

**Cultural Heritage Impact Assessment:
Phase 1 Investigation for the Development of Lodges, Roads and other Tourist
Infrastructure in Kapama Private Game Reserve, Maruleng Local Municipality,
Mopani District Municipality, Limpopo Province**



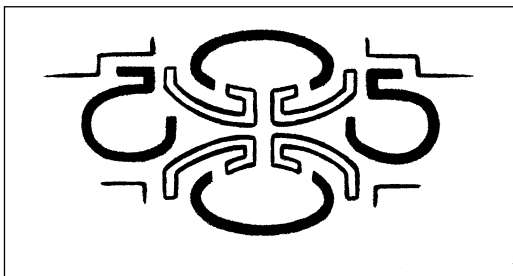
For

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Executive Summary

This report contains a comprehensive heritage impact assessment investigation in accordance with the provisions of Sections 38(1) and 38(3) of the *National Heritage Resources Act* (Act No. 25 of 1999) (NHRA) and focuses on the survey results from a cultural heritage survey as requested by NuLeaf Planning and Environmental Pty (Ltd). The survey forms part of a 24G application as stipulated by the National Environmental Management Act (NEMA) (Act No. 107 of 1998) and NEMA Regulations. The Project Applicant, Kapama Game Reserve (Pty) Ltd, hereby gives notice of its intention to apply for Environmental Authorisation from the Limpopo Department of Economic Development, Environment and Tourism (LEDET) as the Competent Authority, for the development of the Tourist Lodges and Infrastructure in Kapama Private Game Reserve, Limpopo Province. During the period of 1989-2018 Kapama Game Reserve (Pty) Ltd, carried out activities listed under the various EIA Regulations. All of these developments were constructed without the necessary environmental authorization and the Applicant is now applying for ex post facto approval.

Kapama Private Game Reserve is located within the Maruleng Local Municipality, approximately 20 km south of Hoedspruit. Various properties within Kapama Private Game Reserve are affected which include the following: Remaining extent of the farm Hoedspruit 82 KU, Portion 228 of the farm Guernsey 81 KU, Remaining extent of Portion 4 of the farm Moria 83 KU, Portion 213 (ptn of Ptn 194) of the Farm Guernsey 81KU, Remaining extent of Portion 3 of the farm Moria 81 KU, Portion 229 Of Guernsey, 81/KU, Remaining extent of Portion 204 of the farm Guernsey 81 KU.

No archaeological (both Stone Age and Iron Age) or historical artefacts, assemblages, features, structures or settlements were recorded during the survey at the locations of the various existing developments.

Based on the assessment, from a heritage perspective, no archaeological or historical remains were impacted on during the developmental phase of the existing infrastructure, however, care should be taken not to cause any future impact on cultural heritage remains that might still exist in the region. As such, no re-active mitigation measures are required.

Also, please note:

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

Definitions and abbreviations

Midden:	Refuse that accumulates in a concentrated heap.
Stone Age:	An archaeological term used to define a period of stone tool use and manufacture
Iron Age:	An archaeological term used to define a period associated with domesticated livestock and grains, metal working and ceramic manufacture
LIA:	Late Iron Age sites are usually demarcated by stone-walled enclosures
NHRA:	National Heritage Resources Act (Act No. 25 of 1999)
SAHRA:	South African Heritage Resources Agency

SAHRIS: South African Heritage Resources Information System
PHRA-G: Provincial Heritage Resources Authority - Gauteng
GDARD: Gauteng Department of Agriculture and Rural Development
HIA: Heritage Impact Assessment
DMR: Department of Mineral Resources
DENC: Department of Environment and Nature Conservation: Northern Cape
I&APs: Interested and Affected Parties

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



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1. Introduction and Terms of Reference

NuLeaf Planning and Environmental (Pty) Ltd has been appointed by Kapama Game Reserve to conduct a survey that forms part of a 24G application as stipulated by the National Environmental Management Act (NEMA) (Act No. 107 of 1998) and NEMA Regulations. Kapama Game Reserve (Pty) Ltd (the applicant), intends to apply for Environmental Authorisation from the Limpopo Department of Economic Development, Environment and Tourism (LEDET) as the Competent Authority, for the development of the Tourist Lodges and Infrastructure in Kapama Private Game Reserve, Limpopo Province. During the period of 1989-2018 Kapama Game Reserve (Pty) Ltd, carried out activities listed under the various EIA Regulations. All of these developments were constructed without the necessary environmental authorization and the Applicant is now applying for ex post facto approval.

Kapama Private Game Reserve is located within the Maruleng Local Municipality, approximately 20 km south of Hoedspruit. A Cultural Heritage Impact Assessment (HIA) was requested by NuLeaf Planning and Environmental (Pty) Ltd on behalf of the client to evaluate the possible impact of the various existing structures on heritage remains.

2. Objectives

The current survey is therefore a retro-active investigation of the area affected by the development and aims to investigate, evaluate and assess the impact on the cultural heritage remains. More specifically the objective of the cultural heritage survey is to record and document cultural heritage remains consisting of both tangible and intangible archaeological and historical artefacts, structures (including graves), settlements and oral traditions of cultural significance.

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

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

3. Description of Physical Environment of Study Area

The heritage survey focussed on an area situated in the Kapama Game Reserve approximately 20 km south of Hoedspruit, Limpopo Province.

Farm Name(s) and Portions	<p>The following portions and farms:</p> <ul style="list-style-type: none"> • Hoedspruit 82 KU <ul style="list-style-type: none"> ○ Remaining Extent • Guernsey 81 KU <ul style="list-style-type: none"> ○ Portion 228 ○ Portion 213 (portion of Portion 194) ○ Portion 229 ○ Remaining extent of Portion 204
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	<ul style="list-style-type: none"> • Moria 83 KU <ul style="list-style-type: none"> ○ Remaining extent of Portion 4 ○ Remaining extent of Portion 3
Size of Survey Area	Approximately 11650 ha Note that only selected areas affected by developments were investigated.
Magisterial District	Maruleng Local Municipality Mopani District Municipality
1:50 000 Map Sheet	2430BD 2431AC 2431CA
1:250 000 Map Sheet	2430
Central Coordinates of the Development	31.0280358°E 24.4269359°S

Table 1: Physical Environment

The central parts of the survey area fall within the Savanna Biome particularly the Lowveld Bioregion and more specifically the Granite Lowveld (SV1 3). This vegetation type occurs in Limpopo and Mpumalanga Provinces, Swaziland and marginally also KwaZulu-Natal: A north-south belt on the plains east of the escarpment from Thohoyandou in the north, interrupted in the Bolobedu area, continued in the Bitavi area, with an eastward extension on the plains around the Murchison Range and southwards to Abel Erasmus Pass, Mica and Hoedspruit areas to the area east of Bushbuckridge. Substantial parts are found in the Kruger National Park spanning areas east of Orpen Camp southwards through Skukuza and Mkuhlu, including undulating terrain west of Skukuza to the basin of the Mbyamiti River. It continues further southward to the Hectorspruit area with a narrow westward extension up the Crocodile River Valley past Malelane, Kaapmuiden and the Kaap River Valley, entering Swaziland between Jeppe's Reef in the west and the Komati River in the east, through to the area between Manzini and Siphofaneni, including the Grand Valley, narrowing irregularly and marginally entering KwaZulu-Natal near Pongola. Granite Lowveld is characterised by moderately open savannah, dominated by *Sclerocarya birrea*, *Combretum apiculatum* and *C. zeyheri* tree species (Mucina & Rutherford 2006).

The survey footprint is situated on the western periphery of the Kruger National Park. In general the area is characterised by open and flat plains with several drainage lines running mostly south to north. Infrastructure includes buildings and infrastructure associated with lodges at Kapama Nature Reserve, access roads (R40 and various tracks), a railway line and fences.

Hoedspruit normally receives about 410 mm of rain per year, with most rainfall occurring mainly during mid-summer. The region receives the lowest rainfall (0 mm) in July and the highest (84 mm) in December. The monthly distribution of average daily maximum temperatures indicates that the average midday temperatures for Hoedspruit range from 23.3°C in June to 30.2°C in January. The region is the coldest during July when the mercury drops to 7.1°C on average during the night (SAExplorer 2018).

Current Zoning	Tourism Game farming
Economic activities	Tourism and game farming
Soil and basic geology	The Geology of the district is not uniform and is characterized by sandstones, shale, grit, conglomerate, quartzite and basalt. From north to

	<p>south, the Swazian Goudplaats Gneiss, Makhutswi Gneiss and Nelspruit Suite (granite gneiss and migmatite), and further south still, the younger Mpuluzu Granite (Randian) from the major basement geology of the area. Archaean granite and gneiss weather into sandy soils in the uplands and clayey soils with high sodium content in the lowlands.</p>
Prior activities	<p>Livestock farming and agriculture</p>
Socio Economic Environment	<p>Maruleng district’s population is mostly youthful, with Sepedi being the main language. The population distribution indicates that the population group between 15 to 64 years, constitute 60.30% of the total population, followed by under 15 years at 34. 40% and over 65 years at 5.30%. This shows a need for the economic strategy to identify development thrusts that would address the need of the economically active people. There are 26 798 economically active people in Maruleng Municipality, with 13 142 employed, 8 994 unemployed and 1667 discouraged work seekers. This indicates the need for the strategies to identify some of the development thrusts that are linked to job creation and economic growth (Maruleng Local Municipality Reviewed IDP 2016).</p>
Evaluation of Impact	<p>An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits NHRA (Act No. 25 of 1999, Section 38(3d)): Positive</p>

Table 2: Socio-economic environment

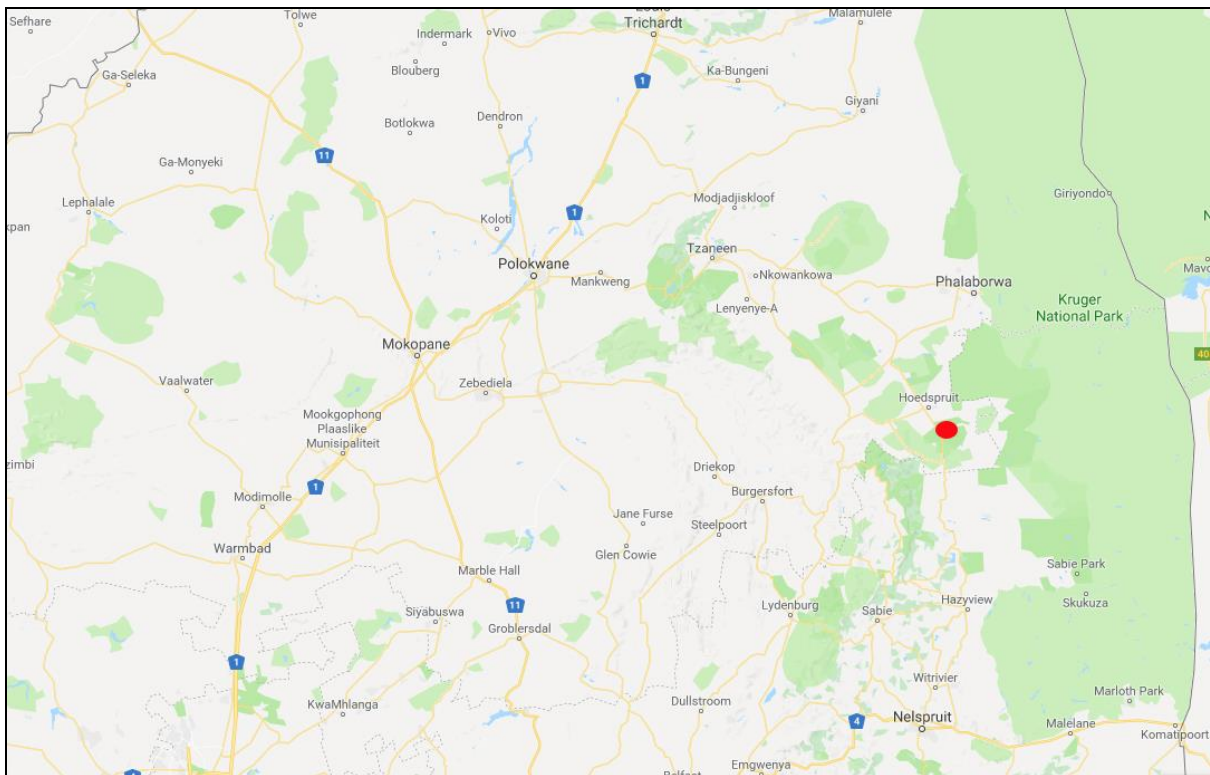


Figure 1: Regional context of the survey area near Kruger National Park (south of Hoedspruit, indicated by the red area)

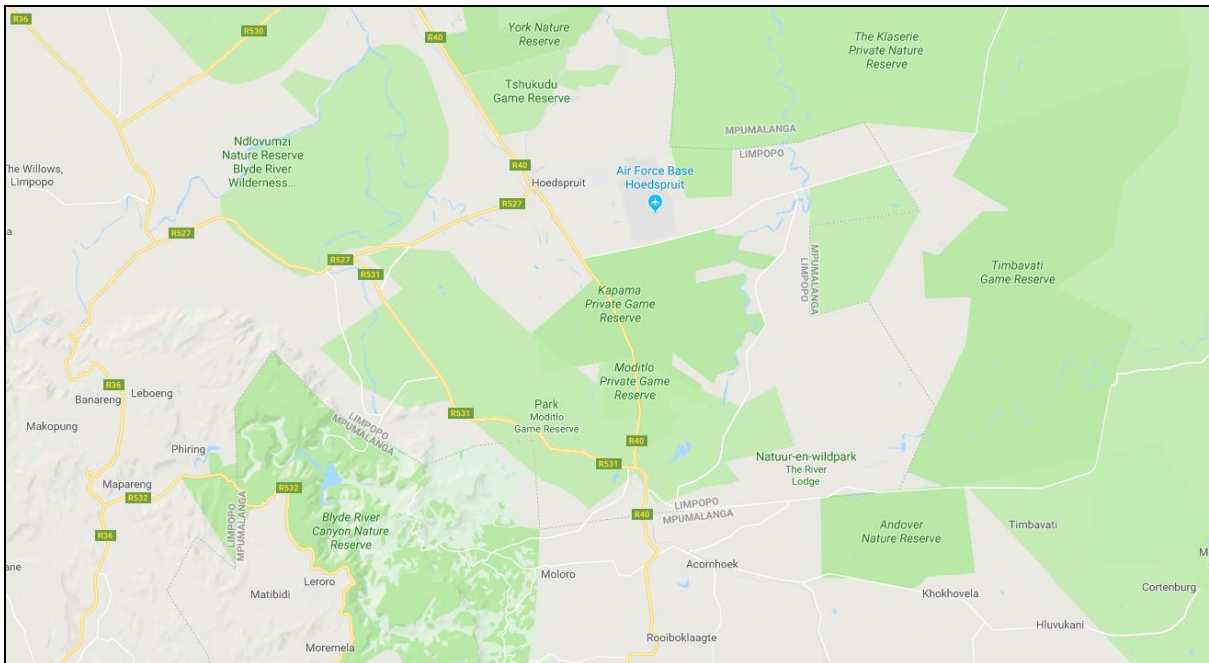


Figure 2: Local context of the survey footprint located within Kapama Game Reserve (indicated by the red area)

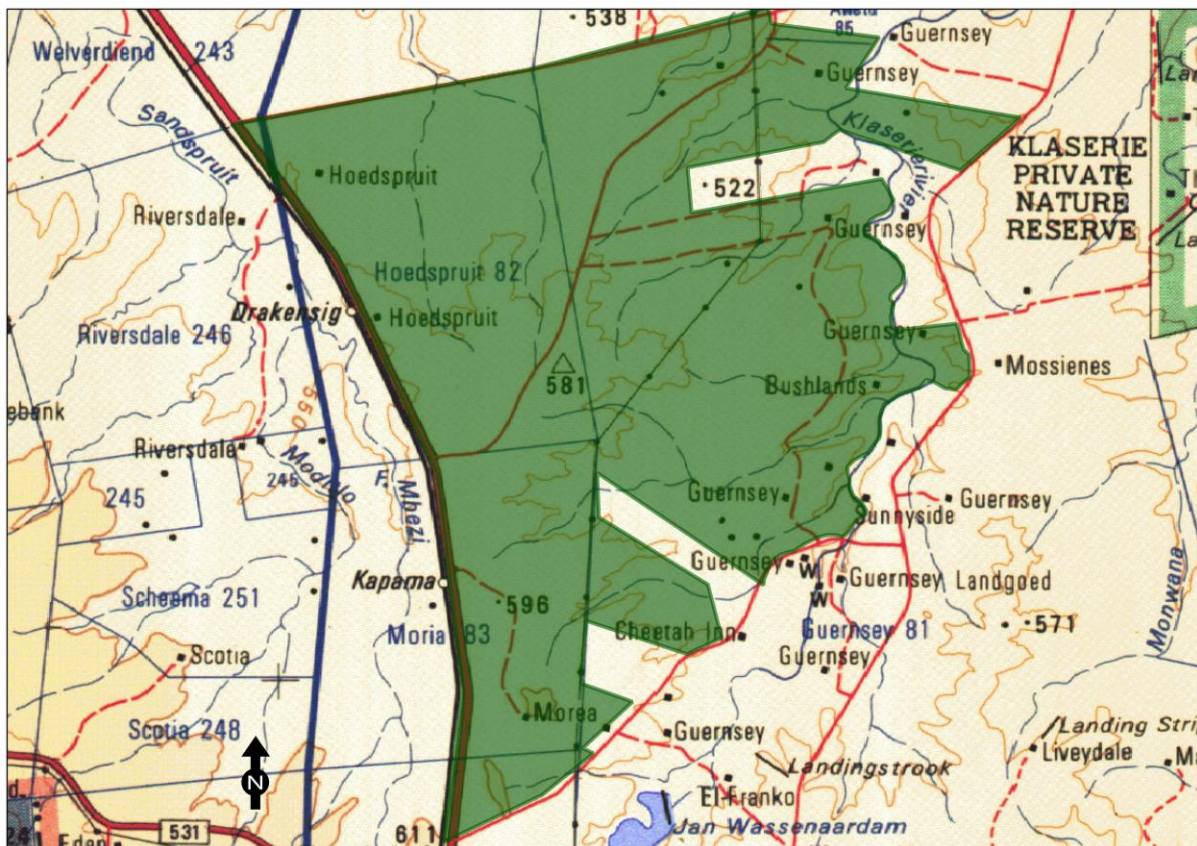


Figure 3: Local context of the survey footprint (1:250 000 Topographical Map 2430)

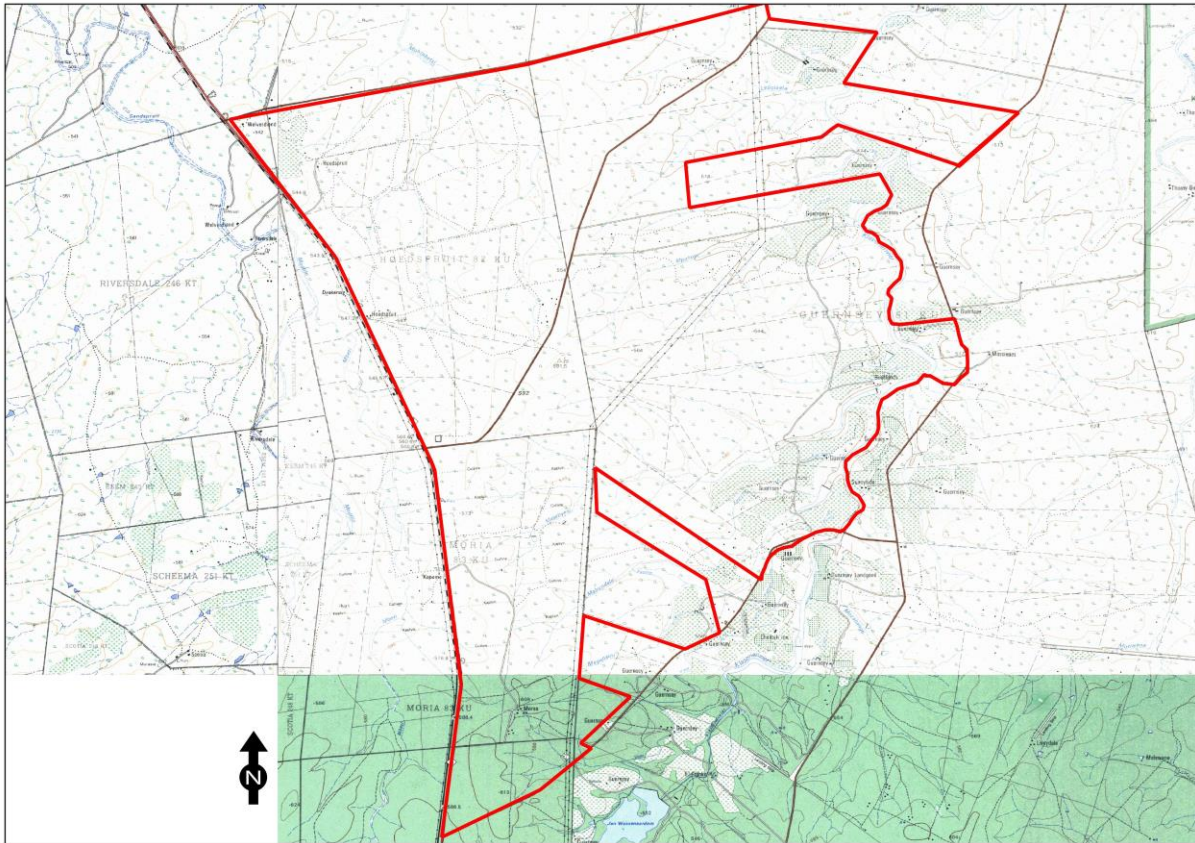


Figure 4: The survey area as indicated on the 1:50 000 topographic maps 2430BD, 2431AC and 2431CA (1986)

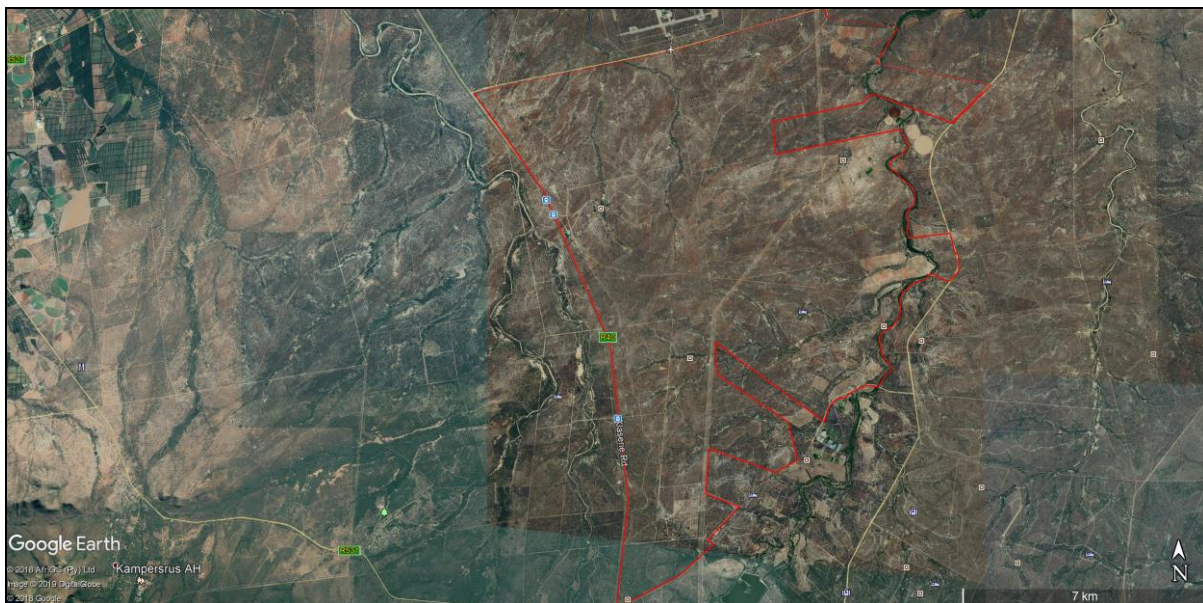


Figure 5: Survey area within general context (Google Earth Pro 2019)



Figure 6: General view of the central region of the survey area



Figure 7: General view of the existing infrastructure (roads and power lines)



Figure 8: General view of the periphery with electrified fences



Figure 9: General view of one of several dams in the survey area



Figure 10: General view of the existing infrastructure (roads and power lines)



Figure 11: General view of one of several rivers running through the survey area



Figure 12: General view of one of the open plains (probably old agricultural fields)



Figure 13: General view of the south-western section of the survey area

4. Proposed Project Description

Kapama Prive Game Reserve was established in 1986, when the late Johann Roode bought a farm called Moria near Hoedspruit. The farm was initially used for cattle grazing. The Drakensig farm was acquired soon after owing to the need for more land. A year after the farm was consolidated and the transformation of the vast property into an ecotourism business began. This was necessitated by the harsh conditions and the cattle falling prey to predators. Pre-2005, portions of Kapama were utilized for game drives for tourists lodging in the broader region. After the game drives, tourists were taken to Rhino Inn where refreshments were served. Rhino Inn comprised a main building with kitchens, lapa, walkways and ablutions. No overnight lodging was available at that time. The need for overnight lodging was identified after consultation with guests and it was proposed that accommodation facilities be provided and as a result River Lodge was born.

Following the success and popularity of River Lodge, three additional lodges were constructed to cater for the growing need for tourism accommodation in the greater region. Kapama Private Game Reserve is well situated with the Kruger National Park to the east, with many other game and nature reserves nearby such as Thornybush Private Nature

Reserve, Blyde River Canyon Nature Reserve and Timbavati Game Reserve. These Game and Nature Reserves are within easy driving distance from Gauteng and are also popular Big 5 game viewing and tourism destinations. It was important that the natural recreational potential of this region be explored and in order to do so, accommodation facilities needed to be developed in the greater region to unlock the natural potential of the region. The Applicant has also commenced with the process to declare Kapama Private Game Reserve as a Protected Area.

The following infrastructure components have been constructed and were investigated during the survey:

- River lodge and staff accommodation
- Karula Camp and staff accommodation
- Buffalo Camp
- Southern Camp
- Drakensig staff accommodation and workshop
- Main Gate
- Waste incineration
- Hongonyi Gate and staff accommodation
- Reservoirs
- Landing runway (air strip)
- Kubu dam water purification and river crossings
- Bosplaas staff accommodation

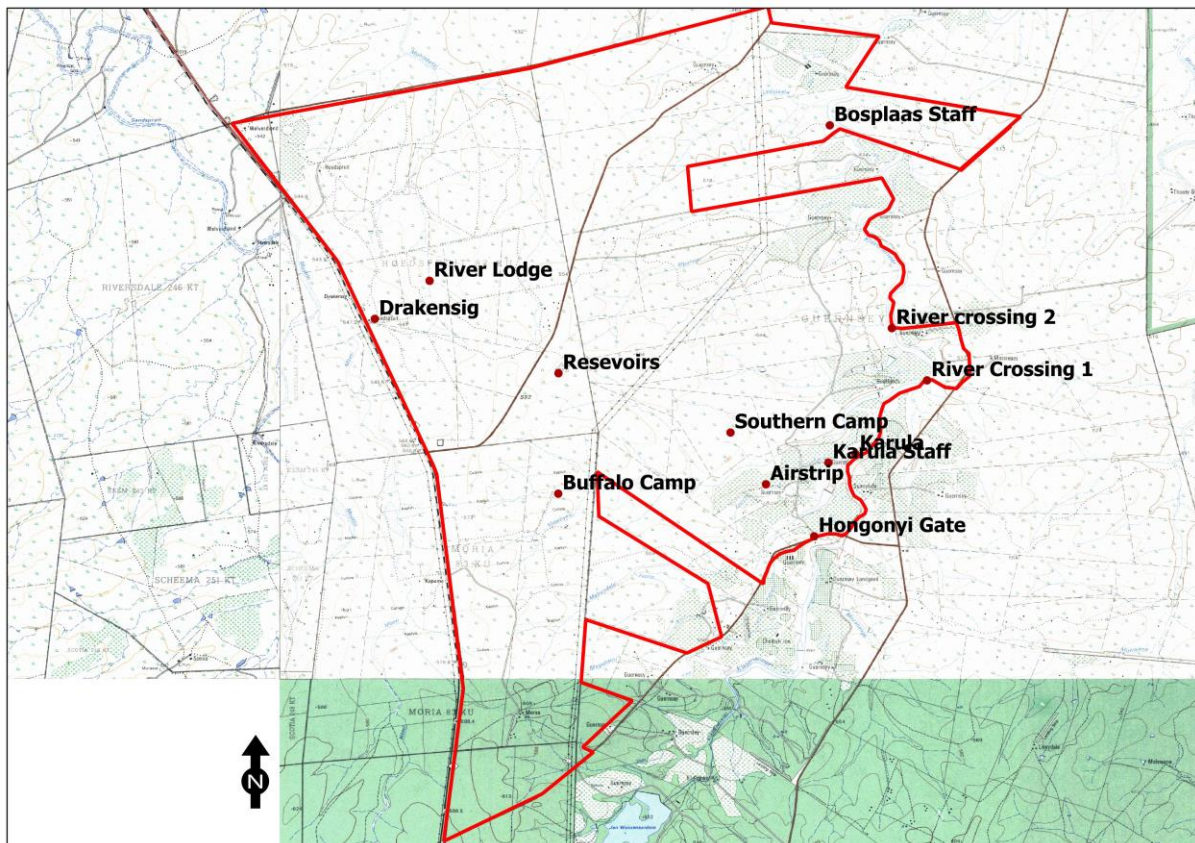


Figure 14: Location of the various developments throughout Kapama Game Reserve

5. Legal Framework

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE APPLIED
The Constitution of the Republic of South Africa (Act No. 108 of 1996)	
The National Environmental Management Act (Act No. 107 of 1998)	Section 24(1) Section 28(1)
The National Water Act (Act No. 36 of 1998)	Section 21 (a)(b)
Air Quality Act (Act No. 39 of 2004)	Section 21
National Forests Act, Act of 84 of 1998	-
The National Heritage Resources Act (Act No. 25 of 1999)	Section 38, 34, 35, 36
Conservation of Agricultural Resources Act (Act No. 85 of 1983)	
Mineral and Petroleum Resources Development Act (Act No. 28 of 2002)	
The National Water Act (Act No. 36 of 1998);	
Mine Health and Safety Act (Act No. 29 of 1996) (MHSA)	
Biodiversity Act (Act 10 of 2004)	
Maruleng Local Municipality Reviewed IDP 2016-2017/21 (2016)	
Mopani District Municipality Reviewed IDP 2016-2021 (2017)	

Table 3: Legal framework

All applicable EIA listed activities associated with development that occurred within Kapama Private Game Reserve are listed below:

ECA EIA Contraventions: between 08 September 1997 and end of 09 May 2002		
Activities commenced with on or after 08 September 1997 and before end 09 May 2002: EIA regulations promulgated in terms of the ECA, Act 73 of 1989		
Indicate the number and date of the relevant notice: e.g. R. 983, 08 December 2014	Activity No (s) (in terms of the relevant notice) e.g. 1(a)	Describe each listed activity as per project description ¹ : e.g. Construction of a 600 mW generator
Environment Conservation Act, 1989 (Act No. 73 of 1989) GNR 1182 & 1183	1 (d)	The construction or upgrading of roads, railways, airfields and associated structures outside the borders of town planning schemes. Game drive tracks and routes were developed from 1989 to 2017. An unpaved airstrip of 1 Km was also constructed.
	1 (m)	The construction or upgrading of public and private resorts and associated infrastructure. An old day visitor centre was upgraded and expanded into what is now River lodge in 2005. River lodge consists of tourist accommodation, a main complex, reception area, spa.
	1 (i)	The construction or upgrading of canals and channels, including diversions of the normal flow of water in a river bed and water transfer schemes between water catchments and impoundments. River Lodge is constructed within the river bed. Two river crossings have been constructed.
	1 (j)	The construction or upgrading of dams, levees and weirs affecting the flow of a river.
	1 (k)	The construction or upgrading of reservoirs for public water supply. Two 800 000 litre reservoirs were constructed to provide water to all of the lodges within Kapama Private Game Reserve i.e. River lodge, Karula Camp, Southern Camp and Buffalo Camp.
ECA EIA Contraventions: between 10 May 2002 and end of 02 July 2006		

Activities unlawfully commenced with on or after 10 May 2002 and before end 02 July 2006: EIA regulations promulgated in terms of the ECA, Act 73 of 1989		
Indicate the number and date of the relevant notice: e.g. R. 983, 08 December 2014	Activity No (s) (in terms of the relevant notice) e.g. 1(a)	Describe each listed activity as per project description²: e.g. Construction of a 600 mW generator
Amendment of the ECA EIA Regulations promulgated in terms of the ECA, Act No 73 of 1989. GNR 670 and GNR 672	1 (d)	The construction or upgrading of roads, railways, airfields and associated structures. Game drive tracks and routes were developed from 1989 to 2017. An unpaved airstrip of 1 Km was also constructed.
	1 (i)	The construction or upgrading of canals and channels, including structures causing disturbances to the flow of water in a river bed, and water transfer schemes between water catchments and impoundments. River Lodge is constructed within the river bed. Two river crossings have been constructed.
	1 (k)	The construction or upgrading of reservoirs for public water supply. Two 800 000 litre reservoirs were constructed to provide water to all of the lodges within Kapama Private Game Reserve i.e. River lodge, Karula Camp, Southern Camp and Buffalo Camp.
	1 (m)	The construction or upgrading of public and private resorts and associated infrastructure. An old day visitor centre was upgraded and expanded into what is now River lodge in 2005. River lodge consists of tourist accommodation, a main complex, reception area, spa.
NEMA EIA Contraventions: between 03 July 2006 and end of 01 August 2010		
Activities unlawfully commenced with on or after 03 July 2006 and before end 01 August 2010: EIA regulations promulgated in terms of the NEMA		
Indicate the number and date of the relevant notice: e.g. R. 983, 08 December 2014	Activity No (s) (in terms of the relevant notice) e.g. 1(a)	Describe each listed activity as per project description³: e.g. Construction of a 600 mW generator
2006 EIA Regulations promulgated in terms of the	1 (d)	The construction of facilities or infrastructure, including associated structures or infrastructure, for resorts, lodges, hotels or other tourism and hospitality facilities in a protected area contemplated in the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003).
NEMA, Act No 107 of 1998. GNR 386		Four lodges were constructed post 1989. Certain portions of Kapama Private Game Reserve have formally been declared under the Nature Conservation Act.

	1 (m)	<p>The construction of facilities or infrastructure, including associated structures or infrastructure, for any purpose in the one in ten year flood line of a river or stream, or within 32 metres from the bank of a river or stream where the flood line is unknown, excluding purposes associated with existing residential use, but including -</p> <p>i. canals; ii. channels; iii. bridges; iv. dams; and v. Weirs.</p> <p>River Lodge is constructed within the river banks, including walkways. Buffalo camp is located within 32 m of the river. Karula Camp is located within 32 m of the river. The two river crossings are constructed within the watercourse</p>
	1 (q) (i) (ii)	<p>The construction of facilities or infrastructure, including associated structures or infrastructure, for the landing, parking and maintenance of aircraft including –</p> <p>i. helicopter landing pads, excluding helicopter landing facilities and stops used exclusively by emergency services; ii. unpaved aircraft landing strips shorter than 1,4km</p> <p>An unpaved airstrip of 1 Km long was constructed and was lengthened by 500 m and paved in 2017.</p>
	4	<p>The dredging, excavation, infilling, removal or moving of soil, sand or rock exceeding 5 cubic metres from a river, tidal lagoon, tidal river, lake, in-stream dam, floodplain or wetland.</p> <p>River lodge is constructed within the river banks. Two river crossings have been constructed.</p>
NEMA EIA Contraventions: between 02 August 2010 and end of 07 December 2014		
Activities unlawfully commenced with on or after 02 August 2010 and before end 07 December 2014: EIA regulations promulgated in terms of the NEMA, Act 107 of 1998		
Indicate the number and date of the relevant notice: e.g. R. 983, 08 December 2014	Activity No (s) (in terms of the relevant notice) e.g. 1(a)	Describe each listed activity as per project description⁴: e.g. Construction of a 600 mW generator
2010 EIA Regulations promulgated in terms of the NEMA, Act No 107 of 1998	GNR 544: 11 (iv) (x) (xi)	<p>The construction of:</p> <p>(iv) dams; (x) buildings exceeding 50 square metres in size; or (xi) infrastructure or structures covering 50 square metres or more</p> <p>River lodge covers an extent of 15 602 square meters and lies within the river bed.</p>
		<p>Buffalo Camp covers an extent of 7600 square meters and lies 32 m from the river. Karula Camp is located within 32 m of the river. The two river crossings are constructed within the watercourse</p>
	GNR 544: 12	The construction of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50000 cubic metres or more, unless such storage falls within the ambit of activity 19 of Notice 545 of 2010

	GNR 544: 18 (i)	<p>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from:</p> <p>(i) a watercourse;</p> <p>River lodge is constructed within the river bed. Two river crossings have been constructed.</p>
	GNR 546: 2	<p>The construction of reservoirs for bulk water supply with a capacity of more than 250 cubic metres.</p> <p>Two 800 000 litre reservoirs were constructed to provide water to all of the lodges within Kapama Private Game Reserve i.e. River lodge, Karula Camp, Southern Camp and Buffalo Camp</p>
	GNR 546: 4	<p>The construction of a road wider than 4 metres with a reserve less than 13,5 metres.</p> <p>Many game drive routes have been constructed over the years, some of which may exceed 4 m in width.</p>
	GNR 546: 5	<p>The construction of resorts, lodges or other tourism accommodation facilities that sleep less than 15 people.</p> <p>Buffalo Camp sleeps 8 guests.</p>
	GNR 546: 6	<p>The construction of resorts, lodges or other tourism accommodation facilities that sleep 15 people or more.</p> <p>River lodge sleeps 164 guests and 40 staff. Karula Camp sleeps 24 guests and 40 staff. Southern Camp sleeps 20 guests and 40 staff. Buffalo camp sleeps 8 guests and 20 staff. Drakensig Staff village sleeps 60 staff. Bosplaas staff village sleeps 8 staff. Karula staff sleeps 20 staff.</p>
	GNR 546: 12	<p>The clearance of an area of 300 square metres or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation.</p> <p>A total of approximately 523 575 Ha of indigenous vegetation have been cleared.</p>
	GNR 546: 13	<p>The clearance of an area of 1 hectare or more of vegetation where 75% or more of the vegetative cover constitutes indigenous vegetation.</p> <p>A total of approximately 52 Ha of indigenous vegetation have been cleared.</p>
	GNR 546: 16 (iii) (iv)	<p>The construction of:</p> <p>(iii) buildings with a footprint exceeding 10 square metres in size; or (iv) infrastructure covering 10 square metres or more</p> <p>where such construction occurs within a watercourse or within 32 metres of a watercourse, measured from the edge of a</p>

		<p>watercourse, excluding where such construction will occur behind the development setback line.</p> <p>River lodge covers an extent of 15 602 square meters and lies within the river bed.</p> <p>Buffalo Camp covers an extent of 7600 square meters and lies 32 m from the river.</p> <p>Karula Camp is located within 32 m of the river.</p> <p>The two river crossings are constructed within the watercourse</p>
	GNR 546: 18	<p>The expansion of a resort, lodge, hotel and tourism or hospitality facilities where the development footprint will be expanded.</p> <p>Over the years, various attributes have been added to the lodges such as spas, additional guest units etc.</p>
	GNR 546: 19	<p>The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.</p> <p>Post 1989, many game viewing tracks have been constructed and old roads lengthened by more than 1 Km.</p>
NEMA EIA Contraventions: between 08 December 2014 and 06 April 2017		
Activities unlawfully commenced with on or after 08 December 2014 and before end 06 April 2017: EIA regulations promulgated in terms of the NEMA, Act 107 of 1998		
Indicate the number and date of the relevant notice: e.g. R. 983, 08 December 2014	Activity No (s) (in terms of the relevant notice) e.g. 1(a)	Describe each listed activity as per project description⁵: e.g. Construction of a 600 mW generator
2014 EIA Regulations promulgated in terms of the NEMA, Act No 107 of 1998	GNR 983: 9	<p>The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water— (vii) with an internal diameter of 0,36 metres or more; or (viii) with a peak throughput of 120 litres per second or more</p> <p>Infrastructure exceeding 1000 m in length may have been constructed for the transportation of water.</p>
	GNR 983: 10	<p>The development and related operation of infrastructure exceeding 1000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes – (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more</p> <p>Infrastructure exceeding 1000 m in length may have been constructed for the transportation of sewage.</p>
	GNR 983: 12 (iii) (iv) (x) (xi) (xii); (a) (c)	<p>The development of— (iii) bridges exceeding 100 square metres in size; (iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size; (x) buildings exceeding 100 square metres in size; (xi) boardwalks exceeding 100 square metres in size; or (xii) infrastructure or structures with a physical footprint of 100 square metres or more;</p> <p>where such development occurs— (a) within a watercourse;</p>

		<p>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse</p> <p>River lodge exceeds 100 square meters in size and portions of it are built within the river banks. Walkways are also constructed over the river bed and decks extend out over the river as well.</p> <p>Buffalo camp is located within 32 m of the river. Karula Camp is located within 32 m of the river. The two river crossings are constructed within the watercourse</p>
GNR 983: 19 (i)		<p>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from</p> <p>(i) a watercourse;</p> <p>River lodge exceeds 100 square meters in size and portions of it are built within the river banks. Walkways are also constructed over the river bed and decks extend out over the river as well.</p> <p>Two river crossings have been constructed.</p>
GNR 983: 27		<p>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation</p> <p>A total of approximately 52 Ha of indigenous vegetation have been cleared.</p>
GNR 985: 2		<p>The development of reservoirs for bulk water supply with a capacity of more than 250 cubic metres.</p> <p>Two 800 000 litre reservoirs were constructed to provide water to all of the lodges within Kapama Private Game Reserve i.e. River lodge, Karula Camp, Southern Camp and Buffalo Camp</p>
GNR 983: 4		<p>The development of a road wider than 4 metres with a reserve less than 13,5 metres.</p> <p>Many game drive routes have been constructed over the years, some of which may exceed 4 meters in width.</p>
GNR 983: 5		<p>The development of resorts, lodges, hotels and tourism or hospitality facilities that sleep less than 15 people.</p> <p>Buffalo Camp sleeps 8 guests.</p>
GNR 983: 6		<p>The development of resorts, lodges, hotels and tourism or hospitality facilities that sleeps 15 people or more.</p> <p>River lodge sleeps 164 guests and 40 staff. Karula Camp sleeps 24 guests and 40 staff. Southern Camp sleeps 20 guests and 40 staff. Buffalo camp sleeps 8 guests and 20 staff. Drakensig Staff village sleeps 60 staff. Bosplaas staff village sleeps 8 staff. Karula staff sleeps 20 staff.</p>
GNR 983: 12		<p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>A total of approximately 52 Ha of indigenous vegetation have been cleared.</p>

	GNR 983: 14 (ii) (iii) (iv) (x) (xi) (xii) (a) (c)	<p>The development of—</p> <ul style="list-style-type: none"> (iii) bridges exceeding 10 square metres in size; (iv) dams, where the dam, including infrastructure and water surface area exceeds 10 square metres in size; (x) buildings exceeding 10 square metres in size; (xi) boardwalks exceeding 10 square metres in size; or (xii) infrastructure or structures with a physical footprint of 10 square metres or more; <p>where such development occurs—</p> <ul style="list-style-type: none"> (a) within a watercourse; (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; <p>River lodge exceeds 10 square meters in size and portions of it are built within the river banks. Walkways are also constructed over the river bed and decks extend out over the river as well.</p> <p>Buffalo camp is located within 32 m of the river. Karula Camp is located within 32 m of the river. The two river crossings are constructed within the watercourse</p>
	GNR 983: 17	<p>The expansion of a resort, lodge, hotel and tourism or hospitality facilities where the development footprint will be expanded.</p> <p>Over the years, various attributes have been added to the lodges such as spas, additional guest units etc.</p>
	GNR 983: 18	<p>The widening of a road by more than 4 metres, or the lengthening of a road by more than 1 kilometre.</p> <p>Post 1989, many game viewing tracks have been constructed and old roads lengthened by more than 1 Km.</p>
	GNR 983: 19	<p>The expansion of runways or aircraft landing strips where the expanded runways or aircraft landing strips will be longer than 1,4 kilometres in length.</p> <p>In 2017 the existing 1 Km unpaved airstrip was expanded by 500 m (total of 1,5 Km) and paved.</p>
NEMA EIA Contraventions: on or after 07 April 2017		
Activities unlawfully commenced with on or after 07 April 2017: EIA regulations promulgated in terms of the NEMA, Act 107 of 1998		
Indicate the number and date of the relevant notice: e.g. R. 983, 08 December 2014	Activity No (s) (in terms of the relevant notice) e.g. 1(a)	Describe each listed activity as per project description⁶: e.g. Construction of a 600 mW generator
Amended 2014 EIA Regulations promulgated in terms of the NEMA, Act No 107 of 1998	GNR 327: 9	<p>The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water</p> <ul style="list-style-type: none"> (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more <p>Infrastructure exceeding 1000 m in length may have been constructed for the transportation of water.</p>
	GNR 327: 10	The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of

	<p>sewage, effluent, process water, waste water, return water, industrial discharge or slimes –</p> <p>(i) with an internal diameter of 0,36 metres or more; or</p> <p>(ii) with a peak throughput of 120 litres per second or more</p> <p>Infrastructure exceeding 1000 m in length may have been constructed for the transportation of sewage.</p>
GNR 327: 12 (i) (ii) (a) (c)	<p>The development of</p> <p>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or</p> <p>(ii) infrastructure or structures with a physical footprint of 100 square metres or more;</p> <p>where such development occurs—</p> <p>(a) within a watercourse;</p> <p>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse</p> <p>River lodge exceeds 100 square meters in size and portions of it are built within the river banks. Walkways are also constructed over the river bed and decks extend out over the river as well.</p> <p>Buffalo camp is located within 32 m of the river. Karula Camp is located within 32 m of the river. The two river crossings are constructed within the watercourse</p>
GNR 327: 19	<p>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;</p> <p>River lodge exceeds 100 square meters in size and portions of it are built within the river bed. Walkways are also constructed over the river bed and decks extend out over the river as well.</p> <p>Two river crossings have been constructed.</p>
GNR 327: 27	<p>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation</p> <p>A total of approximately 52 Ha of indigenous vegetation have been cleared.</p>
GNR 327: 48 (i) (a) (c)	<p>The expansion of</p> <p>(i) infrastructure or structures where the physical footprint is expanded by 100 square metres or more; or</p> <p>where such expansion occurs—</p> <p>(a) within a watercourse;</p> <p>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse</p> <p>Over the years, various attributes have been added to the lodges such as spas, additional guest units, staff accommodation, river crossings etc.</p>
GNR 324: 12 (e) (ii) (iii)	<p>The clearance of an area of 300 square metres or more of indigenous vegetation in (e) Limpopo (ii) critical biodiversity areas (iii) on land zoned open space, conservation or had an equivalent zoning.</p> <p>A total of approximately 523 575 Ha of indigenous vegetation have been cleared. KPGR is located within Limpopo Province, where majority of the reserve is classified as CBA 1 and 2.</p>

	GNR 324: 14 (ii) (a) (c); (e) (i) (ee) (ff) (hh)	<p>The development of (ii) infrastructure or structures with a physical footprint of 10 square meters or more where such development occurs within (a) a watercourse or (c) within 32 m of a watercourse in (e) Limpopo (i) outside urban areas in (ee) sites or areas identified in terms of an international convention (ff) critical biodiversity areas and (hh) within 5 Km of any other protected area.</p> <p>River lodge exceeds 10 square meters in size and portions of it are built within the river bed. Walkways are also constructed over the river bed and decks extend out over the river as well.</p> <p>Buffalo camp is located within 32 m of the river. Karula Camp is located within 32 m of the river. The two river crossings are constructed within the watercourse.</p> <p>KPGR is located within Limpopo Province, where majority of the reserve is classified as CBA 1 and 2. KPGR also falls within the Kruger 2 Canyons Biosphere Reserve and is located within 5 Km of the Klaserie Private Nature Reserve and the Thornybush Game Reserve.</p>
	GNR 324: 17 (e) (i) (dd) (ee) (gg)	<p>The expansion of a resort, lodge, hotel, tourism or hospitality facilities where the development footprint will be expanded and the expanded facility can accommodate an additional 15 people or more in (e) Limpopo (i) outside urban areas in (dd) sites or areas identified in terms of an international convention (ee) critical biodiversity areas within (gg) 5 Km of any protected area</p> <p>Over the years, various attributes have been added to the lodges such as spas, additional guest units, staff accommodation, river crossings etc.</p> <p>KPGR is located within Limpopo Province, where majority of the reserve is classified as CBA 1 and 2. KPGR also falls within the Kruger 2 Canyons Biosphere Reserve and is located within 5 Km of the Klaserie Private Nature Reserve and the Thornybush Game Reserve.</p>
	GNR 324: 19 (e) (i) (dd) (ee) (gg)	<p>The expansion of runways or aircraft landing strips where the expanded runways or aircraft landing strips will be longer than 1,4 kilometres in length (e) Limpopo (i) outside urban areas in (dd) sites or areas identified in terms of an international convention (ee) critical biodiversity areas within (gg) 5 Km of any protected area</p> <p>In 2017 the existing 1 Km unpaved airstrip was expanded by 500 m (total of 1,5 Km) and paved.</p> <p>KPGR is located within Limpopo Province, where majority of the reserve is classified as CBA 1 and 2. KPGR also falls within the Kruger 2 Canyons Biosphere Reserve and is located within 5 Km of the Klaserie Private Nature Reserve and the Thornybush Game Reserve.</p>

Table 4: Listing activities

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

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

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

Table 5: Activities that trigger Section 38 of the NHRA

- Field rating system as recommended by SAHRA:

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

Table 6: Field rating system to determine site significance

- Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and they are valuable, finite, non-renewable and irreplaceable.
- All archaeological remains, features, structures and artefacts older than 100 years and historic structures older than 60 years are protected by the relevant legislation, in this case the **National Heritage Resources Act (NHRA) (Act No. 25 of 1999, Section 34 & 35)**. The Act makes an archaeological impact assessment as part of an EIA and EMPR mandatory (see **Section 38**). No archaeological artefact, assemblage or settlement (site) may be moved or destroyed without the necessary approval from the **South African Heritage Resources Agency (SAHRA)**. Full cognisance is taken of this Act in making recommendations in this report.
- Cognisance will also be taken of the Mineral and Petroleum Resources Development Act (Act No 28 of 2002) and the National Environmental Management Act (Act No 107 of 1998) when making any recommendations.
- Human remains older than 60 years are protected by the NHRA, with reference to Section 36. Human remains that are less than 60 years old are protected by the Regulations Relating to the Management of Human Remains (GNR 363 of 22 May 2013)

made in terms of the National Health Act No. 61 of 2003 as well as local Ordinances and regulations.

- With reference to the evaluation of sites, the certainty of prediction is definite, unless stated otherwise.
- The guidelines as provided by the NHRA (Act No. 25 of 1999) in Section 3, with special reference to subsection 3, and the Australian ICOMOS (International Council on Monuments and Sites) Charter (also known as the Burra Charter) are used when determining the cultural significance or other special value of archaeological or historical sites.
- A copy of this report will be submitted on SAHRIS as stipulated by the National Heritage Resources Act (NHRA) (Act No. 25 of 1999), Section 38 (especially subsection 4) and the relevant Provincial Heritage Resources Authority (PHRA).
- Note that the final decision for the approval of permits, or the removal or destruction of sites, structures and artefacts identified in this report, rests with the SAHRA (or relevant PHRA).

6. Study Approach/Methodology

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

The strategy during this survey was to focus on the footprints associated with all the existing infrastructure developments. The main focus was to establish if there was any impact on heritage remains. Intensive pedestrian surveys were conducted at all the specified sites.

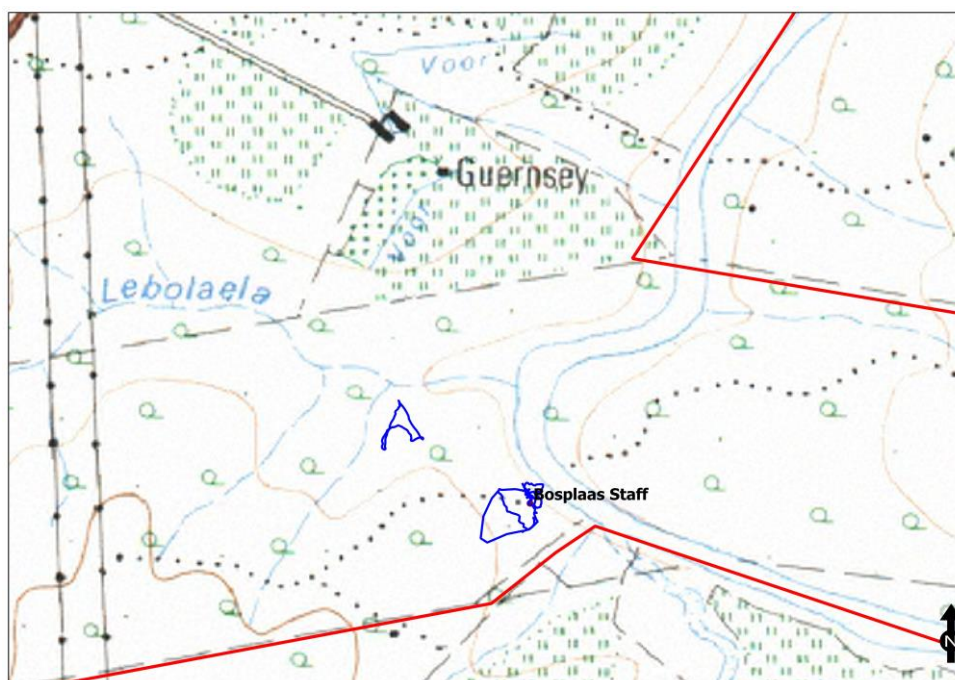


Figure 15: Recorded survey tracks at Bosplaas staff accommodation

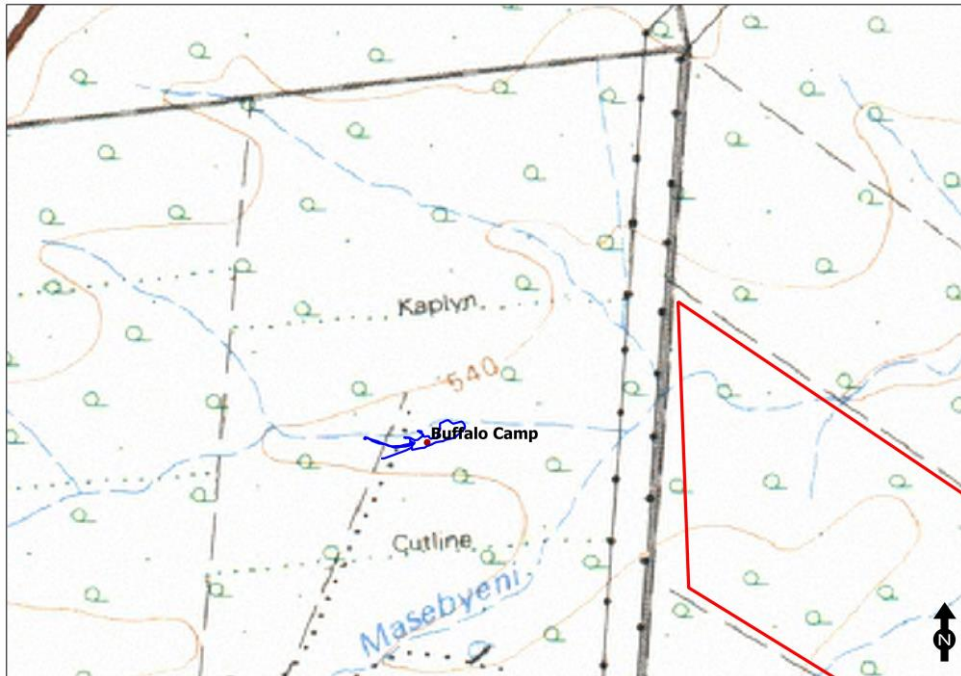


Figure 16: Recorded survey tracks at Buffalo Camp

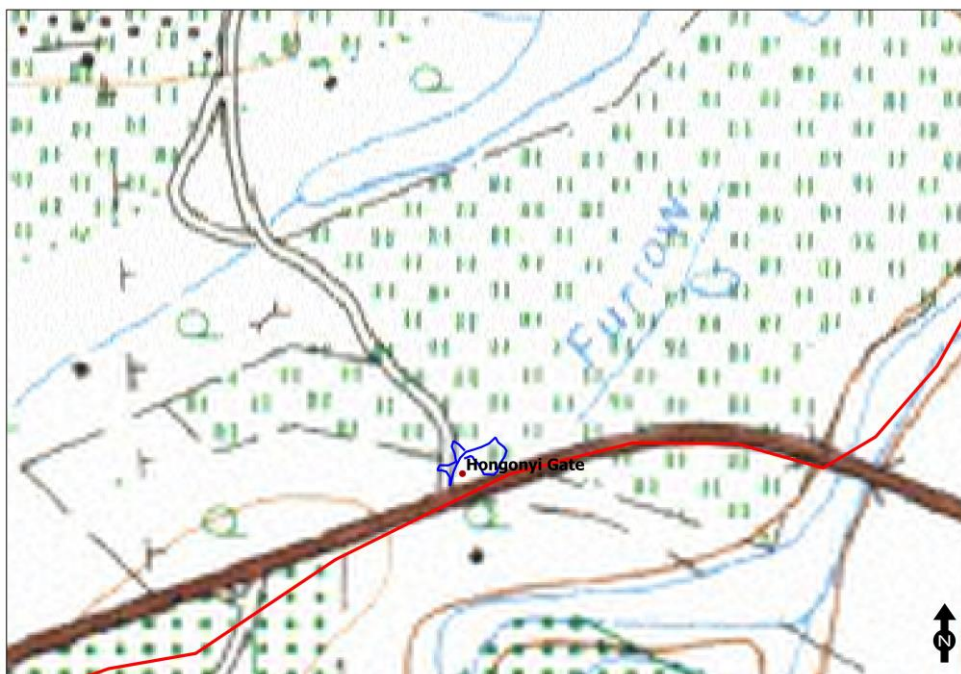


Figure 17: Recorded survey tracks at Hongonyi Gate

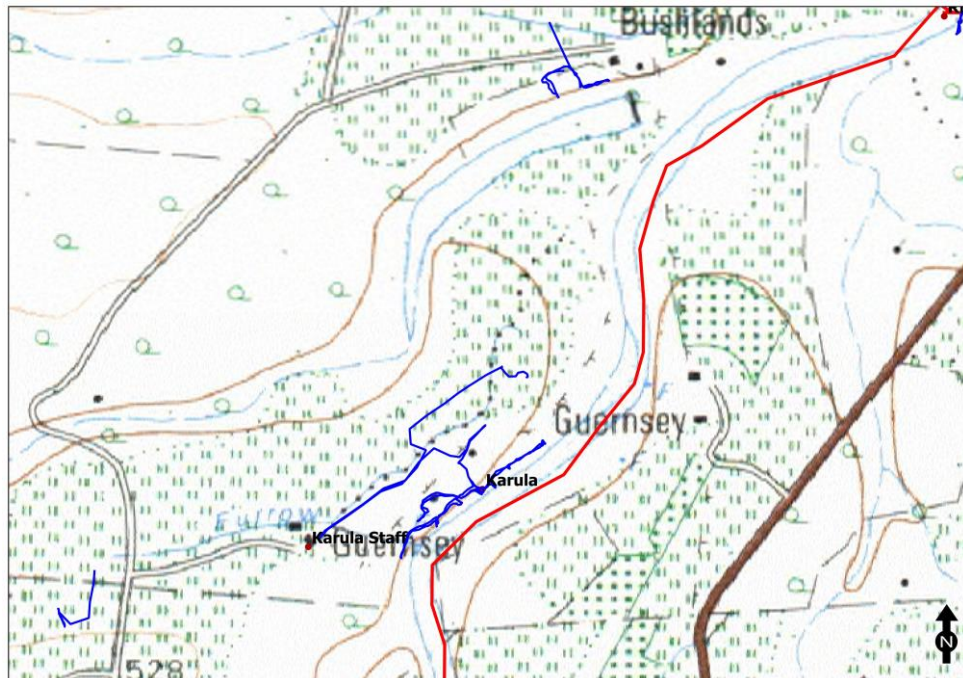


Figure 18: Recorded survey tracks at Karula Camp and staff accommodation

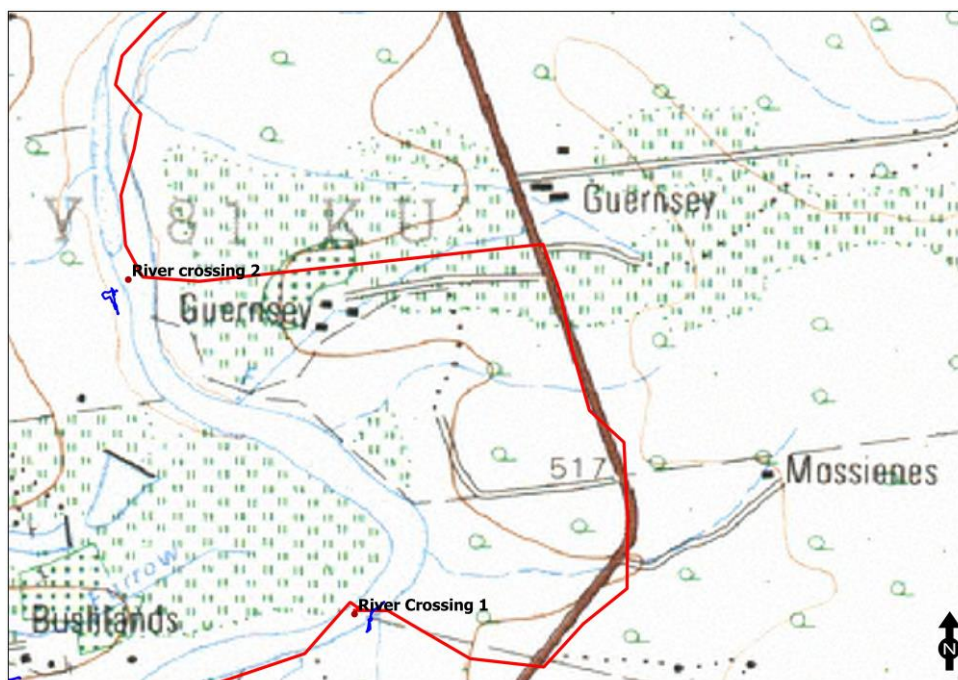


Figure 19: Recorded survey tracks at Kubu Dam water purification plant (Crossing 1) and Crossing 2

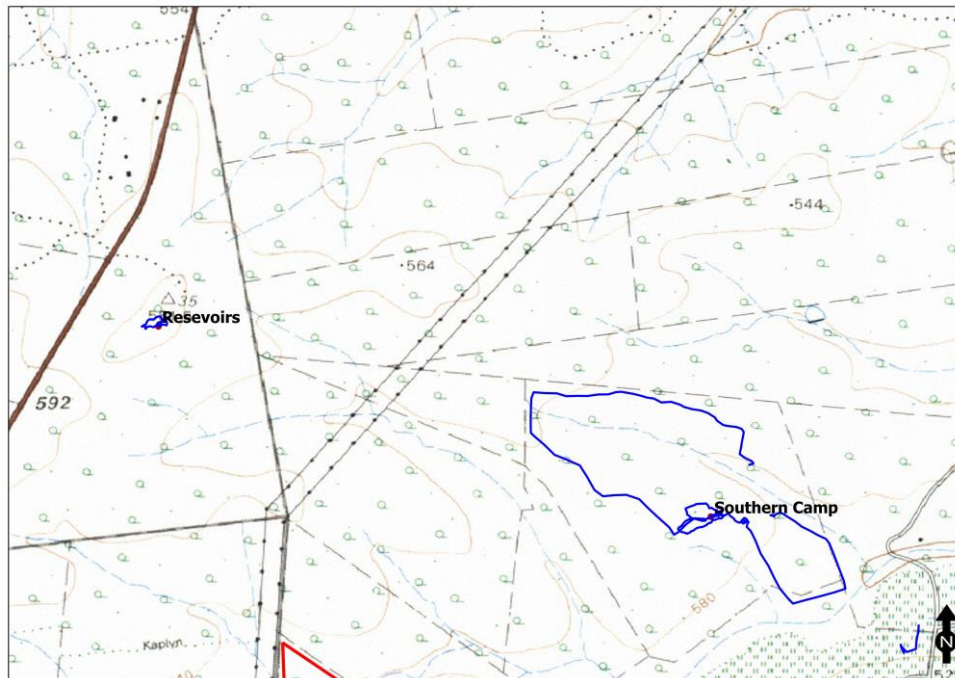


Figure 20: Recorded survey tracks at the Reservoirs and Southern Camp

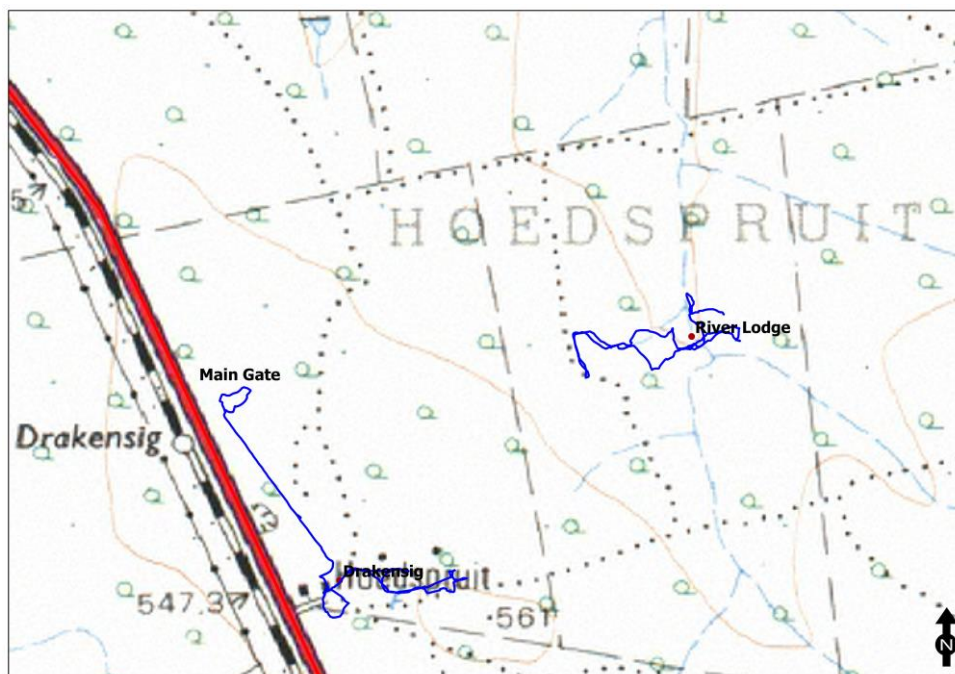


Figure 21: Recorded survey tracks at River Lodge, Drakensig and the Main Gate

6.1 Review of existing information/data

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

- National Mapping Project by SAHRA (which lists heritage impact assessment reports submitted for South Africa);
- Environmental Potential Atlas (ENPAT);
- Online SAHRIS database;
- National Automated Archival Information retrieval System (NAAIRS);
- Maps and information documents supplied by the client; and

- Several heritage surveys have been conducted in the vicinity of the survey area (published and unpublished material on the area (Küsel 2005, Meyer 1986, Roodt 2002, Van Der Walt 2006 and Van Schalkwyk 2004).

Few heritage surveys and research projects have been completed in the general vicinity of the project footprint during the last few years. However, it is indicated by Van Schalkwyk (2004) and Roodt (2002) that a high probability exists for Iron Age burials and potsherds to occur in or associated with Terminalia.

The Surveyor General’s map of the farm Hoedspruit 82 KU confirms that the farm was first surveyed in 1895, the farm Guernsey 81 KU was first survey in 1941 and the farm Moria 83 KU was first surveyed in 1924 (also see Addendum 3).

6.2 Palaeontological sensitivity

From north to south, the Swazian Goudplaats Gneiss, Makhutswi Gneiss and Nelspruit Suite (granite gneiss and migmatite), and further south still, the younger Mpuluzu Granite (Randian) from the major basement geology of the area.

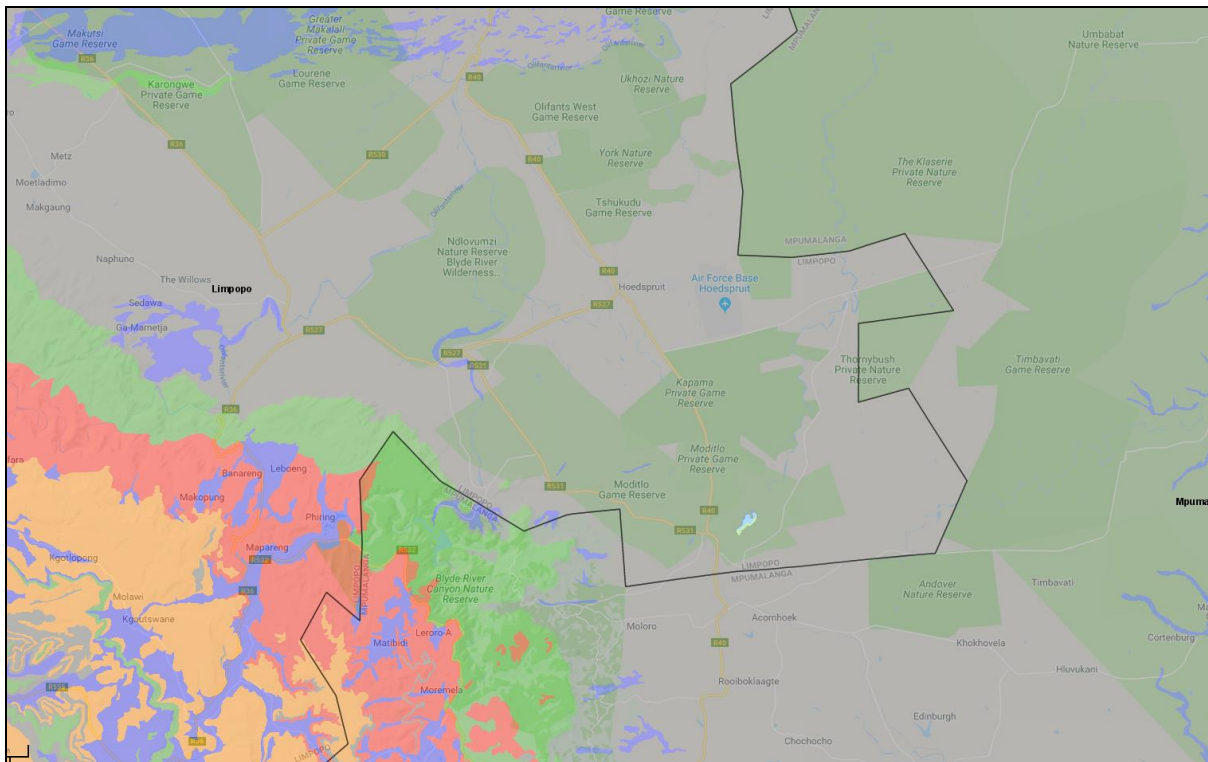


Figure 22: Palaeontological sensitivity zones as indicated for the survey footprint (SAHRIS 2018)

Colour	Sensitivity	Required Action
RED	VERY HIGH	Field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	Desktop study is required
BLUE	LOW	No palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	No palaeontological studies are required
WHITE/CLEAR	UNKNOWN	Will require a minimum of a desktop study. As more

		information comes to light, SAHRA will continue to populate the map.
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The palaeontological sensitivity map was extracted from the SAHRIS database and clearly shows grey (insignificant/zero) sensitivity. As a result no palaeontological study will be required for the survey footprint.

6.3 Site visits

The field survey was conducted from 2 to 4 April 2019.

6.4 Social interaction and current inhabitants

The local lodge manager and maintenance personnel were consulted during the survey to locate any potential heritage sites in the region.

6.5 Public Consultation and Stakeholder Engagement

Standard procedures and public meetings are being held.

6.6 Assumptions, restrictions, gaps and limitations

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

6.7 Methodology for assessment of potential impacts

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

- The **nature**, a description of what causes the effect, what will be affected and how it will be affected;
- The **physical extent**, wherein it is indicated whether:
 - 1 - the impact will be limited to the site;
 - 2 - the impact will be limited to the local area;
 - 3 - the impact will be limited to the region;
 - 4 - the impact will be national; or
 - 5 - the impact will be international.
- The **duration**, wherein it is indicated whether the lifetime of the impact will be:
 - 1 - of a very short duration (0–1 years);
 - 2 - of a short duration (2-5 years);
 - 3 - of a medium-term (5–15 years);
 - 4 - of a long term (> 15 years); or
 - 5 - permanent.
- The **magnitude** of impact, quantified on a scale from 0-10, where a score is assigned:
 - 0 - small and will have no effect;
 - 2 - minor and will not result in an impact;
 - 4 - low and will cause a slight impact;
 - 6 - moderate and will result in processes continuing but in a modified way;
 - 8 - high, (processes are altered to the extent that they temporarily cease); or
 - 10 - very high and results in complete destruction of patterns and permanent cessation of processes;

- The **probability** of occurrence, which describes the likelihood of the impact actually occurring and is estimated on a scale where:
 - 1 - very improbable (probably will not happen);
 - 2 - improbable (some possibility, but low likelihood);
 - 3 - probable (distinct possibility);
 - 4 - highly probable (most likely); or
 - 5 - definite (impact will occur regardless of any prevention measures);
- The **significance**, which is determined through a synthesis of the characteristics described above (refer formula below) and can be assessed as low, medium or high;
- The **status**, which is described as either positive, negative or neutral;
 - The degree to which the impact can be reversed;
 - The degree to which the impact may cause irreplaceable loss of resources; and
 - The degree to which the impact can be mitigated.

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

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

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

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

7. The Cultural Heritage Sites

7.1. Isolated occurrences

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

Throughout the survey footprint only one isolated find was recorded near River Lodge, namely a Middle Stone Age tool. The artefact was recorded in an erosion donga and situated roughly 1 metre below the current soil level.



Figure 23: Profile in which the MSA stone tool was found



Figure 24: MSA stone tool recorded near River Lodge

7.2 Heritage sites

None

8. Locations and Evaluation of Sites

None

9. Management Measures

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

that are not impacted on can be written into the management plan, whence they can be avoided or cared for in the future.

9.1 Objectives

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

The following shall apply:

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

9.2 Control

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

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

10. Recommendations and Conclusions

No archaeological (both Stone Age and Iron Age) or historical artefacts, assemblages, features, structures or settlements were recorded during the survey at the locations of the various existing developments.

Based on the assessment, from a heritage perspective, no archaeological or historical remains were impacted on during the developmental phase of the existing infrastructure, however, care should be taken not to cause any future impact on cultural heritage remains that might still exist in the region. As such, no re-active mitigation measures are required.

Also, please note:

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

11. References

- De Vaal JB. 1990. Transportpaaie, transportryers en die tsetsevlieg in Neem uit die Verlede. Pretoria: Nasionale Parkeraad
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Addendum 1: Archaeological and Historical Sequence

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

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

< = less than; > = greater than

Archaeological Context

Stone Age Sequence

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

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

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

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

Later Stone Age

- Age Range: recent to 20-40 thousand years ago

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

Technological characteristics

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

Technological characteristics

- Much variability can be expected
 - Variants include macrolithic (similar to Smithfield [Sampson 1974]) and/or microlithic (similar to Wilton) assemblages
 - Assemblages are mostly informal (Smithfield)
 - Often characterised by large untrimmed flakes (Smithfield)
 - Sometimes microlithic with scrapers, blades and bladelets, backed tools and adzes (Wilton-like)
 - Worked bone is common
 - OES is common
 - Ochre is common
 - Iron objects are rare
 - Ceramics are absent
- **Wilton**
 - 4000 – 8000 years ago
 - MIS 1

- At some sites continues into the final Later Stone Age as regional variants (e.g. Wilton Large Rock Shelter and Cave James)

Technological characteristics

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

Technological characteristics

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

Technological characteristics

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

Technological Characteristics

- Characterised by unstandardised, often microlithic, pieces and includes the bipolar technique
- Described at some sites, but not always clear whether assemblages represent a real archaeological phase or a mixture of LSA/MSA artefacts

Middle Stone Age

- Age Range: 20 000 – 30 000 years ago

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

Technological characteristics

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

Sibudu

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

Technological characteristics

- Most points are produced using Levallois technique
- Most formal retouch aimed at producing unifacial points
- Sibudu unifacial point (type fossil) characteristics: faceted platform; shape is somewhat elongated with a mean length of 43.9 mm, a mean breadth of 26.8 mm and mean thickness of 8.8 mm (L/B ratio 1.7); their mean mass is 11.8 g (Mohapi, 2012)
- Some plain butts
- Rare bifacially retouched points
- Some side scrapers are present
- Backed pieces are rare
- **Howieson's Poort**
 - 58 000 – 66 000 years ago
 - MIS 3-4

Technological characteristics

- Characterised by blade technology
- Includes small (<4 cm) backed tools, e.g. segments, scrapers, trapezes and backed blades
- Some denticulate blades
- Pointed forms are rare or absent
- **Still Bay**
 - 70 000 – 77 000 years ago
 - MIS 4-5a

Technological characteristics

- Characterised by thin (<10 mm), bifacially worked foliate or lanceolate points
- Semi-circular or wide-angled pointed butts
- Could include blades and finely serrated points (Lombard et al. 2010)
- **Pre-Still Bay**
 - 72 000 – 96 000 years ago
 - MIS 4-5

Technological characteristics

- Characteristics currently being determined / studied
- **Mossel Bay**
 - 77 000 to —105 000 years ago
 - MIS 5a-4
 - Also known as MSA II at Klasies River or MSA 2b generally

Technological characteristics

- Characterised by recurrent unipolar Levallois point and blade reduction
- Products have straight profiles; percussion bulbs are prominent and often splintered or ring-cracked
- Formal retouch is infrequent and restricted to sharpening the tip or shaping the butt
- **Klasies River**
 - 105 000 to —130 000 years ago
 - MIS 5d-5e
 - Also referred to as MSA I at Klasies River or MSA 2a generally

Technological characteristics

- Recurrent blade and convergent flake production
- End products are elongated and relatively thin, often with curved profiles
- Platforms are often small with diffused bulbs
- Low frequencies of retouch
- Denticulate pieces
- **Early Middle Stone Age**
 - Suggested age MIS 6 to MIS 8 (130 000 to —300 000 years ago)
 - Informal designation

Technological characteristics

- This phase needs future clarification regarding the designation of cultural material and sequencing
- Includes discoidal and Levallois flake technologies, blades from volumetric cores and a generalised toolkit
- **Earlier Stone Age**
 - Age range: >200 000 to 2 000 000 years ago
 - General characteristics: early stages include simple flakes struck from cobbles, core and pebble tools; later stages include intentionally shaped handaxes, cleavers and picks; final or transitional stages have tools that are smaller than the preceding stages and include large blades.
 - In the sequence below we highlight differences or characteristics that may be used to refine interpretations depending on context.
- **ESA-MSA transition**
- 200 to —600 thousand years ago
- MIS 7-15

Technological characteristics

- Described at some sites as Fauresmith or Sangoan
- Relationships, descriptions, issues of mixing and ages yet to be clarified
- Fauresmith assemblages have large blades, points, Levallois technology, and the remaining ESA components have small bifaces
- The Sangoan contains small bifaces (<100 mm), picks, heavy and light-duty denticulated and notched scrapers
- The Sangoan is less well described than the Fauresmith
- **Acheulean**
 - 300 thousand to —1.5 million years ago
 - MIS 8-50

Technological characteristics

- Bifacially worked handaxes and cleavers, large flakes > 10 cm
- Some flakes with deliberate retouch, sometimes classified as scrapers
- Gives impression of being deliberately shaped, but could indicate result of knapping strategy
- Sometimes shows core preparation
- Generally found in disturbed open-air locations
- **Oldowan**
 - 1.5 to >2 million years ago
 - MIS 50-75

Technological characteristics

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

Iron Age Sequence

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

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

Ethno-archaeological sequence in the Kruger National Park

Both Early and Later Iron Age settlements have been recorded in the Park by various archaeological researchers. Radiocarbon dates indicate occupation from approximately the beginning of the 5th Century until historic times. Contact situations between the hunter-gatherers and the migratory agropastoralists seem to have been initially symbiotic. The earliest dates for Iron Age occupation are found near Letaba, followed by settlement of the Sabie and Crocodile River areas. The agropastoralists migrating into the Park brought with them a variety of domestic plants as well as domestic animals but still gathered veld foods and hunted actively. They lived in settled villages where they practised mining, smelting and working of iron, copper and gold and manufactured pottery. Decorations on the pottery are culturally diagnostic elements which are used by archaeologists to identify periods and traditions

The southern region of the Park is associated with the Early Iron Age through the following complexes or industries (Meyer 1986):

- Mutlumuvi Complex
- Sites associated with Eiland pottery
- Sites associated with Lydenburg pottery
- Sites associated with the Sabie site
- Mahlambamadube Industry
- Shirimantanga Industry

The southern region of the Park is associated with the Late Iron Age through the following complexes or industries (Meyer 1986):

- Ngwenya Industry
- Nsikazi Industry

During the 18th century, after defeating the Nhlangu and BaPai, the Ngomane, a Shangaan-Tsonga group, settled and dominated the southern regions of the present-day Kruger National Park (Meyer 1986:212-213). During this time the area was also influenced by the military presence of Swazi, Eastern Sotho and Tsonga groups (Meyer 1986:242).

In 1725, De Cuiper and his companions, the first known Europeans to travel through this area, encountered dense concentrations of people with large cattle herds. A hostile group north of the Crocodile River, probably the Ngomane, would not allow the party to continue into their territory (Eloff 1990:31).

After the 10th century trade became an important element of the economy. Items such as game products (including ivory and animal furs), iron, copper and gold, were exported and salt, grain, cattle, sea shells as well as glass beads and textiles from the East imported. Although ivory was a major trade item, documents on trade with the East Coast also refer to leopard skins, tortoise shells and slaves. Gold is specifically mentioned in documents relating to the twelfth century. Although the Arab traders controlled the trade until the 16th century, they used local people as porters and agents. Various trade routes went through the Park. One of these continued from Lydenburg through Pretoriuskop and the Matalhapoort to Delagoabaai. A footpath from Delagoabaai northwards went through Compos Corvo, Progresso de Guedes and Castilhopolis (subsequently used as overnight stops by Nellmapius), through the later Furley's drift at the Nkomati, Tengamanzi on the Crocodile and continued through Pretoriuskop to the area which later became known as Pilgrims Rest.

Accounts by travellers from 1725 to 1838 describe, as mentioned above, a significant presence of agropastoralists in the area which would subsequently become the Kruger National Park. When the Kruger National Park was proclaimed in 1902 the black settlers were removed and resettled in neighbouring areas.

Although ancient mine activities occur in the Kaap Valley, there is no documentary evidence that the Portuguese were actively involved in the mining and trade before the 18th century. The expedition of 1725 led by De Cuiper aimed to establish a connection with the Monomotapa gold fields.

A transport road to Delagoa Bay is indicated on old maps as 'De oude Wagenweg' or the 'oudste weg naar Delagoabaai (De Vaal 1990:240). This road was used by the Trichard commission in 1835 in order to find a route to Delagoa Bay, (also previously investigated by Potgieter in 1834. It passed Pretoriuskop, south of Shitlhavekop, crossed the upper reaches of the Mbyamiti (a tributary of the Crocodile River), passing Kwaggaspan and south of Renoster- and Siyalukop and then through the Lebombo mountains to Delagoa. However, the route was for various reasons not favoured, and in particular because it lacked sufficient watering points for cattle during winter and the route was ultimately discontinued (De Vaal 1990:249).

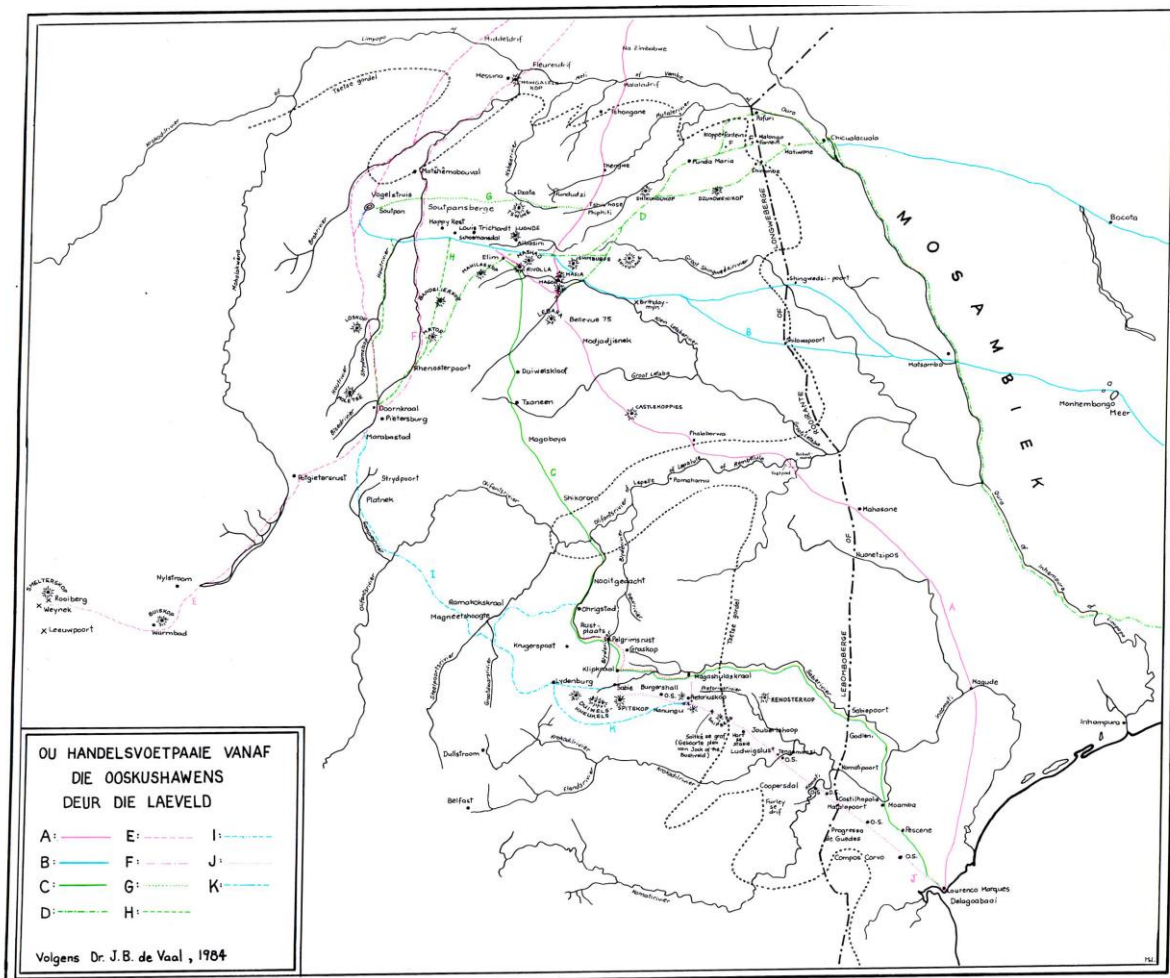


Figure 25: Trade route J passes to the south of the farm Tenbosch (U de V Pienaar 1990)

João Albasini was a well-known trader and elephant hunter who established a trading post at Magashulas Kraal north of Pretoriuskop, where he also built a house. By 1846 he was one of only a few white people living within this area. Albasini played a major role in the trade between the Voortrekkers and the Portuguese. He also established cattle outposts with assistants, and built small shops at some of these, namely at the posts of his assistants Manungu and that of Josekhulu southeast of Skipberg (also known as Langkop by the transport drivers). The Delagoa transport route went passed Skipberg and through the Lebombo mountain range. Manungu administered the trading post and looked after Albasini's cattle between 1845 - 1853. Archaeological investigations have shown that Manungu's outpost on the eastern side of the present Manungukop was used as an overnight stop on the ox-waggon transport route.

Accounts by hunters and other travellers report the presence of immense herds of game in the area, 'particularly between the Lebombos and Ship Mountain' (Scully 1907 quoted by U de V Pienaar 1990). Thomas Hart, who supervised an outpost station for Nellmapius on the trading route from Pilgrims Rest to Delagoa Bay, had a small house and enclosures for his numerous pet animals near the Josekhulu Spruit. Hart was murdered by a robber-band during the Sekhukhune war in 1876 and his buildings destroyed. The mutilated remains of Hart were ultimately buried there. Another well-known trader/hunter in this area was Sandeman who hunted in the Pretoriuskop-Skipberg area on his way to Delagoa Bay. He visited Thomas Hart's station and described the scene of destruction left after the murder of the latter.

Nellmapius was appointed by President Burgers to establish a route from the gold fields to Delagoa Bay. A concession was awarded in 1875 to build a road with overnight stations from the Lydenburg gold fields to Lourenço Marques. Pretoriuskop was the second station. Joubertshoop, the station of Thomas Hart, was 25.6 km southeast of Pretoriuskop. The next station 27.2 km on, was on the righthand bank of the Crocodile River. The crossing on the Crocodile became subsequently known as Nellmapius Drift.

The adventures of the transport driver Percy FitzPatrick and his dog, Jock, are well-known. Commemorative plaques have been constructed on their transport route from Lydenburg through Pretoriuskop to Delagoa Bay, which also falls within the proposed Concession area (See Map 2). A clue to the long-lost site where Jock was born was found in the following reference of FitzPatrick in *Jock of the Bushveld*: ‘We had rested through the heat of the day under a big tree on the bank of a little stream; it was the tree (near Ship Mountain) under which Soltké praid and died’ (FitzPatrick quoted by U de V Pienaar (1990:263).

Hoedspruit

The very first official land owner of the farm Hoedspruit was Dawid Johannes Joubert. He arrived in the lowveld in 1844 and settled in the area between the Blyde River and what is now known as the Zandspruit River. In 1848 on the 5th May, he took the opportunity to register the farm for the first time at the land office which was situated in Ohrigstad, thus it was in 1848 that Hoedspruit had any official recognition and registration towards the town and municipality that it is today. A few years later, in the 1850’s, Ohrigstad was expanding and becoming the central town in the greater region, however, at the time, it was decided that only the older settlers should be allowed to settle in and around the immediate area of Ohrigstad and anyone younger than 45 was encouraged to move further away from the town and settle elsewhere. As a result a group of young men – all under 45 – made their way down the escarpment and settle in the area between the mountain and the Blyde River on a farm that they then called Jonkmanspruit. A few of the other young men settled a little further on on the farm they called Welverdiend (meaning “well deserved”) and yet another on a farm that he called Driehoek due to the shape of the farm itself. These are some of the original names that still exist in the area today and are all situated around the edges of what was the original farm called Hoedspruit.

The name Hoedspruit itself was given by Dawid Johannes Joubert and was directly as a result of an incident after a major cloud burst on Mariepskop area in 1844 (when he first arrived in the area) which caused the “now called Zandspruit” to come down in a flash flood. During this even he ended up losing his hat in the flooding river. Bearing in mind that a hat in those days was a valuable resource for a farmer (sun protection etc) and not something that could be easily replaced as there were not “hat shops” on every corner, this in itself was a major event for Dawid Joubert and as a result, he then named the river the Hoedspruit (the Hat River) – as in the River that stole his Hat.

During the years that the farm was owned by Dawid, Hoedspruit farm that he had registered with the Land Office in Ohrigstad was huge and extended pretty much from the Blyde River to the Klaserie River and of course towards the town centre as it exists today. At pretty much the same time a major dispute erupted between the Portugese in the then Lourenço Marques (Maputo), and the South Africans in the then Transvaal Republic. The Portugese were insisting that the Drakensberg mountain range just behind the town of Hoedspruit was in fact the international border between Mozambique and South Africa and the South Africans were insisting it was the Lebombo Mountains. As a result Oom Paul Kruger, then president of the Transvaal Republic ordered for a proper land survey study to be done and for the official

border to be assessed and finalized. There were no qualified land surveyors at the time in South Africa and thus they had to be brought in from Europe – three of the main surveyors coming into the area included Von Weilligh (after whom the large Baobab in the Kruger Park is named), Vos and Gillfillan.

While the Land Surveyors were in South Africa (or the Transvaal Republic as it was then), Oom Paul then declared that they should also officially mark out the various farm boundaries for the farms and regions along the Drakensberg mountains before returning back to Europe. All the exceptionally large farms – such as the original Hoedspruit farm, were then divided up into smaller registered farms (although still belonging to and being run by a single farmer). It was then up to these European Land Surveyors to give names to all the official farms that they were formalizing and with little knowledge of any local cultures, languages or aspects, all the farms were then given European names of cities, states and countries that they were obviously familiar with.

From the late 1800's to early 1900's Abel Erasmus and his business partner Org Basson had a very successful transport business transporting mine equipment between the upcoming mines in the Gravelote area and the port at Lourenço Marques (Maputo). A crucial resource in their business was their span of "Geel-bek" oxen. Abel had a breeding stock of these oxen that he was very proud of and kept the core breeding stock secure at his farm "Orinoco" near the Mpisane Fort situated in Rolle (near Thulamahashe) – named after a Shangaan Chief in the region called Mpisane Nxumalo. At this very same time, a garrison of British soldiers was seconded to the area that were infamously known as Steinaeckers Horse which included the Kruger Park hero – Harry Wolhuter.

Steinaecker's Horse was a volunteer military unit that fought on the side of the British during the Anglo-Boer War (1899-1902). It operated mainly in the Lowveld of South Africa and Swaziland. The unit was formed by an interesting man named Francis Christiaan Ludwig von Steinaecker, a former Prussian-German soldier with extensive military experience. He came to SA in 1886, working as cartographer in German South-West Africa, before settling in Natal in 1890. He became a British subject and when the war broke out in 1899, he joined the Colonial Scouts.

He came to the attention of General Buller, commander of the British Forces during the early stages of the war, and after participating in a series of successful campaigns against the Boers, he was given permission to raise his own cavalry unit, called Steinaecker's Horse. He was also promoted to the rank of Major. The unit (close to 600 men) consisted mainly of local inhabitants of the Lowveld region, while local Black groups such as Shangaane and Swazi, also assisted (or rather, were utilized by the unit) in their activities.

The core purpose of this garrison was to intercept any potential shipment of arms being sent by the Dutch to the Boers in the Transvaal via Lourenço Marques and moving into the interior. In addition to this, they were also instructed to burn down the homesteads of any boers that were suspected in assisting with the shipping of guns to the Boers, however, before doing so, the soldiers reportedly emptied out the homesteads of all valuables which were kept for themselves before the homesteads were then set alight. This earned them the additional name of The 40 Thieves. It is also due to the activities of Steinackers horse that Thulamahashe (situated between Acornhoek and Bushbuckridge) got its name.

In 1910, after WWI, the Selati Railway was built and traversed over the farm of Hoedspruit. Although originally established for transport reasons, passenger travel also became popular and together with this, the need for stops along the way to allow for passengers to alight and disembark from the trains, was identified. The 5 main stops that were initially identified on

and alongside the Hoedspruit Farm include, Klaserie Town, Kapama, Hoedspruit, Olifanttank and Mica. In the early days of the Selati Railway, the old Steam Trains would stop at each and every stop. Interestingly, the Hoedspruit station is actually not situated on the remaining official farm of Hoedspruit and in fact falls on the farm Berlin. This is as a result of an unintentional error. The train driver, coming from Lourenco Marques side, had been given instructions to stop after “the third bend by the large Knobthorn tree” to offload the steel and material to build the original station, and he made a mistake and selected the wrong tree where he stopped to off load the station building materials. The stations was then built on this spot and it was only years later that it was realized that the Hoedspruit Station was in fact not on the farm Hoedspruit but was in the farm Berlin. Obviously, as so often happens with a train station, development then started building and occurring around the station which has eventually lead to the town we know today. So thinking back on it all, had the train driver not made the mistake he did make, either the town would be situated in a totally different location to where it is now, or alternatively, if his error had been discovered earlier and the station name then changed, we could potentially all be living in the town of Berlin today.

In the early 1950’s Schalk Roos and his son Piet Roos – originally from Brits, purchased the farm Berlin with the intention of registering the town of Hoedspruit as an official town and development. In 1952, they then built the first General Dealers and an accompanying motor repair shop alongside the railway line. The original foundation of this shop is still visible in the old building that currently houses the Game Ranch Management offices in the old section of Hoedspruit.

Following this, a mill and a small hotel was also built – Hotel Coepieba. The name Coepieba was developed by the original owner – Barend Basson and was a combination of his name and his family and friends – Coert Steinberg – a friend – contributed to the Coe portion of the name, Piet, who was his bank manager, contributed to the Pie portion of the name and then the remaining Ba was taken from his son’s name – also called Barend, thus all combined gives us the name Coe.pie...ba. Although the building has changed and has been rebuilt, Fort Coepieba as a pub still exists in the town today although it does have a fairly colourful and infamous history in the stories of early Hoedspruit life (History of Hoedspruit).

Addendum 2: Photographic record of surveyed sites

River Lodge and staff accommodation



Drakensig and Main Gate





Waste incineration



Reservoirs



Buffalo Camp





Landing strip



Southern Camp and Staff accommodation



Hongonyi Gate and Staff accommodation



Karula Camp and Staff accommodation



Kubu dam and water purification plant



Bosplaas staff accommodation



Addendum 3: Surveyor General Farm Diagram

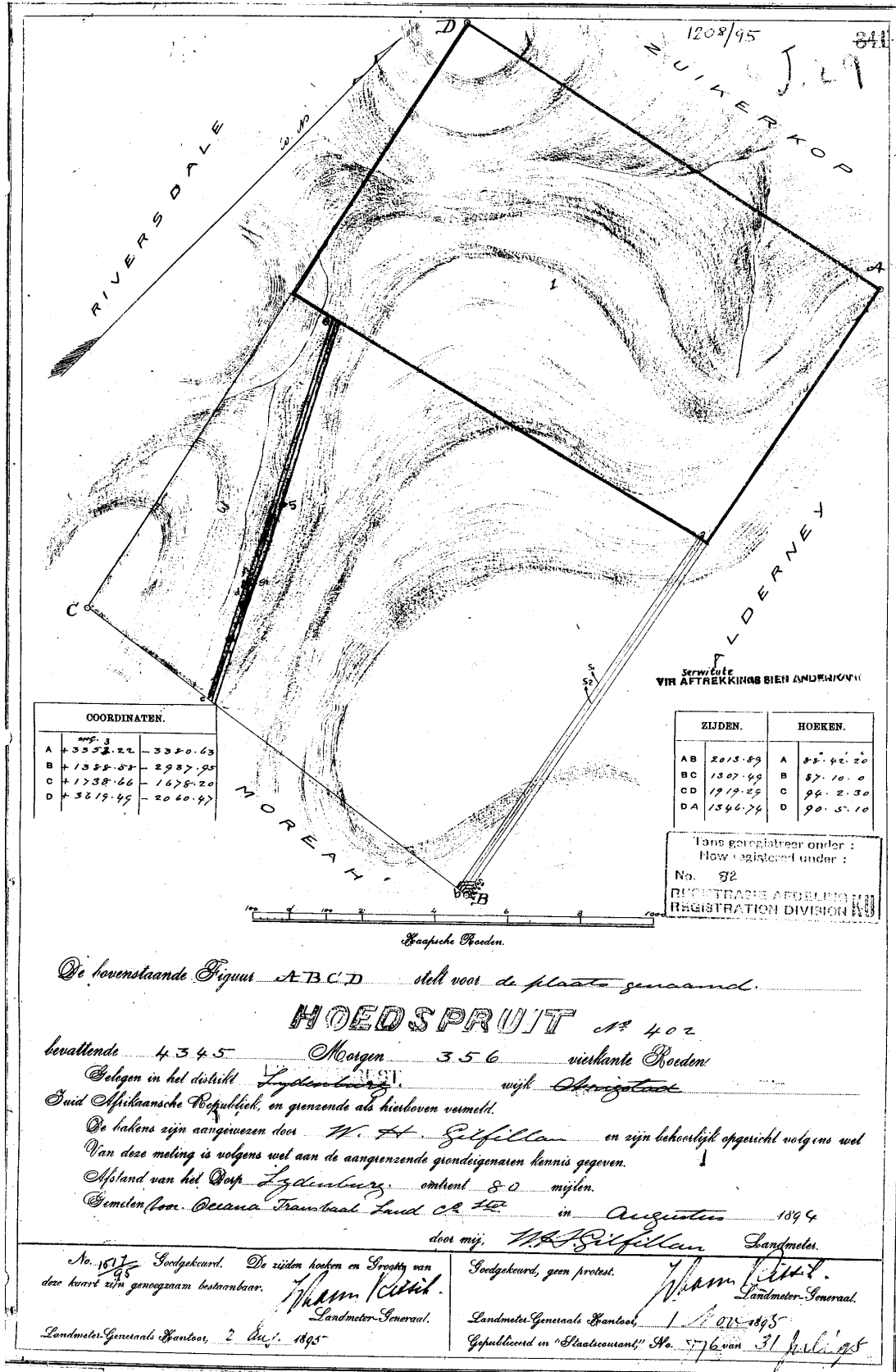


Figure 26: Surveyor General's sketch of the farm Hoedspruit 82 KU which was first surveyed in 1895

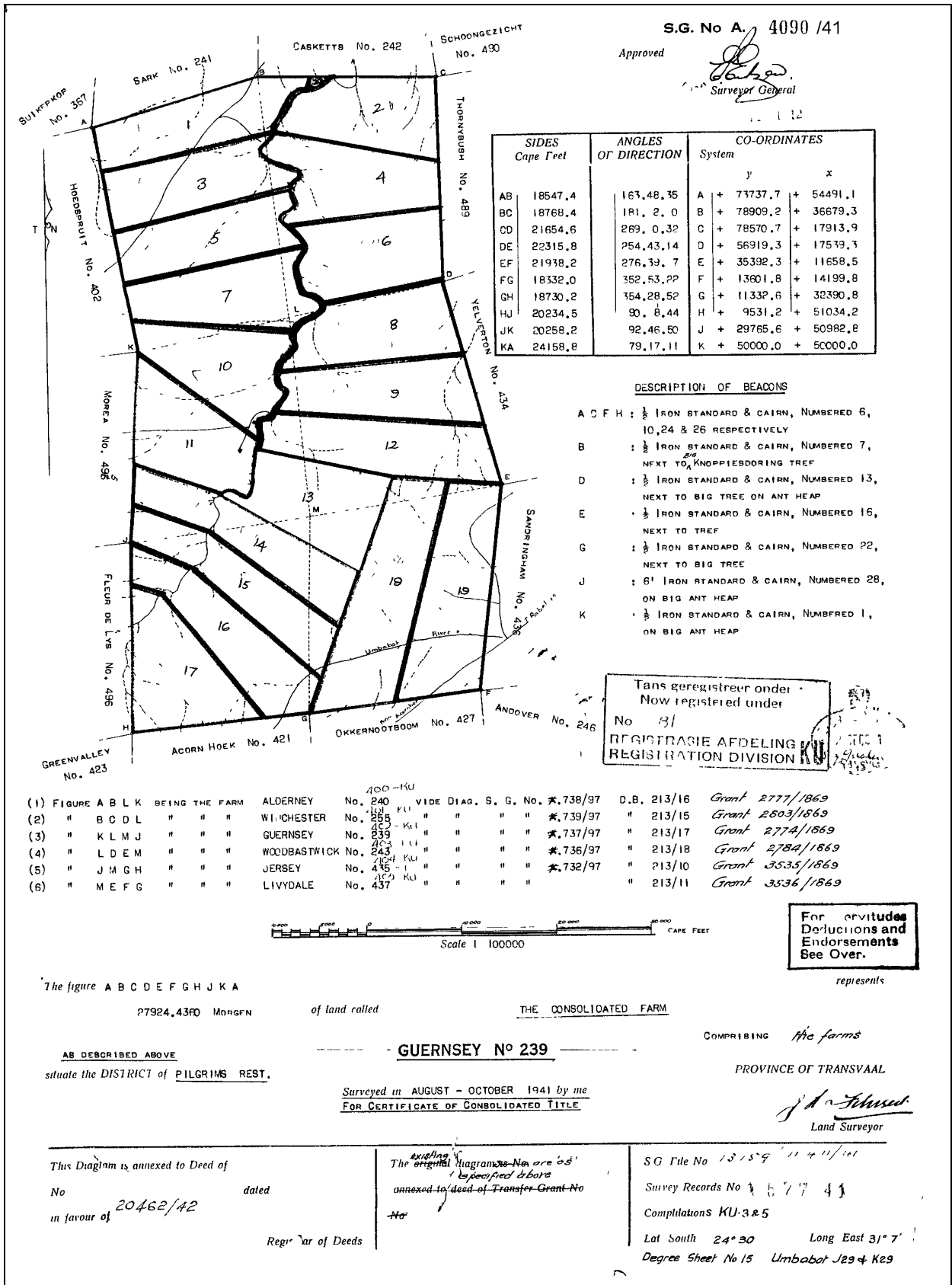


Figure 27: Surveyor General's sketch of the farm Guernsey 81 KU which was first surveyed in 1941

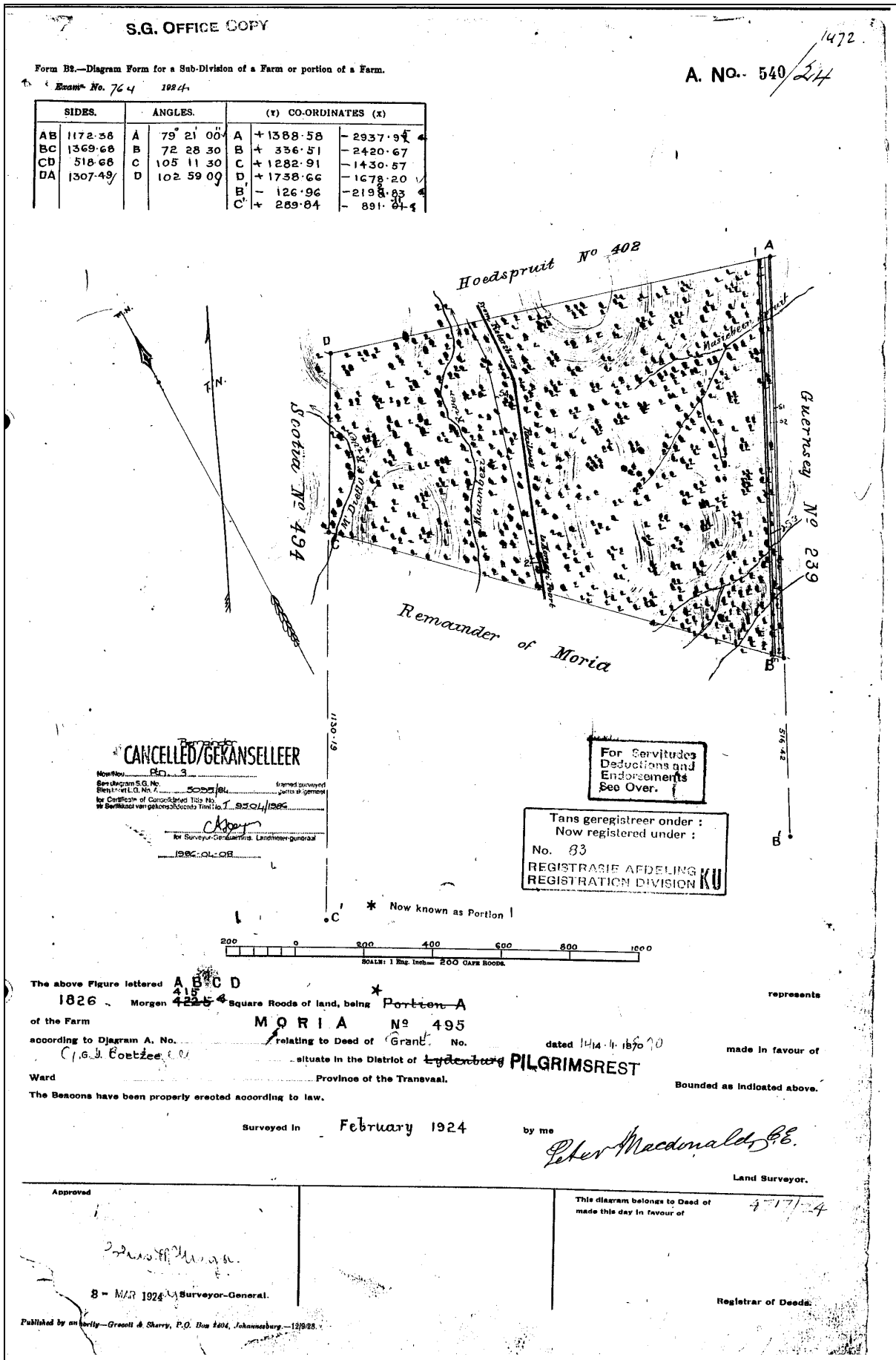


Figure 28: Surveyor General's sketch of the farm Moria 83 KU which was first surveyed in 1924

Addendum 4: Relocation of Graves

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

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

The relocation of graves entails the following procedure:

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

Information needed for the SAHRA permit application

- The permit application must be done by an archaeologist.
- A map of the area where the graves have been located.
- A survey report of the area prepared by an archaeologist.
- All the information on the families that have identified graves.
- A letter of permission from the landowner granting permission to the developer to exhume and relocate the graves.
- A letter (or proof of purchase of the plots) from the new cemetery confirming that the graves will be reburied there.

- Details of the farm name and number, magisterial district and GPS coordinates of the gravesite.

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

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