

ARCHAEOLOGICAL IMPACT ASSESSMENT

FOR THE PROPOSED PROCESSING PROJECT ON PORTION 30 AND PORTION 42 OF THE
FARM DOORNRUG 302 JS, BALMORAL DISTRICT, MPUMALANGA PROVINCE

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EXECUTIVE SUMMARY

Site name and location: The proposed processing development is located on Portion 30 and 42 of the farm Doornrug 302 JS, Balmoral District, Mpumalanga Province.

Purpose of the study: Phase 1 Archaeological Impact Assessment to determine the presence of cultural heritage sites and the impact of the proposed project on these resources within the area demarcated for the proposed quarry.

1:50 000 Topographic Map: 2529 CC

Environmental Consultant: Greenmined Environmental

Developer: B & E International

Heritage Consultant: Heritage Contracts and Archaeological Consulting CC (HCAC).

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Date of Report: 12 December 2015

Findings of the Assessment:

The topography of the study area is relatively flat gently sloping westwards. Within the study area there are no geographical features like drainage systems, pans or rocky outcrops with the main features in the study area being an existing quarry and an old burrow pit. As part of the EIA process for the project the study area was assessed in terms of the archaeological component of Section 35 of the NHRA.

During the survey a single Late Iron Age Archaeological site was recorded **outside** of the study area. Several stone cairns associated with this site was recorded in the north eastern portion of the study area; this aspect will require mitigation as outlined in section 7 of this portion prior to development in this area. Several previous studies were conducted in the immediate vicinity of the study area and similarly very few heritage sites were recorded.

We are of the opinion that the development will not have a significant impact on the heritage of the area if the recommendation as made in the report area adhered by based on approval from SAHRA.

General

Due to the subsurface nature of archaeological material and unmarked graves the possibility of the occurrence of unmarked or informal graves and subsurface finds cannot be excluded. 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.

CONTENTS

EXECUTIVE SUMMARY	7
GLOSSARY	12
1 BACKGROUND INFORMATION.....	13
1.1 Terms of Reference	14
1.2. Archaeological Legislation and Best Practice	15
1.3 Description of Study Area	17
1.3.1 Location Data	17
1.3.2. Location Map	18
2. APPROACH AND METHODOLOGY	19
2.1 Phase 1 - Desktop Study	19
2.1.1 Literature Search	19
2.1.2 Information Collection	19
2.1.3 Consultation	19
2.1.4 Google Earth and Mapping Survey.....	19
2.1.5 Genealogical Society of South Africa.....	19
2.2 Phase 2 - Physical Surveying.....	19
2.3. Restrictions.....	20
3. NATURE OF THE DEVELOPMENT.....	20
4. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND OF THE STUDY AREA.....	22
4.1 Databases Consulted.....	22
4.2 Background Information for the study Area.....	23
4.2.1 Archaeological Background.....	23
4.3. Historical Background to the Witbank Area.....	24
4.3.1. A Brief History of Human Settlement and Black And White Interaction in the Study Area	24
5. HERITAGE SITE SIGNIFICANCE AND MITIGATION MEASURES.....	28
5.1. Field Rating of Sites	30
6. BASELINE STUDY-DESCRIPTION OF SITES	31
7. RECOMMENDATIONS AND CONCLUSIONS.....	37
8. PROJECT TEAM	37
9. STATEMENT OF COMPETENCY	38
10. REFERENCES.....	39

FIGURES

Figure 1: Location map showing the study area in blue. 18

Figure 2: Concentration camps represented by red dots and railway stations with grey squares (Bergh 1999)..... 27

Figure 3: Google Image of the study area (in blue) with track logs of the area covered in black 32

Figure 4: Field drawing of Feature 1 (not to scale)..... 33

Figure 5. Stone walled enclosure. 34

Figure 6. Lower grinding stone..... 34

Figure 7. Stone cairn. 34

Figure 8. Study area viewed from the west..... 34

Figure 9. Existing quarry. 35

Figure 10: Earth works at the existing quarry. 35

Figure 11: Cairns located outside of study area 36

ABBREVIATIONS

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BIA: Basic Impact Assessment
CRM: Cultural Resource Management
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Plan
ESA: Early Stone Age
GPS: Global Positioning System
HIA: Heritage Impact Assessment
LIA: Late Iron Age
LSA: Late Stone Age
MEC: Member of the Executive Council
MIA: Middle Iron Age
MPRDA: Mineral and Petroleum Resources Development Act
MSA: Middle Stone Age
NEMA: National Environmental Management Act
PRHA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency

**Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.*

GLOSSARY

Archaeological site (remains of human activity over 100 years old)

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

The Iron Age (~ AD 400 to 1840)

Historic (~ AD 1840 to 1950)

Historic building (over 60 years old)

1 BACKGROUND INFORMATION

<i>Kind of study</i>	Archaeological Impact Assessment
<i>Type of development</i>	Gravel Processing
<i>Developer:</i>	B & E International
<i>Consultant:</i>	Greenmined Environmental

The Archaeological Impact Assessment report forms part of the EIA for the proposed project.

The aim of the study is to identify cultural heritage sites, document, and assess their importance within local, provincial and national context. It serves to assess the impact of the proposed project on non-renewable heritage resources, and to submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner. It is also conducted to protect, preserve, and develop such resources within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

The report outlines the approach and methodology utilized before and during the survey, which includes: Phase 1, a desktop study that includes collection from various published and unpublished sources; Phase 2, the physical surveying of the area on foot and by vehicle; Phase 3, reporting the outcome of the study.

During the survey a single Iron Age Site and associated features were identified within the proposed footprint of the quarry. General site conditions and features on sites were recorded by means of photographs, GPS locations, and site descriptions. Possible impacts were identified and mitigation measures are proposed in the following report.

This report must also be submitted to the SAHRA for review.

1.1 Terms of Reference

Desktop study

Conducting a brief desktop study where information on the area is collected to provide a background setting of the archaeology that can be expected in the area.

Field study

Conduct a field study to: a) systematically survey the proposed project area to locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest; b) record GPS points identified as significant areas; c) determine the levels of significance of the various types of heritage resources recorded in the project area.

Reporting

Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the identified heritage resources for all 3 phases of the project; i.e., construction, operation and decommissioning phases. Consider alternatives, should any significant sites be impacted adversely by the proposed project. Ensure that all studies and results comply with Heritage legislation and the code of ethics and guidelines of ASAPA.

To assist the developer in managing the discovered heritage resources in a responsible manner, and to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

1.2. Archaeological Legislation and Best Practice

Phase 1, an AIA or a HIA is a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation. The overall purpose of a heritage specialist input is to:

- » Identify any heritage resources, which may be affected;
- » Assess the nature and degree of significance of such resources;
- » Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance;
- » Assess the negative and positive impact of the development on these resources;
- » Make recommendations for the appropriate heritage management of these impacts.

The AIA or HIA, as a specialist sub-section of the EIA, is required under the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999), Section 23(2)(b) of the NEMA and section s.39(3)(b)(iii) of the MPRDA.

The AIA should be submitted, as part of the EIA, BIA or EMP, to the PHRA if established in the province or to SAHRA. SAHRA will be ultimately responsible for the professional evaluation of Phase 1 AIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 AIA reports and additional development information, as per the EIA, BIA/EMP, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 AIA reports authored by professional archaeologists, accredited with ASAPA or with a proven ability to do archaeological work.

Minimum accreditation requirements include an Honours degree in archaeology or related discipline and 3 years post-university CRM experience (field supervisor level).

Minimum standards for reports, site documentation and descriptions are set by ASAPA in collaboration with SAHRA. ASAPA is a legal body, based in South Africa, representing professional archaeology in the SADC region. ASAPA is primarily involved in the overseeing of ethical practice and standards regarding the archaeological profession. Membership is based on proposal and secondment by other professional members.

Phase 1 AIAs are primarily concerned with the location and identification of sites situated within a proposed development area. Identified sites should be assessed according to their significance. Relevant conservation or Phase 2 mitigation recommendations should be made. Recommendations are subject to evaluation by SAHRA.

Conservation or Phase 2 mitigation recommendations, as approved by SAHRA, are to be used as guidelines in the developer's decision making process.

Phase 2 archaeological projects are primarily based on salvage/mitigation excavations preceding development destruction or impact on a site. Phase 2 excavations can only be conducted with a permit, issued by SAHRA to the appointed archaeologist. Permit conditions are prescribed by SAHRA and includes (as minimum requirements) reporting back strategies to SAHRA and deposition of excavated material at an accredited repository.

In the event of a site conservation option being preferred by the developer, a site management plan, prepared by a professional archaeologist and approved by SAHRA, will suffice as minimum requirement.

After mitigation of a site, a destruction permit must be applied for from SAHRA by the client before development may proceed.

Human remains older than 60 years are protected by the National Heritage Resources Act, with reference to Section 36. Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of SAHRA. The procedure for Consultation Regarding Burial Grounds and Graves (Section 36[5]) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in this age category, located inside a formal cemetery administrated by a local authority, require the same authorisation as set out for graves younger than 60 years, in addition to SAHRA authorisation. If the grave is not situated inside a formal cemetery, but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws, set by the cemetery authority, must be adhered to.

Human remains that are less than 60 years old are protected under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning; or in some cases, the MEC for Housing and Welfare.

Authorisation for exhumation and reinterment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. To handle and transport human remains, the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

1.3 Description of Study Area

1.3.1 Location Data

The proposed application is to mine 42.75 ha of Portion 30 and 42 of the farm Doornrug 302 JS, Balmoral District, Mpumalanga Province. The site is located at 25° 52' 40.07"S 29° 02' 51.09". The topography of the area is relatively flat and portions were previously used for mining purposes. The study area falls within the Grassland Biome with the bioregion described by Mucina *et al* (2006) as the Mesic Highveld Grassland Bioregion with the vegetation described as eastern Highveld Grassland. Land use in the general area is characterized by mining and agriculture, dominated by crops and cattle farming.

2. APPROACH AND METHODOLOGY

The aim of the study is to cover archaeological databases to compile a background of the archaeology that can be expected in the study area followed by field verification; this was accomplished by means of the following phases.

2.1 Phase 1 - Desktop Study

The first phase comprised a desktop study scanning existing records for archaeological sites, historical sites, graves, architecture (structures older than 60 years) of the area.

2.1.1 Literature Search

Utilising data for information gathering stored in the archaeological database at Wits. The aim of this is to extract data and information on the area in question.

2.1.2 Information Collection

The SAHRA report mapping project (Version 1.0) and SAHRIS was consulted to collect data from previously conducted CRM projects in the region to provide a comprehensive account of the history of the study area.

2.1.3 Consultation

Consultation was conducted with the manager Mr Jaco van Zyl, who is not aware of any significant sites in the study area.

2.1.4 Google Earth and Mapping Survey

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where sites of heritage significance might be located.

2.1.5 Genealogical Society of South Africa

The database of the Genealogical Society was consulted to collect data on any known graves in the area.

2.2 Phase 2 - Physical Surveying

Due to the nature of cultural remains, the majority of which occurs below surface, a field survey of the study area of 72 Ha was conducted. The study area was surveyed by means of vehicle and extensive surveys on foot by a professional archaeologist on the 29th of April and 15th October 2015.

2.3. Restrictions

Due to the fact that most cultural remains may occur below surface, the possibility exists that some features or artefacts may not have been discovered/ recorded during the survey. Low ground visibility of parts of the study area is due to high vegetation, and the possible occurrence of unmarked graves and other cultural material cannot be excluded.

Only the surface infrastructure footprint area was surveyed as indicated in the location map, and not the entire farm. Intangible impacts were not assessed. Although HCAC surveyed the area as thoroughly as possible, it is incumbent upon the developer to stop operations and inform the relevant heritage agency should further cultural remains, such as stone tool scatters, artefacts, bones or fossils, be exposed during the process of development.

3. NATURE OF THE DEVELOPMENT

B&E International intends to crush and screen the material from the existing quarry on the property in order to produce aggregate to be sold to clients.

The proposed activity will not require any beneficiation or processing of the dolerite prior to it being sold. A site office, workshop and service area, weigh bridge and ablution facilities will be established at the site. A generator will be used to power the infrastructure on site until an Eskom connection can be secured. Process water will be obtained from the existing quarry pit. The water will mainly be used for dust suppression purposes on the crusher plant, roads and processing area. Potable water will daily be transported to site. The solid waste produced during the operational phase of the project will be transported from site to the eMalahleni landfill site. Approximately thirty- eight workers will be employed at the site.

The processing activities will consist of the following:

Crushing and screening

- Stockpiling and transporting
- Sloping and landscaping
- Replacing the topsoil and vegetating the disturbed.

The site will contain the following:

- Crushing and Screening infrastructure
- Site Office
- Site vehicles
- Parking area for visitors and site vehicles
- Vehicle service area with wash bay
- Site Storage Area
- Bunded diesel and oil storage facilities
- Generator on bunded area
- Ablution Facilities
- Weigh Bridge
- Demarcated general and hazardous waste are.

Access Route:

The existing access road of the farm will be used to gain access to the processing area.

4. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND OF THE STUDY AREA

4.1 Databases Consulted

On the 1:50 000 map sheet 2529 CC 2 sites are on record at the Wits Archaeological database. These sites consist of MSA open air sites and are not located in close proximity to the study area. Several previous CRM surveys are on record for the larger study area e.g. van Schalkwyk (2002 & 2006) and Roodt (2008). These studies recorded mostly graves and historical buildings. To the south east of the study area at Landay Colliery, the Heritage Unit at Digby Wells recommended exemption from a HIA for Waste Management Licence for Landau Colliery due to the disturbed nature of the study area (Karodia 2013). Van Der Walt (2013) also recommended exemption for a road upgrade at Kusile power station to the west of the study area. Closer to the the study area Murimbika (2008) conducted a survey for a 132 KV power line and recorded no sites in the power line servitude. Several cemeteries are on record for the Landau Colliery area (Pelser 2010).

Genealogical Society and Google Earth Monuments

Neither the Genealogical Society nor the monuments database at Google Earth (Google Earth also include some archaeological sites and historical battlefields) have any recorded sites in the study area.

4.2 Background Information for the study Area

4.2.1 Archaeological Background

The Stone Age is divided in Early; Middle and Late Stone Age and refers to the earliest people of South Africa who mainly relied on stone for their tools.

Very few Early Stone Age sites are on record for Mpumalanga and no sites dating to this period are expected for the study area. An example in Mpumalanga is Maleoskop on the farm Rietkloof where ESA tools have been found. This is one of only a handful of such sites in Mpumalanga.

The MSA has not been extensively studied in Mpumalanga but evidence of this period has been excavated at Bushman Rock Shelter, a well-known site on the farm Klipfonteinhoek in the Ohrigstad district. This cave was excavated twice in the 1960s by Louw and later by Eloff. The MSA layers show that the cave was repeatedly visited over a long period. Lower layers have been dated to over 40 000 BP (Before Present) while the top layers date to approximately 27 000 BP (Esterhuizen & Smith in Delius, 2007; Bergh, 1998). Some isolated finds were recorded by Van Vollenhoven (1992) close to the study area.

The Later phases of the Stone Age began at around 20 000 years BP. This period was marked by numerous technological innovations and social transformations within these early hunter-gatherer societies. These people may be regarded as the first modern inhabitants of Mpumalanga, known as the San or Bushmen. They were a nomadic people who lived together in small family groups and relied on hunting and gathering of food for survival. Evidence of their existence is to be found in numerous rock shelters throughout the Eastern Mpumalanga where some of their rock paintings are still visible. A number of these shelters have been documented throughout the Province (Bornman, 1995; Schoonraad in Barnard, 1975; Delius, 2007). These include areas such as Witbank, Ermelo, Barberton, Nelspruit, White River, Lydenburg and Ohrigstad.

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: Most of the first millennium AD.
- The Middle Iron Age: 10th to 13th centuries AD
- The Late Iron Age: 14th century to colonial period.

The Iron Age is characterised by the ability of these early people to manipulate and work Iron ore into implements that assisted them in creating a favourable environment to make a better living. No Sites dating to the Early or Middle Iron Age have been recorded or is expected for the study area. The same goes for the Later Iron Age period where the study area is situated outside the western periphery of distribution of Late Iron Age settlements in Mpumalanga. This phase of the Iron Age (AD 1600-1800's) is represented by various tribes including Ndebele, Swazi, BaKoni, Pedi marked by extensive stonewalled settlements found throughout the Mpumalanga escarpment

4.3. Historical Background to the Witbank Area

Since the mid 1800's up until the present, South Africa had been subdivided into various different districts. Since 1945, the area where the modern-day Witbank area is located formed part of the Lydenburg district.

4.3.1. A Brief History of Human Settlement and Black And White Interaction in the Study Area

When writing about the Mpumalanga Province, it is perhaps best to briefly glance back to prehistoric times, when coals formed in vast swamps from rotting forests between 200 and 300 million years ago. Massive seams of vast coal fields have been discovered and extracted in the southern areas in the province. The areas surrounding the towns of Witbank, Middelburg, Bethal, Hendrina, Ermelo and Carolina had long provided South Africa with an abundant source of cheap energy. This discovery has also had unfortunate effects on these areas, since the toxic by-products of burning coal in such quantities had severely polluted the ground and atmosphere in this area. (*Mpumalanga* 2007: 36-37)

J. S. Bergh's historical atlas of the four northern provinces of South Africa is a very useful source for the writing of local and regional histories. According to this source no signs of major Stone Age or Iron Age terrains are present in the vicinity of the farm area. (Bergh 1999: 4-5, 7)

No major black tribes seem to have settled very close to the area where Witbank is located today by the start of the nineteenth century, but the Phuthing Tribe was prominent in the area to the north thereof. (Bergh 1999: 10)

In a few decades, the sociographic nature of the then Transvaal province would change forever. The Difaqane (Sotho), or Mfekane ("the crushing" in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820's until the late 1830's. (Bergh 1999: 109-115) It came about in response to heightened competition for land and trade, and caused population groups like gun-carrying Griquas and Shaka's Zulus to attack other tribes (Bergh 1999: 14; 116-119).

Mzilikazi and his raiders had moved from the Northern Nguni area to the area north of the Vaal River by 1821. It has been recorded that the Ndebeles first attacked the Phuthing tribe, which in turn migrated to the south of the Vaal River and joined groups of Southern Sotho speakers. The Phuthing and Southern Sotho tribes moved westward and northward and started raiding Tswana communities in the surrounding area. The Phuthing were commanded first by Chief Tshane, and later Ratsebe. As the Phuthing under Ratsebe moved eastwards along the Vaal River, they collided with Mzilikazi's Ndebele once more. The Phuthing and other raiding groups were finally taken captive in 1823 by Mzilikazi's men. (Bergh 1999: 110-111) It is unlikely that these events would have had a great influence on the area where the farms under investigation are located today, but it is still important to understand the social dynamics of the larger area.

During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some travellers, missionaries and adventurers had gone on expeditions to the northern areas in South Africa – some as early as in the 1720's. One such an adventurer was Robert Scoon, who formed part of a group of Scottish travellers and traders who had travelled the northern provinces of South Africa in the late 1820s and early 1830s. Scoon had gone on two long expeditions in the late 1820s and once again ventured eastward and northward of Pretoria in 1836. During the latter journey, he passed by the area where Witbank is located today. (Bergh 1999: 13, 116-121)

By the late 1820's, a mass-movement of Dutch speaking people in the Cape Colony started advancing into the northern areas. This was due to feelings of mounting dissatisfaction caused by economical and other circumstances in the Cape. This movement later became known as the Great Trek. This migration resulted in a massive increase in the extent of that proportion of modern South Africa dominated by people of European descent. (Ross 2002: 39) As can be expected, the movement of whites into the Northern provinces would have a significant impact on the black people who populated the land. By 1860, the population of whites in the central Transvaal was already very dense and the administrative machinery of their leaders was firmly in place. Many of the policies that would later be entrenched as legislation during the period of apartheid had already been developed. (Bergh 1999: 170)

Much can be said about the systematic oppression of black people in South Africa. In 1904 about a half of the black population in the Transvaal was living on private land, owned by whites or companies. According to the Squatters' Law of 1895, no more than five families of "natives" could live on any farm or divided portion of a farm, without special permission of the Government in the Transvaal. (Massie 1905: 97)

Black and white relations were however at times also interdependent in nature. After the Great Trek, when white farmers had settled at various areas in the northern provinces, wealthier farmers were often willing to lodge needy white families on their property in exchange for odd jobs and commando service.

This bywoner often arrived with a family and a few cows. He would till the soil and pay a minimal rent to the farmer from the crops he grew. The farmer did not consider him a laborer, but mostly kept black workers for hard labour on the farm. After the Anglo-Boer War, many families were left destitute. Post war years of severe droughts and locust plagues did not ameliorate this state of affairs. All of these factors resulted in what became known as the 'poor white problem'. On the advent of commercial farming in South Africa, white landowners soon found bywoners to be a financial burden, and many were evicted from farms. In many cases, wealthier landlords found it far more profitable to rent their land to blacks than to bywoners. This enabled them to create reservoirs of black labour (for which mine recruiting agencies were prepared to pay handsome commissions), while it was also possible to draw more rent from their black tenants. This practice was outlawed by the 1913 Natives Land Act, which forbade more than five black families from living on white farms as peasant squatters. (Readers Digest 1992: 329-332).

The discovery of diamonds and gold in the Northern provinces had very important consequences for South Africa. After the discovery of these resources, the British, who at the time had colonized the Cape and Natal, had intentions of expanding their territory into the northern Boer republics. This eventually led to the Anglo-Boer War, which took place between 1899 and 1902 in South Africa, and which was one of the most turbulent times in South Africa's history. Even before the outbreak of war in October 1899 British politicians, including Sir Alfred Milner and Mr. Chamberlain, had declared that should Britain's differences with the Z.A.R. result in violence, it would mean the end of republican independence. This decision was not immediately publicized, and as a consequence republican leaders based their assessment of British intentions on the more moderate public utterances of British leaders. Consequently, in March 1900, they asked Lord Salisbury to agree to peace on the basis of the status quo ante bellum. Salisbury's reply was, however, a clear statement of British war aims. (Du Preez 1977).

During the British march into the Transvaal between February and September 1900, several troops passed by the area where Witbank is situated today. The battalions of Lieutenant Generals J. French, R. Pole-Carew and F. Roberts all travelled close by the Witbank area and through Middelburg. A railway line ran along this route at the time. (Bergh 1999: 51).

During the Anglo-Boer War, two railway stations were located in the vicinity of the Witbank area, and close to each a black concentration camp had been established. At Middelburg, about 20 kilometres to the east of Witbank, one white and one black concentration camp was also set up. No skirmishes took place in the direct vicinity of the farm area. (Bergh 1999: 54).

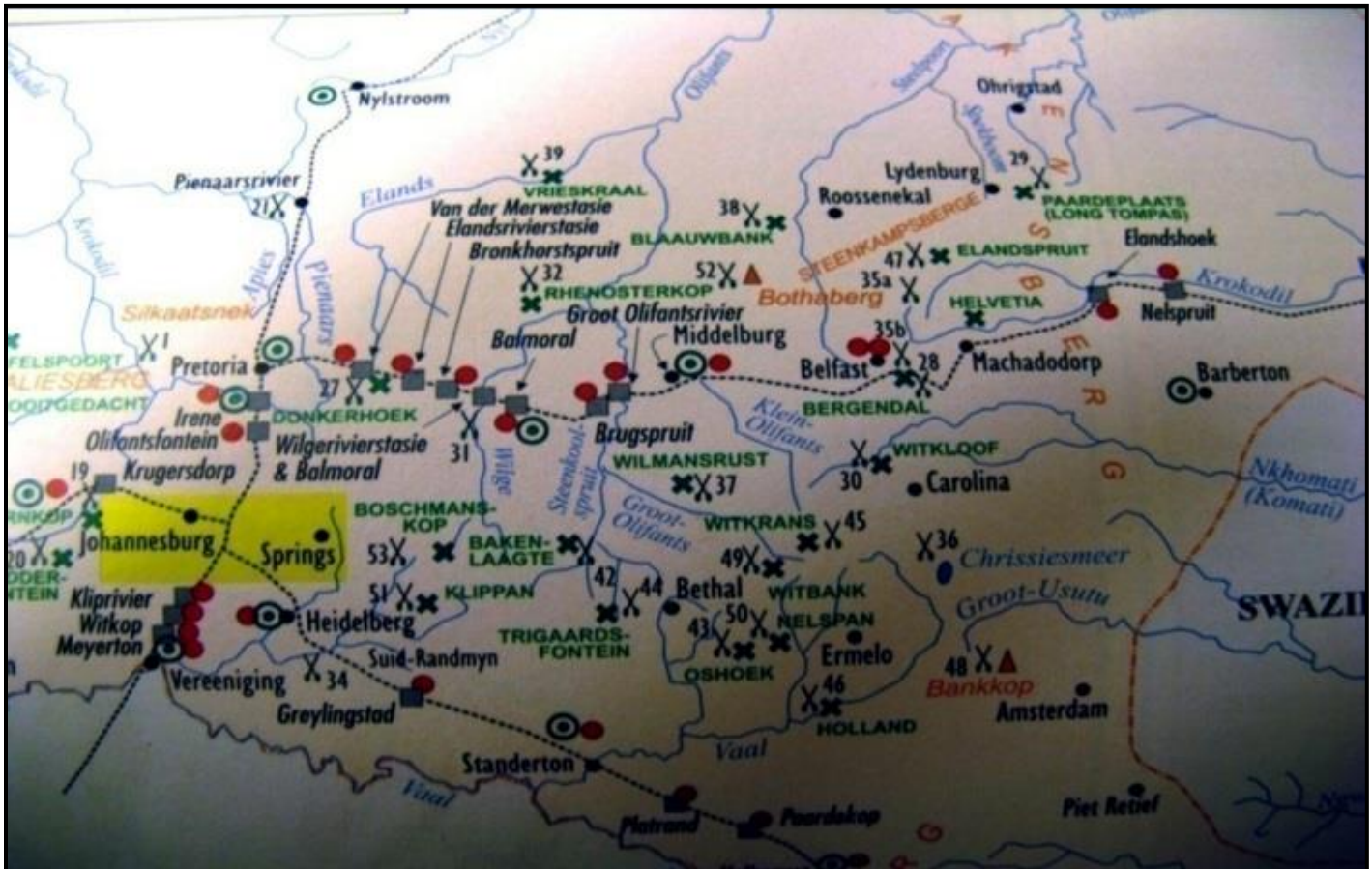


Figure 2: Concentration camps represented by red dots and railway stations with grey squares (Bergh 1999).

5. HERITAGE SITE SIGNIFICANCE AND MITIGATION MEASURES

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area, or a representative sample, depending on the nature of the project. In the case of the proposed quarry extension the local extent of its impact necessitates a representative sample and only the footprint of the areas demarcated for development were surveyed. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface.

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The following criteria were used to establish site significance:

- » The unique nature of a site;
- » The integrity of the archaeological/cultural heritage deposits;
- » The wider historic, archaeological and geographic context of the site;
- » The location of the site in relation to other similar sites or features;
- » The depth of the archaeological deposit (when it can be determined/is known);
- » The preservation condition of the sites;
- » Potential to answer present research questions.

Furthermore, The National Heritage Resources Act (Act No 25 of 1999, Sec 3) distinguishes nine criteria for places and objects to qualify as 'part of the national estate' if they have cultural significance or other special value. These criteria are:

- » Its importance in/to the community, or pattern of South Africa's history;
- » Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- » Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- » Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- » Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- » Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- » Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;

- » Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa;
- » Sites of significance relating to the history of slavery in South Africa.

5.1. Field Rating of Sites

Site significance classification standards prescribed by SAHRA (2006), and acknowledged by ASAPA for the SADC region, were used for the purpose of this report. The recommendations for each site should be read in conjunction with section 7 of this report.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP.A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

6. BASELINE STUDY-DESCRIPTION OF SITES

It is important to note that the entire farm was not surveyed but only the footprint of the proposed processing area as indicated in Figure 1 & 3. The study area is disturbed by previous mining activities and has also been used for agricultural purposes in the past. During the survey a Later Iron Age stone walled enclosure (Feature 1) was recorded **outside** the development footprint at 25° 52' 12.3923" S, 29° 03' 21.8231" E. The site consists of a single enclosure measuring approximately 12 meters in diameter with low stone walling (approximately 20 cm high) and a platform on the outer side with a single visible entrance (Figure 4 & 5).

Inside of the development footprint several stone cairns (Feature 2 & 3) were identified that are associated with the LIA stone walled site (Feature 1). Feature 2 consists of an oval stone cairn measuring approximately 1 meter in diameter and a lower grinding stone (Figure 6) at 25° 52' 16.1149" S, 29° 03' 19.5696" E. Feature 3 consists of at least 3 cairns measuring less than 1.2 meter in diameter located at 25° 52' 15.8159" S, 29° 03' 12.8123" E, 25° 52' 15.9493" S, 29° 03' 12.4958" E and 25° 52' 16.8889" S, 29° 03' 13.2912" E

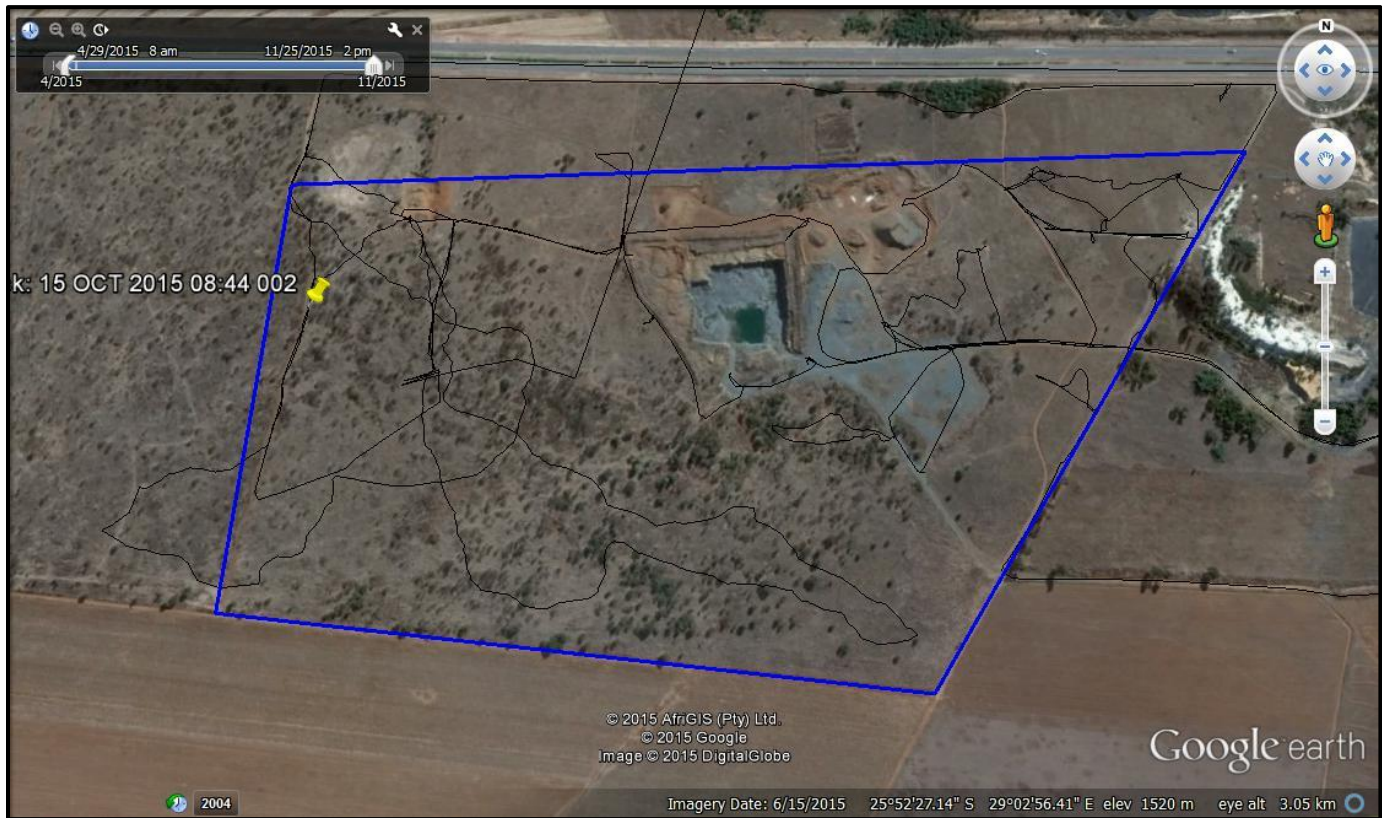


Figure 3: Google Image of the study area (in blue) with track logs of the area covered in black

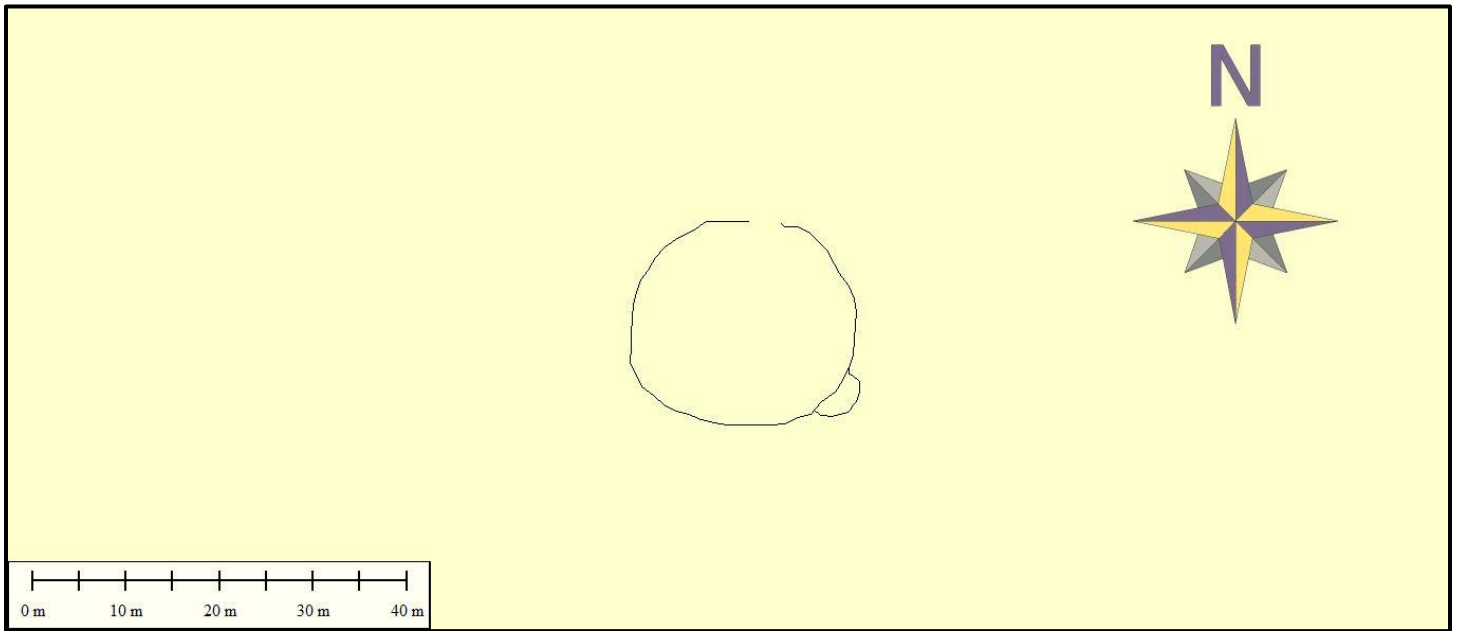


Figure 4: Field drawing of Feature 1 (not to scale).



Figure 5. Stone walled enclosure.



Figure 6. Lower grinding stone.



Figure 7. Stone cairn.



Figure 8. Study area viewed from the west.



Figure 9. Existing quarry.



Figure 10: Earth works at the existing quarry.

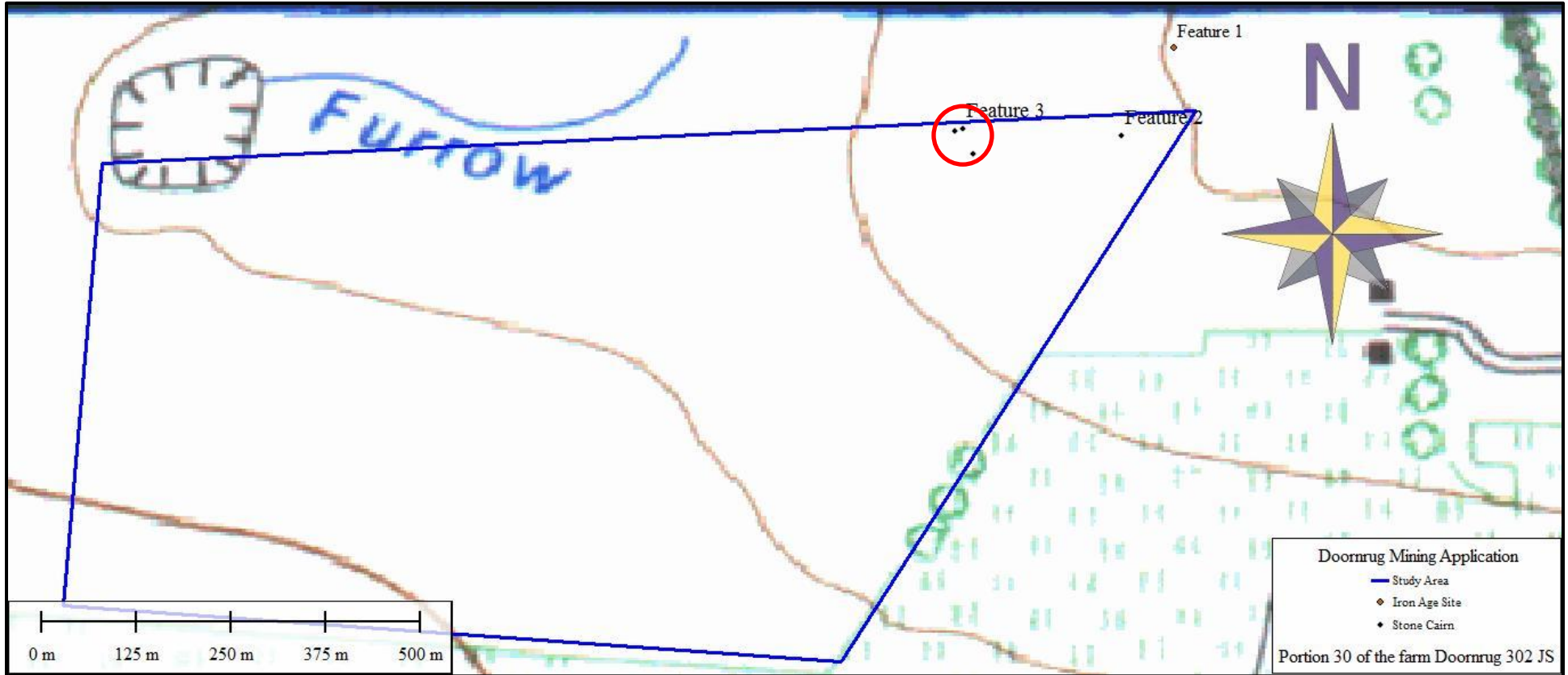


Figure 11: Site distribution map.

7. RECOMMENDATIONS AND CONCLUSIONS

The area on which the proposed 72 ha quarry is located consist of an area previously impacted on by mining activities and as such the chances of recovering archaeological materials *in situ* in the mined area are limited. No Stone Age sites were recorded in the study area possibly due to the lack of shelters, knapping material or features in the landscape, like pans or rocky outcrops.

A Single LIA site (feature 1) was recorded 80 meters **outside** of the development footprint but stone cairns (Feature 2 and 3) and lower grinding stones associated with the LIA site were recoded inside the development footprint. These different features form part of a single site and should be preserved or mitigated together. Sites like these do not occur in isolation and it is possible that higher up, on the rise that feature 1 is located on, more sites could have occurred. These areas are all impacted on by mining and hence this remaining site is all that is left of the Iron Age record of the immediate vicinity, furthermore not many Iron Age sites are known from the region (e.g. van Schalkwyk 2002 & 2006, Murimbika 2008, Roodt 2008 and Karodia 2013) enhancing the significance of the site. Due to the lack of features and visible archaeological deposit the features are of low to medium heritage significance and given a field rating of generally protected B. As these features are located on the periphery and outside of the development area it is recommended that these features are demarcated with a 20 m buffer zone and excluded from the quarry footprint. If this is not possible the features must be mapped and excavated (this will require an excavation permit from the heritage authorities) before a destruction permit can be applied for.

The site resembles a similar site located at Wildbeestfontein near Kinross (Taylor 1979) dating to AD 1650 to 1820 with a Type V layout (Maggs, 1976) or Klipriviersberg/Group III (Huffman 2007).

If during construction, any archaeological finds are made (e.g. stone tools, skeletal material), the operations must be stopped, and the archaeologist must be contacted for an assessment of the finds.

8. PROJECT TEAM

Jaco van der Walt, Project Manager

9. STATEMENT OF COMPETENCY

I (Jaco van der Walt) am a member of ASAPA (no 159), and accredited in the following fields of the CRM Section of the association: Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation. This accreditation is also valid for/acknowledged by SAHRA and AMAFA.

I have been involved in research and contract work in South Africa, Botswana, Zimbabwe, Mozambique, Tanzania and the DRC; and have conducted more than 400 AIAs since 2000.

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