Phase 1 Heritage Impact Assessment Report

Heritage Impact Assessment for the Proposed Cultivation of Fields (Pecan- and Macadamia Nut Orhards) on the Remainder of Portion 1 of the Farm Palmietfontein 2 LT, in the Makhado Local Municipality, Vhembe District Municipality, Limpopo Province.

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STEPHAN GAIGHER

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

Statement of Independence

As the duly appointed representative of G&A Heritage, I Stephan Gaigher, hereby confirm my independence as a specialist and declare that neither I nor G&A Heritage have any interests, be it business or otherwise, in any proposed activity, application or appeal in respect of which the Environmental Consultant was appointed as Environmental Assessment Practitioner, other than fair remuneration for work performed on this project.

SIGNED OFF BY: STEPHAN GAIGHER

MANAGEMENT SUMMARY

Site name and location: Proposed Cultivation of Fields (Pecan - and Macadamia Nut Trees) on the Remainder of Portion 1 of the Farm Palmietfontein 2 LT.

Municipal Area: Makhado Local Municipality, Vhembe District Municipality, Limpopo Province.

Developer: W&E Cronje Family Trust (Mr. Wessel Cornelius Cronje)

Consultant: G&A Heritage, PO Box 522, Louis Trichardt, 0920, South Africa.
38A Vorster St, Louis Trichardt, 0920

Date of Report: 7 March 2018

The purpose of the management summary is to distil the information contained in the report into a format that can be used to give specific results quickly and facilitate management decisions. It is not the purpose of the management summary to repeat in shortened format all the information contained in the report, but rather to give a statement of results for decision making purposes.

This study focuses on the Heritage Impact Assessment for the Proposed Cultivation of Fields (Pecan - and Macadamia Nut Trees) on the Remainder of Portion 1 of the Farm Palmietfontein 2 LT, in the Makhado Local Municipality, Vhembe District Municipality, Limpopo Province.

This study encompasses the heritage impact investigation. A preliminary layout has been supplied to lead this phase of this study.

Scope of Work
A Heritage Impact Assessment (including Archaeological, Cultural heritage, Built Heritage and Basic Paleontological Assessment) to determine the impacts on heritage resources within the study area.

The following are the required to perform the assessment:

- A desk-top investigation of the area;
- A site visit to the proposed development site;
- Public participation with Interested and Affected Parties (IAP's)
- Identify possible archaeological, cultural, historic, built and paleontological sites within the proposed development area;
- Evaluate the potential impacts of construction and operation of the proposed development on archaeological, cultural, historical resources; built and paleontological resources; and
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural, historical, built and paleontological importance.

The purpose of this study is to determine the possible occurrence of sites with cultural heritage significance within the study area. The study is based on archival and document combined with fieldwork investigations.

Findings & Recommendations
The area was investigated during a field visit and through archival studies. The site was found to be devoid of any heritage sites with significance. It is recommended that obscured, subterranean sites be managed, if they are encountered.

Fatal Flaws
No fatal flaws were identified.

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List of Abbreviations

Bp ..... Before Present
DoT ..... Department of Transport
EIA ..... Early Iron Age
ESA ..... Early Stone Age
Fm ..... Femtometre (10^{-15}m)
GPS ..... Geographic Positioning System
HIA ..... Heritage Impact Assessment
LIA ..... Late Iron Age
LSA ..... Late Stone Age
MYA ..... Million Years Ago
MSA ..... Middle Stone Age
NHRA ..... National Heritage Resources Act no 22 of 1999
SAHRA ..... South African Heritage Resource Agency
S&EIR ..... Scoping & Environmental Impact Reporting
Um ..... Micrometre (10^{-6} m)
WGS 84 ..... World Geodetic System for 1984

Chapter 1

PROJECT RESOURCES

HERITAGE IMPACT REPORT

HERITAGE IMPACT ASSESSMENT REPORT FOR THE PROPOSED CULTIVATION OF FIELDS (PECAN – AND MACADAMIA NUT ORCHARDS) ON THE REMAINDER OF PORTION 1 OF THE FARM PALMIETFONTEIN 2 LT, IN THE MAKHADO LOCAL MUNICIPALITY, LIMPOPO PROVINCE.

1. INTRODUCTION

Legislation and methodology

G&A Heritage was appointed by Tekplan (Tecoplan Environmental CC) to undertake a heritage impact assessment for the Proposed Cultivation of Fields on Portion 1 of the Farm Palmietfontein 2 LT, in the Makhado Local Municipality, Limpopo Province.

Section 38(1) of the South African Heritage Resources Act (25 of 1999) requires that a heritage study is undertaken for:

(a) Construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
(b) Construction of a bridge or similar structure exceeding 50 m in length; and
(c) Any development, or other activity which will change the character of an area of land, or water –
(1) Exceeding 10 000 m^2 in extent;
(2) Involving three or more existing erven or subdivisions thereof; or
(3) Involving three or more erven, or subdivisions thereof, which have been consolidated within the past five years; or
(d) The costs of which will exceed a sum set in terms of regulations; or
(e) Any other category of development provided for in regulations.

While the above describes the parameters of developments that fall under this Act., Section 38 (8) of the NHRA is applicable to this development. This section states that;

(8) *The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environment Affairs and Tourism, or the Minerals Act, 1991 (Act 50 of 1991), or any other legislation: Provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent.*

In regards to a development such as this that falls under Section 38 (8) of the NHRA, the requirements of Section 38 (3) applies to the subsequent reporting, stating that;

(3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2) (a): Provided that the following must be included:
(a) The identification and mapping of all heritage resources in the area affected;

(b) An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6 (2) or prescribed under section 7;
(c) An assessment of the impact of the development on such heritage resources;
(d) An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
(e) The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
(f) If heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
(g) Plans for mitigation of any adverse effects during and after the completion of the proposed development.

(1) Ancestral graves,
(2) Royal graves and graves of traditional leaders,
(3) Graves of victims of conflict (iv) graves of important individuals,
(4) Historical graves and cemeteries older than 60 years, and
(5) Other human remains which are not covered under the Human Tissues Act, 1983 (Act No.65 of 1983 as amended);

(h) Movable objects, including ;
(1) Objects recovered from the soil or waters of South Africa including archaeological and paleontological objects and material, meteorites and rare geological specimens;
(2) Ethnographic art and objects;
(3) Military objects;
(4) Objects of decorative art;
(5) Objects of fine art;
(6) Objects of scientific or technological interest;
(7) Books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings; and
(8) Any other prescribed categories, but excluding any object made by a living person;

(i) Battlefields;
(j) Traditional building techniques.

A '**place**' is defined as:
(a) A site, area or region;
(b) A building or other structure (which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure);
(c) A group of buildings or other structures (which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures); and (d) an open space, including a public square, street or park; and in relation to the management of a place, includes the immediate surroundings of a place.

'**Structures**' means any building, works, device, or other facility made by people and which is fixed to land and any fixtures, fittings and equipment associated therewith older than 60 years.

'**Archaeological**' means:
(a) Material remains resulting from human activity which are in a state of disuse and are in or on land and are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
(b) Rock art, being a form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is older than 100 years including any area within 10 m of such representation; and
(c) Wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land or in the maritime cultural zone referred to in section 5 of the Maritime Zones Act 1994 (Act 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which are older than 60 years or which in terms of national legislation are considered to be worthy of conservation;
(d) Features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

'Paleontological' means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

'Grave' means a place of interment and includes the contents, headstone or other marker of and any other structures on or associated with such place. The South African Heritage Resources Agency (SAHRA) will only issue a permit for the alteration of a grave if it is satisfied that every reasonable effort has been made to contact and obtain permission from the families concerned.

The removal of graves is subject to the following procedures as outlined by the SAHRA:

- Notification of the impending removals (using English, Afrikaans and local language media and notices at the grave site);
- Consultation with individuals or communities related or known to the deceased;
- Satisfactory arrangements for the curation of human remains and / or headstones in a museum, where applicable;
- Procurement of a permit from the SAHRA;
- Appropriate arrangements for the exhumation (preferably by a suitably trained archaeologist) and re-interment (sometimes by a registered undertaker, in a formally proclaimed cemetery);
- Observation of rituals or ceremonies required by the families.

The limitations and assumptions associated with this heritage impact assessment are as follows;

- Field investigations were performed on foot and by vehicle where access was readily available.
- Sites were evaluated by means of description of the cultural landscape, direct observations and analysis of written sources and available databases.
- It was assumed that the site layout as provided by Tekplan (Tecoplan Environmental CC) is accurate.
- We assumed that the public participation process performed as part of the Basic Assessment process was sufficiently encompassing not to be repeated in the Heritage Assessment Phase.

Table 1. Impacts on the NHRA Sections

Act	Section	Description	Possible Impact	Action
National Heritage Resources Act (NHRA)	34	Preservation of buildings older than 60 years	No	N/A
	35	Archaeological, paleontological and meteor sites	No	N/A
	36	Graves and burial sites	No	N/A
	37	Protection of public monuments	No	N/A
	38	Does activity trigger a HIA?	Yes	HIA

Table 2. NHRA Triggers

Action Trigger	Yes/No	Description
Construction of a road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length.	No	N/A
Construction of a bridge or similar structure exceeding 50m in length.	No	N/A
Development exceeding 5000 m^2	Yes	Palmietfontein 2 LT (58.88 ha)

Development involving more than 3 erven or sub divisions	No	N/A
Development involving more than 3 erven or sub divisions that have been consolidated in the past 5 years	No	N/A
Re-zoning of site exceeding 10 000 m^2	No	N/A
Any other development category, public open space, squares, parks or recreational grounds	No	N/A

2. Background Information

2.1 Project Description and Location

Mr. Wessel Cornelius Cronje (of the W&E Cronje Family Trust) is proposing the Cultivation of Fields (Pecan - and Macadamia Nut Trees) on the Remainder of Portion 1 of the Farm Palmietfontein 2 LT, in the Makhado Local Municipality, Vhembe District Municipality, Limpopo Province.

Mr. Cronje is intending to cultivate fields for orchards (approximately 10.65 ha. new pecan nut trees and 47.9 ha. new macadamia nut trees).
Site preparation had been started on approximately 7.89 ha. for the pecan nut trees and 16.9 ha for the macadamia nut trees in November 2017. Mr. Cronje stopped all activities immediately when the official from LEDET indicated that he would need EIA approval before he can commence with the further clearing of the intended 2.76 ha. for pecan nut trees and 31 ha. for macadamia nut trees.

Mr. Cronje did not knowingly contravene the law and was under the impression that since the property had been used for agricultural activities in the past, he could continue without having to apply for Environmental Authorization. The applicant is applying for *ex post facto* approval from the Limpopo Department of Economic Development, Environment & Tourism (EIM Section).

The total footprint of the cultivated fields will be approximately 58.55 ha. after approval is granted and bush clearance can commence.

The project area is located approximately 10km east of the town, Louis Trichardt, in the Makhado Local Municipality, Vhembe District Municipality in the Limpopo Province adjacent to the provincial road P98-1 (also known as the R524 or the Louis Trichardt / Levubu / Thohoyandou Road).

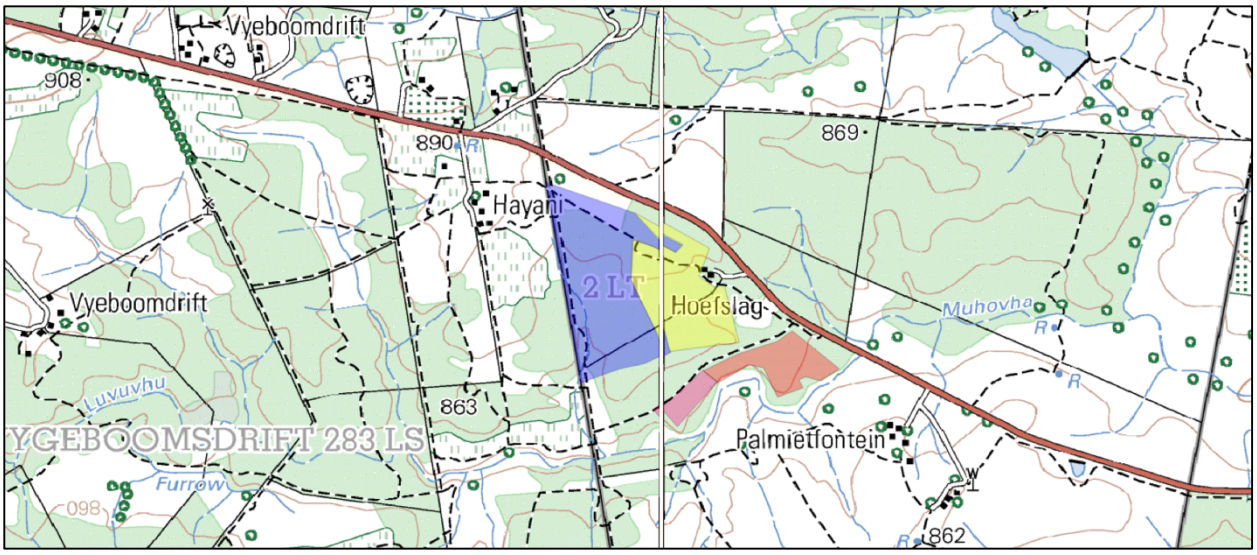

Figure 1. Location Map of the Study Area (Topographical Maps 2329 BB 2004 and 2330 AA 2008)

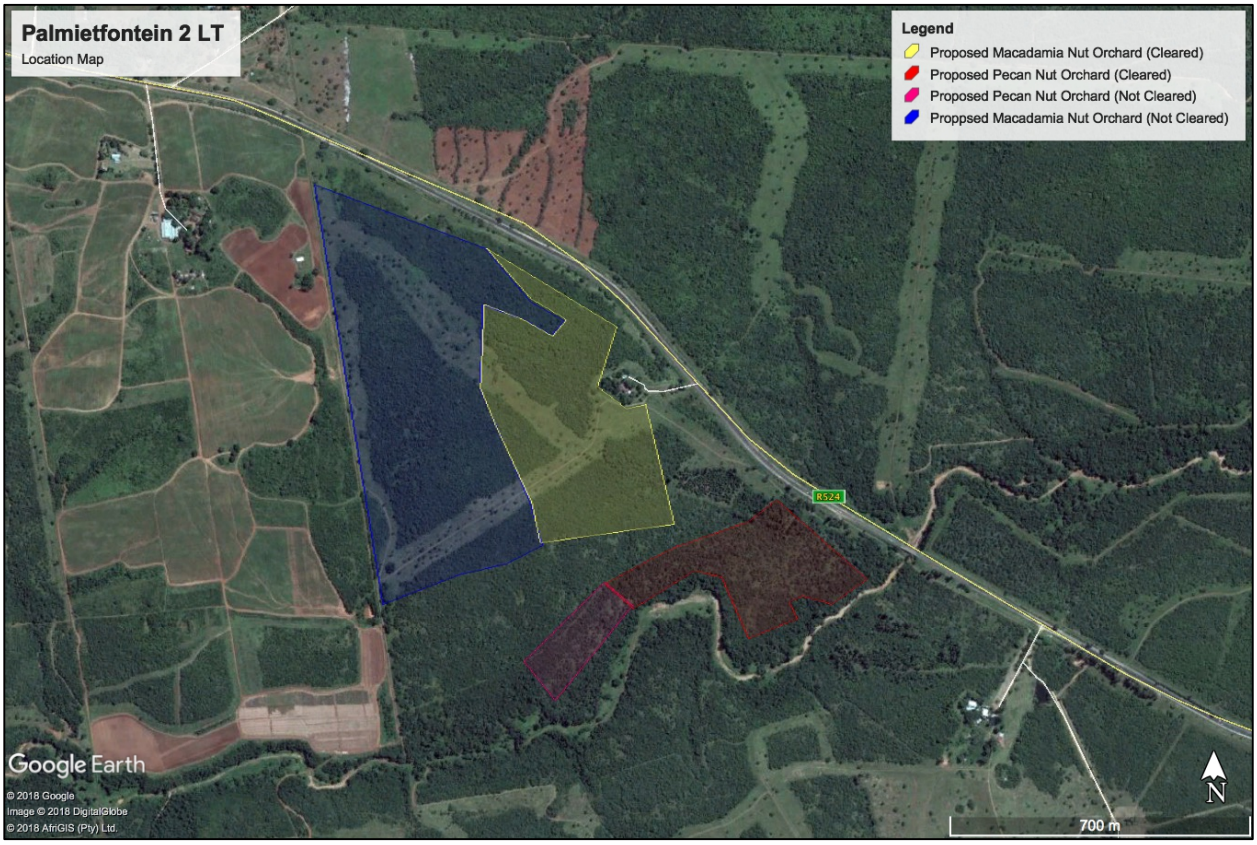

Figure 2. Google Earth Image of the Study Area

2.2. GPS Tracks

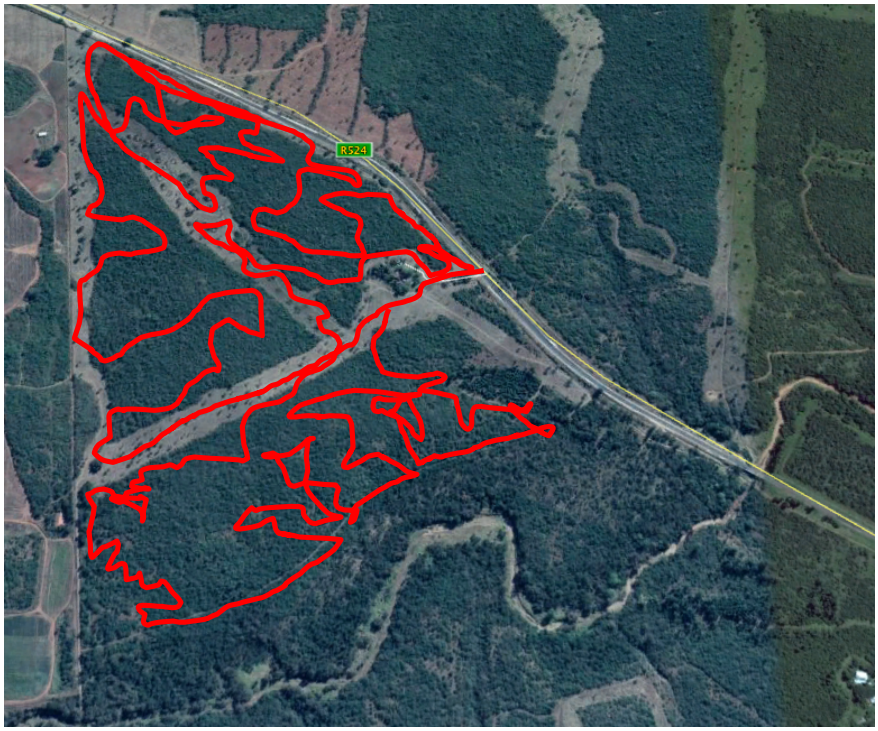

Figure 3. GPS Tracks

Chapter 2

FINDINGS

HERITAGE INDICATORS WITHIN THE RECEIVING ENVIRONMENT

3. REGIONAL CULTURAL CONTEXT

3.1 PALEONTOLOGY

The study area falls within the “Grey” and “Blue” designations indicating a low to zero Palaeontological significance. A desktop study is not required, however, a protocol for finds is required. Please see the recommendations section of this report.

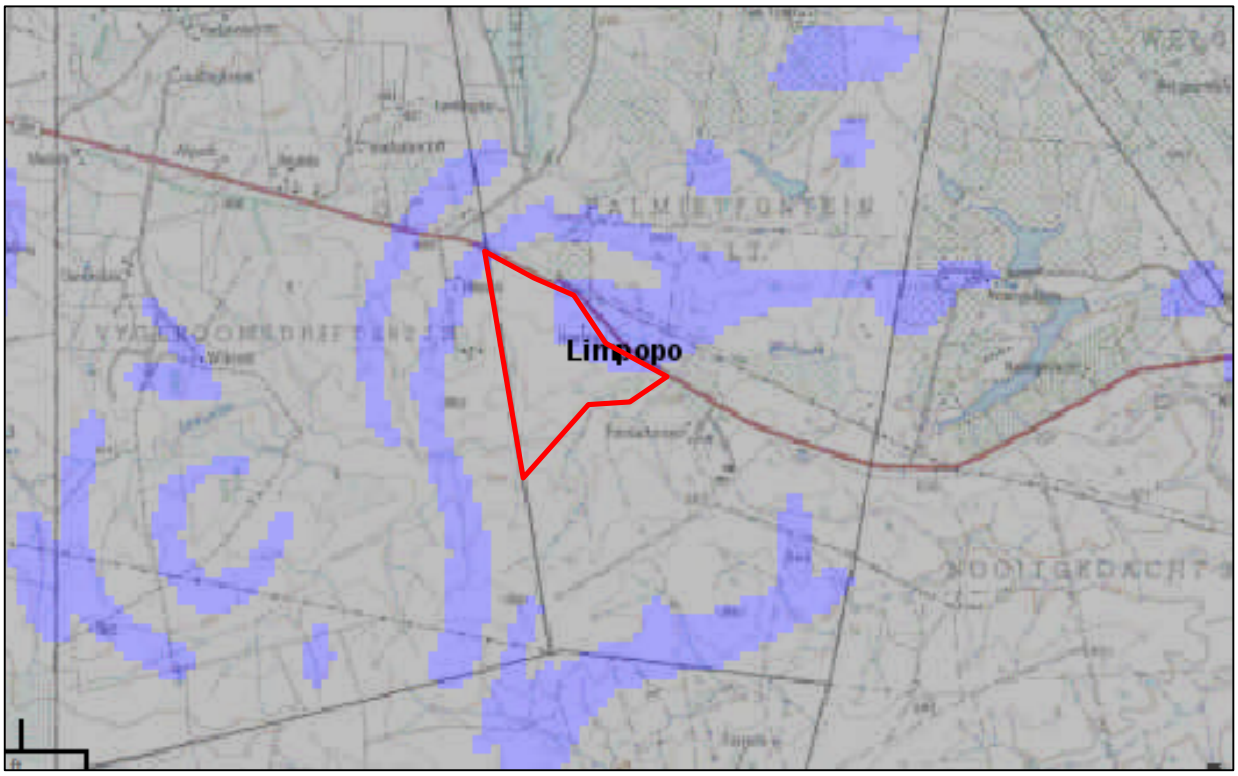

Figure 4. Palaeontology Sensitivity Map (site in red)

3.2 STONE AGE

Early Stone Age:
Predominantly the Acheulean hand axe industry complex dating to +1 000 000 – 250 000 yrs. before present.
Middle Stone Age:
Various lithic industries in SA dating from ± 250 000 yrs. - 30 000 yrs. before present.
Late Stone Age:
The period from ± 30 000 yrs. to the contact period with either Iron Age farmers or European colonists.

3.3 Iron Age

The Iron Age prehistory of southern Africa has traditionally been divided into two periods, the Early Iron Age and the Later Iron Age. Chronologically, the division was put at the year 1000. Culturally, it was based on a number of changes observable in the archaeological record, including economic, social, and political organization. Because of this, the two periods were seen as bracketing separate cultural phenomenon and interpreted as reflecting new population movements into southern Africa from the north. In fact, no new population movements into the region took place. The cultural changes that took place around the turn of the millennium and the origins of the Later Iron Age in southern Africa are seen mainly as a result of local developments, although scholars offer different explanations.

3.4 The Historic Era

Louis Johannes Tregard was born on the 10th of August 1783 in Oudtshoorn in the Karoo. Very little is known of his upbringing, but the diaries he kept of this endeavors, show him to be a reasonably well educated man. Tregard later wrote his name as Tregardt, but it must be noted that there are a number of variants of the name, i.e. Trigardt, Triegardt and the most common, Trichardt. The latter form has been used for towns named in his honour.

Tregardt started farming in Boschberg and later at Somerset East. He moved across the Fish River in 1834 and rented land new the Kei River from the Xhosa chief, Hintsa. Here, in Xhosa country, he was acknowledged as a leader among the exiled Boer community of approximately 30 families. There exists evidence to suggest that Tregardt had shown overt hostility towards the British regime and he was even accused of inciting the Xhosa to begin the frontier war of 1834-5. When he learned that the authorities had issued a warrant for his arrest, Tregardt slipped away from this farm in Hintsa's country and crossed the Orange River. There he received support and assistance from Hendrik Potgieter and Johannes van Rensburg.

Tregardt and his family, as well as Hans van Rensburg's group, started the trek into the far north and arrived at the foot of the Soutpansberg Mountain range in 1836 in two separate parties, as they had parted ways en route due to a disagreement. Van Rensburg's party continued east towards Inhambane, but his entire group was exterminated en route. Tregardt's group was joined by the first group to arrive in the area under the leadership of Coenraad De Buys (the progenitor of the De Buys / Buys people who still live in Buysdorp – a settlement west of Louis Trichardt), who came to the area in 1821. They formed an alliance and aided the Ramabulana to replace the western Venda Chief, Ramavhoya assuming control of the salt plan north of the Soutpansberg Mountain. Tregardt remained in the area for about one year, before leading reconnaissance missions into current day Zimbabwe and towards Mozambique in search of the van Rensburg clan, the made their way to Delagoa Bay 7 months after setting off in September 1837. The trek claimed the lives of many in the party, including Tregardt, who succumbed from malaria in October of 1938.

After his death other Voortrekkers settled in the area as ivory hunters but left after Chief Makhado and his vhaVenda people defeated them in 1867. Only in 1898 did the Zuid-Afrikaansche Republiek take control of the region and established the town Louis Trichardt the following year in February 1899.

Along with other towns in Limpopo Province, Louis Trichardt was renamed Makhado in 2003, after the Venda King Makhado who ruled in the region from the mid-1800s until his death in 1887. However, there was local rejection to the new name, and it was claimed less than 1% of the town's population had been consulted on the change. It was not only the Afrikaans people who were opposed to the name change, many Shangaan people regarded Chief Makhado as an oppressor. A residents' association applied to Pretoria's High Court in 2005 to have the name overturned. They were rejected but rather astonishingly appealed in South Africa's Supreme Court and won, and the name was changed back to Louis Trichardt in 2007.

3.5 Cultural Landscape

The site is situated near to existing agricultural and rural living areas – infrastructural services are available in the vicinity. The surrounding land is used for game keeping and crop farming.
The site is mostly devoid of any structures and is currently being used for grazing and game keeping. The Mahoba River is adjacent to the study area. The area earmarked for the the cultivation of

fields is characterized by either cleared off vegetation or dense vegetation, comprising of both indigenous and invasive plants. The portion adjacent to the Mahova River has two boreholes and recently excavated channels leading to the hill.

Figure 5. Study Area: Proposed Pecan Nut Orchard

Figure 6. Study Area: Proposed Pecan Nut Orchard

Figure 7. Study Area: Proposed Pecan Nut Orchard

Figure 8. Study Area: Mahova River Valley

Figure 9. Study Area: Proposed Pecan Nut Orchard

Figure 10. Study Area: Proposed Pecan Nut Orchard

Figure 11. Study Area: Proposed Macadamia Nut Orchard

Figure 12. Study Area: Proposed Macadamia Nut Orchard

Figure 13. Study Area: Proposed Macadamia Nut Orchard

Figure 14. Study Area: Proposed Macadamia Nut Orchard

Figure 15. Study Area: Proposed Macadamia Nut Orchard

Figure 16. Study Area: Proposed Macadamia Nut Orchard (Western Border of Property)

Figure 17. Study Area: Proposed Macadamia Nut Orchard

3.6 Previous Studies

An extensive research into the SAHRIS database resulted in the identification of the following heritage related studies that have been performed over the last decade in the study area. Only studies within a radius of 50km from the study area were considered.

- Gaigher, S. 2010. Heritage Impact Assessment for the proposed extension of the existing Tabor Substation as well as the Proposed Re-alignment of the Tabor Louis Trichardt 132 kV Line.
- Hutten, M. 2008. Heritage Impact Assessment for the Proposed Development of a Wood Processing Factory East of Louis Trichardt, Limpopo Province.
- Roodt, H.M. 2002. Phase 1 Archaeological Impact Assessment – Proposed Filling Station and Overnight Accommodation, Louis Trichardt, Portion 4 of Rondebosch 287 LS.
- Van Schalkwyk, J. 1999. A Survey of Cultural Resources at the Mampakuil Base Station, Louis Trichardt Area.
- Roodt, F. 2007. Phase 1 Heritage Impact Assessment (Scoping and Evaluation) Black Hawk Golf and Spa: Phase 2 Residential Development Albasini Dam, Louis Trichardt, Limpopo.
- Hutten, M. 2014. Proposed Development of a Residential Lifestyle Estate on Portion 46 of the Farm Vondeling 285 LS, east of Louis Trichardt, in the Makhado Municipality, Vhembe District, Limpopo Province.
- Hine, P. 2012. Phase 1 Heritage Impact Assessment Report: Proposed Makhado Colliery.
- Roodt, F. 2011. Eskom Power Line Paradise Substation to the Proposed Makhado Colliery.
- Roodt, F. 2012. Phase 1 Heritage Impact Assessment Report: Proposed Makhado Colliery Integrated Report for the 1. Open Cast Mine and Infrastructure, 2. Bulk Power Supply and 3. Off Site Transport – Railway Line and Siding.
- Smith, K. 2017. Heritage Impact Assessment for the Proposed New Mutsho Power Project near Makhado.
- Mathoho, E. 2009. An Archaeological Investigation for the Proposed new Waste Disposal Facility on Portion 1 of the Farm Rietvly 276 LS, within the Makhado Local Municipality of Vhembe District, Limpopo Province, South Africa.
- Murinbika, McEdward. 2008. Cultural and Archaeological Heritage Assessment Study for the Proposed Construction of 1021km Powerline at Sereni Village in Makhado Local Municipality of Vhembe District, Limpopo Province.

- Roodt, F. 2003. Phase 1 Heritage Impact Assessment: Portion 7 of the Farm Bergvliet 288 LS – Makhado Municipality, Limpopo Province.
- Roodt, F., Munyai, R. 2008. Phase 1 Heritage Impact Assessment: An Archaeological Investigation of a Proposed Existing Borrow Tshiozwi Borrow Pit, Makhado Municipality, Limpopo.
- Butler, E. 2017. Palaeontological Impact Assessment of the Proposed Development of the new Coal-fired Power Plant and Associated Infrastructure near Makhado, Limpopo Province.
- Murinbika, McEdward. 2008. Cultural and Archaeological Heritage Assessment Study for the Proposed Construction of 2133.37km of 16 kV at Tshino/Ndlitwani Village in Makhado Local Municipality of Vhembe District, Limpopo Province.

3.7 Historical Maps

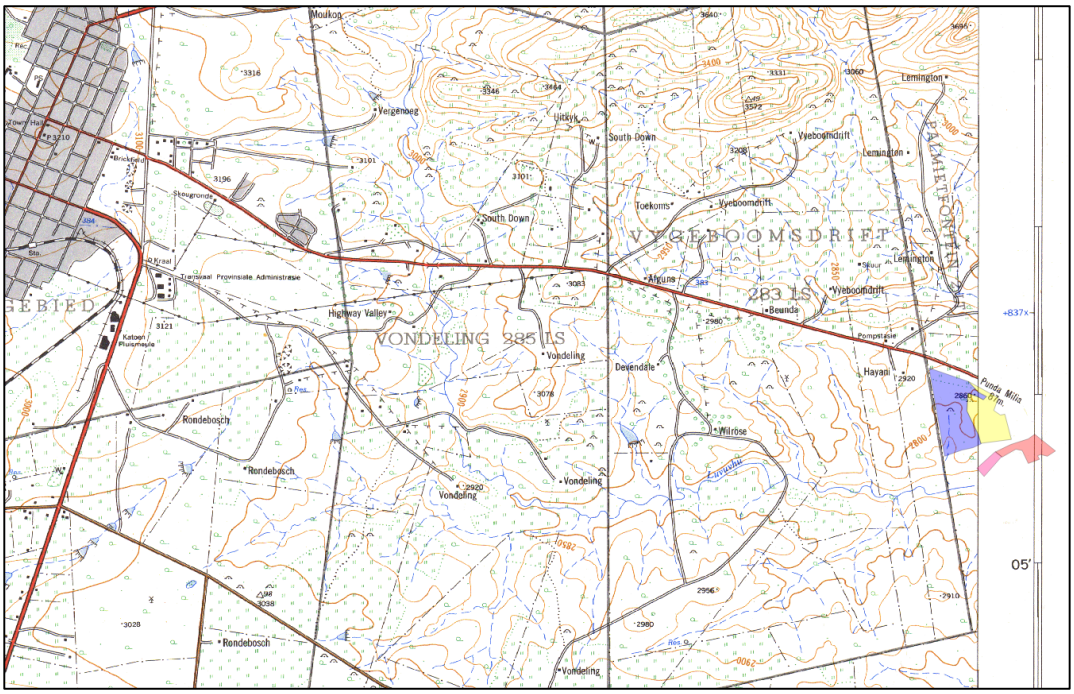

Figure 18. Topographical Map 2329 BB 1967

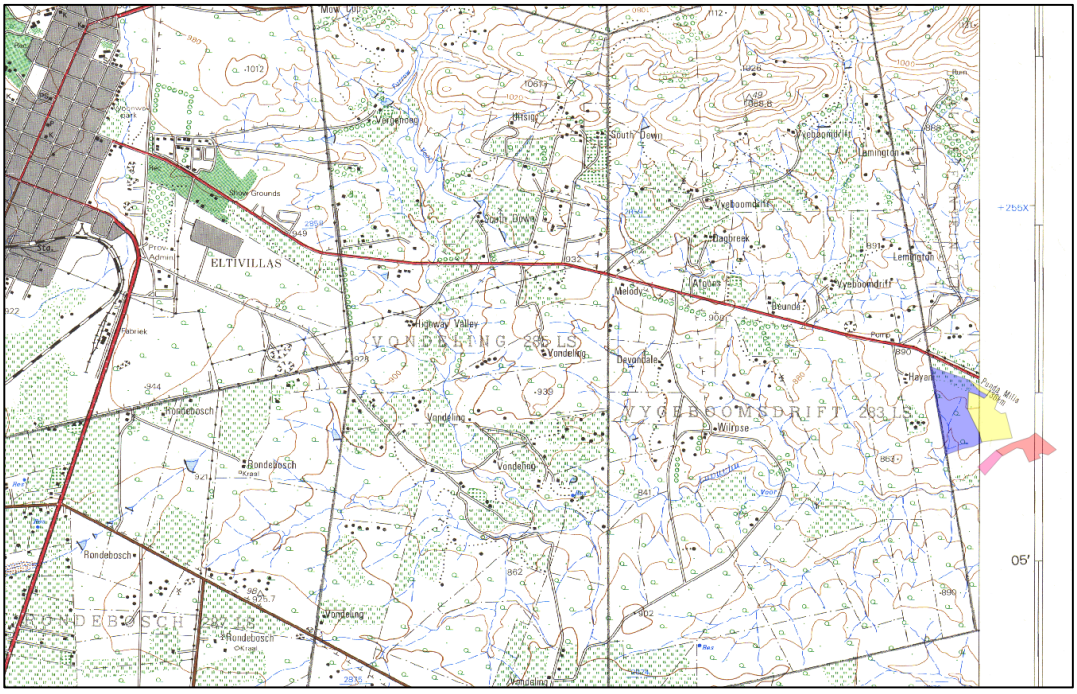

Figure 19. Topographical Map 2329 BB 1973

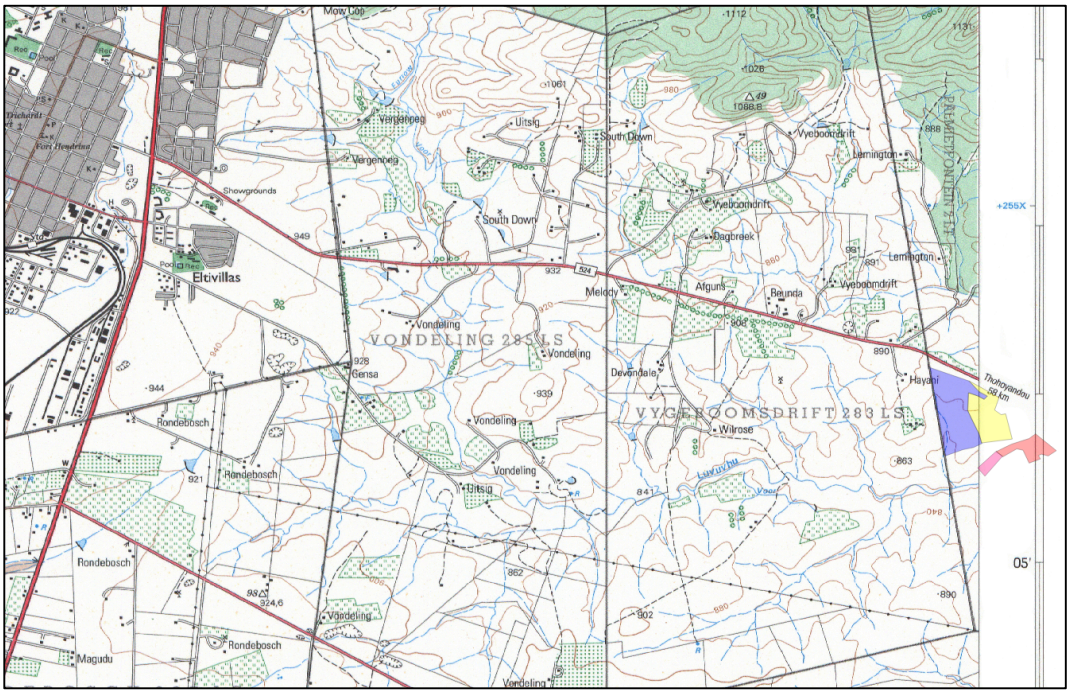

Figure 20. Topographical Map 2329 BB 1994

Topographical Maps 2329 BB
A structure visible on the 1967 map within the proposed Macadamia nut orchard (area not yet cleared), but is no longer evident on the 1973 map. No structures evident on the 1994 map.

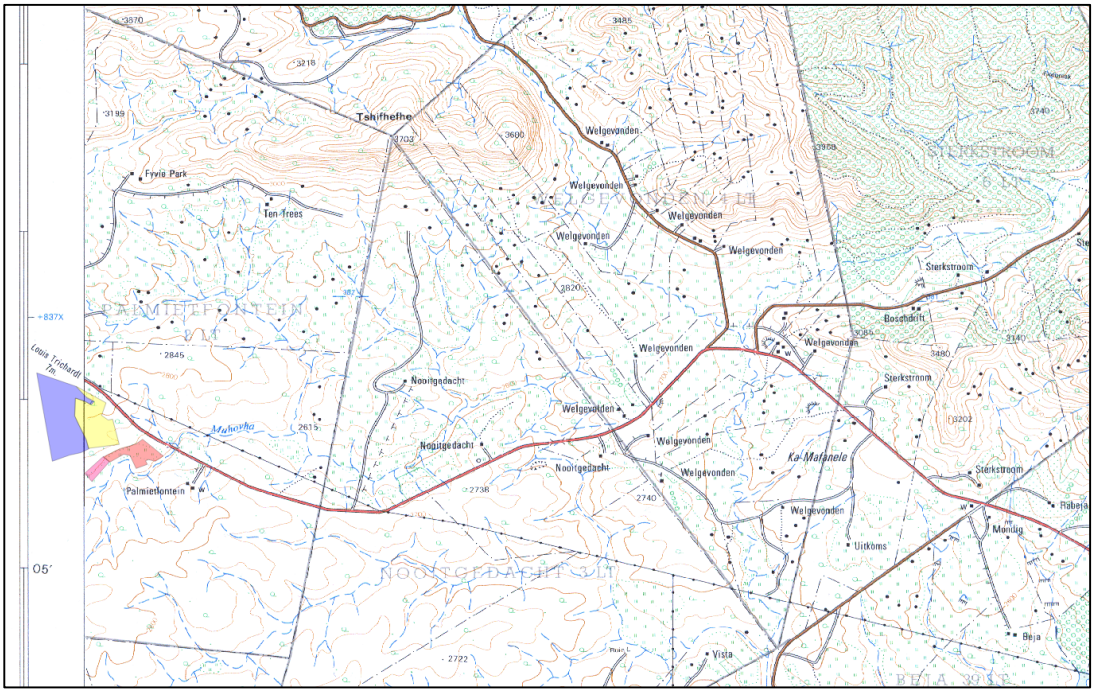

Figure 21. Topographical Map 2330 AA 1967

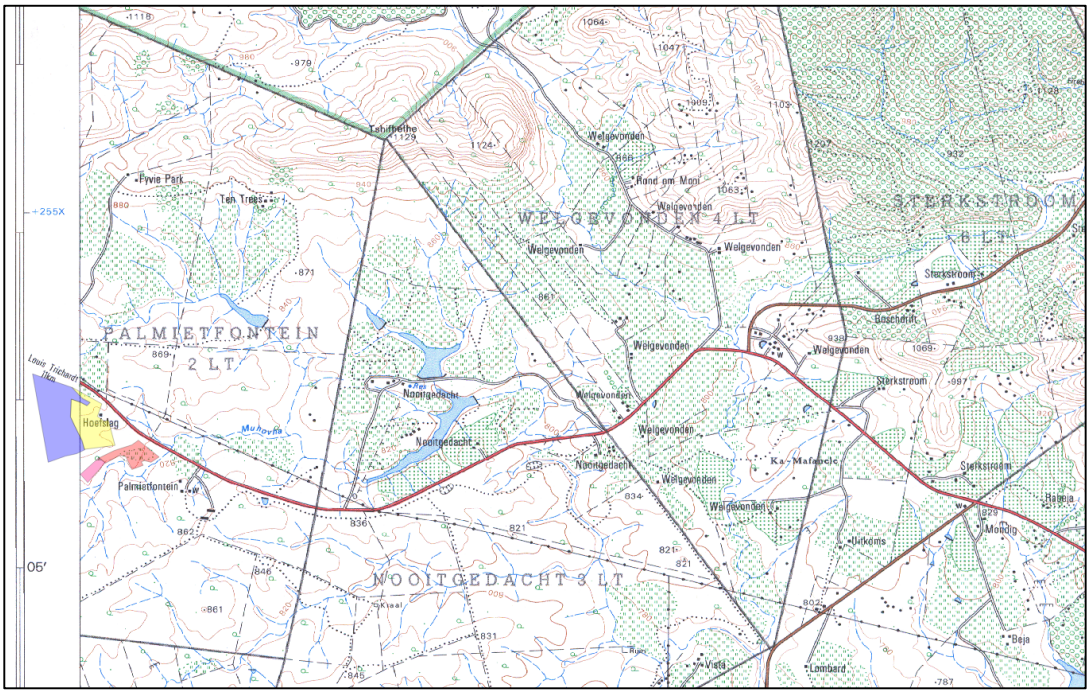

Figure 22. Topographical Map 2330 AA 1980

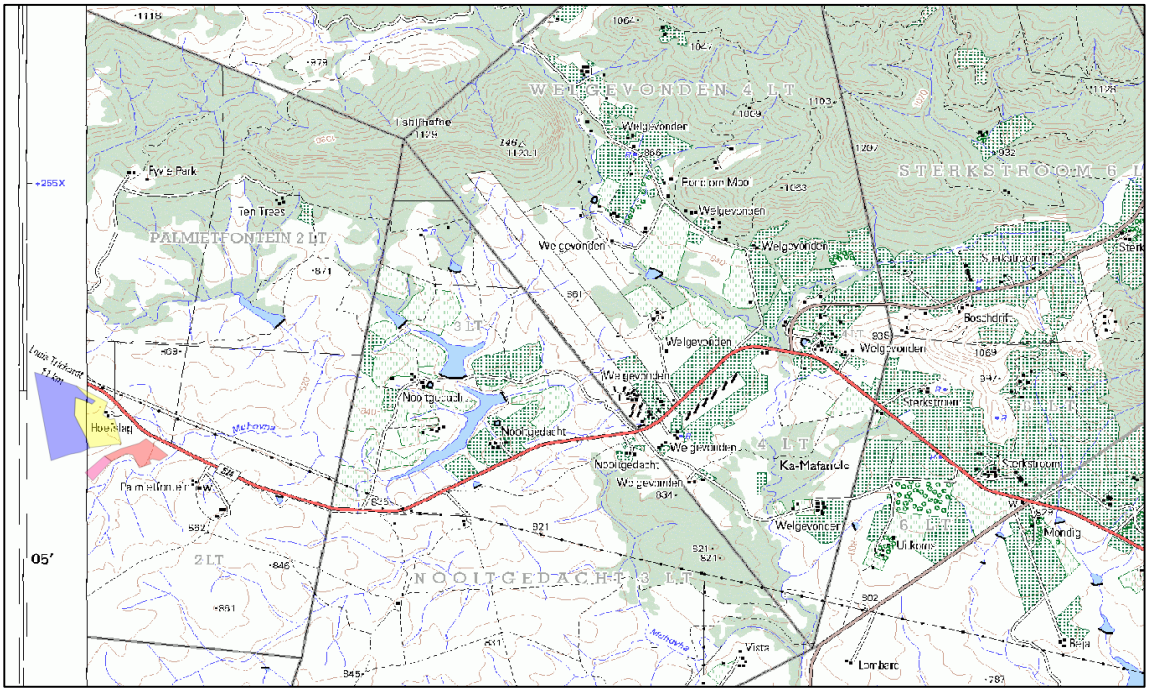

Figure 23. Topographical Map 2330 AA 1997

Topographical Maps 2320 AA
No structures evident on the 1967 map. The current farmhouse is visible from the 1980 onwards (located just east of the proposed Macadamia nut orchard, cleared area). This house will not be affected by the proposed cultivation of the fields.

4. Findings

4.1 Fieldwork Results

The field work was conducted on the 6th of March 2018.
The area was accessed by vehicle and investigated on foot. No heritage sites were noticed or documented during the study. Plant growth was heavy and the possibility of obscured sites should not be discarded.

Chapter 3

IMPACT ASSESSMENT

5. METHODOLOGY

This study defines the heritage component of the EIA process being undertaken for the Proposed Cultivation of Fields (Pecan - and Macadamia Nut Trees) on the Remainder of Portion 1 of the Farm Palmietfontein 2 LT, in the Makhado Local Municipality, Vhembe District Municipality, Limpopo Province. It is described as a first phase (HIA). This report attempts to evaluate both the accumulated heritage knowledge of the area as well as information derived from direct physical observations.

5.1 INVENTORY

Inventory studies involve the in-field survey and recording of archaeological resources within a proposed development area. The nature and scope of this type of study is defined primarily by the results of the overview study. In the case of site-specific developments, direct implementation of an inventory study may preclude the need for an overview.

There are a number of different methodological approaches to conducting inventory studies. Therefore, the proponent, in collaboration with the archaeological consultant, must develop an inventory plan for review and approval by the SAHRA prior to implementation (*Dincause, Dena F., H. Martin Wobst, Robert J. Hasenstab and David M. Lacy 1984)*.

5.2 EVALUATING HERITAGE IMPACTS

A combination of document research as well as the determination of the geographic suitability of areas and the evaluation of aerial photographs determined which areas could and should be accessed.

After plotting of the site on a GPS the areas were accessed using suitable combinations of vehicle access and access by foot.

Sites were documented by digital photography and geo-located with GPS readings using the WGS 84 datum.

Further techniques (where possible) included interviews with local inhabitants, visiting local museums and information centers and discussions with local experts. All this information was combined with information from an extensive literature study as well as the result of archival studies based on the SAHRA (South African Heritage Resource Agency) provincial databases.

This Heritage Impact Assessment relies on the analysis of written documents, maps, aerial photographs and other archival sources combined with the results of site investigations and interviews with effected people. Site investigations are not exhaustive and often focus on areas such as river confluence areas, elevated sites or occupational ruins.

The following documents were consulted in this study;

- South African National Archive Documents
- SAHRIS (South African Heritage Resources Information System) Database of Heritage Studies
- Internet Search
- Historic Maps
- 1967, 1973, 1980, 1994, 1997, 2004 and 2008 Surveyor General Topographic Map series
- 1952 1:10 000 aerial photo survey
- Google Earth 2018 imagery
- Published articles and books
- JSTOR Article Archive

5.3 Fieldwork

Fieldwork for this study was performed on the 6th of March 2018. Most of the areas were found to be accessible by vehicle. The survey was tracked using GPS and a track file in GPX format is available on request.

Where sites were identified it was documented photographically and plotted using GPS with the WGS 84 datum point as reference. GPX files are available on request from G&A Heritage.

The study area was surveyed using standard archaeological surveying methods. The area was surveyed using directional parameters supplied by the GPS and surveyed by foot. This technique has proven to result in the maximum coverage of an area. This action is defined as;

'an archaeologist being present in the course of the carrying-out of the development works (which may include conservation works), so as to identify and protect archaeological deposits, features or objects which may be uncovered or otherwise affected by the works' (DAHGI 1999a, 28).

Standard archaeological documentation formats were employed in the description of sites. Using standard site documentation forms as comparable medium, it enabled the surveyors to evaluate the relative importance of sites found. Furthermore, GPS (Global Positioning System) readings of all finds and sites were taken. This information was then plotted using a ***Garmin Colorado*** GPS (WGS 84- datum).

Indicators such as surface finds, plant growth anomalies, local information and topography were used in identifying sites of possible archaeological importance. Test probes were done at intervals to determine sub-surface occurrence of archaeological material. The importance of sites was assessed by comparisons with published information as well as comparative collections.

5.4 Public Participation

ZOUTPANSBERGER, 9 MAART 2018 15

ZOUT CLASSIFIEDS

FOR SALE

1999 Ford Escort sedan for sale. 1.6 16v, 53 000km on the clock. Everyday runner with papers in order. R35 000 slightly negotiable Whatsapp Louis for photos: 061 454 1861

TE KOOP

* 2 Slaapkamer woonstel in Glenmore in sekuriteitskomploks. R430 000.
* 2 x Erwe op Leisure Bay @ R90 000 & R110 000

Kontak Jaco: 079 523 0619

LEGALS

ERWEE INC

LIQUIDATION AND DISTRIBUTION ACCOUNTS IN DECEASED ESTATE LYING FOR INSPECTION.

In terms of section 35 (5) of the Administration of Estates Act no 66 of 1965, notice is hereby given that copies of the liquidation and distribution accounts (first and final, unless otherwise stated) in the estate specified below will be open for inspection of all persons with a interest therein for a period of 21 days from the date of publication hereof, whichever may be the later, and at the offices of the Masters of the High Court and Magistrates as stated. Should no objection thereto be lodged with the Masters concerned during the specified period, the executors will proceed to make payments in accordance with the accounts.

Estate number: 2647/2011
Surname: Visser First Names: Dorthea Maria ID no: 351220 0027 085
Last address: 2 Sentinal street, Bergview, Musina, 0900. Magistrates Office Musina. Province Limpopo
ERWEE INC, 9 IRWIN STREET, MUSINA, 0900
Tel: 015 534 3403
Ref: HH/ew/W3898/057

GOLDEN GREY CONSORTIUM

NOTICE IN TERMS OF SECTION 92(1) OF THE MAKHADO LOCAL MUNICIPALITY SPATIAL PLANNING LAND DEVELOPMENT AND LAND USE MANAGEMENT BY-LAW, 2016
MAKHADO AMENDMENT SCHEME 290

I, Jackson Sebola of Golden Grey Consortium (Pty) Ltd being the authorized agent of the owner(s) of the property mentioned below, hereby give notice in terms of Section 63 read together Section 85 of the Makhado Municipality Spatial Planning, Land Development and Land Use Management By-Law, 2016 by re-zoning Ptf 1/141 Louis Trichardt Township from "Residential 1" to "Business 2" for the purpose of offices. Particulars of the application will lie for inspection during normal office hours at the office of the Director Development Planning, Civic Centre (New Building), 83 Krogh Street, Makhado, for a period of 28 days from the 2nd of March 2018. Objections to the application can be lodged in writing to the Municipal Manager, Private Bag X2596, Makhado, 0920 within a period of 28 days from the 2nd of March 2018. Address of the Agent: 97 Anderson Street, Louis Trichardt, 0920.

TEKPLAN ENVIRONMENTAL

NOTICE OF APPLICATION FOR RECTIFICATION IN TERMS OF SECTION 24G OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 CONTINUATION OF UNLAWFULLY COMMENCED LISTED ACTIVITY: SUBJECT PROPERTY: REMAINDER OF PORTION 1 OF THE FARM PALMIETFONTEIN 2 LT, MAKHADO LOCAL MUNICIPALITY, LIMPOPO

1) BACKGROUND: The owner of the above mentioned property is of the intention to establish approximately 16 hectares of new Macadamia and approximately 8,5 hectares of Pecan nut trees on the property. Site preparation (clearing of bush) unlawfully commenced in November 2017, as the owner of the land was under the impression that since the property had been used for agricultural activities in the past, he could continue without having to apply for Environmental Authorization. The applicant contravened the stipulations of the Environmental Impact Assessment regulations under the National Environmental Management Act, 1998 and is now is now applying for "ex post facto" approval from the Limpopo Department of Economic Development, Environment & Tourism (DEM Section). 2) APPLICATION TO BE MADE: Application for authorisation should have been obtained prior to the commencement of bush clearing as the following listed activity has been triggered by commencement of the project: Activity no. 15 under R. 984 of 4 December 2014, as amended vide REGULATION GN R. 326 IN GAZETTE NR. 40772 OF 7 April 2017. The mentioned "listed activity" reads as follows: The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan. Application is now being made for rectification ("ex post facto" approval) of the commenced activity. 3) LOCATION: The project area is located approximately 10 kilometres east of the town of Makhado (Louis Trichardt), Limpopo. Provincial Road P98-1 (also known as the R524 or the Louis Trichardt/Messina/Thohoyandou road) runs along the northern boundary of the property. The existing turn-off into the application property from Road P98-1, is located at kilometre post 10,5km (coordinates S23° 4'26.42" E30° 0'41.70"). 4) WATER USE LICENSE: The applicant also hereby gives notice that application will be made with the Limpopo Department of Water and Sanitation (DWS) for an Integrated Water Use License for the following identified water uses: Abstraction of water from groundwater resources: (section 21(a)) & Storage of Water (section 21(b)), as it relates to the above development project. 5)PUBLIC PARTICIPATION: Interested and Affected Parties (IAPs) are hereby notified of the intention of the applicant to submit an "application for rectification" as described above, to the Limpopo Dept. of Economic Development, Environment and Tourism (Environmental Impact management section) in terms of Section 24G of the National Environmental Management Act, 1998. Interested and Affected Parties (IAPs) are hereby afforded an opportunity to object to and/or comment on the proposed rectification of the unlawfully commenced activity. Please submit such communication to TEKPLAN ENVIRONMENTAL to ensure that you are identified as an interested and/or affected party. Also please submit, in writing, your name, contact information and interest in the matter, within 30 days of publication of this notice to the address hereunder. TEKPLAN ENVIRONMENTAL, P.O. Box 55714, POLOKWANE, 0700, Tel: (015) 291 4176/7, Fax 086 218 3267 Email: tecoplan@mweb.co.za Date of publication of this notice: 9 March 2018

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24 uur per dag! 7 dae 'n week!
- Toerspesifieke herstel
- Verkoeling - Lugversorging - Koelkamers
Cois Pretorius
082 498 1464 · 083 808 3000
cois@coiselektries.co.za

MAKHADO LOCAL MUNICIPALITY
Tel: (015) 519 3000 Fax: (015) 516 1195 Private Bag X2596 Makhado 0920

PUBLIC NOTICE FOR INSPECTION OF GENERAL VALUATION ROLL 2018 TO 2023 AND LODGING OF OBJECTIONS

Notice is hereby given in terms of section 49 (1) (a) (i) of the Local Government Municipal Property Rates Act, 2004 (Act 6 of 2004), hereinafter referred to as the "Act" that the General Valuation Roll for the financial years 1 July 2018 to 30 June 2023 is open for public inspection at Makhado Municipality Civic Centre, 83 Krogh Street, Makhado town, Office C027, from 8H00 to 13H00 and from 14H00 to16H00. General valuation roll can also be inspected at the Regional Administrator's Offices at Waterval, Dzanani and Vivaldi Satellite Office and in addition the Valuation roll is available at website www.makhado.gov.za from the 19th March to the 4th of May 2018.

An invitation is hereby made in terms of section 49 (1) (a) (ii) of the Act, that any property owner or other person who so desires should lodge an objection with the Municipal Manager in respect of any matter reflected in, or omitted from the General valuation roll within the above mentioned period.

Attention is specifically drawn to the fact that in terms of Section 50(2) of the Act, an objection must be in relation to a specific individual property and not against the valuation roll as such.

The objection form for the lodging of an objection is obtainable at the Civic Center at 83 Krogh street, Makhado town, Office number C027 and Office of the Regional Administrators at Waterval, Dzanani and at Vivaldi Satellite office and /or www.makhado.gov.za.The completed objection form must be returned to the same Offices or alternatively to the address below :

The Municipal Manager
Makhado Local Municipality
Private Bag X2596
Makhado
0920

For enquiries please telephone: Mr. Thanyani Ndivhuwo or Mr. Nekhavhambe Alfred at (015) 519 3283 / (015)519-3296 or alternatively e-mail to ndivhuwot@makhado.gov.za/ alfredn@makhado.gov.za.

Civic Centre
83 Krogh Street
LOUIS TRICHARDT, 0920
Notice No: 18 of 2018
File No: 6/3/4/1 (2018-2023)

MR. N.F. TSHIVHENGWA
MUNICIPAL MANAGER

TIMBALI TECHNOLOGY INCUBATOR
Private Bag X11208, Nelspruit, 1200, South Africa • T: 013 752 4247 • Fax: 013 752 5954
• E-mail: louise@timbali.co.za • www.timbali.co.za
S25°26.276'; E30°59.242'
Company registration no: 2002/006905/08 • Association incorporated under Section 21

amaBrand amaBlom amaSpice amaFruit amaVeg

VACANCY FOR A ADMINISTRATIVE CLERK

Salary: Market related-salary negotiable
Fixed Term Contract: 01 April 2018 to 31 March 2020

Job Description
SUMMARY:
Our company is looking for a focused, industrious, and flexible candidate to fill a vacant administrative clerk position at our Nwanedi Agri-hub in Limpopo. As an administrative clerk, you will perform a variety of accounting and clerical duties to help keep the office running smoothly. Our ideal candidate is an efficient, dynamic, and cooperative individual who can perform well while juggling multiple tasks with little to no direct supervision. This position is a contractual position for 2 years starting 1 April 2018 and ending 31 March 2020 (with the view to extend)

RESPONSIBILITIES:
- Answer and direct telephone calls
- Communicate with customers, employees, and others to answer questions, address complaints, explain information, and take orders.
- Operate office machinery, including photocopiers, scanners, telephone and voicemail systems, and computers
- Maintain updated systems for filing, inventory, mailing, and databases
- Handle incoming and outgoing office correspondence
- Compile and maintain records of office activities and business transactions
- Type, format, proofread and edit documents from notes or dictation
- Prepare meeting agendas; attend meetings to take notes and write minutes for all committees within the project.
- Oversee and manage compilation of presentation material for meetings (tidying and making presentable-binding etc.)
- Must disseminate all presentation material to stakeholders
- Send meeting notifications to the various stakeholders.
- Manage work schedules, calendars, and appointments
- Obtain information to respond to requests by reviewing files, documents, and records
- Take inventory and order materials, supplies, and services as needed
- Troubleshoot problems that arise with office equipment
- Perform basic bookkeeping and banking transactions, including the collection, counting, and disbursement of money
- Prepare and mail bills, invoices, Purchase Order Requisitions for approval, and contracts.
- Make travel arrangements for personnel
- The candidate will be responsible for the reports to the farmers, during the monthly Corporate Body Meeting (CBM).

REQUIREMENTS AND QUALIFICATIONS:
- Minimum requirements: Diploma in Office Administration and/or equivalent qualifications.
- Proficient in the use of computers, including accounting software, database software, document management software, and Microsoft Office and Sage Evolution
- Minimum of 3 years office administration experience in accountancy.
- Strong communication skills; ability to interact productively with supervisors, peers, and subordinates
- Proficiency in English (Both spoken and written). Venda and/or Tsonga is a must.
- Good Organizational skills, and time management
- Must be able to work independently.
- Driver's license will be an added advantage.

Closing date for applications: 23 March 2018.
Please email CV with at least 3 traceable references to pietro@timbali.co.za.

Zoutpansberger
* Geklassifiseerd en blok advertensies: Dinsdae 14:00 * Kleur advertensies: Maandae 16:00

Figure 24. Legal Notice appeared in the local Newspaper (Zoutpansberger), 9 March 2018

Table 3. List of Neighbours (Interested and Affected Parties)

Portion 1 of the Farm Nooitgedacht 3-LT	Mr. M.J. & Mrs. E.C. Coetzee C/O Enco Fruit & Veg P.O. Box 494 Levubu 0929
Remainder of Portion 3 of the Farm Nooitgedacht 3-LT	Mr. M.J. & Mrs. M.I. Malivha P.O. Box 3322 The Reeds 0061
Remainder of Portion 2 of the Farm Elandspruit 284-LS	Dipeni Props Holdings (Pty) Ltd Mr. Thenga, Mashudu Uriel P.O. Box 2710 Parklands, Johannesburg 2121
Portion 6 of the Farm Vygeboomsdrift 283-LS	Kleintjie Jooste Family Trust P.O. Box 794 Louis Trichardt 0920

None of the above societies or groups had any objections to the development of this site.

6. Measuring Impacts

In 2003 the SAHRA (South African Heritage Resources Agency) compiled the following guidelines to evaluate the cultural significance of individual heritage resources:

6.1 Type of Resource

- Place
- Archaeological Site
- Structure
- Grave
- Paleontological Feature
- Geological Feature

6.2 Type of Significance

6.2.1 Historic Value

It is important in the community, or pattern of history

- Important in the evolution of cultural landscapes and settlement patterns
- Important in exhibiting density, richness or diversity of cultural features illustrating the human occupation and evolution of the nation, province, region or locality.
- Important for association with events, developments or cultural phases that have had a significant role in the human occupation and evolution of the nation, province, region or community.
- Important as an example for technical, creative, design or artistic excellence, innovation or achievement in a particular period.

It has strong or special association with the life or work of a person, group or organisation of importance in history

- Importance for close associations with individuals, groups or organisations whose life, works or activities have been significant within the history of the nation, province, region or community.

It has significance relating to the history of slavery

- Importance for a direct link to the history of slavery in South Africa.

6.2.2 Aesthetic Value

It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group.

- Important to a community for aesthetic characteristics held in high esteem or otherwise valued by the community.
- Importance for its creative, design or artistic excellence, innovation or achievement.
- Importance for its contribution to the aesthetic values of the setting demonstrated by a landmark quality or having impact on important vistas or otherwise contributing to the identified aesthetic qualities of the cultural environs or the natural landscape within which it is located.
- In the case of an historic precinct, importance for the aesthetic character created by the individual components which collectively form a significant streetscape, townscape or cultural environment.

6.2.3 Scientific Value

It has potential to yield information that will contribute to an understanding of natural or cultural heritage

- Importance for information contributing to a wider understanding of natural or cultural history by virtue of its use as a research site, teaching site, type locality, reference or benchmark site.
- Importance for information contributing to a wider understanding of the origin of the universe or of the development of the earth.
- Importance for information contributing to a wider understanding of the origin of life; the development of plant or animal species, or the biological or cultural development of hominid or human species.
- Importance for its potential to yield information contributing to a wider understanding of the history of human occupation of the nation, Province, region or locality.
- It is important in demonstrating a high degree of creative or technical achievement at a particular period
- Importance for its technical innovation or achievement.

(a) Does the site contain evidence, which may substantively enhance understanding of culture history, culture process, and other aspects of local and regional prehistory?

- internal stratification and depth
- chronologically sensitive cultural items
- materials for absolute dating
- association with ancient landforms
- quantity and variety of tool type
- distinct intra-site activity areas
- tool types indicative of specific socio-economic or religious activity
- cultural features such as burials, dwellings, hearths, etc.
- diagnostic faunal and floral remains
- exotic cultural items and materials
- uniqueness or representativeness of the site
- integrity of the site

(b) Does the site contain evidence which may be used for experimentation aimed at improving archaeological methods and techniques?

- monitoring impacts from artificial or natural agents
- site preservation or conservation experiments
- data recovery experiments
- sampling experiments
- intra-site spatial analysis

(c) Does the site contain evidence which can make important contributions to paleoenvironmental studies?

- topographical, geomorphological context
- depositional character
- diagnostic faunal, floral data

(d) Does the site contain evidence which can contribute to other scientific disciplines such as hydrology, geomorphology, pedology, meteorology, zoology, botany, forensic medicine, and environmental hazards research, or to industry including forestry and commercial fisheries?

6.2.4 Social Value / Public Significance

- It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons
- Importance as a place highly valued by a community or cultural group for reasons of social, cultural, religious, spiritual, symbolic, aesthetic or educational associations.
- Importance in contributing to a community's sense of place.

(a) Does the site have potential for public use in an interpretive, educational or recreational capacity?

- integrity of the site
- technical and economic feasibility of restoration and development for public use
- visibility of cultural features and their ability to be easily interpreted
- accessibility to the public

- opportunities for protection against vandalism
- representativeness and uniqueness of the site
- aesthetics of the local setting
- proximity to established recreation areas
- present and potential land use
- land ownership and administration
- legal and jurisdictional status
- local community attitude toward development

(b) Does the site receive visitation or use by tourists, local residents or school groups?

6.2.5 Ethnic Significance

(a) Does the site presently have traditional, social or religious importance to a particular group or community?

- ethnographic or ethno-historic reference
- documented local community recognition or, and concern for, the site

6.2.6 Economic Significance

(a) What value of user-benefits may be placed on the site?

- visitors' willingness-to-pay
- visitors' travel costs

6.2.7 Scientific Significance

(a) Does the site contain evidence, which may substantively enhance understanding of historic patterns of settlement and land use in a particular locality, regional or larger area?
(b) Does the site contain evidence, which can make important contributions to other scientific disciplines or industry?

6.2.8 Historic Significance

(a) Is the site associated with the early exploration, settlement, land use, or other aspect of southern Africa's cultural development?
(b) Is the site associated with the life or activities of a particular historic figure, group, organization, or institution that has made a significant contribution to, or impact on, the community, province or nation?
(c) Is the site associated with a particular historic event whether cultural, economic, military, religious, social or political that has made a significant contribution to, or impact on, the community, province or nation?
(d) Is the site associated with a traditional recurring event in the history of the community, province, or nation, such as an annual celebration?

6.2.9 Public Significance

(a) Does the site have potential for public use in an interpretive, educational or recreational capacity?

- visibility and accessibility to the public
- ability of the site to be easily interpreted
- opportunities for protection against vandalism
- economic and engineering feasibility of reconstruction, restoration and maintenance
- representativeness and uniqueness of the site
- proximity to established recreation areas
- compatibility with surrounding zoning regulations or land use
- land ownership and administration
- local community attitude toward site preservation, development or destruction
- present use of site

(b) Does the site receive visitation or use by tourists, local residents or school groups?

6.2.10 Other

(a) Is the site a commonly acknowledged landmark?
(b) Does, or could, the site contribute to a sense of continuity or identity either alone or in conjunction with similar sites in the vicinity?
(c) Is the site a good typical example of an early structure or device commonly used for a specific purpose throughout an area or period of time?
(d) Is the site representative of a particular architectural style or pattern?

6.3 Degrees of Significance

6.3.1 Significance Criteria

There are several kinds of significance, including scientific, public, ethnic, historic and economic, that need to be taken into account when evaluating heritage resources. For any site, explicit criteria are used to measure these values. These checklists are not intended to be exhaustive or inflexible. Innovative approaches to site evaluation which emphasize quantitative analysis and objectivity are encouraged. The process used to derive a measure of relative site significance must be rigorously documented, particularly the system for ranking or weighting various evaluated criteria.

Site integrity, or the degree to which a heritage site has been impaired or disturbed as a result of past land alteration, is an important consideration in evaluating site significance. In this regard, it is important to recognize that although an archaeological site has been disturbed, it may still contain important scientific information.

Heritage resources may be of scientific value in two respects. The potential to yield information, which, if properly recovered, will enhance understanding of Southern African human history, is one appropriate measure of scientific significance. In this respect, archaeological sites should be evaluated in terms of their potential to resolve current archaeological research problems. Scientific significance also refers to the potential for relevant contributions to other academic disciplines or to industry.

Public significance refers to the potential a site has for enhancing the public's understanding and appreciation of the past. The interpretive, educational and recreational potential of a site are valid indications of public value. Public significance criteria such as ease of access, land ownership, or scenic setting are often external to the site itself. The relevance of heritage resource data to private industry may also be interpreted as a particular kind of public significance.

Ethnic significance applies to heritage sites which have value to an ethnically distinct community or group of people. Determining the ethnic significance of an archaeological site may require consultation with persons having special knowledge of a particular site. It is essential that ethnic significance be assessed by someone properly trained in obtaining and evaluating such data.

Historic archaeological sites may relate to individuals or events that made an important, lasting contribution to the development of a particular locality or the province. Historically important sites also

reflect or commemorate the historic socioeconomic character of an area. Sites having high historical value will also usually have high public value.

The economic or monetary value of a heritage site, where calculable, is also an important indication of significance. In some cases, it may be possible to project monetary benefits derived from the public's use of a heritage site as an educational or recreational facility. This may be accomplished by employing established economic evaluation methods; most of which have been developed for valuating outdoor recreation. The objective is to determine the willingness of users, including local residents and tourists, to pay for the experiences or services the site provides even though no payment is presently being made. Calculation of user benefits will normally require some study of the visitor population *(Smith, L.D. 1977)*.

6.3.2 Rarity

It possesses uncommon, rare or endangered aspects of natural or cultural heritage.

- Importance for rare, endangered or uncommon structures, landscapes or phenomena.

6.3.3 Representivity

- It is important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects.
- Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class.
- Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality.

7. Assessment of Heritage Potential

7.1 Assessment Matrix

7.1.1 Determining Archaeological Significance

In addition to guidelines provided by the National Heritage Resources Act (Act No. 25 of 1999), a set of criteria based on Deacon (J) and Whitelaw (1997) for assessing archaeological significance has been developed for Eastern Cape settings (Morris 2007a). These criteria include estimation of landform potential (in terms of its capacity to contain archaeological traces) and assessing the value to any archaeological traces (in terms of their attributes or their capacity to be construed as evidence, given that evidence is not given but constructed by the investigator).

Estimating site potential

Table 4 (below) is a classification of landforms and visible archaeological traces used for estimating the potential of archaeological sites (after J. Deacon and, National Monuments Council). Type 3 sites tend to be those with higher archaeological potential, but there are notable exceptions to this rule, for example the renowned rock engravings site Driekopseiland near Kimberley which is on landform L1 Type 1 – normally a setting of lowest expected potential. It should also be noted that, generally, the older a site the poorer the preservation, so that sometimes any trace, even of only Type 1 quality, could be of exceptional significance. In light of this, estimation of potential will always be a matter for archaeological observation and interpretation.

Table 4. Classification of landforms and visible archaeological traces for estimating the potential for archaeological sites (after J. Deaon, NMC as used in Morris)

Class	Landform	Type 1	Type 2	Type 3
L1	Rocky Surface	Bedrock exposed	Some soil patches	Sandy/grassy patches
L2	Ploughed land	Far from water	In floodplain	On old river terrace

L3	Sandy ground, inland	Far from water	In floodplain or near features such as hill/dune	On old river terrace
L4	Sandy ground, coastal	>1 km from sea	Inland of dune cordon	Near rocky shore
L5	Water-logged deposit	Heavily vegetated	Running water	Sedimentary basin
L6	Developed urban	Heavily built-up with no known record of early settlement	Known early settlement, but buildings have basements	Buildings without extensive basements over known historical sites
L7	Lime/dolomite	>5 myrs	<5000 yrs	Between 5000 yrs and 5 myrs
L8	Rock shelter	Rocky floor	Loping floor or small area	Flat floor, high ceiling
Class	Archaeological traces	Type 1	Type 2	Type 3
A1	Area previously excavated	Little deposit remaining	More than half deposit remaining	High profile site
A2	Shell of bones visible	Dispersed scatter	Deposit <0.5 m thick	Deposit >0.5 m thick; shell and bone dense
A3	Stone artefacts or stone walling or other feature visible	Dispersed scatter	Deposit <0.5m thick	Deposit >0.5 m thick

Table 5. Site attributes and value assessment (adopted from Whitelaw 1997 as used in Morris)

Class	Landforms	Type 1	Type 2	Type 3
1	Length of sequence /context	No sequence Poor context Dispersed distribution	Limited sequence	Long sequence Favourable context High density of arte / ecofacts
2	Presence of exceptional items (incl. regional rarity)	Absent	Present	Major element
3	Organic preservation	Absent	Present	Major element
4	Potential for future archaeological investigation	Low	Medium	High
5	Potential for public display	Low	Medium	High
6	Aesthetic appeal	Low	Medium	High
7	Potential for implementation of a long-term management plan	Low	Medium	High

7.2 Assessing site value by attribute

Table 5 is adapted from Whitelaw (1997), who developed an approach for selecting sites meriting heritage recognition status in KwaZulu Natal. It is a means of judging a site's archaeological value by ranking the relative strengths of a range of attributes (given in the second column of the table). While aspects of this matrix remain qualitative, attribute assessment is a good indicator of the general archaeological significance of a site, with Type 3 attributes being those of highest significance.

7.3 Impact Statement

7.3.1 Assessment of Impacts

A heritage resource impact may be broadly defined as the net change between the integrity of a heritage site with and without the proposed development. This change may be either beneficial or adverse.
Beneficial impacts occur wherever a proposed development actively protects, preserves or enhances a heritage resource. For example, development may have a beneficial effect by preventing or lessening natural site erosion. Similarly, an action may serve to preserve a site for future investigation by covering it with a protective layer of fill. In other cases, the public or economic significance of an archaeological site may be enhanced by actions, which facilitate non-destructive public use. Although beneficial impacts are unlikely to occur frequently, they should be included in the assessment.
More commonly, the effects of a project on heritage sites are of an adverse nature. Adverse impacts occur under conditions that include:
(a) destruction or alteration of all or part of a heritage site;
(b) isolation of a site from its natural setting; and
(c) introduction of physical, chemical or visual elements that are out-of-character with the heritage resource and its setting.

Adverse effects can be more specifically defined as direct or indirect impacts. Direct impacts are the immediately demonstrable effects of a project which can be attributed to particular land modifying actions. They are directly caused by a project or its ancillary facilities and occur at the same time and place. The immediate consequences of a project action, such as slope failure following reservoir inundation, are also considered direct impacts.
Indirect impacts result from activities other than actual project actions. Nevertheless, they are clearly induced by a project and would not occur without it. For example, project development may induce changes in land use or population density, such as increased urban and recreational development, which may indirectly impact upon heritage sites. Increased vandalism of heritage sites, resulting from improved or newly introduced access, is also considered an indirect impact. Indirect impacts are much more difficult to assess and quantify than impacts of a direct nature.
Once all project related impacts are identified, it is necessary to determine their individual level-of-effect on heritage resources. This assessment is aimed at determining the extent or degree to which future opportunities for scientific research, preservation, or public appreciation are foreclosed or otherwise adversely affected by a proposed action. Therefore, the assessment provides a reasonable indication of the relative significance or importance of a particular impact. Normally, the assessment should follow site evaluation since it is important to know what heritage values may be adversely affected.

The assessment should include careful consideration of the following level-of-effect indicators, which are defined below:

- magnitude
- severity
- duration
- range
- frequency
- diversity
- cumulative effect
- rate of change

7.4 Indicators of Impact Severity

Magnitude
The amount of physical alteration or destruction, which can be expected. The resultant loss of heritage value is measured either in amount or degree of disturbance.

Severity
The irreversibility of an impact. Adverse impacts, which result in a totally irreversible and irretrievable loss of heritage value, are of the highest severity.

Duration
The length of time an adverse impact persists. Impacts may have short-term or temporary effects, or conversely, more persistent, long-term effects on heritage sites.

Range
The spatial distribution, whether widespread or site-specific, of an adverse impact.

Frequency
The number of times an impact can be expected. For example, an adverse impact of variable magnitude and severity may occur only once. An impact such as that resulting from cultivation may be of recurring or on-going nature.

Diversity
The number of different kinds of project-related actions expected to affect a heritage site.

Cumulative Effect
A progressive alteration or destruction of a site owing to the repetitive nature of one or more impacts.

Rate of Change
The rate at which an impact will effectively alter the integrity or physical condition of a heritage site. Although an important level-of-effect indicator, it is often difficult to estimate. Rate of change is normally assessed during or following project construction.

The level-of-effect assessment should be conducted and reported in a quantitative and objective fashion. The methodological approach, particularly the system of ranking level-of-effect indicators, must be rigorously documented and recommendations should be made with respect to managing uncertainties in the assessment. *(Zubrow, Ezra B.A., 1984).*

7.5 Paleontological sites

The study area falls within the “Grey” and “Blue” designations indicating a low to zero Palaeontological significance. A desktop study is not required, however, a protocol for finds is required.

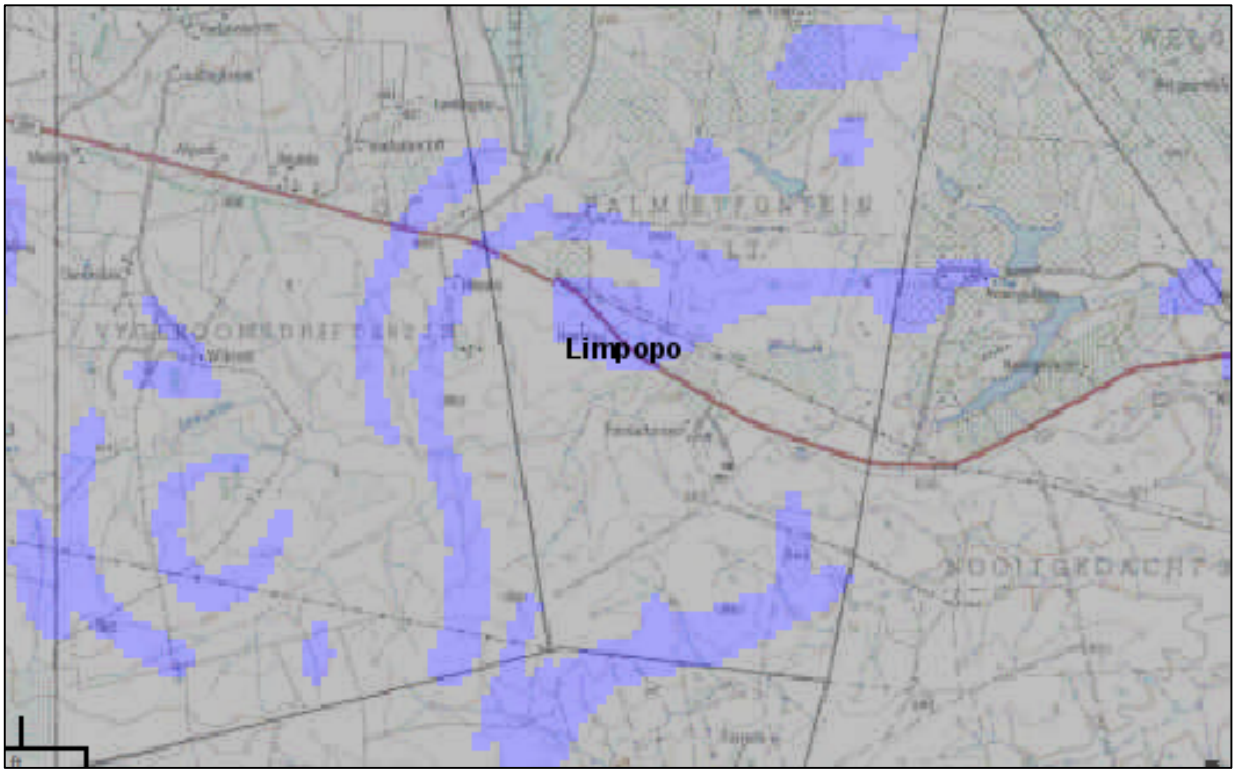

Figure 25. Palaeontology Sensitivity Map

Table 6. Palaeontological Sensitivity

Colour	Sensitivity	Action Required
RED	VERY HIGH	Field assessment and protocol for finds is required.
ORANGE / YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study, a field assessment is likely.
GREEN	MODERATE	Desktop study is required.
BLUE	LOW	No Palaeontological studies are required however, a protocol for finds is required.
GREY	INSIGNIFICANT / ZERO	No Palaeontological studies are required.
WHITE / CLEAR	UNKNOWN	These area will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

7.6 Post-Contact Sites

No sites associated with the post-contact era will be affected by the proposed development.

7.7 Built Environment

Some unimportant structures such as footpaths were noted on site, however none of these had any heritage or architectural value.

Old building adjacent to the proposed field – will not be impacted.
Farm homestead located right on the border of the proposed orchard, but will not be impacted on.

Figure 26. Small building on the neighbouring property

Figure 27. Building located right next to the proposed field, will not be impacted on

Figure 28. Farm house, will not be impacted

7.8 Historic Significance

Table 7. Built Environment

No	Criteria	Significance Rating
1	***Are any of the identified sites or buildings associated with a historical person or group?*** No	N/A
2	***Are any of the buildings or identified sites associated with a historical event?*** No	N/A
3	***Are any of the identified sites or buildings associated with a religious, economic social or political or educational activity?*** No	N/A
4	***Are any of the identified sites or buildings of archaeological significance?*** No	N/A
5	***Are any of the identified buildings or structures older than 60 years?*** No	N/A

7.9 Architectural Significance

Table 8. Architectural Significance

No	**Criteria**	**Rating**
1	***Are any of the buildings or structures an important example of a building type?*** No	N/A
2	***Are any of the buildings outstanding examples of a particular style or period?***	

	No	N/A
3	***Do any of the buildings contain fine architectural details and reflect exceptional craftsmanship?*** No	N/A
4	***Are any of the buildings an example of an industrial, engineering or technological development?*** No	N/A
5	***What is the state of the architectural and structural integrity of the building?*** No	N/A
6	***Is the building's current and future use in sympathy with its original use (for which the building was designed)?*** N/A	-
7	***Were the alterations done in sympathy with the original design?*** N/A	-
8	***Were the additions and extensions done in sympathy with the original design?*** N/A	-
9	***Are any of the buildings or structures the work of a major architect, engineer or builder?*** No.	N/A

7.10 Spatial Significance

Even though each building needs to be evaluated as a single artefact the site still needs to be evaluated in terms of its significance in its geographic area, city, town, village, neighbourhood or precinct. This set of criteria determines the spatial significance.

Table 9. Spatial Significance

No	Criteria	Rating
1	***Can any of the identified buildings or structures be considered a landmark in the town or city?*** No	-
2	***Do any of the buildings contribute to the character of the neighborhood?*** No	-
3	***Do any of the buildings contribute to the character of the square or streetscape?*** No	-
4	***Do any of the buildings form part of an important group of buildings?*** No	-

8. Impact Evaluation

This HIA Methodology assists in evaluating the overall effect of a proposed activity on the heritage environment. The determination of the effect of a heritage impact on a heritage parameter is determined through a systematic analysis of the various components of the impact. This is undertaken using information that is available to the heritage practitioner through the process of heritage impact assessment. The impact evaluation of predicted impacts was undertaken through an assessment of the significance of the impacts.

8.1 Determination of Significance of Impacts

Significance is determined through a synthesis of impact characteristics, which include context and intensity of an impact. Context refers to the geographical scale i.e. site, local, national or global

whereas intensity is defined by the severity if the impact e.g. the magnitude of deviation from background conditions, the size of the area affected, the duration of the impact and the overall probability of occurrence.

Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

8.2 Impact Rating System

Impact assessment must take account of the nature, scale and duration of effects on the heritage environment whether such effects are positive (beneficial) or negative (detrimental). Each issue / impact is also assessed according to the project stages:

- planning
- construction
- operation
- decommissioning

Where necessary, the proposal for mitigation or optimisation of an impact will be detailed. A brief discussion of the impact and the rationale behind the assessment of its significance has also been included.

8.2.1 Rating System Used to Classify Impacts

The rating system is applied to the potential impact on the receiving environment and includes an objective evaluation of the mitigation of the impact. Impacts have been consolidated into one rating. In assessing the significance of each issue the following criteria (including an allocated point system) is used:

Table 10. Classification of Impacts

NATURE		
Including a brief description of the impact of the heritage parameter being assessed in the context of the project. This criterion includes a brief written statement of the heritage aspect being impacted upon by a particular action or activity.		
GEOGRAPHICAL EXTENT		
This is defined as the area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment of a project in terms of further defining the determined.		
1	Site	The impact will only affect the site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.
4	International and National	Will affect the entire country.
PROBABILITY		
This describes the chance of occurrence of an impact		
1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between a 50% to 75% chance of occurrence).

4	Definite	Impact will certainly occur (Greater than a 75% chance of occurrence).
REVERSIBILITY		
This describes the degree to which an impact on a heritage parameter can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and no mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES		
This describes the degree to which heritage resources will be irreplaceably lost as a result of a proposed activity.		
1	No loss of resource.	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.
DURATION		
This describes the duration of the impacts on the heritage parameter. Duration indicates the lifetime of the impact as a result of the proposed activity.		
1	Short term	The impact and its effects will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase (0 – 1 years), or the impact and its effects will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0 – 2 years).
2	Medium term	The impact and its effects will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2 – 10 years).
3	Long term	The impact and its effects will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter (10 – 50 years).
4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered transient (Indefinite).

CUMULATIVE EFFECT		
This describes the cumulative effect of the impacts on the heritage parameter. A cumulative effect/impact is an effect, which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question.		
1	Negligible Cumulative Impact	The impact would result in negligible to no cumulative effects.
2	Low Cumulative Impact	The impact would result in insignificant cumulative effects.
3	Medium Cumulative impact	The impact would result in minor cumulative effects.
4	High Cumulative Impact	The impact would result in significant cumulative effects.
INTENSITY / MAGNITUDE		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/ component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired (system collapse). Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
SIGNIFICANCE		
Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. This describes the significance of the impact on the heritage parameter. The calculation of the significance of an impact uses the following formula: **(Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity.** The summation of the different criteria will produce a non weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.		

Points	Impact Significance Rating	Description
6 to 28	Negative Low impact	The anticipated impact will have negligible negative effects and will require little to no mitigation.
6 to 28	Positive Low impact	The anticipated impact will have minor positive effects.
29 to 50	Negative Medium impact	The anticipated impact will have moderate negative effects and will require moderate mitigation measures.
29 to 50	Positive Medium impact	The anticipated impact will have moderate positive effects.
51 to 73	Negative High impact	The anticipated impact will have significant effects and will require significant mitigation measures to achieve an acceptable level of impact.
51 to 73	Positive High impact	The anticipated impact will have significant positive effects.
74 to 96	Negative Very high impact	The anticipated impact will have highly significant effects and are unlikely to be able to be mitigated adequately. These impacts could be considered "fatal flaws".
74 to 96	Positive Very high impact	The anticipated impact will have highly significant positive effects.

9. Anticipated Impact of the Development

9.1 Obscured or Buried Heritage sites of significance Including Palaeontology

Table 11. Mitigation of Impacts

IMPACT TABLE FORMAT		
Heritage component	*Heritage sites of significance including Palaeontology*	
Issue/Impact/Heritage Impact/Nature	*Proposed Development of the Palmietfontein 2 LT*	
Extent	*Local*	
Probability	*Unlikely*	
Reversibility	*Partly reversible*	
Irreplaceable loss of resources	*Insignificant loss of resources*	
Duration	*Medium term*	
Cumulative effect	*Low cumulative effect*	
Intensity/magnitude	*Low*	
Significance Rating of Potential Impact	*39 points. The impact will have a medium negative impact rating.*	
	Pre-mitigation impact rating	Post mitigation impact rating
Extent	2	2
Probability	2	1

Reversibility	4	2
Irreplaceable loss	3	1
Duration	2	2
Cumulative effect	4	1
Intensity/magnitude	3	1
Significance rating	51 (high negative)	8 (low negative)
Mitigation measure	*Should any sites be identified during the construction phase of the project the attached recommendations should be followed in the mitigation of them. Periodic monitoring during the clearing and earth moving phase of the project is recommended. This should be performed by a qualified archaeologist.*	

9.2 Assessing Visual Impact

Visual impacts of developments result when sites that are culturally celebrated are visually affected by a development. The exact parameters for the determination of visual impacts have not yet been rigidly defined and are still mostly open to interpretation. CNdV Architects and The Department of Environmental Affairs and Development Planning (2006) have developed some guidelines for the management of the visual impacts of wind turbines in the Western Cape, although these have not yet been formalised. In these guidelines they recommend a buffer zone of 1km around significant heritage sites to minimise the visual impact.

9.3 Assumptions and Restrictions

- It is assumed that the South African Heritage Resources Information System (SAHRIS) database locations are correct
- It is assumed that the paleontological information collected for the project is comprehensive.
- It is assumed that the social impact assessment and public participation process of the Basic Assessment will result in the identification of any intangible sites of heritage potential.

9.3.1 Cultural Landscape

The following landscape types were evaluated during the study.

Table 12. Cultural Landscape

Landscape Type	**Description**	**Occurrence still possible?**	**Identified on site?**
1 Paleontological	Mostly fossil remains. Remains include microbial fossils such as found in Barberton Greenstones	No	No
2 Archaeological	Evidence of human occupation associated with the following phases – Early-, Middle-, Late Stone Age, Early-, Late Iron Age, Pre-Contact Sites, Post-Contact Sites	Yes, sub-surface	No
3 Historic Built Environment	- Historical townscapes/streetscapes - Historical structures; i.e. older than 60 years - Formal public spaces - Formally declared urban conservation areas - Places associated with social identity/displacement	Yes	No
4 Historic Farmland	These possess distinctive patterns of settlement and historical features such as:	No	No

	- Historical farm yards - Historical farm workers villages/settlements - Irrigation furrows - Tree alignments and groupings - Historical routes and pathways - Distinctive types of planting - Distinctive architecture of cultivation e.g. planting blocks, trellising, terracing, ornamental planting.		
5 Historic rural town	- Historic mission settlements - Historic townscapes	No	No
6 Pristine natural landscape	- Historical patterns of access to a natural amenity - Formally proclaimed nature reserves - Evidence of pre-colonial occupation - Scenic resources, e.g. view corridors, viewing sites, visual edges, visual linkages - Historical structures/settlements older than 60 years - Pre-colonial or historical burial sites - Geological sites of cultural significance.	No	No
7 Relic Landscape	- Past farming settlements - Past industrial sites - Places of isolation related to attitudes to medical treatment - Battle sites - Sites of displacement,	No	No
8 Burial grounds and grave sites	- Pre-colonial burials (marked or unmarked, known or unknown) - Historical graves (marked or unmarked, known or unknown) - Graves of victims of conflict - Human remains (older than 100 years) - Associated burial goods (older than 100 years) - Burial architecture (older than 60 years)	No	No
9 Associated Landscapes	- Sites associated with living heritage e.g. initiation sites, harvesting of natural resources for traditional medicinal purposes - Sites associated with displacement & contestation - Sites of political conflict/struggle - Sites associated with an historic event/person - Sites associated with public memory	No	No
10 Historical Farmyard	- Setting of the yard and its context - Composition of structures - Historical/architectural value of individual structures - Tree alignments - Views to and from - Axial relationships - System of enclosure, e.g. defining walls - Systems of water reticulation and irrigation, e.g. furrows	No	No

	- Sites associated with slavery and farm labour - Colonial period archaeology		
11 Historic institutions	- Historical prisons - Hospital sites - Historical school/reformatory sites - Military bases	No	No
12 Scenic visual	- Scenic routes	No	No
13 Amenity landscape	- View sheds - View points - Views to and from - Gateway conditions - Distinctive representative landscape conditions - Scenic corridors	No	No

9.4 Mitigation

It is recommended that the development designs take into account the positive and negative characteristics of the existing cultural landscape type and that they endeavor to promote the positive aspects while at the same time mitigating the negative aspects.

10. Resource Management Recommendations and Chance Finds Protocol

Although unlikely, sub-surface remains of heritage sites or paleontological finds could still be encountered during the construction activities associated with the project. Such sites would offer no surface indication of their presence due to the high state of alterations in some areas as well as heavy plant cover in other areas. The following indicators of unmarked sub-surface sites could be encountered:

- Ash deposits (unnaturally grey appearance of soil compared to the surrounding substrate);
- Bone concentrations, either animal or human;
- Ceramic fragments such as pottery shards either historic or pre-contact;
- Stone concentrations of any formal nature.

The following recommendations are given should any sub-surface remains of heritage sites be identified as indicated above:

- All operators of excavation equipment should be made aware of the possibility of the occurrence of sub-surface heritage features and the following procedures should they be encountered.
- All construction in the immediate vicinity (50m radius of the site) should cease.
- The heritage practitioner should be informed as soon as possible.
- In the event of obvious human remains the South African Police Services (SAPS) should be notified.
- Mitigation measures (such as refilling etc.) should not be attempted.
- The area in a 50m radius of the find should be cordoned off with hazard tape.
- Public access should be limited.
- The area should be placed under guard.
- No media statements should be released until such time as the heritage practitioner has had sufficient time to analyze the finds.

11. Conclusion

The site for the Proposed Cultivation of Fields (Pecan - and Macadamia Nut Trees) on the Remainder of Portion 1 of the Farm Palmietfontein 2 LT, in the Makhado Local Municipality, Vhembe District Municipality, Limpopo Province.

The area was investigated during a field visit and through archival studies. The site was found to be devoid of any heritage sites with significance. It is recommended that obscured, subterranean sites be managed, if they are encountered.

Provided the recommendations in this report is followed there is no reason, from a heritage point of view, why this development cannot continue.

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