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**A PHASE 1 HERITAGE IMPACT ASSESSMENT & REPORT FOR THE
ZANDSPRUIT BULK SEWERLINE WULA ON PORTIONS OF THE FARM
ZANDSPRUIT 191IQ, GAUTENG**

For:

***Bokamoso Landscape Architects & Environmental Consultants CC
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REPORT: **APAC022/33**

Project Reference: FP184

by:

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April 2022

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Although all efforts are made to identify all sites of cultural heritage (archaeological and historical) significance during an assessment of study areas, the nature of archaeological and historical sites are as such that it is always possible that hidden or subterranean sites, features or objects could be overlooked during the study. APELSE Archaeological Consulting can't be held liable for such oversights or for costs incurred as a result thereof.

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SUMMARY

APelser Archaeological Consulting (APAC cc) was appointed by Bokamoso Landscape Architects & Environmental Consultants CC to conduct a Phase 1 Heritage Impact Assessment for the establishment of the Zandspruit Bulk Sewerline Line on portions of the farm Zandspruit 191IQ in Gauteng. The study area is located in the Sonnedal Agricultural Holdings area and adjacent to the Jackal Creek Golf Estate. The study forms part of the Water Use License Application (WULA) for the Sewerline.

Background research indicates that there are some cultural heritage (archaeological & historical) sites and features in the larger geographical area within which the study area falls. The April 2022 assessment of the specific study area did not identify any sites, features or material of cultural heritage (archaeological and/or historical) origin or significance, with previous work in the same area by APAC cc (**see Reports APAC020/13 & 14**) having similar results. This report discusses the results of both the background research and physical assessment and provides recommendations on the way forward at the end.

From a Cultural Heritage point of view it is recommended that the Zandspruit Bulk Sewerline establishment be allowed to continue, taking into consideration the recommendations put forward at the end of the report.

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1. INTRODUCTION

APelser Archaeological Consulting (APAC cc) was appointed by Bokamoso Landscape Architects & Environmental Consultants CC to conduct a Phase 1 Heritage Impact Assessment for the establishment of the Zandspruit Bulk Sewerline Line on portions of the farm Zandspruit 191IQ in Gauteng. The study area is located in the Sonnedal Agricultural Holdings area and adjacent to the Jackal Creek Golf Estate. The study forms part of the Water Use License Application (WULA) for the Sewerline.

Background research indicates that there are some cultural heritage (archaeological & historical) sites and features in the larger geographical area within which the study area falls. The April 2022 assessment of the specific study area did not identify any sites, features or material of cultural heritage (archaeological and/or historical) origin or significance, with previous work in the same area by APAC cc.

The client indicated the location and boundaries of the study area and the assessment concentrated on this portion.

2. TERMS OF REFERENCE

The Terms of Reference for the study was to:

1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the portion of land that will be impacted upon by the proposed development;
2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;
4. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;
5. Review applicable legislative requirements;

3. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are dealt with mainly in two Acts. These are the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

3.1. The National Heritage Resources Act

According to the Act the following is protected as cultural heritage resources:

- a. Archaeological artifacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

The National Estate includes the following:

- a. Places, buildings, structures and equipment of cultural significance
- b. Places to which oral traditions are attached or which are associated with living heritage
- c. Historical settlements and townscapes
- d. Landscapes and features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Sites of Archaeological and palaeontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment (AIA) only looks at archaeological resources. An HIA must be done under the following circumstances:

- a. The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length
- b. The construction of a bridge or similar structure exceeding 50m in length
- c. Any development or other activity that will change the character of a site and exceed 5 000m² or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m²
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

Section 34 (1) of the Act states that no person may demolish any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Alter means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

Archaeology, palaeontology and meteorites

Section 35(4) of the Act deals with archaeology, palaeontology and meteorites. The Act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial)

- 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 that assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
- e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.

Human remains

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict
- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. human remains

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

- a. destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- b. destroy, damage, alter, exhume or 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
- c. bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the **Ordinance on Excavations (Ordinance no. 12 of 1980)** (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated to) before exhumation can take place.

Human remains can only be handled by a registered undertaker or an institution declared under the **Human Tissues Act (Act 65 of 1983 as amended)**.

3.2. The National Environmental Management Act

This Act states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made.

Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

4. METHODOLOGY

4.1. Survey of literature

A survey of available literature was undertaken in order to place the development area in an archaeological and historical context. The sources utilized in this regard are indicated in the bibliography.

4.2. Field survey

The field assessment section of the study was conducted according to generally accepted HIA practices and aimed at locating all possible objects, sites and features of heritage significance in the area of the proposed development. The location/position of all sites, features and objects is determined by means of a Global Positioning System (GPS) where possible, while detail photographs are also taken where needed.

4.3. Oral histories

People from local communities are sometimes interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography.

4.4. Documentation

All sites, objects, features and structures identified are documented according to a general set of minimum standards. Co-ordinates of individual localities are determined by means of the Global Positioning System (GPS). The information is added to the description in order to facilitate the identification of each locality.

5. DESCRIPTION OF THE AREA

The proposed Zandspruit Bulk Sewerline establishment is located on portions of the original farm Zandspruit 191IQ in Gauteng. The study area is situated in the Sonnedal Agricultural Holdings area and adjacent to the Jackal Creek Golf Estate.

The topography of the study area is relatively flat and open, with no significant rocky outcrops or ridges present. Vegetation cover was very dense during the assessment and visibility on the ground was limited in sections. In the past the area was utilized for agricultural purposes and small-scale residential settlement. Recent informal settlement in the larger and surrounding areas has impacted on the original landscape and is rapidly moving closer to the study area. As a result of this and the earlier agricultural activities any cultural heritage sites, features and material that did exist here in the past would have been disturbed or destroyed to a large degree. The proposed sewerline crosses sections that in the past would have been utilized for agricultural purposes, while parts of the line follow existing (dirt) roads & servitudes.

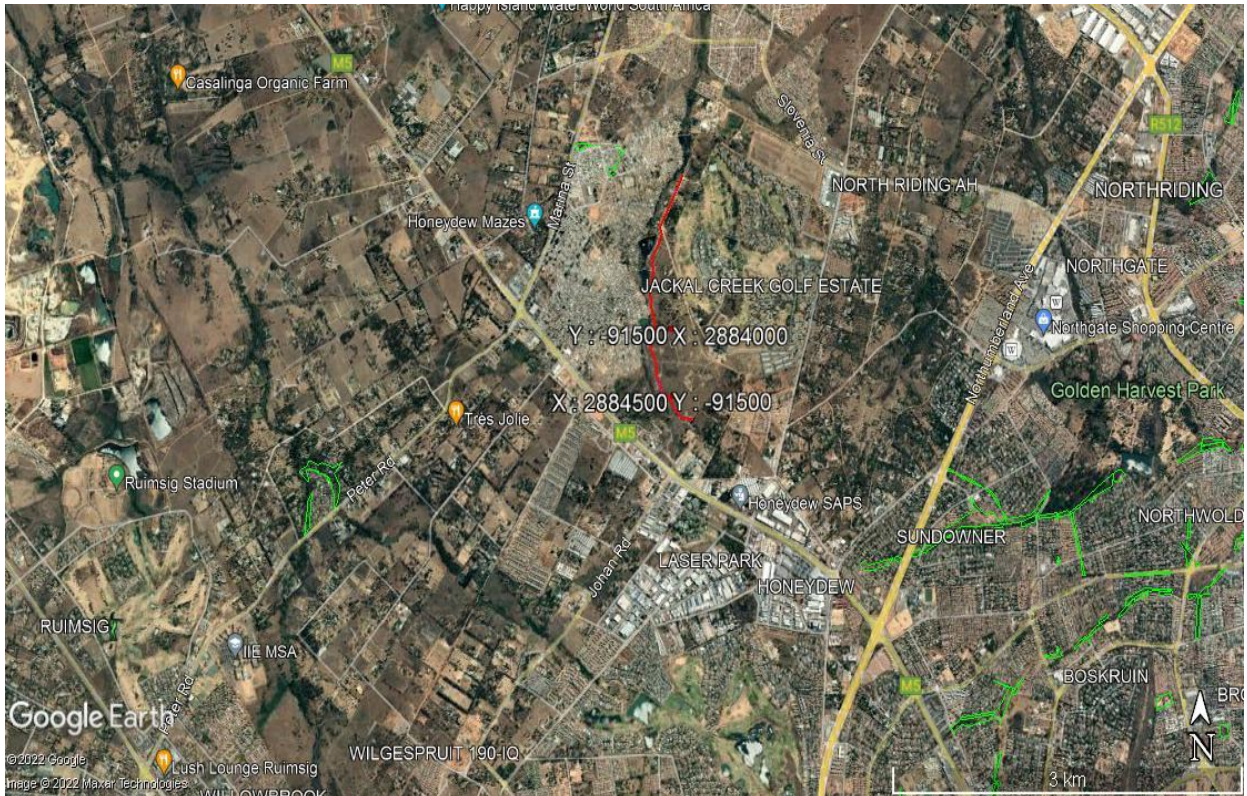


Figure 1: General location of study area & the Sewerline route (Google Earth 2022).



Figure 2: Closer view of the study area and proposed sewerline route (Google Earth 2022).

6. DISCUSSION

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools. In South Africa the Stone Age can be divided in basically into three periods. It is however important to note that dates are relative and only provide a broad framework for interpretation. A basic sequence for the South African Stone Age (Lombard et.al 2012) is as follows:

Earlier Stone Age (ESA) up to 2 million – more than 200 000 years ago
Middle Stone Age (MSA) less than 300 000 – 20 000 years ago
Later Stone Age (LSA) 40 000 years ago – 2000 years ago

It should also be noted that these dates are not a neat fit because of variability and overlapping ages between sites (Lombard et.al 2012: 125).

According to Bergh (1999: p.4) no Stone Age sites or occurrences are known in the direct area, although Later Stone Age sites are known in the larger geographical area (including Zwartkops, Hennopsrivier, Uitkomstgrot, Glenferness, Pietkloof and Zevenfontein).

No Stone Age sites or objects (such as stone tools) were identified in the area. If any Stone Age artifacts are to be found in the area then it would more than likely be single, out of context, stone tools.

The Iron Age is the name given to the period of human history when metal was mainly used to produce metal artifacts. In South Africa it can be divided in two separate phases (Bergh 1999: 96-98), namely:

Early Iron Age (EIA) 200 – 1000 A.D
Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) however indicates that a Middle Iron Age should be included. His dates, which now seem to be widely accepted in archaeological circles, are:

Early Iron Age (EIA) 250 – 900 A.D.
Middle Iron Age (MIA) 900 – 1300 A.D.
Late Iron Age (LIA) 1300 – 1840 A.D.

As with the Stone Age, Bergh (1999) does not indicate any known Early (EIA) Iron Age sites in the specific or larger geographical area, although stone-walled Late Iron Age sites are known to exist in the much larger geographical area (e.g. at Melvillekoppies and Bruma)[Bergh 1999: 6].

Based on Tom Huffman's research it is possible that LIA sites, features or material could be present in the larger area. This will include the Ntsuanatsatsi facies of the Urewe Tradition, dating to between AD1450 and AD1650 (Huffman 2007: 167); the Uitkomst facies of the same tradition (AD1700 to AD1820) [p.171]; Olifantspoort facies of Urewe (AD1500 –

AD1700) [p.191], as well as the Buispoort facies of Urewe, dating to around AD1700 – AD1840 (p.203).

No Iron Age sites, features or cultural material was identified during the assessment of the study area.

The historical age started with the first recorded oral histories in the area. It includes the moving into the area of people that were able to read and write. The first Europeans travelling close to this area were the early travelers Cornwallis Harris in 1836 & Livingstone in 1847. These groups were closely followed by the Voortrekkers after 1844 (Bergh 1999: 12-13). The larger area also saw some activity during Anglo-Boer War (1899-1902) (Bergh 1999: 51; 54).

No historical sites, features or material were identified in the study area during the assessment. During an 2020 assessment in the area one of the owners of many of the properties here), Mr. Pedri van Zyl, indicated that he is not aware of any sites or structures older than 60 years of age in the area. This includes farm houses and graves. According to him a large part of the area used to be farmed and owned by the Van Zyl family (Personal Communication: Mr. Pedri van Zyl – 2020-02-24).

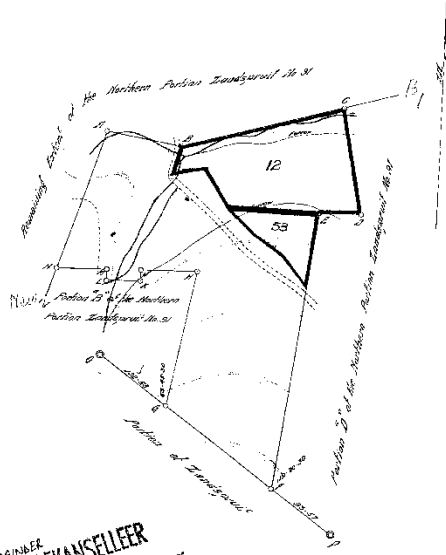
The oldest map for the farm Zandspruit 191IQ (for Portion 7) that could be obtained from the database of the Chief Surveyor General dates to 1911(www.csg.dla.gov.za – CSG Document 10JH9101). It shows that the farm was then known as Zandspruit No.91 and that it was located in the District of Krugersdorp, Ward of Krugersdorp and Province of Transvaal Portion 7 was surveyed in June 1911. The map also indicates that the farm was granted by deed to one Jan Stephanus Botha on the 14th of August 1878.

Form B2.—Diagram Form for a Sub-Division of a Farm or Portion of a Farm.

Full 154 9/11

S.G. No. A.4311//

SIDES		ANGLES		(Y) CO-ORDINATES (x)	
C.A.		C.A.		C.A.	
AB	92.01	A	58.3.55	A	+581.4.00
BC	206.10	B	200.24.00	B	+5800.20
CD	138.94	C	85.16.30	C	+5852.436
DE	51.09	D	78.47.10	D	+5702.00
EF	350.03	E	262.55.10	E	+5723.21
FG	165.84	F	60.53.30	F	+5376.059
GH	171.36	G	116.16.30	G	+5225.330
HV	68.59	H	201.29.50	H	+5642.828
VA	18.32	V	270.0.0	V	+5642.165
AL	41.90	A	50.0.0	A	+5622.108
LM	14.52	L	50.0.0	L	+5627.253
MN	60.50	M	270.0.0	M	+5621.57
NP	182.65	N	71.27.30	N	+5620.332
				O	+5153.70
				P	+5320.05



REMAINDER
 CANCELLED/GEKANSLEER
 Section 203
 12.002.1004
 15.07.70
 2004.12.11

For Geographical
 Details of the
 Boundaries
 See Over

This geographical order
 is registered under
 No. 191
 REGISTRAR'S OFFICE
 REGISTRATION DIVISION IQ



The above Figure lettered A B C D E F G H I J K L M N represents
 16.5 Morgen Square Rods of land, being Portion 12 of the Northern Portion 91
ZANDSPRUIT N^o 91.

as appears on the Diagram S.G. No. A 3624/11 framed by Surveyor J.K. Webber in June 1911
 relating to Deed of Transfer No. 1274/1878 dated 14/5/1878 made in favour of Jesu Stephaan, Betha
 Situate in the District of Krugersdorp Ward Krugersdorp Province of Transvaal. Bounded as indicated above.
 The Beacons were pointed out by L. Goldschmidt, F. LaRoux, F. Dethlefs, P.S. van Wyk & J.K. Webber and have been properly erected according to law.
 Surveyed in June 1911 by me J.K. Webber
 Land-Surveyor.

No. 6017 Examined. The numerical data of this Diagram are sufficiently consistent.
F. Maxwell Edwards
 Examiner of Diagrams.
 Surveyor-General's Office
 Pretoria.

Approved.
J.K. Webber
 Land-Surveyor-General.

This Diagram belongs to Deed of Transfer No. made this day in favour of
Jesu Stephaan, Betha
 Registrar of Deeds.
 Deeds Office
 Pretoria.
1828-4

Published by authority, Grant & Sherr, P.O. Box 2464, Johannesburg—107011.

Figure 3: A 1911 map of Portion 7 of the farm Zandspruit 1911Q (www.csg.dla.gov.za).

Results of the April 2022 study area assessment

No sites, features or material of cultural heritage (archaeological and/or historical) origin or significance were identified in the study area during the physical assessment. The existence of any known sites was also not found in the background research. If any sites did exist here

in the past it would have been largely disturbed or destroyed by recent historical agricultural and earlier development activities in the study and larger area around it.



Figure 4: A view of a section of the area. Note the dense vegetation and the neighboring Informal Zandspruit residential settlement.



Figure 5: A view of a section of the area (taken in 2020).



Figure 6: Another section of the area (also taken in 2020).



Figure 7: A section of the sewerline route follows existing roads and servitudes.



Figure 8: Another view of a section of the study & development area.



Figure 9: General view of the study area and the Zandspruit Informal settlement.



Figure 10: View of the area showing the close proximity of the informal settlement to the sewerline route.



Figure 11: Another section of the study & development area.

Based on the desktop research, previous assessments in the area and the current physical assessment of the Zandspruit Bulk Sewerline there is should be no objection from a Cultural Heritage perspective to the proposed development and WULA.

It should be noted that although all efforts are made to cover a total area during any assessment and therefore to identify all possible sites or features of cultural (archaeological and/or historical) heritage origin and significance, that there is always the possibility of something being missed. This will include low stone-packed or unmarked graves. This aspect should be kept in mind when development work commences and if any sites (including graves) are identified then an expert should be called in to investigate and recommend on the best way forward.

7. CONCLUSIONS AND RECOMMENDATIONS

APelser Archaeological Consulting (APAC cc) was appointed by Bokamoso Landscape Architects & Environmental Consultants CC to conduct a Phase 1 Heritage Impact Assessment for the establishment of the Zandspruit Bulk Sewerline Line on portions of the farm Zandspruit 191IQ in Gauteng. The study area is located in the Sonnedal Agricultural Holdings area and adjacent to the Jackal Creek Golf Estate. The study forms part of the Water Use License Application (WULA) for the Sewerline.

Background research indicates that there are some cultural heritage (archaeological & historical) sites and features in the larger geographical area within which the study area falls.

No sites, features or material of cultural heritage (archaeological and/or historical) origin or significance were identified in the study area during the physical assessment in April 2022. The existence of any known sites was also not found in the background research. If any sites did exist here in the past it would have been largely disturbed or destroyed by recent historical agricultural and earlier development activities in the study and larger area around it.

It should be noted that although all efforts are made to locate, identify and record all possible cultural heritage sites and features (including archaeological remains) there is always a possibility that some might have been missed as a result of grass cover and other factors. The subterranean nature of these resources (including low stone-packed or unmarked graves) should also be taken into consideration. Should any previously unknown or invisible sites, features or material be uncovered during any development actions then an expert should be contacted to investigate and provide recommendations on the way forward.

Based on the current Heritage assessment of the Zandspruit Bulk Sewerline study area and proposed route there is should be no objection from a Cultural Heritage perspective to the proposed development and WULA.

8. REFERENCES

General and closer views of study area location & proposed Zandspruit Sewerline route: Google Earth 2022.

Bergh, J.S. (red.). 1999. **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies**. Pretoria: J.L. van Schaik.

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Republic of South Africa. 1999. **National Heritage Resources Act (No 25 of 1999)**. Pretoria: the Government Printer.

Republic of South Africa. 1998. **National Environmental Management Act (no 107 of 1998)**. Pretoria: The Government Printer.

Chief Surveyor General Database (www.csg.dla.gov.za): Document – 10JH9101.

Personal Communication: Mr. Pedri van Zyl – 2020-02-24.

APPENDIX A: DEFINITION OF TERMS:

Site: A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artifacts, found on a single location.

Structure: A permanent building found in isolation or which forms a site in conjunction with other structures.

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B: DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE

Historic value: Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.

Aesthetic value: Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.

Scientific value: Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period

Social value: Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.

Rarity: Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.

Representivity: Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or 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.

APPENDIX C: SIGNIFICANCE AND FIELD RATING:

Cultural significance:

- Low: A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.
- Medium: Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also any important object found out of context.
- High: Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as of a high importance. Also any important object found within a specific context.

Heritage significance:

- Grade I: Heritage resources with exceptional qualities to the extent that they are of national significance
- Grade II: Heritage resources with qualities giving it provincial or regional importance although it may form part of the national estate
- Grade III: Other heritage resources of local importance and therefore worthy of conservation

Field ratings:

- i. National Grade I significance: should be managed as part of the national estate
- ii. Provincial Grade II significance: should be managed as part of the provincial estate
- iii. Local Grade IIIA: should be included in the heritage register and not be mitigated (high significance)
- iv. Local Grade IIIB: should be included in the heritage register and may be mitigated (high/medium significance)
- v. General protection A (IV A): site should be mitigated before destruction (high/medium significance)
- vi. General protection B (IV B): site should be recorded before destruction (medium significance)
- vii. General protection C (IV C): phase 1 is seen as sufficient recording and it may be demolished (low significance)

APPENDIX D: PROTECTION OF HERITAGE RESOURCES:

Formal protection:

National heritage sites and Provincial heritage sites – Grade I and II

Protected areas - An area surrounding a heritage site

Provisional protection – For a maximum period of two years

Heritage registers – Listing Grades II and III

Heritage areas – Areas with more than one heritage site included

Heritage objects – e.g. Archaeological, palaeontological, meteorites, geological specimens, visual art, military, numismatic, books, etc.

General protection:

Objects protected by the laws of foreign states

Structures – Older than 60 years

Archaeology, palaeontology and meteorites

Burial grounds and graves

Public monuments and memorials

APPENDIX E: HERITAGE IMPACT ASSESSMENT PHASES

1. Pre-assessment or Scoping Phase – Establishment of the scope of the project and terms of reference.
2. Baseline Assessment – Establishment of a broad framework of the potential heritage of an area.
3. Phase I Impact Assessment – Identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
4. Letter of recommendation for exemption – If there is no likelihood that any sites will be impacted.
5. Phase II Mitigation or Rescue – Planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.
6. Phase III Management Plan – For rare cases where sites are so important that development cannot be allowed.