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REPORT NO.: P 02/B810/00/0608/02 Annexure J

GROOT LETABA RIVER WATER DEVELOPMENT PROJECT (GLeWaP)

Environmental Impact Assessment

(DEAT Ref No 12/12/20/978)

ANNEXURE J: HERITAGE RESOURCES SPECIALIST STUDY

MARCH 2010

J A van Schalkwyk
National Cultural History
P O Box 28088, Sunnyside
0132

DECLARATION OF CONSULTANTS' INDEPENDENCE

Dr J A van Schalkwyk, who is a cultural heritage management specialist from the National Cultural History Museum, Pretoria, is an independent consultant to ILISO Consulting (Pty) Ltd (for the Department of Water Affairs and Forestry), i.e. he has no business, financial, personal or other interest in the activity, application or appeal in respect of which he was appointed other than fair remuneration for work performed in connection with the activity, application or appeal. There are no circumstances that compromise the objectivity of the specialist performing such work.

REPORT DETAILS PAGE

Project name:	***Groot Letaba River Water Development Project***
Report Title:	***Environmental Impact Assessment Appendix J: Heritage Resource Specialist Study***
Author:	***Dr J A van Schalkwyk***
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SPECIALIST
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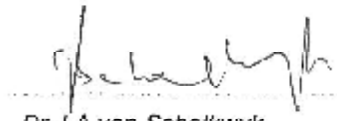
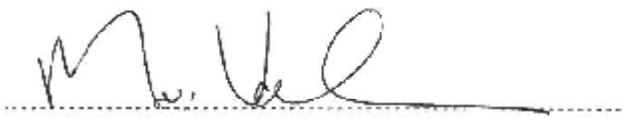


Dr J A van Schalkwyk
Study Leader

ENVIRONMENTAL ASSESSMENT PRACTIONER
Approved for ILISO Consulting (Pty) Ltd by:



Dr Martin van Veelen
Project Director

EXECUTIVE SUMMARY

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the area where the proposed Nwamitwa dam, the road re-alignments and bulk water distribution network are to be developed in a section of the Groot Letaba River.

The survey identified 26 sites of cultural significance located in the above mentioned development areas as well as the dam basin:

- Five Stone Age sites;
- Nine Iron Age sites;
- Four sites dating to historic times; and
- Eight sites containing graves.

All of the identified sites are judged, according to Section 7 of the National Heritage Resources Act, No. 25 of 1999, to have Grade III significance. The implication of this is that there are no sites of cultural heritage significance that would prevent the construction of the dam and the associated infrastructure from taking place. However, in accordance with Section 28 of the National Heritage Resources Act, No. 25 of 1999, mitigation measures should be implemented for the identified sites, after obtaining of the required permits from SAHRA and other Departments, e.g. the Department of Health. Based on what was found and its evaluation, the following is recommended:

- Examples of the Stone Age tools occurring in the area should be collected as they are identified, ideally when mitigation of the archaeological sites take place, i.e. when the archaeologists are active in the area. This collection can then be used in a local display on the prehistory of the area, or by local schools in their educational activities.
- Documentation (mapping and photographing) and limited excavations should be done on the identified Late Iron Age sites.
- Documentation (mapping and photographing) of some of the identified historic structures should be done.

- Workshops should be held with members of local communities in order to identify places to which oral traditions are attached or which are associated with living heritage, e.g. initiation sites, sacred sites, battlefields, etc.
- Graves should be relocated only after consultation with descendants.
- Workshops should be held by the archaeologists/heritage consultants with the various construction crews, at least on 'section head' level, in order to sensitise them about what to expect and how to act if something is uncovered.
- A direct link should be established by the developers with the archaeologist, who should be on call at all times, in the event that something is uncovered.

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ABBREVIATIONS

DWAF	Department of Water Affairs and Forestry
GLeWaP	Groot Letaba River Water Development Project
OA	Options Analysis
PCMT	Project Co-ordination and Management Team
PSP	Professional Service Provider
ADRC	Archaeological Recording Centre
ASAPA	Association of Southern African Professional Archaeologists
CSG	Chief Surveyor General
NASA	National Archives of South Africa
NHRA	National Heritage Resources Act
SAHRA	South African Heritage Resources Agency

1. STUDY INTRODUCTION

1.1 BACKGROUND TO PROJECT

The Department of Water Affairs and Forestry (DWAF) is currently undertaking an Environmental Impact Assessment (EIA) to investigate the environmental feasibility of raising the Tzaneen Dam, the construction of a storage dam in the Groot Letaba River and associated bulk water infrastructure (water treatment, pipelines, pump stations, off-takes and reservoirs) in the Limpopo province. The EIA is being undertaken by ILISO Consulting with Zitholele Consulting providing the public participation support. The EIA is being undertaken according to the EIA Regulations under Section 24 (5) of the National Environmental Management Act (NEMA), (Act No 107 of 1998) as amended in Government Notice R385, 386, 387 – Government Gazette No. 28753 of 21 April 2006.

ILISO Consulting has appointed J A van Schalkwyk to undertake the Heritage Impact Assessment as part of the EIA.

1.2 STRUCTURE OF THIS REPORT

This specialist study will be undertaken in compliance with regulation 33(2) of GN 385. **Table 1.1** indicates how Regulation 33 of GN385 has been fulfilled in this report.

Table 1.1: Indication of ompliance with Regulation 33 in this report

Regulatory Requirements	Section of Report
(a) The person who prepared the report; and the expertise of that person to carry out the specialist study or specialised process.	Chapter 2
(b) a declaration that the person is independent	Page i
(c) an indication of the scope of, and the purpose for which, the report was prepared	Chapter 3
(d) a description of the methodology adopted in preparing the report or carrying out the specialised process	Chapter 4
(e) a description of any assumptions made and any uncertainties or gaps in knowledge	Chapter 5
(f) a description of the findings and potential implications of such findings on the	Chapter 7

impact of the proposed activity, including identified alternatives, on the environment	
(g) recommendations in respect of any mitigation measures that should be considered by the applicant and the competent authority	Chapter 8
(h) a description of any consultation process that was undertaken during the course of carrying out the study	Chapter 9
(i) a summary and copies of any comments that were received during any consultation process	Chapter 10
(j) any other information requested by the competent authority.	Chapter 11

2. PROJECT TEAM

Johan van Schalkwyk of the National Cultural History Museum, Pretoria, undertook the heritage impact assessment. He has a D Litt et Phil degree in Anthropology. He specialises in Heritage Impact Assessments and has completed Heritage Impact Assessments for developments such as dams, power stations, transmission power lines, urban developments, roads, pipe lines and mining activities. He is a member of ASAPA (Registration No. 164) and holds the accreditation of Principal Investigator for Iron Age, Colonial Period and Industrial Heritage.

3. PURPOSE OF REPORT AND SCOPE OF WORK

3.1 PURPOSE OF THE REPORT

The National Cultural History Museum, Pretoria, was appointed by ILISO Consulting (Pty) Ltd., to identify, evaluate and document sites, objects and structures of cultural significance found within the boundaries of the area in which it is planned by Department of Water Affairs and Forestry (DWAF) to develop a new dam and bulk water distribution network. The dam is provisionally named the Nwamitwa Dam, and is to be located in a section of the Groot Letaba River, Limpopo Province.

The aim of this report is to draw up a comprehensive mitigation and conservation management plan for heritage sites located in the area of the proposed dam, as well as for the bulk water distribution network. This plan is to be developed and implemented in different phases. It would start off by a Phase 1 survey, in accordance with the requirements of Section 38(3) of the National Heritage Resources Act (Act 25 of 1999). The second Phase would be the implementation of the various recommended mitigation measures.

3.2 SCOPE OF WORK

In order to achieve the stated aim, the following objectives were developed

- Identify possible archaeological, cultural and historic sites within the proposed development areas;
- 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.

4. METHODOLOGY

4.1 PRELIMINARY INVESTIGATION

The study began with a survey of available published as well as unpublished information. These sources were reviewed with the aim to determine the potential of heritage sites occurring in the area. In this regard, various anthropological, archaeological and historical sources, as well as survey reports, were consulted - see the list of references below.

Various databases were also consulted. Available information, taken up in the *Data Recording Centre*, housed at the National Cultural History Museum, was accessed. This, in essence is also the information housed by SAHRA. Apart from this, the various farms were also accessed in the NASA and CSG databases.

Aerial photographs and topocadastral and other maps were also studied - see the list of references below.

4.1.1 Existing knowledge base

From a heritage point of view, the project area is by and large very under researched, resulting 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 were either self initiated research of for developmental purposes.

With regard to the former, there is, 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, is 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 done with the aim of some development in mind in the project area include 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).

However, based on the above information, it was possible not only to determined that the Letaba River valley falls in a region with a high potential for heritage sites, but also to indicate the range of sites to be expected in the project area. The distribution of these sites is indicated in **Figure 4.1**.

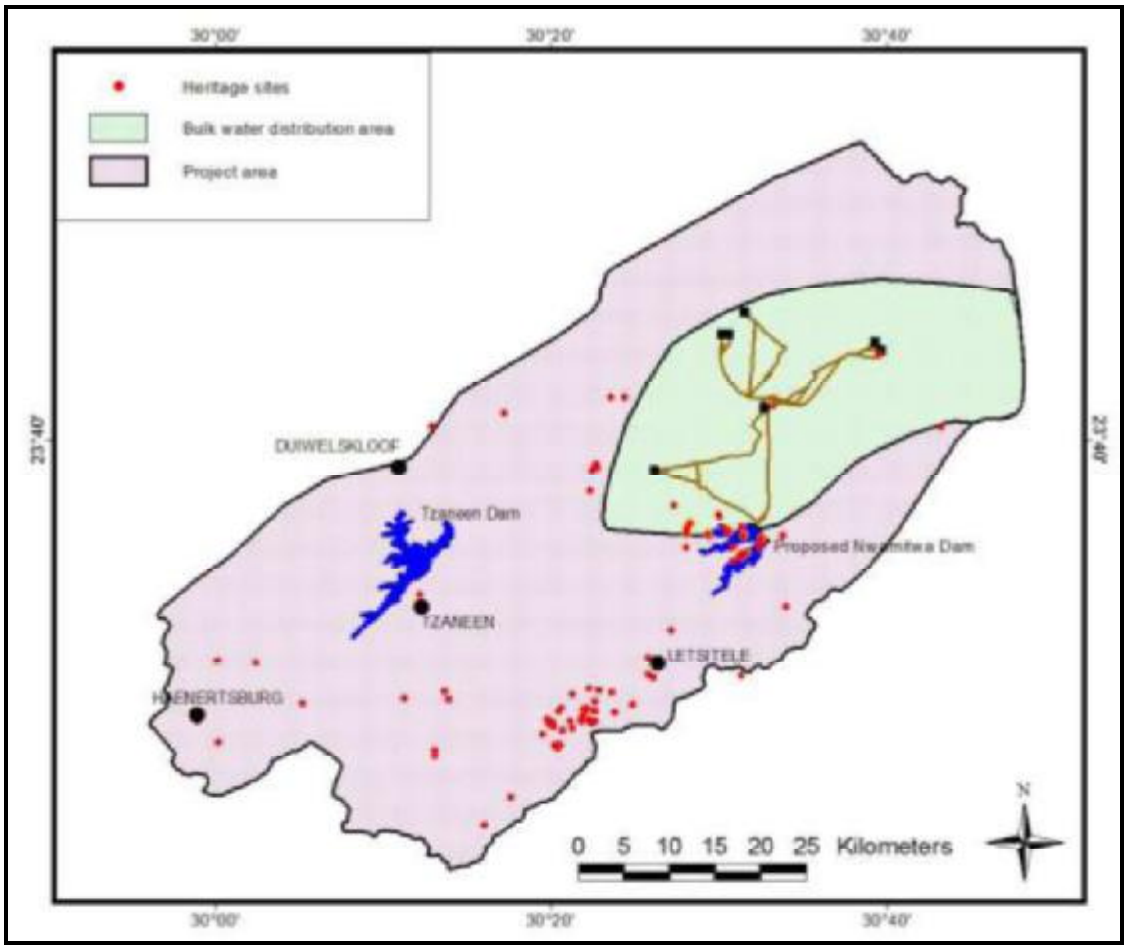

Figure 4.1: Map showing the distribution of known sites of heritage significance in the project area (n = 112).

4.2 FIELD SURVEY

The field survey was done according to generally accepted archaeological practices, and was aimed at locating all possible sites, objects and structures. The area that had to be investigated was identified by ILISO Consulting by means of maps.

The information that was obtained from the literature during the preliminary study was plotted on a map and was used to develop a strategy by which the area could be

accessed systematically. The dam basin was surveyed on both sides of the river by walking across it in a number of parallel transects.

As the development for the bulk water distribution area is linear in nature, the proposed routes that were to be followed were travelled as closely as possible.

The various alternative road re-alignments were not as clearly identified as the water distribution routes, and therefore the affected areas were reviewed in a more general manner.

Engagement with Interested and Affected Parties (I&APs) forms an integral component of the EIA process. I&APs have an opportunity at various stages throughout the EIA process to gain more knowledge about the proposed project, to provide input into the process and to verify that their issues and concerns have been addressed. The EIA team consulted with Mr Ramalepe during the Heritage Resources Study fieldwork and it was agreed that detailed community consultation to identify next of kin etc. for the graves of concern would take place during the implementation of the project. This process is to be extended to also include other aspects such as the identification of places to which oral traditions are attached or which are associated with living heritage, e.g. initiation sites, sacred sites, battlefield

During the survey, a problem was encountered with the dense grass and shrub cover that resulted after good seasonal rains in the area (**Figure 4.2**). This made the detection of archaeological sites difficult, as surface features were in most cases obscured.

Figure 4.2: Photograph showing the dense vegetation encountered in most places during the field survey.

4.3 DOCUMENTATION

All sites, objects and structures that are identified in the preliminary investigation and field survey, were documented according to the general minimum standards accepted by the archaeological profession. Coordinates of individual localities are determined by means of the *Global Positioning System* (GPS)[1] and plotted on a map. This information is added to the description in order to facilitate the identification of each locality.

[1] According to the manufacturer a certain deviation may be expected for each reading. Care was, however, taken to obtain as accurate a reading as possible, and then to correlate it with reference to the physical environment before plotting it on the map.

4.4 IMPACT ASSESSMENT

The key issues identified during the Scoping Phase informed the terms of references of the specialist studies. Each issue consists of components that on their own or in combination with each other give rise to potential impacts, either positive or negative and from the project onto the environment or from the environment onto the project. In the EIA the significance of the potential impacts will be considered before and after identified mitigation is implemented.

A description of the nature of the impact, any specific legal requirements and the stage (construction/decommissioning or operation) will be given. Impacts are considered to be the same during construction and decommissioning.

The following criteria will be used to evaluate significance:

Nature
The nature of the impact will be classified as positive or negative, and direct or indirect.

Extent and location
Magnitude of the impact and is classified as:

- **Local**: the impacted area is only at the site – the actual extent of the activity
- **Regional**: the impacted area extends to the surrounding, the immediate and the neighbouring properties.
- **National**: the impact can be considered to be of national importance.

Duration
This measures the lifetime of the impact, and is classified as:

- **Short term**: the impact will be for 0 – 3 years, or only last for the period of construction.
- **Medium term**: three to ten years.
- **Long term**: longer than 10 years or the impact will continue for the entire operational lifetime of the project.

- **Permanent**: this applies to the impact that will remain after the operational lifetime of the project.

Intensity

This is the degree to which the project affects or changes the environment, and is classified as:

- **Low**: the change is slight and often not noticeable, and the natural functioning of the environment is not affected.
- **Medium**: The environment is remarkably altered, but still functions in a modified way.
- **High**: Functioning of the affected environment is disturbed and can cease.

Probability

This is the likelihood or the chances that the impact will occur, and is classified as:

- **Low**: during the normal operation of the project, no impacts are expected.
- **Medium**: the impact is likely to occur if extra care is not taken to mitigate them.
- **High**: the environment will be affected irrespectively; in some cases such impact can be reduced.

Confidence

This is the level knowledge/information, the environmental impact practitioner or a specialist had in his/her judgement, and is rated as:

- **Low**: the judgement is based on intuition and not on knowledge or information.
- **Medium**: common sense and general knowledge informs the decision.
- **High**: Scientific and or proven information has been used to give such a judgement.

Significance

Based on the above criteria the significance of issues will be determined. This is the importance of the impact in terms of physical extent and time scale, and is rated as:

- **Low**: the impacts are less important, but may require some mitigation action.
- **Medium**: the impacts are important and require attention; mitigation is required to reduce the negative impacts
- **High**: the impacts are of great importance. Mitigation is therefore crucial.

Cumulative Impacts

The possible cumulative impacts will also be considered.

Mitigation

Mitigation for significant issues will be incorporated into the EMP for construction.

Table 4.1: Example of Impact Assessment Table

Description of potential impact		
Nature of impact		
Legal requirements		
Stage	Construction and decommissioning	Operation
Nature of Impact		
Extent of impact		
Duration of impact		
Intensity		
Probability of occurrence		
Confidence of assessment		
Level of significance before mitigation		
Mitigation measures (EMP requirements)		N/A
Level of significance after mitigation		N/A
Cumulative Impacts		

Comments or Discussion	

5. DEFINITIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE

5.1 DEFINITIONS

The National Heritage Resources Act (Act No. 25 of 1999) defines the heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate to include:

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds, including-
  - ancestral graves;
  - royal graves and graves of traditional leaders;
  - graves of victims of conflict;
  - graves of individuals designated by the Minister by notice in the Gazette;
  - historical graves and cemeteries; and
  - other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- sites of significance relating to the history of slavery in South Africa;
- movable objects, including-
  - objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;objects to which oral traditions are attached or which are associated with living heritage;
  - ethnographic art and objects;
  - military objects;
  - objects of decorative or fine art;
  - objects of scientific or technological interest; and

- books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

According to the National Heritage Resources Act, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of-

- its importance in the community, or pattern of South Africa's history;
- its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
- sites of significance relating to the history of slavery in South Africa.

- Sites regarded as having low significance have already been recorded in full and require no further mitigation. Sites with medium to high significance require further mitigation.
- Archaeological sites: any area of land containing artefacts, ecofacts, features and structures in any combination of the above.
- Isolated occurrences: findings of artefacts or other remains located apart from archaeological sites. Although these are noted and samples are collected, it is not used in impact assessment and therefore do not feature in the report.
- Traditional cultural use: resources which are culturally important to people.

- The latitude and longitude of archaeological sites are to be treated as sensitive information by the developer and should not unduly be disclosed to members of the public

5.2 GAPS IN KNOWLEDGE

The possibility that other sites might occur in the study area is very good, especially in the category usually referred to as living heritage, meaning the intangible aspects of inherited culture (NHRA No. 25, 1999, Section 2 (xxi). Sites such as these can usually only be identified with the assistance of the local communities. As time did not allow for an investigation into this aspect, detailed information is still lacking and it is recommended that it is covered during the full EIA survey.

6. EXISTING ENVIRONMENT

At present, 26 sites of cultural significance were identified. Of these, 16 occur within the dam basin study area, and 10 in proximity of the road alignments or bulk water supply system. These sites are representative of all time periods of the past and, in order to understand their significance, they need to be contextualised.

What is presented below is simply a short overview of past human occupation in the region. It is done in order for the reader to gain insight into the complexity of the cultural resources that might be found in the area.

6.1 ARCHAEOLOGICAL SEQUENCE

6.1.1 Stone Age

That Stone Age people occupied the Letaba River valley and the area of the proposed dam is confirmed by the occurrence of stone tools dating to the Early, Middle and Late Stone Age. However, all the finds are classified as isolated surface occurrences. Consequently, such finds are judged to have a low significance and they require no mitigation measures. A case in point is the large number of bored stones, dating to the Later Stone Age, that were ploughed out near the Letaba River on the farm Riverside of Mr J Barnard.

Unfortunately, no primary (stratified/sealed) sites are known to exist in the survey area. The closest stratified site, known as Bushman Rock Shelter, is located at Echo Caves north of Ohrigstad. Here, early humans lived, discontinuously, for thousands of years, from the Early Stone Age, through what is known as the Middle Stone Age, and well into the Later Stone Age.

6.1.2 Iron Age

The term Iron Age is used by African archaeologists to refer to the advent of subsistence patterns based on farming and follow directly on the Stone Age. The Iron Age is characterised by the production and use of metals as well as characteristic types of pottery.

Iron Age people moved into southern Africa by c. AD 200, entering the area either by moving down the coastal plains, or by using a more central route. It seems more likely that the first option was what brought people into the study area. From the coast they followed the various rivers inland. Being cultivators, they preferred the rich alluvial soils to settle on.

Early Iron Age occupation of the region seems to have taken place on a significant scale and at least three different phases of occupation have been identified. One of the earliest known dated sites are located near Tzaneen. Called Silver Leaves, these people, belonging to the Kwale Branch of the Early Iron Age (Huffman 2007) seems to be the oldest Iron Age site discovered so far in southern Africa. As yet, no sites that can be related to this tradition have identified in the study area.

However, other sites dating somewhat later were also identified. Preliminary identification of the pottery indicates that it belong to the Doornkop phase of the Early Iron Age, and should have a date of between AD 600 – 900. These are the same group of people that produced the remarkable clay masks found near Lydenburg in the 1960s.

These settlements seems to have been followed at a slightly later date by settlements linked to the Eiland Facies of the Middle Iron Age (c. AD 1000-1200).

Early Iron Age sites are our only source of evidence for the occupation of the area by early farming communities. As such these sites are important and they are viewed to have medium significance, which implies that they would require mitigation measures.

Over time these communities were replaced by people belonging to groups recognisable in modern times, e.g. Sotho-speakers, for example the Lobedu, Phalaborwa, Letswalo and Kgaga, and TsiTsonga-speakers, such as the Nkuna.

Although located much further to the north, the Venda-speakers also had some influence in the study area, especially amongst the Lobedu.

As this was a period of population movement, conflict and change, it in large part set the scene for the current population situation in the country, a situation that was exploited by the policy of separate development in the sense of the creation of various homelands. Considering the time period that they were occupied, they also

feature in the early historic period. These sites are therefore viewed to have medium significance and would require mitigation.

Based on the occurrence of specific resources, some interesting though not unique industries developed that was aimed at the exploitation of local resources. Two examples are the copper and iron smelting at Phalaborwa and the extraction of salt at the Eiland mineral springs.

Figure 6.1: Clay pot found buried in a termite mound. It is used to catch the termites that are eaten as a source of protein. Decoration on this specific pot shows that it belongs to the Letaba tradition, implying that it can be as much as 300 years old.

6.1.3 Historic period

The historic period started c. 1840s, with the arrival of the first white hunters, missionaries and prospectors in the area.

The discovery of gold at what was to become Leydsdorp, set the scene for outsiders to enter the area in large numbers. However, the gold did not last long and, after a heyday lasting approximately 10 years, the little town was largely forgotten.

As time went by, the area was divided into farms. This, of course, gave rise to conflict between the whites entering the area and the local Sotho and Tsonga communities. Soon conflict broke out, e.g. against the *Kgoši* Makgoba, occupying Magoebas Kloof, and the ZAR government.

Still, development was very slow, with a few farms occupied by the early 20th century. It was only in the 1950s, after the success Dr Siegfried Anneke had with the fight against malaria that population numbers increased significantly.

6.2 ETHNO-HISTORICAL OVERVIEW

Two different language groups are found in the study and surrounding area: Sotho-speakers and Tsonga-speakers.

The Tsonga form the main group in the study area. Their origin is in Mozambique. Due to the wars in the coastal areas of Natal and Mozambique during the 1820-30s, they entered the (former) Transvaal, first in small groups and later, by the 1890's, due to Portuguese aggression, in larger groups with recognized chiefs. They were later given formal 'locations' to settle in, which, during the days of separate development under the previous government, became the homeland of Gazankulu.

To the north and east of the study area is found the Sotho-speakers, of which the Lobedu people is the best known because of their famous 'rain-queen'. They have a strong link to the Venda located more to the north. Other smaller Sotho groups such as the Thlabine and Sekororo are found to the west of the study area.

The map by Van Warmelo (1935) below, illustrated the diversity of people found in the region. It is also significant that it shows largely a lack of people staying in the study area (**Figure. 6.2**). This situation has changed drastically over the last few decades (**Figure 6.3**), largely as a result of the process of homeland development instituted by the previous government. As part of the process of homeland consolidation, people of Tsonga/Shangaan descent were forcibly removed from other areas and relocated in this area, which was to be part of what was planned to become an independent republic called Gazankulu.

Figure 6.2: **Map showing the lack of population (black people) in the survey area (red ellipse) during the 1930s. One dot represents 10 taxpayers (Map: Van Warmelo 1935).**

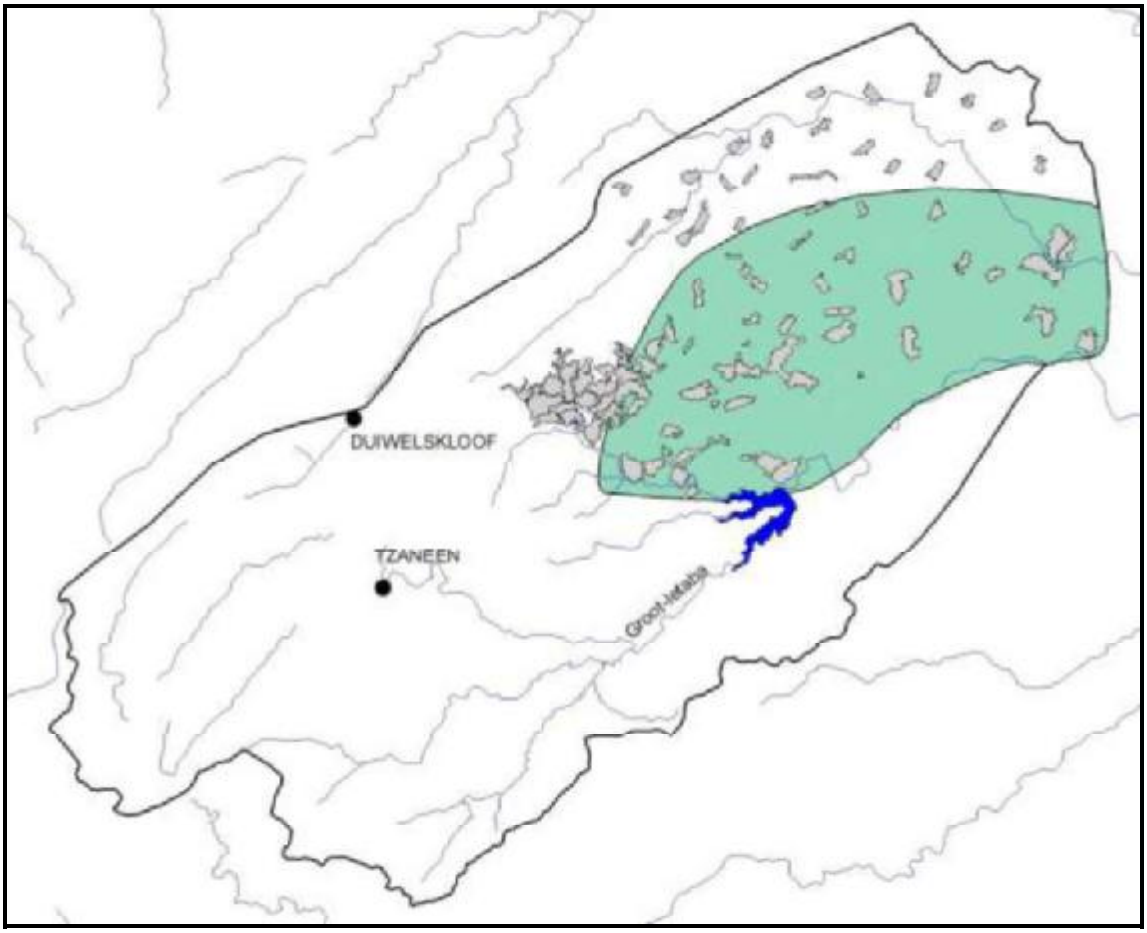

Figure 6.3: Map showing the current population, as expressed by the number of villages in the region.

6.3 IDENTIFIED SITES

The survey produced 26 sites. These are categorised according to time period, as well as to significance

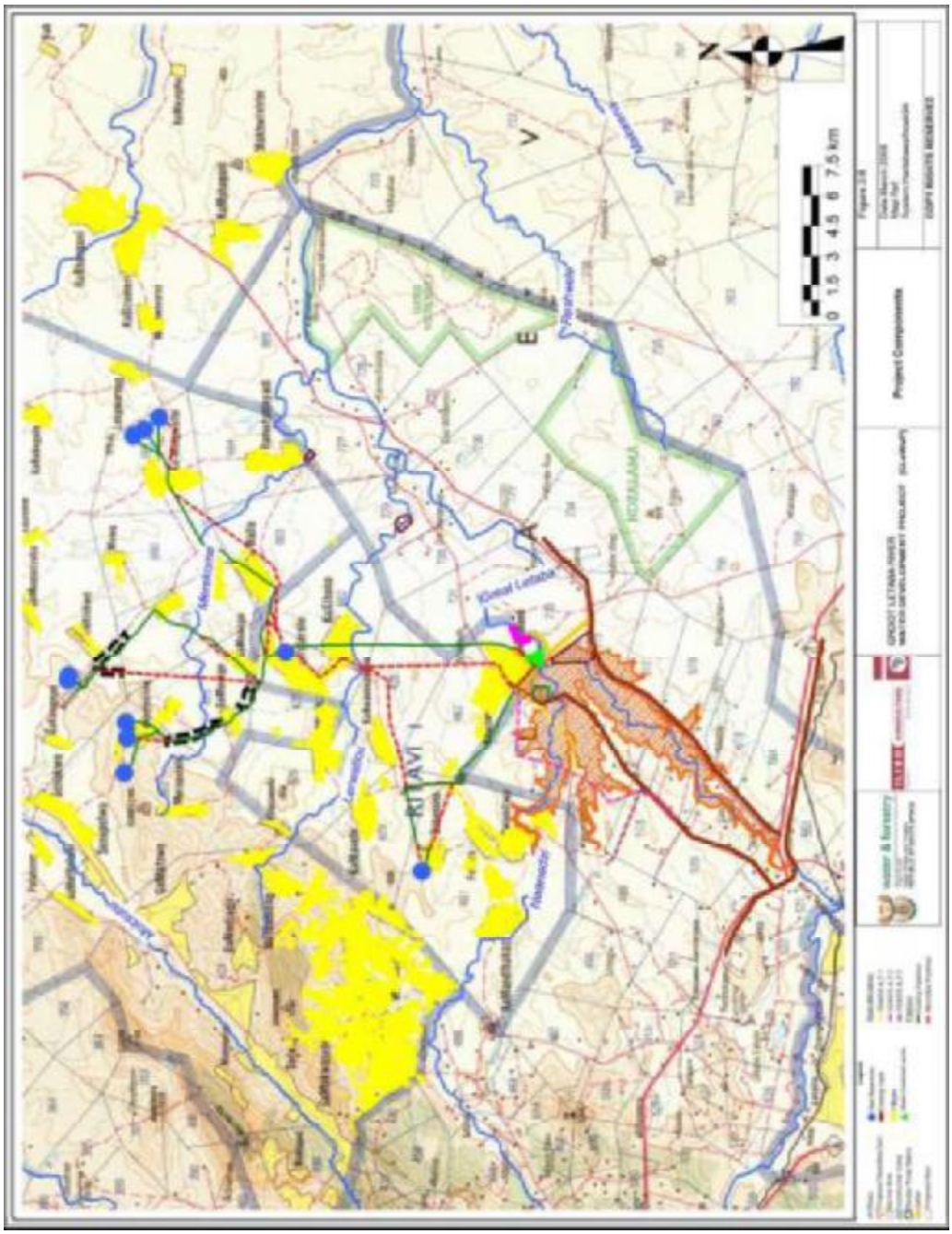

Figure 6.4: Map showing the location of the different project components.

6.3.1 Tzaneen Dam

No sites, features or objects of cultural significance are known to exist in the immediate vicinity of the Tzaneen dam and, therefore, the raising of the dam wall will have no impact on any such sites.

6.3.2 Namitwa Dam

(a) Stone Age

Three sites dating to the Stone Age were identified in the area of the full supply level of this dam. As all the finds are classified as isolated surface occurrences, they are judged to have a low significance and therefore require no mitigation measures.

(b) Iron Age

Seven sites dating to the Iron Age were identified in the area of the full supply level of this dam. Of these, 5 shows potential to contribute, on a scientific level, to our understanding of the prehistory of the region and therefore would require mitigation measures to be implemented before development can take place. Such measures would be the archaeological excavation of the sites.

(c) Historic period

No sites dating to the historic period was identified in the dam basin. However, 4 sites containing graves were identified within the dam basin and the graves would have to be relocated.

(d) Current period

At present, no sites referred to as living heritage, e.g. initiation sites, sacred sites, etc. are known to exist in the dam basin. Such sites can usually only be identified with the assistance of the local communities, and this should be done during the EIA process.

6.3.3 Bulk water supply network

(a) Stone Age

No sites dating to the Stone Age were identified in the bulk water supply network area

(b) Iron Age

No sites dating to the Iron Age were identified in the bulk water supply network area.

(c) Historic period

A number of sites dating to this period have been identified. However, at present it is not possible to determine if they would directly be impacted on, as the proposed alignments are difficult to determine down to this scale.

(d) Current period

At present, no sites referred to as living heritage, e.g. initiation sites, sacred sites, etc. are known to exist in the bulk water supply network. Such sites can usually only be identified with the assistance of the local communities, and this should be done during the EIA process

6.3.4 Alternative road re-alignments

(a) Stone Age

No sites dating to the Stone Age were identified in the road re-alignments.

(b) Iron Age

No sites dating to the Iron Age were identified in the road re-alignments.

(c) Historic period

No sites dating to this period were identified in the road re-alignments.

(d) Current period

At present, no sites referred to as living heritage, e.g. initiation sites, sacred sites, etc. are known to exist in the alternative road re-alignments. Such sites can usually only be identified with the assistance of the local communities, and this should be done during the EIA process.

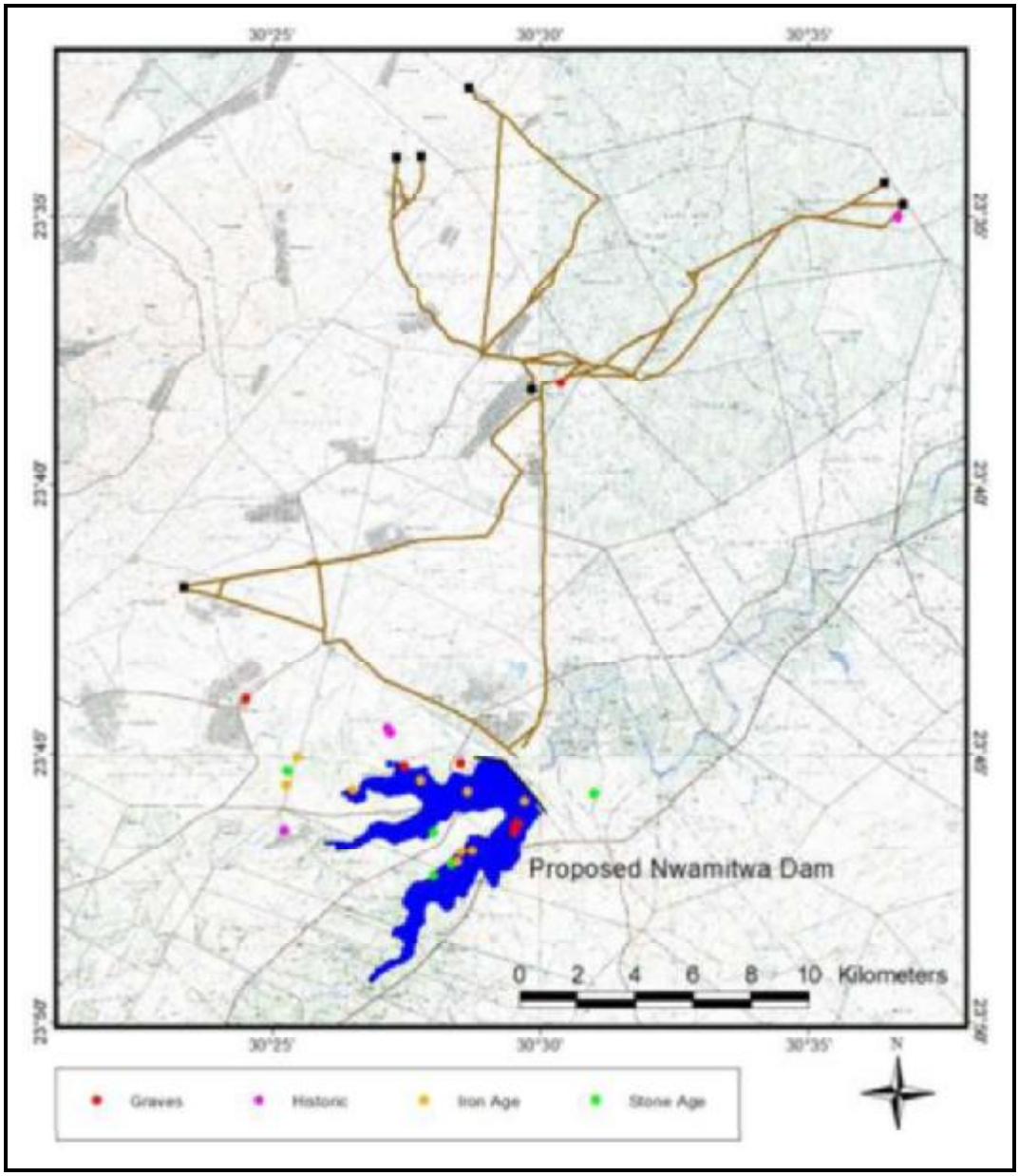

Figure 6.5: Map showing the location of the identified sites (Map 2330CB, 2330CD, 2330DA, 2330DC: Chief Surveyor General.

7. SITE SIGNIFICANCE AND ASSESSMENT

Impact analysis of cultural resources under threat of the proposed development, are based on the present understanding of the development.

According to the NHRA, Section 2(vi) the **significance** of a heritage sites and artefacts is determined by it aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Sites regarded as having low significance are viewed as been recorded in full after identification and would require no further mitigation. Impact from the development would therefore be judged to be low. Sites with a medium to high significance would therefore require mitigation. Mitigation, in most cases the excavation of a site, is in essence destructive and therefore the impact can be viewed as high and as permanent.

The National Heritage Resources Act (Act no 25 of 1999) stipulates the assessment criteria and grading of heritage resources. The following categories are distinguished in Section 7 of the Act:

- Grade I: Heritage resources with qualities so exceptional that they are of special national significance;
- Grade II: Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- Grade III: Other heritage resources worthy of conservation, and which prescribes heritage resources assessment criteria, consistent with the criteria set out in section 3(3), which must be used by a heritage resources authority or a local authority to assess the intrinsic, comparative and contextual significance of a heritage resource and the relative benefits and costs of its protection, so that the appropriate level of grading of the resource and the consequent responsibility for its management may be allocated in terms of section 8.

Based on current knowledge and understanding of the area, one can evaluate the heritage sites in the area as follows:

- Stone tools dating from all periods of the Stone Age are known to occur all over the study area. As these objects are open finds and not in their original position anymore, they are viewed as having a low significance. A few 'sealed' sites, i.e. in a cave or rock shelter are known in the region, some of them containing rock art.

All the known Stone Age sites in the study area are currently viewed as being of Grade III significance.

- On the basis of current knowledge, a number of sites dating to the Early Iron Age are known to exist in the area. Almost all the early sites occur on the alluvial soils close to the river. It is possible that sites dating to the Late Iron Age would be located in the various hills and at the foot of the mountains, where stone was freely available to build structures.

All of the Early and Late Iron Age sites currently known in the area are viewed to be of Grade III significance

- Sites dating to the historic period can be related to early farming, mining and missionary activities. Included in these would be old farmsteads, graves and infra-structural elements such as roads and bridges.

All the sites dating to historic times currently known in the area are viewed to be of Grade III significance.

- At present, no sites referred to as living heritage, e.g. initiation sites, sacred sites, battlefields, etc. are known to exist in the dam basin or in areas where the road re-alignments and bulk water supply network is to be developed. However, there is a strong possibility that such sites will be identified after consultation with the local communities has been done.

All the sites dating to the current period that might exist in the area would be viewed to be of Grade III significance.

Table 7.1: Assessment of sites in the Namitwa dam

Description of potential impact	Inundation of sites by rising dam water / destruction of sites in the construction area	
Nature of impact	Destruction of sites	
Legal requirements	SAHRA permit	
Stage	Construction and decommissioning	Operation
Nature of Impact	Destruction of sites	
Extent of impact	Local	
Duration of impact	Permanent	Permanent
Intensity	High	
Probability of occurrence	Definite	
Confidence of assessment	High	
Level of significance before mitigation	High	
Mitigation measures (EMP requirements)	Document and test excavate / Relocate graves	N/A
Level of significance after mitigation	Medium	N/A
Cumulative Impacts		
Comments or Discussion		

Table 7.2: Assessment of sites in the bulk water supply network

Description of potential impact	Destruction of sites due to trenching / construction activities	
Nature of impact	Destruction of sites	
Legal requirements	SAHRA permit	
Stage	Construction and decommissioning	Operation
Nature of Impact	Destruction of sites	

Extent of impact	Local	
Duration of impact	Permanent	
Intensity	High	
Probability of occurrence	Definite	
Confidence of assessment	High	
Level of significance before mitigation	High	
Mitigation measures (EMP requirements)	Document and test excavate / Relocate graves	N/A
Level of significance after mitigation	Medium	N/A
Cumulative Impacts		
Comments or Discussion		

Table 7.3: Assessment of sites in the alternative road re-alignments

Description of potential impact	Destruction of sites due to road construction	
Nature of impact	Destruction of sites	
Legal requirements	SAHRA permit	
Stage	Construction and decommissioning	Operation
Nature of Impact	Destruction of sites	
Extent of impact	Local	
Duration of impact	Permanent	
Intensity	High	
Probability of occurrence	Definite	
Confidence of assessment	High	
Level of significance before mitigation	High	
Mitigation measures (EMP	Document and test excavate / Relocate	N/A

requirements)	graves	
Level of significance after mitigation	Medium	N/A
Cumulative Impacts		
Comments or Discussion		

8. RECOMMENDED MITIGATION MEASURES

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

8.1 OBJECTIVES

Management of archaeological, historical and any other site or land considered being of cultural value within the project boundary against vandalism, destruction and theft.

The preservation and appropriate management of new discoveries in accordance with the National Heritage Resources Act (Act No. 25 of 1999), should these be discovered during construction.

8.1.1 Construction phase

General management objectives and commitments:

- To avoid disturbing sites of heritage importance; and
- To avoid disturbing burial sites.

The following shall apply:

- The contractors and workers should be notified that archaeological sites might be exposed during the construction work.
- Should any heritage artefacts be exposed during excavation, work on the area where the artefacts were discovered, shall cease immediately and the Environmental Control Officer (ECO) shall be notified as soon as possible;
- All discoveries shall be reported immediately by the Environmental Control Officer to a museum, preferably one at which an archaeologist is available, so that an investigation and evaluation of the finds can be made. Acting upon

advice from these specialists, the Environmental Control Officer will advise the necessary actions to be taken;

- Under no circumstances shall any artefacts be removed, destroyed or interfered with by anyone on the site; and
- Contractors and workers shall be advised of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51. (1).

8.1.2 Operation phase

General management objectives and commitments:

To avoid disturbing sites of heritage importance.

The following shall apply:

- Continued care should be taken to observe discovery of any sites and objects of heritage significance during operation. Should any archaeological artifacts and palaeontological remains be exposed during operations, work on the area where the artefacts were found, shall cease immediately and the appropriate person at the South African Heritage Resources Agency, local museum or the nearest local authority office shall be notified by the ECO as soon as possible;
- Upon receipt of such notification, an Archaeologist or Palaeontologist shall investigate the site as soon as practicable. Acting upon advice from these specialists, the necessary actions shall be taken;
- Under no circumstances shall archaeological or palaeontological artefacts be removed, destroyed or interfered with by anyone on the site during operations; and
- The dam operator shall advise its workers of the penalties associated with the unlawful removal of cultural, historical, archaeological or palaeontological artefacts, as set out in the National Heritage Resources Act (Act No. 25 of 1999), Section 51(1).

8.1.3 Impact minimization

Impact analysis and resultant management of cultural resources under threat of the proposed development, are based on the present understanding of the construction and operation of dams and bulk water supply systems. The following objectives and design standards, if adhered to, can eliminate, minimize or enhance potential impacts.

- The developer must ensure that an archaeologist inspects each site selected for the development, whether the inundation of the dam basin and the installation of a bulk water supply system or the road re-alignment. If a particular development impacts on a heritage site but cannot be shifted, mitigation measures, i.e. the controlled excavation of the site prior to development, can be implemented. This can only be done by a qualified archaeologist after obtaining a valid permit from SAHRA.

- The same action holds true for any support activities such as access routes, construction campsites, borrow pits, etc.

- In the past, people used to settle near water sources. Therefore riverbanks, rims of pans and smaller watercourses should be avoided as far as possible.

- In this particular part of the country, Iron Age people also preferred to settle on the saddle (or neck) between mountains (hills/outcrops). These areas should also be avoided.

- Avoid all patches bare of vegetation unless previously inspected by an archaeologist. These might be old settlement sites.

- Rock outcrops might contain rock shelters, engravings or stone walled settlements, and must be avoided unless previously inspected by an archaeologist.

- Communities living close to the proposed corridor should be consulted as to the existence of sites of cultural significance, e.g. graves, as well as sites that do not show any structures but have emotional significance, such as battlefields, initiation sites, sacred sites, etc.

- All graves or cemeteries should be avoided, unless when totally impossible. The correct procedure, i.e. notification of intent to relocate them, consultation with descendants and the various permit applications should then be followed in relocating the graves. If any of the graves are older than 60 years, they can only be exhumed by an archaeologist. Graves of victims of conflict requires additional permits from SAHRA before they can be relocated.

- Archaeological material, by its very nature, occurs below ground. The developer should therefore keep in mind that archaeological sites might be exposed during the construction work. If anything is noticed, work in that area should be stopped and the occurrence should immediately be reported to a museum, preferably one at which an archaeologist is available. The archaeologist should then investigate and evaluate the find.

- Any mitigation measures applied by an archaeologist, in the sense of excavation and documentation, should be published in order to bring this information into the public domain.

9. CONSULTATION PROCESS

Engagement with Interested and Affected Parties (I&APs) forms an integral component of the EIA process. I&APs have an opportunity at various stages throughout the EIA process to gain more knowledge about the proposed project, to provide input into the process and to verify that their issues and concerns have been addressed.

The proposed project was announced in July 2007 to elicit comment from and register I&APs from as broad a spectrum of public as possible. The announcement was done by the following means:

- the distribution of Background Information Documents (BIDs) in four languages,
- placement of site notices in the project area,
- Placement of advertisements in regional and local newspapers,
- Placement of information on the DWAF web site,
- announcement on local and regional radio stations; and
- the hosting of five focus group meetings in the project area.

Comments received from stakeholders were captured in the Issues and Response Report (IRR) which formed part of the Draft Scoping Report (DSR). The DRS was made available for public comment in October 2007. A summary of the DSR (translated into four languages) was distributed to all stakeholders and copies of the full report at public places. Two stakeholder meetings were held in October to present and discuss the DSR. The Final Scoping Report was made available to stakeholders in December 2007.

The Draft Environmental Impact Assessment Report, its summary (translated in four languages), the various specialist studies, the Environmental Management Plans and Programmes were made available for a period of thirty (30 days) for stakeholders to comment. Stakeholder comments were taken into consideration with the preparation

of the final documents. The availability of the final documents will be announced prior to submission to the decision-making authority.

10. COMMENTS RECEIVED

Mr Lekgolo Ramalepe, BaKgaga BaMaupa Communal Property Association raised concerns in terms of what will happen to ancestral graves in the project area should the graves have to be removed.

Part of the area for the proposed dam construction could submerge traditional and ancestral land of great value to the people and also that people reside in that area. Ruins, gravesites, and other places of importance, such as places of worship, could be affected by the construction of the dam and other proposed developments associated with the bulk water supply. Mr Ramalepe requested an opportunity to show the EIA team the location of the mentioned sites. Mr Ramalepe added that the communities of the area did not have the opportunity to identify graves when the Tzaneen Dam was built and that there were still graves submerged in the dam.

The EIA team consulted with Mr Ramalepe during the Heritage Resources Study fieldwork and it was agreed that detailed community consultation to identify next of kin etc. for the graves of concern would take place during the implementation of the project. This process is to be extended to also include other aspects such as the identification of places to which oral traditions are attached or which are associated with living heritage, e.g. initiation sites, sacred sites, battlefields, etc.

11. OTHER INFORMATION REQUESTED BY THE AUTHORITY

No additional information has been requested by the authorities.

12. CONCLUSION

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the area where the proposed Nwamitwa dam, the road re-alignments and bulk water distribution network are to be developed in a section of the Groot Letaba River.

The survey identified 26 sites of cultural significance located in the above mentioned development areas as well as the dam basin:

- Five Stone Age sites;
- Nine Iron Age sites;
- Four sites dating to historic times; and
- Eight sites containing graves.

All of the identified sites are judged, according to Section 7 of the National Heritage Resources Act, No. 25 of 1999, to have Grade III significance. The implication of this is that there are no sites of cultural heritage significance that would prevent the construction of the dam and the associated infrastructure from taking place. However, in accordance with Section 28 of the National Heritage Resources Act, No. 25 of 1999, mitigation measures should be implemented for the identified sites, after obtaining of the required permits from SAHRA and other Departments, e.g. the Department of Health. Based on what was found and its evaluation, the following is recommended:

- Examples of the Stone Age tools occurring in the area should be collected as they are identified, ideally when mitigation of the archaeological sites take place, i.e. when the archaeologists are active in the area. This collection can then be used in a local display on the prehistory of the area, or by local schools in their educational activities.
- Documentation (mapping and photographing) and limited excavations should be done on the identified Late Iron Age sites.
- Documentation (mapping and photographing) of some of the identified historic structures should be done.

- Workshops should be held with members of local communities in order to identify places to which oral traditions are attached or which are associated with living heritage, e.g. initiation sites, sacred sites, battlefields, etc.
- Graves should be relocated only after consultation with descendants.
- Workshops should be held by the archaeologists/heritage consultants with the various construction crews, at least on 'section head' level, in order to sensitise them about what to expect and how to act if something is uncovered.
- A direct link should be established by the developers with the archaeologist, who should be on call at all times, in the event that something is uncovered.

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