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Natasha Higgitt

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Dear Ms Higgitt

Application for exemption from a Heritage Impact Assessment (HIA) for the proposed Expansion of the Butterworth Quarry on a Portion of Erf RE/153 and Erf RE/725, Mnquma Magisterial District, Eastern Cape Province

Introduction

Greenmined Environmental appointed Beyond Heritage to assess the impacts on heritage resources by the proposed Butterworth Quarry expansion. The Project area is situated at Butterworth Quarry on a Portion of Erf RE/153 and Erf RE/725, Mnquma Magisterial District, Eastern Cape Province. The assessment consists of a desktop study. Based on the complete transformation of the study area previous transformation of the study area, the exemption for a Heritage Impact Assessment is supported by the author.



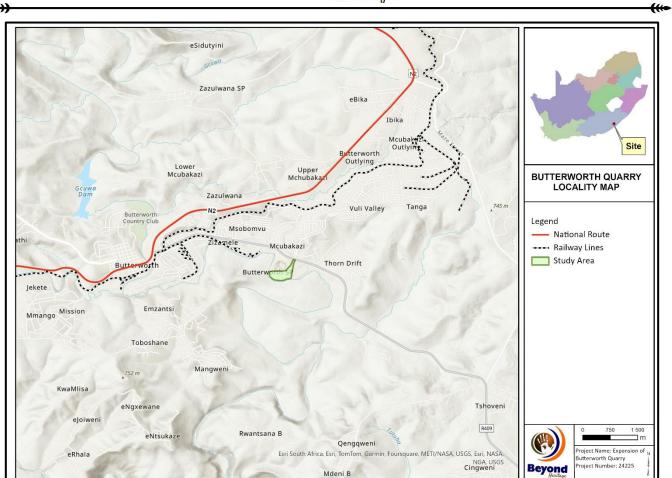


Figure 1.1. Local setting of the Project.



BUTTERWORTH QUARRY

AERIAL MAP

Legend

Study Area

Figure 1.2. Aerial image of the proposed expansion of the Butterworth quarry.



1. Project Background

Butterworth Quarry entails the mining of a hard rock quarry on municipal land that extends over a portion of Erf RE/153 and Erf RE/725, approximately 3 km east of the CBD of Butterworth. The quarry has seen its inception in 1971. Sunshine Enterprises (Pty) Ltd applied for a right to mine dolerite bedrock from this quarry in November 2006. The Department of Mineral Resources and Energy (DMRE) approved the application, and the mining right (MR) commenced on 03 November 2009 and is valid until 03 November 2039. Raumix Aggregates (Pty) Ltd procured the quarry in April 2018 and a Section 11 application was submitted to the DMRE that was granted in April 2021 ceding the mining right to Transkei Quarries (Pty) Ltd.

Scope of the Overall Activity:

Mining at Butterworth Quarry (since 1971) brought about the development of the pit to its ultimate extent. Considering this, the Right Holder identified the need to expand the mining footprint as this will allow development of the quarry pit in a southern/south-eastern direction. The proposed expansion of the mining area will further move the mining activities (such as blasting) away from the nearby community houses that borders the Quarry opposite Kentani Road. Table 1 provides additional information on the location of the proposed Project.

The mining method will remain unchanged, and no additional infrastructure needs to be established in the expansion area, as the motivation for the proposed extension is to expand the quarry pit perimeter. The Right Holder will therefore continue to use the existing offices, workshops, storerooms, plant etc. of the Quarry.

The proposed expansion of the mine's footprint necessitates an application for a Part 2 amendment of the mine's EMPR in terms of GNR 326 Section 31 (NEMA). The application further constitute listed/specified activities in terms of the NEMA: EIA Regulations, 2014 (as amended) and therefore requires an environmental impact assessment (basic assessment process) that assess project specific environmental impacts and alternatives, consider public input, and propose mitigation measures, to ultimately culminate in an environmental management programme that informs the competent authority (Department of Mineral Resources and Energy (DMRE)) when considering the environmental authorisation.

Table 1. Location of the operational and proposed expansion activities.

Farm Name:	❖ Erf Re/153❖ Erf Re/725	
Application area (Ha)	Once the expansion (S102) application is approved the mining area will be 30.1036 ha ◆ Approved Mining Footprint = 16.1634 ha ◆ S102 Expansion Area = 13.9402 ha ◆ Total Expanded Footprint = 30.1036 ha	
Magisterial district:	Mnquma Magisterial District	
Distance and direction from the nearest town	Butterworth Quarry is situated ±3 km east of Butterworth central along Kentani Road.	
21 digit Surveyor General Code for each farm portion	❖ C08700010000015300000❖ C08700010000072500000	





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Need and Desirability:

Butterworth Quarry produces aggregates and road pavement layering products for the construction and building industry of mainly the Eastern Cape. Mining at Butterworth Quarry (since 1971) brought about the development of the pit to its ultimate extent. Considering this, the Right Holder identified the need to expand the mining footprint as this will allow the development of the quarry pit in a southern/south-eastern direction. The earmarked expansion footprint was used as waste dump by the municipality in the past, and therefore does not constitute an undeveloped natural and/or pristine area. Although the proposed expansion area is no longer used as waste dump and has been reinstated in the meantime, the vegetation cover is still representative of disturbed land with no fauna and/or floral species of conservation concern present. The proposed expansion of the mining area will furthermore move the mining activities (such as blasting) away from the nearby community houses that borders the Quarry opposite Kentani Road and include the part of the excavation that historically extended across the mine boundary.

Alternatives Considered:

During the EIA phase the following alternatives were considered:

(a) The property on which or location where it is proposed to undertake the activity: Expansion of the current mining footprint from ±16.16 ha to ±30.1 ha over a previously altered area within the coordinates as presented in this document.

(b) The type of activity to be undertaken:

Mining of the proposed expansion area in the same way as the current quarry is being mined through benched open pit excavations. Hard rock breaking is done by drilling and blasting. The broken rock is sorted and loaded onto articulated dump trucks, that haul it to the existing primary crushing plant of the mine, where various products are conveyed to secondary-, tertiary- and quaternary crushing and screening processes to result in the desired products.

(c) The design or layout of the activity:

Mining of the area without the need to establish permanent infrastructure and/or buildings in the expansion area. The specific design of the quarry pit will be developed in consultation with a qualified mine planner/engineer and will be dictated by the 1:100 year floodline of the Gcuwa River to be determined should the S102 application be successful.

d) The technology to be used in the activity:

Mining of the expansion area through drilling, blasting, and excavation with earthmoving machinery. No complex technology is required.

(e) The operational aspects of the activity:

Incorporation of the proposed activity into the ongoing operations of Butterworth Quarry. The Right Holder already extract water from the quarry pit, no electricity is needed to allow the continuation of the proposed activity, no servicing of mining equipment will be required within the expansion area, Kentani Road and the existing internal roads will provide access to the quarry. The project does consider mitigating impacts such as dust generation, noise handling, waste management, and rehabilitation.



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(f) The option of not implementing the activity:

This alternative will prevent the Right Holder from expanding the quarry pit and the opportunity of mining in a southern direction away from the surrounding residents will be lost. The expansion of the pit will directly affect the lifespan of the Quarry, as the life of mine is presently calculated at ±24 years should the expansion be approved. An increased life of mine will provide the employees with peace of mind regarding downscaling and retrenchments linked to mine closure, as well as socio-economic benefits and growth development opportunities. Given the high levels of unemployment and poverty in the Mnquma District the loss of such opportunities is considered significant. Mining the earmarked area will benefit the Mnquma Municipality (MLM) financially as their undeveloped land will generate surface use income. Therefore, the no-go option is not supported.

2. Physical Environment

The vegetation and landscape are described by Mucina and Rutherford (2006) as Bhisho Thronveld of the Savanna Biome. It is described as undulating to moderately steep slopes, sometimes in shallow, incised drainage valleys. Open savanna characterized by small trees of *Acacia natalitia* with a short to medium, dense, sour grassy understorey, usually dominated by *Themeda triandra* when in good condition. A diversity of other woody species also occurs, often increasing under conditions of overgrazing (Mucina and Rutherford 2006).

The proposed area for expansion has been disturbed previous mining activities and the area was used as a landfill site. Although the Project area has since been rehabilitated, the mining, dumping and rehabilitation activities have all transformed the Project area. None of the original vegetation remains within the Project area and invasive plant species have grown across the Project area. General site conditions are illustrated in (Figure 2.1 - 2.8).



Figure 2.1. View of the Gcuwa River.



Figure 2.2. General view of the quarry.



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Figure 2.3. General site conditions in the Project area.



Figure 2.4. General site conditions in the Project area.



Figure 2.5. Overgrown vegetation within the Project area.



Figure 2.6. General site conditions in the Project area.



Figure 2.7. General site conditions in the Project area.



Figure 2.8. General site conditions in the Project area.



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3. The Heritage Character of the Study Area

3.1. Literature review

A brief survey of available literature was conducted to extract data and information on the area in question to provide general heritage context into which the development would be set. This literature search included published material, unpublished commercial reports, and online material, including reports sourced from the South African Heritage Resources Information System (SAHRIS).

3.1.1. Archaeological Background

The archaeological record for the greater study area consists of the Stone Age and Iron Age.

3.1.1.1. Stone Age

South Africa has a long and complex Stone Age sequence of more than 2 million years. The broad sequence includes the Later Stone Age, the Middle Stone Age and the Earlier Stone Age. Each of these phases contains sub-phases or industrial complexes, and within these we can expect regional variation regarding characteristics and time ranges. For (CRM) purposes it is often only expected/ possible to identify the presence of the three main phases. Yet sometimes the recognition of cultural groups, affinities or trends in technology and/or subsistence practices, as represented by the sub-phases or industrial complexes, is achievable. The three main phases can be divided as follows;

- » Later Stone Age (LSA); associated with Khoi and San societies and their immediate predecessors. -Recently to ~30 thousand years ago.
- » Middle Stone Age (MSA); associated with Homo sapiens and archaic modern human . 30-300 thousand years ago.
- Earlier Stone Age (ESA); associated with early Homo groups such as Homo habilis and Homo erectus.
 400 000-> 2 million years ago.

Most Stone Age finds in the larger area are generally isolated surface occurrences and primarily date to the Middle Stone Age. It is expected that archaeological material in the area would span the Earlier, Middle, and Later Stone Ages. Acheulian artifacts can occasionally be found in the river gravels and along the riverbanks, with MSA and LSA artifacts likely scattered across hillsides and ridges.

Evidence of KhoeKhoe occupation might still be visible in the landscape, as these herding groups are known to have followed larger rivers during their migrations. Herders arrived in the area around the mid-first millennium AD (Mitchell 2002). While habitation sites of these groups are not well understood, some of the stone kraals found in the landscape likely belong to them. KhoeKhoe burials, which are sometimes marked with a cairn of stones, may also be visible. Additionally, pottery found near stone kraals or in cave sites could serve as further evidence of a KhoeKhoe presence in the area. Significant Khoekhoe pastoralist sites in the Eastern Cape include Scott's Cave near Patensie (Deacon 1974), the Goedgeloof shell midden along the St. Francis coast (Binneman 2007), and the Oakleigh rock shelter near Queenstown (Derricourt 1977).

The Late Stone Age communities often left behind archaeological evidence in coastal middens, cave deposits, rock shelters, open sites. Among these coastal groups were the Strandlopers, who were the known to have inhabited the shores of the Eastern Cape. Sometimes, they are identified only by a few scattered stone tools and bone fragments. In the Southern Drakensberg, hunter-gatherers occupied the area before 10 000 BP (Opperman 1987), but it was abandoned around 6,000 BP during the Holocene, only to be reoccupied around 3 000 BP. The San later faced subjugation and assimilation initially by the Khoekhoen, who were cattle herders, and later by the amaXhosa and early European settlers.



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3.1.1.2. Iron Age

Bantu-speaking people moved into Eastern and Southern Africa about 2 000 years ago (Mitchell 2002). These people cultivated sorghum and millets, herded cattle and small stock and manufactured iron tools and copper ornaments. Because metalworking represents a new technology, archaeologists call this period the Iron Age. Characteristic ceramic styles help archaeologists to separate the sites into different groups and time periods. The Iron Age as a whole represents the spread of Bantu speaking people and includes both the Pre-Historic and Historic periods. It can be divided into three distinct periods:

- » The Early Iron Age (EIA): Most of the first millennium AD.
- The Middle Iron Age (MIA): 10th to 13th centuries AD.
- » The Late Iron Age (LSA): 14th century to colonial period.

Iron Age farming communities in southern Africa typically chose to settle in river valleys in the eastern part of the region due to the summer rainfall climate, which was ideal for cultivating millet and sorghum. Although extensive research has been conducted on the Iron Age across southern Africa, the Eastern Cape has received relatively little attention. A notable Early Iron Age site in the Eastern Cape include Kulubele, located in the Kei River Valley south of the Project area (Binneman 1996).

In the Eastern Cape Province, Later Iron Age sites are found both in low-lying river valleys adjacent to major rivers and along ridge crests. The LIA in the larger area is attributed to the Mpondomise, Thembu, and Xhosa groups (Feely 1987). Trade was a crucial aspect of the LIA economy, with goods being exchanged locally and over long distances. Key trade items included metal, salt, grain, cattle, and thatch, leading to the development of economically driven centers and an increase in trade wealth. Domestic animal husbandry, metalworking, and crop cultivation persisted, albeit with changes in economic organization (Huffman 2007). Hilltop settlements are commonly associated with LIA patterns from the second millennium AD. Later Iron Age settlements have been extensively documented by the Albany Museum and cover a broader area compared to Early Iron Age sites. Unlike the Sotho areas where stone buildings are typical, such structures are absent in the Transkei and Ciskei areas. This absence, coupled with a pattern of mobility and a lack of significant stone working technology, has made site identification difficult (Derricourt 1977).

3.1.1.3. Historical Period

Butterworth originated from a station of the Wesleyan Missionary Society, which was established in 1827 by Reverend W.J. Shrewsbury and named after Joseph Butterworth, a former treasurer of the Society. The town was near the residence of Hintsa ka Khawuta, chief of the Gcaleka Xhosa people. After the Frontier Wars ended in 1878, traders began to settle in the area. During the Frontier Wars, the mission station was burnt down numerous times. The town itself was founded in 1880 and gained municipal status in 1904 (Raper 2004). Butterworth is more commonly referred to as Gcuwa.

Gcuwa river is a tributary of the Great Kei River, flowing south past Butterworth to where it meets at Qombolo. Its name is likely a Xhosa adaptation of the Khoekhoen term "Goea," which is believed to mean "densely overgrown place." The Gcuwa River runs past the Project area along the southern boundary.



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3.1.2. Frontier Wars

The series of conflicts known as the Frontier Wars began in 1779 and continued intermittently for nearly a century, involving the Xhosa people, Boers, Khoekhoe, San, and the British. These clashes were primarily driven by colonial expansion, which led to the displacement of the Xhosa and Khoekhoe from their land and cattle, among other losses. Before Dutch occupation, the Xhosa, Khoekhoe, and San focused on hunting, agriculture, and stock farming. In the 1700s, overcrowding forced farmers, known as "Trekboers" or migrant farmers, to move deeper into the Cape Colony. They used superior weaponry to overcome local resistance and employed subdued groups for labour. Although there were periods of relative calm between the wars, minor skirmishes often arose, typically triggered by stock theft. Additionally, alleged breaches of signed or verbal agreements were a significant factor in these armed confrontations. The Dutch East India Company (V.O.C.) grew concerned about the expanding reach of these farmers, as it became harder to exercise control. To reassert authority, the V.O.C. had to follow the farmers and constantly adjust the colony's eastern boundaries. Colonists aimed to solidify their control through military means, evident in the construction of forts, garrisons, military posts, and signal towers. The Xhosa resistance was notably unified, while some Xhosa ethnic groups cooperated with the colonial government when it served their own interests.

By 1778, the Great Fish River became the eastern frontier, where the migrant farmers encountered the Xhosa, leading to serious conflicts. Previously, they had only clashed with the San. The V.O.C. established new districts like Swellendam and Graaff-Reinet to manage the frontier, but the violence persisted. Both the frontier farmers and the Xhosa continued to clash over territory and resources, leading to a series of wars.

The first Frontier War erupted in 1779 when armed Boer farmers attempted to expel the Xhosa from the Zuurveld but failed. This was followed by two more wars in 1793 and 1799–1801, with the third conflict seeing many Khoekhoe, who had worked for the Boers, joining the Xhosa. None of these wars resulted in a decisive victory (Britannica.com).

In the early 1800s, the British took control of the Cape Colony and sought to establish peace on the eastern border. Despite their efforts, a fourth Frontier War began in 1811, during which British troops pushed many Xhosa back across the border.

Between 1818 and 1878, the British fought five additional Frontier Wars against the Xhosa. They fortified the border with forts and stationed many soldiers there. Although the Xhosa were frequently defeated in battle, they persistently resisted British rule.

The ninth Frontier War concluded in 1878 when Xhosa leader Sarili (also known as Kreli) surrendered to the British. By the end of the 1800s, all Xhosa lands had been incorporated into the Cape Colony (sahistory.org.za).



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3.1.3. CRM reports consulted for this study

Few sites are known in the greater region and consists of Historical buildings and burial sites. The following Cultural Resource Management (CRM) assessments (Table 2) were conducted in the larger area and consulted for this report:

Table 2. CRM reports consulted for the study.

Author	Year	Project	Findings
Kruger, N.	2018	Archaeological Impact Assessment on Remainder of the Farm Hatherley 311 JR, Mamelodi, Gauteng Province.	A Historic railway station and associated buildings, an additional Historic building, 3 burial sites.
Magoma, M.	2022	Phase I Archaeological and Cultural Heritage Specialist Report for the Proposed Construction of 132kv Powerline from Butterworth to Idutywa Substations in Mnquma and Mbashe Local Municipalities of Amathole District Municipality, Eastern Cape Province.	Two cemeteries
Van Ryneveld, K.	2016.	Phase 1 Archaeological & Cultural Heritage Impact Assessment- Proposed Conference and Accommodation Facility near Gcuwa Dam, Butterworth, Mnquma Local Municipality, Eastern Cape.	No sites were identified.
Van Schalkwyk, L.	2009	Heritage Impact Assessment of Junction 14 Quarry Extension, Butterworth, Eastern Cape Province, South Africa.	No sites were identified.

3.1.4. Society and Google Earth Monuments

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where archaeological and historical sites might be located. The database of the Genealogical Society of South Africa indicated no known grave sites within the study area.

3.1.5. Cultural Landscape

The Project area is situated along the Gcuwa River and is marked by extensive mining operations at Butterworth Quarry since 1971. The surrounding area has increasingly become developed with the residential areas of Mchubakazi and Zizamele situated north of the Quarry. The Project area itself was previously used for refuse dumping by the municipality for several years (Figure 3.1 to 3.4).





Figure 3.1. 2008 Google Earth image indicating mining activities to the north of the expansion area and a road and dumping in the study area.



Figure 3.2. 2012 Google image indicating additional dumping in the western section of the Project area. Mining activities has expanded especially to the west, and the road and surrounding areas have been cleared.





Figure 3.3. 2016 Google Earth image of the study area – mining has expanded into the Project area and the rest of the landfill seems to have been rehabilitated. There is no original vegetation in the study area.



Figure 3.4. 2023 Google Earth image of the study area – mining and rehabilitation activities are visible within the Project area.





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4. Findings

4.1. Heritage Resources

No heritage resources are on record near the Project area and the heritage potential is low. The Project area has previously been mined in a small section along the quarry and the area has been used for refuse dumping (Figure 3.1 and 3.2). Although the Project area was reinstated, the original vegetation cover is no longer present, nor the original soil cover (Figure 3.3 and 3.4). The complete transformation of the Project area would have impacted on heritage resources had any been present.

4.2. Paleontological Resources

Based on the SAHRA paleontological map (Figure 4.1) the study area is indicated as of insignificant/zero sensitivity and no further studies are required for this aspect.



Figure 4.1. SAHRIS palaeo sensitivity map for the study area. Background colours indicate the following degrees of sensitivity:

Colour	Sensitivity	Required Action
RED	VERY HIGH Field assessment and protocol for finds is required	
ORANGE/YELLOW	HIGH Desktop study is required and based on the of the desktop study; a field assessment is likely	
GREEN	MODERATE	Desktop study is required
BLUE	LOW	No palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	No palaeontological studies are required
WHITE/CLEAR	UNKNOWN	These areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.





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5. Conclusion

The Project area consists of the expansion of the Butterworth Quarry with the Project area extending south of the quarry towards the Gcuwa River. The northern boundary of the Project area has already been subject to mining and is completely transformed. The municipality previously used the Project area as a waste dump which has since ended. The Project area was reinstated thereafter but it is evident that the Project area has been completely transformed and the original vegetation and topsoil is no longer present. The extensive surface disturbances of the Project area would have impacted heritage resources had any previously been present. However, due to the subsurface nature of heritage finds including graves, a Chance Find Procedure must be implemented for the Project.

According to the SAHRA paleontological map, the study area is indicated as of insignificant/zero sensitivity and no further palaeontological studies are required for this aspect.

An application for exemption from a Phase 1 Heritage Impact is therefore supported for the Project based on the complete transformation of the Project area by refuse dumping and mining, heritage resources would have been impacted. It is recommended that:

A Chance find procedure (detailed in appendix A) should be implemented for the project.

This application is subject to approval from SAHRA.

Any further queries can be forwarded to Beyond Heritage at info@heritageconsultants.co.za.

Lara Kraljević

Archaeologist



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6. References

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Electronic sources

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Appendix A - Chance Find Procedure for Heritage Resources

The possibility of the occurrence of subsurface finds cannot be excluded. Therefore, if during construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped, and a qualified archaeologist must be contacted for an assessment of the find and therefor chance find procedures should be put in place as part of the EMP.

This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below.

- If during the pre-construction phase, construction, operations or closure phases of this project, any
 person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service
 provider, finds any artefact of cultural significance or heritage site, this person must cease work at the
 site of the find and report this find to their immediate supervisor, and through their supervisor to the
 senior on-site manager.
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area.
- The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.