



**PHASE 1 ARCHAEOLOGICAL AND HERITAGE IMPACT ASSESSMENT
REPORT FOR THE ABSTRACTION FACILITY AND PIPELINE WORKS
ASSOCIATED WITH THE ROSEDALE/ HIGHBURY WATER WORKS IN OR
TAMBO DISTRICT MUNICIPALITY OF EASTERN CAPE PROVINCE.**

DATE: JUNE 2019

Document Information

Item	Description
Proposed development and location	Phase 1 Heritage Impact Assessment for the Abstraction Facility and Pipeline Works associated with the Rosedale/ Highbury Water Works in OR Tambo District Municipality of Eastern Cape Province
Purpose of the study	To carry out heritage sensitivity assessment to determine the presence of cultural heritage sites and the impact of the proposed project on heritage resources
1:50 000 Topographic Map	
Coordinates	See Figure 1
Municipalities	King Sabata Dalindyebo Local Municipality and OR Tambo District Municipality
Predominant land use of surrounding area	Residential, dam and waterworks
Applicant	OR Tambo District Municipality
EAP	Zikhona Wana GIBB (Pty) Ltd GIBB House, 9 Pearce Street, Berea, East London PO Box 19844, Tecoma, East London, 5241 Email: zwana@gibb.co.za Website: www.gibb.co.za
Heritage Consultant	Sativa Travel and Environmental Consultants(Pty) Ltd Constantia Park, Building 16-5, 546, 16 th Road, Midrand, 1685 Tel: 010 492 4330, Fax: 086 652 9774, Cell: 076 328 1558 / 071 685 9247 url: www.sativatec.co.za email: moses@sativatec.co.za / heritage@sativatec.co.za
Authors	Trust Mlilo (Archaeology and Heritage Specialist) and Joshua Kumbani (Archaeology and Heritage Specialist)
Date of Report	21/06/ 2019

NATIONAL LEGISLATION AND REGULATIONS GOVERNING THIS REPORT

This is a specialist report' and is compiled in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations of 2014, as amended.

DECLARATION OF INDEPENDENCE

In terms of Chapter 5 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) specialists involved in Impact Assessment processes must declare their independence.

Authors **Trust Mlilo** and **Joshua Kumbani**, do hereby declare that we are financially and otherwise independent of the client and their consultants, and that all opinions expressed in this document are substantially our own, notwithstanding the fact that we have received fair remuneration from the client for preparation of this report.

Expertise:

Trust Mlilo is a PhD student at Wits University and holds a Master of Arts. (Archaeology), Bachelor of Arts Honours, Post Graduate Diploma in Education and Bachelor of Arts & (Univ. of Pretoria) a professional member of the Association for Southern African Professional Archaeologists (ASAPA) with more than 15 years of experience in archaeological and heritage impact assessment and management. Mlilo is an accredited member of the ASAPA Amafa akwaZulu Natali and Eastern Cape Heritage Resources Agency (ECPHRA). He has conducted more than hundred Archaeological and Heritage Impact Assessment (AIA/HIA) Studies, heritage mitigation work and heritage development projects over the past 15 years of service. The completed projects vary from Phase 1 and Phase 2 as well as heritage management work for government, parastatals (Eskom Holdings SOC Limited) and several private companies such as BHP Billiton, Rhino Minerals, etc.

Joshua Kumbani, PhD student (Wits University), Master of Arts Archaeology (Univ of Zimbabwe), Bachelor of Arts Archaeology (Univ of Zimbabwe). Joshua is also an accredited member of ASAPA.

Independence

The views expressed in this document are the objective, independent views of Mr Trust Mlilo and Joshua Kumbani and the survey was carried out under GIBB (Pty) Ltd. Sativa Travel and Environmental Consultants (Pty) Ltd has no business, personal, financial or other interest in the proposed development project apart from fair remuneration for the work performed.

Conditions relating to this report

The content of this report is based on the authors best scientific and professional knowledge as well as available information. Sativa Travel and Environmental Consultants (Pty) Ltd reserves the right to modify the report in any way deemed fit should new, relevant or previously unavailable or undisclosed information become known to the author from on-going research or further work in this field, or pertaining to this investigation.

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Authorship: This archaeological and heritage impact assessment Report has been prepared by Mr Trust Mlilo and Mr Joshua Kumbani (Professional Archaeologists). The report is for the review of the Eastern Cape Provincial Heritage Resources Agency and the South African Heritage Resource Agency.

Geographic Co-ordinate Information: Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

Maps: Maps included in this report use data extracted from the NTS Map and Google Earth Pro.

Disclaimer: The Authors are not responsible for omissions and inconsistencies that may result from information not available at the time this report was prepared.

The Archaeological and Heritage Impact Assessment Study was carried out within the context of tangible and intangible cultural heritage resources as defined by the South African Heritage Resource Agency Regulations and Guidelines as to the authorisation of the Abstraction Facility and Pipeline Works associated with the Rosedale/ Highbury Water Works being proposed by OR Tambo District Municipality.

Signed by



21/ 06/ 2019

Acknowledgements

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EXECUTIVE SUMMARY

OR Tambo District Municipality (ORTDM) intends to develop a water abstraction facility and install pipelines associated with the Rosedale Water Works in Mthatha (see Appendix 1) seeing that the authorised method of abstraction has failed. This Archaeology and Heritage Impact Assessment (AIA/HIA) is in compliance with heritage and environmental legislation. The present document is a Phase 1 that serves to inform and guide the developer (ORTDM) and contractors about the potential impacts that the development (construction) may have on heritage resources (if any) located in the study area. The document must also inform the Eastern Cape Heritage Resource Agency (ECPHRA) and the South African Heritage Resource Agency (SAHRA) Burial Ground and Graves Unit about the presence, absence and significance of heritage resources that may be located in the study area.

The identification, recording, reporting and salvaging (if necessary) of significant heritage resources that may occur on the development footprint should be undertaken by a competent heritage practitioner as required by South African heritage legislation. In compliance with heritage legislation, GIBB (Pty) Ltd (GIBB) on behalf of the ORTDM, appointed Sativa Travel and Environmental Consultants (STEC) to conduct Phase 1 AIA/HIA of the proposed abstraction facility and pipeline works associated with the Rosedale/ Highbury Water Treatment Works located at the banks of the Mthatha Dam in Highbury, Eastern Cape Province.

The project also involves the use of existing access roads to link with the existing pipeline routes. A stepped approach involving desktop studies, drive-through and detailed field walking was employed in order to identify any heritage landmarks on and around the development footprint. However, it should be noted that the pipeline route is not on pristine grounds, having been previously disturbed by agricultural activities, housing developments, and dam construction. However, when these heritage resources (including graves) are encountered, work must be stopped forth-with and the finds must be reported to the ECPHRA. However, in terms of the archaeology of the area under study, no mitigation will be required prior to construction. This report must also be submitted to the ECPHRA for review.

- The findings of this report have been informed by desktop data review, field survey and impact assessment reporting which include recommendations to guide heritage authorities in making decisions with regards to the proposed development.
- The proposed development site is very accessible and the field survey was effective enough to cover most sections of the project receiving environs. However, the boundary of the development site had limited access because of tall grass cover.
- The immediate project area is predominantly residential, dam, water works and agriculture.

The report sets out the potential impacts of the proposed development on heritage matters and recommends appropriate safeguard and mitigation measures that are designed to reduce the impacts where appropriate. The report makes the following recommendations:

- The construction team must be inducted on the possibility of encountering archaeological resources that may be accidentally exposed during clearance and construction at the development site prior to commencement of work on the site in order to ensure appropriate mitigation measures and that course of action is afforded to any chance finds.
- If archaeological materials are uncovered, work must cease immediately and the ECPHRA be notified and activity should not resume until appropriate management provisions are in place.
- The findings of this report, with approval of the SAHRA, may be classified as accessible to any interested and affected parties within the limits of the legislations.

This report concludes that the impacts of the proposed development on the cultural environmental values are not likely to be significant on the entire development site if the Environmental Management Programme (EMPr) includes recommended safeguard and mitigation measures identified in this report.

The assessment reached the following conclusions

- The entire development site has been altered by infrastructure developments that include access roads and pipelines (bulk water supply).

Recommendations

- It is also advised that the ECPHRA is alerted when site work begins.
- Strict and clear reporting procedures for chance findings must be followed by and its contractors throughout the whole period of construction.

ABBREVIATIONS

AIA	Archaeological Impact Assessment
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EM	Environmental Manager
EMP	Environmental Management Plan
HIA	Heritage Impact Assessment
LIA	Late Iron Age
NHRA	Nation Heritage Resources Act, Act 25 of 1999
ORTDM	OR Tambo District Municipality
PHRA	Provincial Heritage Resources Agency
PM	Project Manager
SAHRA	South African Heritage Resources Agency
SM	Site Manager
STEC	Sativa Travel and Environmental Consultants (Pty) Ltd

KEY CONCEPTS AND TERMS

Periodization

Archaeologists divide the different cultural epochs according to the dominant material finds for the different time periods. This periodization is usually region-specific, such that the same label can have different dates for different areas. This makes it important to clarify and declare the periodization of the area one is studying. These periods are nothing a little more than convenient time brackets because their terminal and commencement are not absolute and there are several instances of overlap. In the present study, relevant archaeological periods are given below;

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

Early Iron Age (~ AD 200 to 1000)

Late Iron Age (~ AD1100-1840)

Historic (~ AD 1840 to 1950, but a Historic building is classified as over 60 years old)

Definitions

Just like periodization, it is also critical to define key terms employed in this study. Most of these terms derive from South African heritage legislation and its ancillary laws, as well as international regulations and norms of best-practice. The following aspects have a direct bearing on the investigation and the resulting report:

Cultural (heritage) resources are all non-physical and physical human-made occurrences, and natural features that are associated with human activity. These can be singular or in groups and include significant sites, structures, features, ecofacts and artefacts of importance associated with the history, architecture, or archaeology of human development.

Cultural significance is determined by means of aesthetic, historic, scientific, social, or spiritual values for past, present, or future generations.

Value is related to concepts such as worth, merit, attraction or appeal, concepts that are associated with the (current) usefulness and condition of a place or an object. Although significance and value are not mutually exclusive, in some cases the place may have a high level of significance but a lower level of value. Often, the evaluation of any feature is based on a combination or balance between the two.

Isolated finds are occurrences of artefacts or other remains that are not in-situ or are located apart from archaeological sites. Although these are noted and recorded, but do not usually constitute the core of an impact assessment, unless if they have intrinsic cultural significance and value.

In-situ refers to material culture and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Archaeological site/materials are remains or traces of human activity that are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures. According to the National Heritage Resources Act, 1999, (Act No. 25 of 1999), as amended (NHRA), no archaeological artefact, assemblage, or settlement (site) and no historical building or structure older than 60 years may be altered, moved or destroyed without the necessary authorisation from the SAHRA or a provincial heritage resources authority.

Historic material are remains resulting from human activities, which are younger than 100 years, but no longer in use, including artefacts, human remains and artificial features and structures.

Chance finds means archaeological artefacts, features, structures or historical remains accidentally found during development.

A grave is a place of interment (variably referred to as burial) and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery (contemporary) or burial ground (historic).

A site is a distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

Heritage Impact Assessment (HIA) refers to the process of identifying, predicting, and assessing the potential positive and negative cultural, social, economic, and biophysical impacts of any proposed project, which requires authorisation of permission by law and which may significantly affect the cultural and natural heritage resources. Accordingly, an HIA must include recommendations for appropriate mitigation measures for minimising or circumventing negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

Impact is the positive or negative effects on human well-being and / or on the environment.

Mitigation is the implementation of practical measures to reduce and circumvent adverse impacts or enhance beneficial impacts of an action.

Mining heritage sites refer to old, abandoned mining activities, underground or on the surface, which may date from the prehistorical, historical or the relatively recent past.

Study area or 'project area' refers to the area where the developer wants to focus its development activities (refer to plan).

Phase I studies refer to surveys using various sources of data and limited field walking in order to establish the presence of all possible types of heritage resources in any given area

1 INTRODUCTION

1.1. Background

Most heritage sites occur within communities, whose development should not be neglected in the name of heritage preservation but should be encouraged and embraced within legal and adaptive management frameworks (Carter and Grimwade 1997; Salafsky *et al* 2001). This case is true for the entire project area, which hosts palaeontological, archaeological, historical, natural and contemporary heritage resources. The ORTDM is proposing to construct a water abstraction facility and install pipeline associated with the Rosedale/ Highbury Water Treatment Works in Highbury, Eastern Cape Province. Previous Heritage studies were done for Thornhill and Rosedale/ Highbury Water Treatment Works as well as electrification projects in the Mthatha area, (Murimbika and Mlilo 2013a, b, c, d, e and Mlilo 2016). These studies recorded mainly burial sites which occur within homesteads and are protected. As such this current report must be read in conjunction with the previous HIA report by Murimbika and Mlilo (2013). This study focuses on the site ear marked for the construction of Rosedale/ Highbury Water Treatment works, bulk water supply pipeline and associated infrastructure.

The purpose of this AIA/HIA Study is to assess presence/absence of heritage resources on the development footprint. The study was designed to ensure that any significant archaeological or cultural physical property or sites are located and recorded, and site significance is evaluated to assess the nature and extent of expected impacts from the proposed development. The assessment includes recommendations to manage the expected impact of the proposed development. The report includes recommendations to guide heritage authorities in making appropriate decision with regards to the environmental approval process for the proposed development. The report concludes with detailed recommendations on heritage management associated with the proposed development.

STEC, an independent consulting firm, conducted an assessment, research and consultations required for the preparation of the AIA/HIA report in accordance with its obligations set in the NHRA, as well as the environmental management legislations.

In line with SAHRA guidelines, this report, not necessarily in that order, provides:

- 1) Management summary
- 2) Methodology
- 3) Information with reference to the desktop study
- 4) Map and relevant geodetic images and data
- 5) Global Positioning System (GPS) co-ordinates
- 6) Directions to the site
- 7) Site description and interpretation of the cultural area where the project will take place

- 8) Management details, description of affected cultural environment, photographic records of the project area
- 9) Recommendations regarding the significance of the site and recommendations regarding further monitoring of the site.
- 10) Conclusion

1.2. Description of the proposed project

1.2.1. Background of the project

Phase 1

The ORTDM has an Environmental Authorisation (EA) to construct the Rosedale Raw Water Pump-Station No. 1, weir and abstraction structure (housing low-lift submersible pumps) at the end of the Mthatha Dam Spillway Chute, including a small balancing tank as well as Rosedale Raw Pump-Station No. 2 (initially drawing water from the spillway chute below the Mthatha Dam and with provision for future upgrade to increase the volume of abstraction). The EA also covers the development of a 2.1 kilometre (km) long by 600 millimetre (mm) diameter steel Rosedale No. 1 Raw Water Rising Main from Rosedale Pump-Station No.1 to Rosedale/ Highbury Water Treatment Works, 2km long by 600mm diameter steel Rosedale No. 2 Raw Water Rising Main from Rosedale Pump-Station No. 2 to Rosedale/ Highbury Water Treatment Works, and 2 x 2 mega litre (ML) Rosedale Raw Water Balancing Tanks at the Rosedale/ Highbury Water Treatment Works.

Rosedale Raw Water Pump-Station No. 1 comprises a development of a new pump-station building (concrete framed, brick wall panels, concrete roof structure approximately 9 metres (m) by 24m) next to an existing pump-station that conveys water to the Thornhill Water Treatment Works. The area is currently undeveloped and lies just outside the 1:00 year Floodline. Rosedale Raw Water Rising Main No. 1 includes the installation of a 2km long by 600mm diameter continuously-welded steel pipeline (buried). A working width corridor of about 15m wide is required to construct this pipeline. The topsoil will be stripped over this full width, and after excavation of a 1.6m wide trench of nominal depth 2m and laying and backfilling of the pipeline, the topsoil will be replaced and smoothed-off and the natural grass of the area re-established. The pipeline will be laid inside a steel box-truss bridge alongside an existing steel road bridge where it has to cross over the Mthatha Dam spillway channel. This will not, in any way, impact on the chute flow or chute walls. The bridge will comprise a single-span, galvanized mild steel truss box structure, measuring 4m high, 2m wide and 25m in length. This will be fixed onto reinforced concrete buttresses on either side. Once the new weir, abstraction infrastructure and pump station have been constructed (during Phase 2) there will be no need to cross the Mthatha River.

Phase 2

The new weir abstraction and Rosedale Raw Water Pump-Station No. 2 involves abstracting from the end of the Mthatha Dam Spillway Chute. This option will require the construction of a low concrete weir (approximately 1.5m high) at or just below the end of the spillway chute. This allows for the diversion of some of the water into a reinforced concrete intake structure excavated into the side of the 8m high spillway chute rock wall. The structure will house sluice gates (to isolate the inflow when required) and low-lift submersible pumps (to transfer the water to a small concrete balancing at ground level above the chute. The latter will then feed a high-lift pump-station (of similar design to the Rosedale Raw Water Pump-Station No. 1) at the existing ground level immediately above the abstraction structure. The high-lift pump-station would then deliver water to Rosedale/ Highbury Water Treatment Works via a 2km long (or shorter) by 600mm diameter continuously-welded steel buried pipeline. The proposed Rosedale/ Highbury Water Treatment Works is envisaged to have a capacity of up to 50 mega litres per day (ML/day) (with provision for upgrade to an ultimate 100ML/day within the footprint currently proposed). The 50ML/day Water Treatment Works is the required bulk supply daily volume and includes all downstream reticulation losses. This plant will initially be constructed in 2 x 25ML/day modules but the Water Treatment Works footprint will be designed to add two further 25ML/day modules when needed in the long term future (beyond year 2033). The proposed plant will be similar in design and operation to the existing Thornhill Water Treatment Works which currently supplies drinking water in the area. This is a requirement from the end-user (ORTDM) so that the new plant will have similar operation and maintenance requirements to the existing plant.

Clear Water Delivery System will include the below listed infrastructure:

- 2 x 5ML Rosedale Clearwater Balancing Tanks;
- 50ML/day Rosedale Clearwater Pump-Station (pumping to Rosedale Command Reservoir and also to Soyini Reservoir);
- 1.7km long by 900mm diameter steel Rosedale Clear Water Rising main (from Rosedale Clearwater Pump-Station to Rosedale Command Reservoir);
- A 1.7km long by 900mm diameter continuously-welded steel pipeline will convey clear water from the clear water pump-station in the Rosedale/ Highbury Water Treatment Works complex to an existing 20ML command reservoir overlooking the supply area. The command reservoir and downstream distribution system has been the subject of a separate EA Application Process. Construction of this pipeline will require a working width and trench excavation as per that described for the raw water rising main.

1.3. The proposed development

The above development was authorised in December of 2015, and the construction commenced in September of 2016. Two reservoirs are established within the Rosedale/ Highbury Water Treatment Works footprint as authorised. However, the construction only covered some of the activities and not all as the method of abstraction failed. The ORTDM proposes to change the scope of work relating to some of the activities that have not been undertaken yet, i.e. excavating 2 x 1.5m diameter tunnels into the Mthatha Dam. One tunnel is envisaged to be 6m below dam full supply level (FSL), and the other 13m below FSL. This will be done by an unmanned tunnel-boring machine. The client also plans to develop an open 60ML raw water reservoir excavated into the rock alongside the dam and abstraction works (this is storage for Thornhill Water Treatment Works). This will be completely ring-fenced with a razor mesh fence to ensure no one can go swimming in the open raw water reservoir. The applicant, now, proposes to install a 1 200mm diameter pipeline commencing from the abstraction works to link into the existing Thornhill raw water pipelines (seeing that Thornhill can no longer be supplied from the existing failed dam outlet pipework). The raw water pipeline to Rosedale/ Highbury Water Treatment Works will now be 1 x 1 200mm diameter rather than 2 x 600mm diameter pipes previously given above. Ditto the clear water rising main from Rosedale/ Highbury Water Treatment Works up to Rosedale Command Reservoir.

1.4. Location of the proposed development

The Project Area falls within Mthatha (Highbury) in the Eastern Cape Province (see Figure 1 below) under the governance of the King Sabata Dalindyebo Local Municipality and the ORTDM.



Figure 1: Proposed Abstraction Facility and Pipeline Works associated with Rosedale/ Highbury Water Treatment Works (GIBB 2019)

2 LEGAL REQUIREMENTS

Relevant pieces of legislation are applicable to the present study and are presented in this section. Under the NHRA, Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), as amended (MPRDA), and the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended (NEMA) and the Environmental Impact Assessment (EIA) Regulations of 2014, as amended, an AIA/HIA is required as a specialist sub-section of the impact assessment.

Heritage management and conservation in South Africa is governed by the NHRA and falls under the overall jurisdiction of the SAHRA and its Provincial Heritage Resources Authorities (PHRAs), ECPHRA in this case. There are different sections of the NHRA that are relevant to this study. The proposed development is a listed activity in terms of Section 38 of the NHRA which stipulates that the following development categories require an HIA to be conducted by an independent heritage management consultant:

- Construction of a road, **wall**, powerline, **pipeline**, canal **or other linear form of development or barrier exceeding 300m in length**
- Construction of bridge or similar structure exceeding 50m in length
- Development or other activity that will change the character of a site -
 - **Exceeding 5 000 square metres (m²)**
 - Involving three or more existing erven or subdivisions
 - Involving three or more erven or divisions that have been consolidated within past five years
 - Rezoning of site exceeding 10 000m²
 - The costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority
- Any other development category, public open space, squares, parks, recreation grounds

Thus, any person undertaking any development in the above categories, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development. Section 38(2)(a) of the NHRA also requires the submission of a HIA report for authorization purposes to the responsible heritage resources agencies (SAHRA/ECPHRA).

Related to Section 38 of the NHRA are Sections 34, 35, 36 and 37. Section 34 stipulates that no person may alter, damage, destroy, relocate etc. any building or structure older than 60 years, without a permit issued by SAHRA or a provincial heritage resources authority. Section 35(4) of the NHRA stipulates that no person may, without a permit issued by SAHRA, destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object. This section may apply to any significant archaeological sites that

may be discovered before or during construction. This means that any chance find must be reported to SAHRA or ECPHRA, who will assist in investigating the extent and significance of the finds and inform about further actions. Such actions may entail the removal of material after documenting the find site or mapping of larger sections before destruction.

Section 36(3) of the NHRA also stipulates that no person may, without a permit issued by the SAHRA, 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. This section may apply in case of the discovery of chance burials, which is unlikely. The procedure for reporting chance finds also applies to the likely discovery of burials or graves by the developer or his contractors. Section 37 of the NHRA deals with public monuments and memorials which exist in the proposed project area.

In addition, the EIA Regulations promulgated in terms of NEMA determine that any environmental reports will include cultural (heritage) issues. The EIA Regulations in terms of Chapter 5 of the NEMA provide for an assessment of development impacts on the cultural (heritage) and social environment and for Specialist Studies in this regard. The end purpose of such a report is to alert the applicant (ORTDM, the environmental consultant, SAHRA and/or ECPHRA and interested and affected parties about existing heritage resources that may be affected by the proposed development, and to recommend mitigatory measures aimed at reducing the risks of any adverse impacts on these heritage resources.

2.1. Assessing the Significance of Heritage Resources

The appropriate management of cultural heritage resources is usually determined on the basis of their assessed significance as well as the likely impacts of any proposed developments. Cultural significance is defined in the Burra Charter as meaning aesthetic, historic, scientific, or social value for past, present, or future generations (Article 1.2). Social, religious, cultural, and public significance are currently identified as baseline elements of this assessment, and it is through the combination of these elements that the overall cultural heritage values of the site of interest, associated place or area are resolved.

Not all sites are equally significant and not all are worthy of equal consideration and management. The significance of a place is not fixed for all time, and what is considered of significance at the time of assessment may change as similar items are located, more research is undertaken and community values change. This does not lessen the value of the heritage approach, but enriches both the process and the long-term outcomes for future generations as the nature of what is conserved and why, also changes over time (Pearson and Sullivan 1995:7). This assessment of the Indigenous cultural heritage significance of the Site of Interest as its

environments of the study area will be based on the views expressed by the traditional authority and community representatives, consulted documentary review and physical integrity.

African indigenous cultural heritage significance is not limited to items, places or landscapes associated with pre-European contact. Indigenous cultural heritage significance is understood to encompass more than ancient archaeological sites and deposits, broad landscapes, and environments. It also refers to sacred places and story sites, as well as historic sites, including mission sites, memorials, and contact sites. This can also refer to modern sites with particular resonance to the indigenous community.

Archaeological sites, as defined by the NHRA are places in the landscape where people once lived in the past – generally more than 60 years ago – and have left traces of their presence behind. In South Africa, archaeological sites include hominid fossil sites, places where people of the Earlier, Middle and Later Stone Age lived in open sites, river gravels, rock shelters and caves, Iron Age sites, graves, and a variety of historical sites and structures in rural areas, towns and cities. Palaeontological sites are those with fossil remains of plants and animals where people were not involved in the accumulation of the deposits. The basic principle of cultural heritage conservation is that archaeological and other heritage sites are valuable, scarce and non-renewable. Many such sites are unfortunately lost on a daily basis through infrastructure developments such as powerlines, roads and other destructive economic activities such as mining and agriculture. It should be noted that once archaeological sites are destroyed, they cannot be replaced as site integrity and authenticity is permanently lost. Archaeological heritage contributes to our understanding of the history of the region and of our country and continent at large. By preserving links with our past, we may be able to appreciate the role past generations have played in the history of our country and the continent at large.

2.2. Categories of Significance

Rating the significance of archaeological sites, and consequently grading the potential impact on the resources is linked to the significance of the site itself. The significance of an archaeological site is based on the amount of deposit, the integrity of the context, the kind of deposit and the potential to help answer present research questions. Historical structures are defined by Section 34 of the NHRA while other historical and cultural significant sites, places and features, are generally determined by community preferences. The guidelines as provided by the NHRA in Section 3, with special reference to subsection 3 are used when determining the cultural significance or other special value of archaeological or historical sites. In addition, ICOMOS (the Australian Committee of the International Council on Monuments and Sites) highlights four cultural attributes, which are valuable to any given culture:

2.3. Aesthetic Value:

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria include consideration of the form, scale, colour, texture and material of the fabric, the general atmosphere associated with the place and its uses and also the aesthetic values commonly assessed in the analysis of landscapes and townscape.

2.4. Historical Value:

Historic value encompasses the history of aesthetics, science and society and therefore to a large extent underlies all of the attributes discussed here. Usually a place has historical value because of some kind of influence by an event, person, phase or activity.

2.5. Scientific Value:

The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality and on the degree to which the place may contribute further substantial information.

2.6. Social Value:

Social value includes the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a certain group. It is important for heritage specialist input in the impact assessment process to take into account the heritage management structure set up by the NHRA. It makes provision for a 3-tier system of management including the SAHRA at a national level, PHRAs at a provincial and the local authority. The NHRA makes provision for two types or forms of protection of heritage resources; i.e. formally protected and generally protected sites:

2.7. Formally Protected Sites

- Grade 1 or national heritage sites, which are managed by SAHRA
- Grade 2 or provincial heritage sites, which are managed by the PHRAs.
- Grade 3 or local heritage sites.

2.8. General Protection

- Human burials older than 60 years.
- Archaeological and palaeontological sites.
- Shipwrecks and associated remains older than 70 years.
- Structures older than 60 years.

The certainty of prediction is definite, unless stated otherwise and if the significance of the site is rated high, the significance of the impact will also result in a high rating. The same rule applies if the significance rating of the site is low. The significance of archaeological sites is generally ranked into the following categories:

2.9. Significance Rating Action

No significance: sites that do not require mitigation.

Low significance: sites, which may require mitigation.

2a. Recording and documentation (Phase 1) of site; no further action required

2b. Controlled sampling (shovel test pits, auguring), mapping and documentation (Phase 2 investigation); permit required for sampling and destruction

Medium significance: sites, which require mitigation.

3. Excavation of representative sample, C14 dating, mapping and documentation (Phase 2 investigation); permit required for sampling and destruction [including 2a & 2b]

High significance: sites, where disturbance should be avoided.

4a. Nomination for listing on Heritage Register (National, Provincial or Local) (Phase 2 & 3 investigation); site management plan; permit required if utilised for education or tourism

High significance: Graves and burial places

4b. Locate demonstrable descendants through social consulting; obtain permits from applicable legislation, ordinances and regional by-laws; exhumation and reinternment [including 2a, 2b & 3]

Furthermore, the significance of archaeological sites was based on six main criteria:

- Site integrity (i.e. primary vs. secondary context),
- Amount of deposit, range of features (e.g., stonewalling, stone tools and enclosures),
- Density of scatter (dispersed scatter),
- Social value,
- Uniqueness, and
- Potential to answer current and future research questions.

An important aspect in assessing the significance and protection status of a heritage resource is often whether or not the sustainable social and economic benefits of a proposed development outweigh the conservation issues at stake. When, for whatever reason the protection of a heritage site is not deemed necessary or practical, its research potential must be assessed and mitigated in order to gain data /information, which would otherwise be lost.

Table 1: Evaluation of the proposed development as guided by the criteria in NHRA, MPRDA and NEMA

ACT	Stipulation for developments	Requirement details
NHRA Section 38	Construction of road, wall, powerline, pipeline, canal or other linear form of development or barrier exceeding 300m in length	Yes
	Construction of bridge or similar structure exceeding 50m in length	No
	Development exceeding 5 000m ²	Yes
	Development involving three or more existing erven or subdivisions	No
	Development involving three or more erven or divisions that have been consolidated within past five years	No
	Rezoning of site exceeding 10 000m ²	No
	Any other development category, public open space, squares, parks, recreation grounds	No
NHRA Section 34	Impacts on buildings and structures older than 60 years	No
NHRA Section 35	Impacts on archaeological and paleontological heritage resources	None were recorded within the proposed development site
NHRA Section 36	Impacts on graves	None were recorded within the proposed development site
NHRA Section 37	Impacts on public monuments	No
Chapter 5 (21/04/2006) NEMA	HIA is required as part of the impact assessment	Yes

Section 39(3)(b) (iii) of the MPRDA	AIA/HIA is required as part of the impact assessment	No
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2.10. Other relevant legislations

The Human Tissue Act, 1983

Human Tissue Act, 1983 (Act No. 65 of 1983), as amended (HTA) and Ordinance on the Removal of Graves and Dead Bodies, 1925 (Ordinance No. 7 of 1925), as amended, states that Graves 60 years or older are heritage resources and fall under the jurisdiction of both the NHRA and the HTA. However, graves younger than 60 years are specifically protected by the HTA and the Ordinance on the Removal of Graves and Dead Bodies, 1925 as well as any local and regional provisions, laws and by-laws. Such burial places also fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial Member of the Executive Committee (MEC) as well as the relevant Local Authorities.

2.11. Terms of Reference

The author was instructed to conduct an AIA/HIA study addressing the following issues:

- Archaeological and heritage potential of the proposed development site including any known data on affected areas;
- Provide details on methods of study; potential and recommendations to guide the ECPHRA to make an informed decision in respect of authorisation of the proposed development.
- Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located in and around the proposed development site;
- Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
- Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;
- Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;
- Review applicable legislative requirements;

PHOTOGRAPHIC PRESENTATION OF THE PROJECT SITE



Plate 1: Photo 1: View of reservoir where pipeline will connect(Photograph © by Author 2019).



Plate 2: Photo 2: View of pipeline route which is already disturbed by previously authorised construction work (Photograph © by Author 2019).



Plate 3: Photo 3: View of access road to the pipeline route and Rosedale Water works (Photograph © by Author 2019).



Plate 4: Photo 4: View of proposed pipeline route(Photograph © by Author 2019)



Plate 5: Photo 5: View of proposed pipeline route (Photograph © by Author 2019)



Plate 6: Photo 6: View of proposed pipeline route (Photograph © by Author 2019)



Plate 7: Photo 7: View of an old bridge across the Mthatha river. Note that the bridge was confirmed to be younger than 60 years (Photograph © by Author 2019).



Plate 8: Photo 8: View of proposed pipeline cutting through old agriculture fields (Photograph © by Author 2019).

3 METHODOLOGY

Relevant published and unpublished sources were consulted in generating desktop information for this report. This included online databases such as the United Nations Educational, Scientific and Cultural Organization (UNESCO) website, Google Earth, Google Scholar and South African Heritage Resources Information System (SAHRIS). Previous HIA in the project area were also consulted. A number of published works on the archaeology, history and palaeontology were also consulted. This included dedicated archaeological, paleontological and geological works by (Breutz 1956; 1968; 1987; Button 1971; Clarck 1971; Eriksson *et al.* 1975; Bertrand and Eriksson 1977; Humphreys 1978; Humphreys and Thackeray 1983; Beaumont and Vogel 1984; Beaumont and Morris 1990; Beaumont 1999; Holmgren *et al.* 1999; Johnson *et al.* 1997; Peabody 1954; Shillington 1985; Wills 1992; Young 1934; 1940, Huffman 2007, Mason 1962). Thus, the proposed abstraction facility and pipeline works associated with the Rosedale/ Highbury Water Treatment Works was considered in relation to the broader landscape, which is a key requirement of the International Council on Monuments and Sites (ICOMOS) Guidelines.

The proposed development project requires clearance and authorisation from government compliance agencies including the heritage authority of SAHRA. The objectives of this report are to:

- Fulfil the legislative requirements of the NHRA.
- Identify and describe, (in terms of their conservation and / or preservation importance) sites of cultural and archaeological importance that may be affected by the proposed development. This study searched for sites and features of traditional historical, social, scientific, cultural, and aesthetic significance within the affected study area; the identification of gravesites.
- Assess the significance of the resources where they are identified.
- Evaluate the impact thereon with respect to the socio-economic opportunities and benefits that would be derived from the proposed development.
- Provide guidelines for protection and management of identified heritage sites and places (including associated intangible heritage resources management that may apply).
- Consult with the affected and other interested parties, where applicable, in regard to the impact on the heritage resources in the project's receiving environment.
- Make recommendations on mitigation measures with the view to reduce specific adverse impacts and enhance specific positive impacts on the heritage resources.

The following tasks were undertaken:

- Preparation of a predictive model for archaeological heritage resources in the study area.

- A review and gap analysis of archaeological, historical, and cultural background information, including possible previous heritage consultant reports specific to the affected project area, the context of the study area and previous land use history as well as a site search;
- Field survey of the proposed development sites in order to test the predictive model regarding that heritage sites in the area;
- Physical cultural property recording of any identified sites or cultural heritage places;
- Identification of heritage significance; and
- Preparation of AIA/HIA report with recommendation, planning constraints and opportunities associated with the proposed development.

Walking surveys were conducted in order to identify and document archaeological and cultural sites within the proposed development site. Formal settlements, grazing lands; village roads and main road infrastructures, dam, water works, and other auxiliary infrastructures dominate the affected project area. The entire project area was accessible through a network of village roads. Although some sections of the proposed development site were covered by tall grass, this did not hinder identification of possible archaeological sites in surveyed areas. Geographic coordinates were obtained with a handheld Garmin GPS global positioning unit. Photographs were taken as part of the documentation process during field study.

3.1 Assumptions and Limitations

The investigation has been influenced by the unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence) and the difficulty in establishing intangible heritage values. It should be noted that archaeological deposits (including graves and traces of archaeological heritage) usually occur below the ground level. Should artefacts or skeletal material be revealed at the site during construction, such activities should be halted immediately, and a competent heritage practitioner, SAHRA must be notified in order for an investigation and evaluation of the find(s) to take place (see NHRA, Section 36(6)). Recommendations contained in this document do not exempt the applicant from complying with any national, provincial and municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA. The author assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report.

The field survey did not include any form of subsurface inspection beyond the inspection of burrows, road cut sections, and the sections exposed by erosion. Some assumptions were made as part of the study and therefore some limitations, uncertainties and gaps in information would apply. It should however, be noted that these do not invalidate the findings of this study in any significant way:

- The proposed project activities will be limited to specific right of site as detailed in the development layout (Figure 1).
- The construction team to provide link and access to the proposed site by using the existing access roads and there will be no construction beyond the demarcated site.
- No excavations or sampling were undertaken, since a permit from heritage authorities is required to disturb a heritage resource. As such the results herein discussed are based on solely observed indicators. However, these surface observations concentrated on exposed sections such as road cuts and clear farmland.
- This study did not include any ethnographic and oral historical studies nor did it investigate the settlement history of the area.

3.2 Consultations

Public consultations are being conducted by an independent practitioner and issues raised by Interested and Affected parties will be presented during Specialist integration meetings for the project. Issues relating to heritage will be forwarded to the heritage specialist. The study team consulted the Mthatha Museum for any heritage information relating to the project area. STEC team consulted local residents for any heritage resources in the project area.

4 CULTURE HISTORY BACKGROUND OF THE PROJECT AREA

The project area is located in the Mthatha area in the ORTDM of Eastern Cape Province of South Africa that boasts a rich traditional history of prehistoric hunter gatherer communities, the late proto-historic and contemporary Xhosa communities as well as the colonial and settler communities and the recent peopling of the region.

The earliest residents of the Eastern Cape region were the hunter-gatherers associated with Early, Middle and Late Stone Age Traditions. Stone Age sites are generally identifiable by stone artefacts found scattered on the ground surface, as deposits in caves and rock shelters as well as in eroded gully or river sections. Archaeological sites such as the Klasies River Mouth main site recorded in the project region confirms the existence of Stone Age sites that conform to the generic South African periodization split into the Early Stone Age (ESA) (2.5 million years ago, to 250 000 years ago,), the Middle Stone Age (MSA) (250 000 years ago, to 22 000 years ago,) and the Late Stone Age (LSA) (22 000 years ago, to 300 years ago,). Stone Age sites in the region are also associated with rock painting sites. Cave sites also exist on the landscape south west of the project area. About 2000 years ago, the Khoekhoe herders moved into the region introducing first animal husbandry in the area.

From an archaeological perspective, the Mthatha area, like most of Eastern Cape region has potential to yield Stone Age period sites (also see Deacon and Deacon, 1997; 1999). Little specific is known about the archaeology of the specific powerline routes, mainly because no systematic research has been conducted on the area. However, the specific affected project-receiving environment has low potential for Stone Age sites since the affected areas consists of previously open velds which does not usually yield such sites. Stone Age sites are usually associated with caves and rock shelters some of which contain rock art paintings. Another class of common archaeological heritage associated with Stone Age periods are coastal shell middens that were campsites and cooking platforms (Binneman 2001, 2005).

The Mthatha area of Eastern Cape also saw the immigration of the Bantu-speaking farmers associated with Late Iron Age. These came to be known as the southern Nguni Xhosa speaking communities (also see Hammond-Tooke, 1992 and Huffman, 2007). From the 1700s, the Eastern Cape coastlands and hinterlands also witnessed the spread of colonial and settler communities. This marked more than a century of colonial wars, contestations and establishment of new settler settlements and towns. The territory known as Mpondoland, combined the divisions of Bizana, Libode, Ngqeleni, Port St John's, Tabankulu, and Umsikaba. In 1899 provisions of Proclamation 314 allowed for Umsikaba to be partitioned into the divisions of Lusikisiki and Flagstaff. In 1845 Faku, Paramount Chief of the amaMpondo, signed the Maitland Treaty whereby he agreed that trade goods would not be landed on the Pondoland coast without the express permission of the British Colonial Government. In March 1861, the northern reaches of Pondoland, also known as "no-mans-land", were ceded by Faku to the Cape, and the following year were used by the Cape for Griqua resettlement. This was followed by the annexation of a tract of land between the Umzimkulu and Mtamvuna Rivers, later known as Alfred County, to the Colony of Natal in September 1865. Following breaches of the Maitland Treaty, Sir Henry Barkly proposed that the British be allowed to locate a customs-house at the mouth of the St John's River, in return for an annual royalty of 250 pounds in 1874. The new Paramount Chief, Mqikela, refused this offer and in September 1878 the British unilaterally issued a proclamation absolving minor Mpondo chiefs from their allegiance to Mqikela, while asserting British sovereignty over the tidal estuary of St John's River. At the same time, they extended their protection over the amaXesibe, a group inhabiting the northern corner of Pondoland, and incorporated their territory into Griqualand East. This was followed by the establishment of a port at the river mouth, including a customs house and a magistrate's court. On 15 September 1884, the sliver of land known as the Territory of Port St John's was annexed to the Cape. Such interference in the internal affairs of the amaMpondo nation caused considerable friction within the territory. The Territory of Pondoland was formally annexed to the Cape in September 1894. It was also divided into two parts, and its eastern portion, comprising of the divisions of Maclear, Mount Fletcher,

Qumbu, and Tsolo, was ceded to Griqualand East. Presumably, the divisions of Bizana, Libode, Ngqeleni, Port St John's, Tabankulu, and Umsikaba were also proclaimed at the same time”

The town of Mthatha itself has its origins in the colonial villages dating to mid-1800s. Eventually, this effectively ushered in new era of colonial occupation by succeeding Afrikaans and British colonial administration authorities through the last half of the 1800s and into the late 1900s. By 1850s the region witnessed the influx of more settler communities, which triggered settler wars between the African chiefdoms and the incoming settlers. Some of these colonial wars and battles lasted into Anglo-Boer wars of 1899-1902. The later effectively led to complete subjugation of African communities to settler administration starting as part of the British Cape colony. There after the region was subsequently annexed by the British and effectively placed the majority of African communities under the Union of South Africa in 1910, which eventually ended with the establishment of the new South Africa in 1994. (<http://www.sahistory.org.za/places/pondoland>). Port St Johns Town was founded about 1884. It translated from Portuguese São João, either after a ship which foundered or anchored there, or after the outline of a face, resembling that of the apostle, against the mountain.

4.1. Intangible Heritage

As defined in terms of the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (2003) intangible heritage includes oral traditions, knowledge and practices concerning nature, traditional craftsmanship and rituals and festive events, as well as the instruments, objects, artefacts and cultural spaces associated with group(s) of people. Thus, intangible heritage is better defined and understood by the particular group of people that uphold it. In the present study area, very little intangible heritage is anticipated on the development footprint because most historical knowledge does not suggest a relationship with the study area *per se*, even though several other places in the general area do have intangible heritage.

4.2. SAHRIS Database and Impact assessment reports in the proposed project area

There is very little information on previous heritage surveys undertaken in the Mthatha area on SAHRIS and the internet (Anderson 2013). The Mthatha area has been rated as green on SAHRIS Palaeontological sensitivity map (Anderson 2013). The HIA conducted in the area provide some predictive evidence regarding the types and ranges of heritage resources to be expected in the proposed project area: (see reference list for HIA reports). The studies include mining, Waste Water, borrow pits and road upgrades (Almond 2009, 2011, 2013, Anderson 1996, 2009, 2011, 2012, 2013, Almond, J.E., De Klerk, W.J. & Gess, R. 2008, Binneman, J. and Booth 2009, De Jong, Robert. 2011, Kruger. 2014, Mlilo and Murimbika 2013a, b, c, d, e and Mlilo 2016a, b). The studies did not record sites of archaeological significance. Anderson (2009) recorded MSA sites of low archaeological significance. From a palaeontological perspective, the study area is generally sparsely fossiliferous with no vertebrate,

invertebrate or plant body fossils (Almond 2013). Small scale invertebrate burrows are common in the study area but these traces of fossils are of low heritage significance (Almond 2013). In general, the project area was concluded to be of low heritage significance (Almond 2013).

5 RESULTS OF THE ARCHAEOLOGICAL/HERITAGE ASSESSMENT STUDY

The main cause of impacts to archaeological sites is direct, physical disturbance of the archaeological remains themselves and their contexts. It is important to note that the heritage and scientific potential of an archaeological site is highly dependent on its geological and spatial context. This means that even though, for example a deep excavation may expose buried archaeological sites and artefacts, the artefacts are relatively meaningless once removed from their original position.

The severe impacts are likely to occur during clearance and excavation of pipeline trenches; indirect impacts may occur during movement of construction vehicles. The excavation for foundations and fence line posts will result in the relocation or destruction of all existing surface heritage material. Similarly, the clearing of access roads will impact material that lies buried in the surface sand. Since heritage sites, including archaeological sites, are non-renewable, it is important that they are identified, and their significance assessed prior to construction. It is important to note, that due to the localised nature of archaeological resources, that individual archaeological sites could be missed during the survey, although the probability of this is very low within the proposed abstraction facility and pipeline works associated with the Rosedale/ Highbury Water Treatment Works.

Further, archaeological sites and unmarked graves may be buried beneath the surface and may only be exposed during construction. The purpose of the AIA is to assess the sensitivity of the area in terms of archaeology and to avoid or reduce the potential impacts of the proposed development by means of mitigation measures (see appended Chance Find Procedure). The study concludes that the impacts will be negligible since the site has previously been cleared and ploughed. The following section presents results of the field survey. The following section presents results of the archaeological and heritage survey conducted within the proposed development project site.

Table 2: Summary of findings

Heritage resource	Status/Findings
Buildings, structures, places and equipment of cultural significance	A canal, dam wall and bridge within the project area were recorded. However their ages were not confirmed and they are not going to be disturbed by the proposed development.
Areas to which oral traditions are attached or which are associated with intangible heritage	None exists on the study area
Historical settlements and townscapes	There are historical settlements outside the proposed development area
Landscapes and natural features of cultural significance	None
Archaeological and palaeontological sites	The project area is archaeologically and palaeontological sensitive however no significant archaeological remains were recorded during the survey except for a scatter of undecorated potsherds
Graves and burial grounds	None were recorded within the development site
Movable objects	None
Overall comment	The proposed development site is significantly altered as a result of residential construction and road construction but no archaeological artefacts were recorded from the ground surveys that were conducted on the development site.

5.1. Archaeological Sites

No archaeological and heritage sites were recorded during the field survey on the proposed development site and pipeline routes. However, even though no archaeological artefacts, features or structures were noted chances are that there could be archaeological material that can be buried underneath the ground and they can only be exposed during construction work. The affected landscape is heavily degraded from previous farming and current infrastructure development projects underway, this limited the chances of encountering significant *in situ* archaeological sites to be preserved *in situ*. The area affected by the proposed development is broad and it was assumed that there was always a very high chance of finding archaeological sites. However, the chances of

recovering significant archaeological materials were seriously compromised and limited due to infrastructure developments and other destructive land use activities such as bulk water pipeline, road works that already exist on the project area.

Based on the field study results and field observations, the author concluded that the receiving environment for the proposed development is medium to high potential to yield previously unidentified archaeological sites during subsurface excavations and construction work.

5.2. Buildings and Structures older than 60 years

The field study identified the Mthatha dam wall and canal which were thought to be older than 60 years, however the study team confirmed that the dam and associated infrastructure is only 42 years old. Therefore, the project does not trigger Section 34 of the NHRA.

5.3. Burial grounds and graves

Human remains and burials are commonly found close to archaeological sites; they may be found in abandoned and neglected burial sites, or occur sporadically anywhere as a result of prehistoric activity, victims of conflict or crime. It is often difficult to detect the presence of archaeological human remains on the landscape as these burials, in most cases, are not marked at the surface. Archaeological and historical burials are usually identified when they are exposed through erosion and earth moving activities for infrastructure developments such as powerlines and roads. In some instances, packed stones or stones may indicate the presence of informal pre-colonial burials.

The field survey did not record any burial site within the proposed development site. The possibility of encountering previously unidentified burial sites is very low within the proposed development site, should such sites be identified during construction, they are still protected by applicable legislations and they should be protected (also see Appendixes for more details). Burial sites older than 60 years are protected by the NHRA and those younger than 60 years are protected by the Human Tissue Act.

5.4. Significance valuation for Burial Ground, Historic Cemeteries, and Individual Graves

The significance of burial grounds and grave sites is closely tied to their age and historical, cultural, and social context. Nonetheless, every burial should be considered as of high socio-cultural significance protected by practices, a series of legislations, and municipal ordinances.

5.5. Historical Monuments and Memorials

The survey did not identify any historical monument and public memorials within the proposed development site. There are no monuments or plaques within the proposed development site that are on the National Heritage or provincial List. However, it should be noted that there are Historical Monuments listed on SAHRIS Data base in the Mthatha area of the Eastern Cape Province. The proposed development will not impact on any listed monuments and memorials in the project area.

5.6. Battle fields

No known battles or skirmishes associated with the Anglo-Boer war and the struggle against apartheid were fought on the proposed development site.

5.7. Palaeontology

The Palaeontological sensitivity map shows that the proposed project area is located within a generally sensitive area. The impacts of the proposed development on palaeontology is low (Baker 2017). However, if any fossil deposits are discovered during any phase of the development, the contractor responsible for construction should alert SAHRA immediately so that appropriate mitigation (e.g. recording, sampling or collection) can be taken by a professional palaeontologist.

5.8. Archaeo-Metallurgy, Prehistoric Mining and Mining Heritage

No archeo –metallurgy and mining heritage traces were recorded within the proposed development site.

5.9. Visual impacts

The proposed development site is not on the view shed of any listed heritage site.

5.10. Mitigation

From a heritage perspective mitigation is not required for the project.

6 CUMMULATIVE IMPACTS

The European Union Guidelines define cumulative impacts as: “Impacts that result from incremental changes caused by other past, present or reasonably foreseeable actions together with the project. Therefore, the assessment of cumulative impacts for the proposed development is considered the total impact associated with the proposed development when combined with other past, present, and reasonably foreseeable future developments projects. An examination of the potential for other projects to contribute cumulatively to the impacts on heritage resources from this proposed development project was undertaken during the preparation of this

report. The total impact arising from the proposed project (under the control of the applicant), other activities (that may be under the control of others, including other developers, local communities, government) and other background pressures and trends which may be unregulated. The project's impact is therefore one part of the total cumulative impact on the environment. The analysis of a project's incremental impacts combined with the effects of other projects can often give a more accurate understanding of the likely results of the project's presence than just considering its impacts in isolation. The impacts of the proposed development were assessed by comparing the post-project situation to a pre-existing baseline. Where projects can be considered in isolation this provides a good method of assessing a project's impact. However, in this case there are several infrastructure developments where baselines have already been affected, the proposed construction will continue to add to the impacts in the region, it was deemed appropriate to consider the cumulative effects of proposed development.

This section considers the cumulative impacts that would result from the combination of the proposed development. There are existing infrastructure developments within the proposed development site. As such increased development in the project area will have a number of cumulative impacts on heritage resource whether known or covered in the ground. For example, during construction phase they will be increase in human activity and movement of heavy construction equipment and vehicles that could change, alter or destroy heritage resources within and outside the proposed development sites given that archaeological remains occur on the surface. Cumulative impacts that could result from a combination of the proposed development and other actual or proposed future developments in the broader study area include site clearance and the removal of topsoil could result in damage to or the destruction of heritage resources that have not previously been recorded for example abandoned and unmarked graves.

Heritage resources such as burial grounds and graves and archaeological as well as historical sites are common occurrences within the greater study area. These sites are often not visible and as a result, can be easily affected or lost. In addition, increased human activity during construction phase allows increased access to nearby heritage resources such as Burial site. Furthermore, many heritage resource in the greater study area are informal, unmarked and may not be visible, particularly during the wet season when grass cover is dense. As such, construction workers may not see these resources, which results in increased risk of resource damage and/or loss. Vibrations and earth moving activities associated with drilling and excavation tower have the potential to crack/damage rock art covered surfaces, which are known to occur in the greater study area. In addition, vibration from traffic has the potential to impact buildings and features of architectural and cultural significance. A potential interaction between archaeology, architectural and cultural heritage and landscape and visual during both the construction and operational phase of the proposed project is identified. Construction will not result in a

visual impact and impact on features of architectural and cultural significance. Construction works associated with the provision of material assets such as gravel, in particular underground works have the potential to interact with archaeology, architectural and cultural heritage.

No specific paleontological resources were found in the project area during the time of this study; however, this does not preclude the fact that paleontological resources may exist within the greater study area. As such, the proposed development project has the potential to impact on possible paleontological resources in the area. Sites of archaeological, paleontological, or architectural significance were not specifically identified and cumulative effects are not applicable. The nature and severity of the possible cumulative effects may differ from site to site depending on the characteristics of the sites and variables.

Cumulative impacts refer to additional impacts, which even if acceptable if considered in isolation, would together with the existing impacts, exceed the threshold of acceptability and cause harm to the cultural landscape. Cumulative impacts that need attention are related to the impacts of access roads and impacts to buried heritage resources. Allowing the impact of the proposed development to go beyond the surveyed area would result in a significant negative cumulative impact on sites outside the surveyed area. A significant cumulative impact that needs attention is related to stamping by especially construction vehicles during clearance and excavation within the development site. Movement of heavy construction vehicles must be monitored to ensure they do not drive beyond the approved sites. No significant cumulative impacts, over and above those already considered in the impact assessment, are foreseen at this stage of the assessment process. Cumulative impacts can be significant, if construction vehicles/equipment are not monitored to avoid driving through undetected heritage resources.

7 ASSESSMENT OF SIGNIFICANCE

7.1. Assessment Criteria

An impact can be defined as any change in the physical-chemical, biological, cultural and/or socio-economic environmental system that can be attributed to human activities related to alternatives under study for meeting a project need. The significance of the aspects/impacts of the process will be rated by using a matrix derived from Plomp (2004) and adapted to some extent to fit this process. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts.

The significance of the impacts will be determined through a synthesis of the criteria below:

Probability: This describes the likelihood of the impact actually occurring

Improbable: The possibility of the impact occurring is very low, due to the circumstances, design or experience.

Probable: There is a probability that the impact will occur to the extent that provision must be made therefore.

Highly Probable: It is most likely that the impact will occur at some stage of the development.

Definite: The impact will take place regardless of any prevention plans and there can only be relied on mitigatory measures or contingency plans to contain the effect.

Duration: The lifetime of the impact

Short Term: The impact will either disappear with mitigation or will be mitigated through natural processes in a time span shorter than any of the phases.

Medium Term: The impact will last up to the end of the phases, where after it will be negated.

Long Term: The impact will last for the entire operational phase of the project but will be mitigated by direct human action or by natural processes thereafter.

Permanent: The impact is non-transitory. Mitigation either by man or natural processes will not occur in such a way or in such a time span that the impact can be considered transient.

Scale: The physical and spatial size of the impact

Local: The impacted area extends only as far as the activity, e.g. footprint

Site: The impact could affect the whole, or a measurable portion of the above mentioned properties.

Regional: The impact could affect the area including the neighboring residential areas.

Magnitude/ Severity: Does the impact destroy the environment, or alter its function

Low: The impact alters the affected environment in such a way that natural processes are not affected.

Medium: The affected environment is altered, but functions and processes continue in a modified way.

High: Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

Significance: This is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required.

Negligible: The impact is non-existent or unsubstantial and is of no or little importance to any stakeholder and can be ignored.

Low: The impact is limited in extent, has low to medium intensity; whatever its probability of occurrence is, the impact will not have a material effect on the decision and is likely to require management intervention with increased costs.

Moderate: The impact is of importance to one or more stakeholders, and its intensity will be medium or high; therefore, the impact may materially affect the decision, and management intervention will be required.

High: The impact could render development options controversial or the project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor in mitigation.

Table 3: Significance rating

Aspect	Description	Weight
Probability	Improbable	1
	Probable	2
	Highly Probable	4
	Definite	5
Duration	Short term	1
	Medium term	3
	Long term	4
	Permanent	5
Scale	Local	1
	Site	2
	Regional	3
Magnitude/Severity	Low	2
	Medium	6
	High	8
Significance	Sum (Duration, Scale, Magnitude) x Probability	
	Negligible	≤20
	Low	>20 ≤40

Aspect	Description	Weight
	Moderate	>40 ≤60
	High	>60

The significance of each activity should be rated without mitigation measures (WOM) and with mitigation (WM) measures for both construction, operational and closure phases of the proposed development.

Table 4: Impact Assessment Matrix

Abstraction Facility & Pipeline Works associated with Rosedale/ Highbury Water Treatment Works						
Nature of Impact	Management Measures	Duration	Scale	Severity	Probability	Significance
Archaeological Remains	Without management	3	3	6	2	Moderate
	With management	3	2	2	2	Low
Graves and Burial Grounds	Without management	3	3	1	4	Moderate
	With management	3	3	1	2	Low
Historical buildings and structures	Without management	3	3	6	3	Moderate
	With management	3	3	2	2	Low
Mining Heritage	Without management	3	3	1	4	Low
	With management	3	2	1	2	Low
Monuments and memorials	Without management	3	3	1	1	Moderate
	With management	1	3	1	1	Low
Natural Heritage	Without management	3	3	2		

Based on the results of the Impact Assessment Matrix the proposed Rosedale water works and pipeline routes are viable from a heritage perspective.

8 STATEMENT OF SIGNIFICANCE

8.1. Aesthetic Value

The aesthetic values of the AIA Study Area and the overall project area are contained in the Mthatha area environment and landscape typical of this part of the Eastern Cape Province. The visual and physical relationship between AIA study area and the surrounding historical Cultural Landscape demonstrates the connection of place to the local and oral historical stories of the African communities who populated this region going back into prehistory.

The proposed development site will be situated within an environment and associated cultural landscape, which, although developed by existing settlements, remains representative of the original historical environment and cultural landscape of this part of Eastern Cape Province. The local communities consider the project area a cultural landscape linked to their ancestors and history. However, the proposed development will not alter this aesthetic value in any radical way since it will add to the constantly changing and developing settlements.

8.2. Historic Value

The Indigenous historic values of the Site of Interest and overall study area are contained in the claim of possible historic homesteads being located on the affected area. The history of generations of the Xhosa clans is tied to this geographical region. Such history goes back to the pre-colonial period, through the colonial era, the colonial wars and subsequent colonial rule up to modern day Eastern Cape Province.

8.3. Scientific value

Past settlements and associated roads and other auxiliary infrastructure developments and disturbance within the HIA Study Area associated with the proposed development has resulted in limited intact landscape with the potential to retain intact large scale or highly significant open archaeological site deposits.

8.4. Social Value

The project sites fall within a larger and an extensive cultural landscape that is integrated with the wider inland. The overall area has social value for the local community, as is the case with any populated landscape. Literature review suggests that social value of the overall project area is also demonstrated through local history which associates the area with the coming of European missionaries, explorers and colonialists and the African struggle against settler colonialism in the second half of the 1800s and at the end of the 1800s, the colonial wars of resistance, the century long struggle for democracy that followed colonial subjugation. Several generations of communities originate from the project area and continue to call it home. As such, they have ancestral ties to the

area. The land also provides the canvas upon which daily socio-cultural activities are painted. All these factors put together confirms the social significance of the project area. However, this social significance is unlikely to be negatively impacted by the proposed development especially given the fact that the development will add value to the human settlements and activities already taking place. Some sections of development site are covered by thick bushes and vegetation retains social value as sources of important herbs and traditional medicines. As such, they must be considered as significant social value sites

9 DISCUSSIONS

Several archaeologists and researchers conducted various Phase 1 archaeological studies in the Mthatha area since 2000. The studies were conducted for various infrastructure developments such as powerlines and substations, pipelines and residential developments. These studies recorded mainly burial sites occurring in homesteads for example Murimbika and Mlilo (2013), Mlilo (2016). Therefore, the current study should be read in conjunction with previous Phase 1 Impact Studies conducted in the general project area.

The study did not record any archaeological artefacts that were lying on the ground during the surveys. However, the absence of archaeological material on the ground does not imply that the area does not totally have archaeological material. As such the Chance Find procedure applies. In the event that archaeological material is encountered or revealed during clearance, a professional archaeologist must be retained to monitor and document any exposed archaeological remains. The lack of confirmable archaeological sites recorded during the current survey is thought to be a result of one reason:

- That proposed development site is located within a heavily degraded area, and has reduced sensitivity for the presence of highly significant physical cultural site remains, be they archaeological, historical or burial sites, due to previous earth moving disturbances resulting from developments and other land uses in the project area.
- The concrete canal feature was recorded in the vicinity of the proposed development area. The grave site and the concrete feature are deemed to be younger than 60years and are protected by Section 34 of the NHRA. They are part of heritage and hence they should not be altered during the construction phase.

The absence of confirmable and significant archaeological cultural heritage site is not evidence in itself that such sites did not exist in the proposed development area. It may be that, given the dense development in most sections of the development site, if such sites existed before, changing earth-moving activities may have destroyed their evidence on the surface. Significance of the sites of Interest is not limited to presence or absence

of physical archaeological sites. These discoveries that were made testifies to the significance of the project area as a cultural landscape of note, which has discernible links to local oral history and folk stories, environmental and ethnobotanical aesthetics, popular memories etc. associated with significance emanating from intangible heritage of the region.

10 RECOMMENDATIONS

The study did not find any permanent barriers to the proposed development. It is the considered opinion of the authors that the proposed development may proceed from a heritage resources management perspective, provided that mitigation measures are implemented if and when required. The following recommendations are based on the results of the AIA/HIA research, cultural heritage background review, site inspection and assessment of significance.

- From a heritage point of view, the proposed development is viable because the proposed project site has been altered by infrastructure developments.
- The proposed development may be approved to proceed as planned under observation that project work does not extend beyond the surveyed site.
- Should any unmarked burials be exposed during construction, potential custodians must be trekked, consulted and relevant rescue/ relocation permits must be obtained from SAHRA and or Department of Health before any grave relocation can take place. Furthermore, a professional archaeologist must be retained to oversee the relocation process in accordance with the NHRA.
- Should chance archaeological materials or human burial remains be exposed during subsurface construction work on any section of the proposed development laydown sites, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in construction scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.
- Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMPr, there are no other significant cultural heritage resources barriers to the proposed development. The Heritage authority may approve the proposed development to proceed as planned with special commendations to implement the recommendations here in made.
- If during development, operational or closure phases of this project, any person employed by the applicant, one of its subsidiaries, contractors and subcontractors, or service provider, finds any

artefact of cultural significance, work must cease at the site of the find and this person must report this find to their immediate supervisor, and through their supervisor to the site manager.

- The site Manager must then make an initial assessment of the extent of the find, and confirm the extent of the work stoppage in that area before informing an archaeological practitioner.
- In the event that archaeological materials are unearthed, all construction activities within a radius of at least 20m of such indicator should cease and the area be demarcated by a danger tape. Accordingly, a professional archaeologist should be contacted immediately
- It is the responsibility of the applicant to protect the site from publicity (i.e., media) until a mutual agreement is reached.
- Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by SAHRA.
- The applicant is reminded that unavailability of archaeological materials (e.g., pottery, stone tools, remnants of stone-walling, graves, etc.) and fossils does not mean they do not occur, archaeological material might be hidden underground, and as such the client is reminded to take precautions during construction.
- The footprint impact of the proposed construction activities should be kept to minimal to limit the possibility of encountering chance finds within the proposed development site.
- Overall, impacts to heritage resources are not considered to be significant for the project receiving environment. It is thus concluded that the project may be cleared to proceed as planned subject to the Heritage Authority ensuring that detailed heritage monitoring procedures are included in the project EMPr for the construction phase, include chance archaeological finds mitigation procedure in the project EMPr (See Appendix 1).
- The chance finds process will be implemented when necessary especially when archaeological materials and burials are encountered during subsurface construction activities.
- The findings of this report, with approval of the SAHRA, may be classified as accessible to any interested and affected parties within the limits of the laws.

11 CONCLUDING REMARKS

The literature review and field research confirmed that the project area is situated within a contemporary cultural landscape dotted with settlements with long local history. Field survey established that the proposed development site is degraded by current infrastructure development activities. In terms of the archaeology and heritage in respect of the proposed development site, there are no obvious 'Fatal Flaws' or 'No-Go' areas. The potential for chance finds is high and the applicant and contractors are advised to be diligent and observant during construction, should construction activities commence on the site. The procedure for reporting chance finds has clearly been laid out. This report concludes that the proposed development may be approved by SAHRA to proceed as planned subject to recommendations herein made and heritage monitoring plan being incorporated into the construction EMPr (also see Appendices). The mitigation measures are informed by the results of the AIA/HIA study and principles of heritage management enshrined in the NHRA.

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National Environmental Management Act 107 of 1998.

National Heritage Resources Act NHRA of 1999 (Act 25 of 1999).

Appendix 1: Heritage Management Plan Input into the proposed project EMPr

Objective	<ul style="list-style-type: none"> Protection of archaeological sites and land considered to be of cultural value; Protection of known physical cultural property sites against vandalism, destruction and theft; and The preservation and appropriate management of new archaeological finds should these be discovered during construction. 							
No.	Activity	Mitigation Measures	Duration	Frequency	Responsibility	Accountable	Contacted	Informed
Pre-Construction Phase								
1	Planning	Ensure all known sites of cultural, archaeological, and historical significance are demarcated on the site layout plan, and marked as no-go areas.	Throughout Project	Weekly Inspection	Contractor [C] CECO	SM	ECO	EA EM PM
Prospecting Phase								
1	Emergency Response	Should any archaeological or physical cultural property heritage resources be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped until heritage authority has cleared the development to continue.	N/A	Throughout	C CECO	SM	ECO	EA EM PM
		Should any archaeological, cultural property heritage resources be exposed during excavation or be found on development site, a registered heritage specialist or ECPHRA official must be called to site for inspection.		Throughout	C CECO	SM	ECO	EA EM PM
		Under no circumstances may any archaeological, historical or any physical cultural property heritage material be destroyed or removed from site;		Throughout	C CECO	SM	ECO	EA EM PM
		Should remains and/or artefacts be discovered on the development site during earthworks, all work will cease in the area affected and the Contractor will immediately inform the Construction Manager who in turn will inform ECPHRA.		When necessary	C CECO	SM	ECO	EA EM PM
		Should any remains be found on site that is potentially human remains, the ECPHRA and South African Police Service should be contacted.		When necessary	C CECO	SM	ECO	EA EM PM
Rehabilitation Phase								
		Same as construction phase.						
Operational Phase								
		Same as construction phase.						

Appendix 2: Heritage mitigation measures

SITE REF	HERITAGE ASPECT	POTENTIAL IMPACT	MITIGATION MEASURES	RESPONSIBLE PARTY	PENALTY	METHOD STATEMENT REQUIRED
Chance Archaeological and Burial Sites	General area where the proposed project is situated is a historic landscape, which may yield archaeological, cultural property, remains. There are possibilities of encountering unknown archaeological sites during subsurface construction work which may disturb previously unidentified chance finds.	<p>Possible damage to previously unidentified archaeological and burial sites during construction phase.</p> <ul style="list-style-type: none"> • Unanticipated impacts on archaeological sites where project actions inadvertently uncovered significant archaeological sites. • Loss of historic cultural landscape; • Destruction of burial sites and associated graves • Loss of aesthetic value due to construction work • Loss of sense of place <p>Loss of intangible heritage value due to change in land use</p>	<p>In situations where unpredicted impacts occur construction activities must be stopped and the heritage authority should be notified immediately.</p> <p>Where remedial action is warranted, minimize disruption in construction scheduling while recovering archaeological data. Where necessary, implement emergency measures to mitigate.</p> <ul style="list-style-type: none"> • Where burial sites are accidentally disturbed during construction, the affected area should be demarcated as no-go zone by use of fencing during construction, and access thereto by the construction team must be denied. • Accidentally discovered burials in development context should be salvaged and rescued to safe sites as may be directed by relevant heritage authority. 	<ul style="list-style-type: none"> • Contractor / • Project Manager • Archaeologist • Project EO 	<p>Fine and or imprisonment under the ECPHRA Act & NHRA</p>	<p>Monitoring measures should be issued as instruction within the project EMPr.</p> <p>PM/EO/Archaeologists Monitor construction work on sites where such development projects commences within the farm.</p>

Appendix 3: Legal background in South Africa

Extracts relevant to this report from the National Heritage Resources Act No. 25 of 1999, (Sections 5, 36 and 47):

General principles for heritage resources management

5. (1) All authorities, bodies and persons performing functions and exercising powers in terms of this Act for the management of heritage resources must recognise the following principles:

- (a) Heritage resources have lasting value in their own right and provide evidence of the origins of South African society and as they are valuable, finite, non-renewable and irreplaceable they must be carefully managed to ensure their survival;
- (b) every generation has a moral responsibility to act as trustee of the national heritage for succeeding generations and the State has an obligation to manage heritage resources in the interests of all South Africans;
- (c) heritage resources have the capacity to promote reconciliation, understanding and respect, and contribute to the development of a unifying South African identity; and
- (d) heritage resources management must guard against the use of heritage for sectarian purposes or political gain.

(2) To ensure that heritage resources are effectively managed—

- (a) the skills and capacities of persons and communities involved in heritage resources management must be developed; and
- (b) provision must be made for the ongoing education and training of existing and new heritage resources management workers.

(3) Laws, procedures and administrative practices must—

- (a) be clear and generally available to those affected thereby;
- (b) in addition to serving as regulatory measures, also provide guidance and information to those affected thereby; and
- (c) give further content to the fundamental rights set out in the Constitution.

(4) Heritage resources form an important part of the history and beliefs of communities and must be managed in a way that acknowledges the right of affected communities to be consulted and to participate in their management.

(5) Heritage resources contribute significantly to research, education and tourism and they must be developed and presented for these purposes in a way that ensures dignity and respect for cultural values.

(6) Policy, administrative practice and legislation must promote the integration of heritage resources conservation in urban and rural planning and social and economic development.

(7) The identification, assessment and management of the heritage resources of South Africa must—

- (a) take account of all relevant cultural values and indigenous knowledge systems;
- (b) take account of material or cultural heritage value and involve the least possible alteration or loss of it;
- (c) promote the use and enjoyment of and access to heritage resources, in a way consistent with their cultural significance and conservation needs;
- (d) contribute to social and economic development;
- (e) safeguard the options of present and future generations; and
- (f) be fully researched, documented and recorded.

Burial grounds and graves

36. (1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.

(2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.

- (3) (a) No person may, without a permit issued by SAHRA or a provincial 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, 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 equipment, or any equipment which assists in the detection or recovery of metals.
- (4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.
- (5) SAHRA or a provincial heritage resources authority may not issue a permit for any activity under subsection (3)(b) unless it is satisfied that the applicant has, in accordance with regulations made by the responsible heritage resources authority—
- (a) made a concerted effort to contact and consult communities and individuals who by tradition have an interest in such grave or burial ground; and
 - (b) reached agreements with such communities and individuals regarding the future of such grave or burial ground.
- (6) Subject to the provision of any other law, any person who in the course of development or any other activity discovers the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resources authority which must, in co-operation with the South African Police Service and in accordance with regulations of the responsible heritage resources authority—
- (a) carry out an investigation for the purpose of obtaining information on whether or not such grave is protected in terms of this Act or is of significance to any community; and
 - (b) if such grave is protected or is of significance, assist any person who or community which is a direct descendant to make arrangements for the exhumation and re-interment of the contents of such grave or, in the absence of such person or community, make any such arrangements as it deems fit.
- (7) (a) SAHRA must, over a period of five years from the commencement of this Act, submit to the Minister for his or her approval lists of graves and burial grounds of persons connected with the liberation struggle and who died in exile or as a result of the action of State security forces or agents provocateur and which, after a process of public consultation, it believes should be included among those protected under this section.
- (b) The Minister must publish such lists as he or she approves in the Gazette.
- (8) Subject to section 56(2), SAHRA has the power, with respect to the graves of victims of conflict outside the Republic, to perform any function of a provincial heritage resources authority in terms of this section.
- (9) SAHRA must assist other State Departments in identifying graves in a foreign country of victims of conflict connected with the liberation struggle and, following negotiations with the next of kin, or relevant authorities, it may re-inter the remains of that person in a prominent place in the capital of the Republic.

General policy

47. (1) SAHRA and a provincial heritage resources authority—

- (a) must, within three years after the commencement of this Act, adopt statements of general policy for the management of all heritage resources owned or controlled by it or vested in it; and
 - (b) may from time to time amend such statements so that they are adapted to changing circumstances or in accordance with increased knowledge; and
 - (c) must review any such statement within 10 years after its adoption.
- (2) Each heritage resources authority must adopt for any place which is protected in terms of this Act and is owned or controlled by it or vested in it, a plan for the management of such place in accordance with the best environmental, heritage conservation, scientific and educational principles that can reasonably be applied taking into account the location, size and nature of the place and the resources of the authority concerned, and may from time to time review any such plan.
- (3) A conservation management plan may at the discretion of the heritage resources authority concerned and for a period not exceeding 10 years, be operated either solely by the heritage resources authority or in conjunction with an environmental or tourism authority or under contractual arrangements, on such terms and conditions as the heritage resources authority may determine.
- (4) Regulations by the heritage resources authority concerned must provide for a process whereby, prior to the adoption or amendment of any statement of general policy or any conservation management plan, the public and interested organisations are notified of the availability of a draft statement or plan for inspection, and comment is invited and considered by the heritage resources authority concerned.
- (5) A heritage resources authority may not act in any manner inconsistent with any statement of general policy or conservation management plan.
- (6) All current statements of general policy and conservation management plans adopted by a heritage resources authority must be available for public inspection on request.