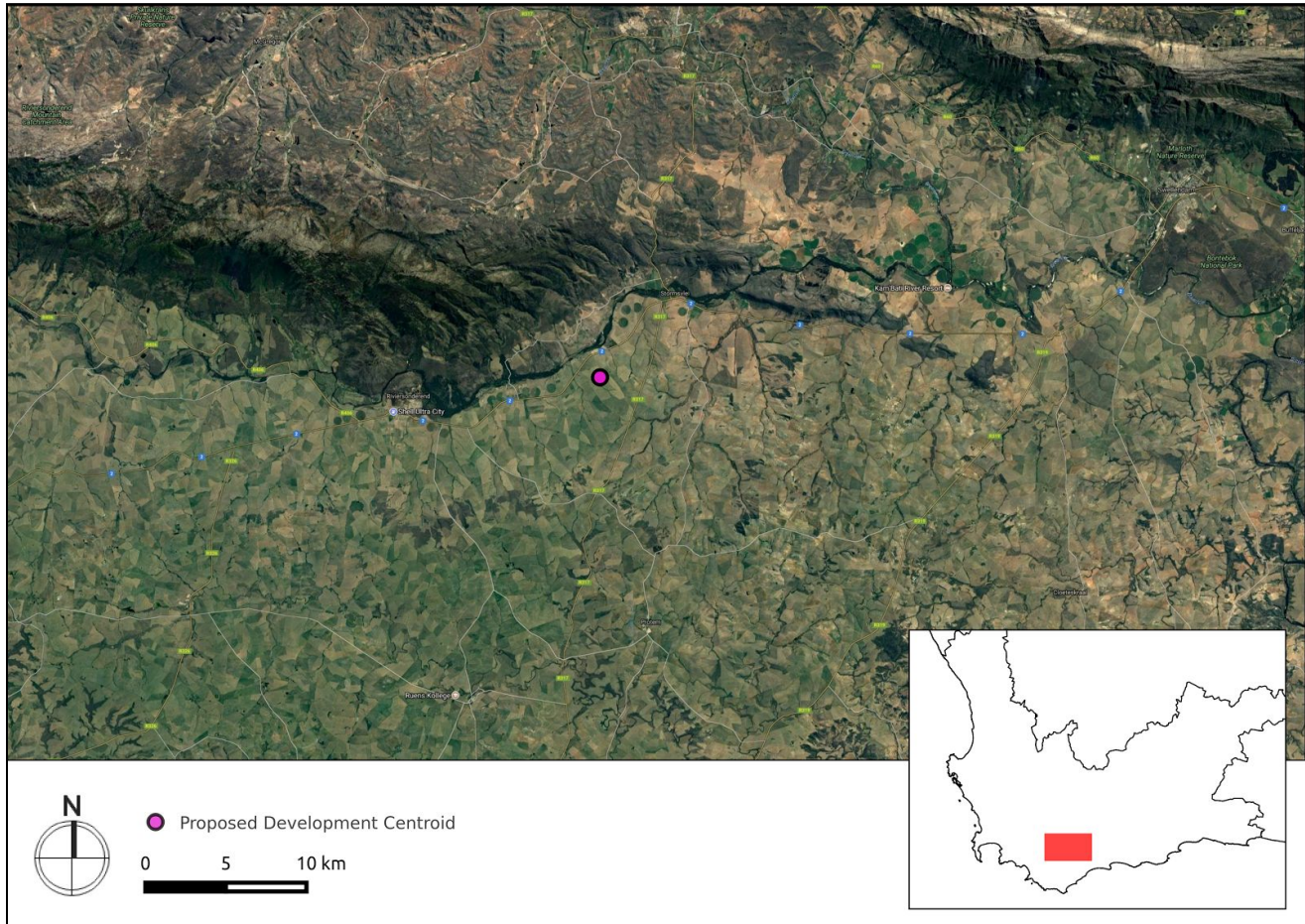


CTS HERITAGE

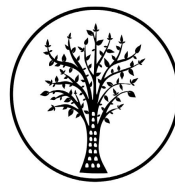
HERITAGE SCREENER

CTS Number:	Reference	CTS17_065
HWC Reference:		17062211
Client:		EnviroAfrica
Date:		June 2017
Title:		Proposed storage dam on Portion 5 of Farm van der Wattskraal No. 399
<div><p>Figure 1a. Satellite map indicating the location of the proposed development in the Western Cape Province</p></div>		
Recommendation by CTS Heritage Specialists: (Type 2)	RECOMMENDATION: (2) The heritage resources and the area proposed for development are only partially recorded See Section 8 for full recommendations.	

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

1. Proposed Development Summary

It is proposed that a farm storage dam be constructed on Portion 5 of Farm van der Wattskraal No. 399 to provide irrigation for proposed citrus orchards. The proposed dam will have a maximum dam wall height of 19,5m, a dam wall length of 535 m, and will have a capacity of approximately 625 000 cubic meters. The water surface at full capacity will be approximately 8,8ha. Water will be obtained from Eksteenkloof within existing water extraction rights (40 ha or 24 000 m³). An existing weir will be upgraded and a pump station will be installed at the weir.

2. Application References

Name of relevant heritage authority(s)	Heritage Western Cape
Name of decision making authority(s)	Department of Environment and Development Planning

3. Property Information

Latitude / Longitude	-34.13133055555556 ; 20.048197222222225 (centroid)
Erf number / Farm number	Portion 5 of Farm van der Wattskraal No. 399
Local Municipality	Swellendam
District Municipality	Overberg
Previous Magisterial District	Swellendam
Province	Western Cape Province
Current Use	Agriculture
Current Zoning	Agriculture
Total Extent	631.7 ha

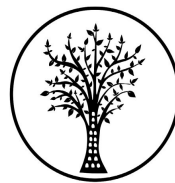
4. Nature of the Proposed Development

Total Surface Area	8.8 ha
Depth of excavation (m)	3-6m
Height of development (m)	19.5m
Expected years of operation before decommissioning	Permanent

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

5. Category of Development

Triggers: Section 38(8) of the National Heritage Resources Act	X
Triggers: Section 38(1) of the National Heritage Resources Act	
1. Construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier over 300m in length.	X
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 000m ² 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):	

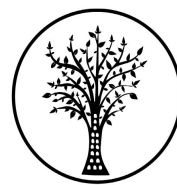
6. Additional Infrastructure Required for this Development

1.5km long, 150-300mm diameter pipeline

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



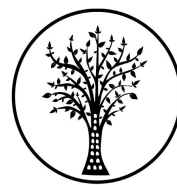
CTS HERITAGE

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

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 **Email:** info@ctsheritage.com **Web:** www.ctsheritage.com



CTS HERITAGE

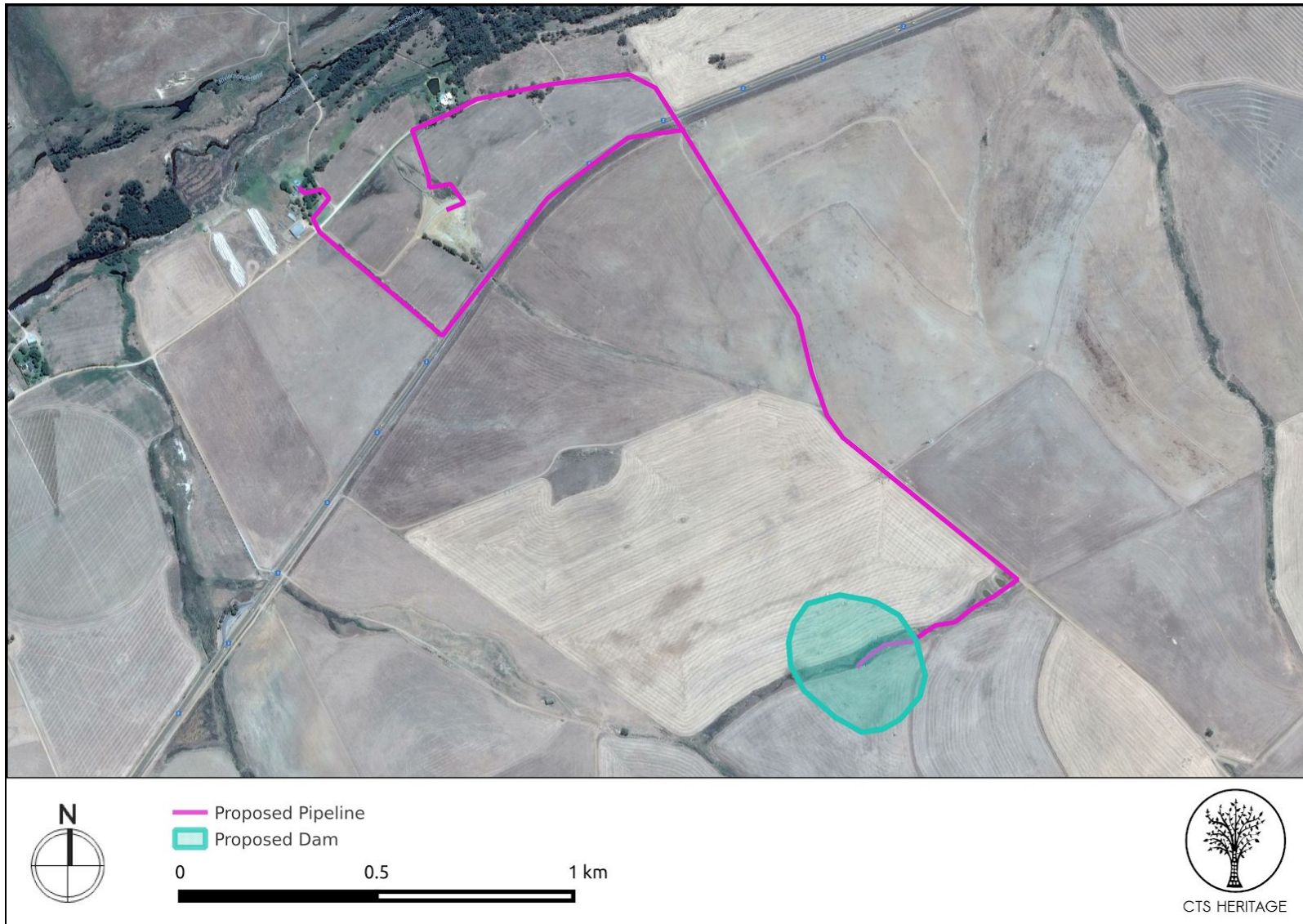
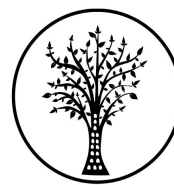


Figure 1b. Overview Map. Satellite image (2017) indicating the proposed development area in its immediate context.



CTS HERITAGE

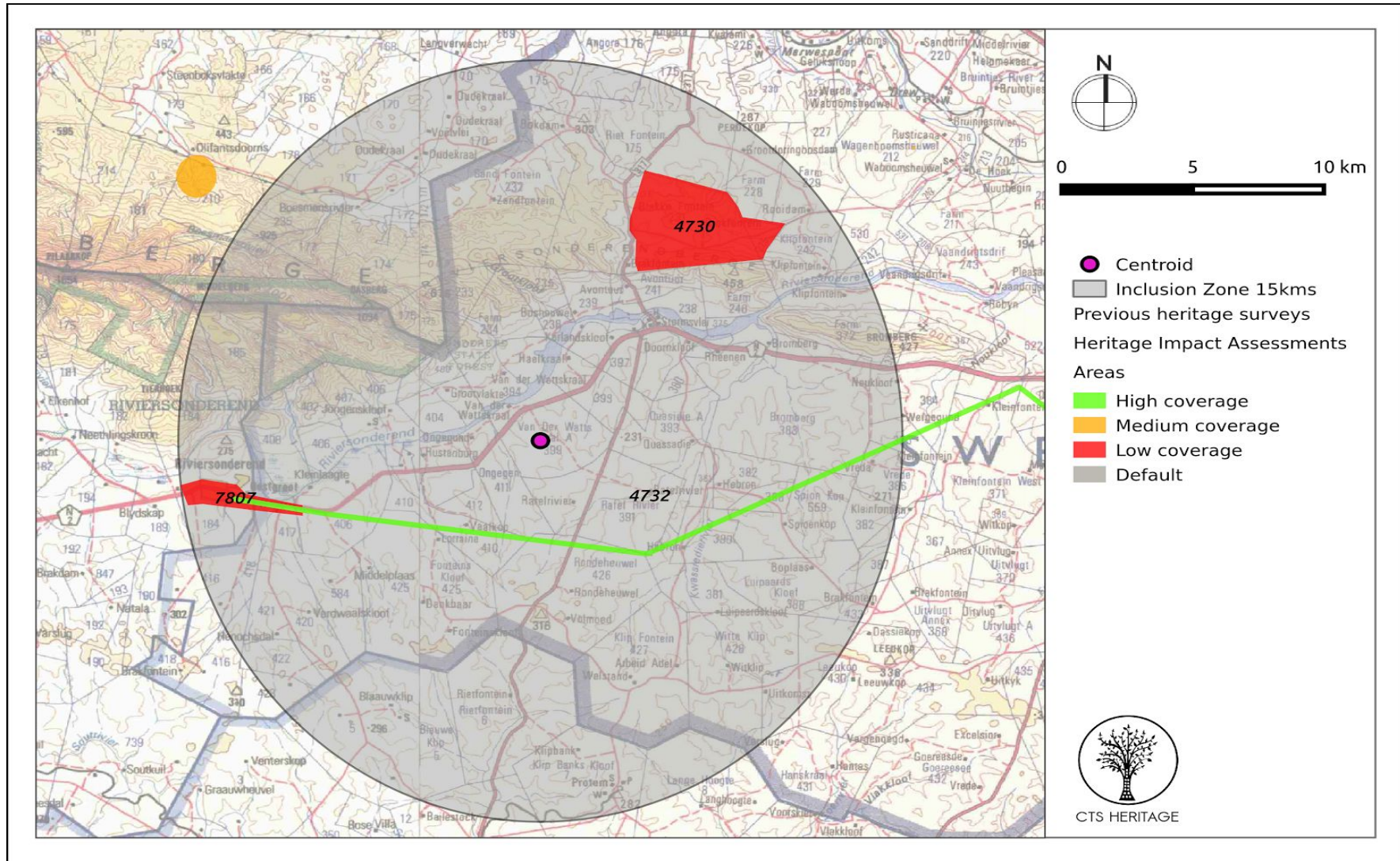
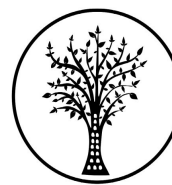


Figure 2a. Previous HIAs map. Previous Heritage Impact Assessments surrounding the proposed development area within 15kms, with SAHRIS NIDS indicated (please see Appendix 2 for full reference list).

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

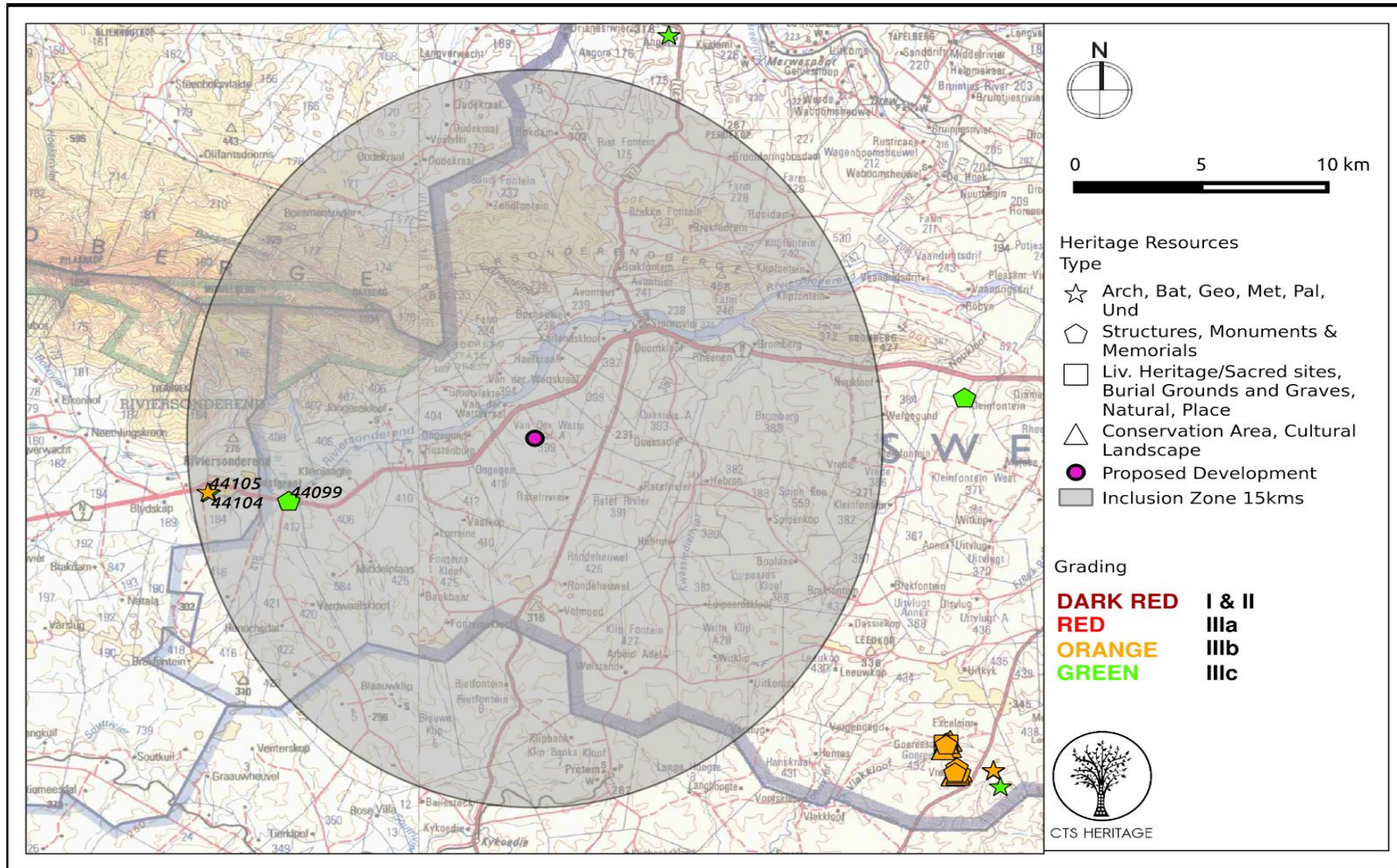
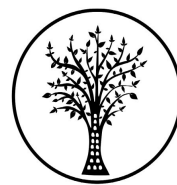


Figure 3a. Heritage Resources Map. Heritage resources previously identified in and near the study area, with SAHRIS Site IDs indicated (see Figure 3b for inset). See Appendix 4 for full description of heritage resource types.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

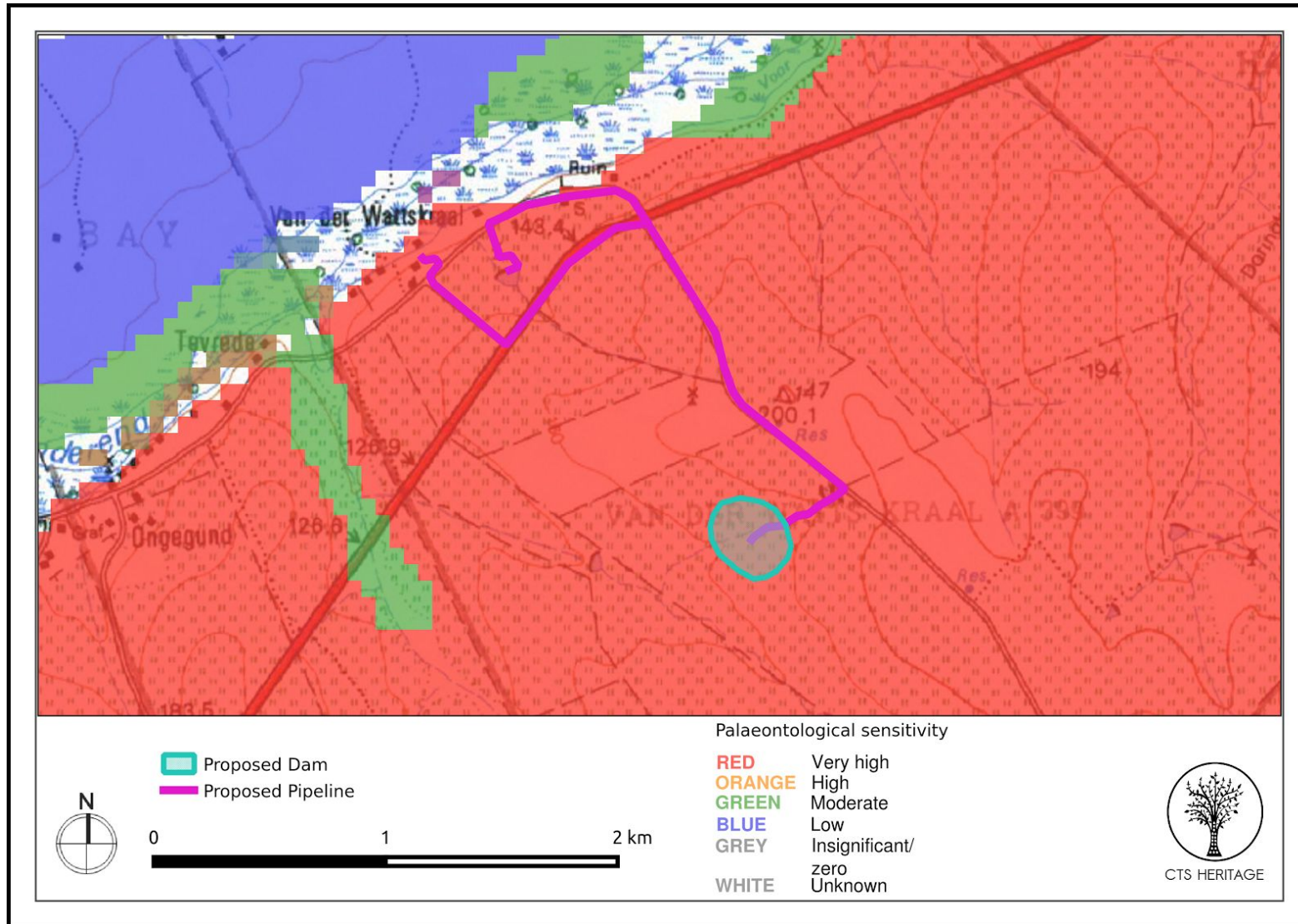
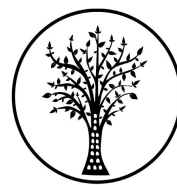


Figure 4. Palaeosensitivity Map, indicating very high fossil sensitivity underlying the study area. See Appendix 3 for full guide to the legend.



CTS HERITAGE

8. Heritage statement and character of the area

The applicant has proposed that a farm storage dam be constructed on Portion 5 of Farm van der Wattskraal No. 399 to provide irrigation for proposed citrus orchards. The proposed dam will have a maximum dam wall height of 19,5 m, a dam wall length of 535 m, and will have a capacity of approximately 625 000 cubic meters. The water surface at full capacity will be approximately 8,8ha. Water will be obtained from Eksteenkloof within existing water extraction rights (40 ha or 24 000 m³). An existing weir will be upgraded and a pump station will be installed at the weir. The dam will be located on previously cultivated land. A new pipeline, approximately 1.5 km in length and a diameter of about 150-300mm will be constructed from the dam to the N2, and access to the dam will be along existing farm roads from the N2.

The presence of perennial water in this area has meant that it has been occupied since the Stone Age, first by hunter-gatherers, and, more recently, by pastoralists. The VOC began loaning land to farmers in this region in the 1700s, and it became increasingly intensively farmed for stock and, particularly wheat. The site lies 15,5 km east of Riviersonderend and 45,7 km west of Swellendam, in the heart of this wheat growing region. There are currently accommodation and conference facilities on the farm.

There are no declared heritage sites within a 10km radius of the proposed development site, although three graded sites exist (Figure 3 and Appendix 1). These are a Grade IIIc historic farmhouse (VRY-RIV01, SID 44099), and two archaeological sites containing ESA and MSA material. One of these, graded IIIb (RSV2, SID 44105), is an extensive scatter of predominantly Early Stone Age material with some Middle Stone Age artefacts included, while the other, graded IIIc (RSV1, SID 44104), is a disturbed site comprising Middle and Early Stone Age artefacts. Only four heritage surveys have been conducted in the area (Figure 2 and Appendix 2), comprising three AIAs and an HIA. These reports confirm that the region has been inhabited since the Stone Age, and occupied more recently by the Khoekhoe, while farms were granted to Europeans from the eighteenth century onwards (Deacon 2006, NID 4731). The early farming of the area has intensified and diversified to create the cultural landscape as it exists today. Relatively little artefactual material was found in these surveys (sites RSV1 and 2), likely owing to the long term disturbance of surfaces resulting from intensive cultivation (Kaplan 1990, NID 7807). While it is clear that archaeological material does occur in this region, the location of this development on previously cultivated land makes any discovery of *in situ*, significant archaeological heritage resources unlikely. In addition, the proposed development of a dam will not have a negative impact on the agricultural cultural landscape of the area.

In terms of palaeontology, the proposed dam is located on underlying sandstone and mudrock deposits of the Early- to Mid-Devonian Voorstehoek Formation of the Ceres Subgroup. According to the SAHRIS Fossil Heritage Browser (2016), these deposits are of very high palaeontological sensitivity, containing diverse shelly invertebrate biotas dominated by brachiopods, echinoderms, trilobites and molluscs, diverse trace fossils, rare fish remains and primitive vascular plants as well as microfossils. The Voorstehoek Formation, which is largely mudrock-dominated, tends to be particularly rich in fossil invertebrate biota. Analysis of this Formation between Botrivier and Caledon, to the west, has however shown that “fossil remains have been largely obliterated by intense tectonic deformation and chemical weathering. Bedrock exposure here very poor due to extensive superficial deposits” (Almond 2012). Given the proposed depth of excavation for the construction of the dam wall, which could be as deep as 6m, there is a very high likelihood of palaeontologically sensitive deposits being impacted as a result of this development. Any excavations into bedrock in this region could result in impacts to the significant fossiliferous deposit, and therefore a field assessment by a suitably qualified palaeontologist must be done before any construction activities commence.

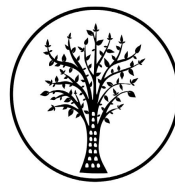
In light of the above, although it is unlikely that the proposed development will impact on significant archaeological resources, it is recommended that a palaeontological field assessment be conducted before construction activities begin on site.

RECOMMENDATION:

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

(2) The heritage resources and the area proposed for development are only partially recorded - a palaeontological field assessment is required before work can commence on site.

APPENDIX 1

List of heritage resources within the 5km Inclusion Zone

Site ID	Site no	Full Site Name	Site Type	Grading
44099	VRY-RIV01	Vryheid to Riviersonderend 01	Building	Grade IIIc
44104	RVS1	Riviersonderend 1	Artefacts	Grade IIIc
44105	RVS2	Riviersonderend 2	Artefacts	Grade IIIb

APPENDIX 2

Reference List

Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title
4730	AIA	Sarah Wurz	18/12/2006	Phase 1 Archaeological Impact Assessment for the Farm Brakke Fontein No 123, Swellendam District, Western Cape
4731	AIA	Hilary Deacon	05/02/2006	Proposed Eskom Overberg Powerline, Vryheid Substation to Riviersonderend Substation: Heritage Impact Assessment Report
4732	HIA	Hilary Deacon	01/03/2006	Proposed Deviation to the Eskom Overberg Powerline Vryheid Substation to Riviersonderend Substation: Heritage Impact Assessment Report
7807	AIA	Jonathan Kaplan	01/12/1990	An Archaeological Investigation of the Proposed Riviersonderend Bypass Road

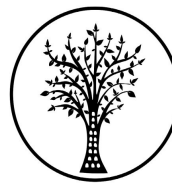
Further References

Author	Date	Title
--------	------	-------

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



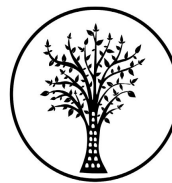
CTS HERITAGE

John E. Almond	01/01/2012	Environmental Impact Assessment for the Establishment of the Proposed Langhoogte Wind Farm, Western Cape Province: Environmental Scoping Report - Specialist Palaeontology Study
----------------	------------	---

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 **Email:** info@ctsheritage.com **Web:** www.ctsheritage.com



CTS HERITAGE

APPENDIX 3 - Keys/Guides

Key/Guide to Acronyms

AIA	Archaeological Impact Assessment
DARD	Department of Agriculture and Rural Development (KwaZulu-Natal)
DEA	Department of Environmental Affairs
DEADP	Department of Environmental Affairs and Development Planning (Western Cape)
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism (Eastern Cape)
DEDECT	Department of Economic Development, Environment, Conservation and Tourism (North West)
DEDT	Department of Economic Development and Tourism (Mpumalanga)
DEDEA	Department Of economic Development, Tourism And Environmental Affairs (free State)
Denc	Department Of Environment And Nature Conservation (northern Cape)
DMR	Department of Mineral Resources
Gdard	Gauteng Department Of Agriculture And Rural Development (gauteng)
HIA	Heritage Impact Assessment
Ledet	Department Of Economic Development, Environment and Tourism (Limpopo)
MPRDA	Mineral and Petroleum Resources Development Act, no 28 of 2002
NEMA	National Environmental Management Act, no 107 of 1998
NHRA	National Heritage Resources Act, no 25 of 1999
PIA	Palaeontological Impact Assessment
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
VIA	Visual Impact Assessment

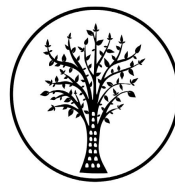
Full guide to Palaeosensitivity Map legend

RED:	VERY HIGH - field assessment and protocol for finds is required
ORANGE/YELLOW:	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:	LOW - no palaeontological studies are required however a protocol for chance finds is required
GREY:	INSIGNIFICANT/ZERO - no palaeontological studies are required
WHITE/CLEAR:	UNKNOWN - these areas will require a minimum of a desktop study.

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

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 PALAEOLOGICAL 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

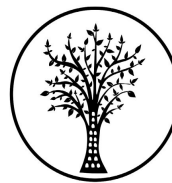
DETERMINATION OF THE COVERAGE RATING ASCRIBED TO A REPORT POLYGON

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

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

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

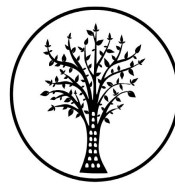
(2) The heritage resources and the area proposed for development are only partially recorded - The surveys undertaken in the area have not adequately captured the heritage resources and/or there are sites which require mitigation or management plans. Further specific heritage work is recommended for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

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com



CTS HERITAGE

- 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.**

CTS Heritage

34 Harries Street, Plumstead, Cape Town, 7800

Tel: (021) 0130131 Email: info@ctsheritage.com Web: www.ctsheritage.com