

ARCHAEOLOGICAL IMPACT ASSESSMENT

FOR THE EXISTING JAN KEMPDORP LANDFILL

SE Solutions

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EXECUTIVE SUMMARY

Site name and location: The Jan Kempdorp landfill site is situated outside of the town within the Lekwa Teemane local municipality, North West Province. The landfill is situated on the Farm Guldenskat 36 Portion 43, and is accessed from the provincial R506. The entire site (footprint area of approximately 39,245 m²) is fenced and fitted with a gate.

1: 50 000 Topographic Map: 2724 DD.

EIA Consultant: SE Solutions

Developer: Phokwane Local Municipality

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

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Date of Report: 18 February 2016.

Findings of the Assessment:

Upon the request from SAHRA to the Phokwane Local Municipality (SAHRA ref 8737) as part of the Waste Management License (WML) application to operate the existing landfill, the study area was assessed in terms of the archaeological component of Section 35 of the NHRA and no surface indicators of archaeological (Stone or Iron Age) material was identified in the study area. No raw material suitable for knapping occur in the study area as the study area is characterized by deep (>3 meters) windblown sand that mantels the underlying Ventersdorp formation.

In terms of the built environment of the area (Section 34), no standing buildings occur within the study area apart from a few shacks of informal waste collectors at the landfill site and no significant cultural landscapes or views were noted during the fieldwork.

In terms of Section 36 no graves or cemeteries were recorded inside the landfill site, a large cemetery is however located to the north east. This cemetery is fenced and no direct impact is expected on the cemetery by the existing landfill site and access road to the landfill site.

Due to the lack of significant heritage features in the study area there is from an archaeological point of view no reason why the development cannot continue based on approval from SAHRA if the recommendations as made in section 7 of this report are adhered to.

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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 (~ 2.6 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

Heritage Contracts and Archaeological Consulting CC (**HCAC**) was appointed to conduct an Archaeological Impact Assessment for the existing unlicensed Jan Kempdorp Landfill Site as part of the Waste Management License application process.

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 desktop study that includes collection from various sources and consultations; Phase 2, the physical surveying of the study area on foot and by vehicle; Phase 3, reporting the outcome of the study.

General site conditions 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 SAHRA for review.

1.1. Terms of Reference

Desktop study

Conduct a brief desktop study where information on the area is collected to provide a background setting of the archaeology that can be expected in 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 23(2) (b) of the NEMA and section S. 39 (3) (b) (iii) of the MPRDA.

The AIA should be submitted, as part of the EIA, BA 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 or with a proven ability to do archaeological work.

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 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 AIA's 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 reinternment 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 un-licensed Jan Kempdorp Waste Disposal Facility (WDF) is situated on portion 43 of the Farm Guldenskat 36 within the Lekwa Teemane LM, North West Province (Figure 1). The facility is located approximately 4 km east of the Central Business District (CBD) of Jan Kempdorp. The 4 ha study area is located at the following co-ordinates 27° 54' 31.0278" S, 24° 52' 27.5506" E.

1.3.2. Location Map

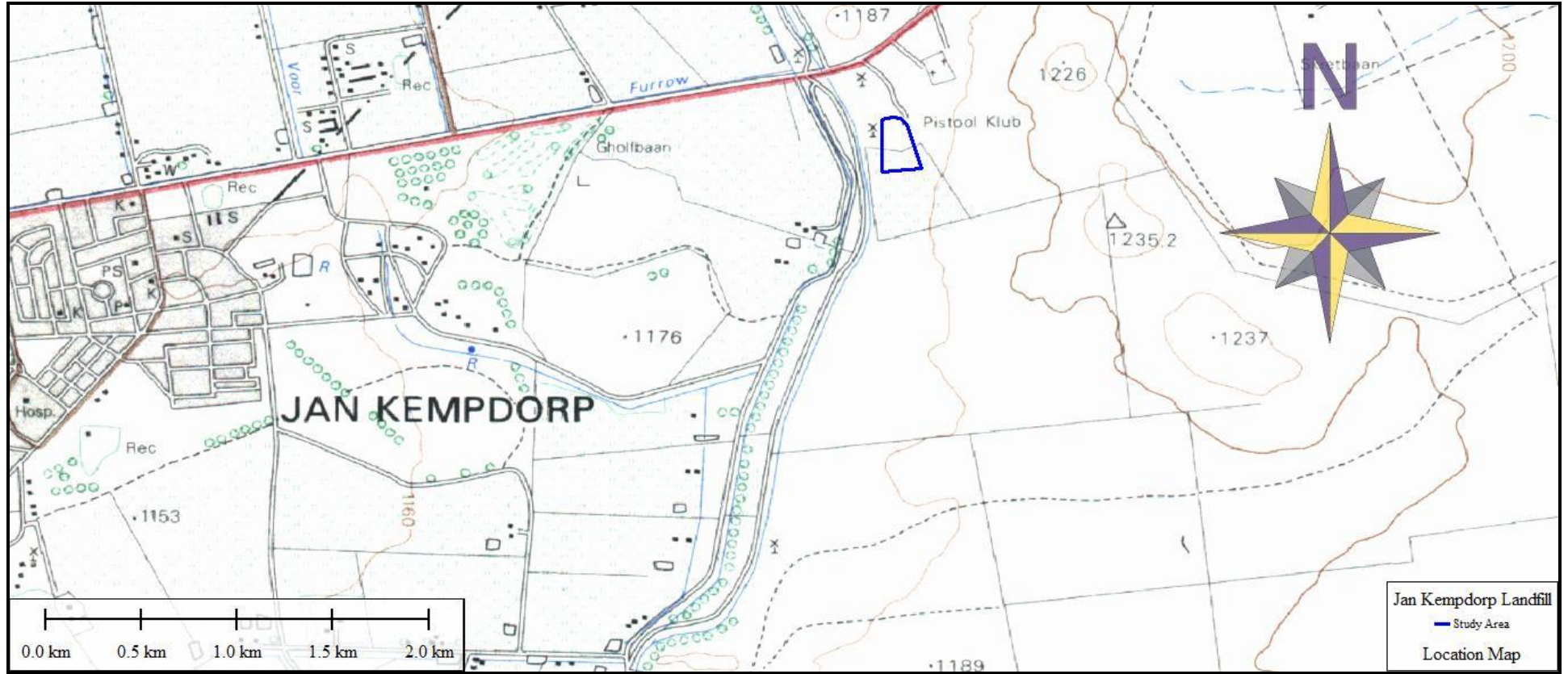


Figure 1: Location map

2. APPROACH AND METHODOLOGY

The aim of the study is to cover archaeological databases to compile a background of the archaeology that can be expected in 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 desktop, scanning existing records for archaeological sites, historical sites, graves, architecture (structures older than 60 years) of the area. The following approached was followed:

2.1.1 Literature Search

This was conducted by utilising data stored in the national archives and published reports relevant to the area. The aim of this is to extract data and information on the area in question.

2.1.2 Information Collection

SAHRIS 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 public consultation was done by the author as this is done independently as part of the environmental application process.

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 proposed development footprint of approximately 4 ha was conducted. The study area was surveyed by means of vehicle and extensive pedestrian surveys on 16th of February 2016. The survey was aimed at covering the proposed development footprint, focussing on specific areas on the landscape that would be more likely to contain archaeological and/or other heritage remains like drainage lines, rocky outcrops as well as slight elevations in the natural topography. Track logs of the areas covered were taken (Figure 2).

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 and the possible occurrence of unmarked graves and other cultural material cannot be excluded. This report only deals with the footprint area of the proposed development as indicated in the location map. Archaeological visibility is almost zero due to the fact that it is an existing landfill site.

Although HCAC 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 graves, stone tool scatters, artefacts, bones or fossils, be exposed during the process of development.



Figure 2: Track logs of the areas surveyed indicated in black with the development footprint indicated in blue.

3. NATURE OF THE DEVELOPMENT

The facility is currently used for the disposal of general waste, garden waste and garden rubble sourced from residents and businesses in Jan Kempdorp. No official records of waste volumes exist for the site, but the following waste disposal quantities from Jan Kempdorp are estimated: 50 – 80 tons of domestic waste per week; and 10 tons of garden waste per week. Waste generated by farming activities in the surrounding areas is also disposed of at the existing landfill. It is thus anticipated that hazardous waste may also be disposed of at the existing Jan Kempdorp Landfill. Due to a shortage of equipment within the Phokwane LM, compaction of waste at the landfill is undertaken once a month. There is limited cover material available on the site, resulting in sporadic covering of waste. The only recycling taking place on site is through informal waste collectors (or waste scavengers) living within the landfill boundaries.

4. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND OF THE STUDY AREA

4.1 Databases Consulted

Very few CRM studies were conducted close to the area. Kusel conducted an assessment of the Vaalharts Irrigations Scheme (Kusel 2015). The report mentions the architecture of the scheme as well as the cemeteries that are the only heritage related features recorded during this study (apart from other known sites mentioned by the author).

In the greater study area Rossouw (2008) reported that several ruins were document along the Vaalharts Irrigation Scheme canal system. Breutz (1968) was also informed of ruined stone kraals in the Taung District, on the farms Modimong and Killarney, Mogogong and Modutung areas and west of Pampierstad (Kusel 2015).

Several rock art sites are also on record for the area. Morris (1988) found that geometric motifs comprise 33% of the rock art images at Vaalharts. He noted that the engraved sites are mostly concentrated in river valleys and on higher ground beside streams, springs or pans. Breutz (1968) recorded engravings at Dikwana near Tlapeng Valley in the north-eastern corner of the Manthe area of the Taung Reserve. The engravings were predominantly the outlines of animals including giraffe, rhinoceros, zebra and antelope.

According to Kusel (2015) the Hartsriver (23 km to the west) gravels should also contain Earlier Stone Age and Middle Stone Age lithics. The Christy 1810-1865 collection in the British Museum contains lithics from the Harts River; the J.A. Swan collection (1948.1.97-102; 1954.7.11) contains lithics from Ricket's Road Drift, Harts (Hartz) River and from the Vaal-Harts Dam J.A. Swan Collection (1947.6.26) (Mitchell 2002, Kusel 2015). Some lithics in the Christy collection are MSA and some were collected from the bed of the Harts River. A salt pan near the Harts River also yielded lithics on hornfels (Kusel 2015).

Genealogical Society and Google Earth Monuments

No grave sites are indicated in close proximity to the study area.

4.2. Brief background to the study area

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 study area is located. Sources include secondary source material, maps, electronic sources and archival documents. A search on the National Archives database also includes searches in various other archives repositories, records centres, national registers and libraries in South Africa. It was only possible to write a more general overview of the history of the district in which the farm is located. Thus, although many sources exist on the general history it is difficult to compile histories that focus on very specific parts of the area, such as individual farms.

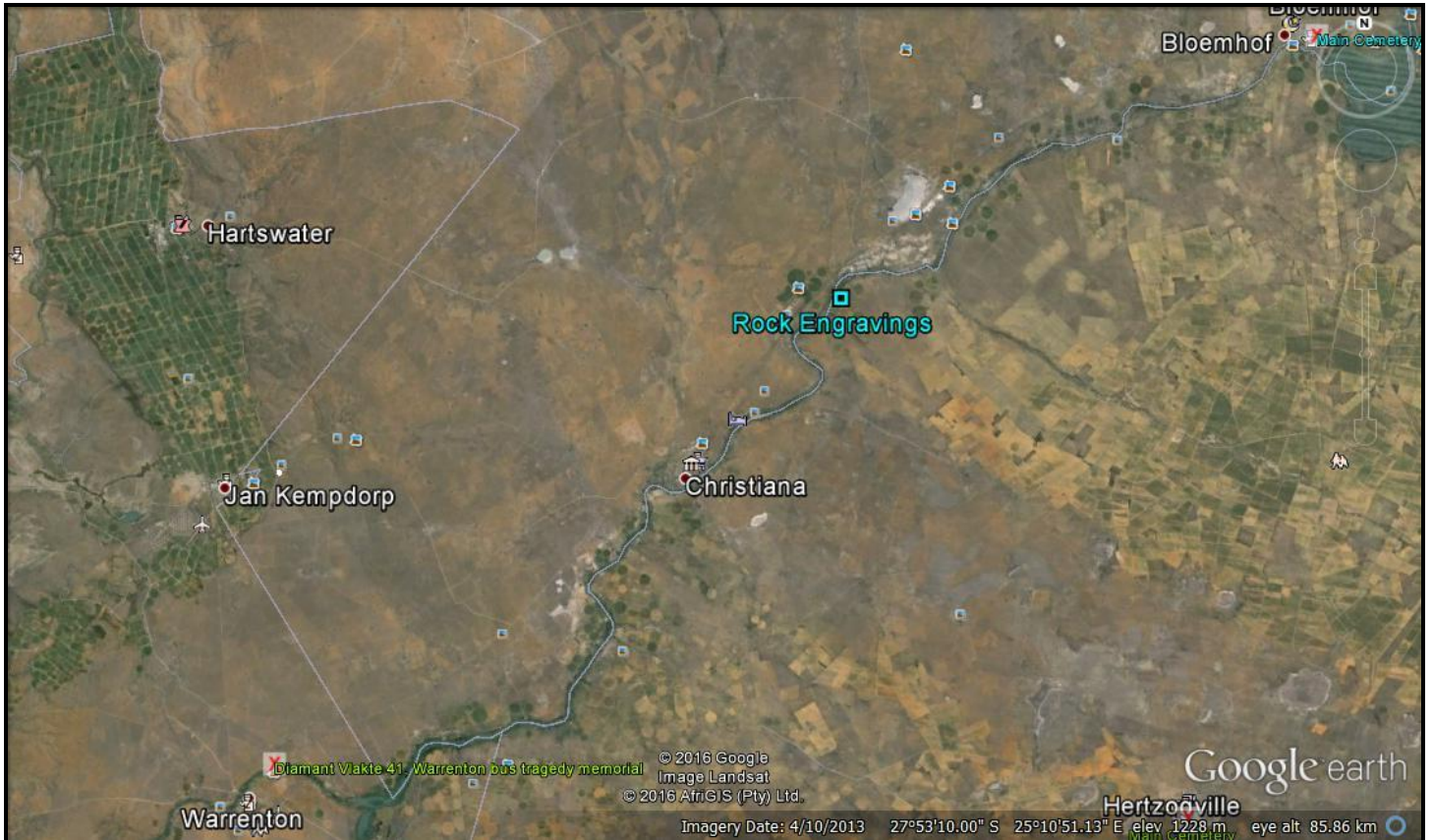


Figure 3: Google Earth Image indicating the study area in relation to Christiana, Bloemhof and Jan Kempdorp.

4.2.1 Maps Of The Area Under Investigation



Figure 4: 1885 Map showing the area of Griqualand West, which was in British possession at the time. Kimberley was located in this district. (The British Empire 2011)

4.2.3. A Brief History of Human Settlement and Black and White Interaction in the greater study Area

A farm does not exist in isolation, and it is important to understand the social history of the surrounding area. It is essential to consider the history of towns in the vicinity of the property under investigation, since these social centres would have affected those individuals living in the rural areas. The city of Kimberley is of obvious significance, but some smaller towns such as Christiana, Bloemhof and Warrenton and also Jan Kempdorp are of import. The history of these towns will be discussed briefly. The Taung skull site is also located around 40 km from the study area. It was discovered in 1924, encased in limestone in the Buxton quarry and identified as the 2.5-million-year-old fossilised skull of a hominid child.

4.2.3.1. Kimberley

Roberts' book provides a lovely description of the Kimberley area: "The earth was grey, stony, cindery, carpeted in long silvery grass and dotted with thousands upon thousands of umbrella-shaped thorn trees...When it rained, the normally dry watercourses became raging torrents; when it blew, the dust was choking; when, as happened for most days of the year, the sun shone, it was like an oven. In more ways than one could it be described as a no-man's-land; lying between the Great Karoo to the south, the undulating grasslands to the north-east and the Kalahari desert to the north-west." (Roberts 1985: 3) The land was however all but uninhabited. Among the earliest inhabitants in the area were the Koranas, the Khoikhoi and the Bushmen. The latter existed as hunter-gatherers, whereas the Khoikhoi and Koranas grazed livestock. In other respects, their cultures were much alike. A group of people, who more recently started to inhabit the Kimberley district, were the "Bastards", in whose veins flowed the blood of white adventurers, the Khoikhoi and Bushmen peoples.

These people, who often owned firearms and wagons, formed bands that joined Bushman and Khoikhoi tribes. "Together they made up a nomadic, independent, haphazard society, each group following its own chief." (Roberts 1985: 3)

The London Missionary Society, which arrived on the scene in the early nineteenth century, attempted to bring order to the Kimberley area. The society renamed the "Bastards" as Griquas, and in due time the territory would become known as Griqualand West. The order however did not last long, and the Griqua split into factions and resumed their raiding expeditions. Boer farmers that moved inland from the Cape Colony during the 1830s and 1840s, further added to this arena of conflicting claims. Colesberg, which came into being in the 1830s, was one of the earliest towns to develop in this area. The settlement of Hopetown was established later on, but the area remained inhospitable and desolate. It was however only in 1866 that an occurrence took place that would forever change the social fibre of this area. In December 1866, during a visit to a family on a neighbouring property, the landowner and amateur geologist Schalk van Niekerk picked up an interesting stone. On further inspection, this was found to be the first diamond that was ever discovered in South Africa. (Roberts 1985: 3-7)

As more diamonds were found on the banks of the Vaal River, just above its confluence with the Gariep, mining and the industry associated with it started to become something that would always be at the centre of South Africa's social, economic and political life. Within a few years, in four locations between the Vaal and the Gariep, volcanic pipes were discovered in which diamonds had crystalized in the distant past. These pipes seemed to be of limitless capacity, and Kimberley developed between them in the early 1870s. In a few years, this town would become the second largest settlement in South Africa, producing 80 per cent of the region's exports. The need for a constant stream of labour dramatically changed the social structure of the area. By the mid-1870s, 50 000 black men a year sought work in Kimberley. The majority of these people were Bapedi and other Sotho-Tswana speakers from Transvaal. There were not many black individuals from Natal and the Cape who came to work at Kimberly, and those who did were mainly educated and Christian, and worked as artisans and clerks. In 1889, the company of Cecil John Rhodes, De Beers Consolidated

Mines, acquired the monopoly over the diamond pipes at Kimberley. Rhodes had realized that working the mines as single units rather than multiple claims would prove much more profitable.

The organization of black labour changed considerably with the consolidation of the mines. Workers henceforth lived in closed barracks, called compounds, which they could only leave to go to work. Since De Beers had the monopoly of the mines, workers' wages were also reduced. In this way the path was set for a new, and ultimately disastrous, organization of labour in South Africa. (Ross 2002: 54-56)

The discovery of diamonds and gold in the northern provinces also had other consequences. 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. 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)

The siege of Kimberley took place between 14 October 1899 and 15 February 1900. By this time, the town was the centre of Cecil John Rhodes' De Beers diamond mining enterprise. Before the war, as Rhodes realized that the conflict was eminent, he moved to Kimberley with a large battalion to defend it against the advancing Boers. On 14 October 1899 the Boers invaded the northern Cape Colony, beginning the siege of Kimberley. The Boers were however unable to lay siege to the town, as the British were relieved by General French's Cavalry Division. (British Battles.com 2011)

Kimberley became the legislative capital of the Northern Cape Province in 1994, when apartheid ended. Apart from considering the history of Kimberley, it is also important to take note of some of the smaller towns that are located in the vicinity of the farm area. The history of the towns of Warrenton and Christiana will be discussed briefly.

4.2.3.2. Warrenton

Warrenton was founded in 1882. A number of cattle farmers had lived in the area before this time. They were scattered and few, but at the discovery of diamonds in the area, they realized the irrigation potential of the Vaal River. These farmers understood that there would be a considerable market for their produce, and started growing vegetables to provide food for the mines at Kimberley. A community of farmers started to develop, and the settlement further expanded when diamonds were found alongside the Vaal River, where Warrenton is located today. The town also developed partially as a church town, as many towns in South Africa had. The leaders of the Nederduitse Gereformeerde Church Council were at one point effectively in charge of the town, and used its authority to influence the community. (Van Wyk 1982.: vii) Warrenton was named after Sir Charles Warren, who was a British land surveyor who had been sent to the Cape to serve as a mediator in the border conflict between the Orange Free State and Griqualand West. Because of the work he did in this respect, as well as serving in military operations, the pioneers at Warrenton decided to name the town after him (Van Wyk 1982.: 4-5).

Warrenton was severely affected by the Anglo-Boer War, since it was a British town surrounded by individuals of republican persuasion. On Tuesday 17 October 1899, the town was seized by Boer forces. Several of Warrenton's inhabitants joined the republican forces at that time. In December of that year the population of the entire town was commandeered by the Boers. The British however successfully occupied the town in March 1900 and imprisoned almost

the whole male population of Warrenton. The siege ended in a few weeks' time, but massive damage had been done during that time (Van Wyk 1982: 32).

4.2.3.3. Christiana

The area in which the town of Christiana was established was initially very sparsely populated. This was due to the constant droughts and cattle diseases that made the area very hard to settle in. Some of the earliest inhabitants in this area were the Batlapin, the Barolong and the Koranas. These populations were however displaced during the Difaqane: a time of bloody upheavals in South Africa, which occurred around the early 1820's until the late 1830's. (Geschiedenisatlas van Suid-Afrika 1999: 109-115) 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. (Geschiedenisatlas van Suid-Afrika 1999: 14; 116-119) These tribes were assaulted by the Ndebele troupes of Mzilikazi, and migrated to the Blesberg. Skirmishes between different tribes in the area continued to cause unrest, but it was not long before the need developed for towns to be established for the white farmers that have settled in the area. Bloemhof was founded on 28 March 1866, and only three years later Christiana was also established. The latter town was named after Christina Petronella Pretorius, the only child of the State President M. W. Pretorius (1857-1860 and 1864-1871). In 1870, plots were first sold at Christiana, and this helped the expansion of the town. (Anon 1970: 3-7)

The discovery of diamonds predictably affected the town of Christiana significantly. On 3 October 1904, the town lands of Christiana were declared public diggings. More than 200 diggers came to the area during this time. Shortly before this, the Anglo-Boer War had also left its mark on Christiana. Several serious battles took place in the vicinity of the town, and several British soldiers are buried in the old grave yard. In May 1900 the town was seized by the British Lieutenant-General Sir A. Hunter. Another incidence of note is an influenza epidemic in the town that killed 60 individuals, including the Chief of Police, in 1918. (Anon 1970: 11-12, 15)

4.2.3.4. Vaalharts Irrigation Scheme

The Vaalharts Irrigation Scheme is the largest and most successful irrigation project in South Africa. It lies on the border between the North West Province and the Northern Cape Province. The scheme was built in the 1930/40's as a poverty relieve project for poor whites in the 1930's depression. Most of the work was done by manual labour digging the 182 kilometres north canal as well as secondary and tertiary canals (Kusel 2015).

4.2.3.5. Jan Kempdorp

Jan Kempdorp was the headquarters for the officials working on the scheme and was originally known as Andalusia named in honour of the Spanish Andalusia donkeys that were used on the irrigation project. On the road between Jankempdorp and Hartswater is a 38 kilometre poplar lane, planted in 1937. This is probably the longest poplar lane in the world. During the Second World War, the town hosted the site of an internment camp for Nazi sympathisers as well as a vast depot that was constructed to store ammunition in case of a coastal invasion. There are grave sites from the Second World War in Jan Kempdorp, among others containing the graves of German soldiers (<http://www.phokwane.gov.za>). The settlement was renamed in 1954 after Jan Kemp (1872 – 1946), a Boer general, rebel leader and politician. He fought in the Second Boer War, and was Minister of Agriculture in the Union of South Africa government under Hertzog.

The border between the Cape Province and the Transvaal Province ran through the town. During the Union of South Africa, and the Republic of South Africa, Jankempdorp was the only town located in two different provinces, until the new post-apartheid era after 1994 when the borders of provinces were re-demarcated (<http://www.routes.co.za/nc/jankempdorp/index.html>).

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 project 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 acknowledged 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.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
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

6. BASELINE STUDY-DESCRIPTION OF SITES

It is important to note that the entire farm was not surveyed but only the footprint of the existing landfill site and immediate surrounds as indicated in Figure 1 and 2. The topography of the study area is flat, marked by deep red sand (Figure 5) measuring more than 3 meters deep in the study area where earthmoving activities exposed this thick sand cover. The study area has been significantly disturbed by the existing landfill and dumping in the study area, no permanent structures occur in the study area although several shacks of informal waste collectors on the landfill occur on the edges (Figure 6 - 8). The southern portion of the study area was used for cultivating into the 1990's (Figure 9) and together with the existing dumping on site obliterated any surface indicators of possible archaeological sites and artefacts. As the general area is marked by thick Kalahari windblown sand overlaying the Ventersdorp geological formation no raw material suitable for manufacturing stone tools occurs in the area. No traces of any archaeological remains were identified during the survey and no buildings older than 60 years exist on site. A large fenced cemetery occurs to the north east of the existing landfill (Figure 9 & 10) centred around 27° 54' 28.5547" S, 24° 52' 34.9421" E.



Figure 5. Thick sand cover in the study area.



Figure 6. General site conditions in the study area.



Figure 7. General site conditions in the study area.



Figure 8. General site conditions in the study area.

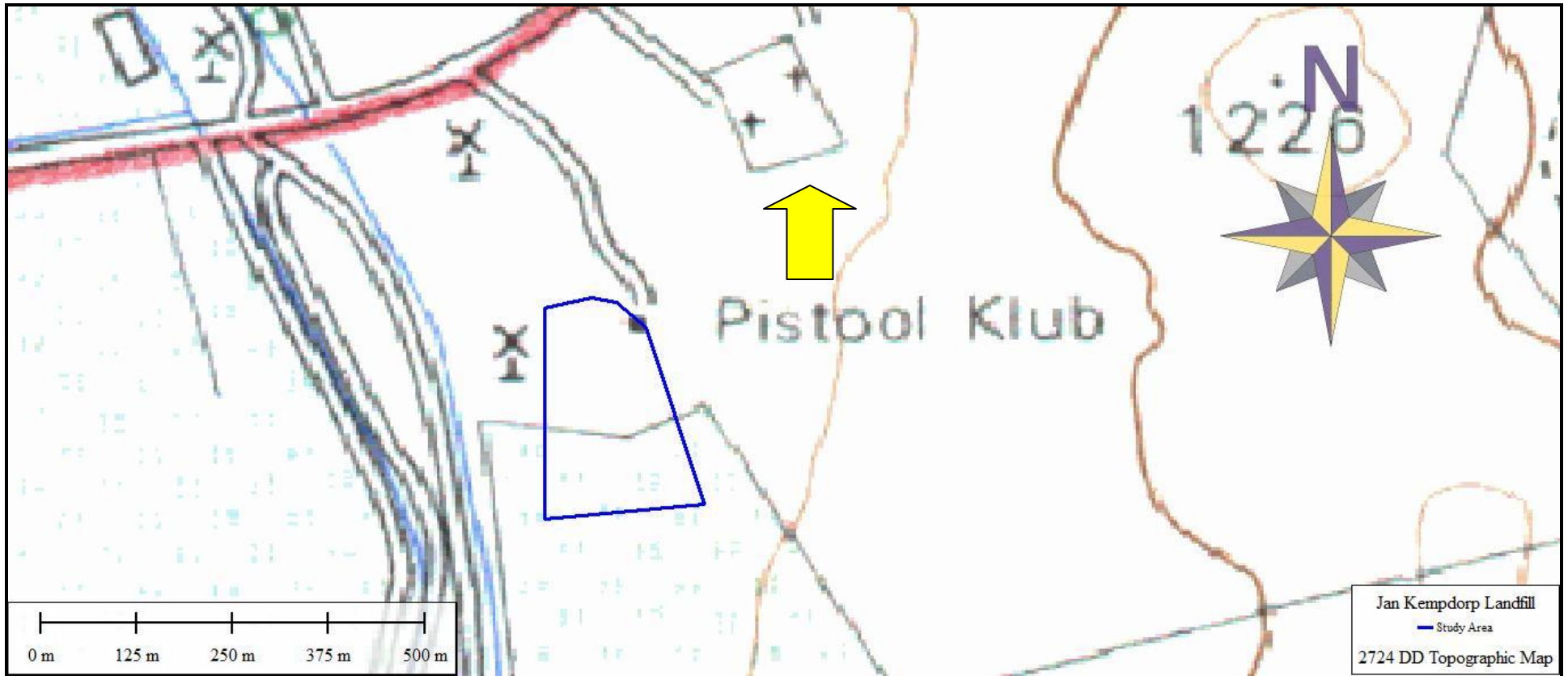


Figure 9: Topographic map showing agricultural activities in the study area and the existing cemetery to the north east indicated by an arrow.



Figure 10: Google image of the study area in relation to a large cemetery marked in red.

7. CONCLUSIONS AND RECOMMENDATIONS

To comply with legislation the study area was assessed in terms of the archaeological component of Section 35 of the NHRA upon the request from SAHRA to the Phokwane Local Municipality (SAHRA ref 8737) and no surface indicators of archaeological (Stone or Iron Age) material was identified in the study area.

In terms of the built environment of the area (Section 34), no standing buildings occur within the study area apart from a few shacks of informal waste collectors at the landfill site and no significant cultural landscapes or viewsapes were noted during the fieldwork.

In terms of Section 36 no graves or cemeteries was recorded inside the landfill site, a large cemetery is however located to the north east. This cemetery is fenced and no direct impact is expected on the cemetery by the existing landfill site and access road to the landfill site.

If during construction any possible finds such as stone tool scatters, possible graves, or fossil remains are made, the operations must be stopped and a qualified archaeologist must be contacted for an assessment of the find.

Due to the subsurface nature of archaeological remains and unmarked graves it is recommended that a chance find procedure is implemented as part of the EMP enforced by the ECO for the project as detailed below:

Chance find procedure

This procedure applies to the developer's permanent employees, its subsidiaries, contractors and subcontractors, and service providers. The aim of this procedure is to establish monitoring and reporting procedures to ensure compliance with this policy and its associated procedures. Construction crews must be properly inducted to ensure they are fully aware of the procedures regarding chance finds as discussed below.

- If during the pre-construction phase, construction, operations or closure phases of this project, any person employed by the developer, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance or heritage site, this person must cease work at the site of the find and report this find to their immediate supervisor, and through their supervisor to the senior on-site manager.
- It is the responsibility of the senior on-site Manager to make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area.
- The senior on-site Manager will inform the ECO of the chance find and its immediate impact on operations. The ECO will then contact a professional archaeologist for an assessment of the finds who will notify the SAHRA.

7.1 Reasoned Opinion

From a heritage perspective the proposed project is considered to be viable. If the above recommendations are adhered to and based on approval from SAHRA, HCAC is of the opinion that the development can continue as the development will not impact negatively on the archaeological record of the area. If during the pre-construction phase or during construction, any archaeological finds are made (e.g. graves, stone tools, and skeletal material), the operations must be stopped, and the archaeologist must be contacted for an assessment of the finds. Due to the subsurface nature of archaeological material and graves the possibility of the occurrence of unmarked or informal graves and subsurface finds cannot be excluded, but can be easily mitigated by preserving the sites *in-situ* within the development.

8. PROJECT TEAM

Jaco van der Walt, Project Manager

9. 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 acknowledged by SAHRA and AMAFA.

I have been involved in research and contract work in South Africa, Botswana, Zimbabwe, Mozambique, Tanzania, Zambie and the DRC; having conducted more than 300 AIA's since 2000.

10. REFERENCES

- Ages. 2013. Anjutone (Pty) Ltd: photovoltaic power plant and power line development on portion 3 of the farm Machorogan 106, Frances Baard District Municipality, Northern Cape Province. For Anjutone (Pty) Ltd.
- Bergh, J.S., (ed.) *Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies*. Pretoria: J. L. van Schaik Uitgewers. 1999.
- Breutz, P.-L. 1968. *The tribes of the districts of Taung and Herbert*. Ethnological Publications No. 51. Pretoria: The Government Printer.
- Mitchell, P. with contributions by Alison Roberts, Alan Cohen and Karen Perkins. 2002. Catalogue of Stone Age Artefacts from Southern Africa in the British Museum. The British Museum Occasional Paper Number 108.
- Du Preez, S. J. Peace attempts during the Anglo Boer War until March 1901. Magister Artium thesis in History. Pretoria: University of Pretoria.
- Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies*. Edited by J. S. Bergh. 1999. Pretoria: J. L. van Schaik Uitgewers.
- Huffman, T.N. 2007. Handbook to the Iron Age: The Archaeology of Pre-Colonial Farming Societies in Southern Africa. University of KwaZulu-Natal Press, Scottsville.
- Kusel, U. 2015. Phase I Cultural Heritage Resources Impact Assessment For The Vaalharts Irrigation Project Canal Ganspan – Pampierstad – Jan Kempdorp – Hartswater And Taung North West Province And Northern Cape Province
- Massie, R. H. 1905. *The Native tribes of Transvaal. Prepared for the General Staff War Office*. London: His Majesty's Stationery Office.
- Mucina, L. & Rutherford, M.C. 2006. The vegetation map of South Africa, Lesotho and Swaziland. SANBI, Pretoria.
- Morris, D. 1988. Engraved in place and time: a review of variability in the rock art of the Northern Cape and Karoo. *The South African Archaeological Bulletin* 43(148): 109-120.
- National Heritage Resources Act NHRA of 1999 (Act 25 of 1999)
- Readers Digest. 1992. Illustrated history of South Africa. The Real Story. Expanded second edition: completely updated. Cape Town: Readers Digest Association.
- Ross, R. 2002. *A concise history of South Africa*. Cambridge: Cambridge University Press.
- SAHRA Report Mapping Project Version 1.0, 200
- Rossouw, L. 2008. Phase 1 Archaeological Assessment of Fourteen Streams. March 2015.
- Steggman, L & Roodt, F. 2013: Phase 1 Heritage Resource Impact Assessment (Scoping & Evaluation) Proposed Village Demarcation Uitvlugt, Marblehall, Limpopo Statement With Regard To Heritage Resources Management
- Van der Walt, J. 2012. Archaeological Impact Assessment For the proposed Pampierstad photovoltaic plant in North West Province
- Van Ryneveld, K. 2005. Cultural Resources Management Impact Assessment: Erf 1, Vaalharts Nedersetting B, Barkly-West District, Northern Cape, South Africa. Report to – Louis Olivier Jestvet 1290.
- <http://www.routes.co.za/nc/jankempdorp/index.html>
- <http://www.phokwane.gov.za/index.php/towns-mainmenu-35/jan-kempdorp>