R18 849.41
SUBTOTAL 1							R1 091 169.48	
1	Weighting factor 2			(0%, 5% or 10%)			R 54 558.47	
2	Preliminary and General			12,5% of subtotal 1			R136 396.19	
8	Contingency			10,0% of subtotal 1			R109 116.95	
SUBTOTAL 2							R300 071.61	
VAT (15%)							R208 686.16	
GRAND TOTAL (SUBTOTAL 1 + SUBTOTAL 2 + VAT)							R1 599 927.25	

Appendix A2: Borrow Pit B Quantum Calculation

No	Description	Unit	A Quantity	B Master rate	C Multiplication factor	D Weighting factor	E=A*B*C*D Amount	2021
1	Dismantling of processing plant and related structures	m ²	0	R18.36	1	1.1	R0.00	R18.36
3	Rehabilitation of access roads	m ²	60	R45.78	1	1	R2 746.63	R45.78
6	Opencast rehabilitation including final voids and ramps	ha	1	R260 391.13	0.04	1.1	R11 457.21	R260 391.13
8(A)	Rehabilitation of overburden and spoils	ha	0.2	R178 800.11	1	1.1	R39 336.02	R178 800.11
10	General surface rehabilitation	ha	1.2	R141 639.85	1	1.1	R186 964.60	R141 639.85
12	Fencing	m	543	R161.57	1	1.1	R96 494.70	R161.57
14	2 to 3 years of maintenance and aftercare	ha	4.1400	R18 849.41	1	1.1	R85 840.21	R18 849.41
SUBTOTAL 1							R422 839.38	
1	Weighting factor 2			(0%, 5% or 10%)			R 21 141.97	
2	Preliminary and General			12,5% of subtotal 1			R52 854.92	
8	Contingency			10,0% of subtotal 1			R42 283.94	
SUBTOTAL 2							R116 280.83	
VAT (15%)							R80 868.03	
GRAND TOTAL (SUBTOTAL 1 + SUBTOTAL 2 + VAT)							R619 988.24	

Appendix A3: Borrow Pit C Quantum Calculation

No	Description	Unit	A Quantity	B Master rate	C Multiplication factor	D Weighting factor	E=A*B*C*D Amount	2021
1	Dismantling of processing plant and related structures	m ²	0	R18.36	1	1	R0.00	R18.36
3	Rehabilitation of access roads	m ²	200	R45.78	1	1	R9 155.43	R45.78
6	Opencast rehabilitation including final voids and ramps	ha	1	R260 391.13	0.52	1.1	R148 943.73	R260 391.13
8(A)	Rehabilitation of overburden and spoils	ha	0.25	R178 800.11	1	1.1	R49 170.03	R178 800.11
10	General surface rehabilitation	ha	1.25	R141 639.85	1	1.1	R194 754.79	R141 639.85
12	Fencing	m	665	R161.57	1	1.1	R118 224.90	R161.57
14	2 to 3 years of maintenance and aftercare	ha	4.3125	R18 849.41	1	1.1	R89 416.89	R18 849.41
SUBTOTAL 1							R609 665.76	
1	Weighting factor 2			(0%, 5% or 10%)			R 30 483.29	
2	Preliminary and General			12,5% of subtotal 1			R76 208.22	
8	Contingency			10,0% of subtotal 1			R60 966.58	
SUBTOTAL 2							R167 658.08	
VAT (15%)							R116 598.58	
GRAND TOTAL (SUBTOTAL 1 + SUBTOTAL 2 + VAT)							R893 922.42	

O. MGUDWA

 20/09/2021

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