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**Letter of Recommendation (LoR): Exemption from a Phase 1 Archaeological and Cultural Heritage Impact Assessment (AIA) for the Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, Amathole District Municipality, Eastern Cape**

**ABSTRACT**

*A 2017/2018 proposal for the Phase 3 Ngqamakhwe regional Water Supply Scheme (WSS) project was not submitted to the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT). The project proponent, the Department of Water and Sanitation (DWS), is reproposing the project for Environmental Authorisation (EA) purposes. The 2024 project proposal—largely based on the 2017/2018 proposal—centres on the development of four (4) distribution and ten (10) service reservoirs as well as 58.802km bulk water mains and 120.04km reticulation lines to provide potable water to Ngqamakhwe town centre and 29 villages of Wards 13, 16, 18 and 20, ultimately servicing some 20,000 residents. The main difference between the 2017/2018 and the 2024 project proposal, from a development viewpoint, is that no abstraction of water, including boreholes, is included in the 2024 proposal and that the main bulk water main along the main road is excluded from the 2024 proposal—it will be undertaken as a separate project.*

*Eight (8) archaeological and cultural heritage resources/sites—Sites NQM-01–NQM-08—were recorded in the Phase 1 Archaeological and Cultural Heritage Impact Assessment (AIA) that formed part of the specialist studies section of the Basic Assessment Report (BAR) for the 2017/2018 project proposal, with the dominant heritage site type being grave and cemetery sites. Four (4) heritage resources/sites—Sites NQM-01–NQM-04—are situated in direct to near/fair proximity from (2017/2018 and) 2024 development aspects, while the other four (4) resources/sites—Site NQM-05–NQM-08—are located 500m+ from any development aspect. The AIA made recommendations for temporary site conservation during the course of construction, excluding Sites NQM-07 and NQM-08, both of which comprise Colonial Period structure sites that are permanently conserved (fenced) and still in use. The main difference between the 2017/2018 and the 2024 proposal, from an archaeological and cultural heritage viewpoint, lies in design parameters: the 2017/2018 proposal focussed on main bulk water line routes and related infrastructure (reservoirs), while the 2024 proposal includes reticulation distribution.*

*It is recommended that the Eastern Cape Provincial Heritage Resources Authority (ECPHRA) considers this Letter of Recommendation (LoR) for archaeological and cultural heritage compliance purposes for the 2024 proposed Phase 3 Ngqamakhwe regional WSS project.*

## 1. Project Location and Purpose

The *Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, Amathole District Municipality, Eastern Cape* project is centred on Ngqamakhwe town centre and 29 villages of Wards 13, 16, 18 and 20 with the purpose of the project being to provide potable water to some 20,000 residents. The study site is situated at general development co-ordinate S32°12'58.4"; E27°58'14.7" (Ngqamakhwe), 1:50,000 map ref – 3227BB and 3228AA.

The *Phase 3 Ngqamakhwe regional Water Supply Scheme (WSS)* project forms part of a greater Ngqamakhwe Regional Water Supply Scheme (RWSS) development with its purpose to supply water to the greater Ngqamakhwe region. Several options for the provision of water have been considered for the Ngqamakhwe RWSS, including: 1) surface water from the Tsomo River, and 2) groundwater from existing boreholes. The delay of the *Phase 3 Ngqamakhwe regional WSS* project has been considered against implementation of the full Ngqamakhwe RWSS (email comm. Kevin Bickell, Indwe, 19 November 2024).

The *Phase 3 Ngqamakhwe regional WSS* project proposal centres on the development of four (4) distribution reservoirs (250–980kL in capacity) with 48 hours clear water storage for distribution and ten (10) service reservoirs (60–175kL in capacity) with 24 hours clear water storage for distribution. Altogether 58.802km bulk water mains (with pipe diameters of 50–200 mm) and 120.04km reticulation lines (with pipe diameters of 50–160mm) will result in 325 standpipes spaced within 200m walking distance from each household (email comm. Kevin Bickell, Indwe, 19 November 2024).



**Map 1:** General locality of the *Phase 3 Ngqamakhwe regional WSS* project (Van Ryneveld 2018)

## 2. History of the Project

The *Phase 3 Ngqamakhwe regional WSS* project was first proposed in 2017/2018 including the preparation of a Basic Assessment Report (BAR) and Environmental Management Plan/programme (EMPr). However, the client—the Department of Water and Sanitation (DWS)—never submitted the Environmental Impact Assessment (EIA) study for Environmental Authorisation (EA). In the interim there has been a reduction/change in the scope of the project, and the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) requested a new EIA for the project.

The main differences in project scope between the 2017/2018 and the 2024 proposals are that no abstraction of water, including boreholes, is included in the 2024 proposal and that the main bulk water main (400–500mm in diameter watermain) along the main road of the 2017/2018 proposal is excluded

from the 2024 proposal—the bulk water main for the 2024 proposal will be undertaken as a separate project from the *Phase 3 Ngqamakhwe regional WSS*.

The BAR for the 2017/2018 project proposal included a Phase 1 Archaeological and Cultural Heritage Impact Assessment (AIA) as part of the specialist studies component of the BAR, referenced as:

- Van Ryneveld, K. (ArchaeoMaps). 2018. Phase 1 Archaeological and Cultural Heritage Impact Assessment—Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, Amathole District Municipality, Eastern Cape.

Eight (8) archaeological and cultural heritage resources/sites were recorded in the Phase 1 AIA:

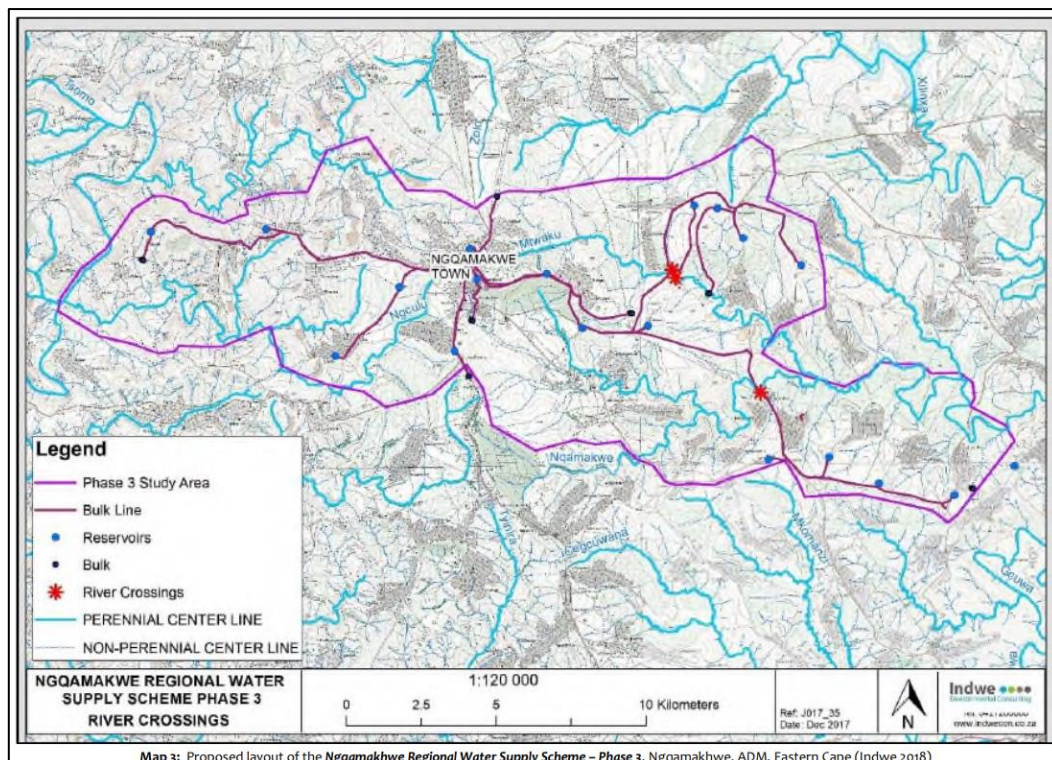
Heritage Compliance Summary				
Ngqamakhwe Regional Water Supply Scheme – Phase 3, Amathole District Municipality, Eastern Cape				
Site nr	Site	Co-ordinates	Site significance	Recommendations
NQM-01	Later Iron Age (LIA): Graves	S32°14'23.6"; E28°02'59.9"	High/medium significance Generally Protected IV-A	Temporary fence and signage
NQM-02	Later Iron Age (LIA): Cemetery	S32°14'14.1"; E28°02'58.4"	High/medium significance Generally Protected IV-A	Temporary signage
NQM-03	Later Iron Age (LIA): Homestead ruins	S32°13'47.8"; E28°02'42.4"	Low significance Generally Protected IV-C	Temporary fence and signage
NQM-04	Later Iron Age (LIA): Cemetery	S32°12'11.2"; E27°59'59.4"	High/medium significance Generally Protected IV-A	Temporary signage
NQM-05	Later Iron Age (LIA): Graves	S32°11'45.0"; E28°02'11.9"	High/medium significance Generally Protected IV-A	Temporary fence and signage
NQM-06	Later Iron Age (LIA): Graves	S32°10'49.2"; E28°03'49.6"	High/medium significance Generally Protected IV-A	Temporary signage
NQM-07	Colonial/Historical Period (CP): Residences	S32°12'06.9"; E27°56'45.5"	Low significance Generally Protected IV-C	N/A
NQM-08	Colonial/Historical Period (CP): Building	S32°12'11.4"; E27°56'33.0"	Medium Significance Generally Protected IV-B	N/A
<b>Heritage resources/sites annotations</b>				
NQM-01	LIA: Graves	Three (3) modern style graves (well conserved but not fenced).		
NQM-02	LIA: Cemetery	Approximately 20 graves, mainly modern style but including traditional earth mound graves (formally fenced).		
NQM-03	LIA: Homestead ruins	Extensive homestead ruins including mainly modern style/contemporary structures but also some old structures/structure ruins— <i>daga</i> and pole hut remains—that are older than 60 years of age (not fenced).		
NQM-04	LIA: Cemetery	Cemetery: approximately 30 graves, mainly modern style graves but including traditional stone cairn graves (formally fenced).		
NQM-05	LIA: Graves	Three (3) modern style graves (two graves are individually fenced, the third is unfenced).		
NQM-06	LIA: Cemetery	Small cemetery of four (4) modern style graves (formally fenced)		
NQM-07	CP: Residences	Three (3) CP residences situated along the main road to Ngqamakhwe town (formally conserved and in current use).		
NQM-08	CP: Building	Old government building (formally conserved and in current use).		

**Table 1:** Heritage compliance summary—Phase 3 Ngqamakhwe regional WSS (after Van Ryneveld 2018)

Although the Eastern Cape Provincial Heritage Resources Authority (ECPHRA) accepts heritage Letters of Recommendations (LoR) only in rare instances and does not, as a general rule, accept Heritage Impact Assessment (HIA) studies older than five years (<https://www.ecphra.org.za/>), Hugo, Indwe, requested a LoR–AIA in the case of the 2024 *Phase 3 Ngqamakhwe regional WSS* project proposal based on the principal types of archaeological and cultural heritage resources/sites identified in the 2018 AIA, being mainly fairly easily recognisable recent/contemporary grave and cemetery sites of Later Iron Age (LIA) or Bantu/Na’Ntu cultural tradition (Van Ryneveld, 2018):

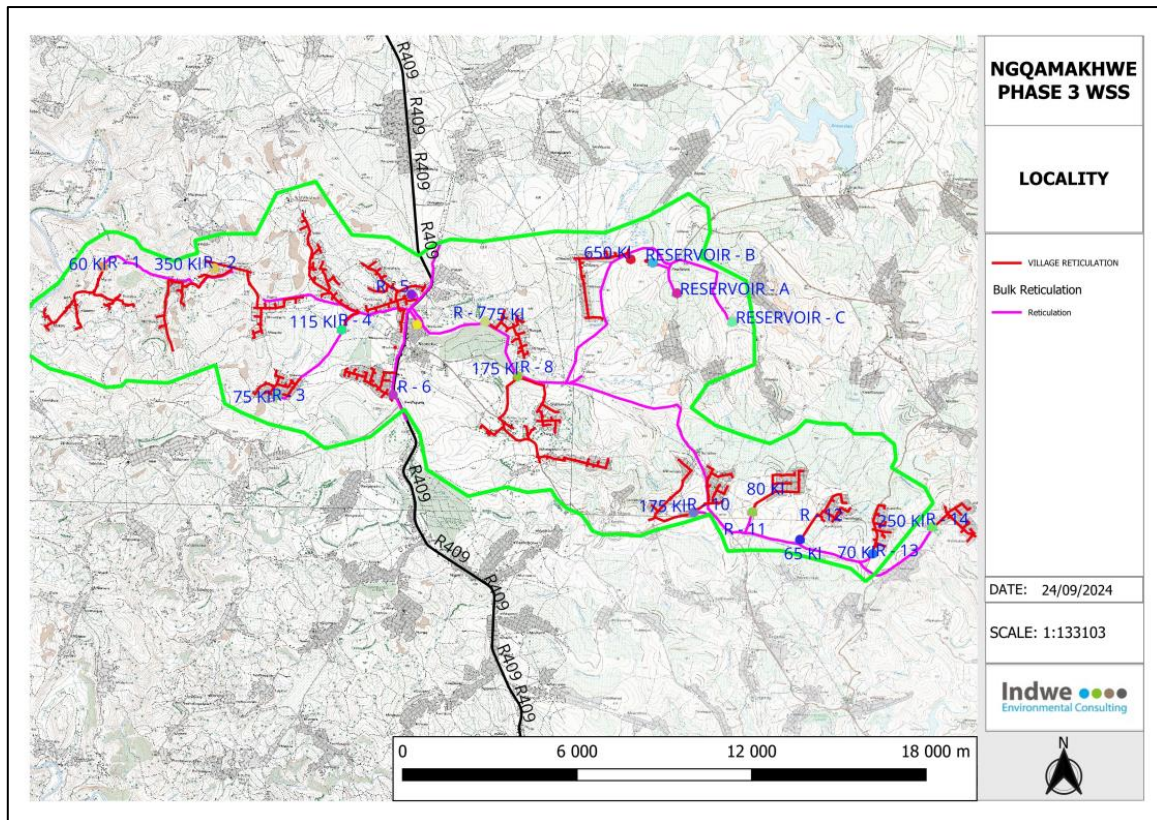
- The Colonial/Historical Period sites, Sites NQM-07 and NQM-08, comprise structure sites. All Colonial Period structures are still in use with basic permanent conservation measures (fences) in place. All structure sites are situated 500m+ from any (2017/2018 and) 2024 proposed development aspects
- The Site NQM-03 LIA homestead is of recent/contemporary age, although aspects of the site are older signalling time-depth that may be of significance with reference to earlier settlement of the general Ngqamakhwe region. The general Ngqamakhwe region is of the more recently settled areas of the old Transkei (by current peoples of the region), dating mainly to the initial arrival (1818) and subsequent government resettlement of the amaMfengu to the region after the 1865 establishment of the *Transkeian Territories*. Ngqamakhwe was founded in 1876 with its establishment directly vested in the founding of the Blythswood Mission and College. Site NQM-03 is situated in direct to near/fair proximity from 2024 proposed development aspects.
- The majority of identified sites are recent/contemporary LIA grave and cemetery sites. Sites NQM-02, NQM-04 and NQM-06 were already formally fenced at the time of the 2018 AIA. Temporary fencing/conservation recommendations were made for Sites NQM-01 and NQM-05 to ensure temporary conservation of all graves during the course of the construction phase of the project. In addition, it was recommended that all grave/cemetery sites must be temporarily sign-posted to alert construction staff to their presence. Sites NQM-05 and NQM-06 are situated 500+m from any 2024 proposed development aspects but Sites NQM-01, NQM-02 and NQM-04 are in direct to near/fair proximity from 2024 proposed development aspects.

The main difference between the 2017/2018 and the 2024 proposal, from an archaeological and cultural heritage viewpoint, lies in design parameters: the 2017/2018 proposal focussed on main bulk water line routes and related infrastructure (reservoirs), while the 2024 proposal includes 120.04km of reticulation distribution (only limited sections of which were included in the 2017/2018 proposal).

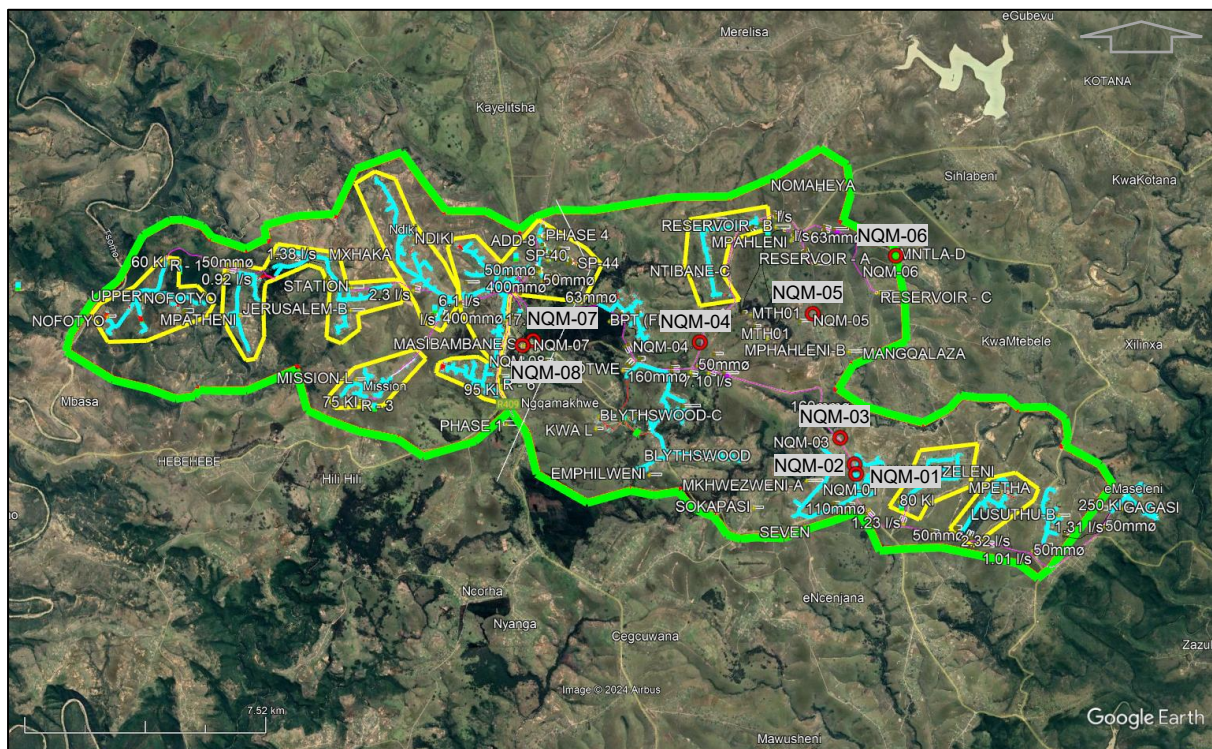


**Map 2:** 2017/2018 proposed Phase 3 Ngqamakhwe regional WSS (Van Ryneveld, 2028)





**Map 3:** 2024 proposed Phase 3 Ngqamakhwe regional WSS (Indwe)



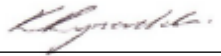
**Map 4:** Distribution of 2018 AIA recorded heritage resources/sites in relation to the 2024 proposed Phase 3 Ngqamakhwe regional WSS layout

### 3. Recommendations

It is recommended that ECPHRA considers this LoR for archaeological and cultural heritage compliance purposes for the 2024 proposed *Phase 3 Ngqamakhwe regional WSS project*.

Prepared by –

#### Heritage Consultant



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## **Appendix A**

Van Ryneveld, K. (ArchaeoMaps). 2018. Phase 1 Archaeological and Cultural Heritage Impact Assessment—Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, Amathole District Municipality, Eastern Cape.

Phase 1 Archaeological & Cultural Heritage Impact Assessment –  
**Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe,  
Amathole District Municipality, Eastern Cape**

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- 18 October 2018 -

**Report to:**

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**Prepared by:**

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### Specialist Declaration of Interest

I, Karen van Ryneveld (Company – ArchaeoMaps; Qualification – MSc Archaeology), declare that:

- I act as independent specialist in this application;
- I do not have any financial or personal interest in the application, its' proponent or subsidiaries, aside from fair remuneration for specialist services rendered;
- I am suitably qualified, accredited and experienced to act as independent specialist in this application;
- That work conducted have been done in an objective manner – and that any circumstances that may have compromised objectivity have been reported on transparently;
- That all material information collected for purposes of this application, that may reasonably influence the decision of the competent authority, are transparently disclosed in the report; and
- That work conducted have been done in accordance with relevant heritage legislation, regulations and policy guidelines, and with cognisance to environmental legislation, regulations and policies, including the principle of Integrated Environmental Management (IEM).



**Signature –**

**- 18 October 2018 -**

## Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, Amathole District Municipality, Eastern Cape

### Executive Summary

#### Project Description –

Indwe have been appointed as independent EAP by the appointed consulting engineers, Sontinga, on behalf of the project proponent, the DWS, to apply for the EA, including a BAR and EMP to the Eastern Cape DEDEAT for the proposed *Ngqamakhwe Regional Water Supply Scheme – Phase 3*, Ngqamakhwe, ADM, Eastern Cape. The development centres around general development co-ordinate S32°12'58.4"; E27°58'14.7" (Ngqamakhwe town) and aims to provide potable water to Ngqamakhwe town and 29 surrounding villages of Wards 13, 16, 18 and 20, implying potable water provision to an estimated 20,000 residents. The proposed *Ngqamakhwe Regional Water Supply Scheme – Phase 3* forms part of the larger Full Ngqamakhwe Regional Water Supply Scheme (NRWSS), which will focus on the subtraction of surface water. The *Ngqamakhwe Regional Water Supply Scheme – Phase 3* will be based on an approximately 28km pipeline development, with pipe diameters varying from 50-110mm and with water being extracted from 6 boreholes, to be equipped with pump houses and submersible pumps and 4 reservoirs for water storage purposes. The proposed development will traverse 3 river crossings.

#### The Phase 1 Archaeological & Cultural Heritage Impact Assessment –

**Project Name & Locality:** *Ngqamakhwe Regional Water Supply Scheme – Phase 3*, Ngqamakhwe, ADM, Eastern Cape [1:50,000 Map Ref – 3227BB & 3228AA].

#### Summary of Findings:

Eight archaeological or cultural heritage resources, as defined and protected by the NHRA 1999, were identified during the field assessment.

- The proposed development poses no 'fatal flaws' with reference to archaeological and cultural heritage resources.
- From an archaeological and cultural heritage point of view consideration of a 'No-Go' option is irrelevant.
- Archaeological and cultural heritage mitigation recommendations as per the Heritage Compliance Summary should be implemented during the construction phase.
- The development will have no cumulative impact on archaeological or cultural heritage resources.
- [In the event of any incidental archaeological and cultural heritage resources, as defined and protected by the NHRA 1999, being identified during the course of development the process described in 'Appendix B: Heritage Protocol for Incidental Finds during the Construction Phase' should be followed. The developer is advised to ensure a sufficient heritage contingency budget to address incidental finds during the course of development.]

Heritage Compliance Summary – Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, Amathole District Municipality, Eastern Cape				
Map Code	Site	Co-ordinates	Site Significance	Recommendations
Ngqamakhwe Regional Water Supply Scheme – Phase 3				
NQM-01	Later Iron Age – Graves	S32°14'23.6"; E28°02'59.9"	High / Medium Significance Generally Protected IV-A	Temporary fence and signage
NQM-02	Later Iron Age - Cemetery	S32°14'14.1"; E28°02'58.4"	High / Medium Significance Generally Protected IV-A	Temporary signage
NQM-03	Later Iron Age – Homestead Ruins	S32°13'47.8"; E28°02'42.4"	Low Significance Generally Protected IV-C	Temporary fence and signage
NQM-04	Later Iron Age - Cemetery	S32°12'11.2"; E27°59'59.4"	High / Medium Significance Generally Protected IV-A	Temporary signage
NQM-05	Later Iron Age – Graves	S32°11'45.0"; E28°02'11.9"	High / Medium Significance Generally Protected IV-A	Temporary fence and signage
NQM-06	Later Iron Age - Graves	S32°10'49.2"; E28°03'49.6"	High / Medium Significance Generally Protected IV-A	Temporary signage
NQM-07	Colonial Period – Residences	S32°12'06.9"; E27°56'45.5"	Low Significance Generally Protected IV-C	N/A
NQM-08	Colonial Period - Building	S32°12'11.4"; E27°56'33.0"	Medium Significance Generally Protected IV-B	N/A

#### Recommendations –

With reference to archaeological and cultural heritage compliance, as per the requirements of the NHRA 1999, it is recommended that the proposed *Ngqamakhwe Regional Water Supply Scheme – Phase 3*, Ngqamakhwe, ADM, Eastern Cape development proceeds as applied for, provided the developer comply with the recommended heritage conservation measures.

**The EC PHRA-APM Unit HIA Comment will state legal requirements for development to proceed, or reasons why, from a heritage perspective, development may not be further considered.**

## CONTENTS

1 – Project Description & Terms of Reference .....	1
2 – The Phase 1 Archaeological & Cultural Heritage Impact Assessment .....	4
2.1) Archaeological & Cultural Heritage Legislative Compliance .....	4
2.2) Methodology & Gap Analysis .....	4
2.1 – Pre-feasibility Assessment .....	6
2.1.1) Pre-feasibility Summary .....	6
2.1.2) The SAHRA 2009 MPD & SAHRIS .....	6
2.1.3) SAHRA Provincial Heritage Site Database – Eastern Cape .....	7
2.1.4) General Discussion .....	7
2.2 – Field Assessment .....	8
2.2.1) Site NQM-01 – Later Iron Age – Graves: S32°14'23.6"; E28°02'59.9" .....	8
2.2.2) Site NQM-02 – Later Iron Age – Cemetery: S32°14'14.1"; E28°02'58.4" .....	8
2.2.3) Site NQM-03 – Later Iron Age – Homestead Ruins: S32°13'47.8"; E28°02'42.4" .....	8
2.2.4) Site NQM-04 – Later Iron Age – Cemetery: S32°12'11.2"; E27°59'59.4" .....	9
2.2.5) Site NQM-05 – Later Iron Age – Graves: S32°11'45.0"; E28°02'11.9" .....	9
2.2.6) Site NQM-06 – Later Iron Age – Cemetery: S32°10'49.2"; E28°03'49.6" .....	9
2.2.7) Site NQM-07 – Colonial Period – Residences: S32°12'06.9"; E27°56'45.5" .....	9
2.2.8) Site NQM-08 – Colonial Period – Building: S32°12'11.4"; E27°56'33.0" .....	10
3 – Environmental Impact Assessment Rating .....	18
4 – Recommendations .....	20
5 – Acronyms & Abbreviations .....	22
6 – References .....	23

### Appendix A:

Schematic Outline of the Pre-colonial and Colonial Periods in South Africa

### Appendix B:

Heritage Protocol for Incidental Finds during the Construction Phase

### Appendix C:

Resumé: Karen van Ryneveld

## List of Maps

<b>Map 1:</b> General locality of the proposed Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, ADM, EC, development (Base Map – MapStudio, 2008) .....	1
<b>Map 2:</b> General locality of the Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, ADM, Eastern Cape [1:50,000 Map Ref: 3227BB & 3228AA] .....	2
<b>Map 3:</b> Proposed layout of the Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, ADM, Eastern Cape (Indwe 2018) .....	3
<b>Map 4:</b> Spatial distribution of geo-referenced PHSs in the SAHRA – Eastern Cape database in relation to the <i>Ngqamakhwe Regional Water Supply Scheme</i> , Ngqamakhwe, ADM, Eastern Cape ( <a href="https://en.wikipedia.org/wiki/List_of_heritage_sites_in_Eastern_Cape">https://en.wikipedia.org/wiki/List_of_heritage_sites_in_Eastern_Cape</a> ).....	7
<b>Map 5:</b> Phase 1 AIA field assessment results for the Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, ADM, Eastern Cape, study site .....	17

## List of Plates

<b>Plate 1:</b> General view of the Ngqamakhwe line route [1] .....	11
<b>Plate 2:</b> General view of the Ngqamakhwe line route [2] .....	11
<b>Plate 3:</b> General view of the Ngqamakhwe line route [3] .....	11
<b>Plate 4:</b> General view of the Ngqamakhwe line route [4] .....	11
<b>Plate 5:</b> General view of the Ngqamakhwe line route [5] .....	12
<b>Plate 6:</b> General view of the Ngqamakhwe line route [6] .....	12
<b>Plate 7:</b> General view of the Ngqamakhwe line route [7] .....	12
<b>Plate 8:</b> General view of the Ngqamakhwe line route [8] .....	12
<b>Plate 9:</b> General view of the Ngqamakhwe line route [9] .....	13
<b>Plate 10:</b> Aloe demarcating old livestock enclosure remains [1] .....	13
<b>Plate 11:</b> Aloe demarcating old livestock enclosure remains [1] .....	13
<b>Plate 12:</b> Old homestead remains [1] .....	13
<b>Plate 13:</b> Old homestead remains [2] .....	14
<b>Plate 14:</b> Stone agricultural field demarcations .....	14
<b>Plate 15:</b> Stone livestock enclosures .....	14
<b>Plate 16:</b> General view of Site NQM-01 .....	14
<b>Plate 17:</b> View of the fenced Site NQM-02 cemetery .....	15
<b>Plate 18:</b> View of the Site NQM-03 homestead ruins .....	15
<b>Plate 19:</b> General view of the Site NQM-04 cemetery .....	15
<b>Plate 20:</b> Two (2) of the graves comprising Site NQM-05 .....	15
<b>Plate 21:</b> The unfenced grave at Site NQM-05 .....	16
<b>Plate 22:</b> View of the Site NQM-06 cemetery .....	16
<b>Plate 23:</b> View of the site NQM-07 Colonial Period residences .....	16
<b>Plate 24:</b> General view of Site NQM-08 .....	16

## List of Tables

<b>Table 1:</b> Extract from the NHRA 1999, Section 38 .....	4
<b>Table 2:</b> SAHRA archaeological and cultural heritage site significance assessment ratings and associated mitigation recommendations5 .....	5
<b>Table 3:</b> Archaeological and basic cultural heritage probability assessment .....	6
<b>Table 4:</b> Environmental Impact Assessment Rating: Sites NQM-01, NQM-02, NQM-04, NQM-05 and NQM-06 .....	19
<b>Table 5:</b> Environmental Impact Assessment Rating: Sites NQM-03, NQM-07 and NQM-08 .....	19
<b>Table 6:</b> Heritage compliance summary .....	20
<b>Table 7:</b> List of Acronyms and Abbreviations .....	22

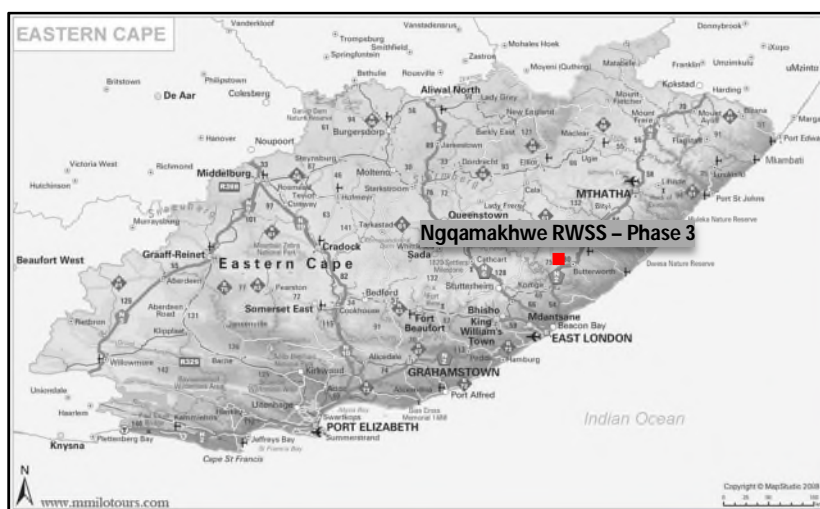


## 1 – Project Description & Terms of Reference

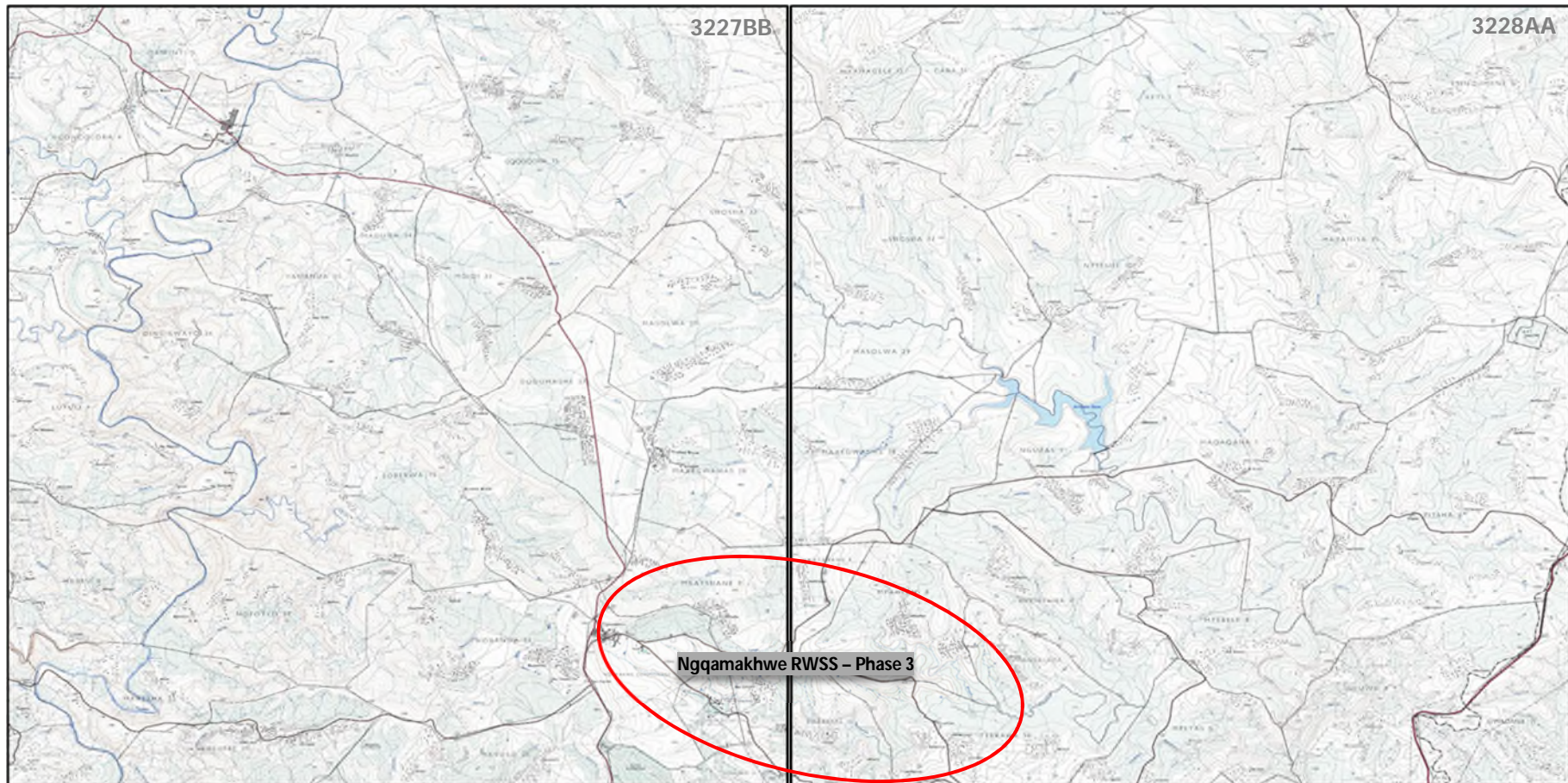
Indwe Environmental Consulting (Indwe) have been appointed as independent Environmental Assessment Practitioner (EAP) by the appointed consulting engineers, Sontinga, on behalf of the project proponent, the Department of Water and Sanitation (DWS), to apply for the Environmental Authorization (EA), including a Basic Assessment Report (BAR) and Environmental Management Plan (EMPr) to the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT) for the proposed *Ngqamakhwe Regional Water Supply Scheme – Phase 3*, Ngqamakhwe, Amathole District Municipality (ADM), Eastern Cape. The development centres around general development co-ordinate S32°12'58.4"; E27°58'14.7" (Ngqamakhwe town) and aims to provide potable water to Ngqamakhwe town and 29 surrounding villages of Wards 13, 16, 18 and 20, implying potable water provision to an estimated 20,000 residents. The proposed *Ngqamakhwe Regional Water Supply Scheme – Phase 3* forms part of the larger Full Ngqamakhwe Regional Water Supply Scheme (NRWSS), which will focus on the subtraction of surface water. The *Ngqamakhwe Regional Water Supply Scheme – Phase 3* will be based on an approximately 28km pipeline development, with pipe diameters varying from 50-110mm and with water being extracted from six (6) boreholes, to be equipped with pump houses and submergible pumps and four (4) reservoirs for water storage purposes. The proposed development will traverse three (3) river crossings (Indwe 2018).

ArchaeoMaps have been appointed by Indwe to compile the Phase 1 Archaeological & Cultural Heritage Impact Assessment (AIA) for the development, as specialist component to the application's Heritage Impact Assessment (HIA), and with findings and recommendations thereof to be included in the BAR and EMPr. Terms of Reference (ToR) for the Phase 1 AIA are summarized as:

- Describe the existing area to be directly affected by the proposal in terms of its archaeological and cultural heritage characteristics as formally protected by the National Heritage Resources Act, No 25 of 1999 (NHRA 1999) and the general sensitivity of these components to change;
- Describe the likely scope, scale and significance of impacts (positive and negative) on the archaeological and cultural heritage resources of the area associated with the 1) construction and 2) operation or use phases of the proposal;
- Make recommendations on the scope of any mitigation measures that may be applied during the 1) construction and 2) operation or use phases to reduce / avoid the significance of identified related impacts. Mitigation measures could be design recommendations as well as operational controls, monitoring programmes, Phase 2 mitigation, management procedures and the like;
- Broadly describe the implication of a 'No-Go' option;
- Broadly comment on the cumulative impact (positive or negative) on archaeological or cultural heritage resources associated with the 1) construction and 2) operation or use phases of the proposal; and
- Confirm if there are any outright 'fatal flaws' to the proposal at its current location from an archaeological and cultural heritage perspective.

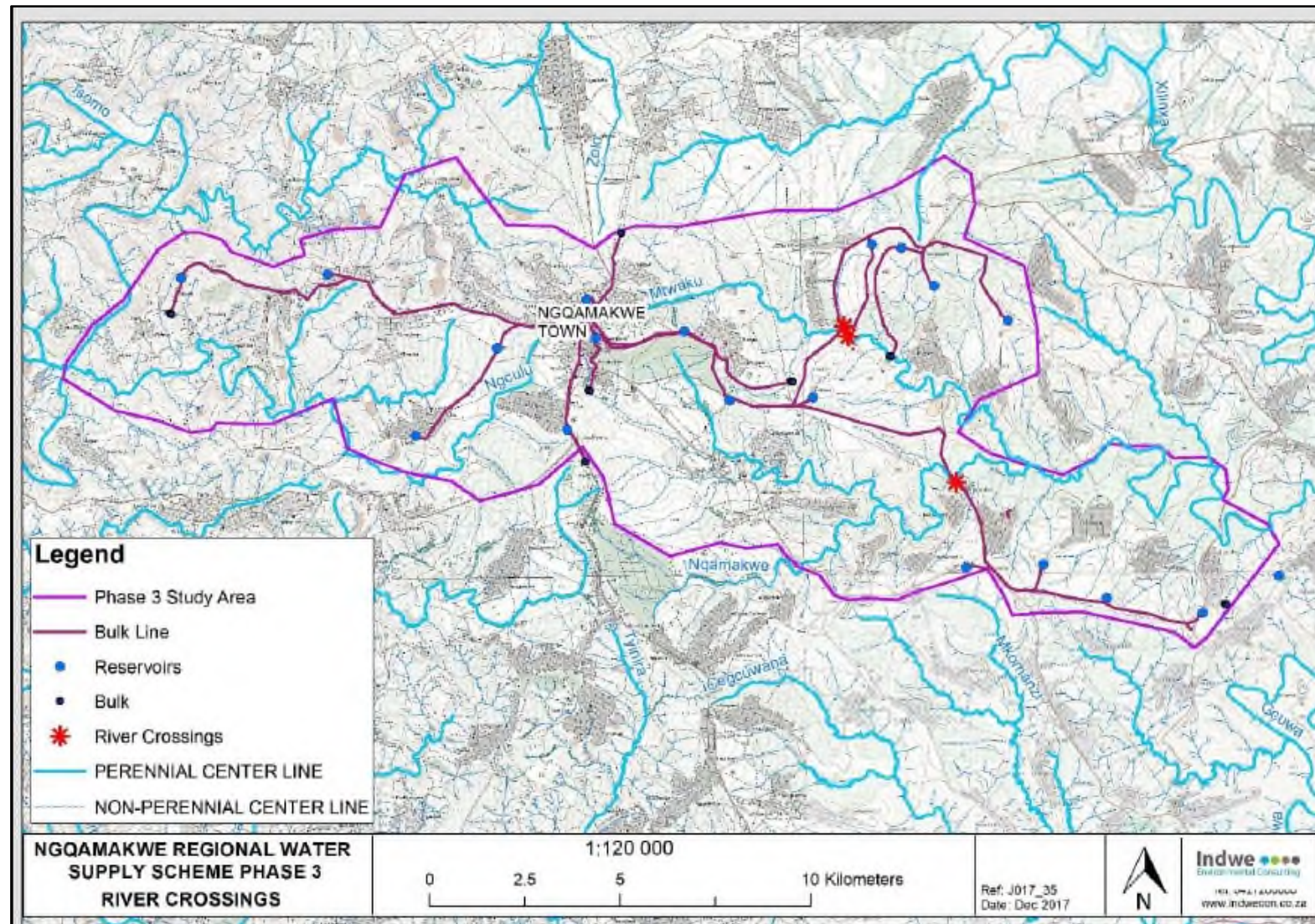


**Map 1:** General locality of the proposed *Ngqamakhwe Regional Water Supply Scheme – Phase 3*, Ngqamakhwe, ADM, EC, development (Base Map – MapStudio, 2008)



**Map 2:** General locality of the Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, ADM, Eastern Cape [1:50,000 Map Ref: 3227BB & 3228AA]





**Map 3:** Proposed layout of the Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, ADM, Eastern Cape (Indwe 2018)

## 2 – The Phase 1 Archaeological & Cultural Heritage Impact Assessment

### 2.1) Archaeological & Cultural Heritage Legislative Compliance

The Phase 1 Archaeological & Cultural Heritage Impact Assessment (AIA) for the *Ngqamakhwe Regional Water Supply Scheme – Phase 3*, Ngqamakhwe, ADM, Eastern Cape, was requested to meet the Eastern Cape Provincial Heritage Resources Authority's (EC PHRA) requirements with reference to archaeological and basic cultural heritage resources in terms of the National Heritage Resources Act, No 25 of 1999 (NHRA 1999), with specific reference to Section 38(1)(a). This report is submitted in (partial) fulfilment of the NHRA 1999, Section 38(3) requirements, for purposes of a NHRA 1999, Section 38(4) / Section 38(8) Heritage Impact Assessment (HIA) Comment by the EC PHRA.

<b>NHRA 1999, Section 38</b>	
1)	Subject to the provisions of subsections 7), 8) and 9), any person who intends to undertake a development categorized as –
a)	<b>The construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;</b>
b)	The construction of a bridge or similar structure exceeding 50m in length;
c)	Any development or other activity which will change the character of a site –
i.	Exceeding 5,000m <sup>2</sup> in extent; or
ii.	Involving three or more existing erven or subdivisions thereof; or
iii.	Involving three or more erven or subdivisions thereof which have been consolidated within the past five years; or
iv.	The costs which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
d)	The rezoning of a site exceeding 10,000m <sup>2</sup> in extent;
e)	Any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,
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.	

**Table 1:** Extract from the NHRA 1999, Section 38

The Phase 1 AIA aimed to locate, identify and assess the significance of archaeological and cultural heritage resources, inclusive of archaeological deposits / sites (Stone Age, Iron Age and Colonial Period), rock art and shipwreck sites, built structures older than 60 years, sites of military history older than 75 years, certain categories of burial grounds and graves, graves of victims of conflict, basic living heritage and cultural landscapes and views as defined and protected by the NHRA 1999, Section 2, 34, 35 and 36, that may be affected by the development.

This report comprises a Phase 1 AIA, including a basic pre-feasibility study and field assessment only. The report was prepared in accordance with the 'Minimum Standards' specifications for Phase 1 AIA reports, as stipulated by SAHRA (2007).

Additional relevant legislation pertaining to the Phase 1 AIA is listed as:

- o National Environmental Management Act, No 107 of 1998 (NEMA 1998) and associated Regulations (2017).

### 2.2) Methodology & Gap Analysis

The Phase 1 AIA includes a basic pre-feasibility study and field assessment:

- o The pre-feasibility assessment is based on the Appendix A schematic outline of South Africa's Pre-colonial and Colonial past, associated with introductory archaeological as well as general and scientific literature available and relevant to the study site. Databases consulted include the SAHRA 2009 Mapping Project Database (MPD), the South African Heritage Resources Information System (SAHRIS) and SAHRA database(s) on declared Provincial Heritage Sites (PHS) pertaining to the study site. The study excludes consultation of museum and university databases.
- o The field assessment was done over a 1 day period with fieldwork conducted by the author. The assessment was done by vehicle and foot and limited to a Phase 1 surface survey. GPS co-ordinates were taken with Garmin



Montana 680 (Datum: WGS84) Photographic documentation was done with a Canon EOS 1300D camera. A combination of Garmap (Base Camp) and Google Earth software was used in the display of spatial information.

The Phase 1 AIA was done according to the system and 'Minimum Standards' prescribed for the 3-tiered Phase 1-3 Heritage Impact Assessment (HIA) process (SAHRA 2007):

- Phase 1 HIA – A Phase 1 HIA is compulsory for development types as stipulated in the NHRA 1999, Section 38(1) and Section 38(8), including any other development type or study site as required by the South African Heritage Resources Agency (SAHRA) or relevant Provincial Heritage Resources Authority (PHRA). A Phase 1 HIA comprises at minimum of an archaeological (AIA) and palaeontological (PIA) study, but aims to address all heritage types protected by the NHRA 1999 and to alert developers to additional heritage specialist study requirements, if and where relevant to a development. Phase 1 HIA studies focusses on pre-feasibility and desktop studies, routinely coined with field assessments in order to locate, describe and assign heritage site significance ratings to identified resources that may be impacted by development. The aim of a Phase 1 AIA is to make site specific and general development recommendations regarding identified heritage resources for development planning and implementation purposes and may include recommendations for conservation, heritage site declaration, monitoring, Phase 2 mitigation (excavation), or destruction.
- Phase 2 HIA – Phase 2 HIAs are as a norm required where heritage resources of such significance have been identified during the Phase 1 HIA that mitigation (excavation) thereof is necessary for development purposes. Aside from large scale Phase 2 mitigation (routinely to precede development impact), lower keyed Phase 2 requirements may well include sampling, testing and monitoring during the construction or implementation phase of a development. Phase 2 HIA work is as a norm done under a compulsory heritage permit.
- Phase 3 HIA – As an extension to Phase 2 HIA work or cases where recommendations for heritage declaration formed part of a development's heritage compliance requirements, heritage resources of such scientific or heritage tourism significance, that their long-term conservation and continued research would be necessary within a development framework is proposed as a Phase 3 HIA.

Archaeological and cultural heritage site significance assessment and associated mitigation recommendations are done according to the combined NHRA 1999, Section 7(1) and SAHRA (2007) system.

SAHRA Archaeological & Cultural Heritage Site Significance System			
Site Significance	Field Rating	Grade	Recommended Mitigation
High Significance	National Significance	Grade I	Heritage site conservation / Heritage site development
High Significance	Provincial Significance	Grade II	Heritage site conservation / Heritage site development
High Significance	Local Significance	Grade III-A	Heritage site conservation or extensive mitigation prior to development / destruction
High Significance	Local Significance	Grade III-B	Heritage site conservation or extensive mitigation prior to development / destruction
High / Medium Significance	Generally Protected A	Grade IV-A	Heritage site conservation or mitigation prior to development / destruction
Medium Significance	Generally Protected B	Grade IV-B	Heritage site conservation or mitigation / test excavation / systematic sampling / monitoring prior to or during development / destruction
Low Significance	Generally Protected C	Grade IV-C	On-site sampling, monitoring or no heritage mitigation required prior to or during development / destruction

**Table 2:** SAHRA archaeological and cultural heritage site significance assessment ratings and associated mitigation recommendations

## 2.1 – Pre-feasibility Assessment

### 2.1.1) Pre-feasibility Summary

Based on the Appendix A schematic outline of the Pre-colonial and Colonial Periods in South Africa and background literature and database information, the probability of archaeological and cultural heritage resources affected by, or situated in proximity to the *Ngqamakhwe Regional Water Supply Scheme – Phase 3*, Ngqamakhwe, Amathole District Municipality, Eastern Cape, study site can briefly be described as:

Archaeological and Basic Cultural Heritage Probability Assessment – Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, Amathole District Municipality, Eastern Cape			
Primary Type / Period	Sub-period	Sub-period type site	Probability
EARLY HOMININ / HOMINID	-	-	None
	Graves / human remains: High scientific significance		
STONE AGE	Earlier Stone Age (ESA)		Low
	Middle Stone Age (MSA)		Low
	Later Stone Age (LSA)		Low
		Rock Art	None
		Shel Middens	None
	Graves / human remains: ESA & MSA - High scientific significance; LSA – High scientific & social significance		
IRON AGE	Early Iron Age (EIA)		None-Low
	Middle Iron Age (MIA)		None
	Later Iron Age (LIA)		High
	Graves / human remains: EIA – High scientific significance; MIA & LIA – High scientific & social significance		
COLONIAL PERIOD	Colonial Period		Medium-High
		LSA – Colonial Period Contact	None
		LIA – Colonial Period Contact	Low
		Industrial Revolution	Low
		Apartheid & Struggle	Low
	Graves / human remains: Medium-high scientific & high social significance		

**Table 3:** Archaeological and basic cultural heritage probability assessment

### 2.1.2) The SAHRA 2009 MPD & SAHRIS

A single archaeological Cultural Resources Management (CRM) project report is recorded in the SAHRA 2009 Mapping Project Database (MPD), situated within an approximate 10km radius from the proposed *Ngqamakhwe Regional Water Supply Scheme – Phase 3*, Ngqamakhwe, ADM, Eastern Cape, study site, referenced as:

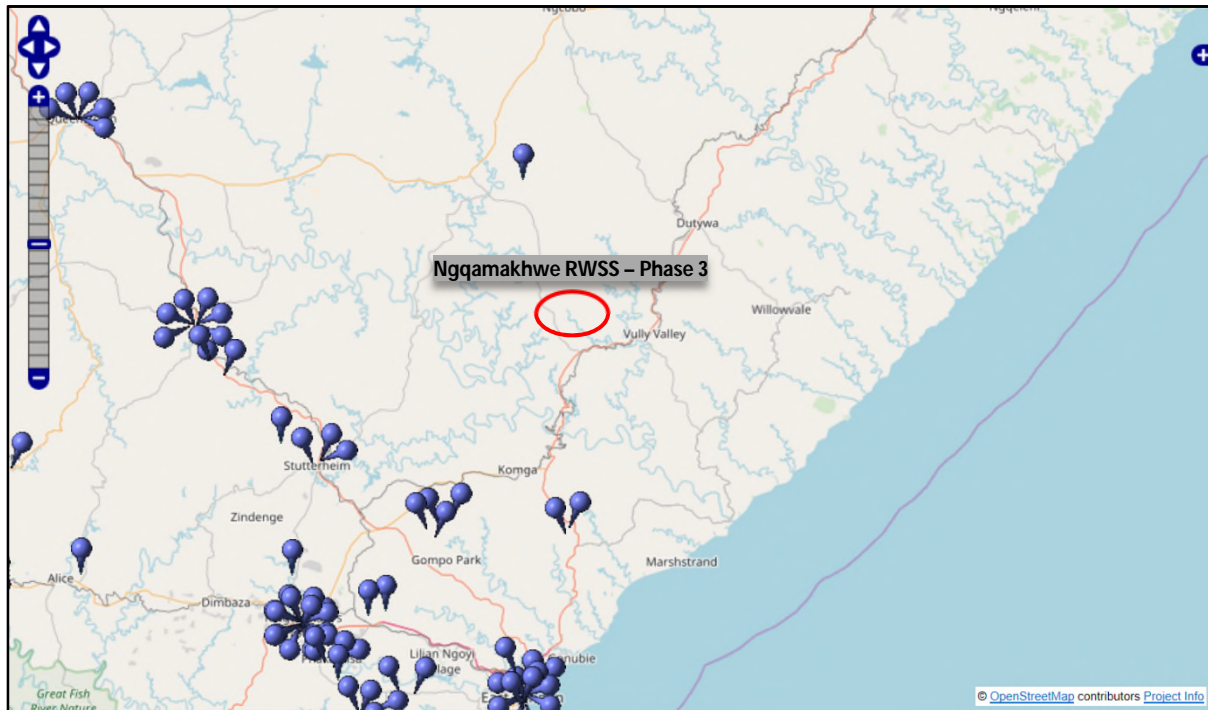
- o Van Schalkwyk, L.O. (eThembeni). 2008. *Heritage Impact Assessment of the Proposed N2 Wild Coast Toll Highway*.

Post compilation of the SAHRA 2009 MPD ten (10) SAHRIS cases have been recorded with project study sites situated within an approximate 10km radius from the *Ngqamakhwe Regional Water Supply Scheme – Phase 3* study site, and with archaeological and cultural heritage results compiled in five (5) CRM reports, referenced as:

- o Booth, C. (Booth heritage Consultants). 2015. *Addendum: Archaeological and Heritage Investigation of Proposed Deviations and Repeater Sites for an Environmental Authorization Amendment for Fibreco Route 4 (George to Port Elizabeth) and 5 (Port Elizabeth to Durban)*. [SAHRIS CaseID – 7631].
- o Van Ryneveld, K. (ArchaeoMaps). 2011. *Phase 1 Archaeological Impact Assessment – Utilization of Borrow Pits, Amathole District Municipality, Eastern Cape, South Africa*. [SAHRIS CaseID – 1138, 1150, 1162, 1182, 1187, 1195].
- o Van Ryneveld, K. (ArchaeoMaps). 2013a. *Phase 1 Archaeological Impact Assessment – Ngcizele Phase 2 Village Water Supply, near Centane, Amathole District Municipality, Eastern Cape, South Africa*. [SAHRIS CaseID – 4458].
- o Van Ryneveld, K. (ArchaeoMaps). 2013b. *Phase 1 Archaeological Impact Assessment – Willowvale – Dwesa Borrow Pits Project, Amathole District Municipality, Eastern Cape, South Africa*. [SAHRIS CaseID – 1532].
- o Van Ryneveld, K. (ArchaeoMaps). 2016. *Phase 1 Archaeological and Cultural Heritage Impact Assessment – Proposed Conference and Accommodation Facility near Gcuwa Dam, Butterworth, Mnquma Local Municipality, Eastern Cape*. [SAHRIS CaseID – 9913].

### 2.1.3) SAHRA Provincial Heritage Site Database – Eastern Cape

No geo-referenced declared Provincial Heritage Sites (PHS) are recorded in the SAHRA – Eastern Cape database ([https://en.wikipedia.org/wiki/List\\_of\\_heritage\\_sites\\_in\\_Eastern\\_Cape](https://en.wikipedia.org/wiki/List_of_heritage_sites_in_Eastern_Cape)) and situated within the 10km radius from the proposed Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, ADM, Eastern Cape study site.



**Map 4:** Spatial distribution of geo-referenced PHSs in the SAHRA – Eastern Cape database in relation to the Ngqamakhwe Regional Water Supply Scheme, Ngqamakhwe, ADM, Eastern Cape ([https://en.wikipedia.org/wiki/List\\_of\\_heritage\\_sites\\_in\\_Eastern\\_Cape](https://en.wikipedia.org/wiki/List_of_heritage_sites_in_Eastern_Cape))

### 2.1.4) General Discussion

Van Schalkwyk (2008) reported on a number of Stone Age resources identified alongside the N2 Wild Coast Toll Road corridor, including Earlier (ESA), Middle (MSA) and Later Stone Age (LSA) sites and occurrences, and including four (4) 'izivivane', small stone cairns marking a journey, which may be of either LSA or Iron Age cultural association. However, none of the recorded resources are situated within the greater Butterworth area.

Identified Iron Age resources are restricted to the Later Iron Age (LIA) and including a LIA homestead site comprising of the ruined remains of a livestock enclosure and five (5) huts, identified during the Amathole Borrow Pits assessment (Van Ryneveld 2011) and additional LIA structure remains located during the Ngcizele Phase 2 study (Van Ryneveld 2013a). Further afield Van Schalkwyk (2008) again reported on a number of LIA sites, including livestock and residential remains as well as cemeteries and burial sites reported on in the N2 Wild Coast Toll Road report. Again, these sites are not situated in proximity to the Ngqamakhwe study site, but their presence highlight the typical site type expected in rural areas.

Identified Colonial Period sites include the Cunningham Mission Church Complex as well as a Colonial Period farmstead recorded during the Amathole Borrow Pits project (Van Ryneveld 2011), while the general presence of Colonial Period sites across rural areas are highlighted by a number of Colonial Period farmstead and structure remains including a 1901 trading store identified during the N2 Wild Coast Toll Road study (Van Schalkwyk 2008).

Contemporary heritage sites, or structures younger than 60 years, but of cultural significance include the Luxeni Tribal Court building, also identified during the Amathole Borrow Pits study (Van Ryneveld 2011), as well as contemporary structures of lesser cultural significance situated near Gcuwa Dam (Van Ryneveld 2016).

Eight (8) archaeological or cultural heritage resources, as defined and protected by the NHRA 1999, were identified during the field assessment of the *Ngqamakhwe Regional Water Supply Scheme – Phase 3*, Ngqamakhwe, ADM, Eastern Cape development study site, six (6) of which constitute Later Iron Age sites and two (2) classed as Colonial Period sites. In addition to sites formally protected by the NHRA 1999, a number of culturally sensitive or heritage site types not directly impacted by the project are highlighted. This for purposes of caution and to familiarise the developer with the broader cultural landscape:

- Graves are often found fenced within homestead yards. Only graves situated immediately adjacent to the line route are recorded in this report, but caution should be taken when working in an area where family graves / cemeteries are situated in nearby homestead yards.
- Patches of aloe are typically found on the landscape. These do represent cultural sensitive areas in that aloe often overgrow old stone walled livestock enclosures. No impact on such features are envisioned and the developer should avoid impact.
- Deserted homesteads and homestead ruins are found scattered across the greater study site. These seem to in general be younger than 60 years of age and thus not formally protected by the NHRA 1999. Any impact on abandoned homesteads or homestead ruins should be avoided.
- Homesteads and homestead ruins are often associated with stone walled livestock enclosures. Again impact on these should be avoided. Such sites have also in cases been interpreted as living heritage sites.
- Stone walled demarcations across the greater study site are not restricted to animal husbandry practices and stone outlines demarcating agricultural fields are visible in places.

#### 2.2.1) Site NQM-01 – Later Iron Age – Graves: S32°14'23.6"; E28°02'59.9"

Site NQM-01 comprises three (3) modern style graves situated along the line route. Graves are well conserved, but at present not fenced.

- **Site Significance and Recommendations:** Site NQM-01 is ascribed a SAHRA High / Medium Significance and a Generally Protected IV-A Field Rating. It is recommended that temporary conservation measures be put in place, comprising a temporary fence (construction netting or a similar visually clear demarcation) and signage indicating the site as a 'Heritage Site – No Entry' area. A conservation buffer of approximately 5m should be maintained around the graves. All temporary conservation measures should be removed upon completion of work in the area.

#### 2.2.2) Site NQM-02 – Later Iron Age – Cemetery: S32°14'14.1"; E28°02'58.4"

Site NQM-02 comprises a small formally fenced cemetery of approximately twenty (20) graves, varying in style but mainly consisting of modern style and earth mound type graves.

- **Site Significance and Recommendations:** Site NQM-02 is ascribed a SAHRA High / Medium Significance and a Generally Protected IV-A Field Rating. The site is already formally fenced. It is recommended that temporary signage indicating the site as a 'Heritage Site – No Entry' area be attached at intervals on the conservation fence for the tenure of development in the area.

#### 2.2.3) Site NQM-03 – Later Iron Age – Homestead Ruins: S32°13'47.8"; E28°02'42.4"

Site NQM-03 constitutes fairly extensive homestead ruins situated along the line route. Varying structure types include disused modern style buildings as well as old daga and pole hut remains indicating that at least some of the structures at the site are older than 60 years of age and formally protected by the NHRA 1999.

- **Site Significance and Recommendations:** Site NQM-03 is ascribed a SAHRA Low Significance and a Generally Protected IV-C Field Rating. No conservation measures are in place. It is recommended that the developer ensures



that conservation measures, including a temporary fence (construction netting or a similar visually clear demarcation) be erected around the site and that temporary signage indicating the area as a 'Heritage Site – No Entry' zone be attached to the conservation fence. All temporary conservation measures should be removed once work in the area is completed.

#### **2.2.4) Site NQM-04 – Later Iron Age – Cemetery: S32°12'11.2"; E27°59'59.4"**

Site NQM-04 comprises a formally fenced cemetery containing approximately thirty (30) graves. Graves are primarily modern in style but including some stone cairn graves.

- **Site Significance and Recommendations:** Site NQM-04 is ascribed a SAHRA High / Medium Significance and a Generally Protected IV-A Field Rating. The site is already formally fenced. It is recommended that temporary signage indicating the site as a 'Heritage Site – No Entry' area be attached at intervals on the conservation fence until work in the area is completed.

#### **2.2.5) Site NQM-05 – Later Iron Age – Graves: S32°11'45.0"; E28°02'11.9"**

Site NQM-05 comprises of three (3) graves situated along the line route. All graves are modern style graves, of which two (2) are individually, formally fenced, while the remainder remains unfenced.

- **Site Significance and Recommendations:** Site NQM-05 is ascribed a SAHRA High / Medium Significance and a Generally Protected IV-A Field Rating. Two (2) of the graves are individually, formally fenced. The third grave is unfenced. It is recommended that the developer ensures that a temporary fence (construction netting or a similar visually clear demarcation) be in place at the unfenced grave and that temporary signage, indicating the graves as 'Heritage Site – No Entry' be attached to all the grave conservation fences. All temporary conservation measures should be removed upon completion of work in the area.

#### **2.2.6) Site NQM-06 – Later Iron Age – Cemetery: S32°10'49.2"; E28°03'49.6"**

Site NQM-06 comprises a small formally fenced cemetery of four (4) graves situated immediately adjacent to the line route. All graves are modern style graves.

- **Site Significance and Recommendations:** Site NQM-06 is ascribed a SAHRA High / Medium Significance and a Generally Protected IV-A Field Rating. The site is already formally fenced. It is recommended that temporary signage indicating the site as a 'Heritage Site – No Entry' area be attached at intervals on the conservation fence for the duration of development in the area.

#### **2.2.7) Site NQM-07 – Colonial Period – Residences: S32°12'06.9"; E27°56'45.5"**

Site NQM-07 comprises three (3) Colonial Period residences situated along the line route at the main road into Ngqamakhwe town. The structures are older than 60 years and formally protected by the NHRA 1999. All residences are formally fenced with access gates and currently in use.

- **Site Significance and Recommendations:** Site NQM-07 comprises of three (3) Colonial Period residences, all of which are ascribed a SAHRA Low Significance and a Generally Protected IV-C Field Rating. All residences are formally fenced with these conservation measures complying with SAHRA / EC PHRA minimum standards for heritage site conservation. The developer need not comply with any additional conservation measures.

**2.2.8) Site NQM-08 – Colonial Period – Building: S32°12'11.4"; E27°56'33.0"**

Site NQM-08 comprises an old Colonial Period government building, still in use for said purposes. The building is older than 60 years and formally protected by the NHRA 1999. The site is formally fenced with an access gate.

- **Site Significance and Recommendations:** Site NQM-08 is ascribed a SAHRA / EC PHRA Medium Significance and a Generally Protected IV-B Field Rating. The building is formally fenced with an access gate, with these measures complying with SAHRA / EC PHRA minimum standards for heritage site conservation. No additional conservation measures are necessary prior to development in the area.



**Plate 1:** General view of the Ngqamakhwe line route [1]



**Plate 3:** General view of the Ngqamakhwe line route [3]



**Plate 2:** General view of the Ngqamakhwe line route [2]



**Plate 4:** General view of the Ngqamakhwe line route [4]





**Plate 5:** General view of the Ngqamakhwe line route [5]



**Plate 7:** General view of the Ngqamakhwe line route [7]



**Plate 6:** General view of the Ngqamakhwe line route [6]



**Plate 8:** General view of the Ngqamakhwe line route [8]





**Plate 9:** General view of the Ngqamakhwe line route [9]



**Plate 11:** Aloe demarcating old livestock enclosure remains [1]



**Plate 10:** Aloe demarcating old livestock enclosure remains [1]



**Plate 12:** Old homestead remains [1]





**Plate 13:** Old homestead remains [2]



**Plate 15:** Stone livestock enclosures



**Plate 14:** Stone agricultural field demarcations



**Plate 16:** General view of Site NQM-01





**Plate 17:** View of the fenced Site NQM-02 cemetery



**Plate 19:** General view of the Site NQM-04 cemetery



**Plate 18:** View of the Site NQM-03 homestead ruins



**Plate 20:** Two (2) of the graves comprising Site NQM-05





**Plate 21:** The unfenced grave at Site NQM-05



**Plate 23:** View of the site NQM-07 Colonial Period residences

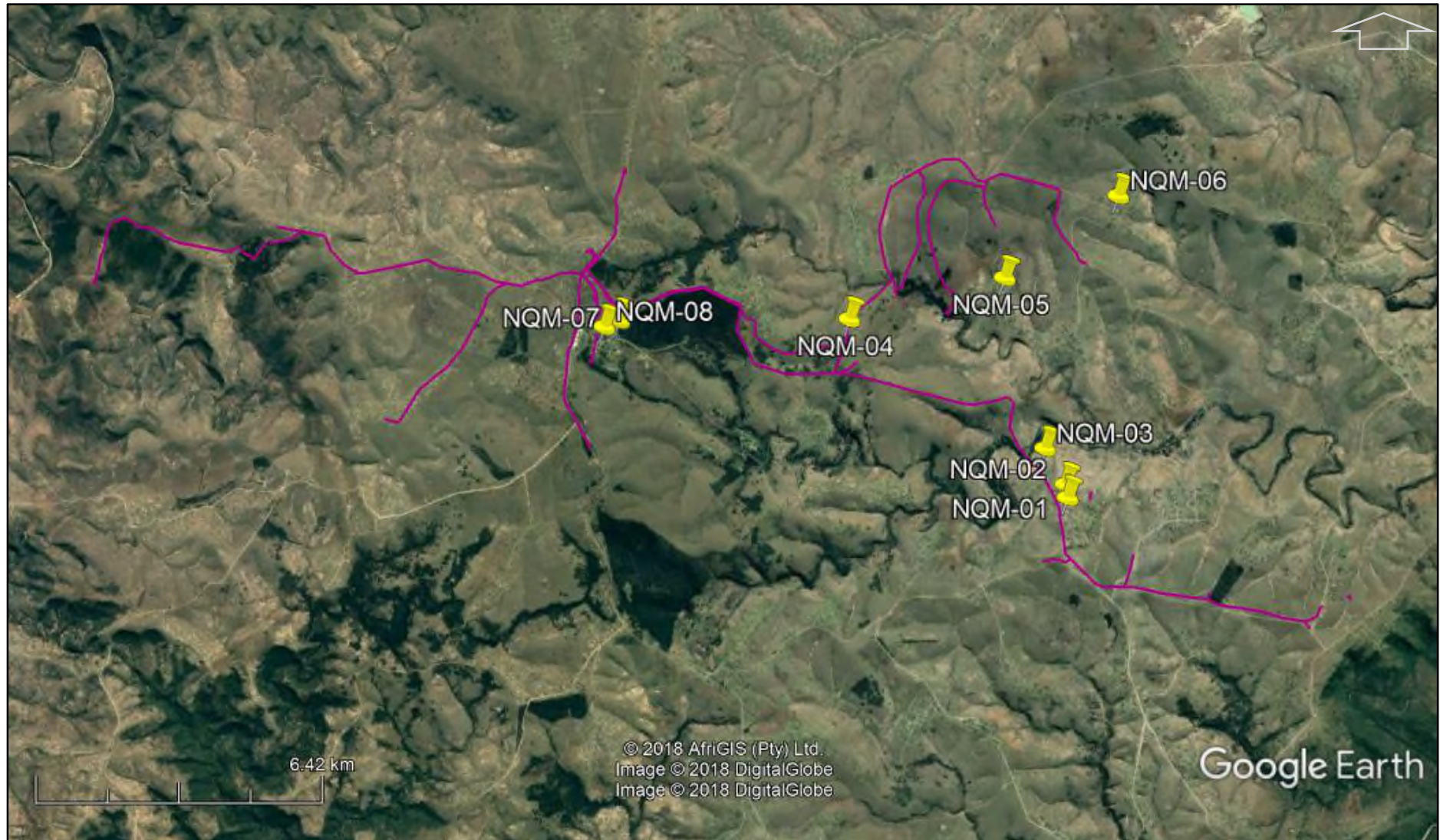


**Plate 22:** View of the Site NQM-06 cemetery



**Plate 24:** General view of Site NQM-08





**Map 5:** Phase 1 AIA field assessment results for the *Ngqamakhwe Regional Water Supply Scheme – Phase 3*, Ngqamakhwe, ADM, Eastern Cape, study site

### 3 – Environmental Impact Assessment Rating

Identified archaeological and cultural heritage resources are ascribed an Environmental Impact Assessment (EIA) rating, based on the outline presented below to provide a significance rating of development impact on resources, both during the 1) construction and 2) operation and use phases of development (in accordance with NEMA 1998, Regulations 2014):

<b>Overall Nature:</b>	1) <b>Negative</b> (negative impact on affected biophysical or human environment), or 2) <b>Positive</b> (benefit to the affected biophysical or human environment).
<b>Type:</b>	1) <b>Direct</b> (caused by the action and occur at the same time and place), 2) <b>Indirect or secondary</b> (caused by the action and are later in time or further removed in distance but reasonably foreseeable), or 3) <b>Cumulative</b> (impact which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions; can result from individually minor, but collectively significant actions taking place over a period of time).
<b>Spatial Extent:</b>	1) <b>Site</b> (immediate area of activity, incorporating a 5m zone from the edge of the affected area), 2) <b>Local</b> (area up to and/or within 10km from the 'site' as defined above), 3) <b>Regional</b> (entire community, basin or landscape), or 4) <b>National</b> (South Africa).
<b>Duration:</b>	1) <b>Short-term</b> (impact would last for the duration of activities; quickly reversible), 2) <b>Medium-term</b> (impact would affect project activity; reversible over time), 3) <b>Long-term</b> (impact would continue beyond project activity), or 4) <b>Permanent</b> (impact would continue beyond decommissioning).
<b>Severity:</b>	1) <b>Low</b> , 2) <b>Medium</b> , or 3) <b>High</b> , being +) <b>Positive</b> , or -) <b>Negative</b> (based on separately described categories examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functionality or slightly alters the environment itself).
<b>Reversibility:</b>	1) <b>Completely reversible</b> (completely reversible impact with implementation of correct mitigation measures), 2) <b>Partly reversible</b> (partly reversible impact with implementation of correct mitigation measures), or 3) <b>Irreversible</b> (impact cannot be reversed, regardless of mitigation or rehabilitation measures).
<b>Replaceability:</b>	1) <b>Resource will not be lost</b> (resource will not be lost provided mitigation measures are implemented), 2) <b>Resource will be partly lost</b> (partial loss or destruction of the resource will occur even though management and mitigation measures are implemented), or 3) <b>Resource cannot be replaced</b> (resource is irreplaceable no matter which management or mitigation measures are implemented).
<b>Probability:</b>	1) <b>Unlikely</b> (<40% probability), 2) <b>Possible</b> (40% probability), 3) <b>Probable</b> (>70% probability), or 4) <b>Definite</b> (>90% probability).
<b>Mitigation potential:</b>	1) <b>High or completely mitigatable</b> (relatively easy and cost effective to manage. Specialist expertise and equipment generally not required. Nature of impact easily understood and may be mitigated through implementation of a management plan or 'good housekeeping', including regular monitoring and reporting regimes. Significance of the impact after mitigation is likely to be low or negligible), 2) <b>Moderate or partially mitigatable</b> (management requires higher level of expertise and resources to maintain impacts with acceptable levels. Mitigation can be tied up in the design of the project. Significance of the impacts after mitigation is likely to be low to moderate. It may not be possible to mitigate the impact entirely, with residual impacts resulting), or 3) <b>Low or un-mitigatable</b> (will not be possible to mitigate the impact entirely, regardless of expertise and resources. Potential to manage the impacts may be beyond the scope of the project. Management of the impact is not likely to result in a measurable change in the level of significance).
<b>Impact significance:</b>	1) <b>Negligible</b> , 2) <b>Low</b> (largely of HIGH mitigation potential, after consideration of other criteria), 3) <b>Moderate</b> (largely of MODERATE or partial mitigation potential, after consideration of other criteria), or 4) <b>Substantial</b> (largely of LOW mitigation potential, after consideration of other criteria).



Environmental Impact Assessment Rating: Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, Amathole District Municipality, Eastern Cape												
Potential Impacts	Overall nature	Type	Spatial extent	Duration	Severity	Reversibility	Replaceability	Probability	MITIGATION POTENTIAL	IMPACT SIGNIFICANCE		MITIGATION MEASURES
										Without mitigation	With mitigation	
SITES: NQM-01, NQM-02, NQM-04, NQM-05 and NQM-06												
Construction phase	Positive	Direct	Site	Short term	High	Irreversible	Resource will not be lost	Possible	Moderate	Substantial	Low	Temporary fencing and signage or temporary signage only
Operational phase	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mitigation details: Temporary fencing and signage or temporary signage only												

**Table 4:** Environmental Impact Assessment Rating: Sites NQM-01, NQM-02, NQM-04, NQM-05 and NQM-06

Environmental Impact Assessment Rating: Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, Amathole District Municipality, Eastern Cape												
Potential Impacts	Overall nature	Type	Spatial extent	Duration	Severity	Reversibility	Replaceability	Probability	MITIGATION POTENTIAL	IMPACT SIGNIFICANCE		MITIGATION MEASURES
										Without mitigation	With mitigation	
SITES: NQM-03, NQM-07 and NQM-08												
Construction phase	Positive	Direct	Site	Short term	Low	Partly reversible	Resource will not be lost	Unlikely	High	Moderate	Negligible	Temporary fencing and signage (Site NQM-03)
Operational phase	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mitigation details: Site NQM – Temporary fencing and signage, Sites NQM-07 and NQM-08 – N/A												

**Table 5:** Environmental Impact Assessment Rating: Sites NQM-03, NQM-07 and NQM-08

With reference to archaeological and cultural heritage compliance, as per the requirements of the NHRA 1999, it is recommended that the proposed **Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, ADM, Eastern Cape** development proceeds as applied for, provided the developer comply with the recommended heritage conservation measures.

Eight archaeological or cultural heritage resources, as defined and protected by the NHRA 1999, were identified during the field assessment.

- The proposed development poses no 'fatal flaws' with reference to archaeological and cultural heritage resources.
- From an archaeological and cultural heritage point of view consideration of a 'No-Go' option is irrelevant.
- Archaeological and cultural heritage mitigation recommendations as per the Heritage Compliance Summary should be implemented during the construction phase.
- The development will have no cumulative impact on archaeological or cultural heritage resources.
- [In the event of any incidental archaeological and cultural heritage resources, as defined and protected by the NHRA 1999<sup>1</sup>, being identified during the course of development the process described in 'Appendix B: Heritage Protocol for Incidental Finds during the Construction Phase' should be followed. The developer is advised to ensure a sufficient heritage contingency budget to address incidental finds during the course of development.]

Heritage Compliance Summary – Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, Amathole District Municipality, Eastern Cape				
Map Code	Site	Co-ordinates	Site Significance	Recommendations
Ngqamakhwe Regional Water Supply Scheme – Phase 3				
NQM-01	Later Iron Age – Graves	S32°14'23.6"; E28°02'59.9"	High / Medium Significance Generally Protected IV-A	Temporary fence and signage
NQM-02	Later Iron Age - Cemetery	S32°14'14.1"; E28°02'58.4"	High / Medium Significance Generally Protected IV-A	Temporary signage
NQM-03	Later Iron Age – Homestead Ruins	S32°13'47.8"; E28°02'42.4"	Low Significance Generally Protected IV-C	Temporary fence and signage
NQM-04	Later Iron Age - Cemetery	S32°12'11.2"; E27°59'59.4"	High / Medium Significance Generally Protected IV-A	Temporary signage
NQM-05	Later Iron Age – Graves	S32°11'45.0"; E28°02'11.9"	High / Medium Significance Generally Protected IV-A	Temporary fence and signage
NQM-06	Later Iron Age - Graves	S32°10'49.2"; E28°03'49.6"	High / Medium Significance Generally Protected IV-A	Temporary signage
NQM-07	Colonial Period – Residences	S32°12'06.9"; E27°56'45.5"	Low Significance Generally Protected IV-C	N/A
NQM-08	Colonial Period - Building	S32°12'11.4"; E27°56'33.0"	Medium Significance Generally Protected IV-B	N/A

**Table 6:** Heritage compliance summary

The EC PHRA-APM Unit HIA Comment will state legal requirements for development to proceed, or reasons why, from a heritage perspective, development may not be further considered.

#### <sup>1</sup> Simplified Guide to the Identification of Archaeological Sites:

- ❖ **Stone Age** – Knapped stone display flakes and flake scars that appear unnatural and may result in similar type 'shaped' stones often concentrated in clusters or forming a distinct layer in the geological stratigraphy. ESA shapes may represent 'pear' or oval shaped stones, often in the region of 10cm or larger. Typical MSA types include blade-like or rough triangular shaped artefacts, often associated with randomly shaped lithics or flakes that display use- or edge-wear around the rim of the artefact. LSA types are similar to MSA types, but generally smaller (≤3cm in size), often informally shaped, and are frequently found in association with bone, pieces of charcoal, ceramic shards and food remains.
  - **Rock Art** – Includes both painted and engraved images.
  - **Shell Middens** – Include compact shell lenses that may be quite extensive in size or small ephemeral scatters of shell food remains, often associated with LSA artefact remains, but may also be of MSA and Iron Age cultural association.
- ❖ **Iron Age** – Iron Age sites are often characterized by stone features, i.e. the remains of former livestock enclosures or typical household remains; huts are identified by either mound or depression hollows. Typical artefacts include ceramic remains, farming equipment, beads and trade goods, metal artefacts (including jewellery) etc. Remains of the 'Struggle' – events, histories and landmarks associated therewith are often, based on cultural association, classed as part of the Iron Age heritage of South Africa.
- ❖ **Colonial Period** – Built environment remains, either urban or rural, are of a Western cultural affiliation with typical artefacts representing early Western culture, including typical household remains, trade and manufactured goods, such as old bottle, porcelain and metal artefacts. War memorial remains, including the vast array of associated graves and the history of the Industrial Revolution form important parts of South Africa's Colonial Period heritage.
- ❖ **Grave and Cemetery Sites** – Marked grave and cemetery sites are routinely associated with the Iron Age and Colonial Period. Unmarked grave sites associated with the Stone Age, Iron Age and Colonial Period may be uncovered during the course of development.

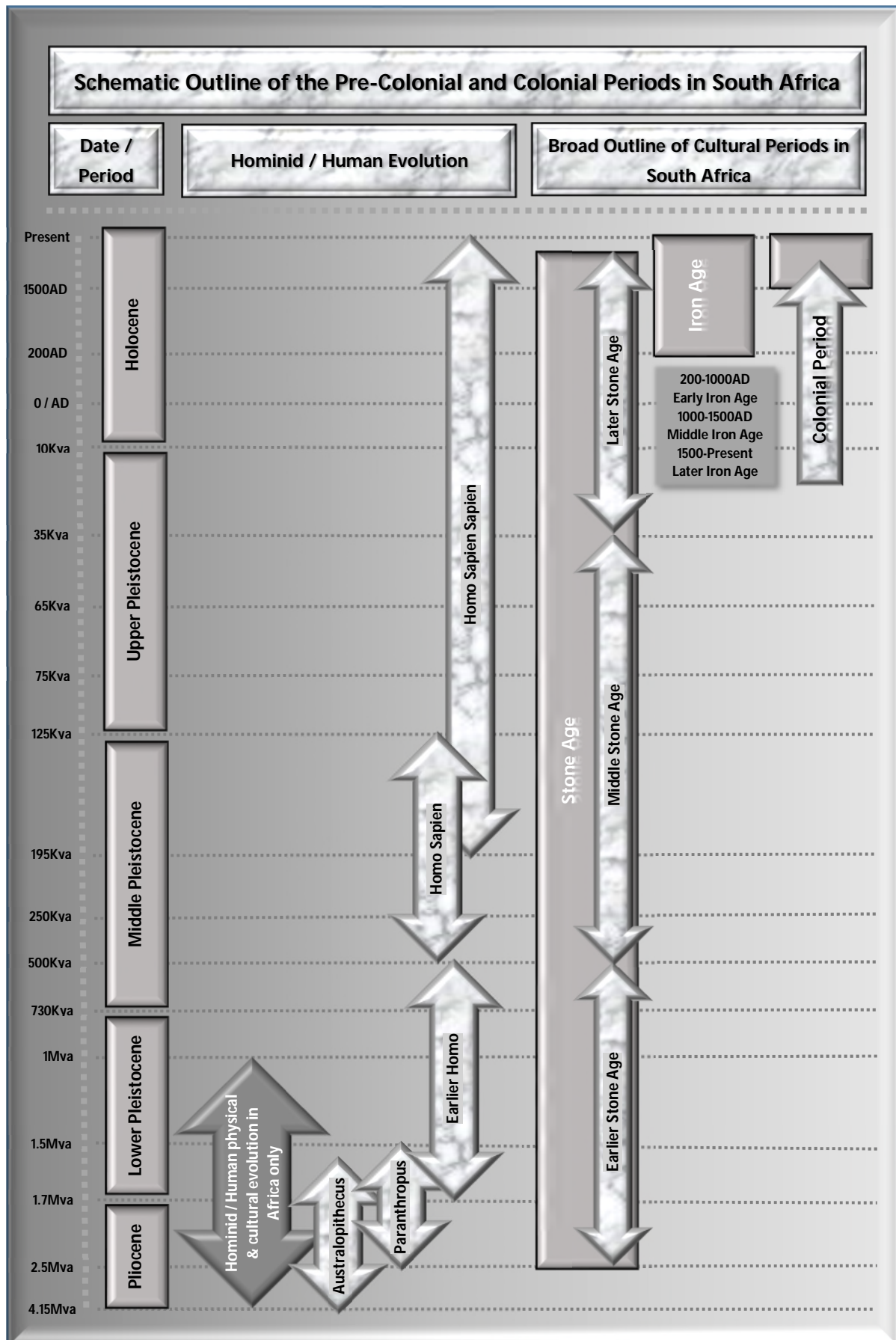
**Notes:** Should any registered Interested & Affected Party (I&AP) wish to be consulted in terms of Section 38(3)(e) of the NHRA 1999 (socio-cultural consultation / SAHRA SIA) it is recommended that the developer / EAP ensures that the consultation be prioritized within the timeframe of the environmental assessment process.

List of Acronyms and Abbreviations	
AD	Anno Domini (the year 0)
AIA	Archaeological (and Cultural Heritage) Impact Assessment
AMAFA	Amafa aKwaZulu-Natali (Natal PHRA)
ASAPA	Association of Southern African Professional Archaeologists
BAR	Basic Assessment Report
BC	Before the Birth of Christ (the year 0)
BCE	Before the Common Era (the year 0)
BID	Background Information Document
BP	Before the Present (the year 0)
Cm	Centimetre
CMP	Conservation Management Plan
CRM	Cultural Resources Management
DAC	Department of Arts and Culture
DEAT	Department of Environmental Affairs and Tourism
DME	Department of Minerals and Energy
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
ELO	Environmental Liaison Officer
EC PHRA	Eastern Cape Provincial Heritage Resources Agency
EIA <sub>1</sub>	Environmental Impact Assessment
EIA <sub>2</sub>	Early Iron Age
EMPr	Environmental Management Plan / Programme Report
ESA	Earlier Stone Age
Ha	Hectare
HIA	Heritage Impact Assessment
HWC	Heritage Western Cape
ICOMOS	International Council on Monuments and Sites
IEM	Integrated Environmental Management
Km	Kilometre
Kya	Thousands of years ago
LIA	Later Iron Age
LSA	Later Stone Age
M	Metre
m <sup>2</sup>	Square metre
MIA	Middle Iron Age
Mm	Millimetre
MPRDA 2002	Mineral and Petroleum Resources Development Act, No 28 of 2002
MSA	Middle Stone Age
Mya	Millions of years ago
NEMA 1998	National Environmental Management Act, No 107 of 1998
NHRA 1999	National Heritage Resources Act, No 25 of 1999
PIA	Palaeontological Impact Assessment
PHRA	Provincial Heritage Resources Agency
PSSA	Palaeontological Society of Southern Africa
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
SIA	Social Impact Assessment

Table 7: List of Acronyms and Abbreviations



1. [en.wikipedia.org/wiki/List\\_of\\_heritage\\_sites\\_in\\_Eastern\\_Cape](http://en.wikipedia.org/wiki/List_of_heritage_sites_in_Eastern_Cape).
2. Indwe. 2018. *Amathole District Municipality: Proposed Ngqamakhwe Regional Water Supply Scheme Phase 3, Eastern Cape – EIA Background Information Document*.
3. South African Government. (No. 107 of) 1998. *National Environmental Management Act*.
4. South African Government. (No. 25 of) 1999. *National Heritage Resources Act*.
5. South African Heritage Resources Agency. 2007. *Minimum Standards for the Archaeological and Heritage Components of Impact Assessments*. (Unpublished guidelines.)
6. Van Ryneveld, K. (ArchaeoMaps). 2011. *Phase 1 Archaeological Impact Assessment – Utilization of Borrow Pits, Amathole District Municipality, Eastern Cape, South Africa*.
7. Van Ryneveld, K. (ArchaeoMaps). 2013a. *Phase 1 Archaeological Impact Assessment – Ngcizele Phase 2 Village Water Supply, near Centane, Amathole District Municipality, Eastern Cape, South Africa*.
8. Van Ryneveld, K. (ArchaeoMaps). 2016. *Phase 1 Archaeological and Cultural Heritage Impact Assessment – Proposed Conference and Accommodation Facility near Gcuwa Dam, Butterworth, Mnquma Local Municipality, Eastern Cape*.
9. Van Schalkwyk, L.O. (eThembeni). 2008. *Heritage Impact Assessment of the Proposed N2 Wild Coast Toll Highway*.





## Heritage Impact Assessment (HIA) – Ngqamakhwe Regional Water Supply Scheme – Phase 3, Ngqamakhwe, Amathole District Municipality, Eastern Cape

### Heritage Protocol for Incidental Finds during the Construction Phase

Should any palaeontological, archaeological or cultural heritage resources, including human remains / graves, as defined and protected by the NHRA 1999, be identified during the construction phase of development (including as a norm during vegetation clearing, surface scraping, trenching and excavation phases), it is recommended that the process described below be followed.

#### ➤ On-site Reporting Process:

1. The identifier should immediately notify his / her supervisor of the find.
2. The identifier's supervisor should immediately (and within 24 hours after reporting by the identifier) report the incident to the on-site SHE / SHEQ officer.
3. The on-site SHE / SHEQ officer should immediately (and within 24 hours after reporting by the relevant supervisor) report the incident to the appointed ECO / ELO officer. [Should the find relate to human remains the SHE / SHEQ officer should immediately notify the nearest SAPS station informing them of the find].
4. The ECO / ELO officer should ensure that the find is within 72 hours after the SHE / SHEQ officers report reported on SAHRIS and that a relevant heritage specialist is contacted to make arrangements for a heritage site inspection. [Should the find relate to human remains the ECO / ELO officer should ensure that the archaeological site inspection coincides with a SAPS site inspection, to verify if the find is of forensic, authentic (informal / older than 60 years), or archaeological (older than 100 years) origin].
5. The appointed heritage specialist should compile a 'heritage site inspection' report based on the site specific findings. The site inspection report should make recommendations for the destruction, conservation or mitigation of the find and prescribe a recommended way forward for development. The 'heritage site inspection' report should be submitted to the ECO / ELO, who should ensure submission thereof on SAHRIS.
6. SAHRA / the relevant PHRA will state legal requirements for development to proceed in the SAHRA / PHRA Comment on the 'heritage site inspection' report.
7. The developer should proceed with implementation of the SAHRA / PHRA Comment requirements. SAHRA / PHRA Comment requirements may well stipulate permit specifications for development to proceed.
  - Should permit specifications stipulate further Phase 2 archaeological investigation (including grave mitigation) a suitably accredited heritage specialist should be appointed to conduct the work according to the applicable SAHRA / PHRA process. The heritage specialist should apply for the permit. Upon issue of the SAHRA / PHRA permit the Phase 2 heritage mitigation program may commence.
  - Should permit specifications stipulate destruction of the find under a SAHRA / PHRA permit the developer should immediately proceed with the permit application. Upon the issue of the SAHRA / PHRA permit the developer may legally proceed with destruction of the palaeontological, archaeological or cultural heritage resource.
  - Upon completion of the Phase 2 heritage mitigation program the heritage specialist will submit a Phase 2 report to the ECO / ELO, who should in turn ensure submission thereof on SAHRIS. Report recommendations may include that the remainder of a heritage site be destroyed under a SAHRA / PHRA permit.
  - Should the find relate to human remains of forensic origin the matter will be directly addressed by the SAPS: A SAHRA / PHRA permit will not be applicable.

**NOTE:** Note that SAHRA / PHRA permit and process requirements relating to the mitigation of human remains requires suitable advertising of the find, a consultation, mitigation and re-interment / deposition process.

➤ **Duties of the Supervisor:**

1. The supervisor should immediately upon reporting by the identifier ensure that all work in the vicinity of the find is ceased.
2. The supervisor should ensure that the location of the find is immediately secured (and within 12 hours of reporting by the identifier), by means of a temporary conservation fence (construction netting) allowing for a 5-10m heritage conservation buffer zone around the find. The temporary conserved area should be sign-posted as a 'No Entry – Heritage Site' zone.
3. Where development has impacted on the resource, no attempt should be made to remove artefacts / objects / remains further from their context, and artefacts / objects / remains that have been removed should be collected and placed within the conservation area or kept for safekeeping with the SHE / SHEQ officer. It is imperative that where development has impacted on palaeontological, archaeological and cultural heritage resources the context of the find be preserved as good as possible for interpretive and sample testing purposes.
4. The supervisor should record the name, company and capacity of the identifier and compile a brief report describing the events surrounding the find. The report should be submitted to the SHE / SHEQ officer at the time of the incident report.

➤ **Duties of the SHE / SHEQ Officer:**

1. The SHE / SHEQ officer should ensure that the location of the find is recorded with a GPS. A photographic record of the find (including implementation of temporary conservation measures) should be compiled. Where relevant a scale bar or object that can indicate scale should be inserted in photographs for interpretive purposes.
2. The SHE / SHEQ officer should ensure that the supervisors report, GPS co-ordinate and photographic record of the find be submitted to the ECO / ELO officer. [Should the find relate to human remains the SHE / SHEQ officer should ensure that the mentioned reporting be made available to the SAPS at the time of the incident report].
3. Any retrieved artefacts / objects / remains should, in consultation with the ECO / ELO officer, be deposited in a safe place (preferably on-site) for safekeeping.

➤ **Duties of the ECO / ELO officer:**

1. The ECO / ELO officer should ensure that the incident is reported on SAHRIS. (The ECO / ELO officer should ensure that he / she is registered on the relevant SAHRIS case with SAHRIS authorship to the case at the time of appointment to enable heritage reporting).
2. The ECO / ELO officer should ensure that the incident report is forwarded to the heritage specialist for interpretive purposes at his / her soonest opportunity and prior to the heritage site inspection.
3. The ECO / ELO officer should facilitate appointment of the heritage specialist by the developer / construction consultant for the heritage site inspection.
4. The ECO / ELO officer should facilitate access by the heritage specialist to any retrieved artefacts / objects / remains that have been kept in safekeeping.
5. The ECO / ELO officer should facilitate coordination of the heritage site inspection and the SAPS site inspection in the event of a human remains incident report.
6. The ECO / ELO officer should facilitate heritage reporting and heritage compliance requirements by SAHRA / the relevant PHRA, between the developer / construction consultant, the heritage specialist, the SHE / SHEQ officer (where relevant) and the SAPS (where relevant).

➤ **Duties of the Developer / Construction Consultant:**

The developer / construction consultant should ensure that an adequate heritage contingency budget is accommodated within the project budget to facilitate and streamline the heritage compliance process in the event of identification of incidental palaeontological, archaeological and cultural heritage resources during the course of development, including as a norm during vegetation clearing, surface scraping, trenching and excavation phases, when resources not visible at the time of the surface assessment may well be exposed.



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**Resumé**  
**Karen van Ryneveld**  
**2018**

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**Name:** Karen van Ryneveld

**Contact Details:** 1) Mobile – 084 871 1064  
2) E-mail – karen@archaeomaps.co.za  
3) Website – www.archaeomaps.co.za  
4) Postal address – Postnet Suite 239, Private Bag X3, Beacon Bay, 5205

**Company:** ArchaeoMaps cc

**Occupation:** Archaeologist

**Qualification:** MSc Archaeology (WITS University – 2003)

**Accreditation:** 1) Association of Southern African Professional Archaeologists (ASAPA) accredited Cultural Resources Management CRM practitioner [member nr – 163]  
     ○ 2010 – ASAPA CRM Section: Principle Investigator – Stone Age  
     ○ 2005 – ASAPA CRM Section: Field Director – Iron Age & Colonial Period  
 2) SAHRA, AMAFA, EC PHRA and HWC listed ASAPA accredited CRM archaeologist

**Tertiary Education**

2010 **University of South Africa (UNISA), Pretoria** (Project Management 501)

2006 – 2007 **Nelson Mandela Metropolitan University (NMMU), Port Elizabeth** (Undergraduate Certificate in Geographical Information Systems – GIS)

2001 – 2003 **University of the Witwatersrand (WITS), Johannesburg** (MSc Archaeology)

1999 – 2000 **University of Pretoria (UP), Pretoria** (BA Hons. Archaeology)

1991 – 1993 **University of Pretoria (UP), Pretoria** (BA Archaeology & History of Art)

**Courses**

2016/01 SPA (Safety Passport Alliance) – Petrol Retail [SA Safety Management Training Services – SMST]

**Employment – Professional Archaeology**

2007/04 – Present ArchaeoMaps [Self-employed] (Archaeologist – CRM)

2006/06 – 2007/03 National Museum, Bloemfontein (Archaeologist – CRM, Dept. of Archaeology)

2005/04 – 2006/05 McGregor Museum, Kimberley (Archaeologist – CRM / Research, Dept. of Archaeology)

2004/04 – 2005/01 Amafa aKwaZulu-Natali (HoD: Archaeology, Palaeontology & Meteorites Unit – APM Unit)

2002/09 – 2004/03 McGregor Museum, Kimberley (Archaeologist – CRM / Research, Dept. of Archaeology)

**Employment – Freelance: Ground Penetrating Radar**

2015/10 – Present Terra Scan assistant (BCM area, EC) – GPR & underground utilities focussing on petrol retail (oil & gas) industry

**Archaeology – Summary**

Karen has been involved in CRM archaeology since 2003 and has been the author (including selected co-authored reports) of approximately 500 Phase 1 AIA studies. Phase 1 AIA work is centred in South Africa, focussing on the Northern and Eastern Cape provinces and the Free State. She has also conducted Phase 1 work in Botswana (2006 / 2007). In 2007 she started ArchaeoMaps, an independent archaeological and heritage consultancy. In 2010 she was awarded ASAPA CRM Principle Investigator (PI) status based on large scale Phase 2 Stone Age mitigation work (De Beers Consolidated Mines – Rooipoort, Northern Cape, 2008 / 2009) and has also been involved in a number of other Phase 2 projects including Stone Age, Shell Middens, Grave / Cemetery projects and Iron Age sites.

In addition to CRM archaeology she has been involved in research, including the international collaborations at Maloney's Kloof and Grootkloof, Ghaap Plateau, Northern Cape (2005 / 2006). Archaeological compliance experience includes her position as Head of the Archaeology, palaeontology and Meteorites (APM) Unit at AMAFA aKwaZulu-Natali (2004).

**Company Profile**

Company Name : ArchaeoMaps cc

Registration Number : 2005/180719/23

VAT Number : Not VAT Registered

Accountant : AZIMA Financial Services

Members / Shareholders : Karen van Ryneveld (100%)

BBBEE Status : Exempted Micro Enterprise (EME)