

HERITAGE IMPACT ASSESSMENT

A DESKTOP STUDY

THE PROPOSED CAPRICORN FUEL STATION AND ITS ASSOCIATED INFRASTRUCTURE ON THE REMAINING EXTENT OF THE GRANGE 471 LS WITHIN THE MOLEMOLE LOCAL MUNICIPALITY IN THE CAPRICORN DISTRICT OF LIMPOPO PROVINCE

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October 2023



DECLARATION OF INDEPENDENCE

I, Frans Roodt representing Vhufa Hashu Heritage Consultants, hereby confirm my independence as a specialist archaeologist and heritage practitioner and declare that I have no business, financial, personal or other interest in any proposed activity, application or appeal in respect of this proposed project, other than fair remuneration for the work performed.



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Executive Summary

This report addresses the proposed development of a Filling Station and associated infrastructure on the Remaining Extent of the Grange 471 LS within the Molemole Local Municipality in the Capricorn District of Limpopo Province.

This is a desktop study and the sources of information were published literature, relevant heritage impact assessment reports, relevant maps and Google earth.

The general project area is potentially rich in archaeological sites. At least one extensive site still exists where the Tropic of Capricorn crosses the N1 Freeway, although there is severe damage to the site from extracting the dung and ash rich soil by local people. The project area has also been severely damaged by recent earthworks. The integrity of any possible heritage remains would be compromised and would have no significance.

In view of the above no mitigation measures are recommended.

Chance finds must however be reported to a heritage practitioner or the relevant Heritage Authority.

From a heritage resources management perspective, there is no reason why the development may not proceed.

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1. INTRODUCTION AND TERMS OF REFERENCE

1.1 Introduction

The author was appointed the Environmental Assessment Practitioner (EAP) Mr. R Tshibubudze of the Ronell Group (Pty) Ltd to undertake a Desktop Heritage Impact Assessment for the proposed to develop of a Filling Station and associated infrastructure on the Remaining Extent of the Grange 471 LS within the Molemole Local Municipality in the Capricorn District of Limpopo Province.

1.2 Project location and description

The proposed development is located in the Molemole Municipality in the Capricorn District of Limpopo Province. It is located approximately 58km north-north east of Polokwane along the N1 Freeway and 45km south-south-west of Louis Trichardt at Ga-Pasha village, very close to the Tropic of Capricorn. General coordinates: 23°26'30.77"S 29°44'37.65"E. The proposed construction is situated at the intersection of Bethel Road (D844) and the N1. (see Figures 1 & 5).

Makepise Filling Station, based in Mphakane Village, Dwarsriver (Matoks), Limpopo intends to develop a filling station and associated infrastructure on the Remaining Extent of the Grange 471 LS. The filling station is planned as a 24/7/365 centre and will contain a one stop shop, petrol and diesel pumps with a fuel carrying capacity of more than 30 000l (various grades of petrol and diesel) housed within storage tanks to be concealed underground on 1149m² of land.

1.3 Terms of reference and scope of work

Undertake a Heritage Impact Assessment and submit a specialist report, which addresses the following:

- A desktop assessment to gather information on heritage resources within the proposed development site;
- Identify possible archaeological, cultural and historic sites within the proposed development area;
- Evaluate the potential impacts of construction, operation and maintenance of the proposed development on archaeological, cultural and historical resources;
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance; and
- Identifying key uncertainties and risks.

2. RELEVANT LEGISLATION

Two sets of legislation are relevant for this study with regard to the protection of heritage resources and graves.

2.1 The National Heritage Resources Act (25 of 1999) (NHRA)

This Act established the South African Heritage Resources Agency (SAHRA) and makes provision for the establishment of Provincial Heritage Resources Authorities (PHRA). The Act makes provision for the undertaking of heritage resources impact assessments for various categories of development as determined by Section 38. It also provides for the grading of heritage resources (Section 7) and the implementation of a three-tier level of responsibilities and functions for heritage resources to be

undertaken by the State, Provincial authorities and Local authorities, depending on the grade of the Heritage resources (Section 8).

In terms of the National Heritage Resources Act (1999) the following is of relevance in terms of the general protection of heritage resources:

Historical remains

Section 34(1) No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

Archaeological remains

Section 35(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority or to the nearest local authority or museum, which must immediately notify such heritage resources authority.

Subsection 35(4) No person may, without a permit issued by the responsible heritage resources authority-

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

Subsection 35(5) When the responsible heritage resources authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or palaeontological site is under way, and where no application for a permit has been submitted and no heritage resources management procedures in terms of section 38 has been followed, it may-

- (a) serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order;
- (b) carry out an investigation for the purpose of obtaining information on whether or not an archaeological or palaeontological site exists and whether mitigation is necessary;
- (c) if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph (a) to apply for a permit as required in subsection (4); and
- (d) recover the costs of such investigation from the owner or occupier of the land on which it is believed an archaeological or palaeontological site is located or from the person proposing to undertake the development if no application for a permit is received within two weeks of the order being served.

Subsection 35(6) The responsible heritage resources authority may, after consultation with the owner of the land on which an archaeological or palaeontological site or meteorite is situated; serve a notice on the owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

Burial grounds and graves

Subsection 36(3)

- (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority-
- (c) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (d) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in detection or recovery of metals.

Subsection 36(6) Subject to the provision of any law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority-

- (a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and
- (b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the content of such grave or, in the absence of such person or community, make any such arrangement as it deems fit.

Culture Resource Management

Subsection 38(1) Subject to the provisions of subsection (7), (8) and (9), any person who intends to undertake a development* ...

must at the very earliest stages of initiating such development notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

***‘development’** means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including-

- (a) construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- (b) carry out any works on or over or under a place*;
- (e) any change to the natural or existing condition or topography of land, and
- (f) any removal or destruction of trees, or removal of vegetation or topsoil;

***‘place’** means a site, area or region, a building or other structure* ...”

***‘structure’** means any building, works, device or other facility made by people and which is fixed to the ground ...”

2.2 The Human Tissues Act (65 of 1983)

This Act protects graves younger than 60 years. These fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial MEC as well as the relevant Local Authorities.

3. METHODOLOGY

3.1 Sources of information

The main sources of information are a literature review, the SAHRIS database. In addition, Google earth and the Topographical map 2329 BC &BD was studied.

3.2 Limitations

The study is partially limited by the fact that no field survey was undertaken, but in view of recent disturbances, there is no reason to believe that any heritage remains with contextual integrity could exist on the terrain.

3.3 Categories of significance

The significance of heritage sites is ranked into the following categories.

No significance: sites that do not require mitigation.
Low significance: sites, which <i>may</i> require mitigation.
Medium significance: sites, which require mitigation.
High significance: sites, which must not be disturbed at all.

The significance of specifically an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit and the potential to help answer present research questions. Historical structures are defined by Section 34 of the National Heritage Resources Act, 1999, while other historical and cultural significant sites, places and features, are generally determined by community preferences.

3.4 Terminology

Early Stone Age:	Predominantly the Oldowan artefacts and Acheulian hand axe industry complex dating to + 1Myr yrs – 250 000 yrs. before present.
Middle Stone Age:	Various lithic industries in SA dating from ± 250 000 yrs. - 22 000 yrs. before present.
Late Stone Age:	The period from ± 22 000-yr. to contact period with either Iron Age farmers or European colonists.
Early Iron Age:	Most of the first millennium AD
Middle Iron Age:	10 th to 13 th centuries AD
Late Iron Age:	14 th century to colonial period. <i>The entire Iron Age represents the spread of Bantu speaking peoples.</i>
Phase 1 assessments:	Scoping surveys to establish the presence of and to evaluate heritage resources in a given area
Phase 2 assessments:	In depth culture resources management studies which could include major archaeological excavations, detailed site surveys and mapping / plans of sites, including historical / architectural structures and features. Alternatively, the sampling of sites by collecting material, small test pit excavations or auger sampling could be undertaken.

Sensitive:	Often refers to graves and burial sites, as well as ideologically significant sites such as ritual / religious places. <i>Sensitive</i> may also refer to an entire landscape / area known for its significant heritage remains.
NHRA	National Heritage Resources Act (Act 25 of 1999)
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System

4. BASELINE INFORMATION

No significant research has been conducted in the project area. The baseline information is therefore mainly generic as no publications cover the specific project area. Previous Heritage Impact Assessment reports in the general area of the project were consulted and referenced.

4.1 The Stone Age

The Stone Age covers most of southern Africa and the earliest consist of the Oldowan and Acheul artefacts assemblages. Oldowan tools are regularly referred to as “choppers”. Oldowan artefacts are associated with *Homo habilis*, the first true humans. In South Africa definite occurrences have been found at the sites of Sterkfontein and Swartkrans. Here they are dated to between 1.7 and 2 million years old. Bearing in mind the proximity of the Makapans Valley palaeontological site about 50km south-east of the project area it is possible that they may occur here. This was followed by the Acheulian technology from about 1.4 million years ago which introduced a new level of complexity. The large tools that dominate the Acheulian artefact assemblages range in length from 100 to 200 mm or more. Collectively they are called bifaces because they are normally shaped by flaking on both faces. In plan view, they tend to be pear-shape and are broad relative to their thickness. Most bifaces are pointed and are classified as handaxes, but others have a wide cutting end and are termed cleavers. The Acheulian design persisted for more than a million years and only disappeared about 250 000 years ago. Here, too the Makapans Valley Site is referenced; especially the Cave of Hearths.

The change from Acheulian with their characteristic bifaces, handaxes and cleavers to Middle Stone Age (MSA), which are characterized by flake industries, occurred about 250 000 years ago and ended about 30 000 – 22 000 years ago. For the most part the MSA is associated with modern humans; *Homo sapiens*. MSA remains are found in open spaces where they are regularly exposed by erosion as well as in caves. Characteristics of the MSA are flake blanks in the 40 – 100 mm size range struck from prepared cores, the striking platforms of the flakes reveal one or more facets, indicating the preparation of the platform before flake removal (the prepared core technique), flakes show dorsal preparation – one or more ridges or arise down the length of the flake – as a result of previous removals from the core, flakes with convergent sides (laterals) and a pointed shape, and flakes with parallel laterals and a rectangular or quadrilateral shape: these can be termed pointed and flake blades respectively. Other flakes in MSA assemblages are irregular in form. The Cave of Hearths in the Makapans Valley Site is referenced.

The change from Middle Stone Age to Later Stone Age (LSA) took place in most parts of southern Africa little more than about 20 000 years ago. It is marked by a series of technological innovations or new tools that, initially at least, were used to do much the same jobs as had been done before, but

in a different way. Their introduction was associated with changes in the nature of hunter-gatherer material culture. The innovations associated with the Later Stone Age “package” of tools include rock art – both paintings and engravings, smaller stone tools, so small that the formal tools less than 25mm long are called microliths (sometimes found in the final MSA) and Bows and arrows. Rock art is an important feature of the LSA and is abundant in the Makgabeng and Soutpansberg to the west and north of the project area (from Deacon & Deacon 1999).

4.2 The Iron Age (Early Farming Communities)

In pre-colonial times, various Eastern Bantu-speaking people inhabited South Africa, including Nguni, Sotho-Tswana, and Tsonga. However, they were not the first groups to occupy southern Africa. About 1800 years ago their predecessors brought a new way of life to the region replacing the Stone Age hunter-gatherers. For the first time, people lived in settled communities, cultivating such crops as sorghum, millets, ground beans and cowpeas, and they herded cattle as well as sheep and goats. Because these early farming people also made their own iron tools, many archaeologists call this block of time the Iron Age. For convenience and to mark widespread events, it is divided into three periods: the Early Iron Age (AD 200-900), the Middle Iron Age (AD 900-1300) and the Late Iron Age (AD 1300-1820) to which the ancestors of the present day Nguni and Sotho-Tswana belonged.

Archaeologists of the Iron Age use ceramic style to establish culture-history sequences. Ceramic sequences are thus the framework for all other domains of Iron Age research, be it life ways (incorporating technology, subsistence and settlement patterns), or the explanation of cultural change.

The earliest cultural expression of the first black farmers that moved into South Africa belonged to the Uruwe Tradition from East Africa and migrated southwards as part of the Kwale Branch, i.e., the **Eastern stream** of migration and settled in the Tzaneen area in the 3rd century AD. This stream moved onto the escarpment in the Lydenberg area and as far south as Durban in KwaZulu-Natal. From the escarpment it moved to Broederstroom near Hartbeespoort Dam. During the 5th century onwards, the **Western stream** of migration, namely the Kalundu Tradition from the Congo/Angola regions reached the South Africa. The Happy Rest Branch represents this stream and has been found in the Zoutpansberg area. It too moved onto the escarpment and further on to KwaZulu-Natal. On the escarpment it developed into the *Doornkop* and later the *Klingbeil* facies. In the western Bushveld of Limpopo, Happy Rest developed into the Diamant facies from which the *Eiland* facies derived (Middle Iron Age). *Eiland* represents the last phase of the Kalundu Ceramic Tradition in the South African interior dating to the 10th – 13th century AD. It occurs in the project area and over a wide area from the Zoutpansberg to the Magaliesberg.

The earliest recorded facies of Sotho-Tswana **Moloko** Branch is *Icon*. *Icon* pottery first appears in the Phalaborwa area and spread to other parts of the Limpopo Province, Mpumalanga and perhaps Botswana, dating to between about AD 1300 and 1500. According to the ceramic evidence, in some places *Icon* incorporated earlier *Eiland* elements. This phase predates the oral record.

The next phase of **Moloko** includes at least three separate facies derived from *Icon*, each with a similar direction of change in motifs: *Letsibogo* in Botswana and north-western Limpopo, *Madikwe* in the North West Province, and central-western Limpopo and Botswana, and *Olifantspoort* in the Magaliesberg. Emphases on different decoration techniques separate these three facies: punctates in Letsibogo, stabs and fingernail impressions in Madikwe, and fine hatching in Olifantspoort. Radiocarbon dates place this second phase between about AD 1500 and 1700. In all three areas, the second phase predates stonewalling ascribed to Sotho-Tswana speakers.

The fourth and final Sotho-Tswana cluster involves the Fokeng who originated at Ntsuanatsatsi Hill in the Free State. This pottery style did not penetrate to the project area (from Huffman 2007).

In terms of Huffman's (2007) distribution sequences of the Iron Age, the project area may contain the remains of the under-mentioned ceramic units which form distinct cultural groups:

➤ **Urewe Tradition**, originating in the Great Lakes area of Central Africa, was a secondary dispersal centre for eastern Bantu speakers. It represents the eastern stream of migration into Southern Africa. The Uruwe Tradition consists of various Branches of which two are relevant with their respective ceramic units:

- **Kwale Branch:**

- Mzonjani facies* (Broederstroom) AD 450 – 750 (Early Iron Age)

- **Moloko (Sotho-Tswana) Branch** (Late Iron Age)

- Icon facies* AD 1300 – 1500: This pottery is associated with the first Sotho Tswana people entering the country.

➤ **Kalundu Tradition**, originating in the far North of Angola, was another secondary dispersal centre for eastern Bantu speakers and represents the western stream of migration into Southern Africa. Only the Happy Rest Sub-Branch with its respective ceramic units are relevant here:

- **Happy Rest Sub-branch:**

- Happy Rest facies* AD 500 – 750 (Early Iron Age)

- Doornkop facies* AD 750 – 1000 (Early Iron Age)

- Eiland facies* AD 1000 – 1300 (Middle Iron Age).

- Tavhatshena facies* AD 1450 – 1600 (Late Iron Age)

- Letaba facies* AD 1600 – 1840 (Later Iron Age)

The author has personal knowledge of Icon facies sites where the Tropic of Capricorn crosses the N1 road and others have been recorded by Warren Fish (Fish 2002) when the N1 was upgraded in the early 2000's.

Today this area is dominated by the BaTlôkwa of BoTlôkwa (van Warmelo 1935) (Figure 6). According to Huffman (2007: 433, 437) the archaeological evidence points to a Nguni speaking origin for the Tlôkwa and he groups them with the Fokeng of the North-West Province. These groups originate from the Ntsuanatsatsi facies in the eastern Free State.

4.3 Brief historical background

The Batlôkwa are found widespread in various Provinces in South Africa and Botswana. In the Limpopo province, they are found in a place called BoTlôkwa, north of Polokwane. Here the Batlôkwa are part of the North-Sotho language grouping claiming Tswana ancestry. They arrived in the region after separating from the Batlôkwa who had fled to the Tshwane region after the defeat of Sekonyela by Moshoeshe in 1853. The main Tlôkwa clans in the area is the Batlôkwa Ba Ga Machaka and Ramokgopa.

After Kgosihadi Mantatisi, known as the warrior queen, travels and conquers in the North-West Province and Botswana during the early Difaqane/difetlwane wars, she returned back to the north-

eastern Free State after being defeated by Makaba of the Bangwaketsi. This strengthens the argument of a the Ntsuanatsatsi (Nguni) origin. Here her son Kgosi Sekonyela was born in 1804 near Harrismith next to the Wilge River. When Sekonyela reached maturity, he took control of the baTlôkwa social structures and military. Amidst the social and political chaos which gripped the present Free State and Lesotho regions, Sekonyela continued to build the Tlôkwa into a major military power. When the worst phase of the wars ended in the early 1830s, he settled on the naturally fortified mountains near the Caledon River.

Kgosi Sekonyela's major rival for control of northern Lesotho was Moshoeshoe, the founder of the Basotho kingdom. In November, 1853 Moshoeshoe attacked and defeated Batlôkwa after which Sekonyela fled to Winburg in the Free State where the Boers gave him asylum. After this defeat the people under Sekonyela disintegrated, some fled to Lesotho where they were absorbed into Moshoeshoe's state, others to Eastern Cape with a substation portion fleeing north to present Tshwane region in Gauteng.

5. RESULTS OF THE DESKTOP STUDY

5.1 Palaeontology

The project area falls in the grey colour code of the SAHRA Palae-Sensitivity map. No palaeontology studies are required.

5.2 Archaeology

No heritage impact assessments were undertaken in the immediate vicinity of the project area. An Icon facies site is known to exist at coordinate 23°26'13.01"S 29°44'40.25"E (Figure 4) where the Tropic of Capricorn crosses the N1 Freeway. All other assessment in the area relate to electrification projects where no heritage resources were recorded (see References).

No Stone Age material or Rock Art have been recorded in the project area.

5.3 Historical structures

No buildings occur on the property. The 1970's bases topographical map does not show any buildings on the premises.

5.4 Graves and burials sites

No graves are expected on the terrain due to its disturbed nature.

6. DISCUSSION

The general project area is potentially rich in archaeological sites. At least one extensive site still exists where the Tropic of Capricorn crosses the N1 Freeway, although there is severe damage to the site from extracting the dung and ash rich soil by local people. The project area has also been severely damaged by recent earthworks. The integrity of any possible heritage remains would be compromised and would have no significance (Figure 3).

7. EVALUATION AND STATEMENT OF SIGNIFICANCE

7.1 Significance criteria in terms of Section 3(3) of the National Heritage Resources Act.

Table 1: Significance criteria and rating

Significance		Rating
1.	The importance of the cultural heritage in the community or pattern of South Africa's history (Historic and political significance)	Low
2.	Possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage (Scientific significance).	Low
3.	Potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage (Research/scientific significance)	Low
4.	Importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects (Scientific significance)	None
5.	Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group (Aesthetic significance)	None
6.	Importance in demonstrating a high degree of creative or technical achievement at a particular period (Scientific significance)	None
7.	Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons (Social significance)	Low
8.	Strong or special association with the life and work of a person, group or organization of importance in the history of South Africa (Historic significance)	None
9.	The significance of the site relating to the history of slavery in South Africa.	None

7.2 Assessment of cultural significance or other special values because of:

7.2.1 Section 38(3) (c) An assessment of the impact of the development on such heritage resources.

No impact on heritage resources is expected.

7.2.2 Section 38(3) (d) An evaluation of the impact of the development on heritage resources relative to the sustainable economic benefits to be derived from the development.

The development will most likely have no impact on any heritage sites or remains and will have a positive economic benefit in the area.

7.2.3 Section 38(3) (e) The results of consultation with the communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources.

The development will have no negative impact on local communities.

7.2.4 Section 38(3)(f) If heritage resources will be adversely affected by the proposed development the consideration of alternatives.

No alternatives have been proposed.

7.2.5 Section 38(3)(g) Plans for mitigation of any adverse effects during and after the completion of the proposed development.

No mitigation measures are recommended.

8. RECOMMENDATIONS

In view of the above no mitigation measures are recommended.

Chance finds must however be reported to a heritage practitioner or the relevant Heritage Authority.

From a heritage resources management perspective, there is no reason why the development may not proceed.

9. REFERENCES

9.1 Literature

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Huffman, T.N. 2007. Handbook to the Iron Age. *The archaeology of Pre-colonial Farming Societies in Southern Africa*. University of KwaZulu-Natal Press.

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9.2 SAHRIS Cases: Electrical Infrastructure

Map ID: 02502

Van Schalkwyk, JA. 2007. Heritage Impact Assessment for the Planned Tabor Witkop Powerline, Limpopo Province.

CaseID: 16598 June 8, 2021

The Proposed Ingwe Solar Power Plant Near Polokwane/Louis Trichardt, Limpopo Province.

CaseID: 19735 October 5, 2022

The Development of The Mafadi Solar PV Plant Near Louis Trichardt, Limpopo Province.

CaseID: 16994 August 17, 2021

Ga-Phasha village on the farm the Grange 471 LS in Molemole Local Municipality of Capricorn District Municipality in Limpopo Province.

CaseID: 19544 Electrical infrastructure No HIA September 12, 2022

Mohakwe village on the farm Leeuwkraal 492 LS in Molemole Local Municipality of Capricorn District Municipality in Limpopo Province.

CaseID: 18801 Electrical infrastructure No HIA June 13, 2022

farm of De Kaffersdrift 510-LS in Molemole Local Municipality of Capricorn District Municipality of the Limpopo Province

CaseID: 8342 Electrical infrastructure No HIA August 25, 2015

De Kaffersdrift 510-LS in Botlokwa Molemole Local Municipality of Capricorn District Municipality of the Limpopo Province

CaseID: 19037 Electrical infrastructure No HIA July 13, 2022

Mphakane village in Molemole Local Municipality of Capricorn District Municipality in Limpopo Province

CaseID: 18132 Electrical infrastructure No HIA March 14, 2022

farm Ramagoep 774LS in Molemole Local Municipality of Capricorn District Municipality of the Limpopo Province.

CaseID: 12815 Electrical infrastructure No HIA August 20, 2018

Ramapoetspruit 514 LS Molemole Local Municipality of Capricorn District Municipality of the Limpopo Province.

CaseID: 17600 Electrical infrastructure No HIA November 23, 2021

farm Locatie van Ramagoep 774LS in Molemole Local Municipality of Capricorn District Municipality of the Limpopo Province.

CaseID: 11928 Electrical infrastructure No HIA November 13, 2017

Botlokwa at Mokomene village in the Molemole Local Municipality under Capricorn District in Limpopo Province

CaseID: 7520 Electrical infrastructure No HIA July 14, 2015

Botlokwa in Mamotswane extension in the Molemole Local Municipality under Capricorn District in Limpopo Province

CaseID: 13182 Electrical infrastructure No HIA November 7, 2018

Ga-Makgato on the Klipplaatdrift 508 LS in the Molemole Local Municipality under Capricorn District in Limpopo Province

CaseID: 17610 Electrical infrastructure No HIA November 24, 2021

Phasha village on the farm Klipplaatdrift 508 LS in Molemole Local Municipality of Capricorn District Municipality in Limpopo Province

CaseID: 18369 Electrical infrastructure No HIA April 13, 2022

Esleben village on the farm Locatie van Ramagoep 774LS in Molemole Local Municipality of Capricorn District Municipality of the Limpopo Province.



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Principal Investigator

10. MAPS AND IMAGES (Figures 1 – 7).



Figure 1. Google image of the project location in relation to surrounding villages.



Figure 2. Historical 2005 Google earth image showing vegetation and some quarrying on the proposed development area.



Figure 3. Current Google earth image showing the area which has been severely damage by earthworks – no vegetation exists.

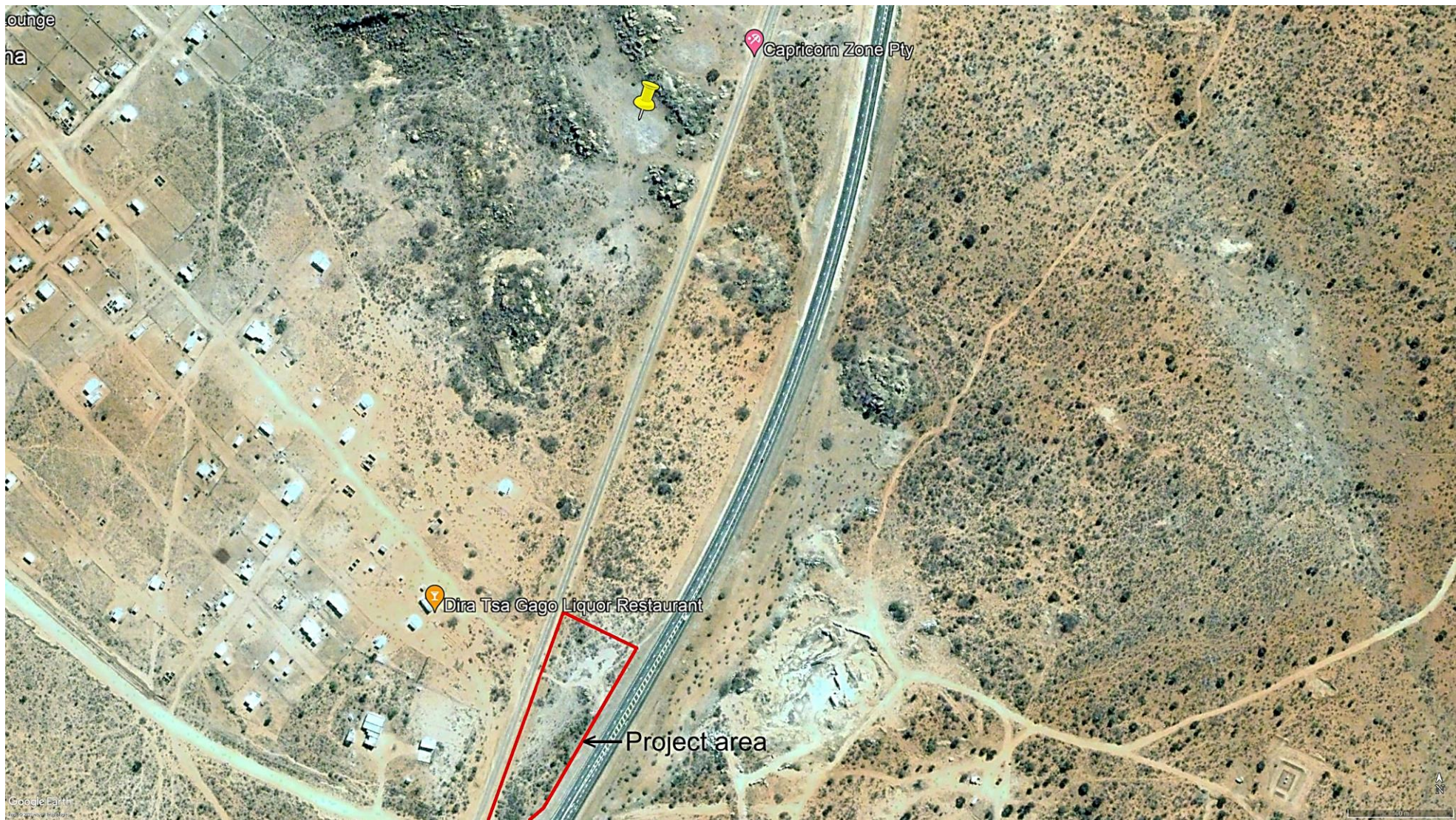


Figure 4. Historical Google earth image showing the project area and the archaeological site (Yellow icon) where the Tropic of Capricorn crosses the N1.

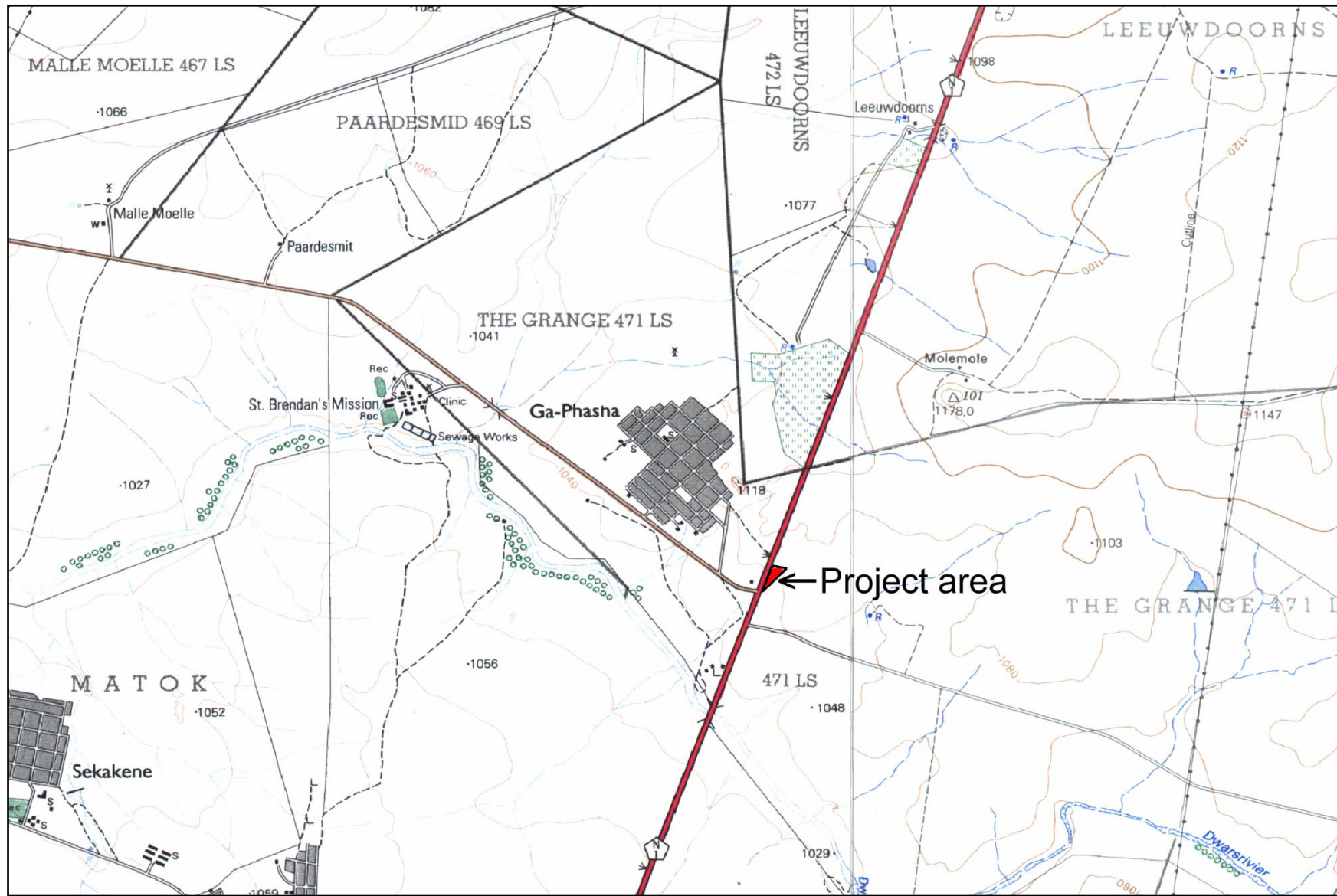


Figure 5. Extract from the Topographical maps 2329 BC &BD showing project area.

