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# A PHASE I HERITAGE IMPACT ASSESSMENT (HIA) STUDY FOR ANGLO OPERATIONS LIMITED GREENSIDE COLLIERY'S NEW DISCARD FACILITY NEAR EMAHLALENI ON THE EASTERN HIGHVELD IN THE MPUMALANGA PROVINCE

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## EXECUTIVE SUMMARY

This study contains the report for the Phase I HIA study for Anglo Operations Limited's (AOL) proposed new Discard Facility which was done in accordance with Section 38 of the National Heritage Resources Act (No 25 of 1999). The aims with the Phase I HIA study were the following:

- To establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (see Box 1) do occur in the Project Area and, if so, what the nature, the extent and the significance of these remains are.
- To outline the significance of these remains and to evaluate what appropriate mitigation measures could be taken if any of these types and ranges of heritage resources may be affected by the proposed Discard Facility Project.

The Phase I HIA study for the proposed Project Area revealed the following types and ranges of heritage resources as outlined in Section 38 of the National Heritage Resources Act (No 25 of 1999), namely:

- Two graveyards.

The two graveyards were geo-referenced (Table 1). They are not indicated on the map of the Project Area as both falls outside the Project Area (Figure 9).

The significance of the graveyards as well as the significance of any impact on the graveyards is indicated (Table 2).

**Possible impact on the heritage resources**

Both graveyards occur outside the Project Area and will not be affected by the proposed new Discard Facility.

**The significance of the graveyards**

All graveyards and graves can be considered to be of high significance and are protected by various laws (Table 1). Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (Act No 25 of 1999) whenever graves are older than sixty years. It seems as if both graveyards are older than sixty years. Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

The significance of possible impacts on the graveyards was determined using various criteria. The significance of any possible impact on the graveyards is very low (Table 2).

**Mitigating the graveyard impacts**

No mitigation measures are needed as the graveyards will not be affected by the proposed Discard Facility Project.

**Managing the graveyards**

G01 and G02 must be demarcated with a fence and fitted with a gate in order to allow for family or friends to visit the deceased. This will also lessen the risk that the graveyards may be affected by any developmental activities.

A Conservation Management Plan must be developed for G01 and G02 which must be incorporated in the EMP report.

General (disclaimer)

It is possible that this Phase I HIA study may have missed heritage resources in the Project Area as heritage sites may occur in thick clumps of vegetation while others may lie below the surface of the earth and may only be exposed once development commences.

If any heritage resources of significance are exposed during AOL's proposed new Discard Facility the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notified in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

## CONTENTS

# 1 INTRODUCTION

Greenside Colliery is a coal mine that is managed by Anglo American Thermal Coal a division of Anglo Operations Proprietary Limited (AOL). Greenside Colliery was acquired by AOL from Gold Fields Coal Limited in 1998 This acquisition forms part of Anglo American Thermal Coal's overall strategy to rationalise mining related to the Greenside, Kleinkopje and Landau Collieries which forms the South African Coal Estate complex.

The acquisition of Greenside Colliery resulted in changes to the planned Life of Mine (LOM) which required the development of a proposed new Discard Facility. The implementation of the Discard Facility Project may have an influence on any of the types and ranges of heritage resources which are listed in Section 3 of the National Heritage Resources Act (No 25 of 1999).

In order to comply with heritage legislation, AOL requires knowledge of the presence, relevance and the significance of any heritage resources that may be affected by the proposed new Discard Facility Project. AOL needs this knowledge in order to take pro-active measures with regard to any heritage resources that may be affected, damaged or destroyed when the proposed Discard Facility Project is implemented. Shangoni Management Services Pty (Ltd), the environmental company responsible for compiling the Environmental Impact Assessment (EIA) for the project, therefore commissioned the author to undertake a Phase I Heritage Impact Assessment (HIA) study for the Project Area.

The aims with the Phase I HIA were the following:

- To establish whether any of the types and ranges of heritage resources ('national estate') as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) do occur in the Project Area and, if so, to determine the significance of these heritage resources.
- To make recommendations regarding the mitigation and management of significant heritage resources that may be affected by AOL's proposed new Discard Facility Project.

This document contains the report on the results of the Phase I HIA study that was done for AOL's proposed Discard Facility Project in the Mpumalanga Province. The Mpumalanga Province has a rich heritage comprised of remains dating from the pre-historical and from the historical periods of South Africa. Pre-historical and historical remains in the Mpumalanga Province form a record of the heritage of most groups living in South Africa today. Heritage resources in the Mpumalanga Province therefore constitute a rich and wide diversified range, also known as the 'national estate' as outlined in Section 3 of the National Heritage Resources Act (Act 25 of 1999) (see Box 1, next page).

## Box 1: Types and ranges of heritage resources (the national estate) as outlined in Section 3 of the National Heritage Resources Act, 1999 (No 25 of 1999).

The National Heritage Resources Act (Act No 25 of 1999, Art 3) outlines the following types and ranges of heritage resources that qualify as part of the National Estate, namely:

(a) places, buildings structures and equipment of cultural significance;
(b) places to which oral traditions are attached or which are associated with living heritage;
(c ) historical settlements and townscapes;
(d) landscapes and natural features of cultural significance;
(e) geological sites of scientific or cultural importance;
(f) archaeological and palaeontological sites;
(g) graves and burial grounds including-
  (i) ancestral graves;
  (ii) royal graves and graves of traditional leaders;
  (iii) graves of victims of conflict;(iv) graves of individuals designated by the Minister by notice in the Gazette;
  (v) historical graves and cemeteries; and
  (vi) other human remains which are not covered by in terms of the Human Tissues Act, 1983 (Act No 65 of 1983);
(h) sites of significance relating to the history of slavery in South Africa;
(i) movable objects, including -
(i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
  (ii) objects to which oral traditions are attached or which are associated with living heritage;
  (iii) ethnographic art and objects;
  (iv) military objects;
  (v) objects of decorative or fine art;
  (vi) objects of scientific or technological interest; and
  (vii) books, records, documents, photographs, positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No 43 of 1996).

The National Heritage Resources Act (Act No 25 of 1999, Art 3) also 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 the following:

(a) its importance in the community, or pattern of South Africa's history;
(a) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
(b) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
(c) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
(e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
(f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
(g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; (h)
(h) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa;
(i) sites of significance relating to the history of slavery in South Africa

# 2 PROJECT DESCRIPTION

## 2.1 Location

Greenside Colliery is situated approximately 15 km southwest of eMalahleni in the eMalahleni Local Municipality on the Eastern Highveld and falls under the jurisdiction of the Nkangala District Municipality in the Mpumalanga Province (2529CC Witbank, 1: 50 000 topographical map; 2528 Pretoria, 1: 250 000 map) (Figure 1).

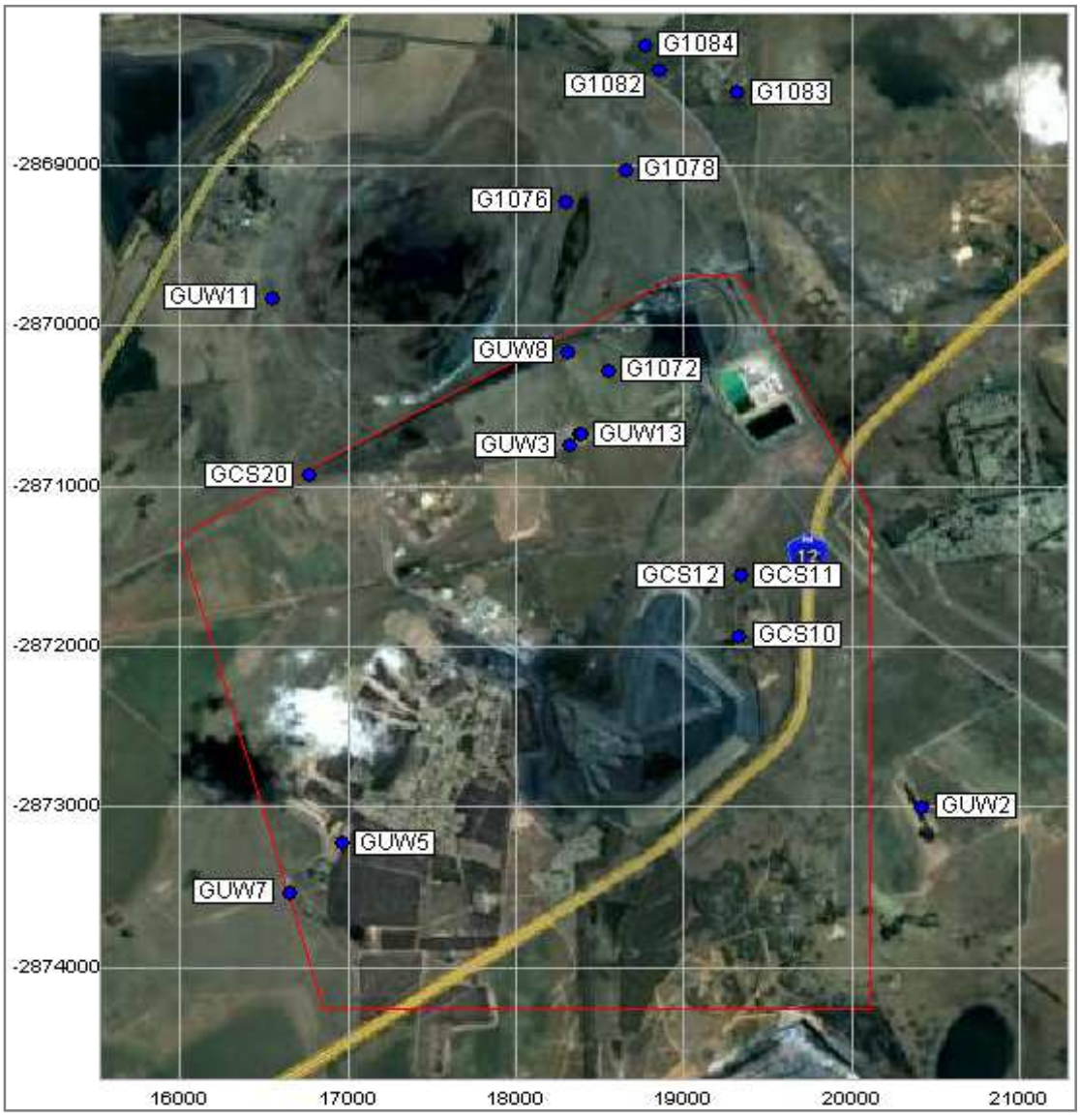



**Figure 1- The regional location for Anglo Operational Limited's proposed Discard Facility Project near Emalahleni on the eastern Highveld in the Mpumalanga Province. The region's dominant landscape character is that of open cast and underground coal mining activities (above).**

The closets major town to Greenside Colliery is eMalahleni, located 15 km to the north east. Blackhill Siding and an associated village are situated 2 km northwest of the mine infrastructure area. The Landau Colliery village is situated 1 km east of Greenside Colliery. The town of Ogies is located 20 km southwest of Greenside Colliery. The N12 highway which links Johannesburg with eMalahleni runs northeast-southwest along the south eastern boundary of Greenside Colliery. The proposed new Discard Facility and associated infrastructure will be located on Portion 0, 2 and 3 of the farm Groenfontein 331JS and the new Discard Facility will cover a surface area of approximately 115 hectares

## 2.2 Development components of the new Discard Facility Project

The acquisition of Greenside Colliery resulted in changes to the planned Life of Mine (LOM). This required an upgrading and extension of the current Discard Disposal Facility to accommodate the updated LOM that was forecasted to 2035 (i.e. 37 years from 1998). A feasibility study concluded that the current Discard Facility would not be able to accommodate the discards for the full LOM and that the best option would be to extend the existing facility as far as possible.

During a recent reassessment of the LOM design of the Discard Facility it was ascertained that historical mining methods beneath the Discard Facility had not taken into account the planned extent and height of the Discard Facility as well as the impact of the facility on the stability of pillars in the mined areas. Investigation s concluded that the current safety factors of the pillars would not be able to support the Discard Facility should it be raised to full height according to the design.

The new Discard Facility is required to accommodate the LOM discard tonnages as well as possible LOM extension tonnages. The Discard Facility will be able to accommodate some 35 Mt of discards. The conceptual design of the facility will require the following associated infrastructure:

- An Overland Conveyor System.
- Bridge crossing.
- Discard Silo.

- Haul roads.
- Dirty and Clean Water Separation Systems.
- The Workshop and associated Offices Complex.
- Power Lines.

High level designs are being developed for the proposed new Discard Facility and together with the associated infrastructure which will be presented as part of the final Environmental Impact Report (EIR). The objectives of the designs are to produce an environmentally acceptable, and economically viable and fully operational Disposal Facility.

### 2.3 The nature of the Project Area

The Project Area is situated on an undulating stretch of grass land on the Eastern Highveld of which the largest part has been transformed due to agricultural and mining activities. The pre-mining land capability of the surface area of Greenside Colliery was pre-dominantly that of agriculture and grazing. A smaller portion can be classified as that of wilderness and wetland areas. The arable areas to the east and west of the proposed new Discard Facility are actively cropped with dry land maize constituting the principle crop. Open grassland areas (both natural veld and rehabilitated areas) are grazed at a low intensity. The south central portion of the site is derelict as a result of past opencast mining activities which have not been rehabilitated. Previously mined areas are currently under a mixed wattle/grassland community. In these disturbed areas other exotic species such as pampas (*Cortaderia jubata*) and wild tomato (*solanum cyssimbrifolium*) are common. A portion of the site has also been planted to *Eucalyptus* trees for past commercial benefit.

The Project Area at large has also been scarred by developmental activities such as haul roads, electrical power lines and coal mining and processing activities which have altered the natural state of the area to that of a typical open cast coal mine on the Eastern Highveld.

The nature and characteristic features of the Project Area is discussed and illuminated with photographs (see Part 6.1 ‘The field survey’).

## 2.4 The heritage potential of the Project Area

A number of heritage studies have been done for AOL and other developers in close proximity of the proposed new Discard Facility which outline the nature and heritage character of the area. These studies also provide some predictive evidence regarding the types and ranges of heritage resources to be expected in any new area to be surveyed, namely: (see Part 9, ‘Bibliography relating to earlier heritage studies').

- EMPR. 2006 (a). Addendum Anglo Operations Limited Project Specific EMPR Addendum for the Emalahleni Water Reclamation Project. Unpublished report by Golder Associates.
- EMPR. 2006 (b). Addendum Greenside Colliery Project Specific EMPR Addendum for the Emalahleni Water Reclamation Project. Unpublished report by Golder Associates.
- Pelser, A.J. 2010. A report on the archaeological investigation of graves on the farm Nooitgedacht 300 JS, impacted on by the Anglo Operations Limited mining operations, near Witbank (Emalahleni), Mpumalanga Province. Unpublished Report Archaetnos AE1079. For Anglo-Coal (Anglo Operations Limited).
- Pelser, A.J. & A.C. van Vollenhoven. 2010. A report on a heritage impact assessment for the expansion of opencast coal mining operations, Anglo Operations Limited, on the farm Nooitgedacht 300 JS near Witbank, Mpumalanga. Unpublished Report Archaetnos AE1028. For Anglo-Coal (Anglo Operations Limited).
- Pistorius, J.C.C. 2006. A scoping report for a Phase I Heritage Impact Assessment study for the proposed new Emalahleni Water Reclamation Project near Witbank in the Mpumalanga Province of South Africa. Unpublished report for Anglo Coal and Ingwe Colliers.
- Pistorius, J.C.C. 2006. A Phase I Heritage Impact Assessment (HIA) study for the proposed new Emalahleni Water Reclamation Project near Witbank in the

Mpumalanga Province of South Africa. Unpublished report for Anglo Coal and Ingwe Colliers.

- Pistorius, J.C.C. 2010. A Phase I Heritage Impact Assessment (HIA) Study for the proposed Landau Expansion Project NearEmalahleni (Witbank) in the Mpumalanga Province of South Africa. Unpublished report prepared for Clean Stream Environmental Services.
- Pistorius, J.C.C. 2011. A Phase I Heritage Impact Assessment (HIA) Study for the proposed new Schoongezicht Coal Mine near Emalahleni (Witbank) in the Mpumalanga Province of South Africa. Unpublished report prepared for Clean Stream Environmental Services.
- Pistorius, J.C.C. 2013. A Phase I Heritage Impact Assessment (HIA) Study for the proposed Anglo Operations Limited Life Extension Project near Emalahleni (Witbank) on the Eastern Highveld in the Mpumalanga Province. Unpublished report prepared for Clean Stream Environmental Services.

Heritage resources which are quite common in the larger Project Area include:

- Historical remains associated with farmstead complexes consisting of houses, associated outbuildings, cattle enclosures and graveyards.
- Abandoned graveyards left by farm workers who moved from farms to urban areas.

In addition, the Project Area was also studied by means of maps on which it appears (2529CC Witbank, 1: 50 000 topographical map; 2528 Pretoria, 1: 250 000 map and Google imagery).

# 3 LEGAL FRAMEWORK

South Africa's heritage resources ('national estate') are protected by international, national and regional legislation which provides regulations, policies and guidelines for the protection, management, promotion and utilization of heritage resources. South Africa's 'national estate' includes a wide range of various types of heritage resources as outlined in Section 3 of the National Heritage Resources Act (NHRA, Act No 25 of 1999) (see Box 1).

According to the NHRA (Act No 25 of 1999) heritage resources are categorised using a three-tier system, namely Grade I (national), Grade II (provincial) and Grade III (local) heritage resources.

At the provincial level, heritage legislation is implemented by Provincial Heritage Resources Agencies (PHRAs) which apply the National Heritage Resources Act (Act 25 of 1999) together with provincial government guidelines and strategic frameworks. Metropolitan or Municipal (local) policy regarding the protection of cultural heritage resources is also linked to national acts and is implemented by the South African Heritage Resources Agency (SAHRA) and the Provincial Heritage Resources Agencies.

At a national level heritage resources are dealt with by the National Heritage Council Act (Act No 11 of 1999) and the National Heritage Resources Act (Act No 25 of 1999).

## 3.1 Legislation relevant to heritage resources

The identification, evaluation and assessment of heritage resources in South Africa are regulated by the following legislation:

- National Environmental Management Act (NEMA) Act 107 of 1998
- National Heritage Resources Act (NHRA) Act 25 of 1999
- Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002

### 3.2 The National Heritage Resources Act (NHRA)

According to the NHRA (Act No 25 of 1999) the 'national estate' comprises the following (see Box 1):

a. Archaeological artefacts, structures and sites older than 100 years
b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
c. Objects of decorative and visual arts
d. Military objects, structures and sites older than 75 years
e. Historical objects, structures and sites older than 60 years
f. Proclaimed heritage sites
g. Graveyards, burial grounds and graves older than 60 years
h. Meteorites and fossils
i. Objects, structures and sites or scientific or technological value.

Elaborating on the above the 'national estate' also includes (Box 1):

1. Places, buildings, structures and equipment of cultural significance
2. Places to which oral traditions are attached or which are associated with living heritage
3. Historical settlements and townscapes
4. Landscapes and features of cultural significance
5. Geological sites of scientific or cultural importance
6. Archaeological and paleontological sites of importance
7. Sites of significance relating to the history of slavery
8. Movable objects (e.g. archaeological, paleontological, meteorites, geological specimens, military and ethnographic objects, books etc.)

### 3.3 Heritage Impact Assessment studies

According to Section 38 of the National Heritage Resources Act (Act No 25 of 1999) a Heritage Impact Assessment (HIA) process must be followed under the following circumstances:

- The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length

- The construction of a bridge or similar structure exceeding 50m in length
- Any development or activity that will change the character of a site and which exceeds 5 000m$^2$ or which involve three or more existing erven or subdivisions thereof
- Re-zoning of a site exceeding 10 000 m$^2$
- Any other category provided for in the regulations of SAHRA or a provincial heritage authority

## 3.4 Regulations with regard to heritage resources

The regulations outlined below are applicable to the types and ranges of heritage resources which are the most common in the region where the heritage study was conducted, namely:

### 3.4.1 Buildings and structures

According to Section 34(1) of the NHRA (Act No 25 of 1999) no person may alter (demolish) any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or any other facility made by people and which is fixed to land and which includes fixtures, fittings and equipment associated with such structures.

Alter means any action which affects the structure, appearance or physical properties of a place or object, whether by way of structural or any other works such as painting, plastering, decorating, etc..

### 3.4.2 Graves and burial grounds

Graves and burial grounds are divided into the following:

a. ancestral graves
b. royal graves and graves of traditional leaders

c. graves of victims of conflict
d. graves designated by the Minister
e. historical graves and cemeteries
f. human remains

In terms of Section 36(3) of the NHRA (Act No 25 of 1999) no person, without a permit issued by the relevant heritage resources authority, may:

a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves
b) destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Unidentified graves are handled as if they are older than 60 years until proven otherwise.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the Ordinance on Excavations (Ordinance no. 12 of 1980) (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated) before exhumation can take place. Human remains can only be handled by a registered undertaker or an institution declared under the Human Tissues Act (Act 65 of 1983 as amended).

### 3.4.3 Archaeology, palaeontology and meteorites

Section 35(4) of the NHRA (Act No 25 of 1999) deals with archaeology, palaeontology and meteorites and states that no person without a permit issued by the responsible heritage resources authority (national or provincial) may:

- destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite
- destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological material or object or any meteorite
- trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or paleontological material or object, or any meteorite; or bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and paleontological material or objects, or use such equipment for the recovery of meteorites
- alter or demolish any structure or part of a structure which is older than 60 years.

Heritage resources may only be disturbed or moved by an archaeologist after being issued with a permit received from the South African Heritage Resources Agency (SAHRA). In order to demolish heritage resources the developer has to acquire a destruction permit by from SAHRA.

# 4 BASELINE ENVIRONMENT

A brief overview of pre-historical and historical information below contextualises the Eastern Highveld and the Project Area in particular. This information is necessary to understand the meaning and significance of heritage resources which may exist in the Project Area.

## 4.1 Stone Age and rock art sites

Stone Age sites are marked by stone artefacts that are found scattered on the surface of the earth or as parts of deposits in caves and rock shelters. The Stone Age is divided into the Early Stone Age (ESA) (covers the period from 2.5 million years ago to 250 000 years ago), the Middle Stone Age (MSA) (refers to the period from 250 000 years ago to 22 000 years ago) and the Late Stone Age (LSA) (the period from 22 000 years ago to 200 years ago).

Dongas and eroded areas at Maleoskop near Groblersdal is one of only a few places in Mpumalanga where ESA Olduwan and Acheulian artefacts have been recorded.
Evidence for the MSA has been excavated at the Bushman Rock Shelter near Ohrigstad. This cave was repeatedly visited over a prolonged period. The oldest layers date back to 40 000 years BP and the youngest to 27 000BP (Esterhuysen & Smith, 2007).

LSA occupation of the Mpumalanga Province also has been researched at Bushman Rock Shelter where it dates back 12 000BP to 9 000BP and at Höningnestkrans near Badfontein where a LSA site dates back to 4 870BP to 200BP (Esterhuysen & Smith, 2007).

The LSA is also associated with rock paintings and engravings which were done by San hunter-gatherers and Khoi Khoi herders. Rock paintings were also done by Early Iron Age (EIA) farmers (Maggs, 1983 and2008). Approximately 400 rock art sites are distributed throughout Mpumalanga, note-ably in the northern and eastern regions at places such as Emalahleni (Witbank) (4), Lydenburg (2), White River and the southern

Kruger National Park (76), Nelspruit and the Nsikazi District (250). The Ermelo area holds eight rock paintings (Smith & Zubieta, 2007).

The rock art of the Mpumalanga Province can be divided into San rock art which is the most wide spread, herder or KhoeKhoe paintings (thin scattering from the Limpopo Valley) through the Lydenburg district into the Nelspruit area) and localised late white farmer paintings. Farmer paintings can be divided into Sotho-Tswana finger paintings and Nguni engravings (Only 20 engravings occur at Boomplaats, north-west of Lydenburg). Farmer paintings are more localised than San or herder paintings and were mainly used by the painters for instructional purposes (Smith & Zubieta, 2007).

During the LSA and Historical Period, San people called the Batwa lived in sandstone caves and rock shelters near Lake Chrissie in the Ermelo area. The Batwa are descendants of the San, the majority of which intermarried with Bantu-Negroid people such as the Nhlapo from Swazi-descend and Sotho-Tswana clans such as the Pai and Pulana. Significant intermarriages and cultural exchanges occurred between these groups. The Batwa were hunter-gatherers who lived from food which they collected from the veldt as well as from the pans and swamps in the area. During times of unrest, such as the *difaqane* in the early nineteenth century, the San would converge on Lake Chrissie for food and sanctuary. The caves, lakes, water pans and swamps provided relative security and camouflage. Here, some of the San lived on the surfaces of the water bodies by establishing platforms with reeds. With the arrival of the first colonists in the nineteenth century many of the local Batwa family groups were employed as farm labourers (Schapera, 1927; Potgieter, 1955; Schoonraad &Schoonraad, 1975).

### 4.2 Iron Age remains

The Iron Age is associated with the first agro-pastoralists or farming communities who lived in semi-permanent villages and who practised metal working during the last two millennia. The Iron Age is usually divided into the Early Iron Age (EIA) (covers the 1st millennium AD) and the Later Iron Age (LIA) (covers the first 880 years of the 2nd millennium AD).

Evidence for the first farming communities in the Mpumalanga Province is derived from a few EIA potsherds which occur in association with the LSA occupation of the Höningnest Shelter near Badfontein. The co-existence of EIA potsherds and LSA stone tools suggest some form of 'symbiotic relationship' between the Stone Age hunter-gatherers who lived in the cave and EIA farmers in the area (also note Batwa and Swazi/Sotho Tswana relationship) (Esterhuysen & Smith, 2007).

The Welgelegen Shelter on the banks of the Vaal River near Ermelo also reflects some relationship between EIA farmers who lived in this shelter and hunter-gatherers who manufactured stone tools and who occupied a less favourable overhang nearby during AD1200 (Schoonraad & Beaumont, 1971).

EIA sites were also investigated at Sterkspruit near Lydenburg (AD720) and in Nelspruit where the provincial governmental offices were constructed. The most infamous EIA site in South Africa is the Lydenburg head site which provided two occupation dates, namely during AD600 and from AD900 to AD1100. At this site the Lydenburg terracotta heads were brought to light. Doornkop, located south of Lydenburg, dates from AD740 and AD810 (Evers, 1981; Whitelaw, 1996).

The Late Iron Age is well represented in Mpumalanga and stretches from AD1500 well into the nineteenth century and the Historical Period. Several spheres of influence, mostly associated with stone walled sites, can be distinguished in the region. Some of the historically well-known spheres of influence include the following:

- Early arrivals in the Mpumalanga Province such as Bakone clans who lived between Lydenburg, Badfontein and Machadodorp and Eastern Sotho clans such as the Pai, Pulana and Kutswe who established themselves in the eastern parts of the province (Collett, 1979 and 1983;. Delius, 2007; Makhura, 2007; Delius & Schoeman, 2008).
- Swazi expansion into the Highveld and Lowveld of the Mpumalanga Province occurred during the reign of Sobhuza (AD1815 to 1836/39) and Mswati (AD1845 to 1868) while Shangaan clans entered the province across the Lembombo Mountains in the east during the second half of the nineteenth century (Delius, 2007; Makhura, 2007.).

- The Bakgatla (Pedi) chiefdom in the Steelpoort Valley rose to prominence under Thulare during the early 1800's and was later ruled by Sekwati and Sekhukune from the village of Tsjate in the Leolo Mountains. The Pedi maintained an extended sphere of influence across the Limpopo and Mpumalanga Provinces during the nineteenth century (Mönnig, 1978; Delius, 1984).
- The Ndzundza-Ndebele established settlements at the foot of the Bothasberge (KwaMaza and Esikhunjini) in the 1700's and lived at Erholweni from AD1839 to AD1883 where the Ndzundza-Ndebele's sphere of influence known as KoNomthjarhelo stretched across the Steenkampsberge.
- The Bakopa lived at Maleoskop (1840 to 1864) where they were massacred by the Swazi while the Bantwane live in the greater Groblersdal and Marble Hall areas.
- Corbelled stone huts which are associated with ancestors of the Sotho on Tafelkop near Davel which date from the AD1700's into the nineteenth century (Hoernle 1930).
- Stone walled settlements spread out along the eastern edge of the Groot Dwarsriver Valley served as the early abode for smaller clans such as the Choma and Phetla communities which date from the nineteenth century.

### 4.3 The Historical Period

Historical towns closest to the Project Area include Emalahleni (Witbank) and Middelburg.

Witbank came into being as the railway line between Pretoria and Lourenço Marques which was built in 1894 passed close to where Emalahleni (Witbank) is located today. The first Europeans who came to the area observed the abundance of coal, which was evident on the surface or in the beds of streams. A stage post for wagons close to a large outcrop of whitish stones (a 'white ridge') gave the town its name. Witbank was established in 1903 on a farm known as Swartbos which belonged to Jacob Taljaard.

Middelburg is one of the oldest towns that were established by the Voortrekkers in the previous Transvaal. The town was established on the farms of Klipfontein and Keerom on the banks of the Klein Olifants River in 1859. It is generally accepted that Middelburg's name is derived from the fact that the Transvaal Republic established the town midway between Pretoria and Lydenburg.

The choice for Middelburg's location was not well accepted by the inhabitants and it was moved to the farm Sterkfontein. Here, a town was established and named Nasaret (Nazareth). However, the name did not appeal to the local community and its original name was reinstated. Middelburg temporarily served as the seat of the Transvaal Republic after the siege of Pretoria during the Second Anglo Boer War.

Today Middelburg and Emalahleni (Witbank) are important centres where coal is mined and transported to Richards Bay from where it is exported all over the world. The 20th century also saw the introduction of large-scale irrigation and dry land farming on the Eastern Highveld. Today the economic activities of the area include diamond and coal mining, light and heavy industries as well as steel and vanadium operations.

### 4.4 A coal mining heritage

Coal mining on the Eastern Highveld is now older than one century and has become the most important coal mining region in South Africa**.** Whilst millions of tons of high-grade coal are annually exported overseas more than 80% of the country's electricity is generated on low-grade coal in Eskom's power stations such as Duvha, Matla and Arnot situated near coalmines on the Eastern Highveld.

The earliest use of coal (charcoal) in South Africa was during the Iron Age (300-1880AD) when metal workers used charcoal, iron and copper ores and fluxes (quartzite stone and bone) to smelt iron and copper in clay furnaces.

Colonists are said to have discovered coal in the French Hoek Valley near Stellenbosch in the Cape Province in 1699. The first reported discovery of coal in the interior of South Africa was in the mid-1830 when coal was mined in KwaZulu/Natal.

The first exploitation for coal was probably in KwaZulu/Natal as documentary evidence refers to a wagon load of coal brought to Pietermaritzburg to be sold in 1842. In 1860 the coal trade started in Dundee when a certain Pieter Smith charged ten shillings for a load of coal dug by the buyer from a coal outcrop in a stream. In 1864 a coal mine was opened in Molteno. The explorer, Thomas Baines mentioned that farmers worked coal deposits in the neighbourhood of Bethal (Transvaal) in 1868. Until the discovery of diamonds in 1867 and gold on the Witwatersrand in 1886, coal mining only satisfied a very small domestic demand.

With the discovery of gold in the Southern Transvaal and the development of the gold mining industry around Johannesburg came the exploitation of the Boksburg-Springs coal fields, which is now largely worked out. By 1899, at least four collieries were operating in the Middelburg-Witbank district, also supplying the gold mining industry. At this time coal mining also started in Vereeniging. The Natal Collieries importance was boosted by the need to find an alternative for imported Welsh anthracite used by the Natal Government Railways.

By 1920 the output of all operating colliers in South Africa attained an annual figure of 9,5 million tonnes. Total in-situ reserves were estimated to be 23 billion tonnes in Witbank-Springs, Natal and Vereeniging. The total in situ reserves today are calculated to be 121 billion tonnes. The largest consumers of coal are Sasol, Mittal and Eskom.

### 4.5 A vernacular stone architectural heritage

A unique stone architectural heritage was established in the Eastern Highveld from the second half of the 19$^{th}$ century well into the early 20$^{th}$ century. During this time period stone was used to build farmsteads and dwellings, both in urban and in rural areas. Although a contemporary stone architecture also existed in the Karoo and in the Eastern Free State Province of South Africa a wider variety of stone types were used in the Eastern Highveld. These included sandstone, ferricrete (‘ouklip’), dolerite (‘blouklip’), granite, shale and slate.

The origins of a vernacular stone architecture in the Eastern Highveld may be ascribed to various reasons of which the ecological characteristics of the region may be the most

important. Whilst this region is generally devoid of any natural trees which could be used as timber in the construction of farmsteads, outbuildings, cattle enclosures and other structures, the scarcity of fire wood also prevented the manufacture of baked clay bricks. Consequently stone served as the most important building material in the Eastern Highveld (Naude, 1993 and 2000). One of these historical structures was excavated and described after a heritage mitigation project was conducted for a coal mine (Pistorius, 2005).

LIA Sotho, Pedi, Ndebele and Swazi communities contributed to the Eastern Highveld's stone walled architecture. The tradition set by these groups influenced settlers from Natal and the Cape Colony to utilize the same resources to construct dwellings and shelters. Farmers from Scottish, Irish, Dutch, German and Scandinavian descend settled and farmed in the Eastern Highveld. They brought the knowledge of stone masonry from Europe. This compensated for the lack of fire wood on the eastern Highveld which was necessary to bake clay bricks.

# 5 STUDY APPROACH AND METHODOLOGY

This Phase I HIA study was conducted by means of the following:

## 5.1 Fieldwork

The Project Area was surveyed with a vehicle whilst pedestrian surveys were conducted where spokespersons pointed out areas where communities were established in the past. The aim with the survey was to geo-reference, describe and photograph heritage resources whenever they existed. The larger part of the Project Area which comprises maize fields was not traversed or surveyed on foot but criss-crossed with a vehicle where accessible roads existed.


**Figure 2- A main track was recorded with a mounted GPS instrument when the survey was conducted. Pedestrian surveys were conducted from the main track. Parts of the Project Area are covered with maize fields, earlier mining activities and with stands of wattle trees (above).**

A GPS track log was registered with a mounted GPS instrument for the main track that was followed during the survey. More detailed pedestrian surveys were

conducted from this main track where intruder vegetation, blue gum trees or other ecological indicators for archaeological remains were observed.

The main characteristics and features of the Project Area is described and illuminated with photographs in the report (see Part 6.1 **'**Fieldwork survey').

## 5.2 Databases, literature survey and maps

Literature relating to the pre-historical and the historical unfolding of the Eastern Highveld was reviewed. This review focused primarily on the pre-history as well as the Historical Period on the Eastern Highveld. It also provided a broad outline of the coal mining history of the region as well as its indigenous architecture. The literature research contextualises the pre-historical and historical background of the Eastern Highveld which again contributes to a better understanding of the identity and meaning of heritage sites which occur in and near the Project Area.

The desktop study also involved consulting heritage data banks maintained at institutions such as the Mpumalanga Provincial Heritage Resources Agency in Barberton, the Archaeological Data Recording Centre at the National Flagship Institute (Museum Africa) in Pretoria and the national heritage resources register at the South African Heritage Resources Agency (SAHRIS) in Cape Town.

## 5.3 Spokespersons consulted

Two residents who live on Groenfontein, namely Alfred Masanga and Moses Mnguni who are acquainted with the Project Area and Gerome Ncina who is employed by Kleinkopje Colliery as Environmental Assistant assisted the author on two of the three days during which fieldwork was conducted (See 'Part 9, Spokespersons consulted').

## 5.4 Assumptions and limitations

It is possible that this Phase I HIA study may have missed heritage resources in the Project Area as heritage sites may occur in thick clumps of vegetation or in maize

fields while others may lie below the surface of the earth and may only be exposed once development commences.

If any heritage resources of significance is exposed during the Discard FacilityProject the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorization (permits) from SAHRA to conduct the mitigation measures.

### 5.5 Some remarks on terminology

Terms that may be used in this report are briefly outlined below:

- Conservation: The act of maintaining all or part of a resource (whether renewable or non-renewable) in its present condition in order to provide for its continued or future use. Conservation includes sustainable use, protection, maintenance, rehabilitation, restoration and enhancement of the natural and cultural environment.

- Cultural resource management: A process that consists of a range of interventions and provides a framework for informed and value-based decision-making. It integrates professional, technical and administrative functions and interventions that impact on cultural resources. Activities include planning, policy development, monitoring and assessment, auditing, implementation, maintenance, communication, and many others. All these activities are (or will be) based on sound research.

- Cultural resources: A broad, generic term covering any physical, natural and spiritual properties and features adapted, used and created by humans in the past and present. Cultural resources are the result of continuing human cultural activity and embody a range of community values and meanings. These resources are non-renewable and finite. Cultural resources include

traditional systems of cultural practice, belief or social interaction. They can be, but are not necessarily identified with defined locations.

- Heritage resources: The various natural and cultural assets that collectively form the heritage. These assets are also known as cultural and natural resources. Heritage resources (cultural resources) include all human-made phenomena and intangible products that are the result of the human mind. Natural, technological or industrial features may also be part of heritage resources, as places that have made an outstanding contribution to the cultures, traditions and lifestyles of the people or groups of people of South Africa.

- In-Situ Conservation: The conservation and maintenance of ecosystems, natural habitats and cultural resources in their natural and original surroundings.

- Iron Age: Refers to the last two millennia and 'Early Iron Age' to the first thousand years AD. 'Late Iron Age' refers to the period between the 16th century and the 19th century and can therefore include the Historical Period.

- Maintenance: Keeping something in good health or repair.

- Pre-historical: Refers to the time before any historical documents were written or any written language developed in a particular area or region of the world. The historical period and historical remains refer, for the Project Area, to the first appearance or use of 'modern' Western writing brought to the Eastern Highveld by the first Colonists who settled here from the 1840's onwards.

- Preservation: Conservation activities that consolidate and maintain the existing form, material and integrity of a cultural resource.

- Recent past: Refers to the 20th century. Remains from this period are not necessarily older than sixty years and therefore may not qualify as archaeological or historical remains. Some of these remains, however, may be close to sixty years of age and may, in the near future, qualify as heritage resources.

- Protected area: A geographically defined area designated and managed to achieve specific conservation objectives. Protected areas are dedicated primarily to the protection and enjoyment of natural or cultural heritage, to the maintenance of biodiversity, and to the maintenance of life-support systems. Various types of protected areas occur in South Africa.

- Reconstruction: Re-erecting a structure on its original site using original components.

- Replication: The act or process of reproducing by new construction the exact form and detail of a vanished building, structure, object, or a part thereof, as it appeared at a specific period.

- Restoration: Returning the existing fabric of a place to a known earlier state by removing additions or by reassembling existing components.

- Stone Age: Refers to the prehistoric past, although Late Stone Age peoples lived in South Africa well into the Historical Period. The Stone Age is divided into an Earlier Stone Age (3 million years to 150 000 thousand years ago) the Middle Stone Age (150 000 years to 40 000 years ago) and the Late Stone Age (40 000 years to 200 years ago).

- Sustainability: The ability of an activity to continue indefinitely, at current and projected levels, without depleting social, financial, physical and other resources required to produce the expected benefits.

- Translocation: Dismantling a structure and re-erecting it on a new site using original components.

- Project Area: refers to the area (footprint) where the developer wants to focus its development activities (refer to Figure 3).

- Phase I studies refer to surveys using various sources of data in order to establish the presence of all possible types and ranges of heritage resources in

any given Project Area (excluding paleontological remains as these studies are done by registered and accredited palaeontologists).

- Phase II studies include in-depth cultural heritage studies such as archaeological mapping, excavating and sometimes laboratory work. Phase II work may include the documenting of rock art, engraving or historical sites and dwellings; the sampling of archaeological sites or shipwrecks; extended excavations of archaeological sites; the exhumation of human remains and the relocation of graveyards, etc. Phase II work involve permitting processes, require the input of different specialists and the co-operation and approval of SAHRA.

# 6 THE PHASE I HERITAGE IMPACT ASSESSMENT STUDY

## 6.1 The field survey

The heritage survey is outlined by means of photographs and descriptions which illuminate the characteristic features of the Project Area.

**Figures 3 & 4– Earlier non rehabilitated mining areas are covered with weed and other invader plants as well as with stands of wattle trees and now is one of the main characteristic features of the Project Area (above and below).**

**Figure 5– Open grass veld which is currently being used for low intensity grazing (above).**

**Figure 6– A few informal dwellings occur towards the central part of the Project Area (below).**

**Figure 7– Natural grass veld (foreground), agricultural fields and avenues with Blue Gum trees occur towards the central part of the Project Area (above).**

## 6.2 Types and ranges of heritage resources

The Phase I HIA study for the proposed Project Area revealed the following types and ranges of heritage resources as outlined in Section 38 of the National Heritage Resources Act (No 25 of 1999), namely:

- Two graveyards.

The two graveyards were geo-referenced (Table 1). They are not indicated on the map of the Project Area as both falls outside the Project Area (Figure 9).

The significance of the graveyards as well as the significance of any impact on the graveyards is indicated (Table 2). No mitigation measures are outlined as the graveyards will not be affected by the proposed Discard Project.

The Phase I HIA study is now briefly discussed and illustrated with photographs.

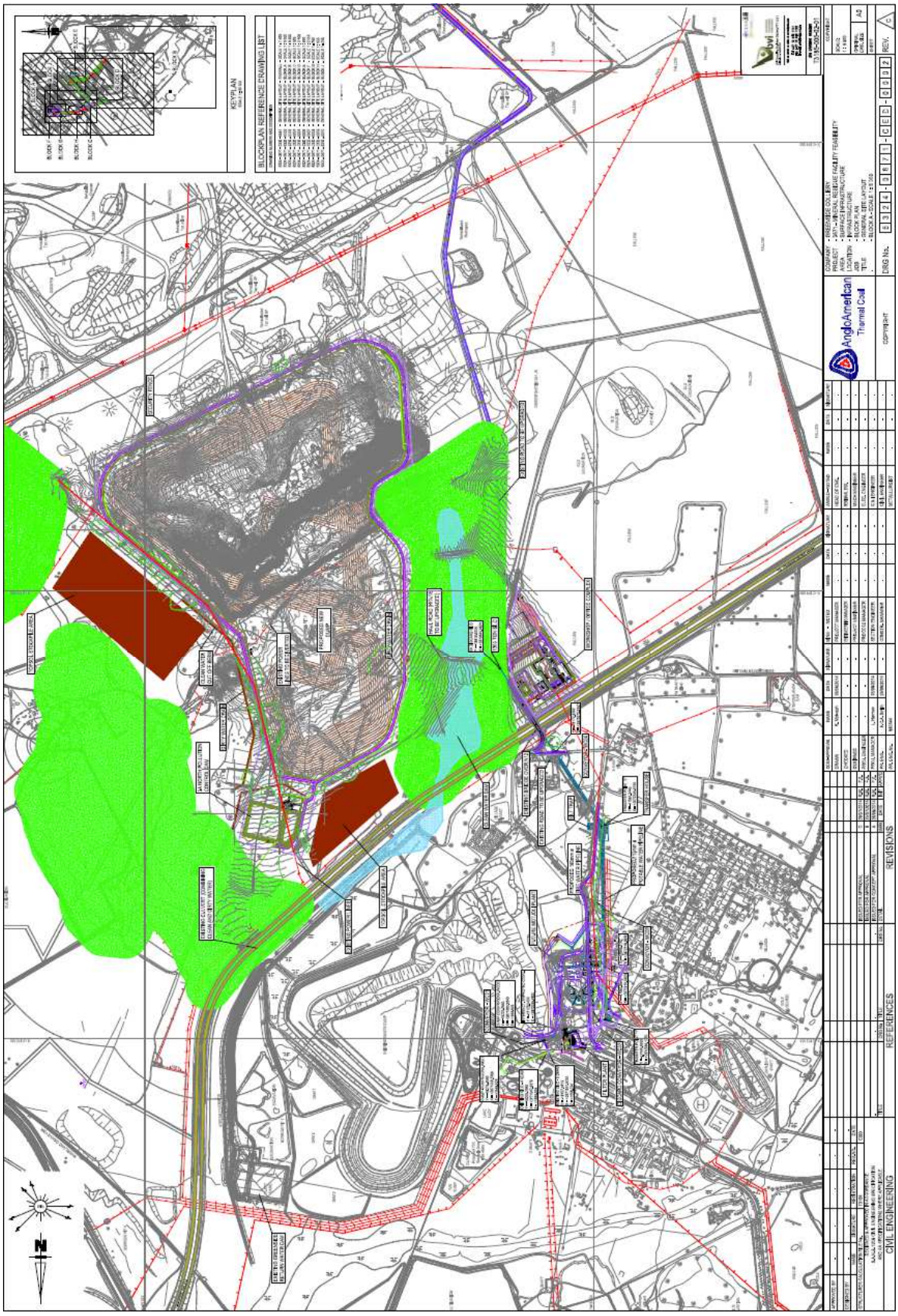


**Figure 9– The proposed Discard Facility (shaded brown) near Emalahleni in the Mpumalanga Province. Two graveyards that were recorded fall outside the Project Area (above).**

## 6.3 Graveyards

Two graveyards were recorded outside the Project Area, namely:

### 6.3.1 Graveyard 01

This graveyard (GY01) is located near Eskom's power lines south of the Project Area. At least two graves of members of the Ntuli family are visible. It is possible that more graves may exist as they may be undecorated and also covered with vegetation.

Both graves are fitted with cement headstones. Inscriptions on the headstones read as follow:

- 'Mss SAR Ntuli Ilangalo Kuealwa Lekufa 25-11-37 Jesus Christ Church'
- 'Mr De Vidi Ntuli Ilangalo Zalwa 27-05-41 Jesus Christ Church'

GY01 is older than sixty years.

**Figure 10- GY01 is located near Eskom's power lines and hold the remains of two members of the Ntuli family. More graves may occur in the graveyard (above).**

### 6.3.2 Graveyard 02

Graveyard 02 (GY02) is demarcated with a fence and is located on the edge of former mining activities to the north-east of the Project Area. It holds at least nine visible graves of which the majority are those of children. More unmarked graves may exist.

Some of the graves are fitted with cement headstones with no inscriptions. One of the graves is fitted with a piece of iron plate with holes punched in the plate which spell out the following name:

- ‘Seliena Mogidi Gemsbokspruit’

It is highly likely that all the graves in GY02 are older than sixty years.

**Figure 11 - GY02 is demarcated with a fence and holds at least nine partly decorated graves. Most of the graves belong to children (above).**

## 6.4 Tables

The coordinates and levels of significance for the heritage resources which were recorded in the Project Area are as follow:

**Table 1 - Coordinates and significance rating for graveyards near the Project Area (below).**

| Graveyards | Coordinates | Significance |
|---|---|---|
| **Inside the project area** | | |
| GY01.Graveyard with two visible graves of the Ntuli family near Eskom's power lines. Older than sixty years. | 25º 58.734'S 29º 12.911'E | **HIGH** |
| GY02. Located near a disturbed area where earlier mine infrastructure may have existed. Older than sixty years. Approximately 9 graves. | 25º 57.426'S 29º 12.135'E | **HIGH** |

## 6.5 Possible impact on the heritage resources

Both graveyards occur outside the Project Area and will not be affected by the proposed new Discard Facility.

## 6.6 The significance of the graveyards

All graveyards and graves can be considered to be of high significance and are protected by various laws (Table 1). Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (Act No 25 of 1999) whenever graves are older than sixty years. It seems as if both graveyards are older than sixty years. Other legislation with regard to graves includes those which apply when graves are

exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

### 6.7 The significance of the impact on the graveyards

The significance of possible impacts on the graveyards was determined using a ranking scale, based on the following:

- Occurrence
  - Probability of occurrence (how likely is it that the impact may/will occur?), and
  - Duration of occurrence (how long may/will it last?)
- Severity
  - Magnitude (severity) of impact (will the impact be of high, moderate or low severity?), and
  - Scale/extent of impact (will the impact affect the national, regional or local environment, or only that of the site?).

Each of these factors has been assessed for each potential impact using the following ranking scales:

| | |
|---|---|
| Probability:<br>5 – Definite/don't know<br>4 – Highly probable<br>3 – Medium probability<br>2 – Low probability<br>1 – Improbable<br>0 – None | Duration:<br>5 – Permanent<br>4 - Long-term (ceases with the operational life)<br>3 - Medium-term (5-15 years)<br>2 - Short-term (0-5 years)<br>1 – Immediate |
| Scale:<br>5 – International<br>4 – National<br>3 – Regional<br>2 – Local<br>1 – Site only<br>0 – None | Magnitude:<br>10 - Very high/don't know<br>8 – High<br>6 – Moderate<br>4 – Low<br>2 – Minor |

The environmental significance of each potential impact was assessed using the following formula:

Significance Points (SP) = (Magnitude + Duration + Scale) x Probability

The maximum value is 100 Significance Points (SP). Potential environmental impacts are rated as very high, high, moderate, low or very low significance on the following basis:

- More than 80 significance points indicates VERY HIGH environmental significance.
- Between 60 and 80 significance points indicates HIGH environmental significance.
- Between 40 and 60 significance points indicates MODERATE environmental significance.
- Between 20 and 40 significance points indicates LOW environmental significance.
- Less than 20 significance points indicates VERY LOW environmental significance.

The significance of any possible impact on the graveyards is very low (Table 2).

| **Grave-yard** | **Probability of impact** | **Magnitude of impact** | **Duration of impact** | **Scale** | **Significance points** | **Significance rating** | **Significance after mitigation** |
|---|---|---|---|---|---|---|---|
| GY01 | **1** | **10** | **5** | **1** | **16** | **Very low** | **Low** |
| GY02 | **1** | **10** | **5** | **1** | **16** | **Very low** | **Low** |

**Table 2: The significance of potential impacts on the graveyard before and after mitigation (below).**

## 6.8 Mitigating the graveyard impacts

No mitigation measures are needed as the graveyards will not be affected by the proposed Discard Facility Project.

## 6.9 Managing the graveyards

G01 and G02 must be demarcated with a fence and fitted with a gate in order to allow for family or friends to visit the deceased. This will also lessen the risk that the graveyards may be affected by any developmental activities.

A Conservation Management Plan must be developed for G01 and G02 which must be incorporated in the EMP report.

# 7 CONCLUSION AND RECOMMENDATIONS

The Phase I HIA study for the proposed Project Area revealed the following types and ranges of heritage resources as outlined in Section 38 of the National Heritage Resources Act (No 25 of 1999), namely:

- Two graveyards.

The two graveyards were geo-referenced (Table 1). They are not indicated on the map of the Project Area as both falls outside the Project Area (Figure 9).

The significance of the graveyards as well as the significance of any impact on the graveyards is indicated (Table 2). No mitigation measures are outlined as the graveyards will not be affected by the proposed Discard Facility Project.

**Possible impact on the heritage resources**

Both graveyards occur outside the Project Area and will not be affected by the proposed new Discard Facility.

**The significance of the graveyards**

All graveyards and graves can be considered to be of high significance and are protected by various laws (Table 1). Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (Act No 25 of 1999) whenever graves are older than sixty years. It seems as if both graveyards are older than sixty years. Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

The significance of possible impacts on the graveyards was determined using various criteria. The significance of any possible impact on the graveyards is very low (Table 2).

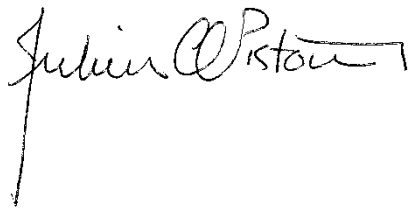
**Mitigating the graveyard impacts**

No mitigation measures are needed as the graveyards will not be affected by the proposed Discard Facility Project.

**Managing the graveyards**

G01 and G02 must be demarcated with a fence and fitted with a gate in order to allow for family or friends to visit the deceased. This will also lessen the risk that the graveyards may be affected by any developmental activities.

A Conservation Management Plan must be developed for G01 and G02 which must be incorporated in the EMP report.



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## 10 SPOKESPERSONS CONSULTED

Alfred Masango. Resident on Groenfontein.

Moses Mnguni. Resident on Groenfontein/

Pule Monyane (Environmental Technician) Middelburg Colliery.

Gerome Ncina. Environmental officer with Kleinkopje Colliery

## APPENDIX A: DETAILS OF THE SPECIALIST

**Profession:** Archaeologist, Museologist (Museum Scientists), Lecturer, Heritage Guide Trainer and Heritage Consultant

**Qualifications:**

BA (Archaeology, Anthropology and Psychology) (UP, 1976)

BA (Hons) Archaeology (distinction) (UP, 1979)

MA Archaeology (distinction) (UP, 1985)

D Phil Archaeology (UP, 1989)

Post Graduate Diploma in Museology (Museum Sciences) (UP, 1981)

**Work experience:**

Museum curator and archaeologist for the Rustenburg and Phalaborwa Town Councils (1980-1984)

Head of the Department of Archaeology, National Cultural History Museum in Pretoria (1988-1989)

Lecturer and Senior lecturer Department of Anthropology and Archaeology, University of Pretoria (1990-2003)

Independent Archaeologist and Heritage Consultant (2003-)

**Accreditation:** Member of the Association for Southern African Professional Archaeologists. (ASAPA)

**Summary:** Julius Pistorius is a qualified archaeologist and heritage specialist with extensive experience as a university lecturer, museum scientist, researcher and heritage consultant. His research focussed on the Late Iron Age Tswana and Lowveld-Sotho (particularly the Bamalatji of Phalaborwa). He has published a book on early Tswana settlement in the North-West Province and has completed an unpublished manuscript on the rise of Bamalatji metal workings spheres in Phalaborwa during the last 1 200 years. He has written a guide for Eskom's field personnel on heritage management. He has published twenty scientific papers in academic journals and several popular articles on archaeology and heritage matters. He collaborated with environmental companies in compiling State of the Environmental Reports for Ekhurhuleni, Hartebeespoort and heritage management plans for the Magaliesberg and Waterberg. Since acting as an independent consultant he has done approximately 800 large to small heritage impact assessment reports. He has a longstanding working relationship with Eskom, Rio Tinto (PMC), Rio Tinto (EXP), Impala Platinum, Angloplats (Rustenburg), Lonmin, Sasol, PMC, Foskor, Kudu and Kelgran Granite, Bafokeng Royal Resources, Pilanesberg Platinum Mine etc. as well as with several environmental companies.

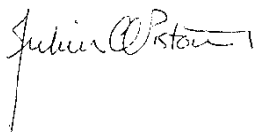
## APPENDIX B: DECLARATION OF INDEPENDENCE

I, Julius CC Pistorius, declare that:

•I act as the independent environmental practitioner in this application
•I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant
•I declare that there are no circumstances that may compromise my objectivity in performing such work;
•I have expertise in conducting environmental impact assessments, including knowledge of the National Heritage Resources Act (No 25 of 1999) and any guidelines that have relevance to the proposed activity;
•I will comply with the Act, regulations and all other applicable legislation;
•I will take into account, to the extent possible, the matters listed in regulation **8** of the regulations when preparing the application and any report relating to the application;
•I have no, and will not engage in, conflicting interests in the undertaking of the activity;
•I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
•I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;
•I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
•I will keep a register of all interested and affected parties that participated in a public participation process; and
•I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not
•all the particulars furnished by me in this form are true and correct;
•will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and
•I realise that a false declaration is an offence in terms of regulation 71 and is punishable in terms of section 24F of the Act.

**Disclosure of Vested Interest**

I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2010.



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Signature of the environmental practitioner:
Private Consultant

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Name of company:
10 November 2014

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Date:

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Signature of the Commissioner of Oaths:

_____
Date:

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Designation:

## 9 BIBLIOGRAPHY RELATING TO EARLIER HERITAGE STUDIES

EMPR.2006 (a). Addendum Anglo Operations Limited Project Specific EMPR Addendum for the Emalahleni Water Reclamation Project. Unpublished report by Golder Associates.

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Pistorius, J.C.C. 2011. A Phase I Heritage Impact Assessment (HIA) Study for the proposed new Schoongezicht Coal Mine near Emalahleni (Witbank) in the Mpumalanga Province of South Africa. Unpublished report prepared for Clean Stream Environmental Services.

Pistorius, J.C.C. 2013. A Phase I Heritage Impact Assessment (HIA) Study for the proposed Anglo Operations Limited Life Extension Project near Emalahleni (Witbank) on the Eastern Highveld in the Mpumalanga Province. Unpublished report prepared for Clean Stream Environmental Services.