

APPENDIX K: HERITAGE (INCLUDING CULTURAL ASPECTS) STUDY

Prepared for:

Alex Pheiffer

SLR Consulting (Africa) (Pty) Ltd

Fourways Manor Office Park 2191

Johannesburg 2060

Tel 0114670945

Fax 0114670978

**A PHASE I HERITAGE IMPACT ASSESSMENT FOR THE
PROPOSED COMMISSIEKRAAL COAL MINE ON THE FARM
COMMISSIEKRAAL 90HT TO THE EAST OF WAKKERSTROOM IN
THE KWA ZULU/NATAL PROVINCE OF SOUTH AFRICA**

Prepared by:

Dr Julius CC Pistorius

PO Box 1522 Roodekuil Bela Bela 0480

Fith Avenue No 8 Cashan x1 Rustenburg 299

Archaeologist and Heritage Consultant

Cell 0825545449

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EXECUTIVE SUMMARY

Tholie Logistics (Pty) Ltd (Tholie) intends to undertake coal mining activities on the farm Commissiekraal 90 HT within the Utrecht region in the province of Kwa Zulu/Natal. The proposed mining area is located approximately twenty-seven kilometres north of Utrecht and roughly twenty-eight kilometres to the west of Paulpietersburg within the Emadlangeni (Utrecht) Local Municipality of the Amajuba District Municipality in the province of Kwa Zulu/Natal.

The proposed Commissiekraal Coal Project may have an influence on any of the types and ranges of heritage resources which are outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999). Consequently, a Phase I Heritage Impact Assessment (HIA) study was conducted for the Project Area as required by 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) (except paleontological remains) do occur in the Project Area and, if so, to determine the nature, the extent and the significance of these remains.
- To establish if any of these heritage resources will be affected by the proposed Commissiekraal Coal Project and, if so, to evaluate what appropriate mitigation measures must be taken if any of the types and ranges of heritage resources will be affected by the proposed mining project.

The Phase I HIA for the proposed Project Area revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999), namely:

- Remains from the historical period.
- Informal graveyards and graves.

No pre-historical remains were recorded. This study did not cover paleontological resources.

The historical remains and graveyards were geo-referenced and mapped (Tables 1-4; Figure 5).

The significance of these heritage resources is indicated as well as the significance of any impact on these remains (Tables 5, 6, & 7). Mitigation measures are outlined for those heritage resources which will be affected by the proposed Commissiekraal Coal Project.

The significance of the heritage resources

The significance of the heritage resources is indicated as some of the heritage resources may be impacted when the proposed Commissiekraal Coal Project is implemented.

The historical remains

All buildings and features older than sixty years are considered to be of historical significance and are protected by Section 34 and Section 38 of the National Heritage Resources Act (No 25 of 1999). The historical remains consisting of Farmstead complexes 01 and 02 and Homestead complex 01 (HC01) as well as EC02 can be considered to be of medium to high significance when considering criteria such as the following (Table 5):

- Although these remains are not uncommon across the larger project area these remains are being threatened on an increasing scale due to coal mining and general development.
- These remains have educational, research, aesthetical and other significance which warrant their continued existence, conservation or even future use.
- These remains have not been adequately documented during this Phase I HIA study and need further investigation if and when they may be disturbed by the proposed Commissiekraal Coal Project.

The graveyards

All graveyards and graves can be considered to be of high significance and are protected by various laws (Table 2). Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. 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).

It is clear that some of the graveyards are older than sixty years whilst others are younger than sixty years. Graveyards which are older than sixty years may also hold graves which date from the recent past as many of the graveyards are still being used.

Mitigation measures are outlined for the graveyards which will be affected by the proposed Commissiekraal Coal Project

The significance of the impact on the heritage resources

The significance of the impacts on the heritage resources was determined using a ranking scale, based on various criteria.

Possible impact on the heritage resources

A mine plan is available for the Commissiekraal Coal Mine. It is therefore possible to establish which of the heritage resources will be affected by the proposed Commissiekraal Coal Project.

According to the mine plan GY25, GY26 and GY27 will be impacted by mine infrastructure within the proposed mine footprint (Figure 5). It is most likely that the impact on the graveyards will commence with the implementation of the construction phase of the proposed Commissiekraal Coal Project which may involve activities such as the the removal of the top soil. Other sites (graves and historical remains) may be indirectly impacted (disturbed) depending on how the activities of the mine in the greater project area are managed.

The significance of the impact on the heritage resources therefore has to be indicated.

The historical remains

None of the historical remains will be directly affected by the proposed Commissiekraal Coal Project. The significance of the impact on the historical remains therefore is very low (Table 6).

The graveyards

Only GY25, GY26 and GY27 will be directly affected by the proposed infrastructure for the Commissiekraal Coal Mine. The significance of the impacts on GY25, GY26 and GY27 therefore is very high (Table 7).

Mitigating the heritage resources

The following mitigation measures have to be applied to the historical remains and graveyards and graves which may be directly or indirectly affected during the construction, operational or decommissioning phases for the proposed Commissiekraal Coal Project, namely:

The historical remains

The historical remains have medium to high heritage significance. None of the historical remains will be directly affected by the proposed mine infrastructure or the access road or its alternative. Should these remains be disturbed by the mine in the future, these remains' significance warrant that they must be further investigated before they may be affected (demolished, altered, renovated).

In this regard the Farmstead and Homestead complexes would require a Phase II investigation by a historical architect and an archaeologist respectively. The archaeologist would need to be accredited with the Association for Southern African Professional Archaeologists (ASAPA) and the historical architect should be in good standing with SAHRA (South African Heritage Resources Agency). The historical remains may only be affected after these investigations have been completed and the necessary permit for the alteration (destruction, renovation) of the historical remains obtained.

The graveyards

GY25, GY26 and GY27 can be mitigated by means of exhumation and relocation when graveyards are affected directly. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

The existing graveyards which are not affected by the Commissiekraal Coal Project have high significance which would require appropriate mitigation and management measures if the Commissiekraal Coal Project is expanded in the future.

In the event that the mine becomes the owner of the farm, necessary arrangements would need to be made to give existing descendants access to the grave sites.

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 tall grass or in Blue Gum lots 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 Commisiekraal Coal Project 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 authorisation (permits) from SAHRA to conduct the mitigation measures.

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1 INTRODUCTION

SLR Consulting (Africa) (Pty) Ltd has been appointed to undertake an Environmental Impact Assessment (EIA) study for the development of the proposed Commissiekraal Coal Mine on the farm Commissiekraal 90HT to the west of Paulpietersburg in the Kwa Zulu/Natal Province of South Africa.

Focused heritage and archaeological research along the escarp in the Kwa Zulu/Natal and Mpumalanga Provinces have indicated that this region has a rich heritage comprised of remains dating from the pre-historical and from the historical (or colonial) periods of South Africa. These pre-historical and historical remains form a record of the heritage of most groups living in South Africa today (see Box 1).

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

The National Heritage Resources Act (Act 25 of 1999, Section 3) outlines the following types and ranges of heritage resources that qualify as part of the national estate:

- 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 in terms of the Human Tissue Act (Act 65 of 1983);
- h. Sites of significance relating to the history of slavery in South Africa;
- i. Moveable objects, including -
 - i. Objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects, 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 (Act 43 of 1996).

The National Heritage Resources Act (Act 25 of 1999, Sec 3) also distinguishes nine criteria for a place and/or object 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;
- b. Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- c. Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- d. 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. Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and/or
- i. Its significance relating to the history of slavery in South Africa.

2 TERMS OF REFERENCE

The Commissiekraal Coal Project involves the establishment of underground coal mine with associated support infrastructure on the farm Commissiekraal 90HT. The Commissiekraal Coal Project may impact on any of the types and ranges of heritage resources ('national estate') which are outlined in Section 3 of the National Heritage Resources Act (No. 25 of 1999) (see Box 1). Consequently, SLR Consulting (Africa) (Pty) Ltd commissioned the author to undertake a Phase I HIA study for the proposed Project Area.

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) (except paleontological remains) do occur in the Project Area and, if so, to determine the nature, the extent and the significance of these remains.
- To establish if any of these heritage resources will be affected by the proposed Commissiekraal Coal Project and, if so, to evaluate what appropriate mitigation measures must be taken if any of the types and ranges of heritage resources will be affected by the proposed mining project.

3 APPROACH AND METHODOLOGY

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

3.1 Fieldwork

The larger Project Area was surveyed with a vehicle whilst much of the northern flat terrain was subjected to a pedestrian survey. The higher mountainous part of the Project Area falling outside the main study area was not surveyed. The aim with the survey was to geo-reference, describe and photograph heritage resources whenever they existed. Disturbed areas included agricultural fields towards the central part of the Project Area where at least one grave was recorded.

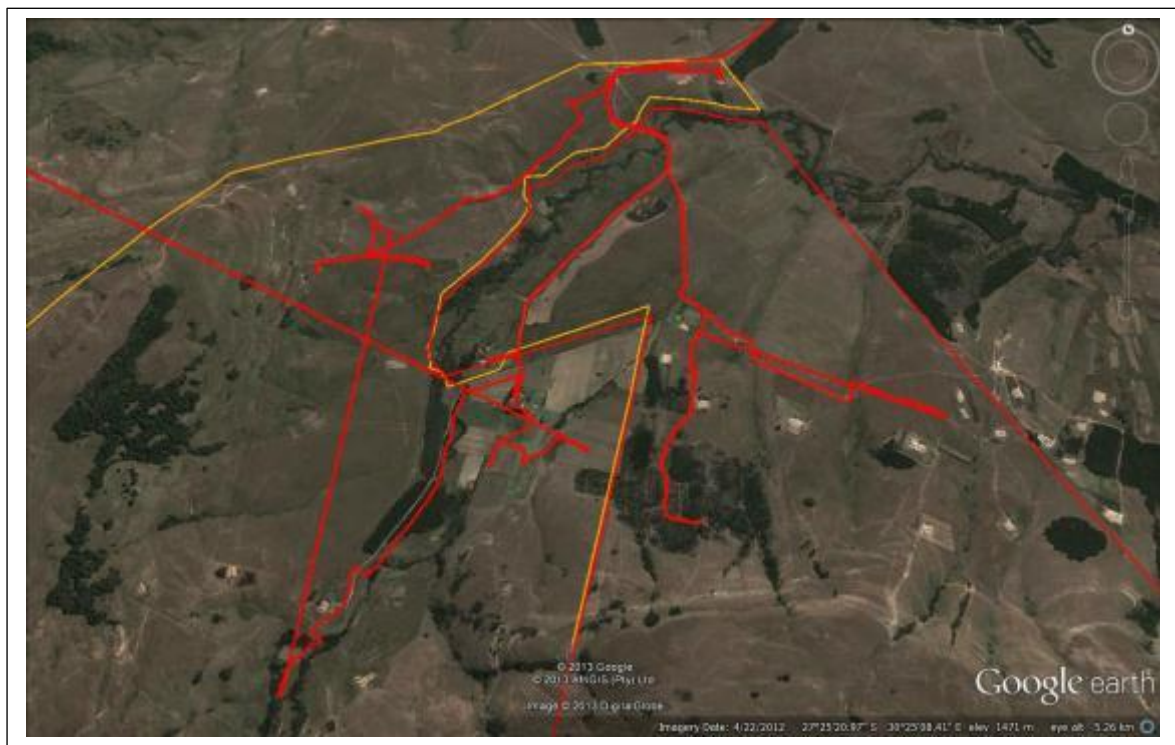


Figure 00- The main track pathway which was followed during the survey and which was recorded with a mounted GPS. More detailed pedestrian surveys were conducted from the main track route (above).

A GPS track pathway was registered with a mounted GPS instrument which outlines the main track for the survey. More detailed pedestrian surveys were conducted from this main track. Considering the size and extent of the Project Area it was not

possible to survey the entire area due to time constraints. Neither were not all dense stand of wattle bush surveyed as some of these bushes are impenetrable.

Photographs illuminate the main characteristic features of the Project Area (see Part 6.1 'The field survey', Figures 3 & 4).

3.2 Databases, literature survey and maps

Literature relating to the pre-historical and the historical unfolding of the Drakensberg Escarp was reviewed. This review focused primarily on the pre-history as well as the historical period of this region. The literature research contextualises the pre-historical and historical background of the region 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 bases maintained at Provincial Heritage Resources Agencies, 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.

In addition, the Project Area was studied by means of maps on which it appears (2730AD Vredenhof; 1 50 000 topographical map; 2730 Vryheid; 1:250 000 map & satellite imagery).

3.3 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 tall grass or in stands with wattle trees 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 construction, operation or closure of the Commissiekraal Coal Project 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.

3.4 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.
- Conservation (*in-situ*): The conservation and maintenance of ecosystems, natural habitats and cultural resources in their natural and original surroundings.
- Cultural (heritage) 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.
- Cultural (heritage) 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.

- Heritage resources: The various natural and cultural assets that collectively form the heritage. These assets are also known as cultural and natural resources. Heritage (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.
- 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 300 years ago).
- 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.
- Historical period: Refers to the first appearance or use of 'modern' Western writing in a particular area or region of the world.
- 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.
- 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.
- Maintenance: Keeping something in good health or repair.
- Preservation: Conservation activities that consolidate and maintain the existing form, material and integrity of a cultural resource.
- 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.
- 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.
- 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 plan).
- 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.
- 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.

4 THE PROJECT AREA

4.1 Location

Tholie Logistics (Pty) Ltd (hereafter referred to as 'Commissiekraal Coal Mine') intends to undertake coal mining activities on the farm Commissiekraal 90 HT within the Utrecht region in the province of Kwa Zulu/Natal. The proposed mining area is located approximately twenty-seven kilometres north of Utrecht and roughly twenty-seven kilometres to the west of Paulpietersburg within the Emadlangeni (Utrecht) Local Municipality of the Amajuba District Municipality in the province of Kwa Zulu/Natal (2730AD Vredenhof; 1 50 000 topographical map; 2730 Vryheid; 1:250 000 map & satellite imagery, Figures 1 & 2).



Figure 1- The Project Area on the farm Commissiekraal 90HT to the north of Utrecht and to the west of Paulpietersburg in the Kwa Zulu/Natal Province of South Africa (above).

4.2 The nature of the Project

Tholie Logistics (Pty) Ltd (TL) is a coal mining and exploration company currently engaged with the development of the Commissiekraal Coal Project. The Commissiekraal Coal Mine comprises a large underground and near surface resource with good quality coals suitable primarily for the export thermal coal market. TL has completed a first phase of exploration and prospecting and has completed an independent technical report on its coal resource. This has been followed with an internal scoping study to determine the feasibility of proceeding with the development of a coal mine. The results have been positive and justify applying for a mining right and completing the necessary technical work to commence with mining if regulatory approvals have been granted. TL has a diversified shareholder base, comprising companies and individuals with a proven track record of mining finance and development.

The proposed mine will deploy conventional drill and blast methods producing approximately 1 million run of mine tons per annum. The coal will be crushed and screened on-site and loaded onto haul trucks. This product will be hauled by road directly to customers or to a regional rail siding. For the purposes of this study it is assumed that a rail siding in Paul Pietersburg will be used. The Project will employ 200 employees and has a planned life of mine of 20 years.

4.3 The nature of the Project Area

The Project Area straddles the Mpumalanga and Kwa Zulu/Natal Provinces and incorporates ecological features such as the grasslands of the Eastern Highveld as well as mountain scenery associated with the Great Escarpment further to the north-east. The grasslands are particularly noticeable towards Wakkerstroom which is also the centre of an important wetland system and a popular birding spot.

The KwaZulu-Natal region further to the south is part of a cultural landscape which is also known as the 'Land of Remembrance' - a piece of land which includes much of Zululand and the districts of Utrecht and Vryheid which used to be part of the Zuid-Afrikaansche Republiek (ZAR) until the South African War of 1899-1900.

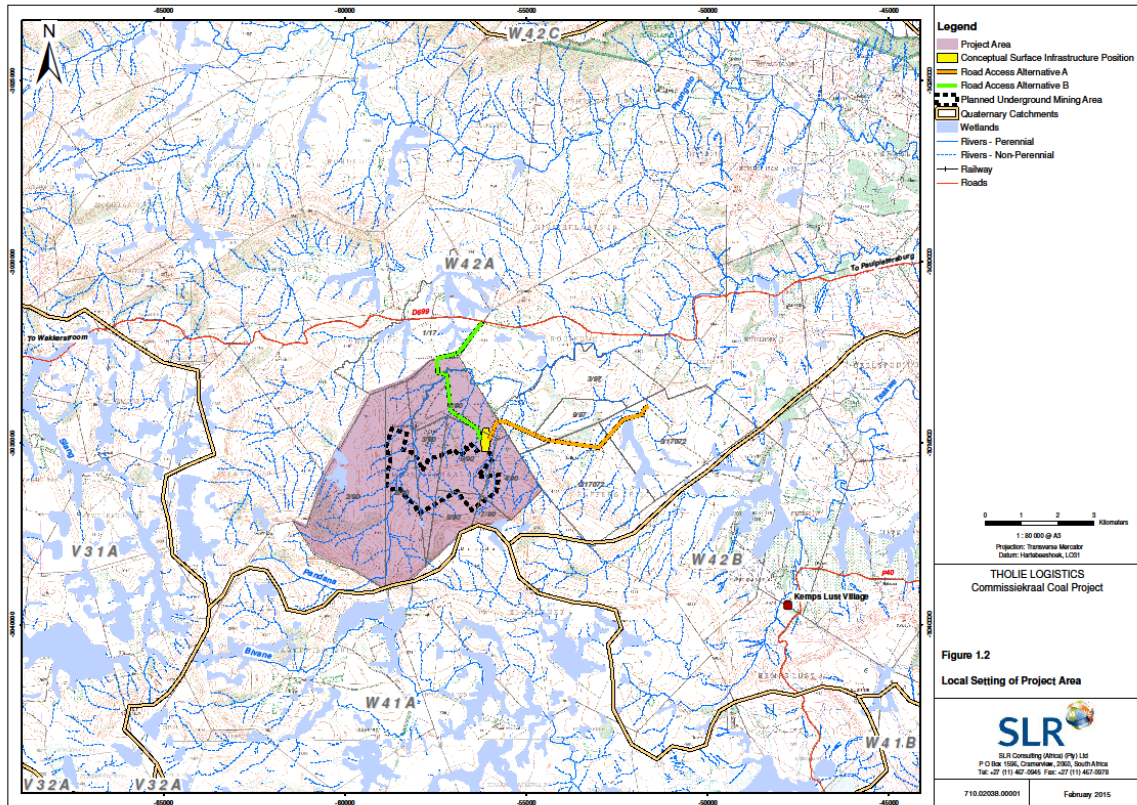


Figure 2- The proposed Commissiekraal Coal mine will be located on the farm Commissiekraal 90HT to the west of Paulpietersburg. The mine infrastructure is outlined by the yellow polygon whilst the underground mining area is demarcated with a black dotted line (above).

The Project Area on Commissiekraal 90HT comprises the purple shaded area. The bulk of the mine infrastructure will be established towards the eastern perimeter of this portion of land. An access road (green line) with a possible alternative access road (if mitigation is required, red dotted line, Figure 5) is focussed in the northern part of the Project Area. This part of the farm is relatively flat and low-laying in comparison with the surrounding western, southern and eastern parts of the farm which are mountainous and therefore on a higher elevation than the northern flat stretch of land which it embraces.

The Pandana River bisects the level stretch of land along its northern winding course after it has collected water from numerous streams which flow from the higher surrounding mountainous terrain. Patches of agricultural fields were established along the river's banks. Densely settled exotic trees line the banks of the river whilst avenues

with Blue Gum trees occur on the flatter area where they demarcated farmsteads or activity areas within farmstead complexes. Colonial farmstead complexes still occupied by farmers today and homestead complexes occupied by Nguni-related family groups occur across the flat part of the Project Area of which most of these residential units are associated with graves and graveyards (2730AD Vredenhof; 1:50 000 topographical map; 2730 Vryheid; 1:250 000 map & satellite imagery, Figure 2).

5 CONTEXTUALISING THE PROJECT AREA

The following brief overview of pre-historical, historical, cultural and economic evidence will help to contextualise the Project Area.

5.1 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 (Before Present) and the youngest to 27 000BP (Esterhuysen & Smith 2007).

LSA occupation of the region 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 associated with rock paintings and engravings which were done by San hunter-gatherers, Khoi Khoi herders and EIA farmers (Maggs 1983, 2008). Approximately 400 rock art sites are distributed throughout Mpumalanga to the north notably in the northern and eastern regions at places such as Emahlaleni (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).

Rock art can be divided into San rock art which is the most wide spread, herder or Khoe Khoe 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. Farmer paintings are more localised than San or herder paintings and were mainly used by the painters for instructional purposes (Smith & Zubieta 2007).

5.2 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 occur in Mpumalanga and Kwa Zulu/Natal. These remains are confined to higher eastern parts of these provinces. These remains are more common in Kwa Zulu/Natal and were recorded at Enkwazini, Mzonjani, Ntsekane, Ndondnwana and other sites near rivers and streams along the eastern Drakensberg Escarpment. In Mpumalanga the EIA has been recorded from a few EIA potsherds which occur in association with the LSA occupation of the Honing nest 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

famous 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 discovered. Doornkop, located south of Lydenburg, dates from AD740 and AD810 (Evers 1981, Whitelaw 1996).

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

- 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 Mpumalanga Province (Collett 1979, 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 Mpumalanga Province across the Lebombo Mountains in the east during the second half of the nineteenth century (Delius 2007, Makhura 2007.).
- 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).
- Further to the south 'Zululand' had a profound impact on historical events which shaped the character of contemporary South Africa. In this land without any formal boundaries the territories of Zulu leaders such as Shaka, Dingane and Cetshwayo developed and acted as cradle of the Zulu nation.

5.3 The Historical Period

Historical towns closest to the Project Area in the north include Ermelo and Piet Retief. A brief outline of the histories of these towns is the following (Bergh 1998; Erasmus 1995).

Ermelo

Long before Ermelo came into being the area was frequented by travellers moving between Lydenburg and Natal. The area was well watered and dotted with lakelets and attracted settlers from Lydenburg and elsewhere. The reverend Lion Cachet of Utrecht began to hold regular services on several of the new farms.

In AD1880 a village was proclaimed on the farm Nooitgedacht. The town was named for Ermelo in Gelderland, Holland and was managed by the Dutch Reformed Church until 1895 when the Transvaal government took over. In 1901, during the Anglo-Boer War, the town was completely destroyed by the British. The town was rebuilt from scratch after 1903. Today Ermelo is the educational, communications, industrial and commercial centre for an intensely farmed district.

Heritage sites in Ermelo include: a memorial near the Dutch Reformed Church in honour of the men from the town and district who fought and died in the Anglo Boer War; rock paintings in caves and rock shelters and the Paul Kruger Bridge across the Vaal River which was built in 1897 by the architect, Sytze Wierda.

Coal is mined by several large mines and Ermelo lies on the railway line between the Highveldt coal fields and the bulk export harbour of Richards Bay on Kwa Zulu-Natal's north coast.

Piet Retief

The town of Piet Retief came into being in 1882 when the Transvaal government gave permission for the town to be established on the farms Osloop and Geluk near the border of Swaziland. The town was named for Piet Retief the Voortrekker leader who was killed on 6 February 1838 after negotiating land for the Voortrekkers from the Zulu king, Dingane.

The town was almost completely destroyed by the British during the Anglo Boer War. Today, it is the commercial centre for a high rainfall district with huge wattle and timber plantations. The most important crops are tobacco, sugarcane and citrus fruit.

The district is home to a large German-speaking population who are descendants of 19th century settlers.

In 1891 Piet Retief also incorporated the 'Independent Republic of Free State', one of several pocket republics which were established in South Africa during the 19th century. When the Transvaal was annexed in 1877 a few burghers purchased 12 000 ha from Chief Umbandine on the Swaziland border. Their number grew to 72 in 1886 and they established an own government and elected a president. The 'republic' was reincorporated into the Transvaal in 1890.

A brief history of historical towns closest to the Project Area in the south includes the histories of Wakkerstroom, Volksrus and Utrecht (Bergh 1998; Erasmus 1995).

Wakkerstroom

Wakkerstroom is one of the oldest white settlements in the former Transvaal. From the early 1880's Voortrekkers began to settle at the foot of Ossewakop ('ox wagon hill') on the banks of the Utaka ('awake' in Swazi) River. The stream's name therefore is derived from this Swazi word hence the stream was named Wakkerstroom.

The main wagon route between Ermelo and Utrecht (at the time still part of the Transvaal Republic) passed nearby. In 1859 the Transvaal parliament allowed Dirk Uys (son of Voortrekker leader Jacobus Uys) to establish a town on the farm Gryshoek. No surveyor was available and Dirk Uys and his two assistants used a thong cut from the hide of an eland as a measuring tape. The town was proclaimed on 6 November 1859 and the first stands were sold in 1864. The town was initially called Marthinus Wesselstroom in honour of Marthinus Wessels Pretorius (the first president of the ZAR). In time the name was changed to Wesselstroom and then to Wakkerstroom which is also the name of the river.

The location of the railway line four kilometres from the town is explained by the fact that the residents refused that the railway line pass through the town. When the railway line between Durban and the Johannesburg goldfields was built in 1895 they

again successfully petitioned the Volksraad to have the town excluded from the route. A similar petition was successful when the government of the Union of South Africa wanted to build a branch line from Volksrus to Bethal in 1910.

Volksrus

Volksrus came into being because the Transvaal government decided to establish a town on the edge of the Drakensberg Escarpment near the border with Natal in 1888. The site which was chosen was fifteen kilometres to the north of the hill Majuba where the Transvaalers won the decisive battle of Majuba on 27 February 1881 to regain their independence from the British. Four farms were bought for this purpose. Dorothea De Jager (daughter of Dirk Uys who died in battle at Laings Neck) was asked to name the new town. She decided on Volksrus presumably because the Transvaal forces had rested there after the Battle of Majuba.

Volksrus was proclaimed on 27 March 1889 and became a municipality in 1904. The main economic products today are maize, wool, sorghum, sunflower, seeds, beef and dairy.

Heritage resources in the area include:

- The Convention Bridge where Paul Kruger (president of the ZAR) and Sir Henry Loch (British High Commissioner) signed the third Swaziland Convention in 1884 in a railway carriage which straddled the Natal and Transvaal Provinces where it stood on the bridge in 1894.
- Two monuments which are associated with the two Transvaal Wars that were fought against the British. One was built in 1918 in memory of 722 women and children who died in the local concentration camps during the Anglo Boer War (1899-1902). The second monument is on Voortrekker square and commemorates those who died during the 1880-1881 war.

Utrecht

The town of Utrecht goes back to 1852 when a group of Voortrekkers settled along the Buffels River in northern Natal. This was beyond the borders of the ZAR agreed upon at the Sand River Convention of the same year and against the wishes of the

Transvaal government who believed the British may experience the act as an encroachment on their territory.

In order to rationalise the situation the settlers formed the Buffels River Company which gave Mpande, king of the Zulus, hundred head of cattle in exchange for grazing rights between the Buffels River and the Ncome (later 'Bloed') River. They also elected their own 'government' comprising a landrost and four councillors. A village was founded on the farm Schoonstroom ('clean stream') which, together with the 'republic', was named Utrecht for the city in Holland.

Utrecht is the terminus of a 45km branch railway from Newcastle built in 1910. The wider area encompassing the southern slope of the Balele Mountains, named for chief Langalibalele, of the amaHlubi. The major economic activity is coal mining. The savannah vegetation is ideal for cattle and sheep ranching.

Heritage resources in town include:

- Three historical houses have been declared national monuments. The Shawe and Rothman houses are colonial residences and the Uys-House is one of the oldest structures north of the Thukela River in KwaZulu-Natal and dates back to 1856.
- The sandstone rectory build in 1887 has been converted into a museum.
- A monument to Piet Uys, leader of the Burgher force, who was killed on 29 March 1879 while fighting with the British against the Zulu in battle of Hlobane. Uys was appointed the first landrost of Utrecht in 1860.
- A commemorative beacon recalls the death of Captain Leo Pokrowsky, a Pole and officer in the Russian army, on 25 December 1900 when his company, who fought on the side of the Boers during the Anglo Boer War, attacked the British garrison in Utrecht.
- The Dutch Reformed Church, the residency, the first magistrate's offices, the old post office (1892) and the town hall (1913) are all national monuments (Erasmus 1995).

5.4 A coal mining heritage

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 Kwa Zulu/Natal.

The first exploitation for coal was probably in Kwa Zulu/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-Spring 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 had 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 9,5million 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 local consumers of coal are Sasol, Iscor and Eskom.

6 THE PHASE I HERITAGE IMPACT ASSESSMENT

6.1 The field survey

The Project Area mainly comprises of two topographical features, namely flat areas where grass veld abound and higher sandstone mountains with dolerite dykes and outcrops. The slopes of the higher elevated area are marked by folds and crevices where dense stands of wattle trees grow.



Figures 3 & 4- The Project Area on Commissiekraal 90HT mainly involves high mountainous areas with foothills in the south and flat outstretched grass veld in the north (above and below).

The fieldwork survey was focussed on the northern flatter part of Commissiekraal 90HT as well as onto some of the lower slopes of the mountain range which runs from the east to the west across Commissiekraal 90HT.

6.2 Types and ranges of heritage resources

The Phase I HIA for the proposed Project Area revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999), namely:

- Remains from the historical period.
- Informal graveyards and graves.

No pre-historical remains were recorded. This study did not cover paleontological resources.

The historical remains and graveyards were geo-referenced and mapped (Tables 1-4; Figure 5).

The significance of these heritage resources is indicated as well as the significance of any impact on these remains (Tables 5, 6, & 7). Mitigation measures are outlined for those heritage resources which will be affected by the proposed Commissiekraal Coal Project.

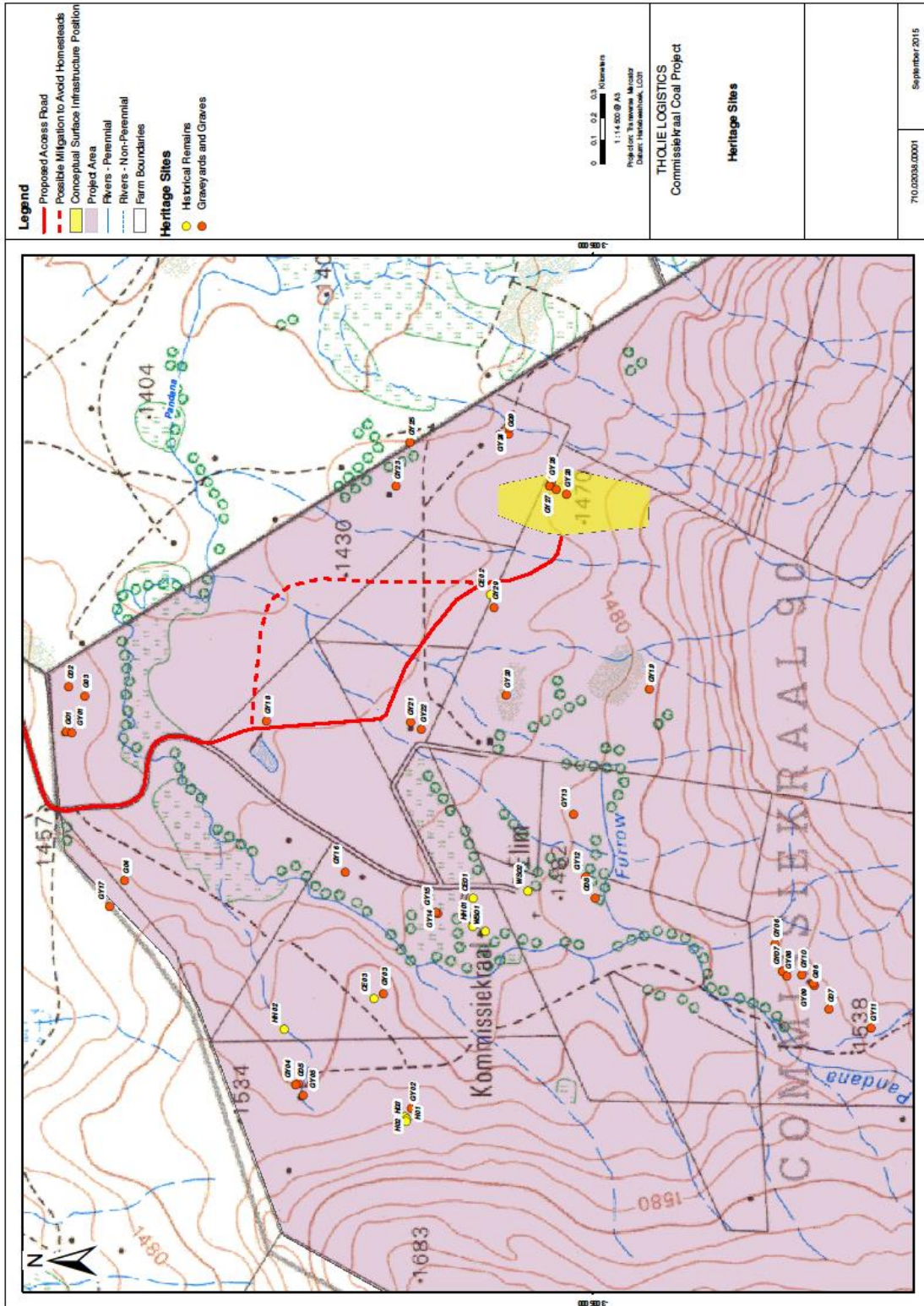


Figure 5- The Project Area on the northern, flatter part of Commissiekraal 90HT. Note the presence of historical remains and graves and graveyards in the Project Area (above).

6.2.1 Historical remains

Remains which consist of homesteads and cattle enclosures which were utilized by local indigenous people as well as remains which can be associated with the first colonials were recorded in the Project Area. All these historical remains are associated with graveyards which indicate that many of the graveyards in the Project Area may be older than sixty years.

The colonial remains consist of dwellings and wagon sheds whilst the material remains of indigenous people mainly comprise of a number of homesteads and stock enclosures which were constructed with stone. All these historical remains date from the late nineteenth to the first half of the twentieth century.

Some of the graveyards that were utilized by local people are associated with household remains that are totally disintegrated. It seems as if most of these graveyards and associated homestead remains may date from the more recent past and that the household remains therefore hold little significance.

At least two enclosures which were constructed with stone occur as isolated phenomenon in the veld. It is highly likely that these structures were associated with homesteads that were constructed with clay which have disintegrated. The enclosures were used to pen stock such as cattle.

The following historical remains were recorded, namely:

6.2.1.1 Farmstead complexes

At least two farmstead complexes occur on the flatter area. These complexes each comprises a number of structures some of which are older than sixty years although each also contains structures which date from the more recent past. These buildings have little or no historical significance and are not discussed.

6.2.1.1.1 Farmstead complex 01

This farmstead complex may be the older of the two and is located on flat ground in close proximity of the Pandana River. It holds the following structures which all are in a relatively good condition, namely:

- A farm dwelling (HH01) which was constructed with dolerite stone and with clay bricks. It is an elongated structure which is fitted with a pitched corrugated iron roof. The house has two inscriptions which indicate that it was constructed in two sessions, namely during 1903 whilst a second addition the house occurred in 1906.



Figures 6 & 7- HH01 dates from AD1903 and viewed from the front (above) and back (below). The original house has been extended on both these.

- The farm house is associated with a well preserved wagon shed (WS01) whose main walls were constructed with dolerite stone. The gables of the structure were constructed with clay bricks. It is fitted with a pitched corrugated iron roof.



Figures 8 & 9- A wagon shed (WS01) (above) and a cattle enclosure (below) both constructed with dolerite stone are part of Farmstead complex 01.



- A cattle enclosure CE01 which is situated approximately one hundred meters from with the dwelling and wagon shed seems to be spatially and temporally linked with the farm complex.
- A historical graveyard (with extension) is part of Farmstead complex 01.

Other structures which are part of this complex of buildings include a dwelling with rondavel which were constructed with clay bricks and cement as well as at least two sheds which were constructed with corrugated iron plate. These buildings are not older than sixty years.

6.2.1.1.2 Farmstead complex 02

Farmstead complex 02 comprises a number of structures which include a farm house and a wagon shed which respectively are older than sixty years. Other buildings in this complex include at least one shed and two rondavels which date from the more recent past.

The historical structures in this complex include the following:

- A farm house (HH02) which was constructed at the start of the 20th century (AD1910) and which was built with sandstone and fitted with a pitched corrugated iron roof. The main building involves an elongated structure with gables. The original building was probably extended and renovated on more than one occasion in the past.
- A wagon shed (WS02) in close proximity of the farm house was constructed with dolerite stone and fitted with a pitched corrugated iron roof.

Other structures such as a shed which was constructed with cement and which is fitted with a slanted corrugated iron roof was built approximately fifty years ago. Two rondavels near the main dwelling seems to date from the more recent past although at least one of these structures may be older and may have been restored in the more recent past.



Figures 10, 11 & 12- The main residence (HH02) viewed from the front (above) and the back (centre) and a cattle enclosure (CE02) (below) in Farmstead complex 02. The residence was constructed with sandstone and the wagon shed with dolerite. Both are fitted with corrugated iron roofs.

6.2.1.1.3 Homestead complex 01

Homestead complex 01 (HC01) involves at least three dwelling compounds (homes) which are located slightly up the slope of a sandstone ridge. Two of the three houses (H01 and H02) were constructed with dolerite and are partly dillapidated. The third homestead (H03) merely consists of the outer (square) boundary wall which surrounds a dwelling which now has collapsed and disintegrated.



Figures 13 & 14- Homestead complex 01 includes two homes constructed with dolerite stone (H01, above) whilst a third home (H03) merely comprises the outer square wall which once surrounded a dwelling (below).

The homestead complex is also associated with a graveyard which is demarcated with a stone wall which holds eight graves.

It is highly likely that a single stone walled enclosure (CE03) which occurs at some distance on the flats but in full view from the homestead complex may have been part of this homestead complex.



Figure 15- A single enclosure (CE03) some distance from Homestead complex 01 can probably be linked with this homes which are situated near trees on the lower slope of a sandstone ridge (above).

6.2.1.1.4 A single enclosure

A single enclosure (CE02) which was used to shelter stock occurs on flat terrain near some contemporary dwellings and the graveyard (GY12) of the Nkosi clan.

This enclosure was probably part of homesteads which now have disintegrated. A prominent feature of the enclosure are the number of upright standing stones (monoliths) which are part of the structure's enclosing wall.

6.2.1.1.5 Tables

Tables outlining the coordinates and significance rating for historical remains.

Table 1- Coordinates for historical remains in the Project Area (above).

Historical remains	Coordinates	Significance
Colonial remains		
Farm stead complex 01		
HH01: Historical House	27° 25.293's 30° 24.835'e	Med-High
WS01: Wagon shed	27° 25.323's 30° 24.822'e	Med-High
CE01: Cattle enclosure	27° 25.295s 30° 24.910'e	Med-High
Farm stead complex 02		
HH02: Historical House	27° 25 24.85's 30° 24 56.73'e	Med-High
WS02: Wagon shed	27° 25.423's 30° 24.928'e	Med-High
Indigineous remains		
Homestead complex 01		
H01: Home 01	27° 25.133's 30° 24.338'e	Med-High
H02: Home 02	27° 25.136's 30° 24.332'e	Med-High
H03: Home 03	27° 25.135's 30° 24.326'e	Med-High
CE03: Cattle enclosure	27° 25.061's 30° 24.647'e	Med-High
CE02: Cattle enclosure	27° 25.339's 30° 25.707'e	Med-High

6.2.2 Graveyards

A considerable number of graveyards and single graves were recorded in the Project Area. Most of these graveyards and graves occur near homesteads which are currently occupied. Isolated graveyards and graves which have been recorded probably existed in conjunction with homestead complexes which have been abandoned. The remains of these homesteads have disintegrated and are not visible any longer.

The graveyards and graves which have been recorded are briefly discussed below. They are divided into those graveyards which occur in the eastern, central and western parts of the Project Area.

Most of the graveyards and graves are undecorated. Consequently, no accurate dates are available for most of the graves. Whilst it is clear that many graves date from the more recent past it must be accepted that many of the graves are older than sixty and even hundred years.

6.2.2.1 Graveyards and graves in the west

The following graveyards and graves were recorded in this part of the Project Area, namely:

6.2.2.1.1 Grave 01

A single grave (G01) belonging to a member of the Mbatha family occurs in the village of the Sengena family.

The grave is covered with a pile of dolerite stones.

6.2.2.1.2 Graveyard 01

This graveyard (GY01) holds the remains of four individuals, one of which is a child. The graveyard is located on the perimeter of the homestead.

All the graves are covered with piles of dolerite stones.

6.2.2.1.3 Grave 02

A grave of a child (G02) of the Mbata clan which is covered with a few stones is located on the edge of the village.



Figures 16 & 17- A single grave (G01) and a small graveyard (GY01) holding four graves in the homestead of the Sengena family (above and below).



6.2.2.1.4 Grave 03

This single grave (G03) is covered with a pile of stones and is located outside the homestead on the edge of a wattle bush.

6.2.2.1.5 Grave 04

This single grave occurs against the slope of a low rise in the midst of the remains of an abandoned homestead complex. The grave is covered with a few stones.

6.2.2.1.6 Graveyard 02

GY02 is located against the lower slope of a sandstone ridge. It holds the remains of eight (8) individuals, one of which is a child. The deceased are members of the Nkosi family. All the graves are covered with piles of stone, except one which is fitted with a granite headstone with the following inscription:

- 'Adam Nkosi 1-1-67 Isakhiwo 2-7-1984 Bane Nhlahla abafa beba Mbelele Enkosi Ngobo Bayo Bussiswa'



Figure 18 - G02 against the slope of a sandstone ridge holds the remains of eight members of the Nkosi family (above).

6.2.2.1.7 Graveyard 03

GY03 holds the remains of at least seven (7) members of the Tshoka clan. The graveyard is demarcated with a stone wall and is associated with a cattle enclosure (CE03).

6.2.2.1.8 Grave 05

A single grave (G05) covered with stones in the midst of a demolished home. The remains are possibly that of a member of the Ndaba family.



Figures 19 & 20- GY03 and GY04 each hold the remains of members of the Tshoka and Ndaba families respectively (above).

6.2.2.1.9 Graveyard 04

GY04 holds the remains of three (3) members of the Ndaba family. All three graves are covered with piles of stone and are associated with the disintegrated remains of a homestead.

6.2.2.1.10 Graveyard 05

This graveyard (GY05) holds two members of the Ndaba family which are covered with piles of stone. The graves are demarcated with a stone wall.



Figure 21- G05 holds the remains of two members of the Ndaba family (above).

6.2.2.1.11 Graveyard 06

GY06 comprises three (3) heaps of stone near the Pandana River. The identity of the deceased are unknown.

6.2.2.1.12 Graveyard 07

GY07 comprises three (3) heaps of stone in open veld. The identity of the deceased are unknown.



Figure 22- G07 comprises three heaps of stone. The identity of the deceased is unknown (above).

6.2.2.1.13 Graveyard 08

This graveyard (GY08) is demarcated with a stone wall and holds the remains of at least ten (10) individuals which are covered with piles of stone. The deceased are members of the Levunu family.

6.2.2.1.14 Grave 06

G06 is a single grave which is covered with stones. It is located in the midst of a homestead belonging to the Zwane family.



Figures 23 & 24- G06 (above) and GY07 (below) respectively holds the remains of a single individual and the remains of seventeen individuals which are all buried in a homestead belonging to one of several Zwane families in the Project Area.



6.2.2.1.15 Graveyard 09

GY09 is located in the homestead of the Zwane family and holds seventeen (17) graves which are covered with piles of stone.

6.2.2.1.16 Graveyard 10

GY10 is located in tall grass and holds the remains of an unknown number of individuals. Most of the graves are covered with piles of stone. The graveyard belongs to the Levunu family.

6.2.2.1.17 Grave 07

This single grave (G07) is located under a tree. It is marked by a single stone. The identity of the deceased is unknown.



Figure 25- A single grave (G07) (above) marked by a stone under a tree with the remains of an unknown individual.

6.2.2.1.18 Graveyard 11

GY11 contains four graves of which three are covered with stones. The fourth grave is newly established. The graveyard is located on the perimeter of the Zwane homestead.



Figure 26– The remains of four individuals (GY11) on the perimeter of one of the homesteads of one of the Zwane families in the Project Area (above).

6.2.2.1.19 Table

Tables outlining the coordinates and significance rating for graveyards and graves.

Table 2- Coordinates for graveyards in the western part of the Project Area (above).

Graveyards	Coordinates	Significance
G01. Single grave of a member of the Mbatha clan in the Sengena village. The grave is located in the homestead.	27° 24.342's 30° 25.352'e	HIGH
GY01. Three graves (one child) in the homestead of the Sengena clan.	27° 24.355's 30° 25.349'e	HIGH
G02. Grave of a child of the Mbatha clan. Located on the perimeter of the homestead.	27° 24.348's 30° 25.472'e	HIGH
G03. Single grave located outside the homestead next to a wattle bush.	27° 24.386's 30° 25.447'e	HIGH
G04. Single grave in an abandoned homestead located along a slope.	27° 24.477's 30° 24.961'e	HIGH
GY02. Approximately 8 graves (one child) covered with dolerite stone. One fitted with granite headstone. Demarcated with stone wall. Located on low ridge. Associated with stone walled dwellings. Members of the Nkosi clan.	27° 25.148's 30° 24.358'e	HIGH
GY03. Approximately 7 graves, 4 inside demarcated area and 3 on the outside. Covered with piles of stone. Associated with a cattle enclosure. Members of the Tshoka clan.	27° 25.083's 30° 24.661'e	HIGH
G05. Single grave covered with piles of stone. Associated with collapsed remains of dwellings. Belong to the Ndaba clan.	27° 24.883's 30° 24.424'e	HIGH
GY04. Three (3) graves covered with stones. Associated with collapsed remains of dwellings. Members of the Ndaba clan.	27° 24.876's 30° 24.421'e	HIGH
GY05. Two (2) graves covered with stones. Demarcated with stone wall. Members of the Ndaba clan.	27° 24.894s 30° 24.394'e	HIGH

GY06. Four (4) graves covered with stones near river. Identity of deceased unknown.	27° 26.002's 30° 24.784'e	HIGH
GY07. Three (3) graves covered with stones located in open veld. Identity of deceased unknown.	27° 26.019's 30° 24.713'e	HIGH
GY08. Ten (10) graves covered with stones. Demarcated with stone wall. Located in tall grass. Members of the Levunu clan.	27° 26.030's 30° 24.702'e	HIGH
G06. Single grave in the Zwane homestead. Covered with stones.	27° 26.094's 30° 24.675'e	HIGH
GY09. Approximately 17 graves in the Zwane homestead all covered with stones.	27° 26.091's 30° 24.684'e	HIGH
GY10. Unknown number of graves located in an area demarcated with a stone wall. Covered with dense, tall grass. Possibly associated with the Levunu clan.	27° 26.065's 30° 24.703'e	HIGH
G07. Single grave under a tree. Marked by a single stone. Identity of deceased unknown.	27° 26.128's 30° 24.613'e	HIGH
GY11. Four (4) graves in the homestead of the Zwane family.	27° 26.227's 30° 24.564'e	HIGH

6.2.2.2 Graveyards and graves in the central part

The following graveyards and graves were recorded in the central part of the Project Area, namely:

6.2.2.2.1 Grave 08

This single grave belongs to an unknown individual, is covered with a pile of stones and is located in the midst of a maize field.



Figures 27 & 28– A single grave (G08) (above) covered with a pile of stones in the midst of a maize field. Two graves (GY12) located in open veld. The identities of all deceased are unknown.



6.2.2.2 Graveyard 12

GY12 is located to the north of the current farmstead and comprises at least two graves which are covered with piles of dolerite stone. The graves are demarcated with a low wall. The identity of the deceased is no longer remembered.

6.2.2.3 Graveyard 13

This graveyard (GY13) is overgrown with tall grass. The identity of the deceased is unknown as well as the number of graves in the graveyard.

6.2.2.4 Graveyard 14

This historical graveyard (GY14) which is demarcated with a stone wall is located near Farmstead complex 02 and contains the remains of at least seven (7) individuals. Some of the graves are fitted with headstones, two of which bear decipherable inscriptions, namely:

- 'Ter gedagtenis van ons geliefde zoontjie Joel Daniel Muller Geboren 12 December 1902 Leef in den Heer Van ons genomen 2 Augustus 1908'
- 'Ter gedachtenis aan Petronella Johanna Muller Geboren 27 Maart 1878 Gestorwen 25 Junie 1894'

6.2.2.5 Graveyard 15

GY15 comprises two graves which are linked to GY14's outer wall. GY15 therefore can be considered an extension of GY14. The two graves belong to an English soldier who participated in the Battle of Commissiekraal and a wandering 'trekboer' who was struck by lightning. His surname may have been Bedford.



Figures 29 & 30– GY14 holds at least seven graves some of which are fitted with headstones (above). GY15 comprises two graves which are barely visible and which are located directly on the outer wall of GY14 (below).



6.2.2.2.6 Graveyard 16

GY16 holds the remains of a number of farm workers who lived in a homestead near the dirt road that ran to the current farmstead of the Lens family. The graveyard is located in tall grass and the number of graves it holds is unknown. At least two piles of stones could be distinguished but it is most likely that a few more individuals were buried in close proximity of the abandoned and disintegrated homestead.

6.2.2.2.7 Graveyard 17

GY17 represents the graveyard of three members of the Van Vuuren family which is located near Farmstead complex 02.

The graveyard holds three graves which are all fitted with granite headstones. However, the inscriptions of the tombstones are barely decipherable due to damage to the headstones as a result of veld fires.



Figure 31– The graveyard (GY17) of three members of the Van Vuuren family located next to a stock of hay (above).

The inscriptions on the headstones are the following:

- 'Fransina van Dyk (gebore Dreyer) Geb 1866 Oorlede 1945;
- 'Hier rus ons mammie Susanna Maria Jane Van Vuuren Gebore 3-8-1909 Oorlede 30-1-1971 Ps 103:15'
- 'Lukas Marthinus van Vuuren Gebore 1899 Oorlede 28-6-1963' Ps 91'

6.2.2.2.8 Table

Table 3- Coordinates for graveyards in the central part of the Project Area (above).

Graveyards and graves	Coordinates	Significance
G08. Single grave in a maize field. Covered with stones. Identity of deceased unknown.	27° 25.581's 30° 24.907'e	HIGH
GY12. Two (2) graves next to maize field. Demarcated with low stone wall. Identity of deceased unknown.	27° 25.559's 30° 24.964'e	HIGH
GY13. Unknown number of graves in grazing area.	27° 25.531's 30° 25.130'e	HIGH
GY14. Historical graveyard with approximately 7 graves. Located near Farmstead complex 01. Some of the graves are decorated with headstones.	27° 25.212's 30° 24.871'e	HIGH
GY15. Historical graveyard with two possible graves next to the historical graveyard. The two graves are severely neglected and barely recognisable.	27° 25.207's 30° 24.874'e	HIGH
GY16. Graveyard with unknown number of graves located in tall grass. Associated with remains from the recent past.	27° 24.995's 30° 24.981'e	HIGH
GY17. Graveyard of members of the Van Vuuren family near Farmstead complex 02. Holds three graves.	27° 24.442's 30° 24.893'e	HIGH

6.2.2.3 Graveyards and graves in the east

The following graveyards and graves were recorded in the eastern part of the Project Area, namely:

6.2.2.3.1 Graveyard 18

This graveyard (GY18) is located to the south of a dam and holds the remains of thirteen (13) members of the Mayisela clan. All the graves are covered with dolerite stones.



Figures 32 & 33– GY18 and GY19 hold remains of members of the Phagati family and is located in open veld and in a wattle bush respectively (above and below).

6.2.2.3.2 Graveyard 19

GY19 comprises twelve graves (12) which are covered with dolerite stones. The graveyard is located in a wattle bush which had been cleared. The deceased are members of the Phagati clan.

6.2.2.3.3 Graveyard 20

GY20 holds the remains of four (4) children whose remains are covered with dolerite stones. The graveyard is located on the outskirts of one of the homesteads of the Phagati family. The deceased are members of this family.

6.2.2.3.4 Graveyard 21

GY21 comprises six (6) graves which are covered with dolerite stones and which are demarcated with a stone wall. The graves are those of members of the Phagati family and the graveyard is located on the outskirts of the homesteads of one of the Phagati families.



Figure 34– The graveyard (GY21) of six members of the Phagati family on the outskirts of the Phagati homestead (above).

6.2.2.3.5 Graveyard 22

GY22 is a second graveyard which is located on the outskirts of a homesteads of one of the Phagati families.

This graveyard holds approximately twelve (12) graves of which two are for children. The graves are covered with dolerite stones.



Figure 35– GY22 on the outskirts of the Phagati family holds twelve graves (above).

6.2.2.3.6 Graveyard 23

GY23 comprises two graves for children who were members of the Levunu family. They were buried in the midst of mud dwellings which date from the recent past and which have disintegrated.

The graves are represented by a pile of dolerite stone and a single flat stone.



Figure 36– Two children who were members of the Levunu family were buried in the midst of dwellings which have disintegrated (above).

6.2.2.3.7 Grave 09

This single grave (G09) occurs in the homestead of the Tlhatshwayo family. It is covered with a pile of dolerite stones.

6.2.2.3.8 Graveyard 24

GY24 comprises three graves consisting of piles of stone in the midst of a maize field some distance from the homestead of the Tlhatshwayo family. The deceased were members of the Mtjali family.

6.2.2.3.9 Graveyard 25

GY25 is located in a wattle bush. The graves belong to members of the Ngema clan. The graves are covered with piles of dolerite stone.



Figures 37, 38 & 39– A single grave in the homestead of the Tlhatshwayo family (G09); a graveyard (GY24) located in the midst of a maize field and a graveyard (GY25) of the Ngema clan located in a wattle bush (below).

6.2.2.3.10 Graveyard 26

GY26 is located in the homestead of the Ankonyane family. It holds the remains seventeen individuals (17). At least three children's graves can be distinguished. All the graves are covered with dolerite stones.

6.2.2.3.11 Grave 10

This single grave (G10) is located in the homestead of the Ankonyane family and is covered with a pile of dolerite stones.



Figures 40 & 41– A single grave in the homestead of the Akonyana family (G10) (above) as well as a graveyard (GY26) which holds seventeen graves (below).

6.2.2.3.12 Graveyard 27

GY27 comprises two single stones in the homestead of the Ankonyane family. The two stones cover the remains of children.

6.2.2.3.13 Graveyard 28

GY28 comprises two piles of dolerite stone which represent two individuals which were buried outside the homestead of the Ankonyane family.



Figures 42 & 43– Two graves (GY28) in the homestead of the Akonyana family (G10) (above) and a graveyard (GY29) which holds the remains of eight members of the Nkosi family (below).

6.2.2.3.14 Graveyard 29

This graveyard (GY29) is demarcated with a low stone wall which embraces seven to eight graves which are all covered with piles of dolerite stone.

GY29 was used by members of the Nkosi clan.

6.2.2.3.15 Table

Table 4- Coordinates for graveyards in the eastern part of the Project Area (above).

Graveyards	Coordinates	Significance
GY18. Approximately 13 graves covered with dolerite stones. (Mayisela clan). South of dam.	27° 24.812's 30° 25.377'e	HIGH
GY19. Approximately 12 graves covered with dolerite stones (Phagati clan). In wattle bush.	27° 25.710's 30° 25.456'e	HIGH
GY20. Approximately 4 children graves covered with dolerite stones. (Phagati clan). Next to homestead.	27° 25.374's 30° 25.443'e	HIGH
GY21. Approximately 6 graves covered with dolerite stone. Graveyard demarcated with dolerite stone wall. (Phagati clan). Next to homestead.	27° 25.150's 30° 25.372'e	HIGH
GY22. Approximately 12 graves (two children) covered with dolerite stones. (Phagati clan). Next to homestead.	27° 25.175's 30° 25.355'e	HIGH
GY23. Two graves for children in the midst of remains from the recent past. Members of Levunu clan.	27° 25.118's 30° 25.993'e	HIGH
G09. Single grave covered with dolerite stones. Located in a homestead. Member of the Tlhatshwayo clan.	27° 25.383's 30° 26.129'e	HIGH

GY24. Three graves covered with piles of dolerite stone in the midst of a maize field. Members of the Mtjali clan.	27° 25.385's 30° 26.146'e	HIGH
GY25. Approximately 6 graves located in wattle bush. Graves covered with dolerite stones. Members of the Ngema clan.	27° 25.151's 30° 26.108'e	HIGH
GY26. Approximately 17 graves (at least 3 children) covered with dolerite stones. Located in homestead of Ankonjane family.	27° 25.482's 30° 26.001'e	HIGH
G10. Single grave in homestead of the Ankonjane family (father). Covered with dolerite stones.	27° 25.478's 30° 25.992'e	HIGH
GY27. Holds 2 graves of possible still-born children represented by two single stones in homestead of the Ankonjane family	27° 25.494's 30° 25.984'e	HIGH
GY28. Two graves outside homestead of the Ankonjane family. Covered with dolerite stones.	27° 25.518's 30° 25.971'e	HIGH
GY29. Approximately 7 to 8 graves which are demarcated with circular wall. Covered with piles of dolerite stone. Members of the Nkosi clan.	27° 25.347's 30° 25.675'e	HIGH

7 THE SIGNIFICANCE, POSSIBLE IMPACT ON AND THE MITIGATION OF THE HERITAGE RESOURCES

7.1 The significance of the heritage resources

The significance of the heritage resources is indicated as some of the heritage resources may be impacted when the proposed Commissiekraal Coal Project is implemented.

7.1.1 The historical remains

All buildings and features older than sixty years are considered to be of historical significance and are protected by Section 34 and Section 38 of the National Heritage Resources Act (No 25 of 1999). The historical remains consisting of Farmstead complexes 01 and 02 and Homestead complex 01 (HC01) as well as EC02 can be considered to be of medium to high significance when considering criteria such as the following (Table 5):

- Although these remains are not uncommon across the larger project area these remains are being threatened on an increasing scale due to coal mining and general development.
- These remains have educational, research, aesthetical and other significance which warrant their continued existence, conservation or even future use.
- These remains have not been adequately documented during this Phase I HIA study and need further investigation if and when they may be disturbed by the proposed Commissiekraal Coal Project.

Table 5- Significance rating criteria for historical remains (Farmstead, Homestead complexes and enclosures) in the Project Area.

Significance rating	Criteria for significance rating	Mitigation/Management Measures
High (3)	National/provincial value Educational, research, aesthetical	Conserve unaffected for posterity (preferably) <i>in situ</i>

	conservation value Future use	
Medium (2)	Provincial value Medium educational, research, aesthetical conservation value No future use	Phase II investigation before demolishing. Permitting required
Low (1)	Local and site specific value Low educational, research, aesthetical conservation value No future use	Document during Phase I HIA Demolish during construction. No permitting required

7.1.2 The graveyards

All graveyards and graves can be considered to be of high significance and are protected by various laws (Table 2). Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. 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).

It is clear that some of the graveyards are older than sixty years whilst others are younger than sixty years. Graveyards which are older than sixty years may also hold graves which date from the recent past as many of the graveyards are still being used. Mitigation measures are outlined for the graveyards which will be affected by the proposed Commissiekraal Coal Project

7.2 The significance of the impact on the heritage resources

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

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

$$\text{Significance Points (SP)} = (\text{Magnitude} + \text{Duration} + \text{Scale}) \times \text{Probability}$$

The maximum value is 100 Significance Points (SP). Potential 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 heritage significance.
- Between 40 and 60 significance points indicates MODERATE heritage significance.
- Between 20 and 40 significance points indicates LOW heritage significance.
- Less than 20 significance points indicates VERY LOW heritage significance.

7.3 Possible impact on the heritage resources

A mine plan is available for the Commissiekraal Coal Mine. It is therefore possible to establish which of the heritage resources will be affected by the proposed Commissiekraal Coal Project.

According to the mine plan GY25, GY26 and GY27 will be impacted by mine infrastructure within the proposed mine footprint (Figure 5). It is most likely that the impact on the graveyards will commence with the implementation of the construction phase of the proposed Commissiekraal Coal Project which may involve activities such as the the removal of the top soil. Other sites (graves and historical remains) may be indirectly impacted (disturbed) depending on how activities of the mine in the greater project area are managed.

The significance of the impact on the heritage resources therefore has to be indicated.

7.3.1 The historical remains

None of the historical remains will be directly affected by the proposed Commissiekraal Coal Project. The significance of the impact on the historical remains therefore is very low (Table 6).

Table 6- The significance of the impact on historical remains in the Project Area.

Historical Remains	Probability of project impacting on site(s)	Magnitude if project impacts on site(s)	Duration if project impacts on site(s)	Scale if project impacts on site(s)	Significance points	Significance rating
FC01	0	2	1	1	0	VERY LOW
FC02	0	2	1	1	0	VERY LOW
HC01	0	2	1	1	0	VERY LOW
CE02	0	2	1	1	0	VERY LOW

7.3.2 The graveyards

Only GY25, GY26 and GY27 will be directly affected by the proposed infrastructure for the Commissiekraal Coal Mine. The significance of the impacts on GY25, GY26 and GY27 therefore is very high (Table 7).

Table 7- The significance of the impact on some graveyards in the Project Area.

Graveyards and graves	Probability of project impacting on this site	Magnitude if project impacts on this site	Duration if project impacts on this site	Scale if project impacts on this site	Significance points	Significance rating
GY25	5	10	5	1	90	VERY HIGH
GY26,	5	10	5	1	90	VERY HIGH
GY27	5	10	5	1	90	VERY HIGH

7.4 Mitigating the heritage resources

The following mitigation measures have to be applied to the historical remains and graveyards and graves which may be directly or indirectly affected during the construction, operational or decommissioning phases for the proposed Commissiekraal Coal Project, namely:

7.4.1 The historical remains

The historical remains have medium to high heritage significance. None of the historical remains will be directly affected by the proposed mine infrastructure or the access road or its alternative. Should these remains be disturbed by the mine in the future these remains' significance warrant that they must be further investigated before they may be affected (demolished, altered, renovated).

In this regard the Farmstead and Homestead complexes would require a Phase II investigation by a historical architect and an archaeologist respectively. The archaeologist would need to be accredited with the Association for Southern African Professional Archaeologists (ASAPA) and the historical architect should be in good standing with SAHRA (South African Heritage Resources Agency). The historical remains may only be affected after these investigations have been completed and the necessary permit for the alteration (destruction, renovation) of the historical remains obtained.

7.4.2 The graveyards

GY25, GY26 and GY27 can be mitigated by means of exhumation and relocation as they are affected directly. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

The existing graveyards which are not affected by the Commissiekraal Coal Project have high significance which would require appropriate mitigation and management measures if the Commissiekraal Coal Project is expanded in the future.

In the event that the mine becomes the owner of the farm, necessary arrangements would need to be made to give descendants access to the grave sites.

8 CONCLUSION AND RECOMMENDATION

The Phase I HIA for the proposed Project Area revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999), namely:

- Remains from the historical period.
- Informal graveyards and graves.

No pre-historical remains were recorded. This study did not cover paleontological resources.

The historical remains and graveyards were geo-referenced and mapped (Tables 1-4; Figure 5).

The significance of these heritage resources is indicated as well as the significance of any impact on these remains (Tables 5, 6, & 7). Mitigation measures are outlined for those heritage resources which will be affected by the proposed Commissiekraal Coal Project.

The significance of the heritage resources

The significance of the heritage resources is indicated as some of the heritage resources may be impacted when the proposed Commissiekraal Coal Project is implemented.

The historical remains

All buildings and features older than sixty years are considered to be of historical significance and are protected by Section 34 and Section 38 of the National Heritage Resources Act (No 25 of 1999). The historical remains consisting of Farmstead complexes 01 and 02 and Homestead complex 01 (HC01) as well as EC02 can be considered to be of medium to high significance when considering criteria such as the following (Table 5):

- Although these remains are not uncommon across the larger project area these remains are being threatened on an increasing scale due to coal mining and general development.
- These remains have educational, research, aesthetical and other significance which warrant their continued existence, conservation or even future use.
- These remains have not been adequately documented during this Phase I HIA study and need further investigation if and when they may be disturbed by the proposed Commissiekraal Coal Project.

The graveyards

All graveyards and graves can be considered to be of high significance and are protected by various laws (Table 2). Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. 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).

It is clear that some of the graveyards are older than sixty years whilst others are younger than sixty years. Graveyards which are older than sixty years may also hold graves which date from the recent past as many of the graveyards are still being used. Mitigation measures are outlined for the graveyards which will be affected by the proposed Commissiekraal Coal Project

The significance of the impact on the heritage resources

The significance of the impacts on the heritage resources was determined using a ranking scale, based on various criteria.

Possible impact on the heritage resources

A mine plan is available for the Commissiekraal Coal Mine. It is therefore possible to establish which of the heritage resources will be affected by the proposed Commissiekraal Coal Project.

According to the mine plan GY25, GY26 and GY27 will be impacted by mine infrastructure within the proposed mine footprint (Figure 5). It is most likely that the impact on the graveyards will commence with the implementation of the construction phase of the proposed Commissiekraal Coal Project which may involve activities such as the removal of the top soil. Other sites (graves and historical remains) may be indirectly impacted (disturbed) depending on how activities of the mine in the greater project area are managed.

The significance of the impact on the heritage resources therefore has to be indicated.

The historical remains

None of the historical remains will be directly affected by the proposed Commissiekraal Coal Project. The significance of the impact on the historical remains therefore is very low (Table 6).

The graveyards

Only GY25, GY26 and GY27 will be directly affected by the proposed infrastructure for the Commissiekraal Coal Mine. The significance of the impacts on GY25, GY26 and GY27 therefore is very high (Table 7).

Mitigating the heritage resources

The following mitigation measures have to be applied to the historical remains and graveyards and graves which may be directly or indirectly affected during the construction, operational or decommissioning phases for the proposed Commissiekraal Coal Project, namely:

The historical remains

The historical remains have medium to high heritage significance. None of the historical remains will be directly affected by the proposed mine infrastructure or the access road or its alternative. Should these remains be disturbed by the mine in the future, these remains' significance warrant that they must be further investigated before they may be affected (demolished, altered, renovated).

In this regards the Farmstead and Homestead complexes would require a Phase II investigation by a historical architect and an archaeologist respectively. The archaeologist would need to be accredited with the Association for Southern African Professional Archaeologists (ASAPA) and the historical architect should be in good standing with SAHRA (South African Heritage Resources Agency). The historical remains may only be affected after these investigations have been completed and the necessary permit for the alteration (destruction, renovation) of the historical remains obtained.

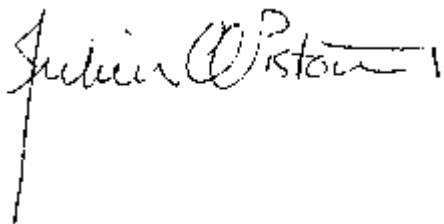
The graveyards

GY25, GY26 and GY27 can be mitigated by means of exhumation and relocation as they are affected directly. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and

relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

The existing graveyards which are not affected by the Commissiekraal Coal Project have high significance which would require appropriate mitigation and management measures if the Commissiekraal Coal Project is expanded in the future.

In the event that the mine becomes the owner of the farm, necessary arrangements would need to be made to give descendants access to the grave sites.

A handwritten signature in black ink, appearing to read 'Julius CC Pistorius'. The signature is written in a cursive style with a long vertical line extending downwards from the start.

Dr Julius CC Pistorius
Archaeologist and Heritage Consultant
Cell 0825545449
Member ASAPA

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10 SPOKESPERSONS CONSULTED

Mr. N. Lens. Farm owner of Commissiekraal 90HT.

Mrs. M. Lens. Farm owner of Commissiekraal 90HT.

Mr. Themba Zwane. Farm labourer on Commissiekraal 90HT. Acted as mediator between the author and local communities.

Numerous occupiers of households on Commissiekraal 90HT.

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 Ekurhuleni, 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.

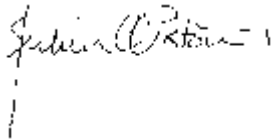
APPENDIX B: DECLARATION OF INDEPENDENCE

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.



Signature of the practitioner:

30 September 2015