

**ARCHAEOLOGICAL IMPACT
ASSESSMENT (PHASE 1)**

for

**Environmental Assurance
(Pty) Ltd**

Authors ©:

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May 2013

A Phase 1 Archaeological Impact Assessment for the proposed Yoctolux (Pty) Ltd open cast coal mine on Portion 38 of the farm Elandspruit 291 JS, district Middelburg, Mpumalanga

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1. Executive Summary

The authors were appointed by Environmental Assurance (Pty) Ltd to undertake an Archaeological study on the farm Elandspruit 291 JS, 11 km west south west of Middelburg, Mpumalanga Province, to determine the scope of archaeological resources which could be impacted on by proposed open cast coal mining activities of Yoctolux Investments (Pty) Ltd.

During the pedestrian survey on the demarcated section, the eastern section of Portion 38 on the farm Elandspruit 291 JS, no sites of heritage importance were observed. However, a number of archaeological sites were observed on other sections of the farm. These sites are: nine unmarked, unfenced graves 300 m from the area demarcated for development in the northeastern corner of Portion 38 and graves and homesteads in close proximity to the residential and commercial areas, some of which date to the Historical Period. There are two Voortrekker graves in an open field, and 50 workers' graves, the oldest of which dates to 1958, under a canopy of black wattle trees. Family members pay yearly visits to the workers' graves. Farm workers currently occupy the original Voortrekker farm homestead, which dates to the 1880s. Modern bricks were added to the original building during later stages. The second homestead also originated in historical times, but is currently being demolished.

Due to no visible material remains pertaining to heritage resources on the demarcated section, the eastern section of Portion 38 on the farm Elandspruit 291 JS, development may continue on this specific 45 hectare section. Should culturally significant material or skeletal remains be exposed during development and construction phases, all activities must be suspended pending further investigation by a qualified archaeologist (See National Heritage and Resources Act, 25 of 1999 section 36 (6)).

2. Project Background

2.1 Introduction

Environmental Assurance (Pty) Ltd appointed the authors to undertake an Archaeological study on the 45 hectares demarcated for development on the eastern section of Portion 38 on the farm Elandspruit 291 JS, Mpumalanga Province. The purpose of this study is to examine the demarcated 45 hectares in order to determine if any archaeological resources of heritage value will be impacted on by the proposed open cast coal mining as well as to archaeologically contextualise the general study area. The aim of this report is to provide the developer with information regarding the location of heritage resources on the section demarcated for development.

No sites of heritage importance were located on the 45 hectare section demarcated for development on the eastern section of Portion 38 on the farm Elandspruit 291 JS, but there are several archaeological sites on other

sections of the farm. There are nine unmarked and unfenced graves 300 m toward the northeast of the demarcated area, two homesteads dating to the Historical Period, two Voortrekker graves and 50 workers' graves, which family members visit each year.

We recorded these sites via GPS location and photographic record to serve as evidence for the type of archaeological remains present in the study area. In the following report, we discuss the implication for development on the demarcated section of Portion 38 on the farm Elandspruit 291 JS with regard to heritage resources. Additionally, we briefly discuss the archaeological sites on the other sections of the farm. The legislation section included serves as a guide towards the effective identification and protection of heritage resources and will apply to any such material unearthed during development and construction phases on the demarcated 45 hectare section.

2.2 Legislation

The South African Heritage Resources Agency (SAHRA) aims to conserve and control the management, research, alteration and destruction of cultural resources of South Africa and to prosecute if necessary. It is therefore crucially important to adhere to heritage resource legislation contained in the Government Gazette of the Republic of South Africa (Act No.25 of 1999), as many heritage sites are threatened daily by development. Conservation legislation requires an impact assessment report to be submitted for development authorisation that, in all cases, must include AIAs.

AIAs should be done by qualified professionals with adequate knowledge to (a) identify all heritage resources including archaeological and palaeontological sites that might occur in areas of development and (b) make recommendations for protection or mitigation of the impact of the sites.

2.2.1 The EIA and AIA processes

Phase 1 Archaeological Assessments generally involve the identification of sites during a field survey with assessment of their significance, the possible impact development might have and relevant recommendations.

All Archaeological Impact Assessment reports should include:

- a. Location of the sites that are found;
- b. Short descriptions of the characteristics of each site;
- c. Short assessments of how important each site is, indicating which should be conserved and which mitigated;
- d. Assessments of the potential impact of the development on the site(s);

- e. In some cases a shovel test, to establish the extent of a site, or collection of material, to identify the associations of the site, may be necessary (a pre-arranged SAHRA permit is required); and
- f. Recommendations for conservation or mitigation.

This AIA report is intended to inform the client about the legislative protection of heritage resources and their significance and make appropriate recommendations. It is essential to also provide the heritage authority with sufficient information about the sites to enable the authority to assess with confidence:

- a. Whether or not it has objections to a development;
- b. What the conditions are upon which such development might proceed;
- c. Which sites require permits for mitigation or destruction;
- d. Which sites require mitigation and what this should comprise;
- e. Whether sites must be conserved and what alternatives can be proposed to relocate the development in such a way as to conserve other sites; and
- f. What measures should or could be put in place to protect the sites which should be conserved.

When a Phase 1 AIA is part of an EIA, wider issues such as public consultation and assessment of the spatial and visual impacts of the development may be undertaken as part of the general study and may not be required from the archaeologist. If, however, the Phase 1 project forms a major component of an AIA it will be necessary to ensure that the study addresses such issues and complies with Section 38 of the National Heritage Resources Act.

2.2.2 Legislation regarding archaeology and heritage sites

National Resource Act of April 1999

According to Act No.25 of 1999 a historical site is “any identifiable building or part thereof, marker, milestone, gravestone, landmark or tell older than 60 years.” This clause is commonly known as the “60-years clause”. Buildings are among the most enduring features of human occupation, and this definition therefore includes all buildings older than 60 years, modern architecture as well as ruins, fortifications and Farming Community settlements. A “tell” refers to the evidence of human existence which is no longer above ground level, such as building foundations and buried remains of settlements (including artefacts). The Act identifies heritage objects as:

- objects recovered from the soil or waters of South Africa including archaeological and palaeontological objects, meteorites and rare geological specimens;

- visual art objects;
- military objects;
- numismatic objects;
- objects of cultural and historical significance;
- objects to which oral traditions are attached and which are associated with living heritage;
- objects of scientific or technological interest;
- any other prescribed category.

With regards to activities and work on archaeological and heritage sites this Act states that:

“No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit by the relevant provincial heritage resources authority.” (34. [1] 1999:58)

and

“No person may, without a permit issued by the responsible heritage resources authority:

- (a) *destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;*
- (b) *destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;*
- (c) *trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or*
- (d) *bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.”(35. [4] 1999:58)*

and

“No person may, without a permit issued by SAHRA or a provincial heritage resources agency:

- (a) *destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*

- (b) *destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority;*
- (c) *bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) and excavation equipment, or any equipment which assists in the detection or recovery of metals.” (36. [3] 1999:60)*

On the development of any area the gazette states that:

“...any person who intends to undertake a development categorised as:

- (a) *the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
- (b) *the construction of a bridge or similar structure exceeding 50m in length;*
- (c) *any development or other activity which will change the character of a site-*
- (d) *exceeding 5000m² in extent; or*
- (e) *involving three or more existing erven or subdivisions thereof; or*
- (f) *involving three or more erven or divisions thereof which have been consolidated within the past five years; or*
- (g) *the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;*
- (h) *the re-zoning of a site exceeding 10000m² in extent; or*
- (i) *any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.” (38. [1] 1999:62-64)*

and

“The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included:

- (a) *The identification and mapping of all heritage resources in the area affected;*
- (b) *an assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;*

- (c) *an assessment of the impact of the development on such heritage resources;*
- (d) *an evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;*
- (e) *the results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;*
- (f) *if heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and*
- (g) *plans for mitigation of any adverse effects during and after the completion of the proposed development.”*
(38. [3] 1999:64)

Human Tissue Act and Ordinance 7 of 1925

The Human Tissues Act (65 of 1983) and Ordinance on the Removal of Graves and Dead Bodies (Ordinance 7 of 1925) protects graves younger than 60 years. These fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities. Graves 60 years or older fall under the jurisdiction of the National Heritage Resources Act as well as the Human Tissues Act, 1983.

3. Study Area and Project Description

The farm Elandspruit 291 JS is located about 11 km west-south-east of the town of Middelburg. The farm lies within the Nkangala District in the Mpumalanga Province (**Figure 1**). In terms of vegetation, the study area falls within the Grassland biome; specifically, the Rand Highveld Grassland and Mesic Highveld Grassland. The average annual rainfall is around 572 mm.

The section of Portion 38 of the farm Elandspruit 291 JS on which the proposed development will take place is 45 hectares in size. The geology of the area consists of shale and arenite and the goal of the proposed development is to obtain underground coal via open cast mining. Open cast coal mining recovers a greater percentage of the coal deposit. High grade coal is used mainly for fuel and power generation.

Table 1: Farm name & coordinates

Farm	Portion	Map Reference (1:50 000)	Coordinates
Elandspruit 291 JS	38	2529 CD	25°48'47.15" S 29°22'24.71" E

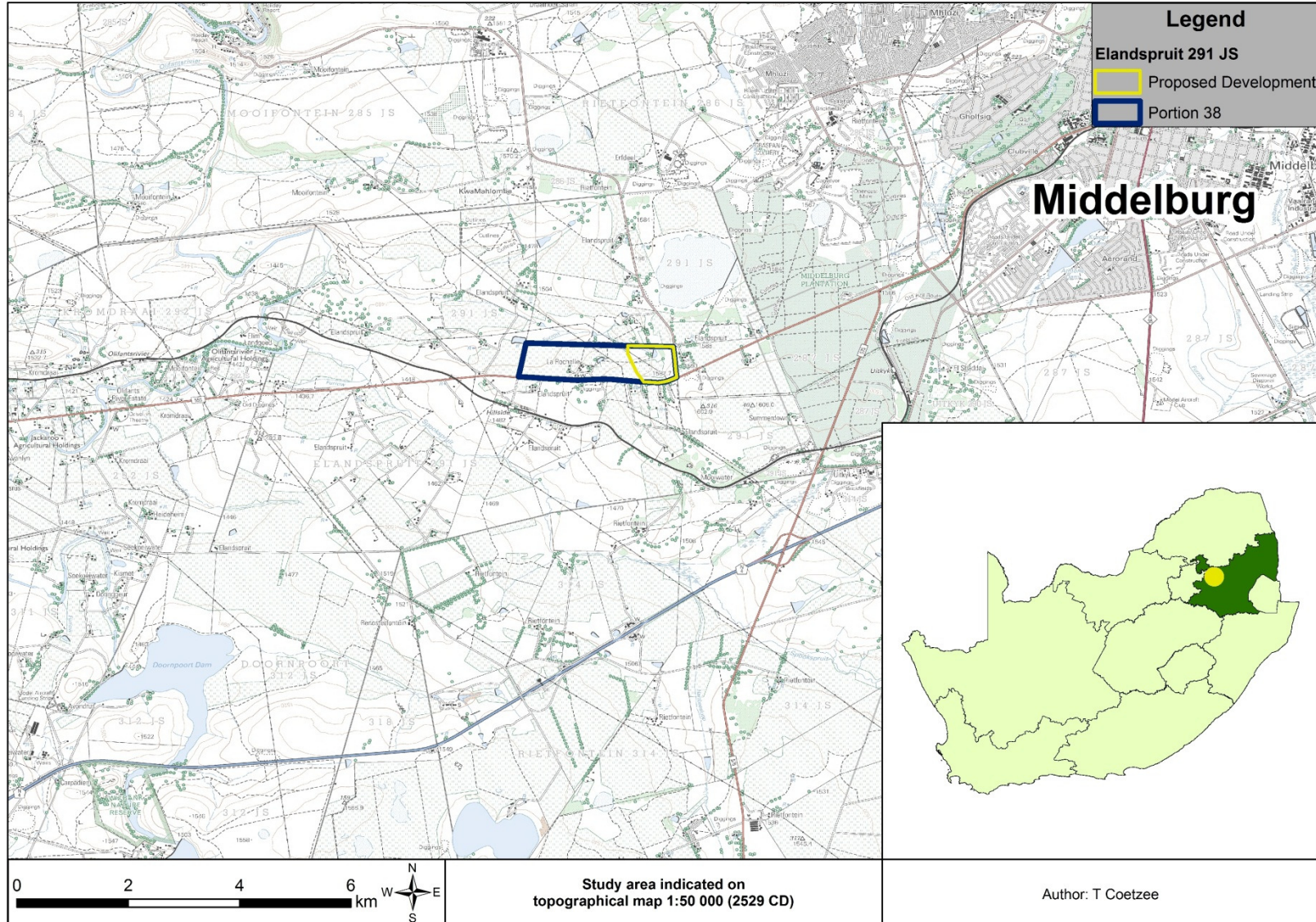


Figure 1: Segments of SA 1: 50 000 2529 CD indicating the study area

3.1 Archaeological Background

Southern African archaeology is broadly divided into the Early, Middle and Later Stone Ages, Early and Later Iron Ages, and Historical, or Colonial, Periods.

3.1.1 The Early Stone Age

The earliest stone tool industry, the Oldowan, was developed by early human ancestors which were the earliest members of the genus *Homo*, such as *Homo habilis*, around 2.6 million years ago. It comprises tools such as cobble cores and pebble choppers (Toth & Schick 2007). The oldest stone tools from the Sterkfontein Caves are found in the Oldowan Infill and date to between 2 and 1.7 million years ago. As the name suggests, these tools are similar to those found at Olduvai Gorge in Tanzania. Archaeologists suggest these stone tools are the earliest direct evidence for culture in southern Africa (Clarke & Kuman 2000). The advent of culture indicates the advent of more cognitively modern hominins (Mitchell 2002: 56, 57)

The Acheulean industry completely replaced the Oldowan industry. The Acheulian industry was first developed by *Homo ergaster* between 1.8 to 1.65 million years ago and lasted until around 300 000 years ago. Archaeological evidence from this period is also found at Swartkrans, Kromdraai and Sterkfontein. Around 1.5 million years ago, the western side of the cave probably enlarged, since artefact-bearing breccias (coarse-grained sedimentary rock made of sharp fragments of rock and stone cemented together by finer material, which is produced by volcanic activity or erosion, including frost shattering) are more widely distributed.

The most typical tools of the ESA are handaxes, cleavers, choppers and spheroids. Although hominins seemingly used handaxes often, scholars disagree about their use. There are no indications of hafting, and some artefacts are far too large for it. Hominins likely used choppers and scrapers for skinning and butchering scavenged animals and often obtained sharp ended sticks for digging up edible roots. Presumably, early humans used wooden spears as early as 5 million years ago to hunt small animals. The hominin *Homo erectus* and *Homo ergaster* used fire as early as between 300,000 and 1.5 million years ago, and possibly even earlier. The invention of fire reduced mortality rates and provided protection against predators. Examples of sites from this time period include Kromdraai, Makapansgat and Sterkfontein and Swartkrans (Toth & Schick 2007).

3.1.2 The Middle Stone Age

Middle Stone Age artefacts started appearing about 250 000 years ago and replaced the larger Early Stone Age bifaces, handaxes and cleavers with smaller flake industries consisting of scrapers, points and blades. These artefacts roughly fall in the 40-100 mm size range and were, in some cases, attached to handles, indicating a significant technical advance. Few other artefacts from this period remain. In some cases, archaeologists found circular hearths, which indicate the ability to make fire. Animal and plant remains indicate a hunting and gathering lifestyle. The first *Homo sapiens* species also emerged during this period. Associated sites are Klasies River Mouth, Blombos Cave and Border Cave (Deacon & Deacon 1999). The most recent deposit in the Sterkfontein cave dates to between 115 000 and 253 000 years ago and includes a

few hominin bone fragments, fauna and Middle Stone Age artefacts (Clarke & Kuman 2000:10-13). Anatomically modern *Homo sapiens sapiens* emerged around 150 000 years ago (Mitchell 2002:42).

3.1.3 The Later Stone Age

Although the transition from the Middle Stone Age to the Later Stone Age did not occur simultaneously across the whole of Southern Africa, the Later Stone Age ranges from about 20 000 to 2000 years ago. Stone tools from this period are generally smaller, but were used to do the same job as those from previous periods; only in a different, more efficient way. At the time of European contact in South Africa, some groups, for example the Khoisan, were still producing and using these tools. This aided understanding how and for what these tools were used. The Later Stone Age is associated with: rock art, smaller stone tools (microliths), bows and arrows, bored stones, grooved stones, polished bone tools, earthenware pottery and beads. Examples of Later Stone Age sites are Nelson Bay Cave, Rose Cottage Cave and Boomplaas Cave (Deacon & Deacon 1999).

3.1.4 Early Iron Age

The Early Iron Age marks the movement of farming communities into South Africa in the first millennium AD, or around 2500 years ago (Mitchell 2002:259, 260). These groups were agro-pastoralist communities that settled in the vicinity of water in order to provide subsistence for their cattle and crops. Archaeological evidence from Early Iron Age sites is mostly artefacts in the form of ceramic assemblages. The origins and archaeological identities of this period are largely based upon ceramic typologies. Some scholars classify Early Iron Age ceramic traditions into different “streams” or “trends” in pot types and decoration, which emerged over time in southern Africa. These “streams” are identified as the Kwale Branch (east), the Nkope Branch (central) and the Kalundu Branch (west). Early Iron Age ceramics typically display features such as large and prominent inverted rims, large neck areas and fine elaborate decorations. This period continued until the end of the first millennium AD (Mitchell 2002; Huffman 2007). Some well-known Early Farming community sites include the Lydenburg Heads in Mpumalanga, Happy Rest in the Limpopo Province and Mzonjani in Kwa-Zulu Natal.

3.1.5 Later Iron Age and Historical Periods

According to literary sources, it appears that the study area was not directly influenced by major events in human settlement patterns during the Later Iron Age and later times. Missionaries from Berlin, who settled in the area during the second half of the 19th century, reported that there were Kwena and Kgatla farming communities living there during that time (Bergh 1998:106). The missionaries, led by Alexander Merensky, settled north of the study area, and encountered Pedi refugees and Kopa people (Delius & Hay 2009:71). The missionaries called the area Botshabelo (Place of Refuge).

More comprehensive information is available on Voortrekker history in the area, as a result of the Tregardt and Van Rensburg treks in the 1830s. Louis Tregardt and Johannes van Rensburg's northward treks were forced in a different direction after reaching the Middelburg area. Difficult terrain forced the trekkers in a western direction towards Spitskop and Renosterkop in the vicinity of present day Bronkhorstspuit. From there, they turned in a

northern direction along the Olifants River towards the Strydpoort Mountains to reach Soutpansberg. Some of the place names to the north of Bronkhorstspuit refer to the Voortrekker route, and some of these are Vlooiokop, Trichardspoort and Renosterpoort (Rex 1969: 1-3).

Establishment of Middelburg (1859 – 1874)

Present-day Middelburg was initially named Nazareth on 28 March 1860, although the town was established on 25 October 1859. It was officially proclaimed a town under the magistrate of Lydenburg in 1867. In 1874, the name changed to Middelburg.

The First (1880 – 1881) and Second Freedom Wars (1899 – 1902)

The naming of Middelburg coincides with the year Lord Carnarvon, the Colonial State Secretary, decided he wanted to unite British territory and the two Boer Republics under the British flag. None of these states were in favour, and Carnarvon decided uniting with Transvaal might urge the others to follow. He sent Shepstone from Natal to Pretoria with a police force of 25 to annex Transvaal, and Shepstone hoisted the British flag on 12 April 1877, without firing a single shot.

After failing to regain independence through requests sent to England, S. P. J. Kruger, P. Joubert and M. W. Pretorius held a meeting from 12 to 16 December 1880 to discuss the matter. The British decided to attack the republicans and the Battle of Bronkhorstspuit, about 50 km west of the study area, ensued on 20 December 1880. The British forces consisted of 257 men under Colonel Anstruther, and the Boer forces were roughly the same number under Frans Joubert. The battle lasted a mere 10 to 20 minutes, and ended with 76 killed and 62 wounded on the British side and one killed and five wounded on the Boer side. This was the first open battle of the First Freedom War, also known as the First Anglo-Boer War (Roodt 1949: 7-9).

During the Second Freedom War, also known as just the Anglo-Boer War, General French and Hutton's Brigade of Mounted Infantry marched into and annexed Middelburg on 27 July 1900 (Wilson 1902:94).

4. Methodology

We conducted archaeological reconnaissance of the study area mainly through a systematic site survey on the 45 ha where the proposed development will take place, and an unsystematic survey of the other sections, focusing mainly on the current residential and commercial areas.

Before the site visit, we pre-plotted transects from east to west on an aerial photograph of the study area, each 50 m apart. During the site visit, we conducted a pedestrian survey along the transects in order to systematically cover the entire study area (**Figure 5**).

We also identified possible heritage sites from satellite imagery beforehand, inspected these sites during the site visit, and recorded the sites we located via GPS and photographic record. The reconnaissance of the area under investigation served a twofold purpose:

- To obtain an indication of heritage material found in the general area as well as to identify or locate archaeological sites on the section of Portion 38 that may be affected. This was done in order to establish a heritage context and to supplement background information that would benefit developers through identifying areas that are sensitive from a heritage perspective.
- All archaeological and historical events have spatial definitions in addition to their cultural and chronological context. Where applicable, spatial recording of these definitions were done by means of a handheld GPS (Global Positioning System) during the site visit.

4.1 Sources of information

At all times during the survey the authors followed standard archaeological procedures for the observation of heritage resources. As most archaeological material occurs in single or multiple stratified layers beneath the soil surface, we paid special attention to disturbances; both man-made such as roads and clearings, and those made by natural agents such as burrowing animals and erosion. We recorded locations of archaeological material remains by means of a Garmin Oregon 550 GPS and archaeological features and photographed these sites as well as general conditions on the terrain with a Nikon D40 DSLR(Digital Single Lens Reflex) camera.

We conducted a literature study, which incorporated previous work done in the region, in order to place the study area into context from a heritage perspective. Among other sources, we inspected historical maps dating between 1900 and 1920 for traces of past human activity, but we did not observe any such indications on the affected portion, Portion 38. There are, however, historical homesteads visible on the present-day residential and commercial portions visible on maps from 1900 (**Figure 2**).

During the site visit, we spoke to the current farm owner, who confirmed the presence and locations of the historical homesteads and the various graveyards. The farm owner also confirmed that there are no other significant material cultural remains on the affected section or any other section of the farm.

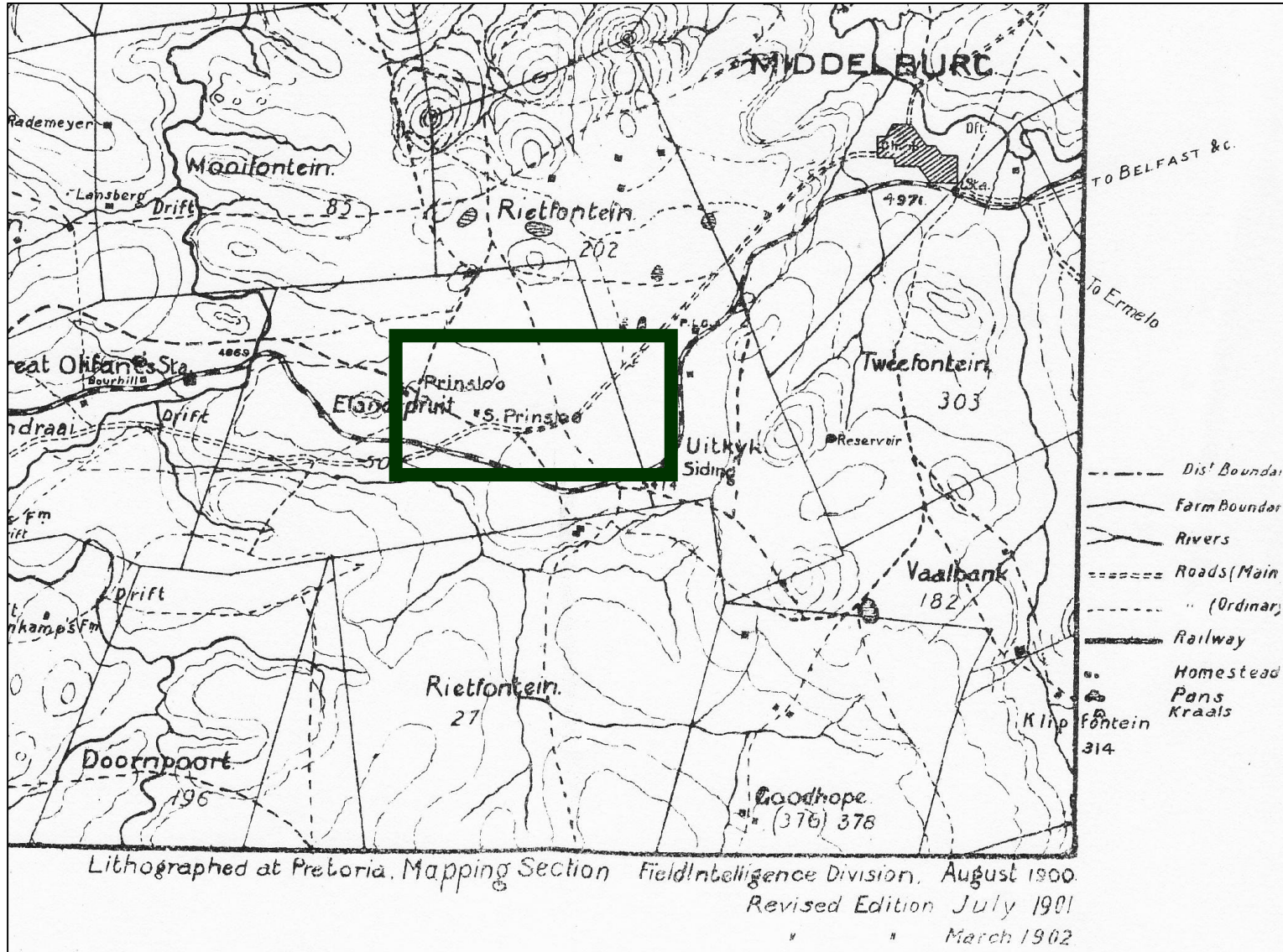


Figure 2: Enlargement of the study area on Historical map

4.2 Limitations

The surrounding vegetation of the study area is Rand Highveld Grassland and Mesic Highveld Grassland. During the time of surveying (May 2013), the general visibility of the study area and areas under investigation was good, with thick, short grass cover dominating the demarcated section (**Figures 3 & 5**). A section of the area demarcated for development could not be accessed by foot due to the presence of a small stream and wet conditions (**Figure 4**).

The two historical homesteads, the Voortrekker graves and the 50 workers' graves are in the vicinity of the current residential and commercial areas and were easily accessible by foot. The nine graves closest to the demarcated area were also accessible by foot.



Figure 3: Environment on the section demarcated for development



Figure 4: Natural spring on the section demarcated for development



Figure 5: Environment on the remaining section of portion 38

5. Archaeological and Historical Remains

5.1 Stone Age Remains

No Stone Age archaeological remains were found.

5.2 Iron Age Farmer Remains

No Iron Age Farmer archaeological remains were identified in the study area.

5.3 Historical Remains

No Historical archaeological remains were identified on the section demarcated for development. The two historical homesteads date to around the 1880s, and were the homesteads of the original Voortrekker farm owners. The main homestead is currently inhabited by farm workers, and modern bricks were added to the structure (**Figures 9 & 10**). The second homestead is being demolished (**Figures 7 & 8**).

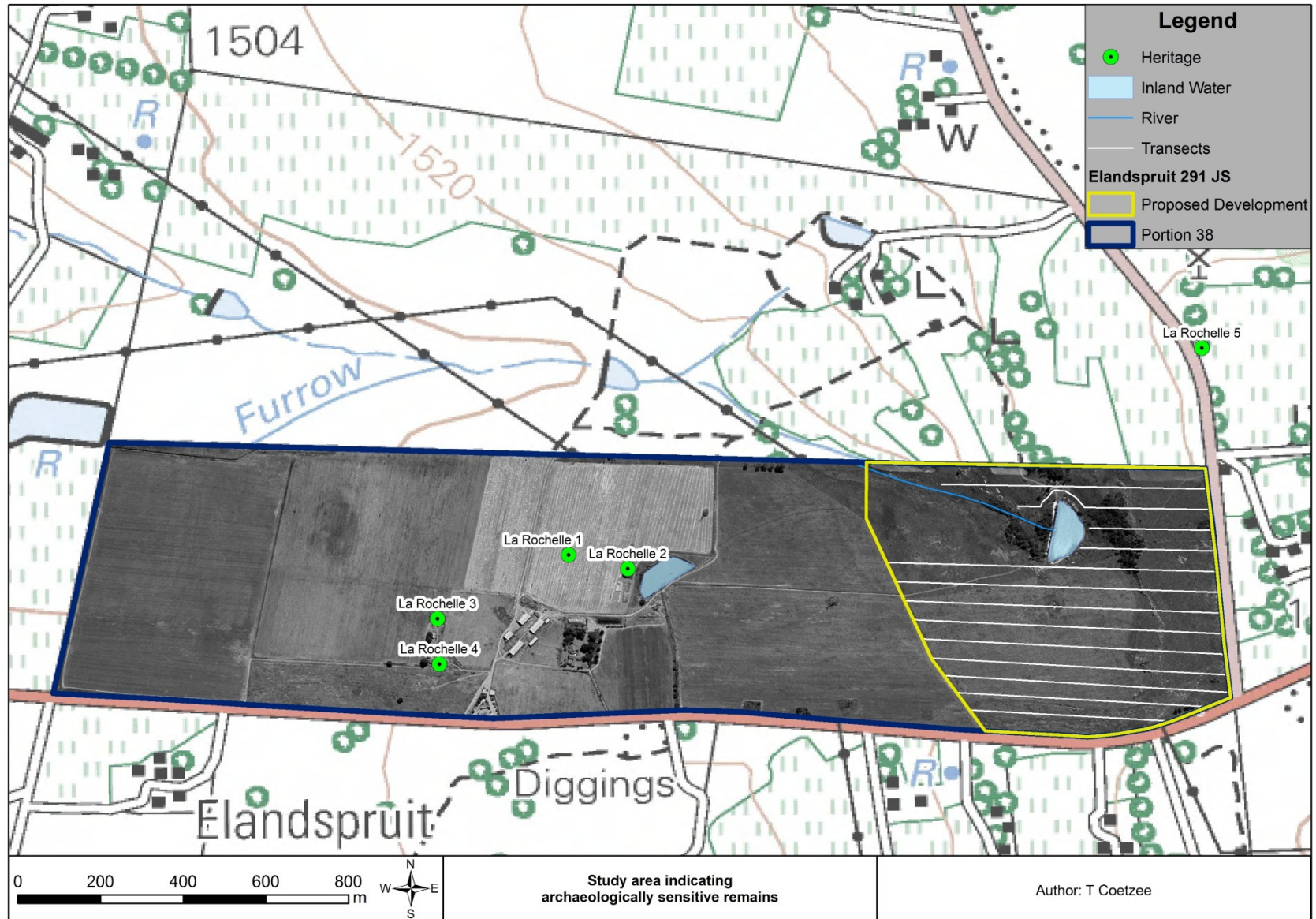


Figure 6: Distribution of archaeologically sensitive areas and extent of fieldwork on portion 38 of the farm Elandspruit 291 JS

Table 2: Site coordinates

Site	Coordinates
La Rochelle 1	25°48'48.13"S 29°22'16.65"E
La Rochelle 2	25°48'49.05"S 29°22'21.60"E
La Rochelle 3	25°48'52.77"S 29°22'06.43"E
La Rochelle 4	25°48'56.49"S 29°22'06.89"E
La Rochelle 5	25°48'31.71"S 29°23'06.50"E

**Figure 7:** Site La Rochelle 3 viewed from the east (historical homestead)



Figure 8: Site La Rochelle 3 from a southern perspective



Figure 9: Site La Rochelle 4 viewed from the north (historical homestead)



Figure 10: Site La Rochelle 4 from a southern perspective

5.4 Graves

No graves were located on the area demarcated for development on Portion 38 of the farm Elandspruit 291 JS. The closest graves, nine graves 300 m from the demarcated area toward the northeastern corner of Portion 38, will not be affected by the proposed development. These graves are unmarked and unfenced, but are presumably those of farm workers (**Figure 15**). The two Voortrekker graves (**Figures 11, 12 & 13**) and 50 workers' graves (**Figure 14**) on the residential and commercial areas of Portion 38 will not be affected by the proposed development. The two Voortrekker graves date to 1905 and 1942, respectively. The earliest date on the 50 workers' graves is 1958. The family members of the workers visit these graves on a yearly basis. Although none of the graves will be affected by the proposed development it should be noted that an archaeologist should be contacted in the event that any of these archaeological sites are damaged or affected by the proposed development.



Figure 11: Voortrekker graveyard on Elandspruit 291 JS (Site La Rochelle 1)



Figure 12: Grave of C.J.C. Prinsloo (Site La Rochelle 1)



Figure 13: Grave of M.M. Prinsloo (site La Rochelle 1)



Figure 14: Workers' graveyard (site La Rochelle 2)



Figure 15: Workers' graveyard 300 m from demarcated area (site La Rochelle 5)

6. Statement of Significance & Recommendations

6.1 Statement of significance

No archaeological material of heritage significance was observed on the section demarcated for development on Portion 38 of the farm Elandspruit 291 JS.

The historical homesteads are older than 60 years, and are protected under the National Heritage and Resources Act (25 of 1999). These homesteads will not be affected by the proposed development, but it should be noted that these structures should be properly recorded by a qualified archaeologist in the event that they are impacted on by the proposed development.

Neither the two Voortrekker graves and 50 workers' graves on the same section as the homesteads, nor the nine graves 300 m from the section demarcated for development will be affected by the proposed development. However, in the event that these graves are affected or on discovery of other graves during the course of development, the following will apply: The National Heritage Resources Act (25 of 1999) and the Human Tissues Act (65 of 1983) protect graves older than 60 years. Graves younger than 60 years, however, are protected under the Human Tissue Act (65 of 1983) and fall under Section 2 (1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925). The exhumation of graves falls under the jurisdiction of the National Department of Health and the relevant Provincial Department of Health. Exhumation permission must also be obtained from the relevant local or regional council where graves are located, and from the relevant regional and local council to where the grave will be relocated.

6.2 Recommendations

The following recommendations are made in terms with the National Heritage Resources Act (25 of 1999):

- No heritage material was observed on the section demarcated for development on the farm Elandspruit 291 JS. Because archaeological artefacts generally occur below surface, the possibility exists that culturally significant material and skeletal remains may be exposed during the development and construction phases, in which case all activities must be suspended pending further archaeological investigations by a qualified archaeologist (See National Heritage and Resources Act, 25 of 1999 section 36 (6)). From a heritage point of view, development may proceed on the demarcated section on Portion 38 of the farm Elandspruit 291 JS subject to the abovementioned conditions and recommendations.
- Should the need arise to expand the development beyond the 45 hectare demarcated area mentioned in this study, the following applies: a qualified archaeologist must conduct a full Phase One assessment on the sections beyond the demarcated areas which will be affected by the expansion, in order to determine the occurrence and extent of any archaeological sites and the impact development might have on these sites.

7. Addendum: Terminology

Archaeology:

The study of the human past through its material remains.

Artefact:

Any portable object used, modified, or made by humans; e.g. pottery and metal objects.

Assemblage:

A group of artefacts occurring together at a particular time and place, and representing the sum of human activities.

Context:

An artefact's context usually consist of its immediate *matrix* (the material surrounding it e.g. gravel, clay or sand), its *provenience* (horizontal and vertical position within the matrix), and its *association* with other artefacts (occurrence together with other archaeological remains, usually in the same matrix).

Cultural Resource Management (CRM):

The safeguarding of the archaeological heritage through the protection of sites and through salvage archaeology (rescue archaeology), generally within the framework of legislation designed to safeguard the past.

Excavation:

The principal method of data acquisition in archaeology, involving the systematic uncovering of archaeological remains through the removal of the deposits of soil and other material covering and accompanying it.

Feature:

An irremovable artefact; e.g. hearths or architectural elements.

Ground Reconnaissance:

A collective name for a wide variety of methods for identifying individual archaeological sites, including consultation of documentary sources, place-name evidence, local folklore, and legend, but primarily actual fieldwork.

Matrix:

The physical material within which artefacts is embedded or supported, i.e. the material surrounding it e.g. gravel, clay or sand.

Phase 1 Assessments:

Scoping surveys to establish the presence of and to evaluate heritage resources in a given area.

Phase 2 Assessments:

In-depth culture resources management studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling is required.

Sensitive:

Often refers to graves and burial sites although not necessarily a heritage place, as well as ideologically significant sites such as ritual / religious places. *Sensitive* may also refer to an entire landscape / area known for its significant heritage remains.

Site:

A distinct spatial clustering of artefacts, features, structures, and organic and environmental remains, as the residue of human activity.

Surface survey:

Two basic kinds can be identified: (1) unsystematic and (2) systematic. The former involves field walking, i.e. scanning the ground along one's path and recording the location of artefacts and surface features. Systematic survey by comparison is less subjective and involves a grid system, such that the survey area is divided into sectors and these are walked systematically, thus making the recording of finds more accurate.

8. References

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