

HERITAGE SCREENER

CTS Reference Number:	CTS19_160
SAHRIS Ref:	
Client:	Terreco
Date:	October 2019
Title:	PROPOSED BULK WATER INFRASTRUCTURE FOR THE AUGMENTATION OF BULK WATER SUPPLY TO THE IBIKA RESERVOIRS, BUTTERWORTH, EASTERN CAPE

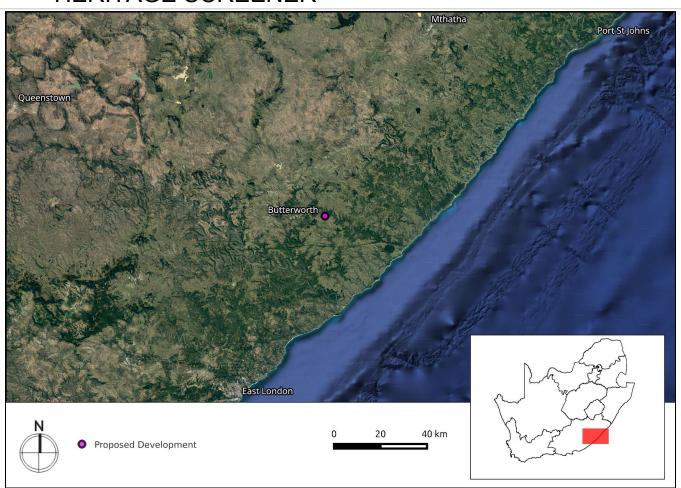


Figure 1a. Satellite map indicating the location of the proposed development in the Eastern Cape Province

Recommendation by CTS Heritage Specialists

RECOMMENDATION:

Based on the available information, it is unlikely that the proposed development will impact on significant heritage resources. However, due to the very high sensitivity of the area for impacts to palaeontology, it is recommended that the attached Chance Fossil Finds Procedure be implemented. In addition, should any unmarked burial grounds or graves be disturbed through excavation associated with this development, work must cease and ECPHRA must be contacted regarding a way forward.



1. Proposed Development Summary

The Amathole District Municipality (ADM) proposes to implement emergency bulk water supply projects that will augment the bulk water supply to the Ibika reservoirs that supply Butterworth and the surrounding villages. The proposed project includes the construction of bulk water supply pipelines, internal village reticulation and a reservoir as part of the larger scheme. It also includes the equipping of boreholes to supply water to the scheme. The proposed activities include the construction of a new reservoir within a critical biodiversity area as well as four watercourse crossings.

2. Application References

Name of relevant heritage authority(s)	SAHRA
Name of decision making authority(s)	DEDEAT

3. Property Information

Latitude / Longitude	32°19′31.02″S, 28°18′03.88″E
Erf number / Farm number	Farm RE/142 and Farm 1/31
Local Municipality	Mnquma
District Municipality	Amathole
Previous Magisterial District	Butterworth
Province	Eastern Cape
Current Use	Existing Road
Current Zoning	Road Reserve
Total Extent of Property	3600 Ha

4. Nature of the Proposed Development

Total Surface Area of development	8.71km
Depth of excavation (m)	<1m
Height of development (m)	NA



5. Category of Development

X	Triggers: Section 38(8) of the National Heritage Resources Act
	Triggers: Section 38(1) of the National Heritage Resources Act
Х	1. Construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier over 300m in length.
	2. Construction of a bridge or similar structure exceeding 50m in length.
	3. Any development or activity that will change the character of a site-
	a) exceeding 5 000m² in extent
	b) involving three or more existing erven or subdivisions thereof
	c) involving three or more erven or divisions thereof which have been consolidated within the past five years
	4. Rezoning of a site exceeding 10 000m ²
	5. Other (state):

6. Additional Infrastructure Required for this Development

None



7. Mapping (please see Appendix 3 and 4 for a full description of our methodology and map legends)

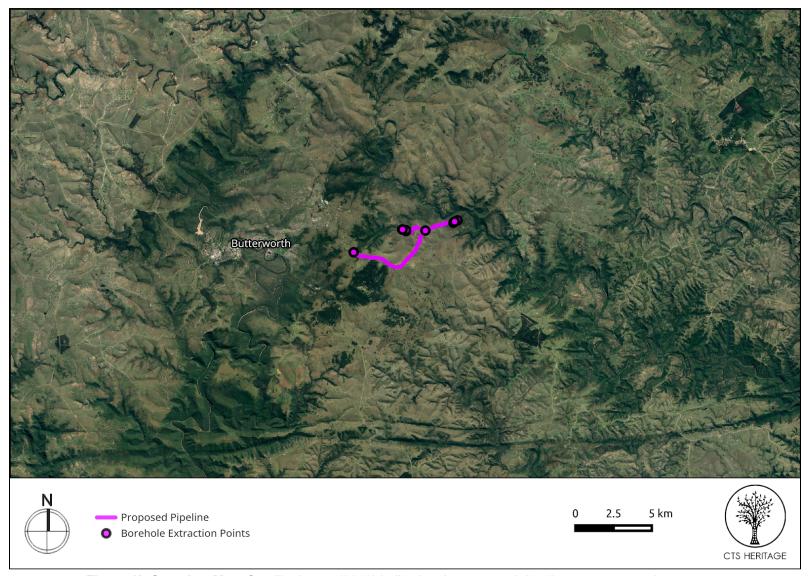


Figure 1b Overview Map. Satellite image (2019) indicating the proposed development area at closer range.



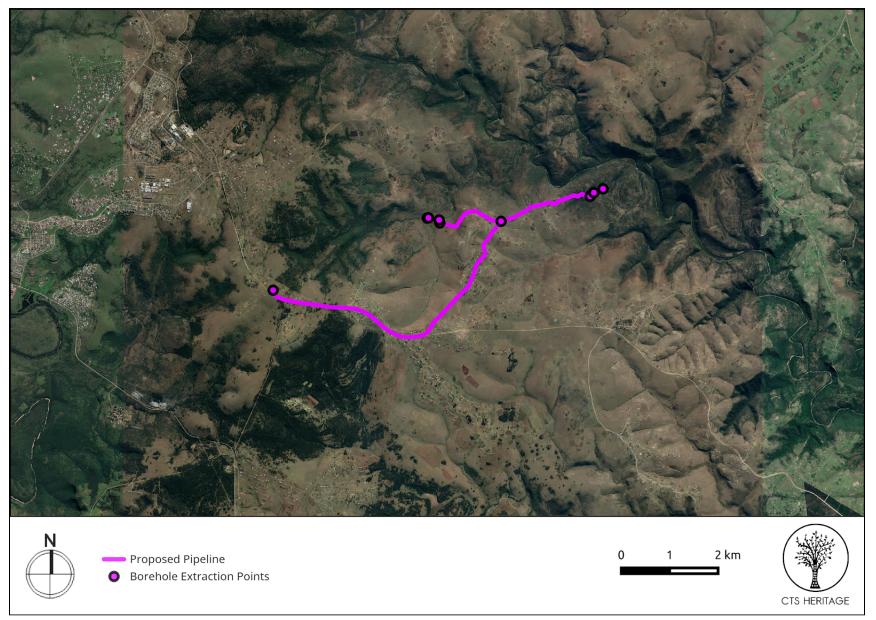


Figure 1c. Overview Map. Satellite image (2019) indicating the proposed development area at closer range.



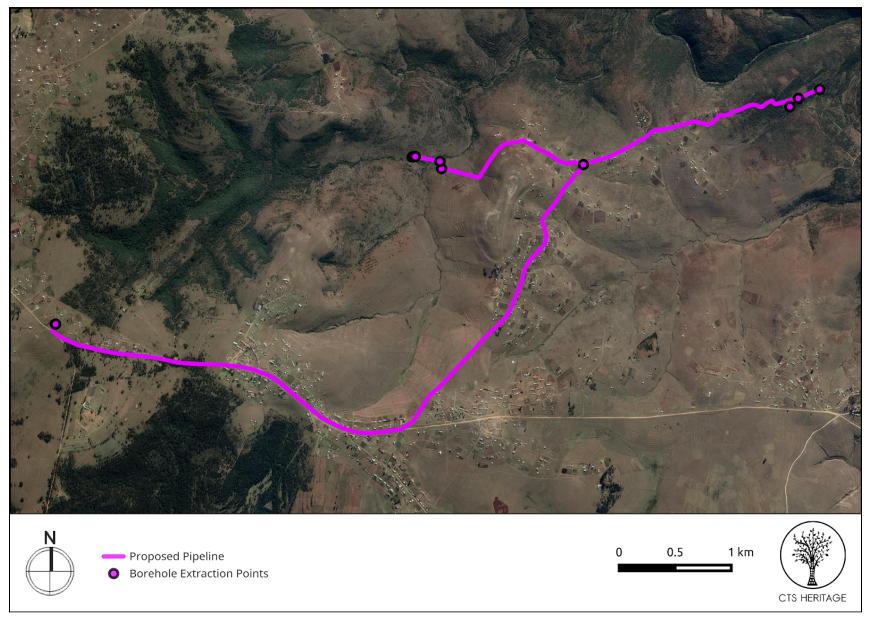


Figure 1d. Overview Map. Satellite image (2019) indicating the proposed development area at closer range



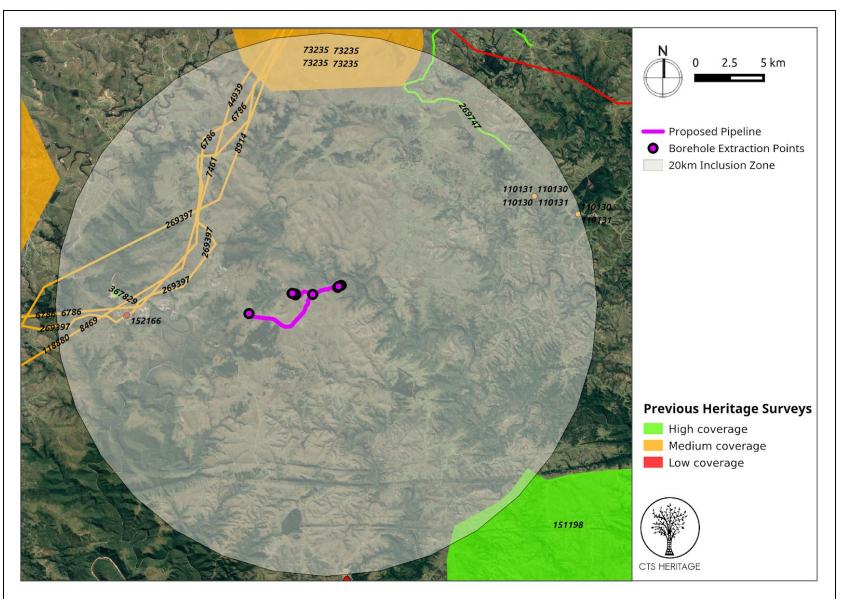


Figure 2. Previous HIAs Map. Previous Heritage Impact Assessments surrounding the proposed development area within 20km, with SAHRIS NIDS indicated. Please see Appendix 2 for full reference list.



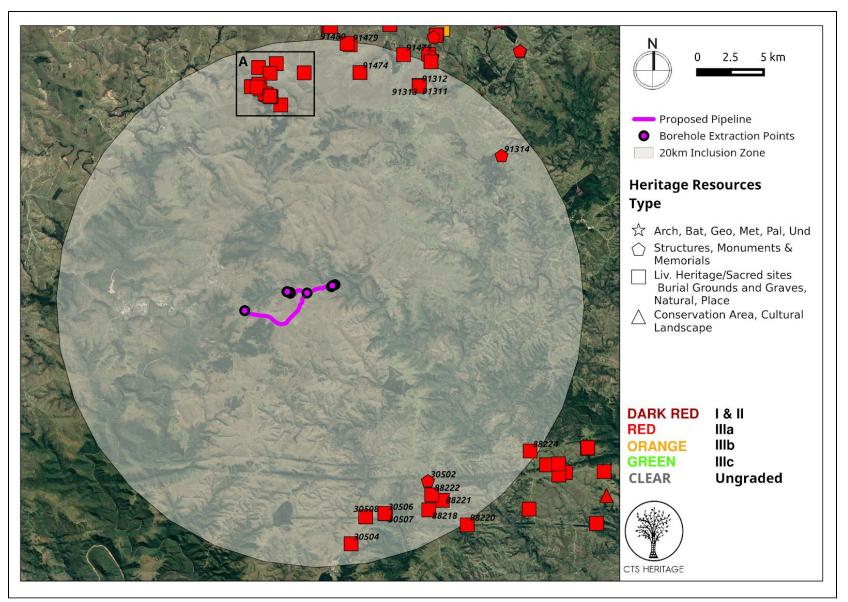


Figure 3a. Heritage Resources Map. Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated. Please See Appendix 4 for full description of heritage resource types.



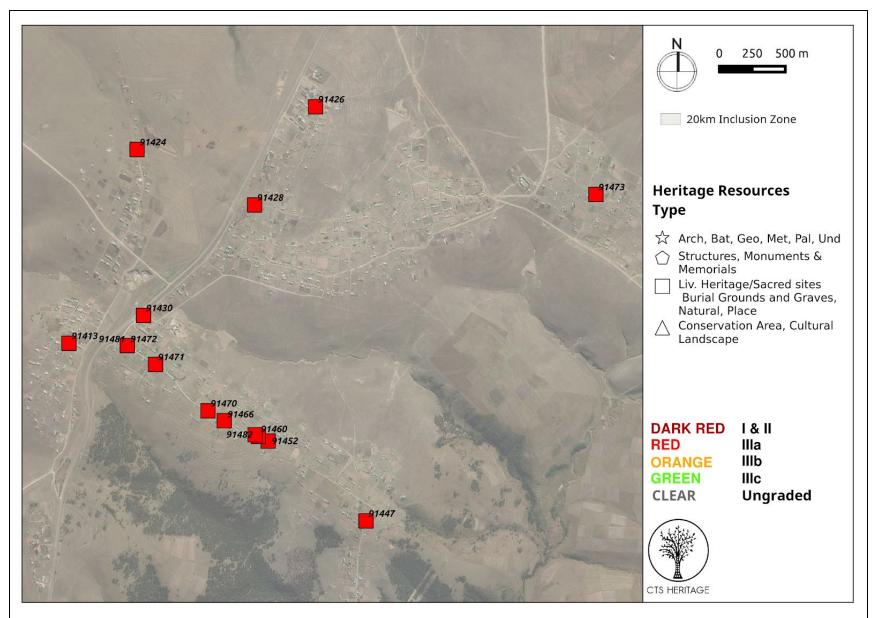


Figure 3b. Heritage Resources Map. Heritage Resources Inset A



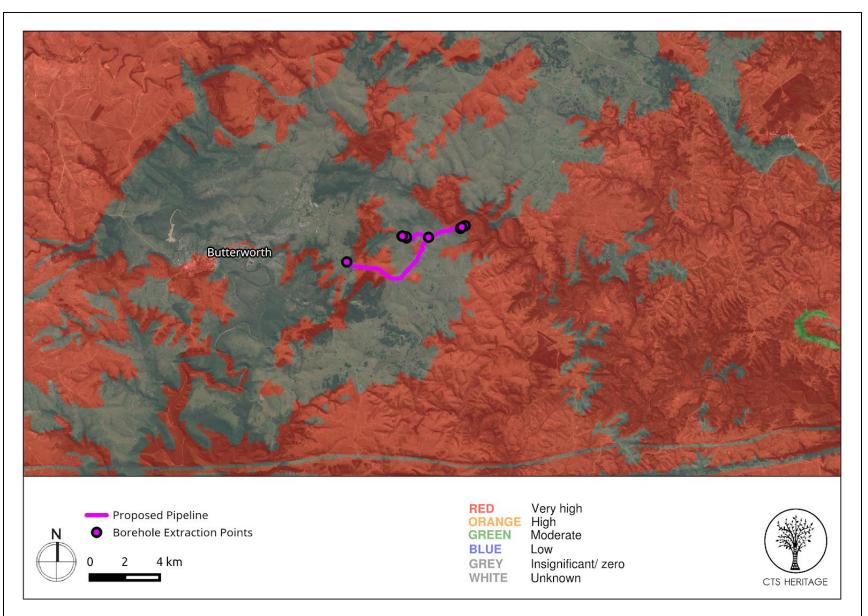


Figure 4. Palaeosensitivity Map. Indicating Zero and Very High fossil sensitivity underlying the study area. Please See Appendix 3 for full guide to the legend.



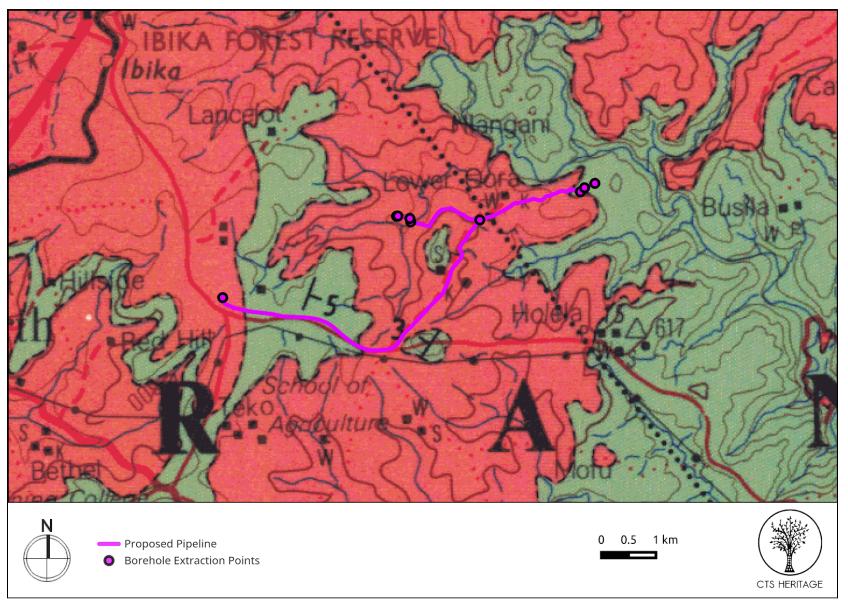


Figure 6. Geology Map. Indicating the underlying geology across the study area through overlaying the geology maps from the CGS series 3228 Kei Mouth (Jd: Burgersdorp (Dolerite), Pa: Adelaide (Grey and Brownish-red mudstone, sandstone))



8. Heritage statement and character of the area

The application is for the proposed development of bulk water supply pipelines, internal village reticulation and a reservoir as part of an emergency bulk water supply augmentation process. The pipeline will predominantly be constructed within the road reserve of the local gravel road network. However it will be necessary to extend the pipeline into some grassland areas for a distance of approximately 1 750m to reach the project boreholes. The reservoir will be built within the village of Lower Quoro on an open grassland area. As such, it is unlikely that the proposed development will impact on significant built environment heritage resources.

The proposed development area, within the village of Lower Quoro, is located approximately 10km east of the historic core of Butterworth in the Eastern Cape. Butterworth was first established as a Wesleyan mission station in 1827 north of the Great Kei River in British Kaffraria. It was named after Joseph Butterworth. During the Frontier Wars, the town was close to the seat of Hintsa ka Khawuta, the King of the Xhosa people and as such, it was of great strategic importance. At the end of the Frontier Wars in 1878, traders began to settle here and the town has grown to become a small industrial centre. Butterworth became a municipality of the Cape Colony in 1904. The town was incorporated into the former Transkei bantustan during the apartheid years. The proposed excavation for the pipeline will not exceed a depth of 1m, after which it will be covered up. As such, the proposed development is unlikely to negatively impact on the sense of place of the village of Lower Quoro, nor will it impact on the cultural landscape of the Transkei.

In terms of impacts to archaeology, prior to the establishment of the Wesleyan Mission at Butterworth, the area was occupied by Khoe herders and San hunter-gatherers, as well as Xhosa farmers. According to Kruger (2018, SAHRIS NID: 520056), a few archaeological and historical studies have been conducted in this section of the Eastern Cape most of which infer a varied and rich heritage landscape. The literature shows traces of coastal Herder sites during the later Stone Ages with evidence of pastoralism, rock art as well as Iron Age farmer presence and a Colonial frontier denoting European farmer expansion. The vast landscape that encompasses this area seems to have been inhabited continuously for centuries in prehistoric and historical times, the remnants of which are visible in transformed agriculture and rural settlement areas. Despite this high level of heritage sensitivity, very few archaeological heritage resources are known from this area (Figure 3a), the vast majority of which are known are burial grounds and/or graves (Appendix 1). The Archaeological Impact Assessment by Kruger (2018) located in Butterworth identified heritage resources including burial grounds and graves, and historical structures, whereas Archaeological Impact Assessments located in close proximity to Butterworth by Van Ryneveld (2016 SAHRIS NID: 367829) and Van Schalkwyk (2009, SAHRIS NID: 7002) did not identify any heritage resources of significance. In addition, the area proposed for the establishment of the proposed pipeline has been previously disturbed through the development of the village of Lower Quoro. As such, it is unlikely that the proposed pipeline excavations will impact on significant heritage resources.

The area proposed for development is underlain by geological sediments that have no palaeontological sensitivity (Jurassic Dolerites of the Burgersdorp Formation) as well as sediments that have very high palaeontological sensitivity (sediments of the Adelaide Formation). According to the SAHRIS Fossil Heritage Browser, the Adelaide Formation is known to record a very rich palaeontological heritage including fish, amphibians, reptiles, therapsids and vertebrate burrows. In addition, the Adelaide Formation falls within the Dicynodon and Lystrosaurus assemblage zones. Diverse terrestrial and freshwater tetrapods are known from this formation including amphibians, true reptiles, synapsids – especially therapsids, palaeoniscoid fish, freshwater bivalves, trace fossils (including tetrapod trackways), sparse to rich assemblages of vascular plants (*Glossopteris* Flora, including spectacular petrified logs) as well as insects. This formation is known to record key evidence for the evolution of mammalian characteristics among therapsids and conserves a continental record of Late Permian Mass Extinction Events. The scientific significance of this palaeontologically rich formation cannot be overstated. That being said, the excavations anticipated for the proposed pipeline will not exceed 1m in depth. In addition, the boreholes proposed for this project have already been excavated and as such, it is unlikely that the excavations required for the pipeline will impact on significant palaeontological resources. However, due to the significance of the palaeontology that may be located here, it is recommended that the attached Chance Fossil Finds Procedure be implemented throughout all excavations proposed as part of this development.

RECOMMENDATION:

Based on the available information, it is unlikely that the proposed development will impact on significant heritage resources. However, due to the very high sensitivity of the area for impacts to palaeontology, it is recommended that the attached Chance Fossil Finds Procedure be implemented. In addition, should any unmarked burial grounds or graves be disturbed through excavation associated with this development, work must cease and ECPHRA must be contacted regarding a way forward.



APPENDIX 1

List of heritage resources within the 20km Inclusion Zone from SAHRIS

Site ID	Site no	Full Site Name	Site Type	Grading
30502	UMLANDO-CE-A20		Building	Grade IIIa
30504	UMLANDO-MAZ01		Building, Burial Grounds & Graves	Grade IIIa
30506	UMLANDO-MAZ03		Burial Grounds & Graves	Grade IIIa
30507	UMLANDO-MAZ03A		Burial Grounds & Graves	Grade IIIa
30508	UMLANDO-MAZ04		Burial Grounds & Graves	Grade IIIa
88218	NXAXO014	Nxaxo Reticulation Project 014	Burial Grounds & Graves	Grade IIIa
88220	NXAXO015	Nxaxo Reticulation Project 015	Burial Grounds & Graves	Grade IIIa
88221	NXAXO016	Nxaxo Reticulation Project 016	Burial Grounds & Graves	Grade IIIa
88222	NXAXO017	Nxaxo Reticulation Project 017	Burial Grounds & Graves	Grade IIIa
88224	NXAXO019	Nxaxo Reticulation Project 019	Burial Grounds & Graves	Grade IIIa
91311	BBWSS015	Bende Bulk Water Supply Scheme 015	Burial Grounds & Graves	Grade IIIa
91312	BBWSS016	Bende Bulk Water Supply Scheme 016	Burial Grounds & Graves	Grade IIIa
91313	BBWSS017	Bende Bulk Water Supply Scheme 017	Burial Grounds & Graves	Grade IIIa
91314	BBWSS018	Bende Bulk Water Supply Scheme 018	Structures	Grade IIIa
91413	MGS054	Mgwali South Water 054	Burial Grounds & Graves	Grade IIIa
91424	MGS053	Mgwali South Water 053	Burial Grounds & Graves	Grade IIIa
91426	MGS052	Mgwali South Water 052	Burial Grounds &; Graves	Grade IIIa
91428	MGS051	Mgwali South Water 051	Burial Grounds & Graves	Grade IIIa
91430	MGS050	Mgwali South Water 050	Burial Grounds & Graves	Grade IIIa
91447	MGS049	Mgwali South Water 049	Burial Grounds & Graves	Grade IIIa
91452	MGS048	Mgwali South Water 048	Burial Grounds & Graves	Grade IIIa



91460	MGS047	Mgwali South Water 047	Burial Grounds & Graves	Grade IIIa
91466	MGS045	Mgwali South Water 045	Burial Grounds & Graves	Grade IIIa
91470	MGS044	Mgwali South Water 044	Burial Grounds & Graves	Grade IIIa
91471	MGS043		Burial Grounds & Graves	Grade IIIa
91472	MSG042	Mgwali South Water 042	Burial Grounds & Graves	Grade IIIa
91473	MGS041	Mgwali South Water 041	Burial Grounds &Graves	Grade IIIa
91474	MGS040	Mgwali South Water 040	Burial Grounds & Graves	Grade IIIa
91475	MGS039	Mgwali South Water 039	Burial Grounds & Graves	Grade IIIa
91479	MGS037	Mgwali South Water 037	Burial Grounds & Graves	Grade IIIa
91480	MGS036	Mgwali South Water 036	Burial Grounds & Graves	Grade IIIa
91481	MGS042	Mgwali South Water 042	Burial Grounds & Graves	Grade IIIa
91482	MGS046	Mgwali South Water 046	Burial Grounds & Graves	Grade IIIa

APPENDIX 2

Reference List from SAHRIS

	Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title	
6786	AIA Phase 1	Robert de Jong	06/02/2011	HERITAGE IMPACT ASSESSMENT REPORT: INSTALLATION OF LONG-HAUL DARK FIBRE DUCTING INFRASTRUCTURE ALONG THE N 2 BETWEEN DURBAN AND EAST LONDON, KWA-ZULU NATAL AND EASTERN CAPE PROVINCES	
7002	AIA Phase 1	Len van Schalkwyk	19/01/2009	Heritage Impact Assessment of Junction 14 Quarry Extension, Butterworth, Eastern Cape Province, South Africa	
7461	AIA Phase 1	Johan Binneman	01/01/2002	N2 Wild Coast Toll Road Project, Chapter 6 Archaeological Heritage Sensitivity Survey	
8469	HIA Phase 1	Len van Schalkwyk	08/04/2008	Heritage Impact Assessment of the Proposed N2 Wild Coast Toll Highway	
8914	PIA Phase 1	Robert Gess	30/03/2011	Palaeontological heritage component of FibreCo Telecommunications, basic assessment for the proposed fibre optic	



				data cable project: Route 5: PE to Durban
44939	PIA Phase 1	Robert Gess	01/05/2012	
73235	HIA Phase 1	Wouter Fourie, Gideon Groenewald	27/07/2012	Heritage Impact Assessment - Proposed Mgwali South Water Supply, iDutywa, Mbhashe Municipality, Amatole District Municipality Eastern Cape Province
110130	AIA Phase 1	Karen Van Ryneveld	28/01/2013	PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT:WILLOWVALE-DWESA BORROW PITS PROJECT, AMATHOLE DISTRICT MUNICIPALITY, EASTERN CAPE, SOUTH AFRICA
110131	PIA Phase 1	Lloyd Rossouw	28/01/2013	Phase 1 Palaeontological Impact Assessment of 2 Quarries and 6 Borrow Pits, between Willowvale and Dwesa, EC Province.
118880	AIA Phase 1B	Andrie Meyer	07/03/2013	N2 Wild Coast Toll Highway. Supplementary Archaeological Survey. Field Survey Conducted from 24 to 28 October 2011. Final Report December 2012.
151198	Heritage Impact Assessment Specialist Reports	Wouter Fourie	27/07/2013	Proposed Development of Amathole District Municipality Water Supply Scheme in the Nxaxo and Cebe area Eastern Cape Province
152164	PIA Desktop	Robert Gess	18/12/2013	Desktop Palaeontological Impact Assessment for the Ngcizele Water Project
152166	AIA Phase 1	Karen Van Ryneveld	18/12/2013	Phase 1 Archaeological Impact Assessment - Ngcizele Phase 2 Village Water Supply, near Centane, Eastern Cape, South Africa
269397	AIA Phase 1	Celeste Booth	02/03/2015	FibreCo Repeater Sites Routes 3 and 4_Heritage_2015 AIA report
269747	HIA Phase 1	Karen Van Ryneveld, John Almond	11/05/2015	HIA-Bende Bulk Water Supply Scheme, Amathole District Municipality, Eastern Cape
367829	AIA Phase 1	Karen Van Ryneveld	21/07/2016	Phase 1 Archaeological and Cultural Heritage Impact Assessment - Conference and Accommodation Facility near Gcuwa Dam, Butterworth, Mnquma Local Municipality, Eastern Cape
520056	AIA Phase 1	Neels Kruger	10/12/2018	ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) FOR THE PROPOSED NDABAKAZI INTERCHANGE UPGRADE PROJECT IN THE BUTTERWORTH AREA OF THE AMATHOLE DISTRICT MUNICIPALITY, EASTERN CAPE PROVINCE



APPENDIX 3 - Keys/Guides

Key/Guide to Acronyms

Archaeological Impact Assessment
Department of Agriculture and Rural Development (KwaZulu-Natal)
Department of Environmental Affairs (National)
Department of Environmental Affairs and Development Planning (Western Cape)
Department of Economic Development, Environmental Affairs and Tourism (Eastern Cape)
Department of Economic Development, Environment, Conservation and Tourism (North West)
Department of Economic Development and Tourism (Mpumalanga)
Department of economic Development, Tourism and Environmental Affairs (Free State)
Department of Environment and Nature Conservation (Northern Cape)
Department of Mineral Resources (National)
Gauteng Department of Agriculture and Rural Development (Gauteng)
Heritage Impact Assessment
Department of Economic Development, Environment and Tourism (Limpopo)
Mineral and Petroleum Resources Development Act, no 28 of 2002
National Environmental Management Act, no 107 of 1998
National Heritage Resources Act, no 25 of 1999
Palaeontological Impact Assessment
South African Heritage Resources Agency
South African Heritage Resources Information System
Visual Impact Assessment

Full guide to Palaeosensitivity Map legend

RED:	VERY HIGH - field assessment and protocol for finds is required	
ORANGE/YELLO	W: HIGH - desktop study is required and based on the outcome of the desktop study, a field assessment is likely	
GREEN:	MODERATE - desktop study is required	
BLUE/PURPLE:	BLUE/PURPLE: LOW - no palaeontological studies are required however a protocol for chance finds is required	
GREY:	: INSIGNIFICANT/ZERO - no palaeontological studies are required	
WHITE/CLEAR:	R: UNKNOWN - these areas will require a minimum of a desktop study.	



APPENDIX 4 - Methodology

The Heritage Screener summarises the heritage impact assessments and studies previously undertaken within the area of the proposed development and its surroundings. Heritage resources identified in these reports are assessed by our team during the screening process.

The heritage resources will be described both in terms of **type**:

- Group 1: Archaeological, Underwater, Palaeontological and Geological sites, Meteorites, and Battlefields
- Group 2: Structures, Monuments and Memorials
- Group 3: Burial Grounds and Graves, Living Heritage, Sacred and Natural sites
- Group 4: Cultural Landscapes, Conservation Areas and Scenic routes

and **significance** (Grade I, II, IIIa, b or c, ungraded), as determined by the author of the original heritage impact assessment report or by formal grading and/or protection by the heritage authorities.

Sites identified and mapped during research projects will also be considered.

DETERMINATION OF THE EXTENT OF THE INCLUSION ZONE TO BE TAKEN INTO CONSIDERATION

The extent of the inclusion zone to be considered for the Heritage Screener will be determined by CTS based on:

- the size of the development,
- the number and outcome of previous surveys existing in the area
- the potential cumulative impact of the application.

The inclusion zone will be considered as the region within a maximum distance of 50 km from the boundary of the proposed development.

DETERMINATION OF THE PALAEONTOLOGICAL SENSITIVITY

The possible impact of the proposed development on palaeontological resources is gauged by:

- reviewing the fossil sensitivity maps available on the South African Heritage Resources Information System (SAHRIS)
- considering the nature of the proposed development
- when available, taking information provided by the applicant related to the geological background of the area into account

DETERMINATION OF THE COVERAGE RATING ASCRIBED TO A REPORT POLYGON



Each report assessed for the compilation of the Heritage Screener is colour-coded according to the level of coverage accomplished. The extent of the surveyed coverage is labeled in three categories, namely low, medium and high. In most instances the extent of the map corresponds to the extent of the development for which the specific report was undertaken.

Low coverage will be used for:

- desktop studies where no field assessment of the area was undertaken;
- reports where the sites are listed and described but no GPS coordinates were provided.
- older reports with GPS coordinates with low accuracy ratings;
- reports where the entire property was mapped, but only a small/limited area was surveyed.
- uploads on the National Inventory which are not properly mapped.

Medium coverage will be used for

- reports for which a field survey was undertaken but the area was not extensively covered. This may apply to instances where some impediments did not allow for full coverage such as thick vegetation, etc.
- reports for which the entire property was mapped, but only a specific area was surveyed thoroughly. This is differentiated from low ratings listed above when these surveys cover up to around 50% of the property.

High coverage will be used for

• reports where the area highlighted in the map was extensively surveyed as shown by the GPS track coordinates. This category will also apply to permit reports.

RECOMMENDATION GUIDE

The Heritage Screener includes a set of recommendations to the applicant based on whether an impact on heritage resources is anticipated. One of three possible recommendations is formulated:

(1) The heritage resources in the area proposed for development are sufficiently recorded - The surveys undertaken in the area adequately captured the heritage resources. There are no known sites which require mitigation or management plans. No further heritage work is recommended for the proposed development.

This recommendation is made when:

- enough work has been undertaken in the area
- it is the professional opinion of CTS that the area has already been assessed adequately from a heritage perspective for the type of development proposed

(2) The heritage resources and the area proposed for development are only partially recorded - The surveys undertaken in the area have not adequately captured the heritage resources and/or there are sites which require mitigation or management plans. Further specific heritage work is recommended for the proposed development.

This recommendation is made in instances in which there are already some studies undertaken in the area and/or in the adjacent area for the proposed development. Further studies in a limited HIA may include:



- improvement on some components of the heritage assessments already undertaken, for instance with a renewed field survey and/or with a specific specialist for the type of heritage resources expected in the area
 - compilation of a report for a component of a heritage impact assessment not already undertaken in the area
 - undertaking mitigation measures requested in previous assessments/records of decision.

(3) The heritage resources within the area proposed for the development have not been adequately surveyed yet - Few or no surveys have been undertaken in the area proposed for development. A full Heritage Impact Assessment with a detailed field component is recommended for the proposed development.

Note:

The responsibility for generating a response detailing the requirements for the development lies with the heritage authority. However, since the methodology utilised for the compilation of the Heritage Screeners is thorough and consistent, contradictory outcomes to the recommendations made by CTS should rarely occur. Should a discrepancy arise, CTS will immediately take up the matter with the heritage authority to clarify the dispute.

The compilation of the Heritage Screener will not include any field assessment. The Heritage Screener will be submitted to the applicant within 24 hours from receipt of full payment. If the 24-hour deadline is not met by CTS, the applicant will be refunded in full.