

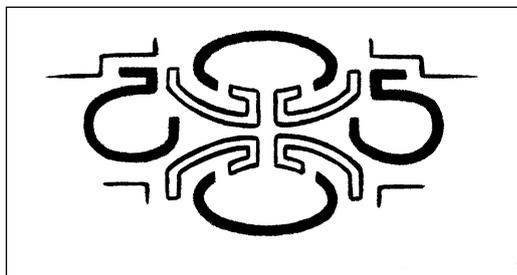
## Cultural Heritage Impact Assessment:

Phase 1 Investigation for the Section 102, Part 2 amendment to amend the existing Prospecting Right (NW 30/5/1/1/2/11794 PR) to include bulk sampling to prospect for Chrome ore and Platinum Group Metals (PGM), combined with a Waste License application near Brits on the Remaining Extent of Portion 1, Portion 2, Portion 3 (portion of portion 1) of the farm Lekker Sukkel Landgoed 454 JQ, the farm Zandfontein 923 JQ and Portion 44 (portion of portion 5), Portion 45 (portion of portion 5), Remaining Extent of Portion 46 (portion of portion 5), Remaining Extent of Portion 226, Portion 343 (portion of portion 41), Portion 369, Portion 370, Portion 371 and Portion 372 of the farm Zandfontein 447 JQ, Madibeng Local Municipality, Bojanala Platinum District Municipality, North West Province



For

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## Executive Summary

This report contains a comprehensive heritage impact assessment investigation in accordance with the provisions of Sections 38(1) and 38(3) of the *National Heritage Resources Act* (Act No. 25 of 1999) (NHRA) and focuses on the survey results from a cultural heritage survey as requested by Milnex 189 CC. The full EIA process for the Section 102, Part 2 amendment to amend the existing Prospecting Right (NW 30/5/1/1/2/11794 PR) to include bulk sampling to prospect for Chrome ore and Platinum Group Metals (PGM), combined with a Waste License application near Brits (Madibeng) on the Remaining Extent of Portion 1, Portion 2, Portion 3 (portion of portion 1) of the farm Lekker Sukkel Landgoed 454 JQ, the farm Zandfontein 923 JQ and Portion 44 (portion of portion 5), Portion 45 (portion of portion 5), Remaining Extent of Portion 46 (portion of portion 5), Remaining Extent of Portion 226, Portion 343 (portion of portion 41), Portion 369, Portion 370, Portion 371 and Portion 372 of the farm Zandfontein 447 JQ, Madibeng Local Municipality, Bojanala Platinum District Municipality, North West Province. The properties are situated approximately 8 kilometres south from the town of Madibeng (Brits). The Scoping and EIA process for Environmental Authorisation for the proposed prospecting application is conducted in terms of the National Environmental Management Act (Act No. 107 of 1998) (NEMA).

A total of one historical complex (Site 1) was recorded during the survey. The site is probably associated with early to mid 20<sup>th</sup> century tobacco farming in the region. The two tobacco dry furnaces have been partially stripped of their fittings (roofs, doors and windows). One structure was constructed first (built with sun-dried bricks) and the other furnace was probably constructed later (plastered with metal support rods) and were used to cure and dry tobacco leaves.

Site No	Site Type	Field Rating of Significance	Direct Impacts	Significance of Impact before Mitigation	Significance of Impact after Mitigation	Proposed Mitigation
1	Historical tobacco curing furnaces	Generally Protected B: Medium Significance	None	6 (Low)	6 (Low)	<ul style="list-style-type: none"> <li>A buffer zone of 10 metres should be maintained</li> </ul>

No archaeological (both Stone Age and Iron Age) artefacts, assemblages, features, structures or settlements were recorded during the survey of the project footprint.

It is therefore recommended, from a cultural heritage perspective that the proposed prospecting activities may proceed.

Also, please note:

Archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and a university or museum notified in order for an investigation and evaluation of the find(s) to take place (*cf.* NHRA (Act No. 25 of 1999), Section 36 (6)).

## Definitions and abbreviations

Midden:	Refuse that accumulates in a concentrated heap.
Stone Age:	An archaeological term used to define a period of stone tool use and manufacture
Iron Age:	An archaeological term used to define a period associated with domesticated livestock and grains, metal working and ceramic manufacture
LIA:	Late Iron Age sites are usually demarcated by stone-walled enclosures
NHRA:	National Heritage Resources Act (Act No. 25 of 1999)
SAHRA:	South African Heritage Resources Agency
SAHRIS:	South African Heritage Resources Information System
PHRA-G:	Provincial Heritage Resources Authority - Gauteng
GDARD:	Gauteng Department of Agriculture and Rural Development
HIA:	Heritage Impact Assessment
DMR:	Department of Mineral Resources
DENC:	Department of Environment and Nature Conservation: Northern Cape
I&APs:	Interested and Affected Parties

I, Francois Coetzee, hereby confirm my independence as a cultural heritage specialist and declare that I do not have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of the listed environmental processes, other than fair remuneration for work performed on this project.



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## 1. Introduction and Terms of Reference

Milnex 189 CC an independent environmental consultant was contracted by Thabo-Gaelebale Mineral Resources (Pty) Ltd to undertake a full EIA process for the Section 102, Part 2 amendment to amend the existing Prospecting Right (NW 30/5/1/1/2/11794 PR) to include bulk sampling to prospect for Chrome ore and Platinum Group Metals (PGM), combined with a Waste License application near Brits (Madibeng) on the Remaining Extent of Portion 1, Portion 2, Portion 3 (portion of portion 1) of the farm Lekker Sukkel Landgoed 454 JQ, the farm Zandfontein 923 JQ and Portion 44 (portion of portion 5), Portion 45 (portion of portion 5), Remaining Extent of Portion 46 (portion of portion 5), Remaining Extent of Portion 226, Portion 343 (portion of portion 41), Portion 369, Portion 370, Portion 371 and Portion 372 of the farm Zandfontein 447 JQ, Madibeng Local Municipality, Bojanala Platinum District Municipality, North West Province. The properties are situated approximately 8 kilometres south from the town of Madibeng (Brits). The Scoping and EIA process for Environmental Authorisation for the proposed prospecting activities is conducted in terms of the National Environmental Management Act (Act No. 107 of 1998) (NEMA). A Cultural Heritage Impact Assessment (HIA) was requested by Milnex 189 CC on behalf of the client to evaluate the potential impact of the proposed prospecting.

## 2. Objectives

The general objective of the cultural heritage survey is to record and document cultural heritage remains consisting of both tangible and intangible archaeological and historical artefacts, structures (including graves), settlements and oral traditions of cultural significance.

As such the terms of reference of this survey are as follows:

- Identify and provide a detailed description of all artefacts, assemblages, settlements and structures of an archaeological or historical nature (cultural heritage sites) located on the study area,
- Estimate the level of significance/importance of these remains in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value,
- Assess any impact on the archaeological and historical remains within the area emanating from the development activities, and
- Propose recommendations to mitigate heritage resources where complete or partial conservation may not be possible and thereby limit or prevent any further impact.

## 3. Description of Physical Environment of Study Area

The heritage survey focussed on an area situated approximately 8 kilometres south of the Madibeng (Brits).

Farm Name(s) and Portions	<ul style="list-style-type: none"> <li>• Remaining Extent of Portion 1 of the farm Lekker Sukkel Landgoed 454 JQ</li> <li>• Portion 2 of the farm Lekker Sukkel Landgoed 454 JQ</li> <li>• Portion 3 (portion of portion 1) of the farm Lekker Sukkel Landgoed 454 JQ</li> <li>• The farm Zandfontein 923 JQ</li> <li>• Portion 44 (portion of portion 5) of the farm Zandfontein 447 JQ</li> <li>• Portion 45 (portion of portion 5) of the farm Zandfontein 447 JQ</li> </ul>
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	<ul style="list-style-type: none"> <li>• Remaining Extent of Portion 46 (portion of portion 5) of the farm Zandfontein 447 JQ</li> <li>• Remaining Extent of Portion 226 of the farm Zandfontein 447 JQ</li> <li>• Portion 343 (portion of portion 41) of the farm Zandfontein 447 JQ</li> <li>• Portion 369 of the farm Zandfontein 447 JQ</li> <li>• Portion 370 of the farm Zandfontein 447 JQ</li> <li>• Portion 371 of the farm Zandfontein 447 JQ</li> <li>• Portion 372 of the farm Zandfontein 447 JQ</li> </ul>
Size of Survey Area	117.17 Ha
Magisterial District	Madibeng Local Municipality Bojanala Platinum District Municipality
1:50 000 Map Sheet	2527DG
1:250 000 Map Sheet	2526
Central Coordinates of the Development	27.778650°E 25.687850°S

**Table 1: Physical Environment**

The northern parts of the survey area falls within the Savanna Biome, particularly the Central Bushveld Bioregion and more specifically the Marikana Thornveld (SVcb 6). This veld type occurs in North-West and Gauteng Provinces and is found on plains from the Rustenburg area in the west, through Marikana and Brits to the Pretoria area in the east. The vegetation & landscape features include open *Acacia karoo* woodland, occurring in valleys and slightly undulating plains, and some lowland hills. Shrubs are more dense along drainage lines, on termitaria and rocky outcrops or in other habitat protected from fire (Mucina & Rutherford 2006).

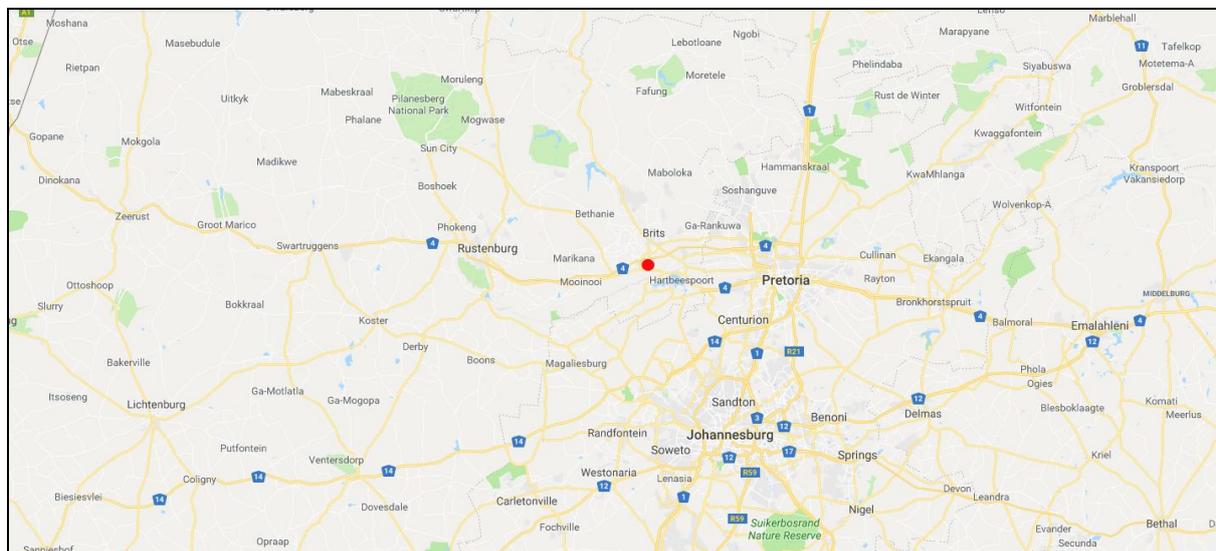
The survey footprint is characterised as an open and flat area dominated by clay and dark cotton soils covered mostly in grasses and sporadic tree clusters. The area is dominated by circular irrigated agricultural fields, a water canal (aqueduct), the intersection of the R512 and the N4 (with various off-ramps) and an existing open cast mine. Infrastructure includes dirt roads, fences, farmhouse complexes, agricultural and various power lines transecting the survey footprint.

Brits (Madibeng) normally receives about 540 mm of rain per year, with most rainfall occurring mainly during mid-summer. The region receives the lowest rainfall (0 mm) in June and the highest (105 mm) in January. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for Brits range from 19.8°C in June to 29.3°C in January. The region is the coldest during July when the mercury drops to 2.1°C on average during the night (SAExplorer 2018).

Current Zoning	Agricultural (Cultivation) Mining
Economic activities	Farming Mining
Soil and basic geology	The mafic rocks of the Bushveld Complex host layers rich in platinum group elements (PGE), chromium and vanadium, and constitute the world's largest known resource of these metals and are collectively termed the Rustenburg Layered Suite (RLS). The Critical Zone is characterized by regular rhythmic layering of cumulus chromite within pyroxenites, anorthosites, norites and olivine-rich rocks. It hosts virtually

	all economic mineralization encountered in the Bushveld Complex. The first economically significant cycle from a PGE perspective is the UG2 chromitite layer. The Merensky Reef can also be traced along strike for 280 km and is estimated to contain 60 000 t of PGE to a depth of 1 200 m below surface.
Prior activities	Livestock farming and agriculture
Socio Economic Environment	Agriculture, Tourism and mining are the main primary economies. The Agricultural sector, which produces food, is the biggest primary economy. It is categorized into four classifications, namely, extensive farming (44% of the Municipal area), intensive agriculture (18%), game farming (10%) and subsistence farming. Tourism also plays a major economic role as it is based on the natural systems (11%). Scenic routes, heritage sites, resorts and nature reserves are some of the main attractions in the tourism sector. The mining sector is dominated by platinum and chromium mining as well as quarrying activity. Platinum mining activity is located on the south eastern side of the side of Brits while quarrying is spread around the municipal area. The primary economic activities have to be managed in such a manner as to make sure that their impact on the natural environment and resources is controlled.
Evaluation of Impact	An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits NHRA (Act No. 25 of 1999, Section 38(3d)): <b>Positive</b>

**Table 2: Socio-economic environment**



**Figure 1: Regional map of the survey area (situated west of Pretoria)**

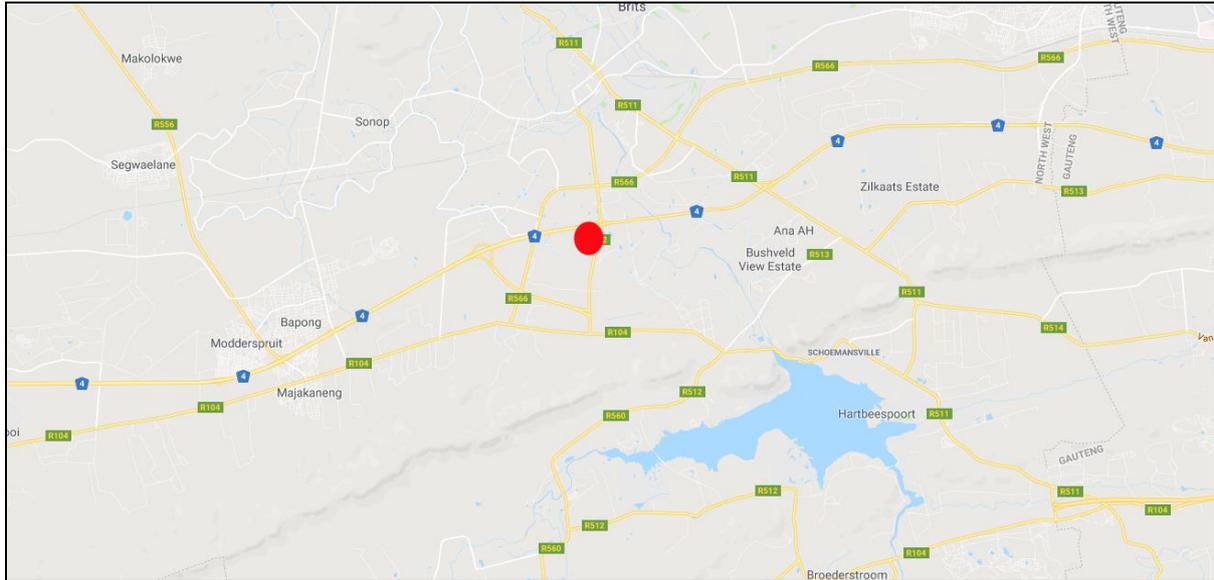


Figure 2: Regional context of the survey footprint located south of Brits (indicated by the red area)



Figure 3: Local context of the survey footprint (1:250 000 Topographical Map 2526)

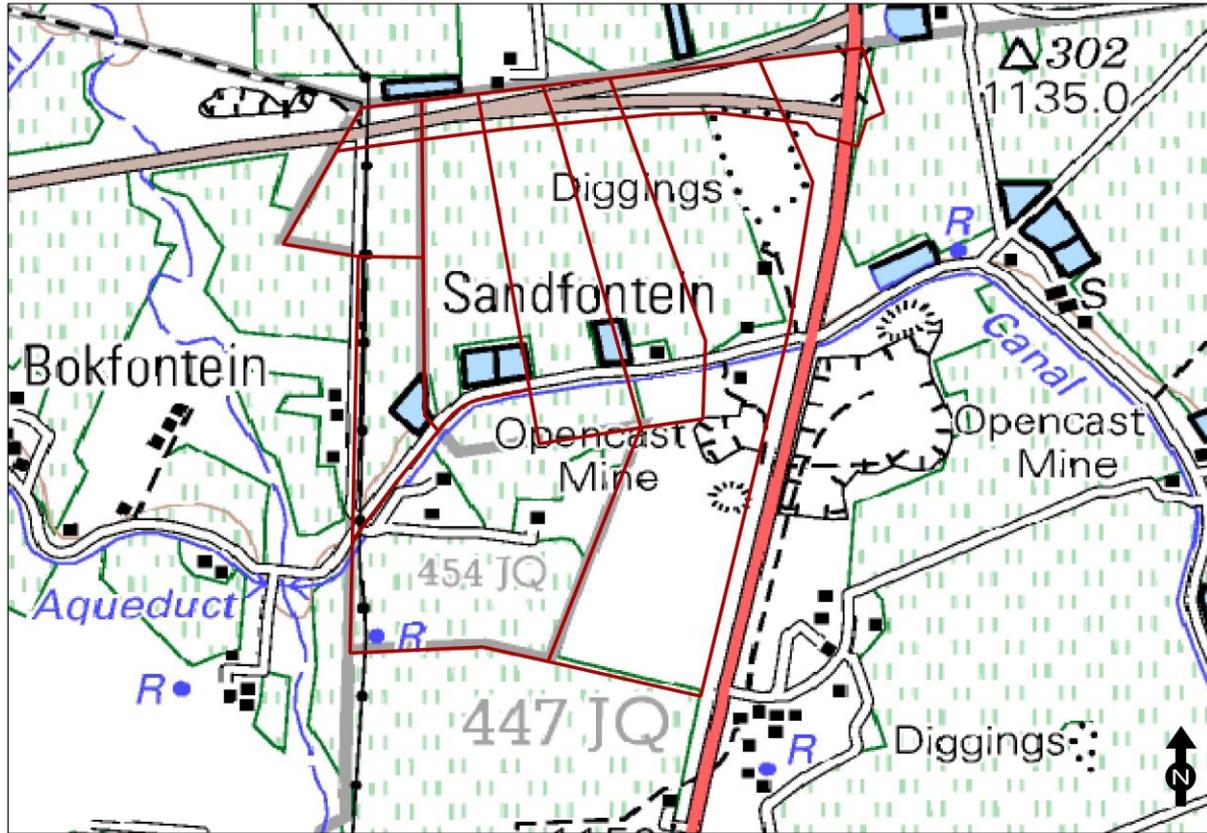


Figure 4: The survey area as indicated on the 1:50 000 topographic map 2527CA (2001)

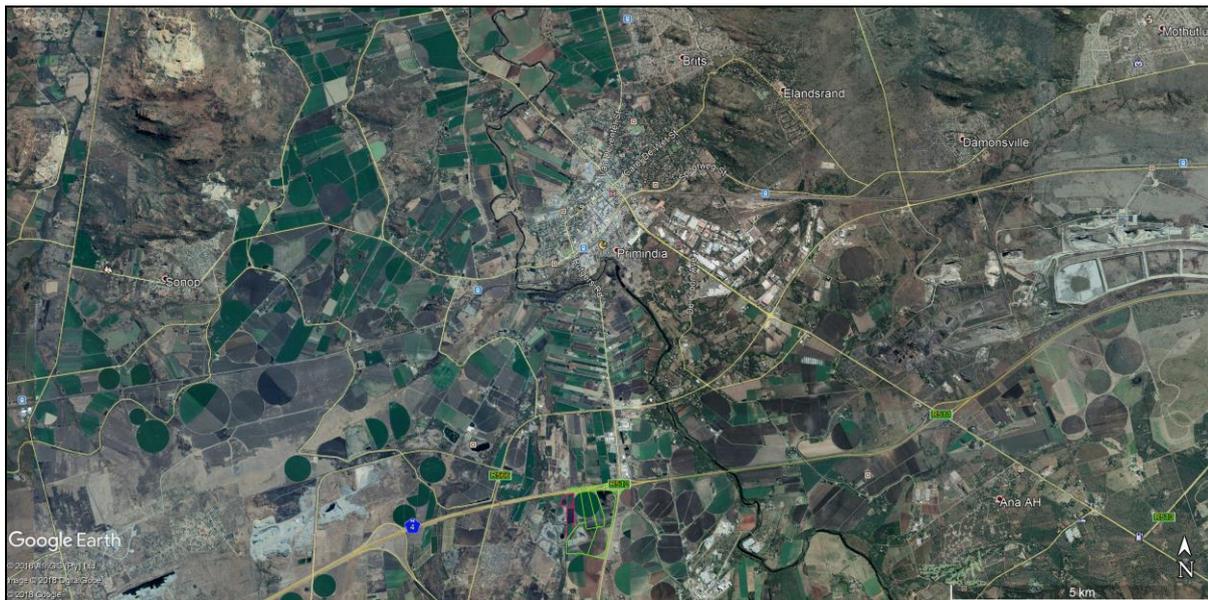


Figure 5: Survey area within general context (Google Earth Pro 2018)



Figure 6: Survey area within local context (Google Earth Pro 2018)



Figure 7: General view of the agricultural fields within the survey footprint



Figure 8: General view of existing and past prospecting activities



Figure 9: General view of the central section of the survey footprint (existing agricultural fields)



Figure 10: General view of the water canal (aqueduct) that cuts across the middle of the survey footprint



Figure 11: General view of the northern section of the survey footprint (existing agricultural fields)



Figure 12: Existing farmhouses currently occupied, situated along the water canal



Figure 13: General view of the north-eastern section of the survey footprint which is mostly water logged and marshy



**Figure 14: Prospecting seems to have started during 2016**



**Figure 15: Further subsurface prospecting was undertaken in 2017**

#### **4. Proposed Project Description**

It is proposed prospecting activities will consist of non-invasive and invasive activities which will include the following:

- ***Non-invasive activities***
  - Pre-feasibility studies and evaluation
  - Geological field mapping
  - Geophysical survey programme
  - Data gathering and evaluation
  - Market research and mining right application

- **Invasive activities**
  - Phased geological core drilling programme (8 geological boreholes)
  - Pitting, trenching and blasting (bulk sampling will include the excavation of 2 pits and 8 trenches [pits: 115m x 115m x 50m deep and 132m x 322m x 55m deep; trenches: 10 m x 1.8 m x 2.5 m deep; blasting will be done only when resistant rock is intercepted during trenching])
- Ablution: Chemical toilets will be used
- Storage of dangerous goods: During the prospecting activities, limited quantities of diesel and fuel, oil and lubricants will be stored on site.

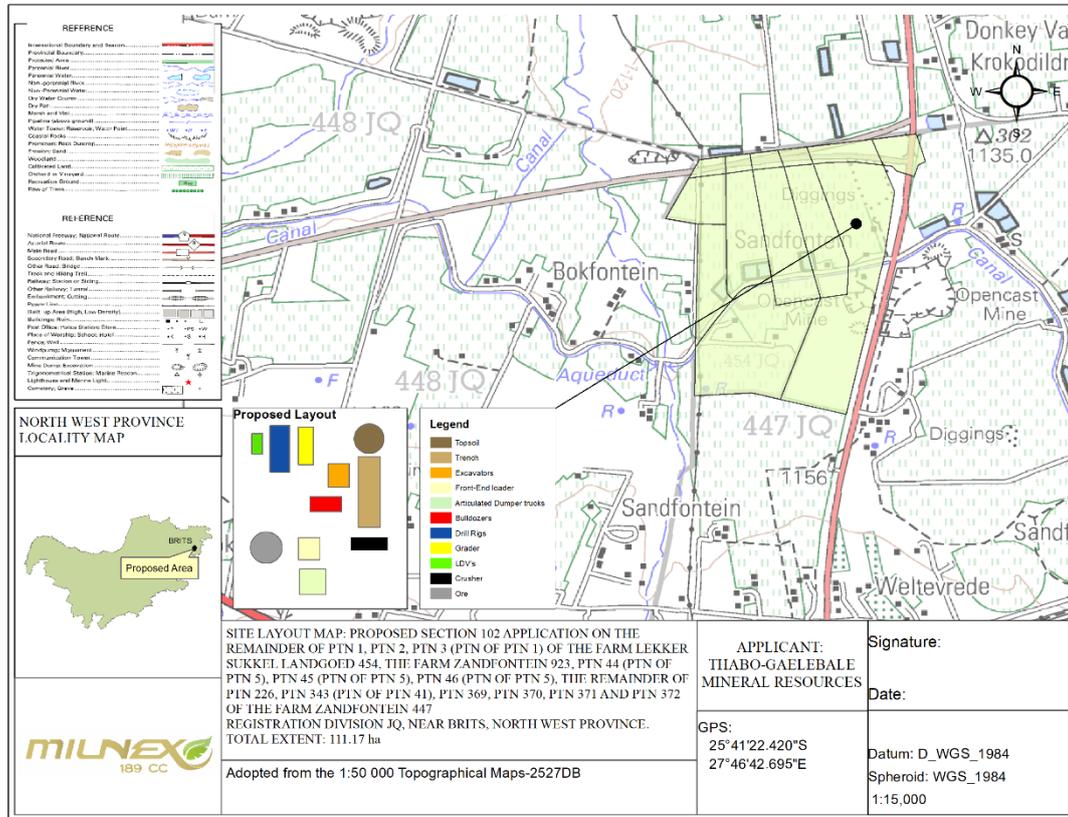


Figure 16: Proposed layout of the prospecting infrastructure

5. Legal Framework

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE APPLIED
The Constitution of the Republic of South Africa (Act No. 108 of 1996)	
The National Environmental Management Act (Act No. 107 of 1998)	Section 24(1) Section 28(1)
The National Water Act (Act No. 36 of 1998)	Section 21 (a)(b)
Air Quality Act (Act No. 39 of 2004)	Section 21
National Forests Act, Act of 84 of 1998	Chap 3 (Part 1) 1998 S12(1) S15(1)
The National Heritage Resources Act (Act No. 25 of 1999)	Section 38, 34, 35, 36
Conservation of Agricultural Resources Act (Act No. 85 of 1983)	
Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)	
The National Water Act (Act No. 36 of 1998);	

Mine Health and Safety Act (Act No. 29 of 1996) (MHSA)	
Biodiversity Act (Act 10 of 2004)	
Bojanala Platinum District Municipality Integrated Development Plan (IDP)	
Madibeng Local Municipality Integrated Development Plan (IDP) Review	

**Table 3: Legal framework**

<p><b>Description of the overall activity.</b> (Indicate Mining Right, Mining Permit, Prospecting right, Bulk Sampling, Production Right, Exploration Right, Reconnaissance permit, Technical co-operation permit, Additional listed activity)</p>	<p><b>1. Listing Notice GNR 325, Activity 15:</b> "The clearance of an area of 20 hectares or more, of indigenous vegetation." – Random indigenous vegetation clearance of over 1721.30 hectares area.</p> <p><b>2. Listing Notice GNR 325, Activity 19:</b> "The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including— (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource [,]; or (b) [including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)] the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in this Notice applies.</p> <p><b>3. Listing Notice GNR 325, Activity 20:</b> "Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including— (a) associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource[,]; or [including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)] (b) the primary processing of a mineral resource including winning, extraction, classifying, concentrating, crushing, screening or washing; but excluding the secondary processing of a mineral resource, including the smelting, beneficiation, reduction, refining, calcining or gasification of the mineral resource in which case activity 6 in Listing Notice 2 applies – Prospecting right with bulk samples for the mining of <b>Chrome Ore</b> including associated infrastructure, structure and earthworks.</p> <p>Prospecting right with bulk samples for the mining of Chrome ore (Cr) and Platinum Group Metals (PGM) including associated infrastructure, structure and earthworks.</p> <p>NEM:WA 59 of 2008 Residue stockpiles or residue deposits</p> <p><b>4. Category A: (15):</b> The establishment or reclamation of a residue stockpile or residue deposit resulting from activities which require a prospecting right or mining permit, in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).</p>
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**Table 4: Listed activities**

- Section 38 of the NHRA (Act No. 25 of 1999) stipulates that the following activities trigger a heritage survey:

Development criteria in terms of Section 38(1a-e) of the NHRA (Act No. 25 of 1999)	Yes/No
Construction of road, wall, powerline, pipeline, canal or other linear form of development or barrier exceeding 300m in length	Yes
Construction of bridge or similar structure exceeding 50m in length	No

Development exceeding 5000 m <sup>2</sup> in extent	Yes
Development involving three or more existing erven or subdivisions	No
Development involving three or more erven or divisions that have been consolidated within past five years	No
Rezoning of site exceeding 10 000 m <sup>2</sup>	Yes
Any other development category, public open space, squares, parks, recreation grounds	No

**Table 5: Activities that trigger Section 38 of the NHRA**

- Field rating system as recommended by SAHRA:

Field Rating	Grade	Significance	Recommended Mitigation
National Significance	Grade I	High significance	Conservation by SAHRA, national site nomination, mention any relevant international ranking. No alteration whatsoever without permit from SAHRA.
Provincial Significance	Grade II	High significance	Conservation by provincial heritage authority, provincial site nomination. No alteration whatsoever without permit from provincial heritage authority.
Local Significance	Grade III-A	High significance	Conservation by local authority, no alteration whatsoever without permit from provincial heritage authority. Mitigation as part of development process not advised.
Local Significance	Grade III-B	High significance	Conservation by local authority, no external alteration without permit from provincial heritage authority. Could be mitigated and (part) retained as heritage register site.
Generally Protected A	Grade IV-A	High/medium significance	Conservation by local authority. Site should be mitigated before destruction. Destruction permit required from provincial heritage authority.
Generally Protected B	Grade IV-B	Medium significance	Conservation by local authority. Site should be recorded before destruction. Destruction permit required from provincial heritage authority.
Generally Protected C	Grade IV-C	Low significance	Conservation by local authority. Site has been sufficiently recorded in the Phase 1 HIA. It requires no further recording before destruction. Destruction permit required from provincial heritage authority.

**Table 6: Field rating system to determine site significance**

- Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and they are valuable, finite, non-renewable and irreplaceable.
- All archaeological remains, features, structures and artefacts older than 100 years and historic structures older than 60 years are protected by the relevant legislation, in this case the **National Heritage Resources Act (NHRA) (Act No. 25 of 1999, Section 34 & 35)**. The Act makes an archaeological impact assessment as part of an EIA and EMPR mandatory (see **Section 38**). No archaeological artefact, assemblage or settlement (site) may be moved or destroyed without the necessary approval from the **South African Heritage Resources Agency (SAHRA)**. Full cognisance is taken of this Act in making recommendations in this report.
- Cognisance will also be taken of the Mineral and Petroleum Resources Development Act (Act No 28 of 2002) and the National Environmental Management Act (Act No 107 of 1998) when making any recommendations.

- Human remains older than 60 years are protected by the NHRA, with reference to Section 36. Human remains that are less than 60 years old are protected by the Regulations Relating to the Management of Human Remains (GNR 363 of 22 May 2013) made in terms of the National Health Act No. 61 of 2003 as well as local Ordinances and regulations.
- With reference to the evaluation of sites, the certainty of prediction is definite, unless stated otherwise.
- The guidelines as provided by the NHRA (Act No. 25 of 1999) in Section 3, with special reference to subsection 3, and the Australian ICOMOS (International Council on Monuments and Sites) Charter (also known as the Burra Charter) are used when determining the cultural significance or other special value of archaeological or historical sites.
- A copy of this report will be submitted on SAHRIS as stipulated by the National Heritage Resources Act (NHRA) (Act No. 25 of 1999), Section 38 (especially subsection 4) and the relevant Provincial Heritage Resources Authority (PHRA).
- Note that the final decision for the approval of permits, or the removal or destruction of sites, structures and artefacts identified in this report, rests with the SAHRA (or relevant PHRA).

## **6. Study Approach/Methodology**

Geographical information (KML shapefiles) on the proposed prospecting activities was supplied by Milnex 189 CC. The most up-to-date Google Earth images and topographic maps were used to indicate the survey area. Topographic maps were sources from the Surveyor General. Please note that all maps are orientated with north facing upwards (unless stated otherwise).

The strategy during this survey was to survey most of the footprint that form part of the application. However, certain areas were restricted by active mining and some areas were surveyed by detailed pedestrian (foot) survey techniques.

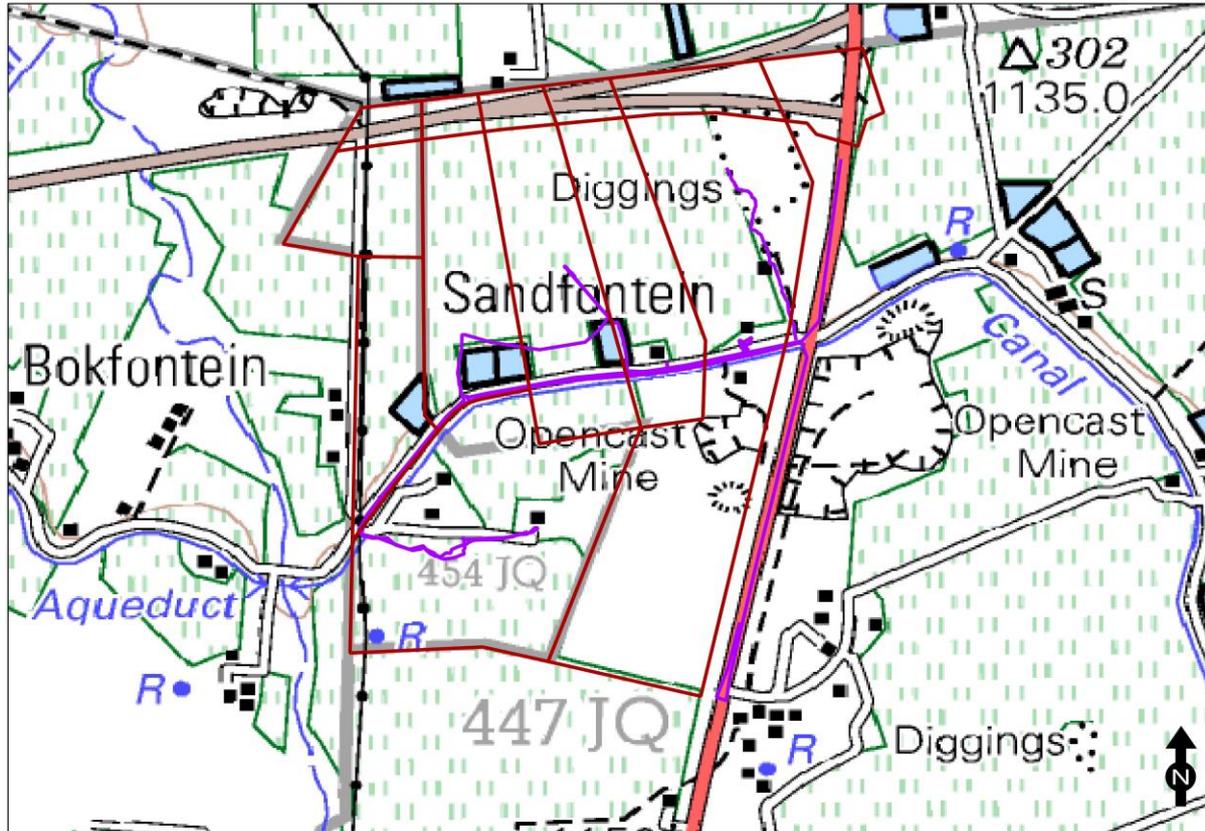


Figure 17: Recorded survey tracks for the project

## 6.1 Review of existing information/data

Additional information on the cultural heritage of the area was sourced from the following records:

- National Mapping Project by SAHRA (which lists heritage impact assessment reports submitted for South Africa);
- Environmental Potential Atlas (ENPAT);
- Online SAHRIS database;
- National Automated Archival Information retrieval System (NAAIRS);
- Maps and information documents supplied by the client; and
- Several heritage surveys have been conducted in the vicinity of the survey area (published and unpublished material on the area (Coetzee 2016a; Coetzee 2016b & Magoma 2018).

Several heritage surveys and research projects have been completed outside the project footprint during the last few years. Although several heritage impact assessments have been completed in the general vicinity of the survey area, no heritage sites were recorded inside the current survey footprint (Coetzee 2016a, Coetzee 2016b & Magoma 2018).

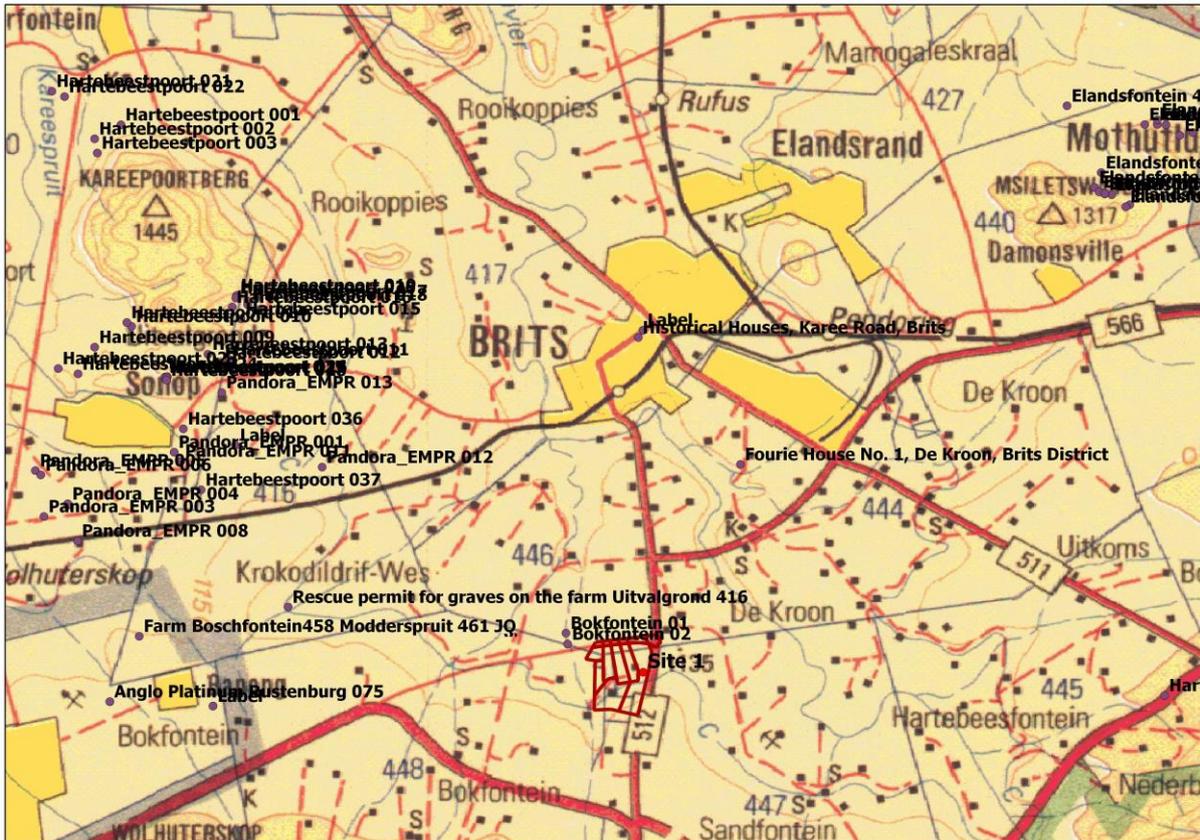


Figure 18: Recorded sites near the survey footprint as recorded on SAHRIS (as at August 2018)

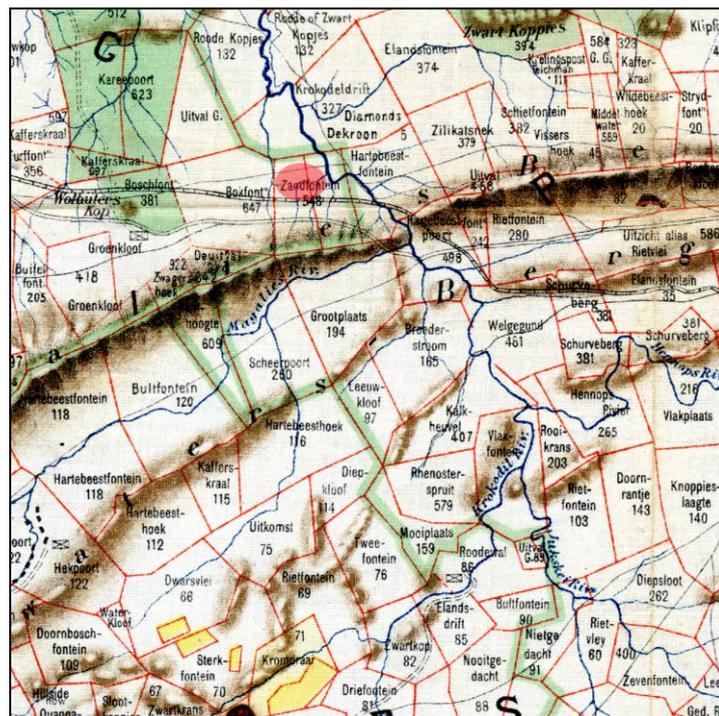


Figure 19: Jeppe's Map dating to 1899 indicates the location of the farms north of the Magaliesberg Mountains

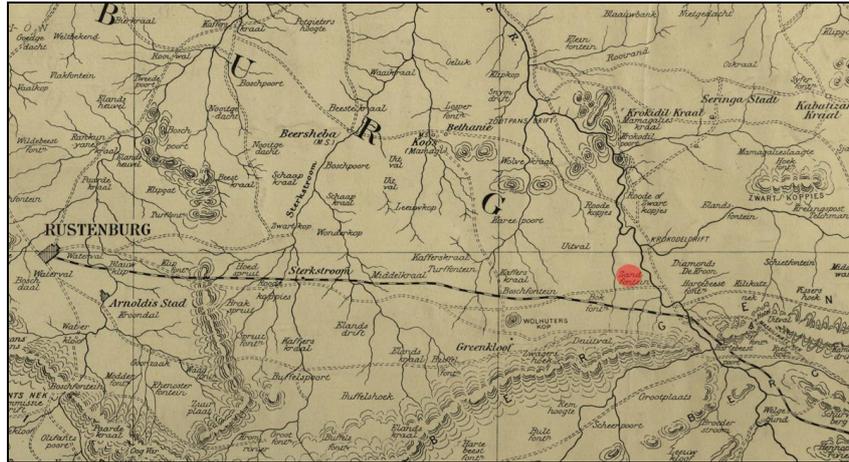


Figure 20: War Office Map indicating the location of the survey area east of Rustenburg in 1899

The Surveyor General’s map of the farm Zandfontein 447 JQ confirms that the farm was first surveyed in 1916 and the Title Deed was granted to W.I Grobler in 1855 (also see Addendum 3).

### 6.2 Palaeontological sensitivity

The mafic rocks of the Bushveld Complex host layers rich in platinum group elements (PGE), chromium and vanadium, and constitute the world's largest known resource of these metals and are collectively termed the Rustenburg Layered Suite (RLS).

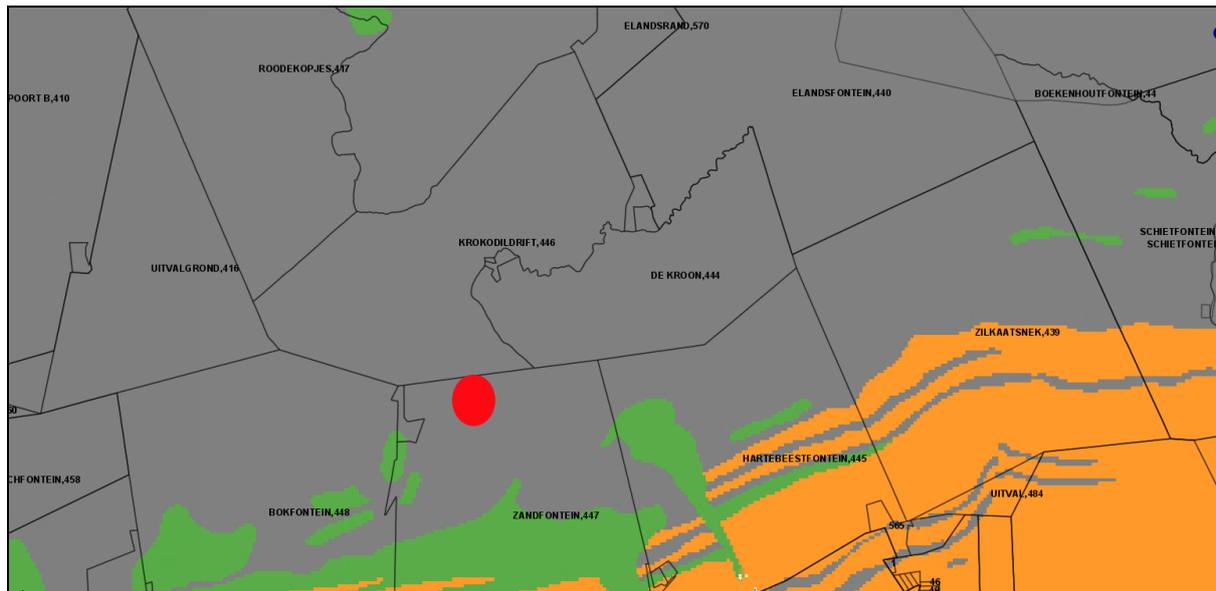


Figure 21: Palaeontological sensitivity zones as indicated for the survey footprint (SAHRIS 2018)

Colour	Sensitivity	Required Action
RED	VERY HIGH	Field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	Desktop study is required
BLUE	LOW	No palaeontological studies are required however a protocol for finds is required

GREY	INSIGNIFICANT/ZERO	No palaeontological studies are required
WHITE/CLEAR	UNKNOWN	Will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

The palaeontological sensitivity map was extracted from the SAHRIS database and clearly shows grey (Insignificant/zero) sensitivity. As a result no desktop palaeontological study will be required for the survey footprint.

### 6.3 Site visits

The field survey was conducted on 25 August 2018.

### 6.4 Social interaction and current inhabitants

A representative of the currently land owner and the farmer were consulted during the survey to locate known heritage sites in the region.

### 6.5 Public Consultation and Stakeholder Engagement

Since the proposed development is unlikely to result in any impacts that extent beyond the municipal area where it is located, it was deemed sufficient to advertise in a local newspaper. An advertisement was placed in English in the local newspaper (Brits Pos) on 20 April 2018, notifying the public of the EIA process and requesting Interested and Affected Parties (I&APs) to register with and submit their comments to Milnex 189 CC. I&APs were given the opportunity to raise comments within 30 days of the advertisement. Site notices were placed (as anticipated on the coordinates below) on site in English on 24 April 2018 to inform surrounding communities and immediately adjacent landowners of the proposed development. I&APs will be given the opportunity to raise comments. Identified I&APs, including key stakeholders representing various sectors, are directly informed of the proposed development and the availability of the Scoping Report via registered post on 3 April 2018 and were requested to submit comments by 7 May 2018. A copy of the report is also available at the Milnex offices in Schweizer-Reneke, 4 Botha Street, Schweizer-Reneke and Potchefstroom (Waterberry Street, Waterberry Square, 1st floor, Office 5B, Potchefstroom), between 7:30AM and 5PM, Monday to Friday.

### 6.6 Assumptions, restrictions, gaps and limitations

No severe physical restrictions were encountered as the survey area was fairly accessible.

### 6.7 Methodology for assessment of potential impacts

All impacts identified during the EIA stage of the study will be classified in terms of their significance. Issues were assessed in terms of the following criteria:

- The **nature**, a description of what causes the effect, what will be affected and how it will be affected;
- The **physical extent**, wherein it is indicated whether:
  - 1 - the impact will be limited to the site;

- 2 - the impact will be limited to the local area;
- 3 - the impact will be limited to the region;
- 4 - the impact will be national; or
- 5 - the impact will be international.
- The **duration**, wherein it is indicated whether the lifetime of the impact will be:
  - 1 - of a very short duration (0–1 years);
  - 2 - of a short duration (2-5 years);
  - 3 - of a medium-term (5–15 years);
  - 4 - of a long term (> 15 years); or
  - 5 - permanent.
- The **magnitude** of impact, quantified on a scale from 0-10, where a score is assigned:
  - 0 - small and will have no effect;
  - 2 - minor and will not result in an impact;
  - 4 - low and will cause a slight impact;
  - 6 - moderate and will result in processes continuing but in a modified way;
  - 8 - high, (processes are altered to the extent that they temporarily cease); or
  - 10 - very high and results in complete destruction of patterns and permanent cessation of processes;
- The **probability** of occurrence, which describes the likelihood of the impact actually occurring and is estimated on a scale where:
  - 1 - very improbable (probably will not happen);
  - 2 - improbable (some possibility, but low likelihood);
  - 3 - probable (distinct possibility);
  - 4 - highly probable (most likely); or
  - 5 - definite (impact will occur regardless of any prevention measures);
- The **significance**, which is determined through a synthesis of the characteristics described above (refer formula below) and can be assessed as low, medium or high;
- The **status**, which is described as either positive, negative or neutral;
  - The degree to which the impact can be reversed;
  - The degree to which the impact may cause irreplaceable loss of resources; and
  - The degree to which the impact can be mitigated.

The significance is determined by combining the criteria in the following formula:

$S = (E+D+M) \times P$ ; where:

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

Points	Significance Weighting	Discussion
< 30 points	Low	Where this impact would not have a direct influence on the decision to develop in the area.
31-60 point	Medium	Where the impact could influence the decision to develop in the area unless it is effectively mitigated.
> 60 points	High	Where the impact must have an influence on the decision process to develop in the area.

## **7. The Cultural Heritage Sites**

### **7.1. Isolated occurrences**

Isolated occurrences are artefacts or small features recorded on the surface with no contextual information. No other associated material culture (in the form of structures or deposits) was noted that might provide any further context. This can be the result of various impacts and environmental factors such as erosion and modern developments. By contrast archaeological sites are often complex sites with evidence of archaeological deposit and various interrelated features such as complex deposits, stone walls and middens. However, these isolated occurrences are seen as remains of erstwhile complex or larger sites and they therefore provide a broad indication of possible types of sites or structures that might be expected to occur or have occurred in the survey footprint.

Throughout the survey footprint no isolated finds were recorded.

### **7.2 Heritage sites**

One historical complex (Site 1) was recorded during the survey. The site is probably associated with early to mid 20<sup>th</sup> century tobacco farming in the region. The two tobacco dry furnaces have been partially stripped of their fittings (roofs, doors and windows). One structure was constructed first (built with sun-dried bricks) and the other furnace was probably constructed later (plastered with metal support rods) and were used to cure and dry tobacco leaves.

Also note that the water canal is part of the Crocodile River water supply scheme and do appear on maps dating to 1918. Construction of the project was finished in 1926. However, large sections of the canal have completely been rebuilt (several sections with new cement lining was observed within the survey area). As such it seems that most of the heritage value and significance of this aqueduct have been lost.

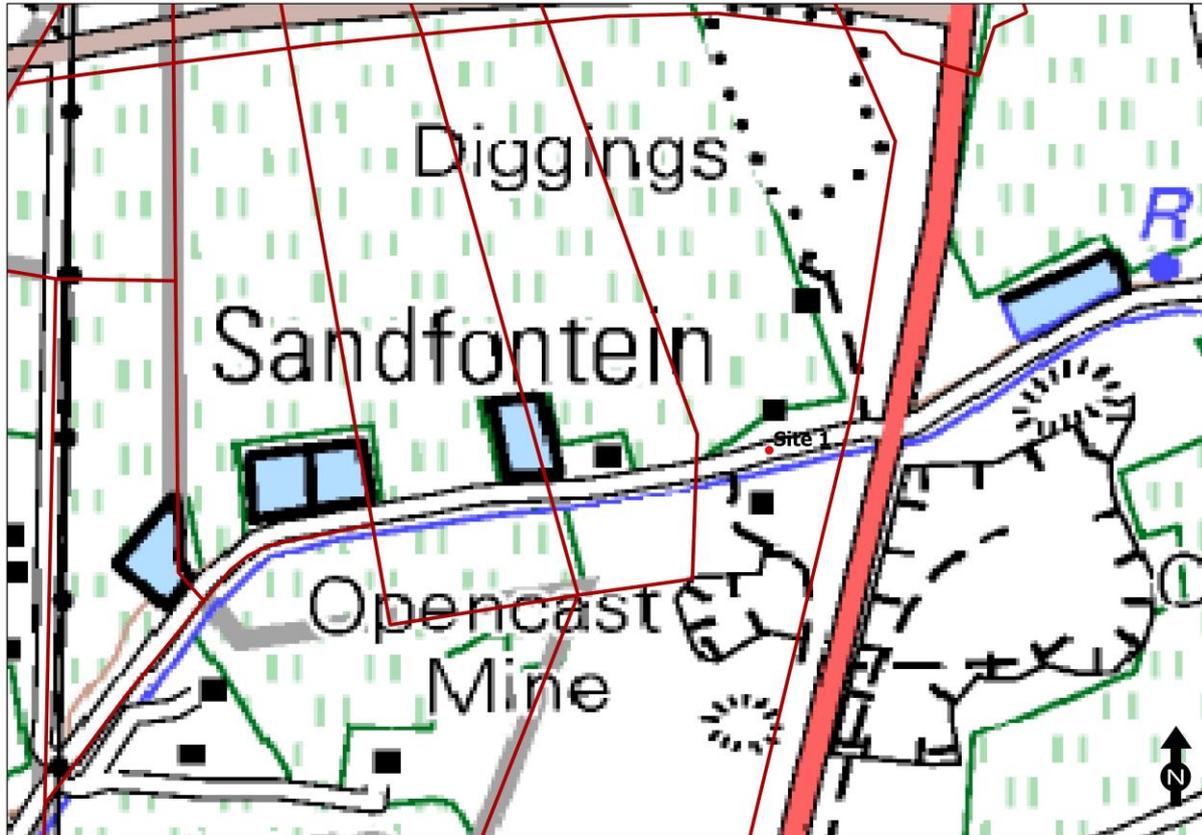


Figure 22: Location of the historic farmhouse complexes

## 8. Locations and Evaluation of Sites

Site No	Coordinates	Site Type	Field Rating of Significance	Impact	Proposed Mitigation
1	25.689201°S 27.781929°E	Historical tobacco curing furnaces	Generally Protected B Medium significance	None	<ul style="list-style-type: none"> <li>A buffer zone of 10 metres should be maintained</li> </ul>

Table 7: Location and evaluation of site

## 9. Management Measures

Heritage sites are fixed features in the environment, occurring within specific spatial confines. Any impact upon them is permanent and non-reversible. Those resources that cannot be avoided and that are directly impacted by the proposed development can be excavated/recorded and a management plan can be developed for future action. Those sites that are not impacted on can be written into the management plan, whence they can be avoided or cared for in the future.

### 9.1 Objectives

- Protection of archaeological, historical and any other site or land considered being of cultural value within the project boundary against vandalism, destruction and theft.
- The preservation and appropriate management of new discoveries in accordance with the NHRA, should these be discovered during construction activities

The following shall apply:

- Known sites should be clearly marked in order that they can be avoided during construction activities.
- The contractors and workers should be notified that archaeological sites might be exposed during the construction activities.
- Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer shall be notified as soon as possible;
- All discoveries shall be reported immediately to a heritage practitioner so that an investigation and evaluation of the finds can be made. Acting upon advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;
- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site; and
- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the NHRA (Act No. 25 of 1999), Section 51. (1).

## 9.2 Control

In order to achieve this, the following should be in place:

- A person or entity, e.g. the Environmental Control Officer, should be tasked to take responsibility for the heritage sites and should be held accountable for any damage.
- Known sites should be located and isolated, e.g. by fencing them off. All construction workers should be informed that these are no-go areas, unless accompanied by the individual or persons representing the Environmental Control Officer as identified above.
- In areas where the vegetation is threatening the heritage sites, e.g. growing trees pushing walls over, it should be removed, but only after permission for the methods proposed has been granted by SAHRA. A heritage official should be part of the team executing these measures.

## 10. Recommendations and Conclusions

A total of one historical complex (Site 1) was recorded during the survey. The site is probably associated with early to mid 20<sup>th</sup> century tobacco farming in the region. The two tobacco dry furnaces have been partially stripped of their fittings (roofs, doors and windows). One structure was constructed first (built with sun-dried bricks) and the other furnace was probably constructed later (plastered with metal support rods) and were used to cure and dry tobacco leaves.

No archaeological (both Stone Age and Iron Age) artefacts, assemblages, features, structures or settlements were recorded during the survey of the project footprint. It is well known that Late Iron Age stone-walled settlements do not usually occur in open low-lying grasslands. Especially black cottons soils with a high clay content.

<b>Nature:</b> Two historical tobacco curing furnaces (Site 1)		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Pre-construction &amp; Construction Phase</b>		
<i>Probability</i>	Very Improbable (1)	Very Improbable (1)

<i>Duration</i>	Very short term (1)	Very short term (1)
<i>Extent</i>	Limited to the site (1)	Limited to the site (1)
<i>Magnitude</i>	Small (0)	Small (0)
<b>Significance of Impact</b>	<b>2 (Low)</b>	<b>2 (Low)</b>
<i>Status (positive or negative)</i>	Neutral	Neutral
<b>Operational (Prospecting) Phase</b>		
<i>Probability</i>	Very Improbable (1)	Very Improbable (1)
<i>Duration</i>	Permanent (5)	Permanent (5)
<i>Extent</i>	Limited to the site (1)	Limited to the site (1)
<i>Magnitude</i>	Small (0)	Small (0)
<b>Significance of Impact</b>	<b>6 (Low)</b>	<b>6 (Low)</b>
<i>Status (positive or negative)</i>	Neutral	Neutral
<b>Reversibility</b>	Low	Low
<i>Irreplaceable loss of resources?</i>	None	None
<i>Cumulative impacts and indirect impacts</i>	Prospecting activities result in extensive heavy vehicle traffic, extraction of deposits, movements of heavy machinery which culminate in vibrations and dust. Blasting will also take place.	
<i>Can impacts be mitigated?</i>	Not required	

It is therefore recommended, from a cultural heritage perspective that the proposed prospecting activities may proceed.

Also, please note:

Archaeological deposits usually occur below ground level. Should archaeological artefacts or skeletal material be revealed in the area during development activities, such activities should be halted, and a university or museum notified in order for an investigation and evaluation of the find(s) to take place (*cf.* NHRA (Act No. 25 of 1999), Section 36 (6)).

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## Addendum 1: Archaeological and Historical Sequence

The table provides a general overview of the chronological sequence of the archaeological periods in South Africa.

PERIOD	APPROXIMATE DATES
Earlier Stone Age	more than 2 million years ago to >200 000 years ago
Middle Stone Age	<300 000 years ago to >20 000 years ago
Later Stone Age (Includes hunter-gatherer rock art)	<40 000 years ago up to historical times in certain areas
Early Iron Age	c. AD 200 - c. AD 900
Middle Iron Age	c. AD 900 – c. AD 1300
Late Iron Age (Stonewalled sites)	c. AD 1300 - c. AD 1840 (c. AD 1640 - c. AD 1840)

< = less than; > = greater than

### Archaeological Context

#### Stone Age Sequence

Concentrations of Early Stone Age (ESA) sites are usually present on the flood-plains of perennial rivers and may date to over 2 million years ago. These ESA open sites may contain scatters of stone tools and manufacturing debris and secondly, large concentrated deposits ranging from pebble tool choppers to core tools such as handaxes and cleavers. The earliest hominins who made these stone tools, probably not always actively hunted, instead relying on the opportunistic scavenging of meat from carnivore kill sites.

Middle Stone Age (MSA) sites also occur on flood plains, but are also associated with caves and rock shelters (overhangs). Sites usually consist of large concentrations of knapped stone flakes such as scrapers, points and blades and associated manufacturing debris. Tools may have been hafted but organic materials, such as those used in hafting, seldom preserve. Limited drive-hunting activities are also associated with this period.

Sites dating to the Later Stone Age (LSA) are better preserved in rock shelters, although open sites with scatters of mainly stone tools can occur. Well-protected deposits in shelters allow for stable conditions that result in the preservation of organic materials such as wood, bone, hearths, ostrich eggshell beads and even bedding material. By using San (Bushman) ethnographic data a better understanding of this period is possible. South African rock art is also associated with the LSA.

The following chronological sequence was recently established by prominent Stone Age archaeologists (Lombard et al 2012):

## Later Stone Age

- Age Range: recent to 20-40 thousand years ago
  - General characteristics: expect variability between assemblages, a wide range of formal tools, particularly scrapers (microlithic and macrolithic), backed artefacts, evidence of hafted stone and bone tools, borers, bored stones, upper and lower grindstones, grooved stones, ostrich eggshell (OES) beads and other ornaments, undecorated/decorated OES fragments, flasks/flask fragments, bone tools (sometimes with decoration), fishing equipment, rock art, and ceramics in the final phase.
- **Ceramic or Final Later Stone Age**
    - Generally < 2 thousand years ago
    - MIS 1
    - Contemporaneous with, and broadly similar to, final Later Stone Age, but includes ceramics
    - Economy may be associated with hunter-gatherers or herders

### Technological characteristics

- Stone tool assemblages are often microlithic
  - In some areas they are dominated by long end scrapers and few backed microliths; in others formal tools are absent or rare
  - Grindstones are common, ground stone artefacts, stone bowls and boat-shaped grinding grooves may occur
  - Includes grit- or grass-tempered pottery
  - Ceramics can be coarse, or well-fired and thin-walled; some times with lugs, spouts and conical bases; sometimes with decoration; sometimes shaped as bowls
  - Ochre is common
  - Ostrich eggshell (OES) is common
  - Metal objects, glass beads and glass artefacts also occur
- **Final Later Stone Age**
    - 100 – 4000 years ago
    - MIS 1
    - Hunter-gatherer economy

### Technological characteristics

- Much variability can be expected
- Variants include macrolithic (similar to Smithfield [Sampson 1974]) and/or microlithic (similar to Wilton) assemblages
- Assemblages are mostly informal (Smithfield)
- Often characterised by large untrimmed flakes (Smithfield)
- Sometimes microlithic with scrapers, blades and bladelets, backed tools and adzes (Wilton-like)
- Worked bone is common
- OES is common
- Ochre is common
- Iron objects are rare
- Ceramics are absent

- **Wilton**
  - 4000 – 8000 years ago
  - MIS 1
  - At some sites continues into the final Later Stone Age as regional variants (e.g. Wilton Large Rock Shelter and Cave James)

#### **Technological characteristics**

- Fully developed microlithic tradition with numerous formal tools
  - Highly standardised backed microliths and small convex scrapers (for definition of standardisation see Eerkens & Bettinger 2001)
  - OES is common
  - Ochre is common
  - Bone, shell and wooden artefacts occur
- **Oakhurst**
    - 7000 – 12 000 years ago
    - MIS 1
    - Includes Albany, Lockshoek and Kuruman as regional variants

#### **Technological characteristics**

- Flake based industry
  - Characterised by round, end, and D-shaped scrapers and adzes
  - Wide range of polished bone tools
  - Few or no microliths
- **Robberg**
    - 12 000 to 18 000 years ago
    - MIS 2

#### **Technological characteristics**

- Characterised by systematic bladelet (<26mm) production and the occurrence of outils ecailles or scaled pieces
  - Significant numbers of unretouched bladelets and bladelet cores
  - Few formal tools
  - Some sites have significant macrolithic elements
- **Early Late Stone Age**
    - 18 000 – 40 000 years ago
    - MIS 2-3
    - Informal designation
    - Also known as transitional MSA-LSA
    - Overlapping in time with final Middle Stone Age

#### **Technological Characteristics**

- Characterised by unstandardised, often microlithic, pieces and includes the bipolar technique

- Described at some sites, but not always clear whether assemblages represent a real archaeological phase or a mixture of LSA/MSA artefacts

### **Middle Stone Age**

- Age Range: 20 000 – 30 000 years ago
- General characteristics: Levallois or prepared core techniques (for definitions see Van Peer 1992; Boeda 1995; Pleurdeau 2005) occur in which triangular flakes with convergent dorsal scars, often with faceted striking platforms, are produced. Discoidal systems (for definition see Inizan et al. 1999) and intentional blade production from volumetric cores (for definition see Pleurdeau 2005) also occur; formal tools may include unifacially and bifacially retouched points, backed artefacts, scrapers, and denticulates (for definition see Bisson 2000); evidence of hafted tools; occasionally includes marine shell beads, bone points, engraved ochre nodules, engraved OES fragments, engraved bone fragments, and grindstones.
- In the sequence below we highlight differences or characteristics that may be used to refine interpretations depending on context.
- **Final Middle Stone Age**
  - 20 000 – 40 000 years ago
  - MIS 3
  - Informal designation partly based on the Sibudu sequence

### **Technological characteristics**

- Characterised by high regional variability that may include, e.g. bifacial tools, bifacially retouched points, hollow-based points
- Triangular flake and blade industries (similar to Strathalan and Melikane)
- Small bifacial and unifacial points (similar to Sibudu and Rose Cottage Cave)
- Sibudu point characteristics: short, stout, lighter in mass compared to points from the Sibudu technocomplex, but heavier than those from the Still Bay
- Can be microlithic
- Can include bipolar technology
- Could include backed geometric shapes such as segments, as well as side scrapers

### **Sibudu**

- 45 000 – 58 000 years ago
- MIS 3
- Previously published as informal late Middle Stone Age and post-Howieson's Poort at Sibudu
- Formerly known post-Howieson's Poort, MSA 3 generally, and MSA III at Klasies River

### **Technological characteristics**

- Most points are produced using Levallois technique
- Most formal retouch aimed at producing unifacial points
- Sibudu unifacial point (type fossil) characteristics: faceted platform; shape is somewhat elongated with a mean length of 43.9 mm), a mean breadth of 26.8 mm and mean thickness of 8.8 mm (L/B ratio 1.7); their mean mass is 11.8 g (Mohapi, 2012)
- Some plain butts

- Rare bifacially retouched points
- Some side scrapers are present
- Backed pieces are rare

- **Howieson's Poort**

- 58 000 – 66 000 years ago
- MIS 3-4

**Technological characteristics**

- Characterised by blade technology
- Includes small (<4 cm) backed tools, e.g. segments, scrapers, trapezes and backed blades
- Some denticulate blades
- Pointed forms are rare or absent

- **Still Bay**

- 70 000 – 77 000 years ago
- MIS 4-5a

**Technological characteristics**

- Characterised by thin (<10 mm), bifacially worked foliate or lanceolate points
- Semi-circular or wide-angled pointed butts
- Could include blades and finely serrated points (Lombard et al. 2010)

- **Pre-Still Bay**

- 72 000 – 96 000 years ago
- MIS 4-5

**Technological characteristics**

- Characteristics currently being determined / studied

- **Mossel Bay**

- 77 000 to —105 000 years ago
- MIS 5a-4
- Also known as MSA II at Klasies River or MSA 2b generally

**Technological characteristics**

- Characterised by recurrent unipolar Levallois point and blade reduction
- Products have straight profiles; percussion bulbs are prominent and often splintered or ring-cracked
- Formal retouch is infrequent and restricted to sharpening the tip or shaping the butt

- **Klasies River**

- 105 000 to —130 000 years ago
- MIS 5d-5e
- Also referred to as MSA I at Klasies River or MSA 2a generally

**Technological characteristics**

- Recurrent blade and convergent flake production

- End products are elongated and relatively thin, often with curved profiles
- Platforms are often small with diffused bulbs
- Low frequencies of retouch
- Denticulate pieces

- **Early Middle Stone Age**

- Suggested age MIS 6 to MIS 8 (130 000 to —300 000 years ago)
- Informal designation

**Technological characteristics**

- This phase needs future clarification regarding the designation of cultural material and sequencing
- Includes discoidal and Levallois flake technologies, blades from volumetric cores and a generalised toolkit

- **Earlier Stone Age**

- Age range: >200 000 to 2 000 000 years ago
- General characteristics: early stages include simple flakes struck from cobbles, core and pebble tools; later stages include intentionally shaped handaxes, cleavers and picks; final or transitional stages have tools that are smaller than the preceding stages and include large blades.
- In the sequence below we highlight differences or characteristics that may be used to refine interpretations depending on context.

- **ESA-MSA transition**

- 200 to —600 thousand years ago
- MIS 7-15

**Technological characteristics**

- Described at some sites as Fauresmith or Sangoan
- Relationships, descriptions, issues of mixing and ages yet to be clarified
- Fauresmith assemblages have large blades, points, Levallois technology, and the remaining ESA components have small bifaces
- The Sangoan contains small bifaces (<100 mm), picks, heavy and light-duty denticulated and notched scrapers
- The Sangoan is less well described than the Fauresmith

- **Acheulean**

- 300 thousand to —1.5 million years ago
- MIS 8-50

**Technological characteristics**

- Bifacially worked handaxes and cleavers, large flakes > 10 cm
- Some flakes with deliberate retouch, sometimes classified as scrapers
- Gives impression of being deliberately shaped, but could indicate result of knapping strategy
- Sometimes shows core preparation
- Generally found in disturbed open-air locations

- **Oldowan**
  - 1.5 to >2 million years ago
  - MIS 50-75

#### **Technological characteristics**

- Cobble, core or flake tools with little retouch and no flaking to predetermined patterns
- Hammerstones, manuports, cores
- Polished bone fragments/tools

### **Iron Age Sequence**

In the northern regions of South Africa at least three settlement phases have been distinguished for early prehistoric agropastoralist settlements during the **Early Iron Age** (EIA). Diagnostic pottery assemblages can be used to infer group identities and to trace movements across the landscape. The first phase of the Early Iron Age, known as **Happy Rest** (named after the site where the ceramics were first identified), is representative of the Western Stream of migrations, and dates to AD 400 - AD 600. The second phase of **Diamant** is dated to AD 600 - AD 900 and was first recognized at the eponymous site of Diamant in the western Waterberg. The third phase, characterised by herringbone-decorated pottery of the **Eiland** tradition, is regarded as the final expression of the Early Iron Age (EIA) and occurs over large parts of the North West Province, Northern Province, Gauteng and Mpumalanga. This phase has been dated to about AD 900 - AD 1200. These sites are usually located on low-lying spurs close to water.

The Late Iron Age (LIA) settlements are characterised by stone-walled enclosures situated on defensive hilltops c. AD 1640 - AD 1830). This occupation phase has been linked to the arrival of ancestral Northern Sotho, Tswana and Ndebele (Nguni-speakers) in the northern regions of South Africa with associated sites dating between the sixteenth and seventeenth centuries AD. The terminal LIA is represented by late 18th/early 19th century settlements with multichrome Moloko pottery commonly attributed to the Sotho-Tswana. These settlements can in many instances be correlated with oral traditions on population movements during which African farming communities sought refuge in mountainous regions during the processes of disruption in the northern interior of South Africa, resulting from the so-called difaqane (or mfecane).

By nature of the topography of the farm the archaeological sites are mostly situated on high laying plateau and foothills. All the stone walls are built with the dry-walling technique as no evidence was found that the surfaces were plastered with an agent (i.e. dagma (cattle dung mixed with mud)).

The Zwartkoppies Mountain range is well known for its high concentration of stone walled Late Iron Age settlements. Occupation is even traced back to the AD 1400s to a place in the area called Mabyanamatswana. On the farm Hoekfontein, situated to the west of the farm Klipfontein an archaeological impact assessment revealed an extensive Late Iron Age settlement. This investigation was prompted when multiple graves were exposed when excavations were done for a pipeline on the farm Hoekfontein.

## Ethno-historical Context

### *Difaqane (mfecane)*

The period of upheaval known as the Difaqane (Mfecane) had widespread implications for the northern interior of South Africa. Mzilikazi, one of the generals of King Shaka of the Zulu kingdom left KwaZulu-Natal in 1820 and took his Khumalo clan north-westward on a journey which changed the face of the South African interior. He first reached to Pedi people north of the Olifants and Steelpoort Rivers and took over their land. A year later and after a lengthy sojourn the group arrived at the slopes of the Magaliesberg Mountains in the Pretoria area in about 1827. Mzilikazi established two military kraal or capitals. The one was situated on the Apies River called enDinaneni which was situated north-west of Pretoria on the road to Hartebeespoort Dam and enKungweni which was built along the Daspoort range of hills.

His main residence was on the south side of Meintjieskop, but he later moved to the north of the Magaliesberg Mountains, to a place named emHlahlandlela. This aggressive occupation of the land forced the local Ndebele (Ndzundza) groups to scatter and hide in mountainous areas. Later during the 1830s Mzilikazi moved further west to establish a capital at Gabeni, north of Zeerust where he subjugated various Sotho Tswana groups in the area. His power was only challenged in 1837 by a combined Boer, Tswana and Griqua force. Mzilikazi later migrated into Zimbabwe and established his next capital, Bulawayo (Rasmussen 1977).

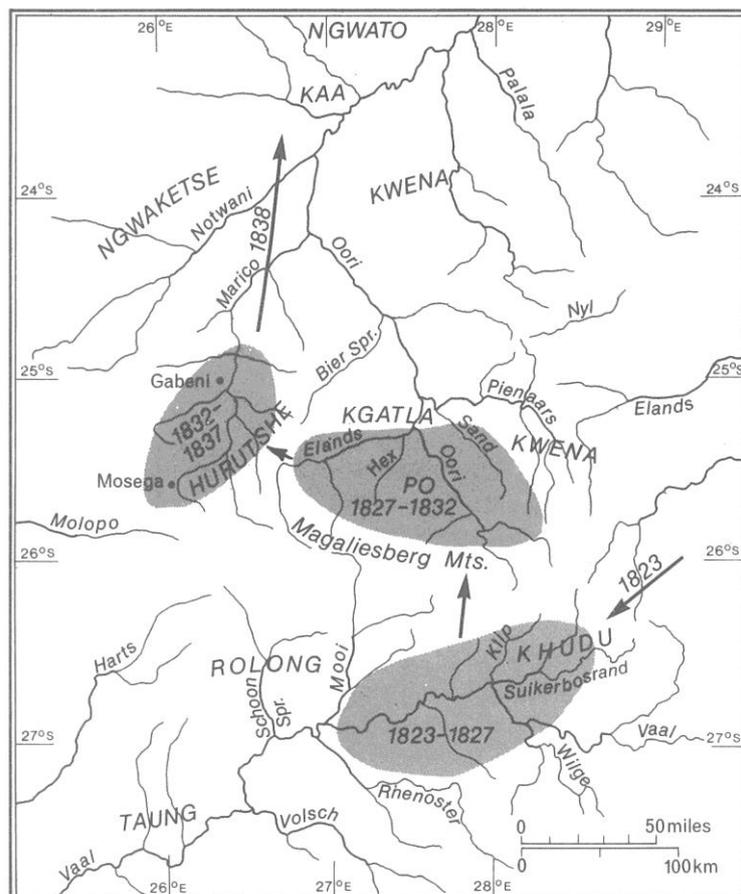


Figure 23: The location of the major spheres of influence of Mzilikazi from the early 1820s to late 1830s

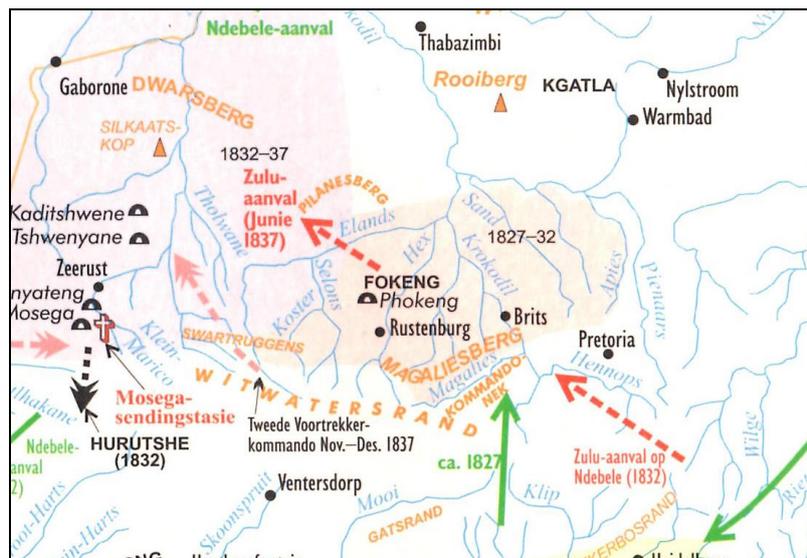


Figure 24: Movement of Mzilikazi's warriors relative to the survey area north of Brits (after Bergh 1998)

### *Tswana History*

The BaHurutshe – BaKwena – BaNgwaketse – BaNgwato Tswana groups have a very rich history and extensive genealogy of chiefs dating back to the AD 1400s. However, the aim of this report is to present a concise ethnohistorical framework for the Brits District with specific emphasis on the mountainous regions (known as Mabjanamatswana) situated between Zwartkoppies (Bon Accord Dam) and Pilanesberg. As such, only the relevant groups (and their history) are pertinent to this investigation.

### **Bakwena ba Mogopa**

The BaKwena consists of various subgroups of which the Mogopa (totem: crocodile) is only one. The earliest settlement recalled by the baMogopa is Rathateng (at the confluence of the Crocodile and Limpopo Rivers), from where they moved to Lokwadi (Zandriviervoort 747) during the 17<sup>th</sup> century AD. They later resettled at Phalane mountains. During the 18<sup>th</sup> century AD they moved to the Mabjanamatswana mountain range to the north-east of Brits. They resettled west of the Pienaars River at Mangwatladi only to return to Mabjanamatswana before the end of the 18<sup>th</sup> century AD. Here they lived at Gwate (Mamogaleslaagte) at the foot of Thaba ya Morena.

During the period known as the Difagane (AD 1830s), Mzilikazi and his armies entered and subdued the region. After the initial conflict the group scattered in various directions with the core moving to Botswana, where they remained until 1868. The baMogopa then returned to Mathare (north-east of Brits), Mantabole (Bethanie) and Makolokwe (Wolwekraal) where they reside until today.

The Bakwena ba Mogopa owned and settled on the following farms:

Berseba 503

Boschpoort 841

Karrepoort 623

Leeukop 501  
Leeuwpan 1047  
Losperfontein 119  
Pearl 395  
Waaikraal 206  
Wolwekraal 206  
Wonderkop 835  
Nooitgerdacht 908  
Bospoort 16  
Elandsfontein 20 & 21

Farms of the Hebron Section:

Kameelfontein 51  
Sjambok zynkraal 52  
Syferfontein 310  
Oskraal 437  
Uitvalgrond 376

Farms of the Jericho Section:

Palmietfontein 59  
Kaalzandbult 34  
Uitvalgrond 326

### **BaKgatla ba ga Mmakau**

According to ethnographic evidence the Bakgatla бага Mmakau, a Tswana-speaking group, settled at Gammakau in Sjambok's Location on the farm Hoekfontein 432JQ in the Odi District since the late 18<sup>th</sup> century AD. The farms Hoekfontein 432JQ and Klipfontein fall generally within the Bakgatla бага Mmakau's sphere of influence. The baMmakau (totem: blue monkey (kgabo)) is also a group that is associated with the Mabjanamatswana mountain range north-east of Brits.

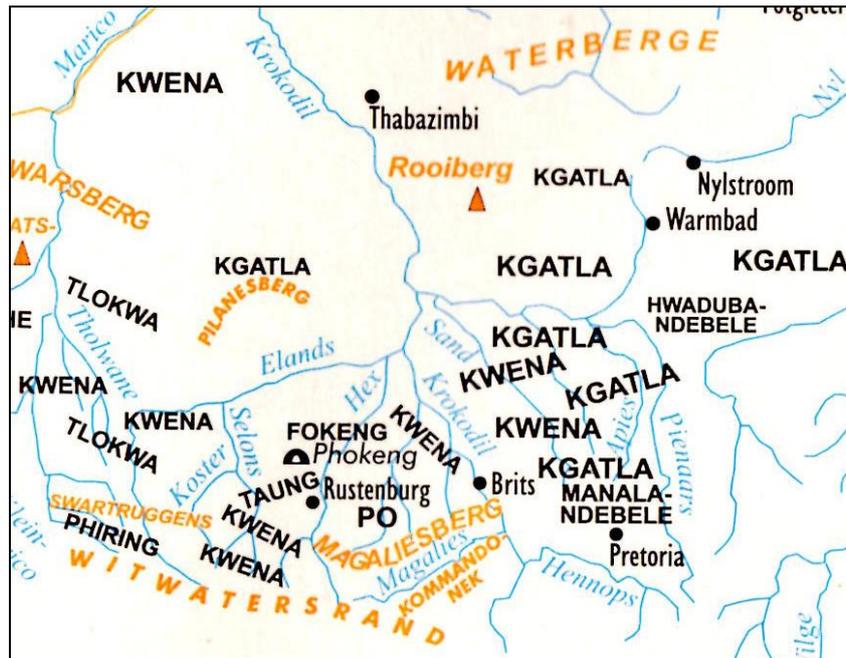


Figure 25: The various Tswana groups north of Brits that are relevant to this survey (after Bergh 1998)

### *Brits*

The town Brits was founded in 1924 on a farm owned by Gert Brits. Hekpoort and Skeerpoort were thriving farming communities and it is recorded that as early as 1840 Albertus Venter with his wife and daughter were already farming on the farm De Kroon, in the Brits area. Not long afterwards they were joined by the Fourie family and on 13 June 1846 the first white baby was born in the area north of the Magaliesberg. Fourie was to eventually buy Venter's farm and establish the first permanent homestead that was to become known as the "Ou Werf" In 1864 the armistice treaty for the Transvaal civil war signed beneath a Karee tree just to the south of Brits.

The Brits railway station, built on the property of Johan Nicolaas Brits part owner of the farm Roodekopjes, was opened on 9 July 1906 and soon entrepreneurs started setting up shops on the southern side of the station, which is today known as Tom Street, and is the major part of the Indian area of Brits called Pimindia.

Another significant event in the area was a speech by General Hertzog in 1912 at the nearby De Wildt railway station that led to the formation of the National Party a major player in the history of South Africa until the country's first totally democratic election in 1994.

Initially when post started arriving at Brits by train the station master was required to sort the mail until 1915, when Heydon Thomas was appointed as the first Postmaster of the little Post Office that was established on the Brits Station, and in due course the first telephone in the area was installed in this building.

By 1918 the first steam driven roller mill, built on the west side of the station, was in operation, and was to serve the community for years to come.

Sergeant Prinsloo commander of the first police station when it came into operation in 1921.

At the outset the area developed with no proper planning, having no running water, however after Louis Karovsky bought the part of Hendrik Christiaan Brits' farm to the north of the rail road and cut up the area into 940 stands, and this section was proclaimed as a township, in October 1923.

In 1923 the Hartbeespoort Dam, situated less than twenty kilometres south of Brits, on the Crocodile River finally opened, and by 1928 the last of the network of irrigation canals was completed, bringing water to large areas of farmland around Brits, which encouraged the cultivation of citrus, vegetables and grain, the mainstays of the present farming community.

Today with its strong industrial base the town plays an important role in the South African mining industry, as, addition to the large vanadium mine in the district, 94% of South Africa's platinum is produced in the Rustenburg and Brits districts, which together mine more platinum than any other single area in the world (Carruthers 2000).

## Addendum 2: Description of the Recorded Sites

A system for grading the significance of heritage sites was established by the NHRA (Act No. 25 of 1999) and further developed by the South African Heritage Resources Agency (SAHRA 2007) and has been approved by ASAPA for use in southern Africa and was utilised during this assessment.

### Site 1

<b>A. GENERAL SITE DESCRIPTION</b>				
<b>Site type</b>	Historical tobacco curing (Drying) furnace			
<b>Site Period</b>	Early to Mid 20 <sup>th</sup> century			
<b>Physical description</b>	<p>The site comprises two large double volume structures which probably functioned until recent times as furnaces to dry tobacco leaves. The southern structure was possibly built first as it was constructed with sun-dried bricks. The corrugated iron roof and some of the fitting (doors) have been removed. The second building is located on the northern side and was probably built later. It has been constructed with bricks and cement and the walls have been plastered. Iron rods fitted on the outside provide additional structural support. The corrugated iron roof with top vents (letting out hot air) is still in position. The double volume structure each has two rooms with wooden beams from which the tobacco leaves were suspended for drying.</p> <p>Each room is supplied with its own furnace and water supply. Each furnace is lined with special high temperature fire-resistant bricks. Curing and subsequent aging allow for the slow oxidation and degradation of carotenoids in the tobacco leaf. This produces various compounds in the tobacco leaves that give cured tobacco its sweet hay, tea, rose oil, or fruity aromatic flavour that contributes to the "smoothness" of the consumed product. Non-aged or low quality tobacco is often artificially flavoured with these otherwise naturally occurring compounds.</p>			
<b>Integrity of deposits or structures</b>	The structures are stable and should be preserved (refitting of one roof)			
<b>Site extent</b>	Both structures: 11 m x 5 m; over 6 metres in height			
<b>B. SITE EVALUATION</b>				
<b>B1. HERITAGE VALUE</b>			<b>Yes</b>	<b>No</b>
<b>Historic Value</b>				
It has importance to the community or pattern of South Africa's history or precolonial history.				X
It has strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa.				X
It has significance relating to the history of slavery in South Africa.				X
<b>Aesthetic Value</b>				
It has importance in exhibiting particular aesthetic characteristics valued by a particular community or cultural group.				X
<b>Scientific Value</b>				
It has potential to yield information that will contribute to an understanding of South Africa's natural and cultural heritage.			X	
It has importance in demonstrating a high degree of creative or technical achievement at a particular period.				X
It has importance to the wider understanding of the temporal change of cultural landscapes, settlement patterns and human occupation.			X	
<b>Social Value</b>				
It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (sense of place).				X
<b>Tourism Value</b>				
It has significance through its contribution towards the promotion of a local sociocultural identity and can be developed as tourist destination.				X
<b>Rarity Value</b>				

It possesses unique, uncommon, rare or endangered aspects of South Africa's natural or cultural heritage.				X
<b>Representative Value</b>				
It is importance in demonstrating the principle characteristics of a particular class of South Africa's natural or cultural places or objects.			X	
<b>B2. REGIONAL CONTEXT</b>				
Other similar sites in the regional landscape.				X
<b>C. SPHERE OF SIGNIFICANCE</b>		<b>High</b>	<b>Medium</b>	<b>Low</b>
International				X
National				X
Provincial				X
Local			X	
Specific community			X	
<b>D. FIELD REGISTER RATING</b>				
National/Grade 1 [should be registered, retained]				
Provincial/Grade 2 [should be registered, retained]				
Local/Grade 3A [should be registered, mitigation not advised]				
Local/Grade 3B [High significance; mitigation, partly retained]				
Generally Protected A [High/Medium significance, mitigation]				
Generally protected B [Medium significance, to be recorded]				X
Generally Protected C [Low significance, no further action]				
<b>E. GENERAL STATEMENT OF SITE SIGNIFICANCE</b>				
Low				
Medium				X
High				
<b>F. RATING OF POTENTIAL IMPACT OF DEVELOPMENT</b>				
None				X
Peripheral				
Destruction				
Uncertain				
<b>G. RECOMMENDED MITIGATION</b>				
<ul style="list-style-type: none"> <li>Maintain a buffer zone of 10 metres</li> </ul>				
<b>H. APPLICABLE LEGISLATION AND LEGAL REQUIREMENTS</b>				
<ul style="list-style-type: none"> <li>National Heritage Resources Act (Act No. 25 of 1999, Section 34)</li> </ul>				
<b>I. PHOTOGRAPHS</b>				
				

Figure 26: General view of northern façade of the tobacco curing furnaces



Figure 27: General view of fireplaces driving the larger furnace



Figure 28: Eastern facade of the tobacco curing furnaces

Addendum 3: Surveyor General Farm Diagram

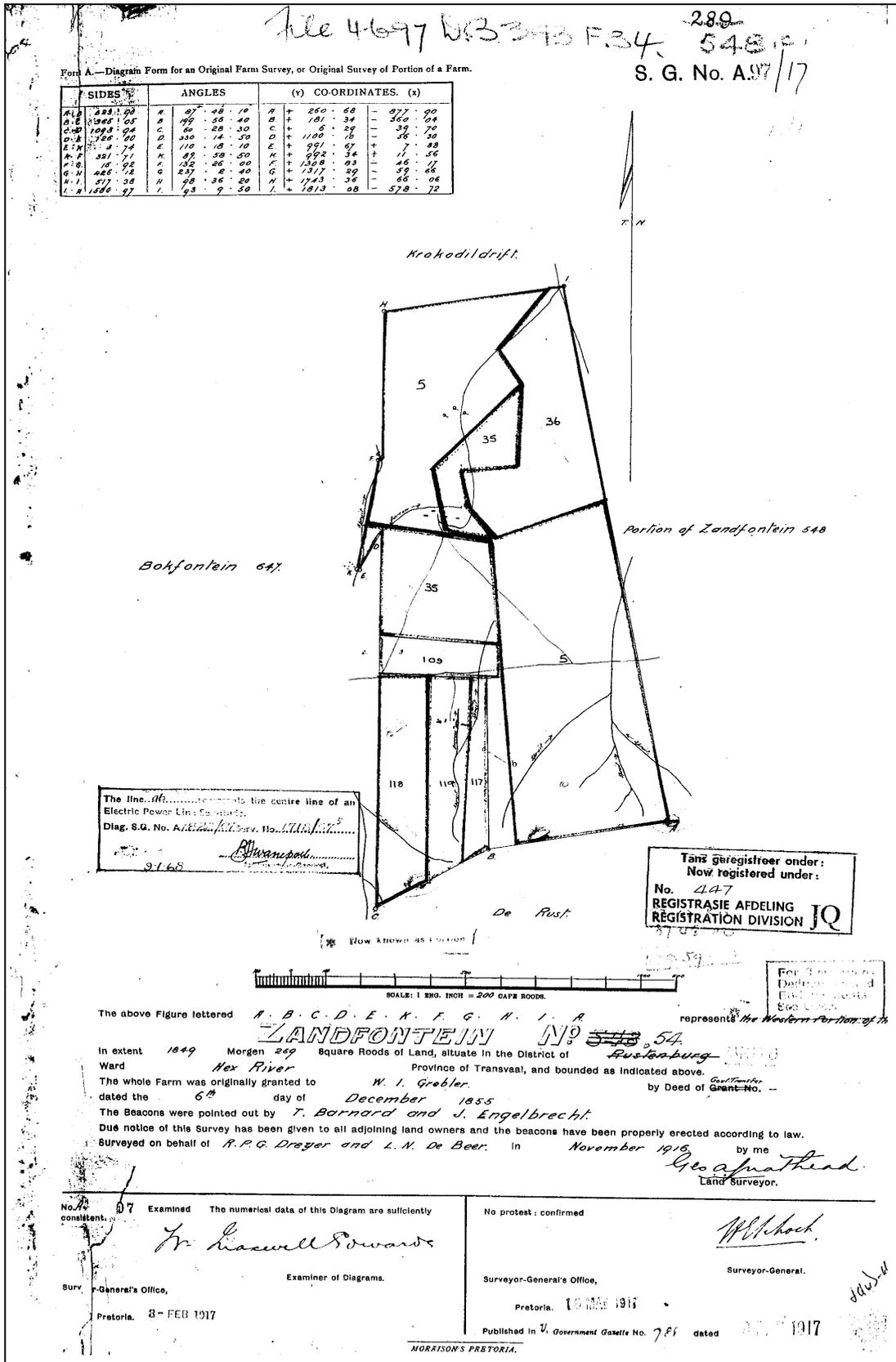


Figure 29: Surveyor General's sketch of the farm Zandfontein 447 JQ which was first surveyed in 1916

#### **Addendum 4: Relocation of Graves**

Marked graves younger than 60 years do not fall under the protection of the NHRA (Act No. 25 of 1999) with the result that exhumation, relocation and reburial can be conducted by an undertaker. This will include logistical aspects such as social consultation, purchasing of plots in cemeteries, procurement of coffins, etc. Other legislative measures which may be pertinent include the Removal of Graves and Dead Bodies Ordinance (Ordinance No. 7 of 1925), Regulations Relating to the Management of Human Remains (GNR 363 of 22 May 2013) made in terms of the National Health Act No. 61 of 2003, Ordinance on Exhumations (Ordinance No. 12 of 1980) as well as any local and regional provisions, laws and by-laws that may be in place.

Marked graves older than 60 years are protected by the NHRA (Act No. 25 of 1999) as a result an archaeologist must be in attendance to assist with the exhumation and documentation of the graves. Note that unmarked graves are by default regarded as older than 60 years and therefore also falls under the NHRA (Act No. 25 of 1999, Section 36).

The relocation of graves entails the following procedure:

- Notices of intent to relocate the graves must be put up at the burial site for a period of 60 days. This should contain contact information where communities and family members can register as interested and affected parties. All information pertaining to the identification of the graves must be documented for the application of a SAHRA permit. All notices must be in at least 3 languages, of which English is one. This is a requirement by law.
- These notices of intention must also be placed in at least two local newspapers and have the same information as above.
- Local radio stations can also be used to try contact family members. This is not required by law, but can be helpful.
- During this time (60 days) a suitable cemetery must be identified near to the development or otherwise one specified by the family of the deceased.
- An open day for family members should be arranged after the period of 60 days so that they can gather to discuss the way forward, and to sort out any problems. The developer needs to take the families requirements into account.
- Once the 60 days have passed and all the information from the family members have been received, a permit can be requested from SAHRA. This is a requirement by law.
- Once the permit has been issued, the graves may be exhumed and relocated.
- All headstones must be relocated with the graves as well as any remains and any additional objects found in the grave.

Information needed for the SAHRA permit application

- The permit application must be done by an archaeologist.
- A map of the area where the graves have been located.
- A survey report of the area prepared by an archaeologist.
- All the information on the families that have identified graves.
- A letter of permission from the landowner granting permission to the developer to exhume and relocate the graves.

- A letter (or proof of purchase of the plots) from the new cemetery confirming that the graves will be reburied there.
- Details of the farm name and number, magisterial district and GPS coordinates of the gravesite.

Graves are generally be classified into four categories. These are:

- Graves younger than 60 years;
- Graves older than 60 years, but younger than 100 years;
- Graves older than 100 years; and
- Graves of victims of conflict or of individuals of royal descent.