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# PHASE 1 HIA REPORT FOR THE THE PROPOSED NKAMBAKO BULK WATER PIPELINE PROJECT IN NWAMITWA, TZANEEN, IN THE GREATER TZANEEN LOCAL MUNICIPALITY, LIMPOPO.

For:

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REPORT: APAC021/16

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#### **SUMMARY**

APelser Archaeological Consulting (APAC) was appointed by Vulcano Engineering & Environmental Engineering, on behalf of Tangos Consultants and Lepelle Northern Water, to conduct a Phase 1 HIA for the Proposed Nkambako Bulk Water Pipeline Project in Nwamitwa, Tzaneen, in the Greater Tzaneen Local Municipality, Limpopo.

Background research indicates that there are some cultural heritage sites and features in the larger geographical area within which the study area falls. Previous work by the author of this report in the area (for the Nwamitwa Dam and associated infrastructure project) in 2016 provided background information as well (See APAC016/20). The assessment of the specific study area did not identify any sites, features or material of cultural heritage (archaeological and/or historical) origin or significance. This report discusses the results of both the background research and physical assessment.

From a Cultural Heritage perspective it is recommended that the proposed development actions be allowed to continue, taking into consideration the recommendations put forward at the end of the report.

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#### 1. INTRODUCTION

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Background research indicates that there are some cultural heritage sites and features in the larger geographical area within which the study area falls. Previous work by the author of this report in the area (for the Nwamitwa Dam and associated infrastructure project) in 2016 provided background information as well (See APAC016/20). The assessment of the specific study area did not identify any sites, features or material of cultural heritage (archaeological and/or historical) origin or significance.

The client indicated the location and boundaries of the study area and the assessment concentrated on this area and the Water Pipeline Alignment.

#### 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 above-mentioned 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 000m<sup>2</sup> or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m<sup>2</sup>
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

# **Structures**

Section 34 (1) of the mentioned 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 this 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.

# <u>Human remains</u>

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 of otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- 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
- 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 is 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 any study is conducted according to generally accepted HIA practices and aims 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 Nkambako Bulk Water Pipeline Project study area is located between Nwamitwa and Nkambako, near Tzaneen, in the Greater Tzaneen Local Municipality of the Limpopo Province. The proposed pipeline runs between the Nkambako Water Treatment Plant, to the Matshepane Water Reservoir and from there to the Babanana Water Reservoir.

The topography of the study area is in general fairly flat, although there are some rocky outcrops and low hills present (especially at the Water Reservoir locations). The largest sections of the pipeline route follow existing roads (tar and dirt roads) and will be located in the road reserves. Parts of the line follow an existing pipeline route. The line will avoid settlement areas and areas with small-scale agricultural fields, although in some sections it crosses between these areas on tracks that run here.



Figure 1: General location of the Nkambako Bulk Water Pipeline route (Google Earth 2021).



Figure 2: Closer view of the study area and pipeline route (Google Earth 2021).

#### 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 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) the closest known Stone Age sites (MSA) occur near Polokwane. No Stone Age sites or objects (such as stone tools) were identified in the area, and if any were to be found it would most likely be single, out of context, stone tools. To the south west of the study area excavations at Makapansgat attest to ESA occupation in the region, providing evidence of long occupation, initially by Australopithecus africanus from approximately 3.3 million years B.P. The LSA is represented in the wider area by, for example, the presence of San rock paintings and engravings in the Mohlapitse River valley in

the Wolkberg to the south-west of the study area. Studies in the Kruger National Park to the east have documented numerous Middle and Late Stone Age sites (Fourie 2016).

# No Stone Age sites or material (stone tools) were identified in the study area during the February 2021 field work.

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

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Early Iron Age (EIA) 200 – 1000 A.D.
Late Iron Age (LIA) 1000 – 1850 A.D.
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Huffman (2007: xiii) indicates that a Middle Iron Age should be included. His dates, which are widely accepted in archaeological circles, are:

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Early Iron Age (EIA) 250 – 900 A.D.
Middle Iron Age (MIA) 900 – 1300 A.D.
Late Iron Age (LIA) 1300 – 1840 A.D.
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The closest know Iron Age sites to the area are those of Silver Leaves (EIA) and Eiland (MIA) close to Tzaneen south of the study area (Bergh 1999: 6-7). Based on Tom Huffman's research it is possible that Iron Age sites, features or material could be present in the larger area. This will include the Silver Leaves facies of the Urewe Tradition, dating to between AD280 and AD450 (Huffman 2007: 167); the Mzonjani facies of the same tradition (AD450 to AD750 (p.127); the Icon facies of Urewe (AD1300 – AD1500 (p.183); the Eiland facies of the Kalundu Tradition dating to between AD1000-AD1300 (p.227); the Tavhatshena facies of Kalundu (AD1450-AD1600 (p.263) and the Letaba facies of the same tradition dating to between AD1600 & AD1840 (p.267).

# No Iron Age occurrences were identified in the study area during the assessment.

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 traveler De Buys in 1821 and 1825. They were followed by the Voortrekkers from circa 1840 onwards (Bergh 1999: 12-14). During the Anglo-Boer War (1899-1902) the closest battle or skirmish in the larger geographical area was at Houtboschberg on 30 April 1901 (Bergh 1999: 54).

The wider area is famous for the residence of the Rain Queen Modjadj (of the Balobedu people0, whose ethnography was described in some detail from the 1930s onwards by social anthropologists Eileen Jensen Krige and Jacob Daniell Krige and whose culture around rain-making continues to be a focus of such studies. Other history of the wider area includes the 1895 war between Chief Makgoba and the ZAR, the 1889 establishment of the famous postal coach service from Pietersburg via Haenertsburg to Leydsdorp by Doel Zeederberg and the passage of the Anglo-Boer War including a clash between the Bushveldt Carbineers

(BVC) and the Letaba Commando at W.H. Viljoen's farm Duiwelskloof (to the south west of the study area) in August 1901 (Fourie 2016).

# No historical sites, structures or remains were identified during the February 2021 assessment.

The author of this report undertook a detailed assessment of the general and larger area in 2016 for the proposed Nwamitwa Dam Development project, with a 2009 by Van Schalkwyk for the same dam also providing background information for the 2016 study. Although a number of cultural heritage sites (both archaeological and recent historical – including grave sites) were identified in the area during these studies, none of these are locate close to the Nkambako Bulk Water Pipeline route.

Van Schalkwyk's work provides some background. From a heritage point of view he concluded that the project area is largely under researched, which resulted in a near absence of available information. Only a few areas in the larger region have been subjected to intensive surveys. The motivation for these was either self-initiated research of for developmental purposes. With regard to the former, there was, for example Evers (1975, 1982) who did some work on Iron Age settlement in the Hans Merensky Nature Reserve, east of the project area. Other self-initiated research, covering large areas, was that of Pistorius (1989) on the Iron Age in the Phalaborwa region and Meyer (1986), who did an intensive survey of the Kruger National Park, documenting hundreds of Iron Age and historic sites. Surveys conducted for various developments in the larger project area included the following: the original survey for the Namitwa Dam (then known as the Janetsi Dam - Van Schalkwyk 1996a), the Letsitele (Van Schalkwyk 1996b) and Thapane (Van Schalkwyk 2001) dams, township development in Letsitele (Van Schalkwyk 2000) and the Project Olympia mining area (Van Schalkwyk 1999). According to Dr.van Schalkwyk it was however possible to determine that the Letaba River Valley falls within a region with a high potential for heritage sites, but also to indicate the range of sites that could expected in the project area (Pelser 2016: 15-16).

Twenty-six (26) sites of cultural significance were identified during the 2009 Impact Assessment by Van Schalkwyk. These included Stone Age, Iron Age and more recent historical times (including graves and graveyards). Of these, 16 occurred within the dam basin study area, with 10 in proximity of the road alignments or bulk water supply system. These sites are representative of all time periods of the past. Pelser identified an additional 3 sites during his 2016 study, dating to the Iron Age and more recent historical ages (Pelser 2016).

It is therefore clear from these earlier studies that there is a potential of cultural heritage sites being present in the specific study and larger geographical area.

#### Results of the study area assessment

As indicated earlier 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 proposed Nkambako Bulk Water Pipeline follows mostly existing roads and servitudes and the impact of the development of the line will therefore be minimal in terms of the surrounding landscape and any possible historical sites or structures (such as buildings or graves). Parts of the line also follow existing old pipeline routes and these areas have also been impacted as a result.

The line will run in between formal and informal settlements in portions but once again there will be no impacts on any potential heritage sites and structures. The line runs from the Nkambako Water Treatment Plant, to the Matsephane Water Reservoir and from there link up to the Babanana Water Reservoir. These areas have also been impacted in the past and the possibility of any sites, features or material of cultural heritage (archaeological and/or historical) origin or significance being present here is unlikely.

A small section of the intended line route could not be assessed in detail due to issues with access. The vegetation in this section was also very dense at the time of the field work. Should any sites be identified here during the development actions then a Heritage Specialist should be called in to investigate and provide recommendations on the way forward.

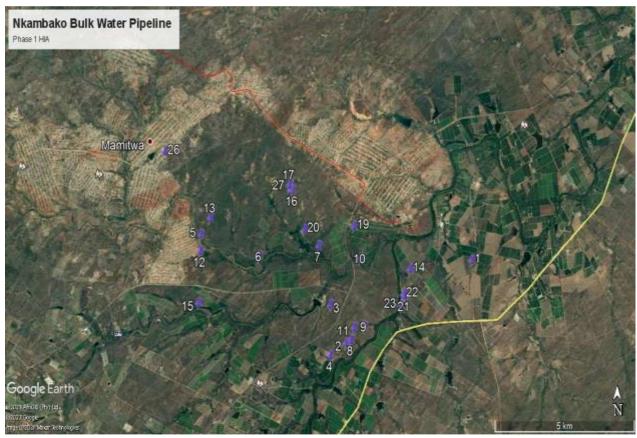


Figure 3: Location of the Nkambako Bulk Water Pipeline (in red) in relation to known Cultural Heritage Sites identified during previous assessments (Google Earth 2021).



Figure 4: A view of the Nkambako Water Treatment Plant starting point.



Figure 5: The pipeline route runs from here through to the main road.



Figure 6: A view of a section of the line route. The vegetation here was very dense.



Figure 7: A view of a section of the line route where it links up with the main tar road in Nkambako.



Figure 8: The line follows the tar road servitude to its next turning point.



Figure 9: A view of a section of the line route close to its intersection with the R529 and the dirt road to the Matsephane Water Reservoir.



Figure 10: Another view down the line route towards Matsephane.



Figure 11: Another view of the route section towards Matsephane.



Figure 12: General view of the general landscape through which the line runs.



Figure 13: A view showing an existing pipeline route marker.



Figure 14: A view of the line route close to Matsephane Water Reservoir.



Figure 15: A view of the line route running up to the Matsephane Water Resevoir.



Figure 16: View of Matsephane Water Reservoir.



Figure 17: A section of the line route from Matsephane follows a tar road servitude before it turns toward Babanana.



Figure 18: A view of a section of the line route following an existing dirt road again.



Figure 19: Another view of the route.



Figure 20: From here the line follows a route that was difficult to access & with dense vegetation.



Figure 21: A section of the line route close to Babanana runs past settlement areas again.



Figure 22: Section of the line route close to Babanana Water Reservoir.



Figure 23: View of the line route up to the Babanana Water Reservoir.

Finally, 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

In conclusion it is possible to say that the Phase 1 HIA for the Proposed Nkambako Bulk Water Pipeline Project in Nwamitwa, Tzaneen, in the Greater Tzaneen Local Municipality, Limpopo was conducted successfully.

Background research indicates that there are some cultural heritage sites and features in the larger geographical area within which the study area falls. Previous work by the author of this report in the area (for the Nwamitwa Dam and associated infrastructure project) in 2016 provided background information as well.

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 proposed Nkambako Bulk Water Pipeline follows mostly existing roads and servitudes and the impact of the development of the line will therefore be minimal in terms of the surrounding landscape and any possible historical sites or structures (such as buildings or graves). Parts of the line also follow existing old pipeline routes and these areas have also been impacted as a result.

The line will run in between formal and informal settlements in portions but once again there will be no impacts on any potential heritage sites and structures. The line runs from the Nkambako Water Treatment Plant, to the Matsephane Water Reservoir and from there link up to the Babanana Water Reservoir. These areas have also been impacted in the past and the possibility of any sites, features or material of cultural heritage (archaeological and/or historical) origin or significance being present here is unlikely.

A small section of the intended line route could not be assessed in detail due to issues with access. The vegetation in this section was also very dense at the time of the field work. Should any sites be identified here during the development actions then a Heritage Specialist should be called in to investigate and provide recommendations on the way forward.

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.

Finally, from a Cultural Heritage point of view the proposed Nkambako Bulk Water Pipeline Project should be allowed to continue taking into consideration the recommended measures above.

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General and Closer Views of Study Area Location & Pipeline route: Google Earth 2021.

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#### **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.

**Aestetic 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.