

# HERITAGE DESKTOP REPORT

**Proposed Welgedacht Coal Prospecting Right and Environmental Authorisation  
Application, Gauteng Province, South Africa**

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## EXECUTIVE SUMMARY

**Site name and location:** The proposed Welgedacht Prospecting Right (PR) Application covers an area of approximately 771 ha. The study area is located on Portions 5, 19, 20, 21, 22, 27, 33, 42, 43, 64, 65, 66, 67 and 76 of the farm Holfontein 71 IR and Portions 26 and 32 of the farm Welgedacht 74 IR, Gauteng Province.

**1: 50 000 Topographic Map:** 2628 AB & BA

**EIA Consultant:** Enviro Insight CC

**Developer:** Wozimart (Pty) Ltd

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

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**Date of Report:** 18 January 2019

### Findings of the Assessment:

The scope of work comprises a heritage desktop report for the Welgdacht prospecting right area. This report was conducted based on available archaeological and cultural heritage data to compile a background history of the study area. The study area is characterized by extensive cultivation that would have impacted on surface indicators of heritage resources and artefacts in the study area.

This study revealed that very few known heritage sites occur in the immediate vicinity of the study area but this can be attributed to a lack of research in the area rather than a hiatus of heritage sites in the area. The following conclusions can be made:

- Archaeological or historical sites that might occur within the proposed development area will have a Generally Protected B (GP. B) rating and all sites should be mitigatable and no red flags are identified.
- Graves are of high social significance and can be expected anywhere in the landscape and pose the biggest risk to the project.
- According to the SAHRIS Paleontological map the area is of high paleontological significance and it is recommended that a palaeontological assessment is conducted by a qualified palaeontologist.
- In order to comply with the National Heritage Resources Act (Act 25 of 1999) it is recommended that a Phase 1 Heritage Impact Assessment must be undertaken.

It is expected that identified impacts on heritage resources in this area can be mitigated to an acceptable level. From a heritage point of view the proposed project is considered to be viable and no fatal flaws are expected. This will be confirmed through a Heritage Impact Assessment.

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## ABBREVIATIONS

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

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

## GLOSSARY

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

Early Stone Age (2 million to 300 000 years ago)

Middle Stone Age (300 000 to 30 000 years ago)

Late Stone Age (30 000 years ago until recent)

Historic (approximately AD 1840 to 1950)

Historic building (over 60 years old)

Lithics: Stone Age artefacts

## 1. INTRODUCTION

Heritage Contracts and Archaeological Consulting CC was contracted by Enviro Insight CC to conduct a Heritage study for the proposed Welgedacht PR. The study area is located on Portions 5, 19, 20, 21, 22, 27, 33, 42, 43, 64, 65, 66, 67 and 76 of the farm Holfontein 71 IR and Portions 26 and 32 of the farm Welgedacht 74 IR, north-east of Springs, Gauteng Province (Figure 1 & 2). The heritage desktop report is conducted as part of the BA process for the proposed project.

The aim of the report is to identify possible heritage resources within the project area and to assess their importance within a Local, Provincial and National context. The study furthermore aims to assess the impact of the proposed project on non - renewable heritage resources and to submit appropriate recommendations with regards to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve and develop them within the framework provided by Heritage legislation.

The report outlines the approach and methodology utilized for the desktop phase of the project. The report includes information collected from various sources outlined under section 2 of this report. Possible impacts are identified and mitigation measures are proposed in the following report.

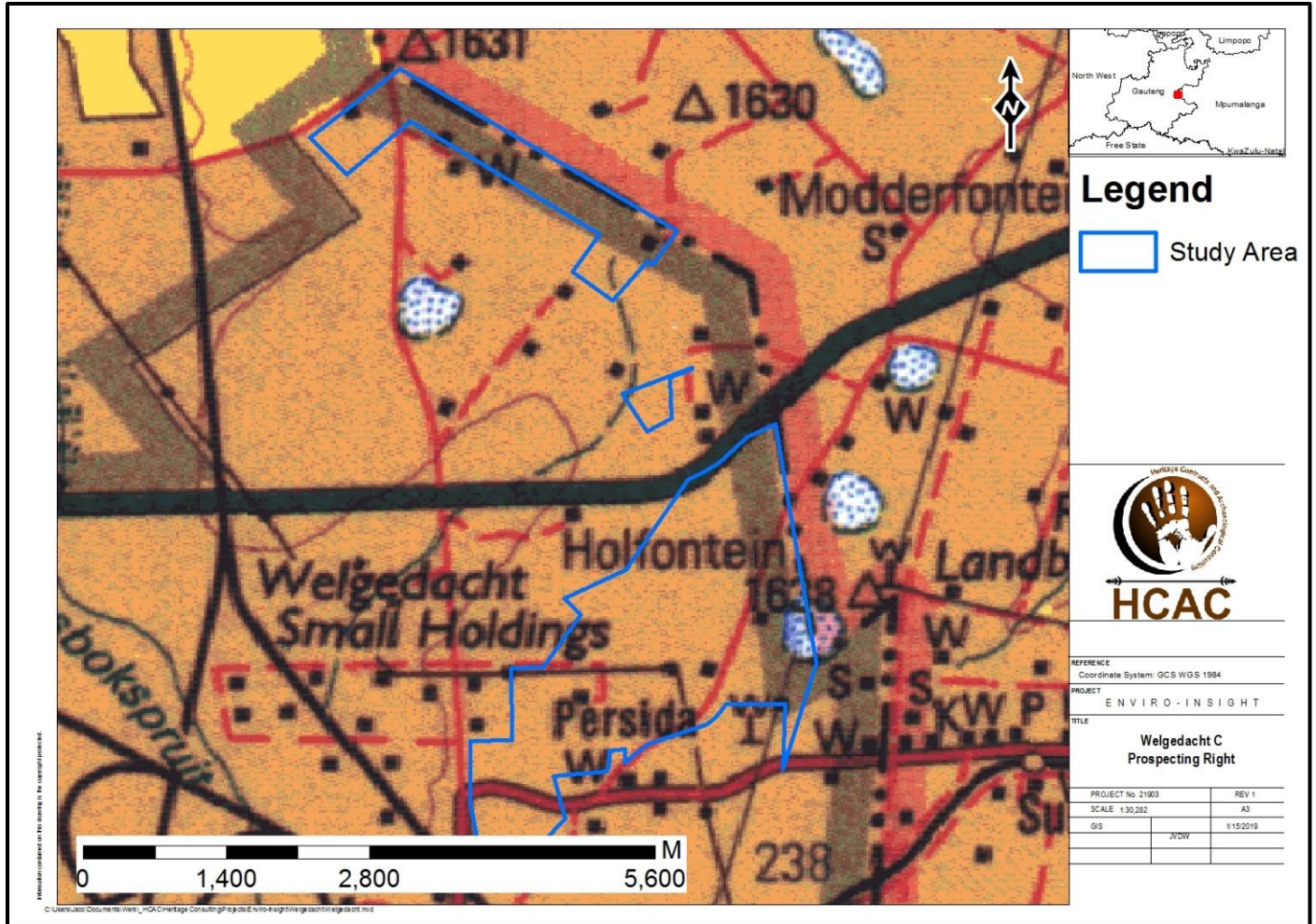


Figure 1. Regional locality map of the study area.

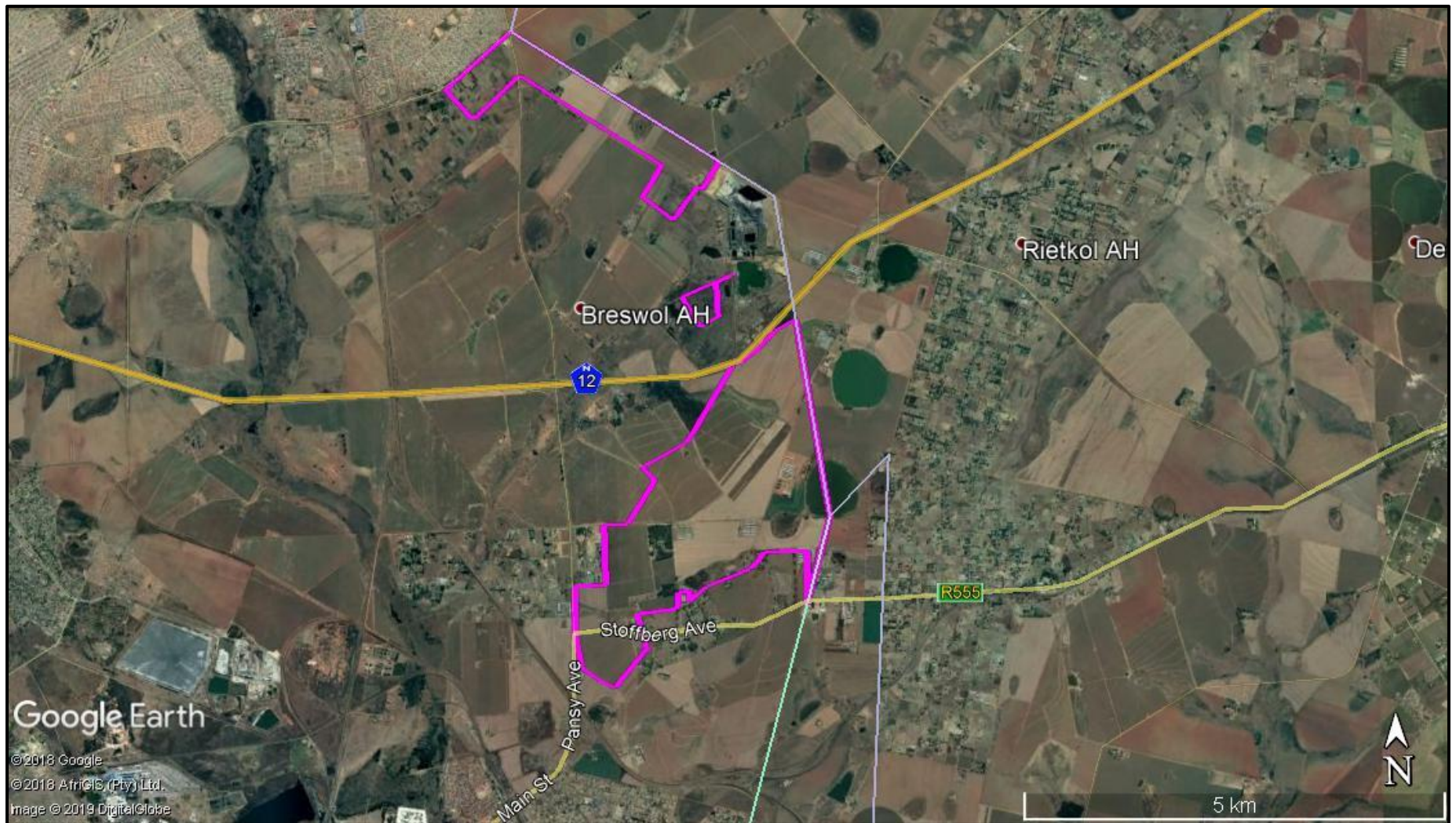


Figure 2. Google Earth Image indicating the study area.

## 1.2 Terms of Reference

The main aim of this report is to determine if any known heritage resources occur within the study area and to predict the occurrence of any possible heritage significant sites that might present a fatal flaw to the proposed project. The objectives of the report were to:

- » Conduct a desktop study:
  - \* Review available literature, previous heritage studies and other relevant information sources to obtain a thorough understanding of the archaeological and cultural heritage conditions of the area;
  - \* Gather data and compile a background history of the area;
  - \* Identify known and recorded archaeological and cultural sites;
  - \* Determine whether the area is renowned for any cultural and heritage resources, such as Stone Age sites, Iron Age sites, informal graveyards or historical homesteads.
  
- » Report

The reporting for the desk-based component is based on the results and findings of the study, wherein potential issues associated with the proposed project will be identified, and those issues requiring further investigation through the IA Phase highlighted. Reporting will aim to identify the anticipated impacts, as well as cumulative impacts, of the operational units of the proposed project activity on the identified heritage resources for all 3 development stages of the project, i.e. construction, operation and decommissioning. Reporting will also consider alternatives should any significant sites be impacted on by the proposed project. This is done to assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve and develop them within the framework provided by Heritage Legislation.

## 1.3 Nature of the development

The project comprises an application for a prospecting right and proposed activities include drilling.

### **Description of planned non-invasive activities:**

Desktop studies to be undertaken over the area would include studying of all available geological maps/plans, aerial photographs, topography maps and any other related geological information about this area. Upon completion of the desktop study, field geological mapping of the area will be conducted, and if necessary, a ground magnetic geophysical survey to locate the occurrence of any dolerite sills/dykes that may be present in the area.

### **Description of planned invasive activities:**

This Prospecting Work Program is designed to establish the extent of the area of the coal deposit, and all available geological information will be utilized to calculate the in-situ Coal Resource and the economic viability of the Project. **Diamond Core Exploration Drilling** is selected as the primary means of exploration as it provides accurate information on the depth and thickness of the coal seams, the quality and physical properties of the Resource, composition and thickness of the overburden and aid in interpreting possible fault blocks.

These holes will be drilled in strategic locations to fill the gaps and confirm existing borehole data and information derived from the ground magnetic field survey.

Based on the extent of the area, 84 TNW (75mm diameter) diamond core drill holes are planned to be drilled in order to increase the geological accuracy of the Resource modelling to inferred, of which some area may be measured. Please note that practical and geological considerations may however reduce the number of planned boreholes and subsequent budget substantially.

The average depth of these boreholes is expected to vary between 130m and 170m, and will be sealed with a cement plug to one meter below surface upon completion to make it safe for people and animals and allow future access by the exploration team. The drill rigs are truck-mounted and equipped with diesel driven engines to provide power to drill. Water for the drilling process is provided by a truck fitted with a water tank.

The recovered core is geologically described and the coal sampled to be analysed at an accredited laboratory to determine the quality of the coal based on proximate analysis, and where required, based on a wash analysis.

Should additional information be required, **Large Diameter Percussion Drilling** will be done where drill chips/rock fragments are blown out of the top of the hole and collected at 1m intervals and arranged to allow continuous detailed lithological descriptions of the stratigraphic horizons.

Subsequent **Downhole Geophysical Surveying** is done at every completed borehole to produce a number of profiles reflecting rock strength, coal qualities and structural features for the total length of the borehole. A range of specialized geo-physical tools are lowered into the open borehole to record various physical and lithological characteristics of the rock mass and transmitted digitally via a cable to a computer on the surface. A single truck is used which contains all equipment including a mobile generator.

#### 1.4 The receiving environment

The PR and EA applications will include Portions 5, 19, 20, 21, 22, 27, 33, 42, 43, 64, 65, 66, 67 and 76 of the farm Holfontein 71 IR and Portions 26 and 32 of the farm Welgedacht 74 IR, Gauteng Province. The study area is located in a rural setting where current land use consists of agriculture. The site is bordered by Pansy Avenue to the West, Stofberg Avenue to the South, Laris Street to the North and the N12 running between the mentioned farm portions. Mandela Park borders the study area to the North, Holfontein to the East, Persida to the South, and Welgedacht SH to the West

The topography of the area is relatively flat and mostly cultivated and this would have impacted on surface indicators of heritage resources.

## **2. APPROACH AND METHODOLOGY**

The assessment is to be undertaken in two phases, a desktop study and a field-based Heritage Impact Assessment. This report concerns the desk-based assessment. The aim of the study is to cover archaeological and cultural heritage data available to compile a background history of the study area. In order to identify possible heritage issues or fatal flaws that should be avoided during development.

This was accomplished by means of the following phases (the results are represented in section 4 of this report):

### **2.1 Literature search**

A literature search was conducted utilising data from published articles on the archaeology and history of the area. The aim of this is to extract data and information on the area in question, looking at archaeological sites, historical sites and graves of the area.

### **2.2 Information collection**

The SAHRA report mapping project (Version 1.0) and SAHRIS was consulted to further collect data from CRM practitioners who undertook work in the area to provide the most comprehensive account of the history of the area where possible.

### **2.3 Public consultation**

A full public consultation process will be facilitated by Enviro Insight

### **2.4 Google Earth and mapping survey**

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

### **2.5 Genealogical Society of South Africa**

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



### 3. LEGISLATION

For this project the National Heritage Resources Act, 1999 (Act No. 25 of 1999) is of importance and the following sites and features are protected:

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

The national estate that includes the following:

- 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 features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Archaeological and palaeontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

Section 34 (1) of the act deals with structures which is older than 60 years. Section 35(4) of this act deals with archaeology, palaeontology and meteorites. Section 36(3) of the National Heritage Resources Act, deals with human remains older than 60 years. Unidentified/unknown graves are also handled as older than 60 until proven otherwise.

### 3.1 Heritage Site Significance and Mitigation Measures

The presence and distribution of heritage resources define a Heritage Landscape. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface.

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. National and Provincial Monuments are recognised for conservation purposes. The following interrelated criteria were used to establish site significance:

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

The criteria above will be used to place identified sites with in SAHRA's (2006) system of grading of places and objects which form part of the national estate. This system is approved by ASAPA for the SADC region. The recommendations for each site should be read in conjunction with section 10 of this report.

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

## 4. REGIONAL OVERVIEW

### 4.1 General Information

#### 4.1.1. Literature search

Few heritage studies were conducted in the immediate vicinity of the study area (SAHRA report mapping project V1.0 and SAHRIS). Studies consulted for this study include

Author	Year	Project	Findings
Pelser, A.	2015	Baseline Study & Heritage Assessment Report For The Proposed Gold One International Holfontein Project, Near Springs, Gauteng	Historical gold mining features
Hemming, M	2013	Motivation for Exemption from Heritage Assessment: 24G Application for Rectification, Holfontein Stockpile	No features

#### 4.1 2. Public consultation

A public participation process is facilitated by Enviro Insight CC as per the Basic Assessment process.

#### 4.1.3. Google Earth and mapping survey

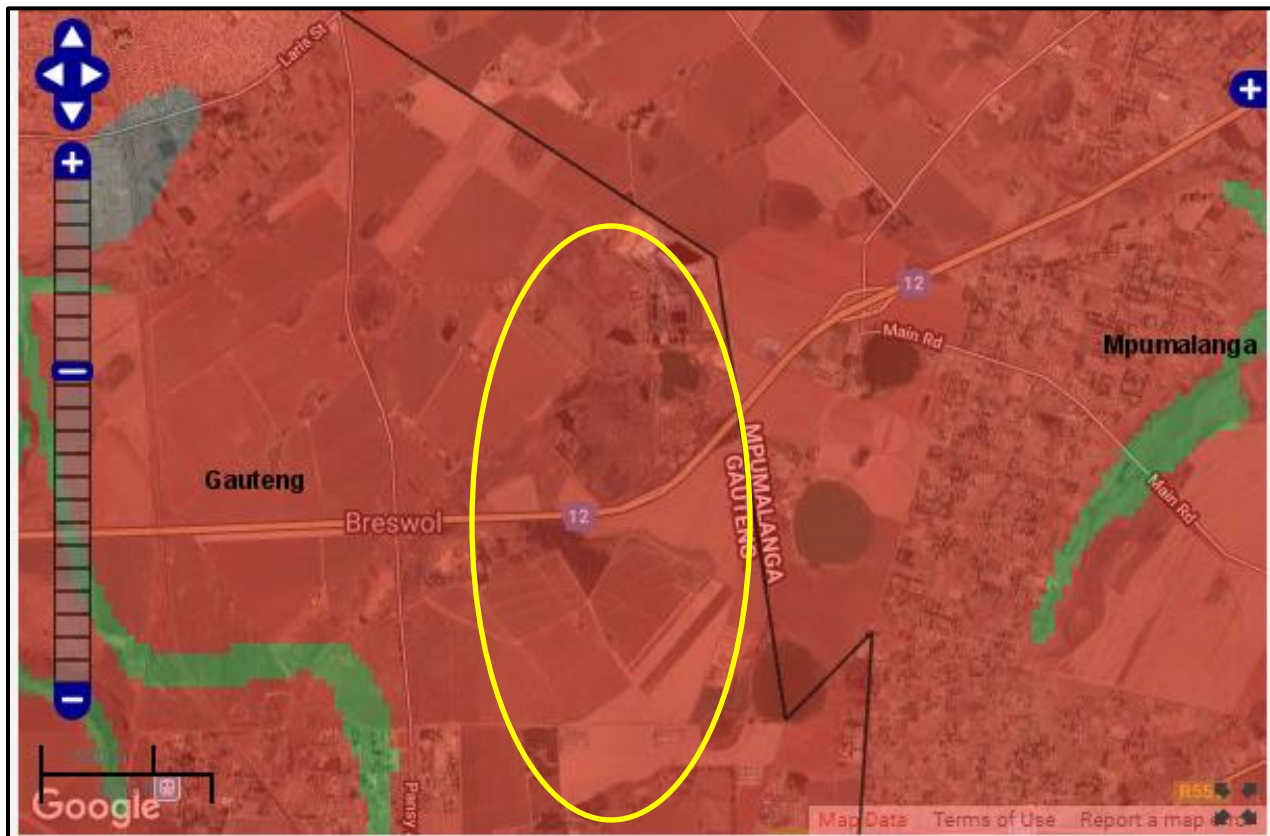
Google Earth and 1:50 000 maps of the area was utilised to identify possible places where archaeological sites might be located.

#### 4.1.4. Genealogical Society of South Africa

No grave sites are indicated within the study area.

### 4. 2. Palaeontology

According to the SAHRIS Paleontological map the area is of high paleontological significance and it is recommended that a palaeontological study should be conducted by a qualified palaeontologist.



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	These areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

Figure 3. Palaeontological sensitivity map with the approximate location of the study area (yellow polygon).

### 4.3 Archaeological and Historical Information Available on the Study Area

The Stone Age can be divided in three main phases as follows;

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

Although there are no well-known Stone Age sites located on or around the study area there is evidence of the use of the larger area by Stone Age communities for example along the Kliprivier where ESA and MSA tools were recorded. LSA material is recorded along ridges to the south of the current study area (Huffman 2008). Petroglyphs occur at Redan as well as along the Vaal River (Berg 1999).

Extensive Stone walled sites are recorded at Klipriviers Berg Nature reserve 20 km to the south west belonging to the Late Iron Age period. A large body of research is available on this area. These sites (Taylor's Type N, Mason's Class 2 & 5) are now collectively referred to as Klipriviersberg (Huffman 2007).

These settlements are complex in that aggregated settlements are common, the outer wall sometimes includes scallops to mark back courtyards, there are more small stock kraals, and straight walls separate households in the residential zone. These sites dates to the 18th and 19th centuries and was built by people in the Fokeng cluster.

In this area the Klipriviersberg walling would have ended at about AD 1823, when Mzilikazi entered the area (Rasmussen 1978). This settlement type may have lasted longer in other areas because of the positive interaction between Fokeng and Mzilikazi.

J. S. Bergh's historical atlas of the four northern provinces of South Africa is a very useful source for researching local and regional history. This source serves as a helpful tool in plotting where certain events had taken place in the past.

In Southern Africa the domestication of the environment began only a couple of thousands of years ago, when agriculture and herding were introduced. At some time during the last half of the first millennium BC, people living in the region where Botswana, Zambia and Angola are today, started moving southward, until they reached the Highveld and the Cape in the area of modern South Africa. Over the centuries, as the sub-continent became fully settled, these agro-pastoralists, who spoke Bantu languages, started dominating all those areas which were ecologically suitable for their way of life. This included roughly the eastern half of modern South Africa, the eastern fringe of Botswana and the north of Namibia. There are no signs that Stone Age or Iron Age communities had been active in the modern-day Springs area in the past, and at the beginning of the 19<sup>th</sup> century no prominent black tribe had settled in this area yet. This would soon change. The Difaqane (Sotho), or Mfekane ("the crushing" in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820's until the late 1830's. It came about in response to heightened competition for land and trade, and caused population groups like gun-carrying Griquas and Shaka's Zulus to attack other tribes. By 1827 Mzilikazi's Ndebele were moving through the area where Johannesburg is located today. This group went on raids to various other areas in order to expand their area of influence.

By 1832 Zulu raiders however travelled close by the Springs area to attack the Ndebele tribe (Ross 1995: 6, 7; Packard 2001: 594; Bergh 1999: 4-8, 10, 11, 14, 116-119). During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some travellers, missionaries and adventurers had gone on expeditions to the northern areas in South Africa, some already as early as the 1720's. One Hume travelled through the area north of Springs in 1830, but it does not seem that any of the early travellers visited this specific area (Bergh 1999: 13).

It was only by the late 1820's that a mass-movement of Dutch speaking people in the Cape Colony started advancing into the northern areas. This was due to feelings of mounting dissatisfaction caused by economical and other circumstances in the Cape. This movement later became known as the Great Trek. This migration resulted in a massive increase in the extent of that proportion of modern South Africa dominated by people of European descent. Between 1839 and 1840, farm boundaries were drawn up in an area that includes the present-day Springs. As can be expected, the migration of whites into the northern provinces would have a significant impact on the black people who populated the land (Ross 2002: 39; Bergh 1999: 15).

The area of interest for this report is located approximately 30 kilometers east of Johannesburg, in a region formerly known as the Far East Rand, within the larger Witwatersrand gold mining area. The first gold discovered in this part of the Witwatersrand was on the farm Varkensfontein in 1888, only two years after gold was first discovered in the Witwatersrand. The discovery of diamonds and gold in the northern provinces had very important consequences for South Africa. After the discovery of these resources, the British, who at the time had colonized the Cape and Natal, had intentions of expanding their territory into the northern Boer republics. This eventually led to the Anglo-Boer War, which took place between 1899 and 1902 in South Africa, and which was one of the most turbulent times in South Africa's history (Till 1992: 1).

The situation in the Witwatersrand also served as a trigger for the commencement of the Anglo-Boer War. The rush of *uitlanders* (foreigners) that followed the discovery of gold in the Witwatersrand, and the resultant fear of the Afrikaners of being overwhelmed, caused President Kruger to resist the granting of the franchise to incomers. Increased resentment towards Kruger fuelled Cecil Rhodes' plot to oust Kruger's government. At the outbreak of the war in October 1899, Johannesburg provided a commando under Commandant B. J. Viljoen, whilst the *uitlanders* left for Lourenco Marques to join the British troops at Durban. To the south of the Magaliesberg range, between Johannesburg and Mafeking, stands the Witwatersrand range of hills. These hills were skilfully exploited by Boers during the guerrilla phase of the war, and especially by Assistant Commandant-general Koos de la Rey and Chief-commandant Christiaan de Wet (Marix Evans 2000: 128-129, 163).

Some skirmishes were recorded near Springs. The Johannesburg Mounted Rifles British corps was founded in December 1900, and the greater portion of these troops was stationed in the Springs district in the early part of 1901. Here the Boer enemy was always in the vicinity, and opportunities for confrontation often came up. On 17 January 1901, Lieutenant S. A. Anderson and Captain D. W. Talbot ambushed Boer troops near Springs. (Angloboerwar.com 1999)

By the late 1940s mining was booming on the East Rand. There were 22 mines in operation working the Main and Kimberley reefs from more than 90 shafts. The area's prosperity however did not last; during the 1950's and 1960's many of the mines closed because their ore reserves had become depleted. The mines that stayed in operation started to mine their second reef low grade ore because the high-grade ore had been depleted. By 1992 only four operating mines were left in the East Rand.

#### 4.4 Historical Maps of the study area

The site under investigation is located to the north and south of the N12, about eight kilometres north east of Springs in Gauteng Province.



Figure 4. 1957-1965 Topographical map of the site under investigation. The approximate study area is indicated with yellow borders. The sites under investigation were located on the farms Holfontein 71 IR and Welgedacht 74 IR. Northern site: Secondary roads can be seen along the north western and southern borders of this site, and the entire area was used as cultivated lands. Other developments on the property included a dam, a chicken farm with various buildings and a windmill, as well as a traditional hut / kraal and four other settlement sites with between two and three buildings. Small, central site: A section of cultivated land and two graves are visible. The Lusthof Dam can be seen to the west of the site. Southern site: A number of secondary roads went through the area, and almost the entire property was used as cultivated lands.. Other developments included two dams, some individual buildings and huts at various locations, a power line, an excavation site and two graves. (Topographical Map 1957; Topographical Map 1965)

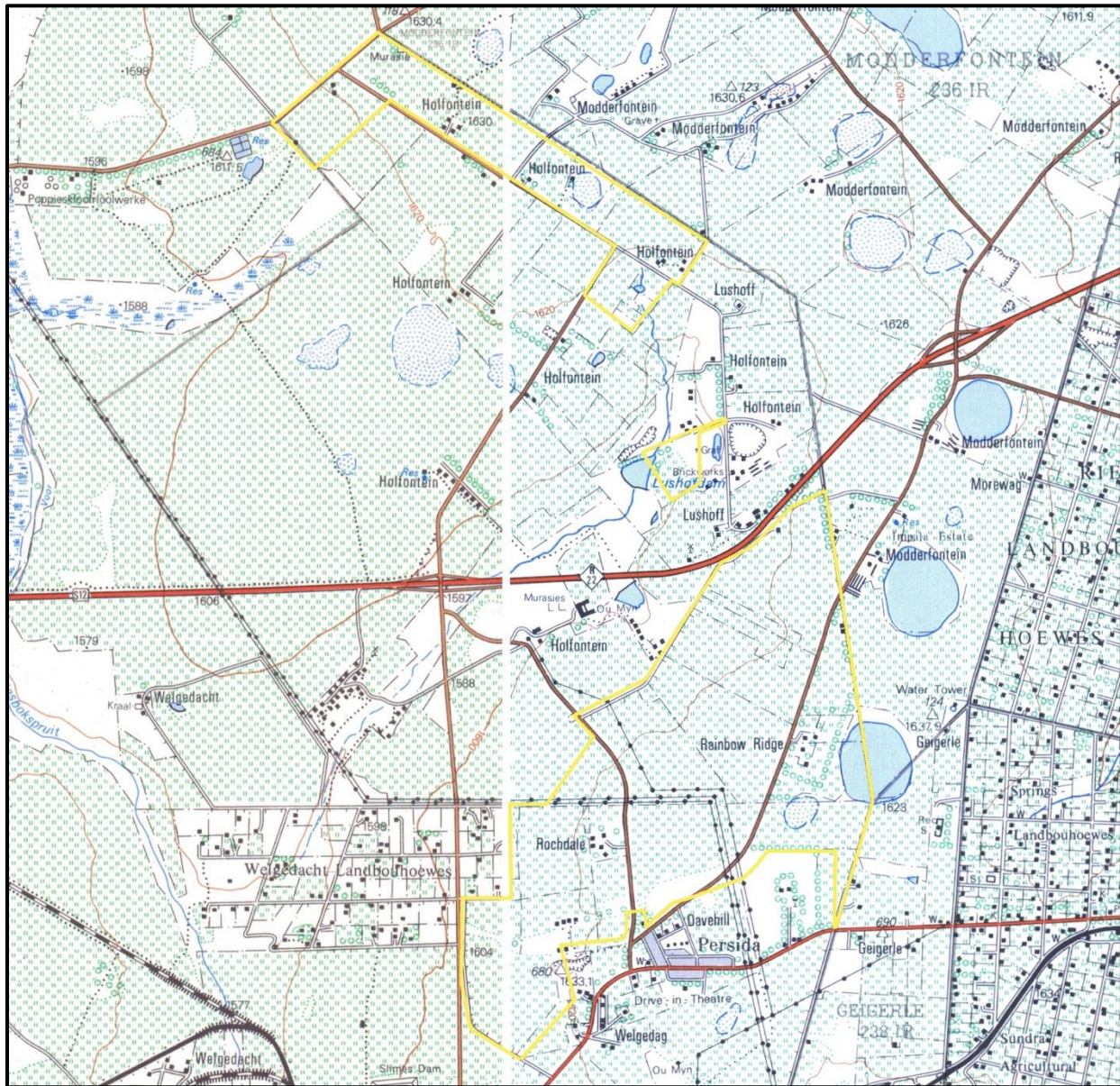


Figure 5. 1976-1977 Topographical map of the site under investigation. The approximate study area is indicated with a yellow border. The sites under investigation were located on the farms Holfontein 71 IR and Welgedacht 74 IR. Northern site: Secondary roads can be seen along the north western and southern borders of this site, and the entire area was used as cultivated lands. Other developments on the property included two dams, a ruin, as well as six settlement sites with between one and four buildings. Small, central site: A section of cultivated land and a grave are visible. The Lusthof Dam can be seen to the west of the site, and a brickworks was located close by. Southern site: A number of secondary roads went through the area, and almost the entire property was used as cultivated lands. Other developments included two dams, six sites with between one and five buildings, an excavation site and three power lines. (Topographical Map 1976; Topographical Map 1977)



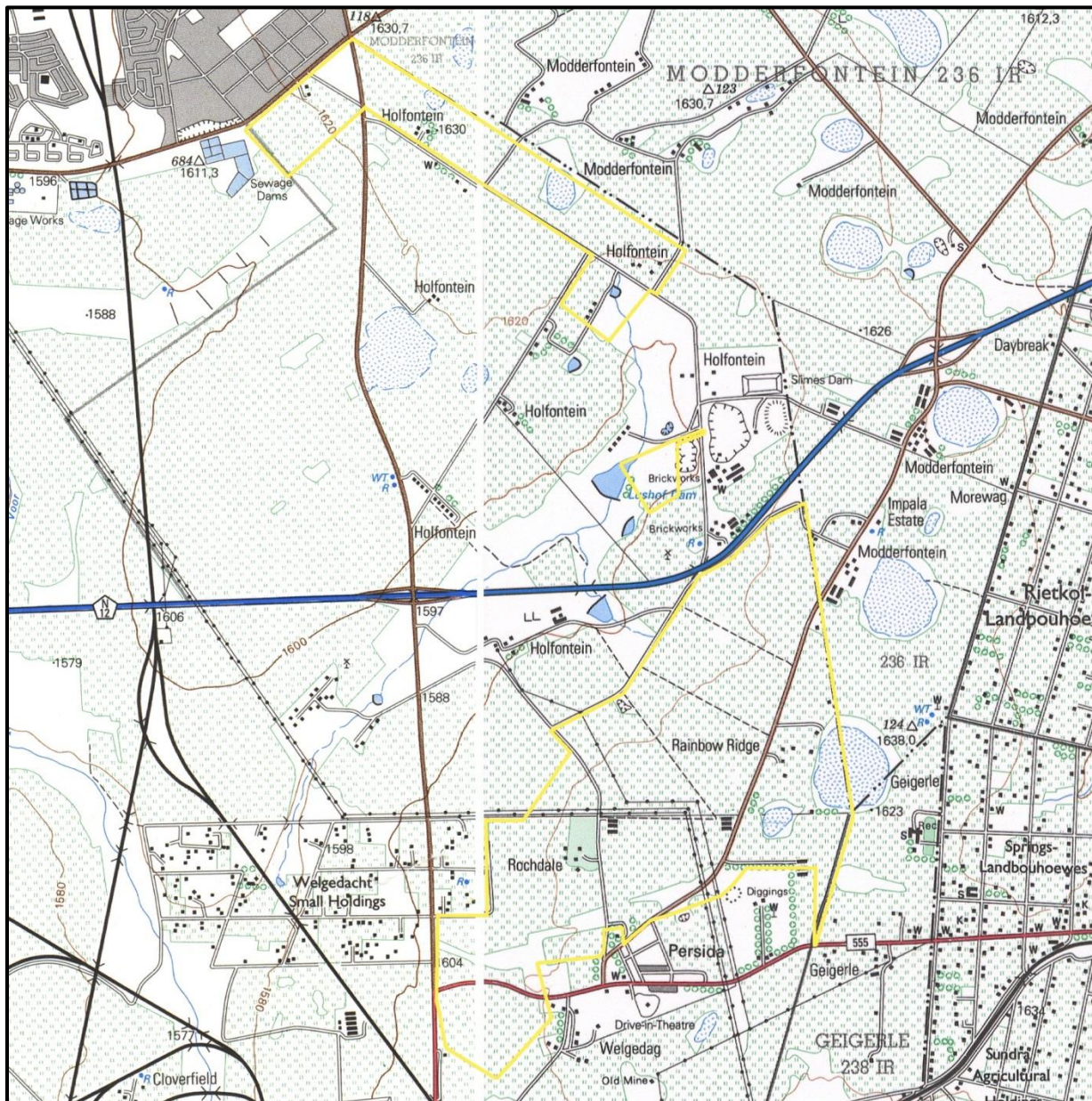


Figure 6. 1995 Topographical map of the site under investigation. The approximate study area is indicated with a yellow border. The sites under investigation were located on the farms Holfontein 71 IR and Welgedacht 74 IR. Northern site: Secondary roads can be seen in the north western part of this site, and almost the entire area was used as cultivated lands. Other developments on the property included three dams, as well as four settlement sites with between two and four buildings. Small, central site: A section of cultivated land is visible. The Lusthof Dam can be seen in the western part of the site, and an excavation site (part of a brickworks) is visible to the east. Southern site: A number of secondary roads and a main road went through the area, and almost the entire property was used as cultivated lands. Other developments included two dams, several sites with between one and six buildings, an excavation site and three power lines. (Topographical Map 1995)

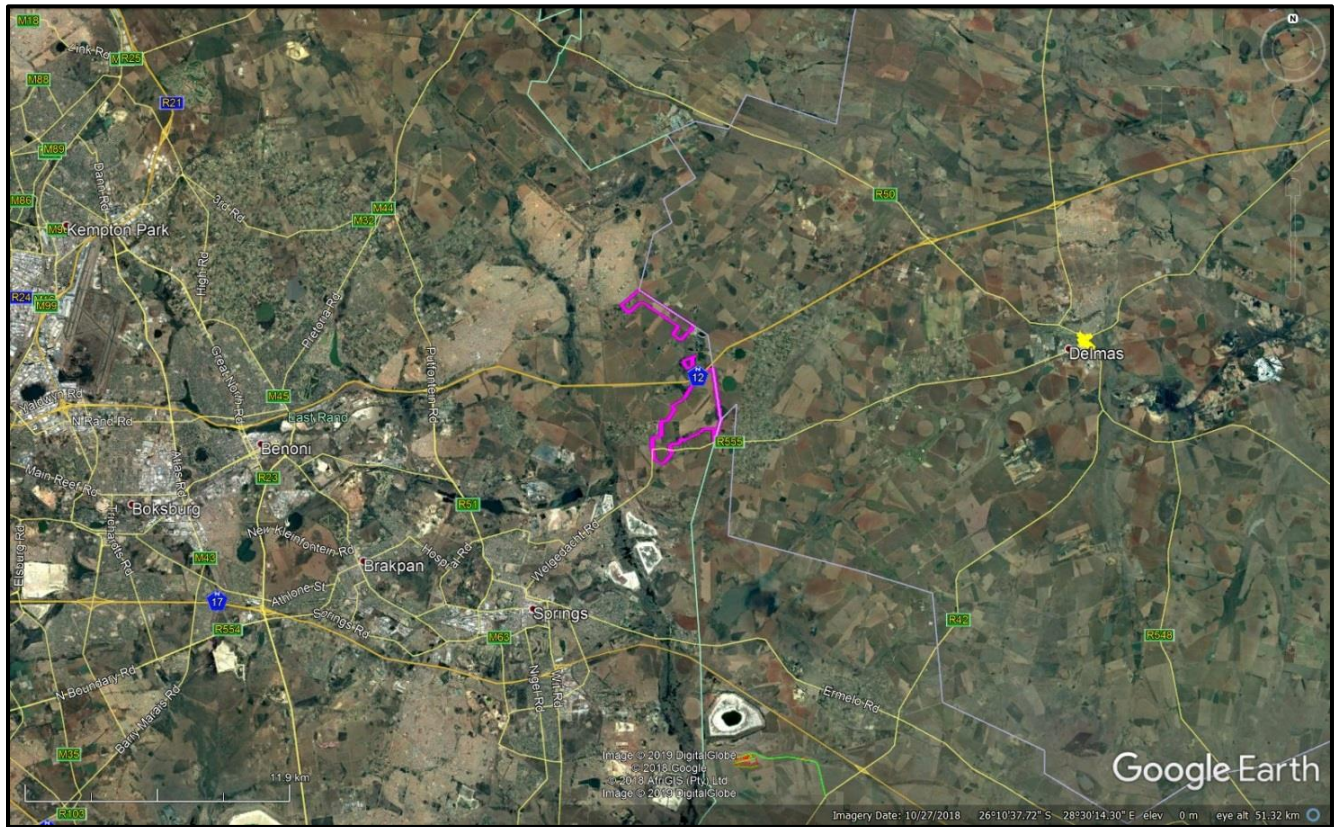


Figure 7. 2018 Google Earth image showing the study area in relation to the N12, the R555, Springs, Brakpan, Benoni and other sites. (Google Earth 2018)

## 5. PROBABILITY OF OCCURRENCE OF SITES

Based on the above information, it is possible to determine the probability of finding archaeological and cultural heritage sites within the study area to a certain degree. For the purposes of this section of the report the following terms are used – low, medium and high probability. Low indicates that no known occurrences of sites have been found previously in the general study area, medium probability indicates some known occurrences in the general study area are documented and can therefore be expected in the study area and a high probability indicates that occurrences have been documented close to or in the study area and that the environment of the study area has a high degree of probability having sites.

» Palaeontological landscape

Fossil remains. *Medium - High probability.*

» Archaeological And Cultural Heritage Landscape

NOTE: *Archaeology is the study of human material and remains (by definition) and is not restricted in any formal way as being below the ground surface.*

*Archaeological remains dating to the following periods can be expected within the study area:*

» Stone Age finds

ESA: *Low- Probability*

MSA: *Low- Probability*

LSA: *Low-Medium Probability*

LSA –Herder: *Low Probability*

» Iron Age finds

EIA: *Low Probability*

MIA: *Low Probability*

LIA: *Low -Medium Probability*

» Historical finds

Historical period: *Medium- High Probability*

Historical dumps: *Medium- High Probability*

Structural remains: *Medium- High Probability*

Cultural Landscape: *Low probability*

» Living Heritage

For example, rainmaking sites: *Low Probability*

» Burial/Cemeteries

Burials over 100 years: *Medium Probability*

Burials younger than 60 years: *High Probability*

Subsurface excavations including ground levelling, landscaping, and foundation preparation can expose any number of these.

## **6. ASSUMPTIONS AND LIMITATIONS**

The study area was not subjected to a field survey at this stage in the environmental process, it is recommended that this will be done prior to exploration. It is assumed that information obtained for the wider area is applicable to the study area. Additional information could become available in future that could change the results of this report. It is assumed that the EAP will upload all relevant documents to the SAHRIS.

## **7. FINDINGS**

The heritage desktop study revealed that the following heritage sites, features and objects can be expected within the study area.

### **7.1. Palaeontological**

The area is of high paleontological sensitivity and further studies will be required prior to development.

### **7.2. Archaeology**

#### **7.2.1 Archaeological finds**

Almost no archaeological sites are on record close to the study area. This does not mean that there are no sites in the study area but can be attributed to the lack of systematic research in the area. There is a low - medium likelihood of finding LSA material close to pans and rocky outcrops.

#### **7.2.2 Nature of Impact**

The project (invasive prospecting activities) could directly impact on surface and subsurface archaeological sites.

#### **7.2.3 Extent of impact**

The project could have a low impact on a local scale.

### **7.3. Historical period**

#### **7.3.1 Historical finds:**

Historical finds include middens, structural remains and cultural landscape. Several homesteads/structures are visible on Google earth in the study area although the age of these structures are not known and will be verified during the field work phase of the project.

#### **7.3.2 Nature of Impact**

The project (invasive prospecting activities) can directly impact on both the visual context and sense of place of historical sites.

#### **7.3.3 Extent of impact**

Invasive Exploration activities of the project could have a low impact on a local scale.

## 7.4. Burials and Cemeteries

### 7.4.1 Burials and Cemeteries

Graves and informal cemeteries can be expected anywhere on the landscape. Several grave sites are indicated on archival maps of the area (Figure 4 -6) it is not known if these still exist and will have to be verified during the field work phase of the project. The approximate location of these graves are recorded in table 1 and indicated on Figure 8.

Table 1. Grave locations in the study area

LABEL	LONGITUDE	LATITUDE
Cemetery 1	28° 30' 09.9021" E	26° 11' 22.2418" S
Cemetery 2	28° 30' 46.6031" E	26° 09' 21.4493" S
Cemetery 3	28° 30' 51.4227" E	26° 09' 16.6936" S
Cemetery 4	28° 31' 09.3406" E	26° 10' 45.9347" S
Cemetery 5	28° 31' 11.9264" E	26° 10' 38.2663" S

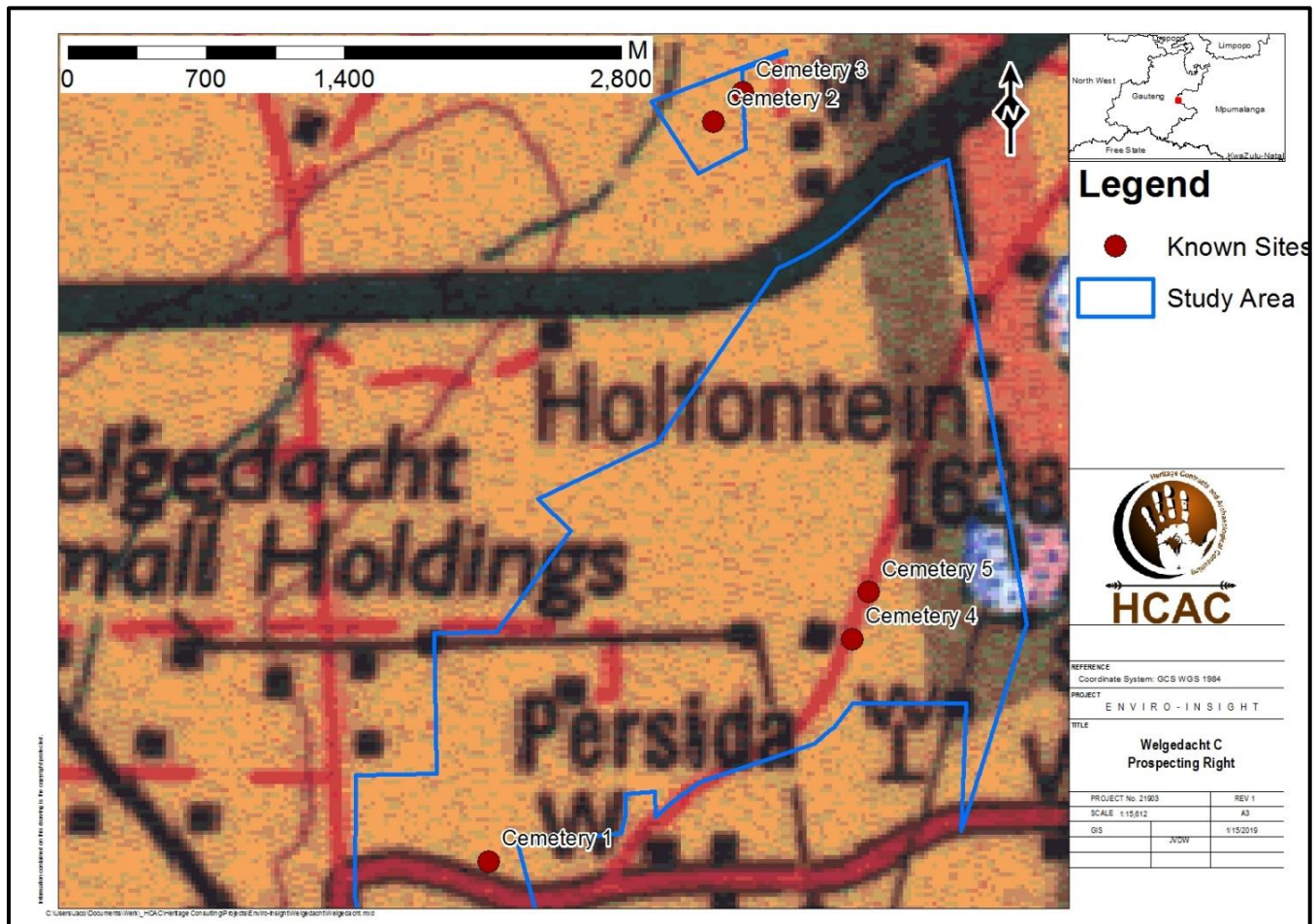


Figure 8. Grave sites in relation to the study area.

#### 7.4.2 Nature of Impact

The project (invasive prospecting activities) could directly impact on marked and unmarked graves.

#### 7.4.3 Extent of impact

The project could have a medium to high impact on a local scale.

### 8. POTENTIAL SIGNIFICANCE OF HERITAGE RESOURCES

Based on the current information obtained for the area at a desktop level it is anticipated that any archaeological or historical sites that occur within the proposed development area will have a Generally Protected B (GP. B) field rating and all sites should be mitigatable and no red flags are identified. Graves are of high social significance and can be expected anywhere in the landscape and poses the biggest risk to the project

## 9. CONCLUSIONS AND RECOMMENDATIONS

This desktop study revealed that very few known heritage sites occur in the vicinity of the study area, this can be attributed to a lack of systematic research in the area. It should also be noted that the study area has been extensively disturbed by agricultural activities. Every site is relevant to the Heritage Landscape, but it is anticipated that no site in the study area could have conservation value. The following conclusions are applicable to the following sites:

» Archaeological sites

If any sites occur in the study area, they could be mitigated either in the form of conservation of the sites with in the development or by a Phase 2 study where the sites will be recorded and sampled before the client can apply for a destruction permit for these sites prior to development.

» Historical finds and Cultural landscape

Some structures could occur that are older than 60 years. No impact on structures older than 60 years is foreseen during prospecting activities, however if structures are to be impacted destruction/ alteration permits will have to be applied for.

» Burials and cemeteries

Formal and informal cemeteries as well as pre-colonial graves occur widely across Southern Africa. It is generally recommended that these sites are preserved with in a development. These sites can however be relocated if avoidance is not possible, but this option must be seen as a last resort and is not advisable. The presence of any grave sites must be confirmed the public consultation process.

» General

It is recommended that as part of the public consultation process the presence of graves, archaeological and historical sites should be determined.

## 10. PLAN OF STUDY

This desktop study underlined the lack of systematic research in the study area and no archaeological or historical sites of significance are on record for the area under investigation. However several grave sites occur in the study area. Therefor in order to comply with the National Heritage Resources Act (Act 25 of 1999) it is recommended that a Phase 1 Heritage Impact Assessment must be undertaken. During this study sites of archaeological, historical or places of cultural interest must be located, identified, recorded, photographed and described. During this study the levels of significance of recorded heritage resources must be determined and mitigation measures proposed should any significant sites be impacted upon, ensuring that all the requirements of SAHRA are met.

The area is indicated as of high paleontological sensitivity by SAHRA and further studies will be required prior to construction.

### 11 LIST OF PREPARERS

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Liesl Bester (Archival Specialist)

### 12. STATEMENT OF COMPETENCY

The author of the report is a member of the Association of Southern African Professional Archaeologists and is also accredited in the following fields of the Cultural Resource Management (CRM) Section, member number 159: Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation. Jaco is also an accredited CRM Archaeologist with SAHRA and AMAFA.

Jaco has been involved in research and contract work in South Africa, Botswana, Mozambique, Zimbabwe, Tanzania and the DRC and conducted well over 300 AIAs since he started his career in CRM in 2000. This involved several mining operations, Eskom transmission and distribution projects and infrastructure developments. The results of several of these projects were presented at international and local conferences.

### 13. STATEMENT OF INDEPENDENCE

I, Jaco van der Walt as duly authorised representative of Heritage Contracts and Archaeological Consulting CC, hereby confirm my independence as a specialist and declare that neither I nor the Heritage Contracts and Archaeological Consulting CC have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which the client was appointed as Environmental Assessment practitioner, other than fair remuneration for work performed on this project.



**SIGNATURE:**

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