

# Archaeological Impact Assessment

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For the proposed RustMo3 PV facility on Portion 90 of the farm Spruitfontein JQ 341, near Buffelspoort, North-West Province

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Prepared For  
**Savannah Environmental (Pty) Ltd**

By



## HERITAGE

Contracts and Archaeological Consulting

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**VERSION 1.0**  
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## EXECUTIVE SUMMARY

**Site name and location:** The proposed RustMo3 PV facility on Portion 90 of the farm Spruitfontein JQ 341 near Buffelspoort approximately 20 km from Rustenburg, North West Province.

**Purpose of the study:** Phase 1 Archaeological Impact Assessment to determine the presence of archaeological sites and the impact of the proposed project on these resources within the areas demarcated for the solar development.

**1:50 000 Topographic Map:** 2527 CB

**Environmental Consultant:** Savannah Environmental (Pty) Ltd

**Developer:** Momentous Energy

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

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**Date of Report:** 27 March 2012

### **Findings of the Assessment:**

This report endeavoured to give an account of the history of the farm Spruitfontein 341 JQ, where the proposed photovoltaic plant RustMO3 is located. The general history of human settlement in the farm area, as well as the interaction between black and white population groups, was discussed. Finally, all available information on the concerned farm was taken into account to write up a short history of the developments that had taken place thereon. An Independent palaeontological study has shown that the proposed development will not have negative effect on palaeontological heritage and a field study confirmed that no archaeological sites occur within the study area.

From a heritage point of view there is no reason why the development cannot commence work. If during construction any archaeological finds are made (e.g. stone tools, skeletal material), the operations must be stopped, and the archaeologist must be contacted for an assessment of the find.

### **General**

Due to extensive sand cover, ground visibility was low on portions of the site during survey. The possible occurrence of unmarked or informal graves and subsurface finds can thus not be excluded. If during construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped and a qualified archaeologist must be contacted for an assessment of the find.

**Disclaimer:** *Although all possible care is taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. Heritage Contracts and Archaeological Consulting CC and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.*

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- The results of the project;
- The technology described in any report;
- Recommendations delivered to the Client.

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## Appendix A: Palaeontological Assessment

## 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 (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

The Iron Age (~ AD 400 to 1840)

Historic (~ AD 1840 to 1950)

Historic building (over 60 years old)

## 1 BACKGROUND INFORMATION

<b><i>Kind of study</i></b>	Archaeological Impact Assessment
<b><i>Type of development</i></b>	Photovoltaic solar energy facilities
<b><i>Rezoning/subdivision of land</i></b>	Rezoning
<b><i>Developer:</i></b>	Momentous Energy
<b><i>Consultant:</i></b>	Savannah Environmental
<b><i>Farm owner:</i></b>	Barend Daniel Janse van Resnburg

The Archaeological Impact Assessment report forms part of the BA for the proposed project.

The aim of the study is to identify cultural heritage sites, document, and assess their importance within local, provincial and national context. It serves to assess the impact of the proposed project on non-renewable heritage resources, and to submit appropriate recommendations with regard 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. It is also conducted to protect, preserve, and develop such resources within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

The report outlines the approach and methodology utilized before and during the survey, which includes: Phase 1, a review of the heritage scoping report that includes collection from various sources and consultations; Phase 2, the physical surveying of the area on foot and by vehicle; Phase 3, reporting the outcome of the study.

During the survey no heritage sites were identified. General site conditions and features on sites were recorded by means of photographs, GPS locations, and site descriptions. Possible impacts were identified and mitigation measures are proposed in the following report.

This report must also be submitted to the appropriate SAHRA provincial office for peer review.



## 1.1 Terms of Reference

### Desktop study

Conducting a brief desktop study where information on the area is collected to provide a background history of the area.

### Field study

Conduct a field study to: a) systematically survey the proposed project area to locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest; b) record GPS points identified as significant areas; c) determine the levels of significance of the various types of heritage resources recorded in the project area.

### Reporting

Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have on the identified heritage resources for all 3 phases of the project; i.e., construction, operation and decommissioning phases. Consider alternatives, should any significant sites be impacted adversely by the proposed project. Ensure that all studies and results comply with Heritage legislation and the code of ethics and guidelines of ASAPA.

To assist the developer in managing the discovered heritage resources in a responsible manner, and to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

## 1.2. Archaeological Legislation and Best Practice

Phase 1, an AIA or a HIA is a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation. The overall purpose of a heritage specialist input is to:

- » Identify any heritage resources, which may be affected;
- » Assess the nature and degree of significance of such resources;
- » Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance;
- » Assess the negative and positive impact of the development on these resources;
- » Make recommendations for the appropriate heritage management of these impacts.

The AIA or HIA, as a specialist sub-section of the EIA, is required under the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999), Section 38(1), Section 38(8) of the NEMA and the MPRDA.

The AIA should be submitted, as part of the EIA, BIA or EMP, to the PHRA if established in the province or to SAHRA. SAHRA will be ultimately responsible for the professional evaluation of Phase 1 AIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 AIA reports and additional development information, as per the EIA, BIA/EMP, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 AIA reports authored by professional archaeologists, accredited with ASAPA.

Minimum accreditation requirements include an Honours degree in archaeology or related discipline and 3 years post-university CRM experience (field supervisor level).

Minimum standards for reports, site documentation and descriptions are set by ASAPA in collaboration with SAHRA. ASAPA is a legal body, based in South Africa, representing professional archaeology in the SADC region. ASAPA is primarily involved in the overseeing of ethical practice and standards regarding the archaeological profession. Membership is based on proposal and secondment by other professional members.

Phase 1 AIAs are primarily concerned with the location and identification of sites situated within a proposed development area. Identified sites should be assessed according to their significance. Relevant conservation or Phase 2 mitigation recommendations should be made. Recommendations are subject to evaluation by SAHRA.

Conservation or Phase 2 mitigation recommendations, as approved by SAHRA, are to be used as guidelines in the developer's decision making process.

Phase 2 archaeological projects are primarily based on salvage/mitigation excavations preceding development destruction or impact on a site. Phase 2 excavations can only be conducted with a permit, issued by SAHRA to the appointed archaeologist. Permit conditions are prescribed by SAHRA and includes (as minimum requirements) reporting back strategies to SAHRA and deposition of excavated material at an accredited repository.

In the event of a site conservation option being preferred by the developer, a site management plan, prepared by a professional archaeologist and approved by SAHRA, will suffice as minimum requirement.

After mitigation of a site, a destruction permit must be applied for from SAHRA by the client before development may proceed.

Human remains older than 60 years are protected by the National Heritage Resources Act, with reference to Section 36. Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of SAHRA. The procedure for Consultation Regarding Burial Grounds and Graves (Section 36[5]) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in this age category, located inside a formal cemetery administrated by a local authority, require the same authorisation as set out for graves younger than 60 years, in addition to SAHRA authorisation. If the grave is not situated inside a formal cemetery, but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws, set by the cemetery authority, must be adhered to.

Human remains that are less than 60 years old are protected under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925), as well as the Human Tissues Act (Act 65 of 1983), and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning; or in some cases, the MEC for Housing and Welfare.

Authorisation for exhumation and reinterment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. To handle and transport human remains, the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

### **1.3 Description of Study Area**

#### **1.3.1 Location Data**

The proposed project is on a site located approximately 20 kilometres from Rustenburg, close to Buffelspoort in the North-West Province on an area measuring 8.8 ha. The topography of the area is relatively flat and was used for agricultural purposes. The site is bordered on the south by the N4.

The study area falls within the bioregion described by Mucina *et al* (2006) as the Central Bushveld Bioregion with the vegetation described as Marikana thornveld. Land use in the general area is characterized by agriculture, dominated by crops and cattle farming. The study area is characterised by deep sandy to loamy soils.

### 1.3.2. Location Map

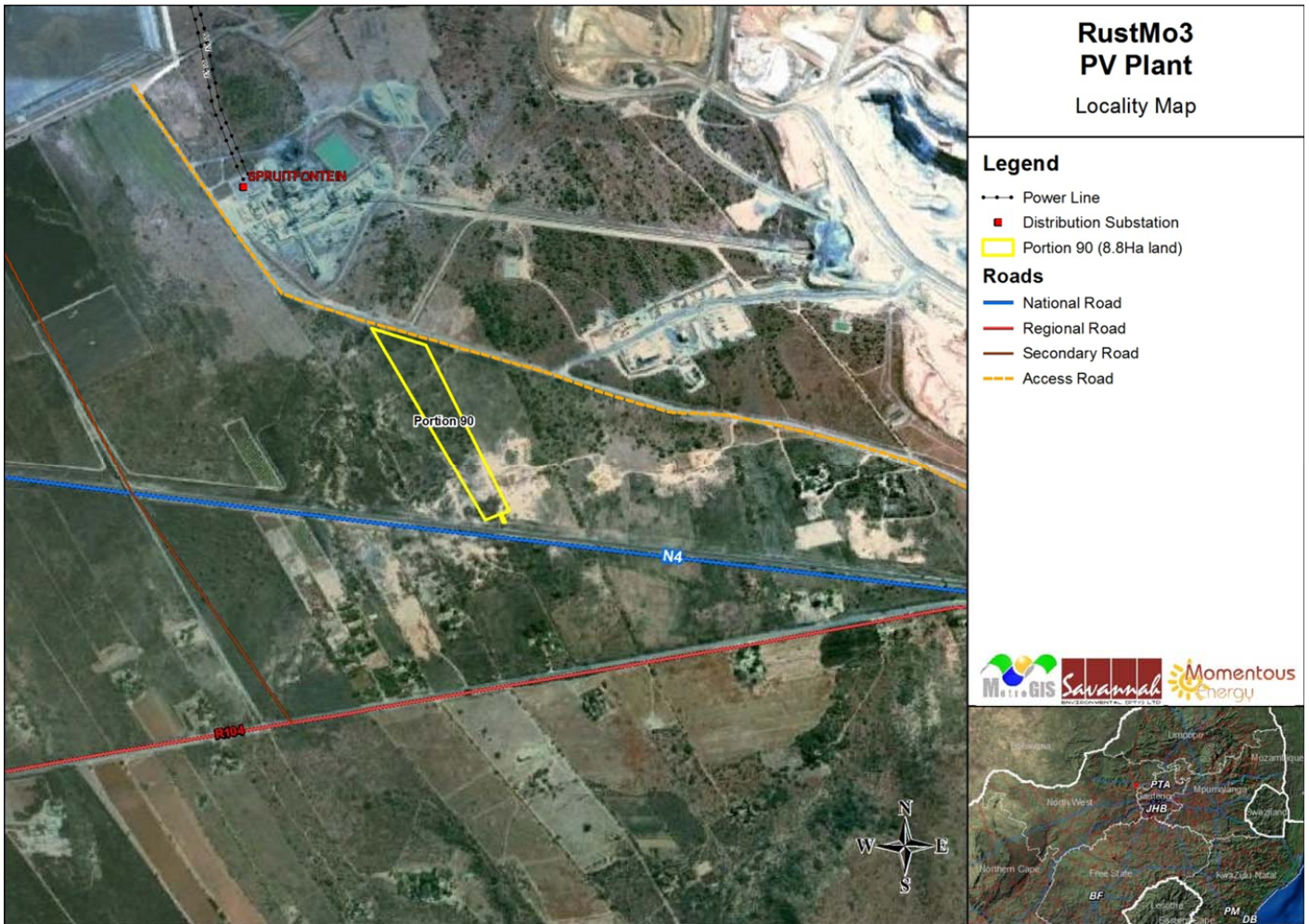


Figure 1: Location map provided by Savannah also indicating the survey area.

## **2. APPROACH AND METHODOLOGY**

The aim of the study is to cover archaeological databases and historical sources to compile a background history of the study area followed by field verification; this was accomplished by means of the following phases.

### **2.1 Phase 1 - Desktop Study**

The first phase comprised a desktop study, gathering data to compile a background history of the area in question. It included scanning existing records for archaeological sites, historical sites, graves, architecture, oral history and ethnographical information on the inhabitants of the area.

#### ***2.1.1 Literature Search***

Utilising data for information gathering stored in the archaeological database at Wits, previous CRM reports done in the area and a search in the National archives. The aim of this is to extract data and information on the area in question, looking at archaeological sites, historical sites, graves, architecture, oral history and ethnographical information on the inhabitants of the area.

#### ***2.1.2 Information Collection***

The SAHRA report mapping project (Version 1.0) was consulted to collect data from previously conducted CRM projects in the region to provide a comprehensive account of the history of the study area.

#### ***2.1.3 Consultation***

No consultation was conducted since no one resides in the study area.

#### ***2.1.4 Google Earth and Mapping Survey***

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

#### ***2.1.5 Genealogical Society of South Africa***

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

### **2.2 Phase 2 - Physical Surveying**

Due to the nature of cultural remains, the majority of which occurs below surface, a field survey of the study area of 8.8Ha was conducted; focussing on drainage lines, hills and outcrops, high lying areas and disturbances in the topography. The study area was surveyed by means of vehicle and extensive surveys on foot by professional archaeologists during the week of 9 March 2012.

All sites discovered inside the proposed development area was plotted on 1:50 000 maps and their GPS co-ordinates noted. Digital photographs were taken at all the sites.

### **2.3. Restrictions**

Due to the fact that most cultural remains may occur below surface, the possibility exists that some features or artefacts may not have been discovered/ recorded during the survey. Low ground visibility of parts of the study area is due to sand cover and vegetation, and the possible occurrence of unmarked graves and other cultural material cannot be excluded. Only the surface infrastructure footprint areas were surveyed as indicated in the location map, and not the entire farm. Although Heritage Contracts and Archaeological Consulting CC surveyed the area as thoroughly as possible, it is incumbent upon the developer to stop operations and inform the relevant heritage agency should further cultural remains, such as stone tool scatters, artefacts, bones or fossils, be exposed during the process of development.

### **3. NATURE OF THE DEVELOPMENT**

The PV solar energy facility is proposed to accommodate an array of photovoltaic (PV) panels with a generating capacity of up to 5MW referred to as RustMo3.

Other infrastructure associated with the PV facility will include:

- » Photovoltaic Solar Panels with a generating capacity of 5 MW
- » An on-site mini substation;
- » Foundations to support the PV panels where necessary;
- » Cabling between the project components ,to be laid where practical
- » Internal Access Roads
- » Security room and storage area

### **4. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND OF THE STUDY AREA**

#### **4.1 Databases Consulted**

##### ***Wits Archaeological Data Bases***

Six previously recorded sites are on record for the 2527 CB topographic map at the Wits database. These sites all consist of LIA Moloko stonewalled sites.

##### ***SAHRA Report Mapping Project***

The SAHRA Report Mapping project (version 1) has one survey on record for the study area by Pistorius (2003). The results of this study were not accessible at the time of the deadline of this report.

##### ***Genealogical Society and Google Earth Monuments***

Neither the Genealogical Society nor the monuments database at Google Earth (Google Earth also include some archaeological sites and historical battlefields) have any recorded sites in the study area.

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

The following report will endeavour to give an account of the history of this farm and also a brief overview of the history of the area and district in which it is located. The report has been divided into several sections that will focus on the following aspects:

- General history of human settlement in the area
- The history of black and white interaction in the area
- A history of specific land ownership and development of the farm, where this could be traced

### 4.2.1. Historiography and Methodology

It was necessary to use a wide range of sources in order to give an accurate account of the history of the area in which the farm Spruitfontein 341 JQ is located. Sources include secondary source material, maps, electronic sources and archival documents. Fortunately, it was possible to trace a number of documents in the National Archives that specifically relates to issues on the farm Spruitfontein 341 JQ.

Unfortunately, time restrictions made it impractical to exhaust all the sources that could be found on the topic. The following sources may be of interest if a further study of the area surrounding Spruitfontein 341 JQ is pursued:

- » Breuts, P. L. 1953. *Union of South Africa. Department of Native Affairs. Ethnological Publications No. 28. The Tribes of Rustenburg and Pilansberg Districts.* Pretoria: The Government Printer.
- » Breuts, P. L. 1989. *A history of the Batswana and origin of Bophuthatswana.* Ramsgate.
- » Coertze, R. D. 1971. *Die familie-, erf- en opvolgingsreg van die Bafokeng van Rustenburg.* Pretoria: Sabra.
- » Coetzee, N. A. 1997. *Die geskiedenis van Rustenburg ongeveer van 1840 tot 1940.* Pretoria: V&R Drukkery (Edms) Bpk.
- » Pretorius, Z. L. 1967. *Die geskiedenis van Rustenburg, 1851-1918.* Potchefstroom.
- » Rosenthal, E. 1979. *Rustenburg Romance. The history of a Voortrekker Town.* Johannesburg: Perskor Publishers.
- » Stadsraad van Rustenburg. *Die Rustenburgse Eeu fees Gedenkboek. 1851-1951.* Edited by Prof. A. N. Pelsler and Mr. N. Prinsloo. 1951. Johannesburg: HortorsBeperk.

### 4.2.2. Maps Of The Area Under Investigation

Since the mid 1800's up until the present, South Africa has been divided and re-divided into various different districts. Since 1851, the farm Spruitfontein 341 JQ formed part of the Rustenburg district. (Geschiedenisatlas van Suid-Afrika 1999: 17) This remained the case up until 1977, when South Africa was divided into various smaller Magisterial Districts. The area of the farm became part of the Rustenburg Magisterial District. (Geschiedenisatlas van Suid-Afrika 1999: 25) Since 1990, however, a large portion of the Rustenburg Magisterial District fell under the Bophuthatswana Bantustan or homeland. This area was however reintegrated into South Africa in 1994, and Spruitfontein 341 JQ is still located in the Rustenburg district at present. (Geschiedenisatlas van Suid-Afrika 1999: 26-27)

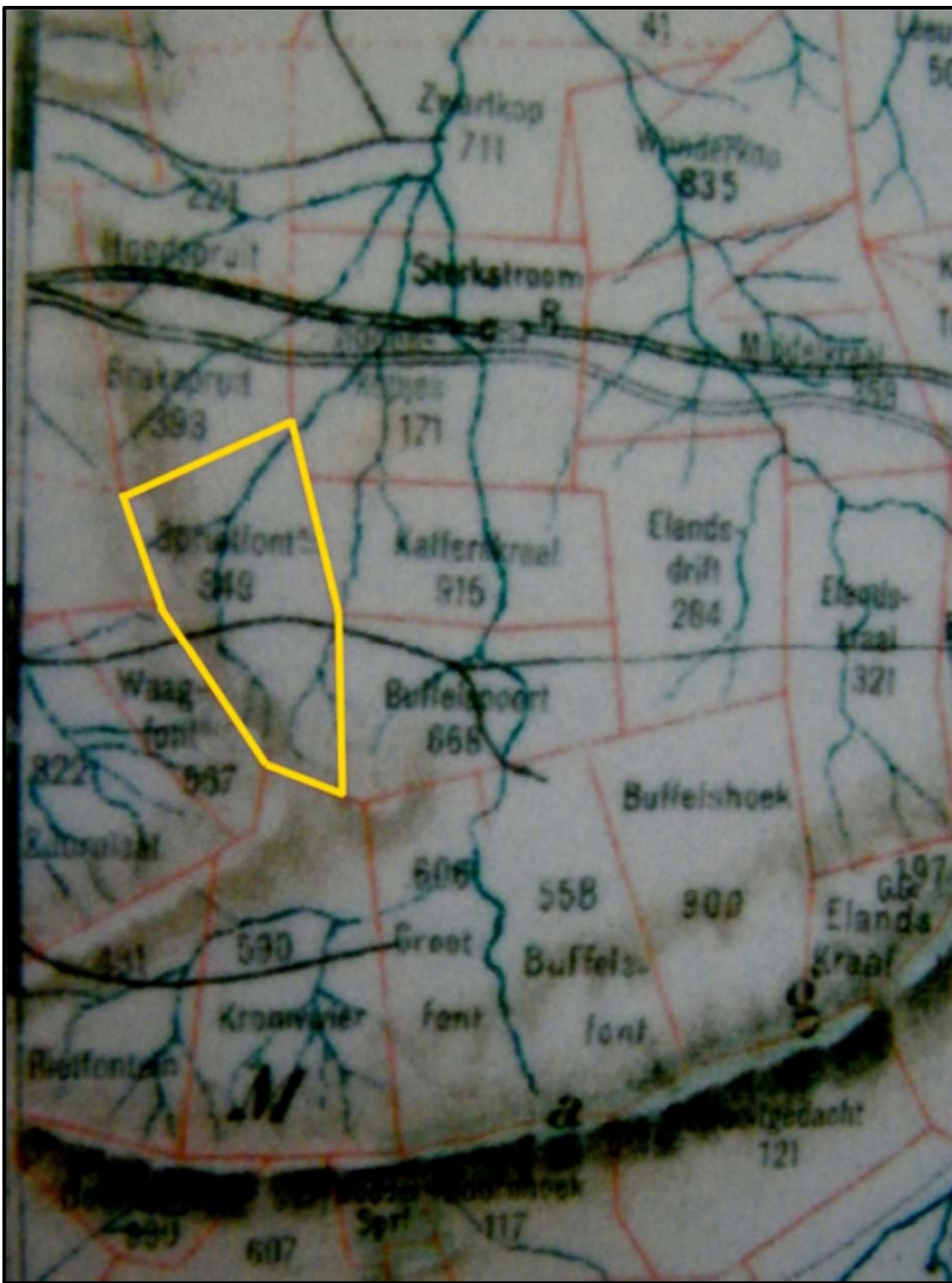


Figure 2. 1900 Map of the Transvaal. (Holmden 1900 [?])

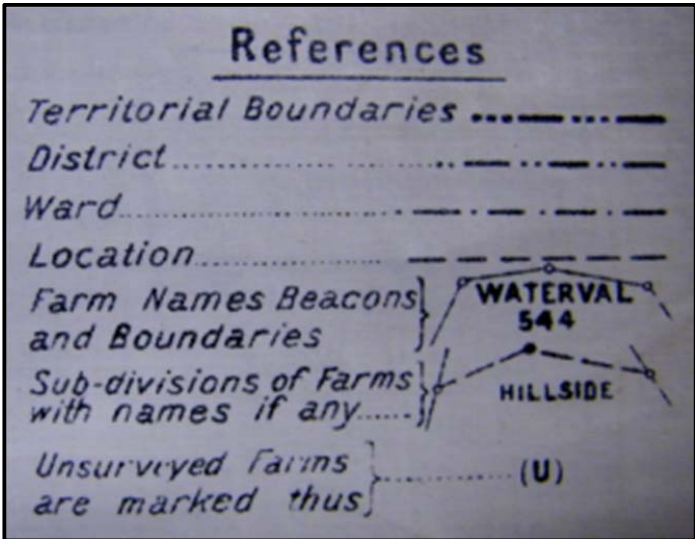
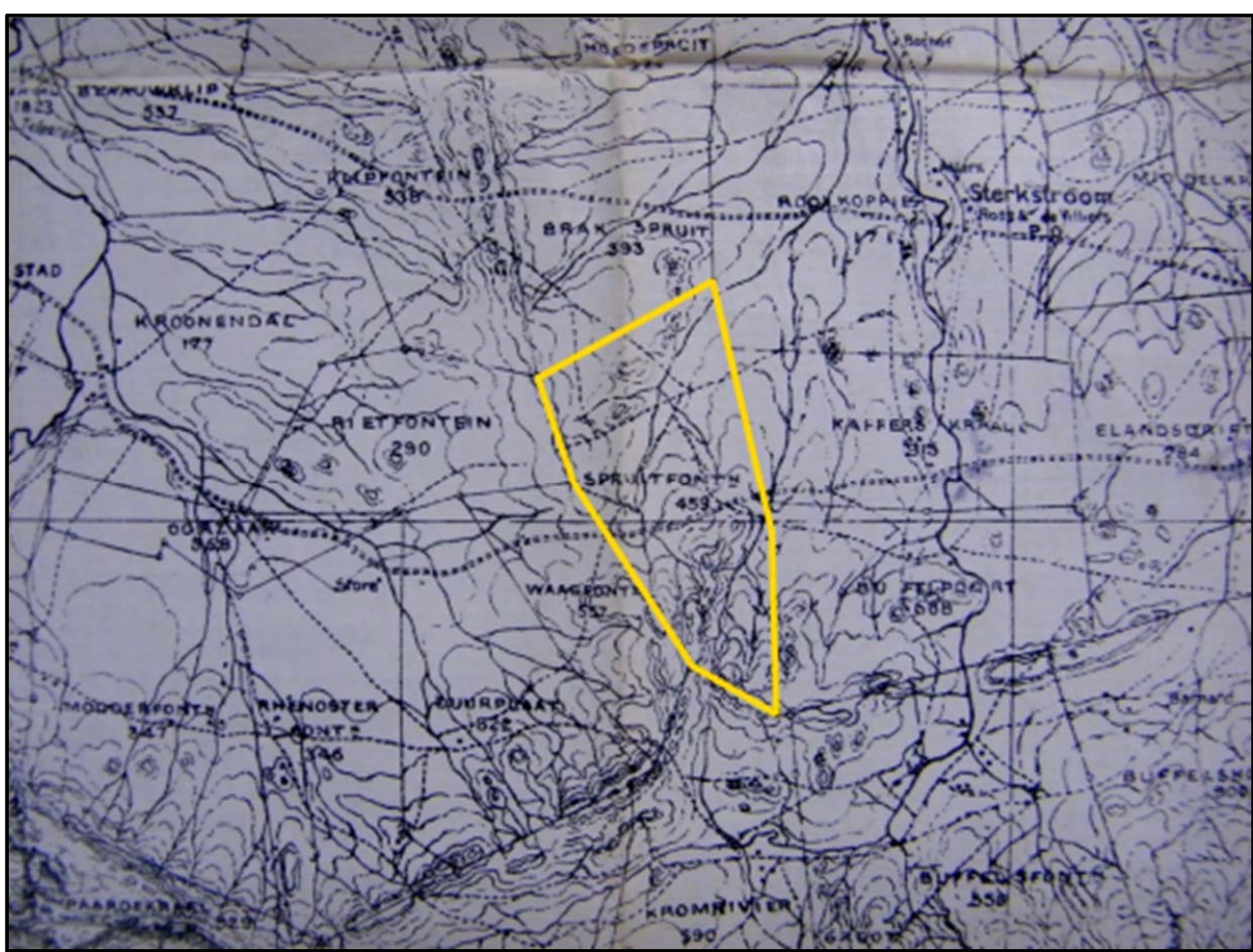


Figure 3. 1905 Major Jackson map of Spruitfontein No. 459. No developments have been indicated on the farm. (Major Jackson Series 1905)



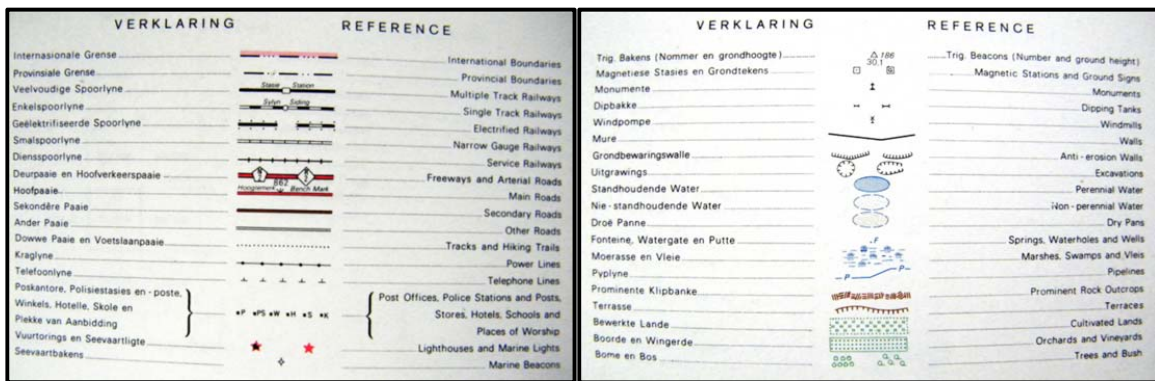


Figure 4. 1985 Topographical map of the farm Spruitfontein 341 JO. (Topographical Map [2527CD] 1985; Topographical Map [2527CB] 1985) showing the approximate location of the study area in red.

#### 4.2.3. A Brief History Of Human Settlement And Black And White Interaction In The Farm Area

J. S. Bergh's historical atlas of the four northern provinces of South Africa is a very useful source for the writing of local and regional history. Through this source it could be ascertained that there might have been sporadic occurrences of Malaria infections in the area of the farm Spruitfontein 341 JQ during the rainy season, up until the 1930's. Tsetse flies were however not present in the area at that time. (Geskiiedenisatlas van Suid-Afrika 1999: 3)

Some signs of Stone Age activity can be found in the area where Spruitfontein 341 JQ is located today. Two sites with Stone Age rock engravings are located to the northwest and northeast thereof. There are no signs of Early Iron Age remains in the immediate vicinity of Spruitfontein 341 JQ. (Geskiiedenisatlas van Suid-Afrika 1999: 4-6) There are however signs that the present-day Rustenburg, as well as the farm Spruitfontein 341 JQ, is located in an area that used to be a large Late Iron Age (1000-1800) terrain. (Geskiiedenisatlas van Suid-Afrika 1999: 7)

Since the beginning of the 19<sup>th</sup> century, there was a presence of Fokeng, Kwena and Tuang settlements in the present-day Rustenburg area. The Fokeng tribe had its settlement at Phokeng, to the northwest of Rustenburg, and were able to live there up until the time of the Difaqane, when Mzilikazi's Khumalo-Ndebeles drove all other black communities from the area. The Fokeng, under the authority of Nôgê, was one of the few groups that resisted Mzilikazi, and without success. (Geskiiedenisatlas van Suid-Afrika 1999: 10-11; 110-111) 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. (Geskiiedenisatlas van Suid-Afrika 1999: 10) 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. (Geskiiedenisatlas van Suid-Afrika 1999: 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. In 1829, Robert Scoon and McLuckie made a journey from Mzilikazi's Kraal, along the area directly to the north of Rustenburg (seemingly very close by the area where Spruitfontein 341 JQ is located today), to the north of Zeerust and finally down to Danielskuil. In the same year, Moffat and Archbell travelled from Mzilikazi's Kraal (to the north of Pretoria), through Rustenburg and all the way Zeerust and then to Kuruman in the southwest. In 1835, Dr. Andrew Smith, a natural and medical scientist, travelled between Mzilikazi's kraal and Rustenburg, and finally much further to the north, almost up to Mahalapye. (Geskiiedenisatlas van Suid-Afrika 1999: 12-13)

It was however 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. (Ross 2002: 39)

As can be expected, the movement of whites into the northern provinces would have a significant impact on the black people who populated the land. This was also the case in the North West Province, where Spruitfontein 341 JQ is located. Farms were surveyed in a large area, which included the present-day Rustenburg district, between 1839 and 1840. (Geskiiedenisatlas van Suid-Afrika 1999: 15) By 1860, the population of whites in the central Transvaal was already very dense and the administrative machinery of their leaders was firmly in place. Many of the policies that would later be entrenched as legislation during the period of apartheid had already been developed. (Geskiiedenisatlas van Suid-Afrika 1999: 170)

The Anglo-Boer War, which took place between 1899 and 1902 in South Africa, was one of the most turbulent times in South Africa's history. Even before the outbreak of war in October 1899 British politicians, including Sir Alfred Milner and Mr. Chamberlain, had declared that should Britain's differences with the Z.A.R. result in violence, it would mean the end of republican independence. This decision was not immediately publicized, and as a consequence republican leaders based their assessment of British

intentions on the more moderate public utterances of British leaders. Consequently, in March 1900, they asked Lord Salisbury to agree to peace on the basis of the status quo ante bellum. Salisbury's reply was, however, a clear statement of British war aims. (Du Preez 1977)

One battalion of British troops moved through Rustenburg between February and September 1900. This was the regiment of General Major R. S. S. Baden-Powell. The Boer war-hero General Jacobus Herculaas de la Rey (more commonly known as Koos de la Rey) also moved past Rustenburg on his route between Barberton and Lichtenburg. (Geskiiedenisatlas van Suid-Afrika 1999: 51)

Rustenburg was under siege on 14 June 1900, when Colonel Herbert Plumer accepted the surrender of the Rustenburg Field Cornet Piet Kruger. Kruger, on his part, had been unable to get the Burghers to put up any resistance against the British forces. The British camped near the old goal, but on strict order from General Baden-Powell that there were no demonstrations. On the same day, the demoralized Burghers handed 1000 rifles to the British authorities, and it is perhaps safe to assume that an equivalent number signed the oath of neutrality. (Wulfsohn 1992: 50-51)

By 1899, quite a large number of farms to the north of Rustenburg had been bought by blacks. These farms are located mainly to the north and northwest of the concerned Spruitfontein farm area. A black reserve was located directly to the north of the farm. By 1904 several properties to the north and northwest of Spruitfontein were still in black ownership. (Geskiiedenisatlas van Suid-Afrika 1999: 40-41) The 1913 Native Land Act and the 1936 Native Trust and Land Act ensured that black "homelands" were established in various areas in South Africa. A rather large portion of land, a small distance to the north of Rustenburg, was allocated as a homeland. Another portion of land to the east of Rustenburg, and directly to the north of the farm under investigation, also became a homeland. (Geskiiedenisatlas van Suid-Afrika 1999: 42) By 1993, a large area to the north of Rustenburg had been declared as the Bophuthatswana Independent Black State, and this area is located very close to where Spruitfontein 341 JQ is situated. (Geskiiedenisatlas van Suid-Afrika 1999: 43)

#### **4.2.4. Historical Overview Of The Ownership And Development Of The Farm Spruitfontein 341 Jq**

On 26 September 1902, a ten day provisional quarantine was placed on cattle belonging to blacks living on the farm Spruitfontein No. 459. One of the cattle owners was called "Janti", and it was recorded that his cattle were infected with East Coast Fever. It seems that the farm was at that time owned by one J. C. Engelbrecht. (NASA TAB, TAD: 360 AW464)

In the early 1950s, talks were under way for the establishment of a transport scheme between the farms Spruitfontein and the neighbouring Kafferskraal. This was due to the need for transport to a farm school that had been established on Kafferskraal. The 26 attending students had to travel between 2.2 and 4.1 miles to the school, and were at that time making use of donkey cars and bicycles. They however had to travel along a portion of the Pretoria-Rustenburg Main Road, and this was very dangerous. It is for this reason that the Director of Education in the Transvaal made funds available for the establishment of a transport scheme. (NASA TAB, TOD: 752 E10/26/94)



Figure 5. Photo of school bus. (NASA TAB, TOD: 752 E10/26/94)

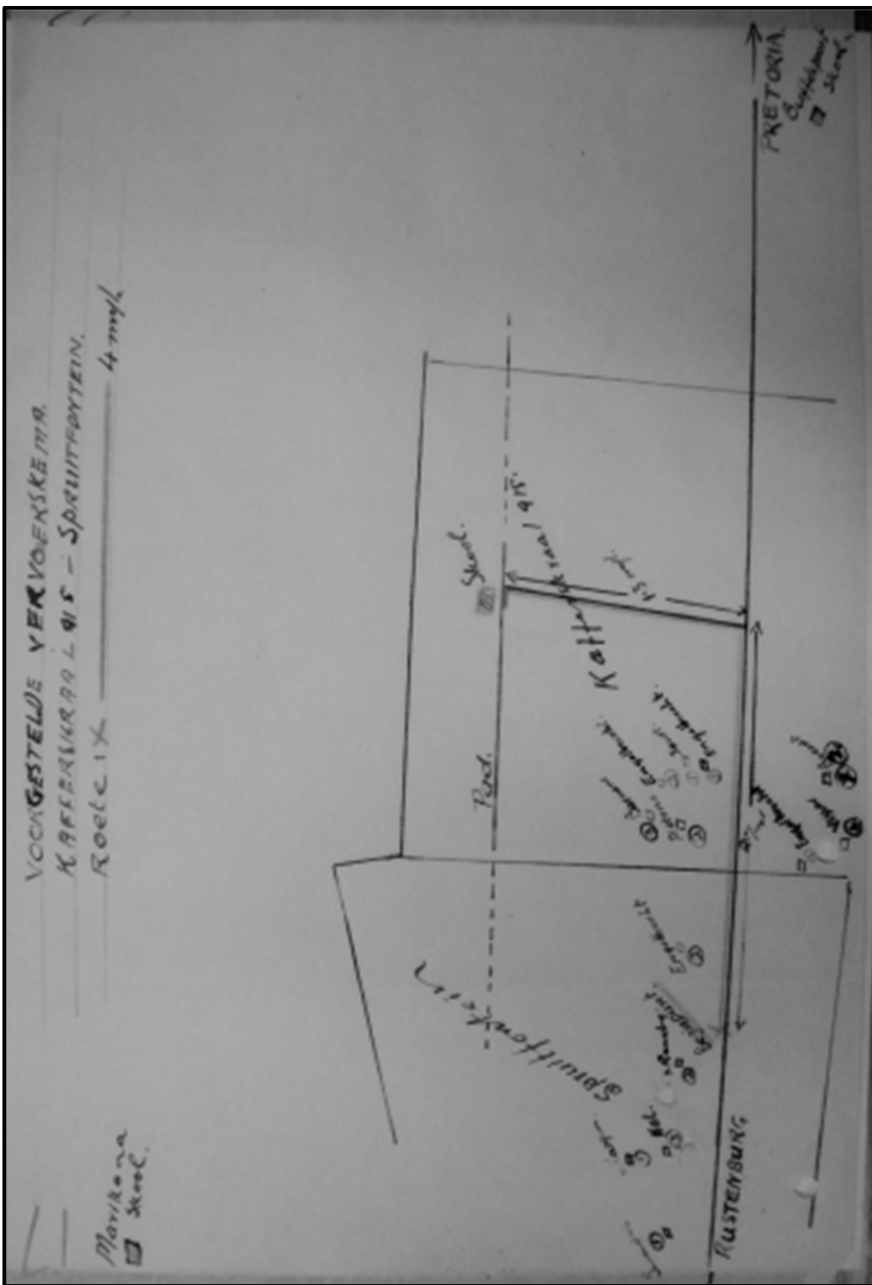


Figure 6. Sketch of proposed transport scheme..(NASA TAB, TOD: 752 E10/26/94)

On this sketch map one can see that the Engelbrecht, van Rensburg, Nel, Van Rooyen and Swanepoel families were at that time residing on Spruitfontein. Mr. Dawid Jacobus Pieterse of the farm Kafferskraal had the contract to drive the school bus between 1951 and 1952. (NASA TAB, TOD: 752 E10/26/94)

In June 1953, Ms. Magdalena Johanna du Plessis became the new school bus contractor for the Kafferskraal-Spruitfontein transport scheme, after Mr. Pieterse decided to leave the area. Mr. J. Engelbrecht was the bus driver. (NASA TAB, TOD: 752 E10/26/94)









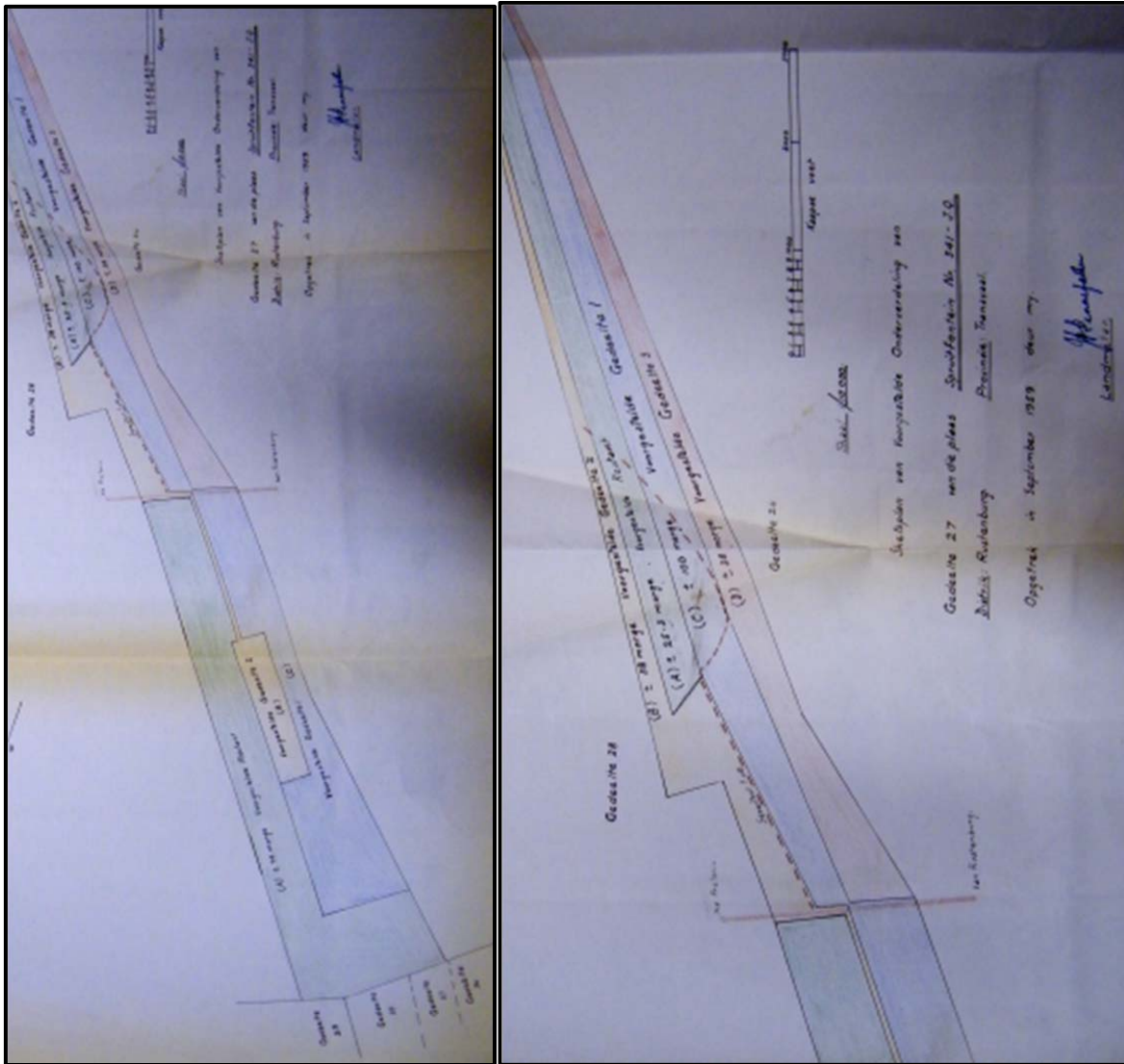


Figure 10 | Sketch of the proposed subdivision of Portion 27 of Spruitfontein. (NASA SAB, CDB: 2/806 TAD9/27/41)

In January 1960, the Director of Local Management approved this subdivision. (NASA SAB, CDB: 2/806 TAD9/27/41)

In February 1960, Christian Jacob Homan (born 13 September 1921) applied to subdivide his property, Portion 31 of the farm Spruitfontein No. 341 JQ, as on the sketch map below.

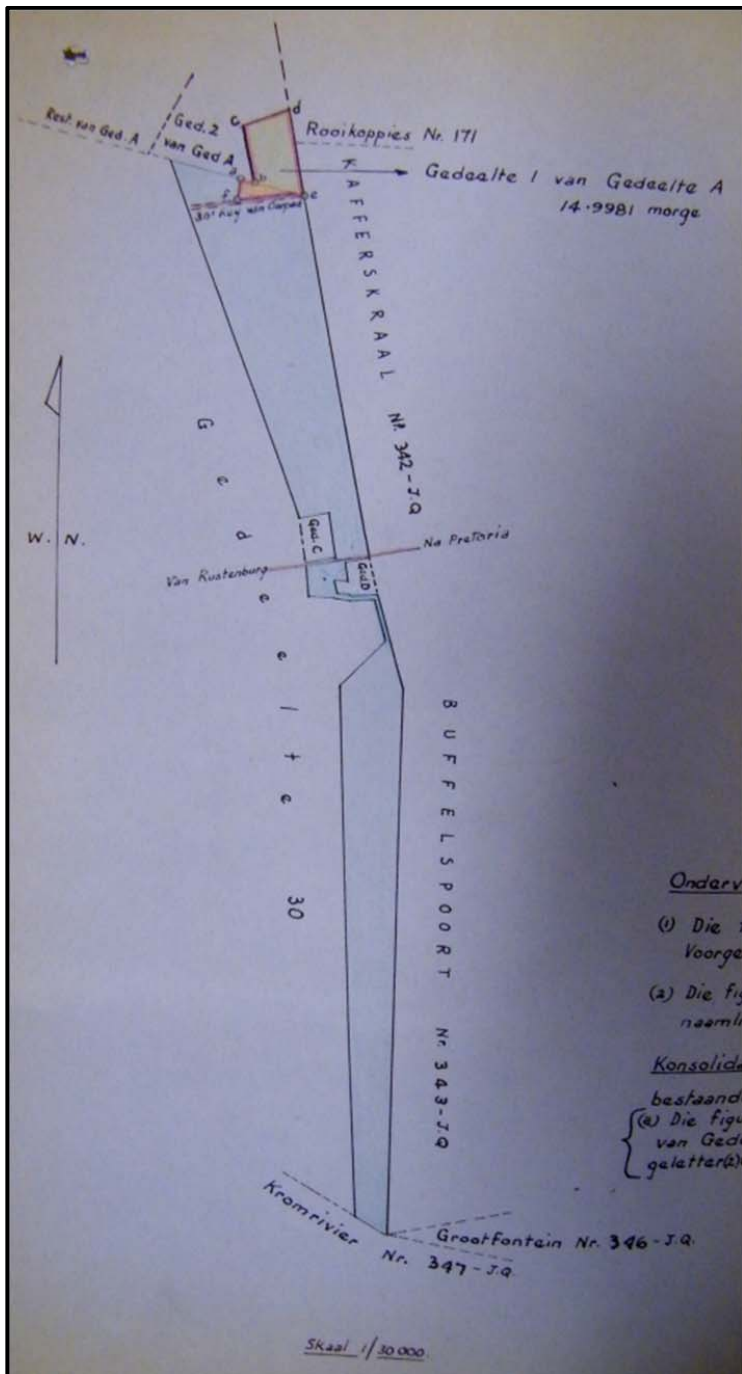


Figure 11: (NASA SAB, CDB: 2/806 TAD9/27/41)

Homan was at the time the owner of the mineral rights on his farm. He had acquired the title deed to the farm on 11 November 1959. The farm portion was used for agricultural purposes. The subdivision was recommended in July 1960. (NASA SAB, CDB: 2/806 TAD9/27/41)

In March 1962, the subdivision of Portion 30 of Spruitfontein 341 JQ was recommended by the Surveyor General, soon to be approved by the Secretary of Local Management. It is not known who the landowners were at the time. The following sketch map shows the recommended subdivision.



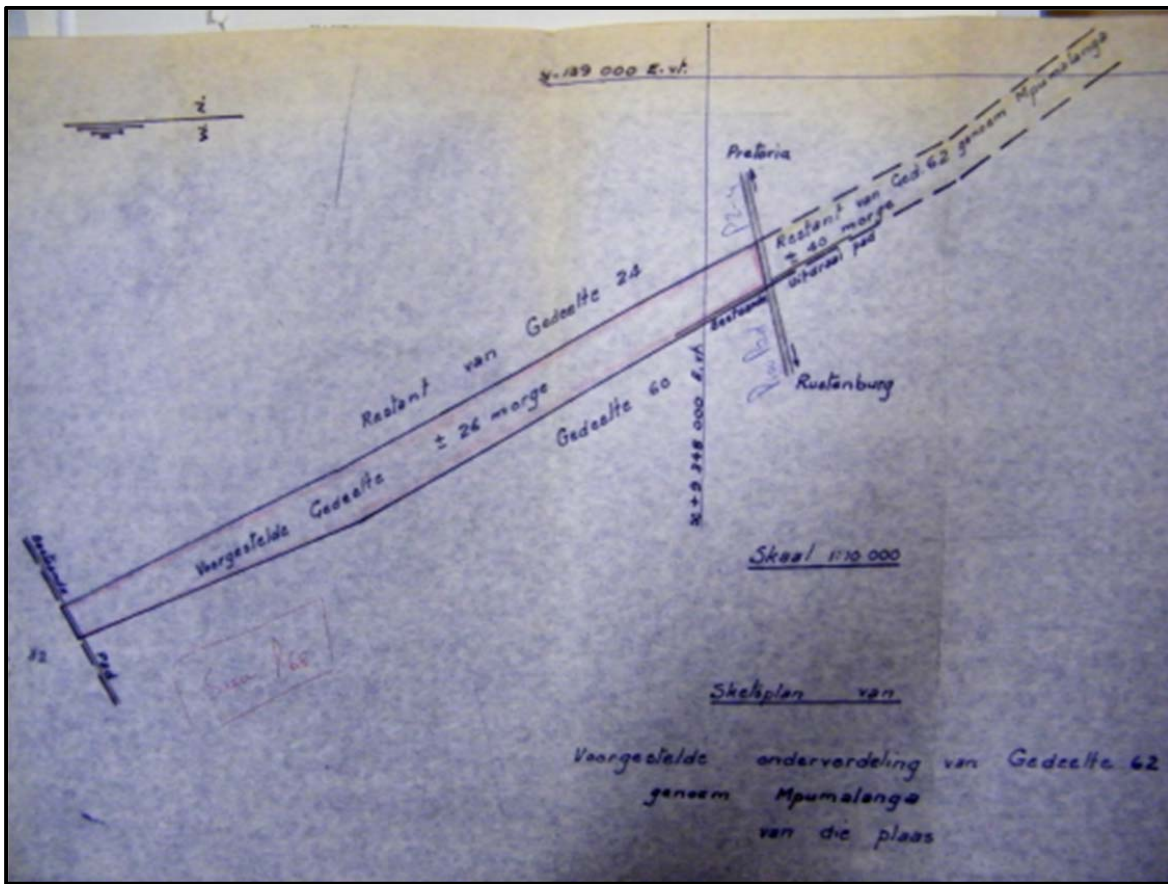


Figure 13 (NASA SAB, CDB: 2/806 TAD9/27/41)

In August 1969, it was proposed by the firm Pennefather, Smit and De Ridder that Portion 52 of Spruitfontein 341 JQ be subdivided as on the following sketch.



- » No building or any structure whatsoever could be erected within a distance of 300 Cape feet from the centre line of a public road. (NASA SAB, CDB: 2/806 TAD9/27/41)

A deed to a portion of the Remaining Extent of Spruitfontein 241 JQ was first transported to one Eduard Jacobus Engelbrecht on 8 March 1911. Unfortunately the title deed record could not be traced for the period between 1911 and 25 March 1964, when the same portion was sold to Adolf Jacobus Jonker. (NASA SAB, CDB: 15385 PB4/19/2/40/341/1) On 15 April 1969, the title deed to this portion of the Remaining Extent of Spruitfontein 341 JQ, measuring 2486 morgen 242 square roods, was sold by Adolf Jacobus Jonker (born 24 February 1917) to Hendrik Abraham Christoffel de Beer (born 26 December 1929). It was however stipulated in this deed of sale that a share of the mining rights on this portion of land was reserved to Johannes Cornelius Rudolph Engelbrecht (born 9 May 1885). Engelbrecht had acquired this share in March 1964. (NASA SAB, CDB: 15385 PB4/19/2/40/341/1)

In June 1975, discussions were underway for the construction of a road between the farms Spruitfontein 341 JQ and Bokfontein 448 JQ. A gravel road was already in existence, and the new road would follow this same course, except for a few improvements to the route. No particulars were given as to the extent of the development on Spruitfontein 341 JQ. (NASA SAB, CDB: 15613 PB4/21/5/2/87)

In October 1982, Mr. H. A. C. de Beer applied for a permit to operate a road stall and garden nursery on this property (Portion 23 of Spruitfontein 341 JQ). The road stall was located close to the road, to attract the attention of motorists driving by. The buildings for these businesses had already been constructed at that time. (NASA SAB, CDB: 15385 PB4/19/2/40/341/1)

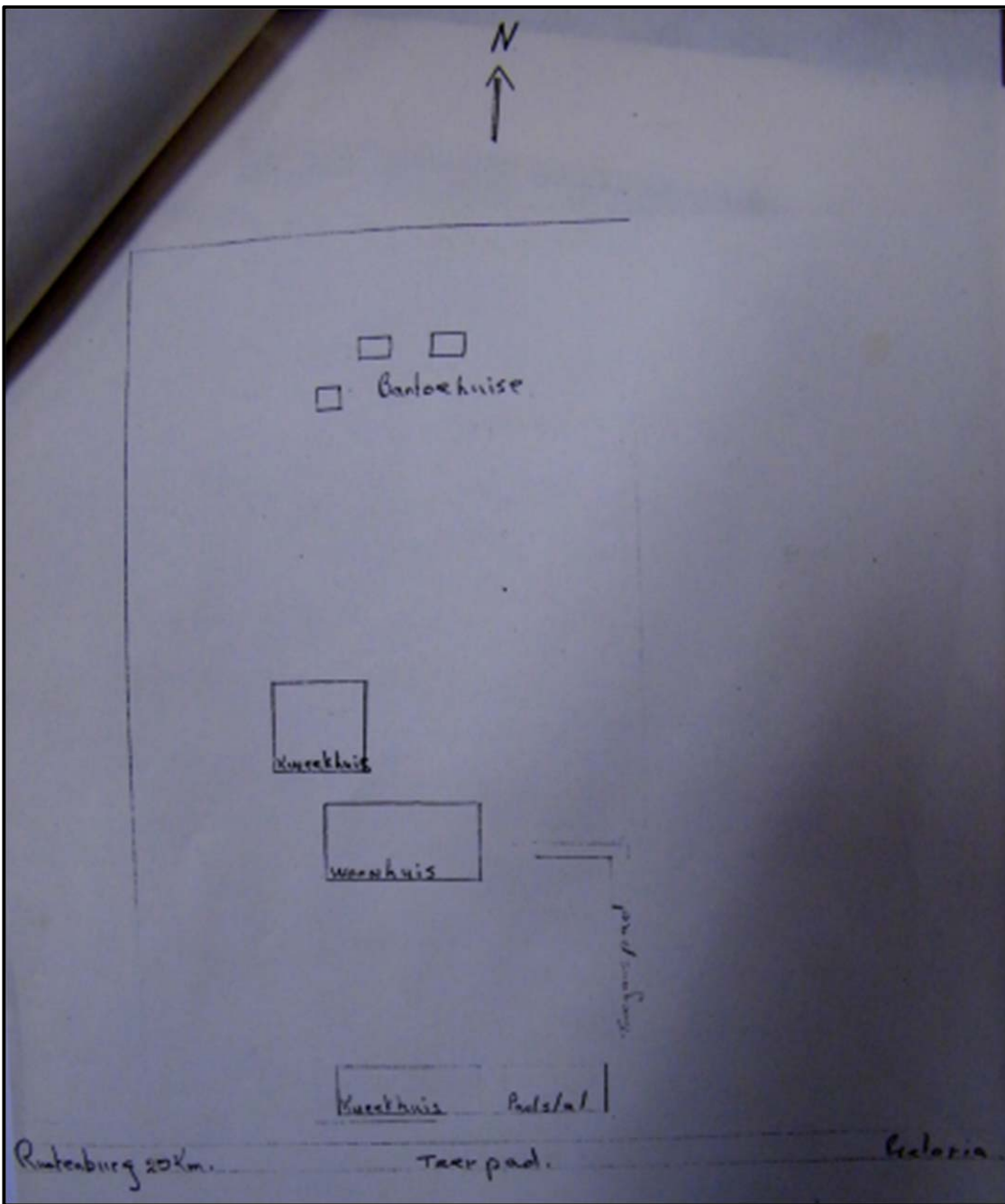


Figure 15: Proposed plant nursery and road stall businesses. (NASA SAB, CDB: 15385 PB4/19/2/40/341/1)





## 5. 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, or a representative sample, depending on the nature of the project. In the case of the proposed PV Solar Facility the local extent of its impact necessitates a representative sample and only the footprint of the areas demarcated for development were surveyed. 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. The following criteria were used to establish site significance:

- » The unique nature of a site;
- » The integrity of the archaeological/cultural heritage deposits;
- » 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/is known);
- » The preservation condition of the sites;
- » Potential to answer present research questions.

Furthermore, The National Heritage Resources Act (Act No 25 of 1999, Sec 3) distinguishes nine criteria for places and objects to qualify as 'part of the national estate' if they have cultural significance or other special value. These criteria are:

- » Its importance in/to the community, or pattern of South Africa's history;
- » Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- » Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- » Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- » Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- » Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- » Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- » Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa;
- » Sites of significance relating to the history of slavery in South Africa.

### 5.1. Field Rating of Sites

Site significance classification standards prescribed by SAHRA (2006), and approved by ASAPA for the SADC region, were used for the purpose of this report. The recommendations for each site should be read in conjunction with section 7 of this report.

<b><i>FIELD RATING</i></b>	<b><i>GRADE</i></b>	<b><i>SIGNIFICANCE</i></b>	<b><i>RECOMMENDED MITIGATION</i></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

## 5.2 Impact Rating of Assessment

The criteria below are used to establish the impact rating of a site. as provided by the client:

- » The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- » The **extent**, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high):
- » The **duration**, wherein it will be indicated whether:
  - \* the lifetime of the impact will be of a very short duration (0-1 years), assigned a score of 1;
  - \* the lifetime of the impact will be of a short duration (2-5 years), assigned a score of 2;
  - \* medium-term (5-15 years), assigned a score of 3;
  - \* long term (> 15 years), assigned a score of 4; or
  - \* permanent, assigned a score of 5;
- » The **magnitude**, quantified on a scale from 0-10 where; 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- » The **probability of occurrence**, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1-5 where; 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
- » The **significance**, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high; and
- » the **status**, which will be 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.
- » the *degree* to which the impact can be mitigated.

The **significance** is calculated by combining the criteria in the following formula:

$$S = (E + D + M)P$$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The **significance weightings** for each potential impact are as follows:

- » < 30 points: Low (i.e., where this impact would not have a direct influence on the decision to develop in the area),
- » 30-60 points: Medium (i.e., where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- » > 60 points: High (i.e., where the impact must have an influence on the decision process to develop in the area).

## 6. BASELINE STUDY-DESCRIPTION OF SITES

It is important to note that the entire Spruitfontein farm was not surveyed but only the footprint of the proposed PV layout area and access roads as indicated in Figure 1. The study area has been used for agricultural purposes in the past and more recently sand mining occurred in the southern portion. These activities would have destroyed any surface indications of heritage sites. During the survey no sites of heritage significance was identified. A desktop study by Prof Bruce Rubidge (2012) indicated that the proposed development will not have negative effect on palaeontological heritage.



Figure 17. Northern view of sand mining in study area.



Figure 18. General Site conditions in the northern portion of the study area.



Figure 19. Study area viewed from the South.



Figure 20. Old agricultural fields in the north of the study area.

### Impact evaluation of the proposed project on heritage resources

<b>Nature:</b> During the construction phase activities resulting in disturbance of surfaces and/or sub-surfaces may destroy, damage, alter, or remove from its original position archaeological and paleontological material or objects.		
	<b>Without mitigation</b>	<b>With mitigation</b>
<b>Extent</b>	Local (2)	Local (1)
<b>Duration</b>	Permanent (5)	Permanent (5)
<b>Magnitude</b>	Low (2)	Low (1)
<b>Probability</b>	Probable (1)	Probable (1)
<b>Significance</b>	<b>9 ( low)</b>	<b>8 (low)</b>
<b>Status (positive or negative)</b>	Negative	Negative
<b>Reversibility</b>	Not reversible	Not reversible
<b>Irreplaceable loss of resources?</b>	Yes	Yes
<b>Can impacts be mitigated?</b>	Yes	
<b>Mitigation:</b> No sites were identified during the survey. However, if any archaeological or cultural material is uncovered during construction or operation a qualified archaeologist must be contacted to verify and record the find. Mitigation will then include documentation and sampling of the material. This will also be required if any paleontological material is uncovered.		
<b>Cumulative impacts:</b> Archaeological and cultural sites are non-renewable and impact on any archaeological context or material will be permanent and destructive.		
<b>Residual Impacts:</b> Depletion of archaeological record of the area.		

## **7. RECOMMENDATIONS**

No sites of heritage significance were identified during the survey. However, if during construction, any archaeological finds are made (e.g. stone tools, skeletal material), the operations must be stopped, and the archaeologist must be contacted for an assessment of the finds.

## **8. CONCLUSIONS**

This report endeavoured to give an account of the history of the farm Spruitfontein 341 JQ, where the proposed PV plant RustMO3 is located. Some particulars could be traced regarding the interactions between whites and blacks in the vicinity. The general history of human settlement in the farm area, as well as the interaction between black and white population groups, was discussed. Finally, all available information on the concerned farm was taken into account to write up a short history of the developments that had taken place thereon.

No sites of heritage significance were found during the survey and desktop study and from a heritage point of view there is no reason why the development cannot commence work.

## **9. PROJECT TEAM**

Jaco van der Walt, Project Manager

Liesl du Preez, Archival Research

## **10. STATEMENT OF COMPETENCY**

I (Jaco van der Walt) am a member of ASAPA (no 159), and accredited in the following fields of the CRM Section of the association: Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation. This accreditation is also valid for/acknowledged by SAHRA and AMAFA.

Currently, I serve as Council Member for the CRM Section of ASAPA, and have been involved in research and contract work in South Africa, Botswana, Zimbabwe, Mozambique and Tanzania; having conducted more than 300 AIAs since 2000.



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