

CTS HERITAGE

HERITAGE SCREENER

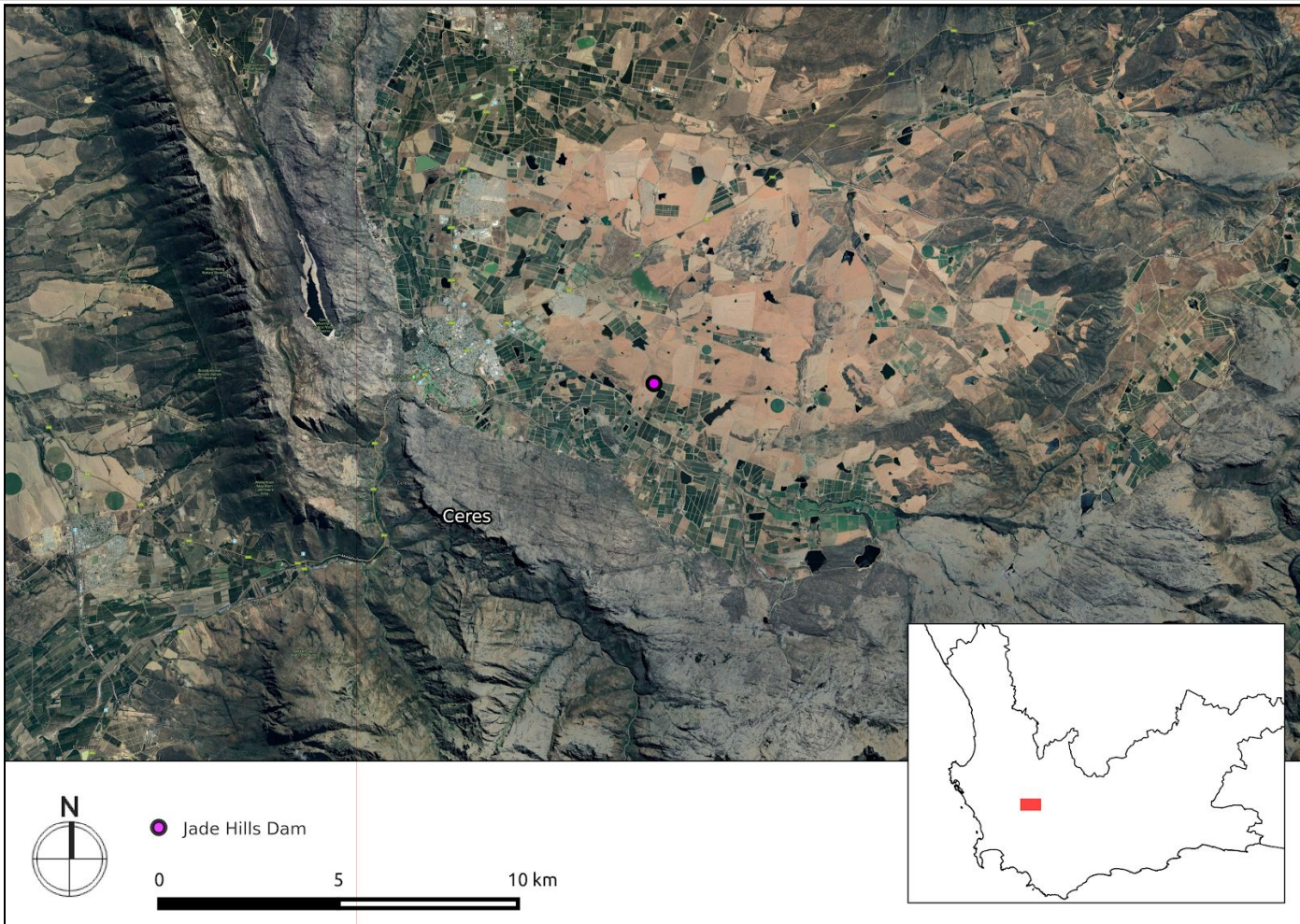
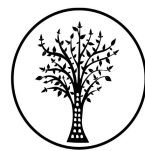
CTS Reference Number:	CTS18_187	
HWC Reference:		
Client:	EnviroAfrica	
Date:	12 December 2018	
Title:	Proposed development of Jade Hills Dam on Portion 26 of Farm Stinkfontein 383, Ceres	
Recommendation by CTS Heritage Specialists	<p>RECOMMENDATION: The proposed development is unlikely to impact on significant archaeology, built environment or cultural landscape heritage resources. However, the area proposed for development is underlain by formations of very high palaeontological sensitivity. It is recommended that no further studies are required, however a Chance Fossil Finds Procedure must be adopted for the development of the dam.</p>	

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

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1. Proposed Development Summary

The project entails the design and construction of the proposed Jade Hills Dam with a provisional storage capacity in the order of $\pm 67\,000\text{m}^3$. The main idea is to top up the existing winter water use, namely 8,6ha of water from the privately owned Rietvallei scheme for summer irrigation.

2. Application References

Name of relevant heritage authority(s)	HWC
Name of decision making authority(s)	DEADP

3. Property Information

Latitude / Longitude	33°22'31.67"S 19°22'13.15"E
Erf number / Farm number	Ptn 26 of Stinkfontein 383, Ceres
Local Municipality	Witzenberg
District Municipality	Boland
Previous Magisterial District	Ceres
Province	Western Cape
Current Use	Agriculture
Current Zoning	Agriculture
Total Extent	53.47ha

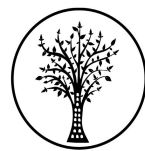
4. Nature of the Proposed Development

Total Surface Area	1,128ha
Depth of excavation (m)	>3m depth excavation for the cut of trench. If they hit an impermeable surface before that they stop. Excavation can reach a max of 7m but highly unlikely
Height of development (m)	Max wall height 11.1m
Expected years of operation before decommission	NA

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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
x	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-
x	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):

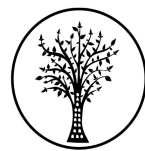
6. Additional Infrastructure Required for this Development

A pipeline connecting to an existing outlet pipeline which connects to the Rietvlei irrigation schema. Small pump station and pipelines from the dam connecting to irrigation pipelines. All pipelines will be on previously disturbed land

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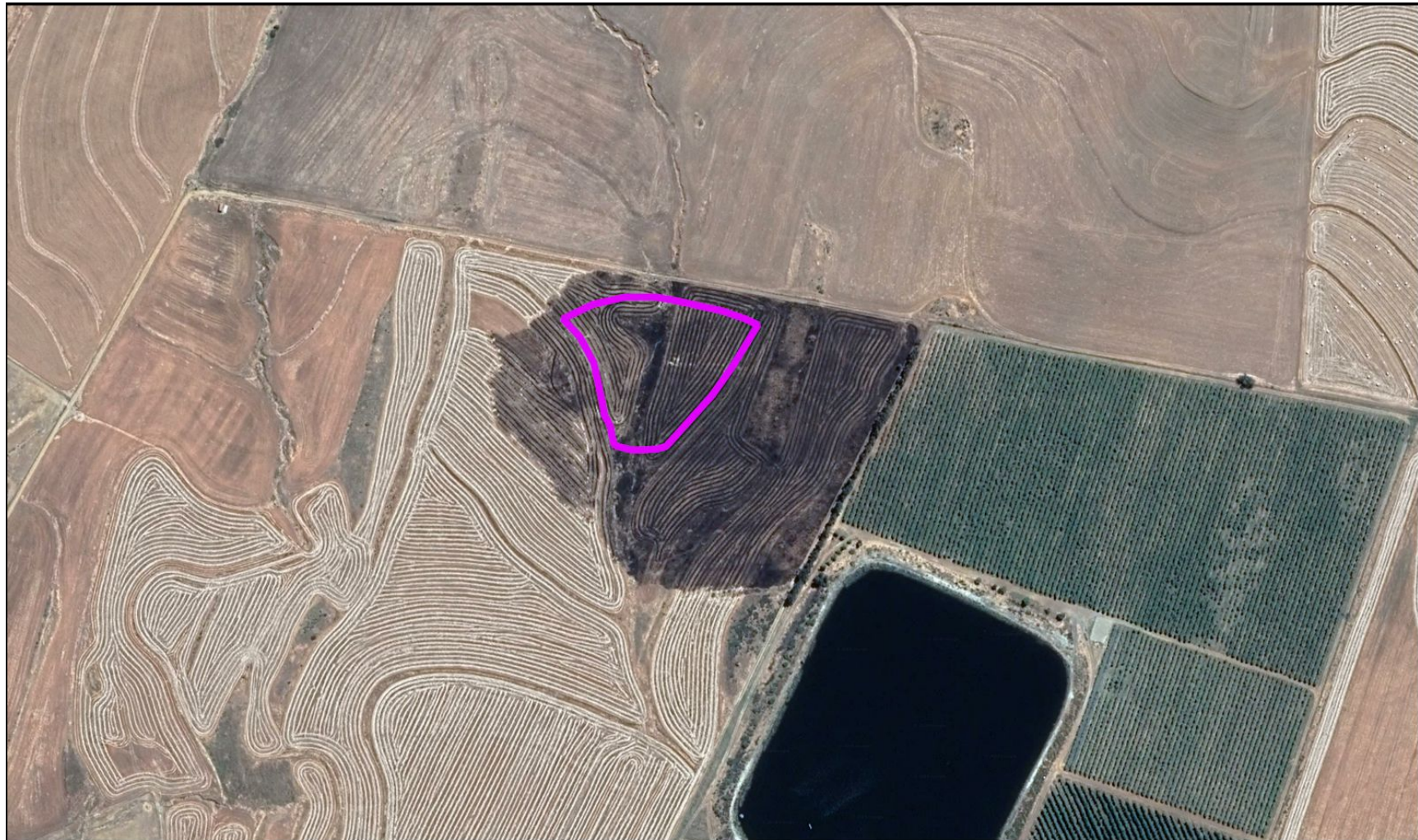
7. Mapping (please see Appendix 3 and 4 for a full description of our methodology and map legends)



Figure 1b. Overview Map. Satellite image (2017) indicating the proposed development area at closer range.



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 Jade Hills Dam

0.1 0 0.1 km



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Figure 1c. Overview Map. Satellite image (2017) indicating the proposed development area at closer range.

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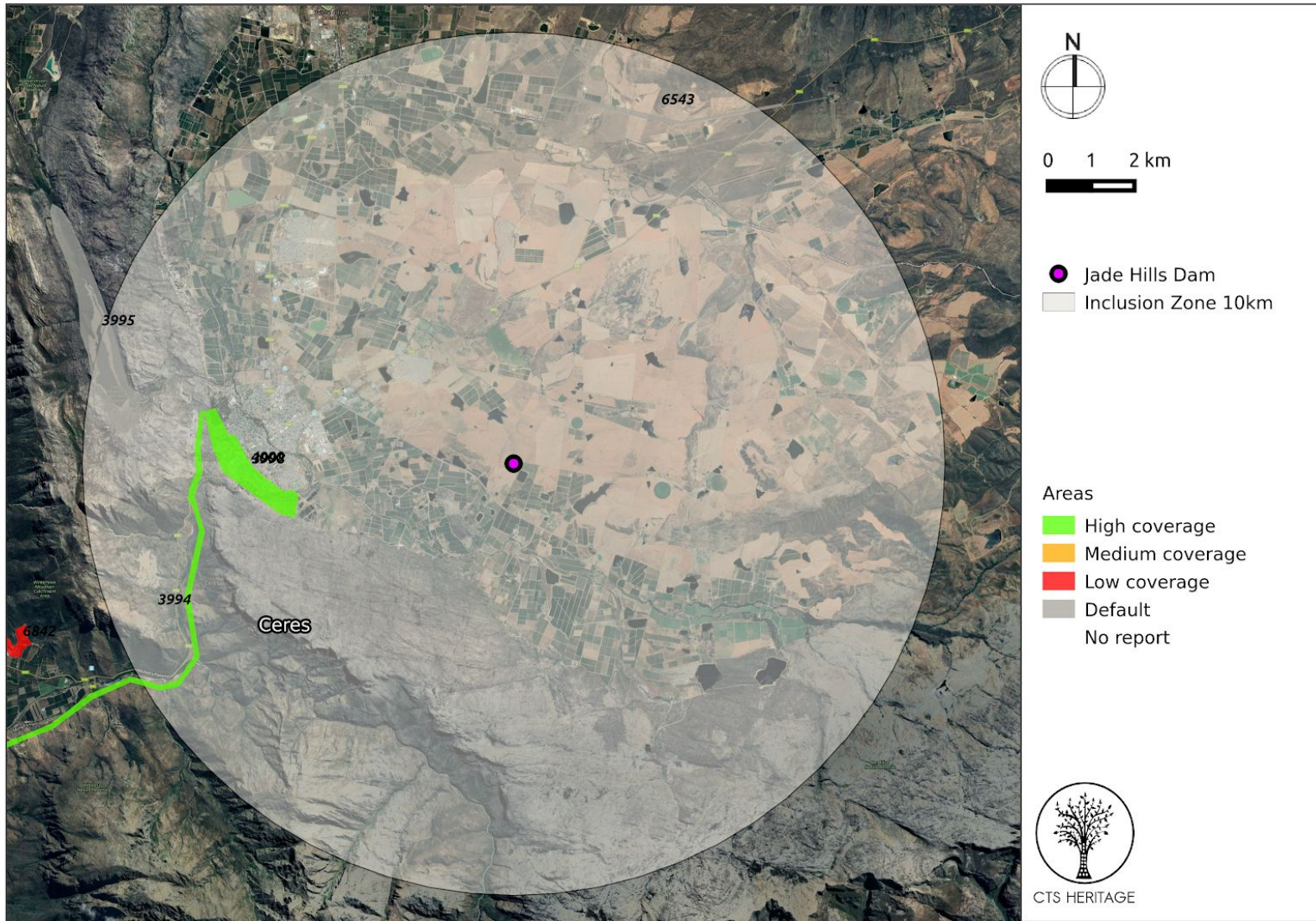
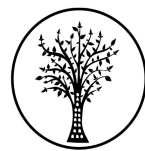


Figure 2. Previous HIAs Map. Previous Heritage Impact Assessments surrounding the proposed development area within 10km, with SAHRIS NIDS indicated. Please see Appendix 2 for full reference list.

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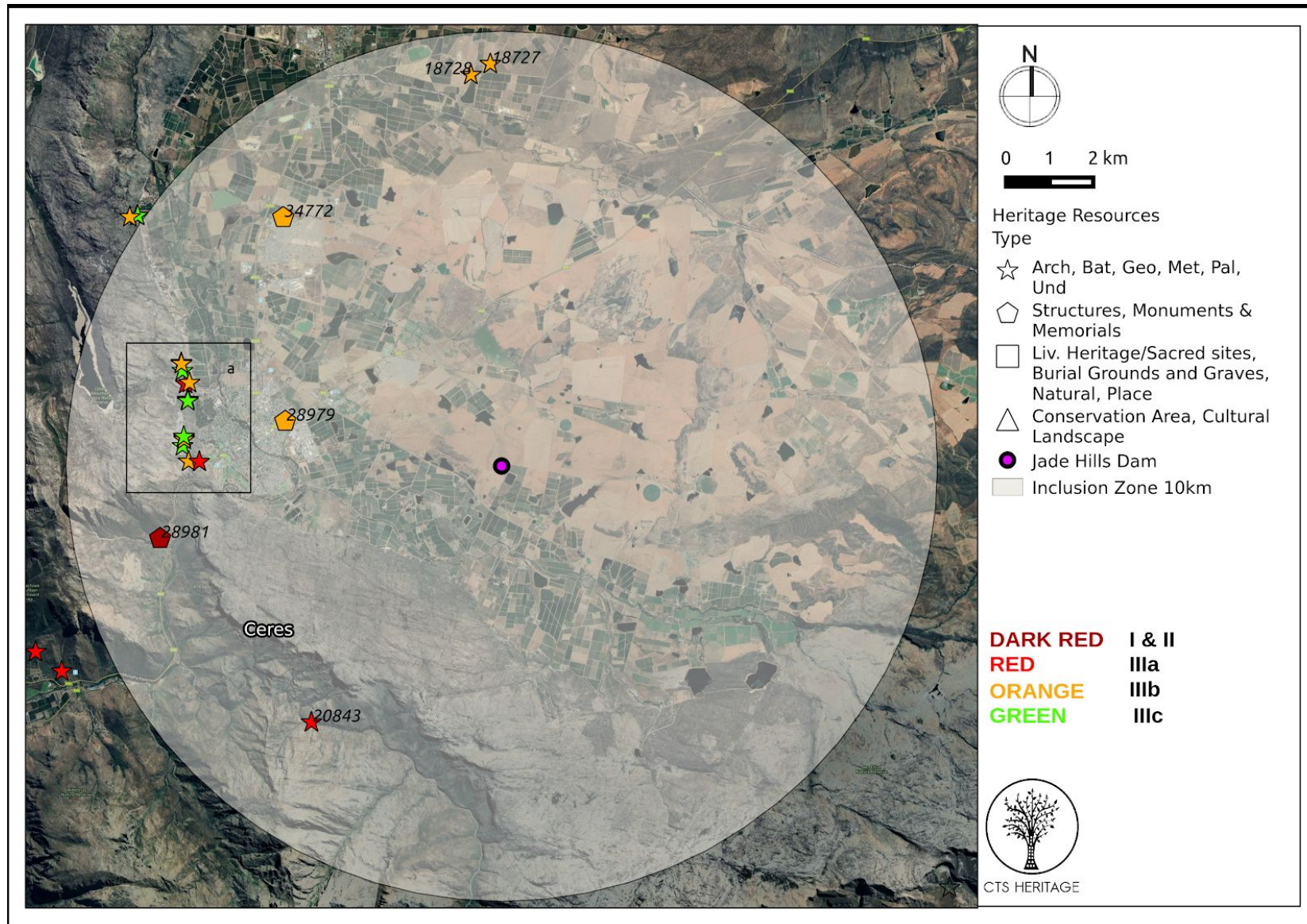
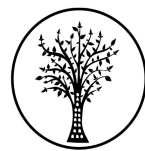


Figure 3. Heritage Resources Map. Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated (see Figure 3a for inset). Please See Appendix 4 for full description of heritage resource types.

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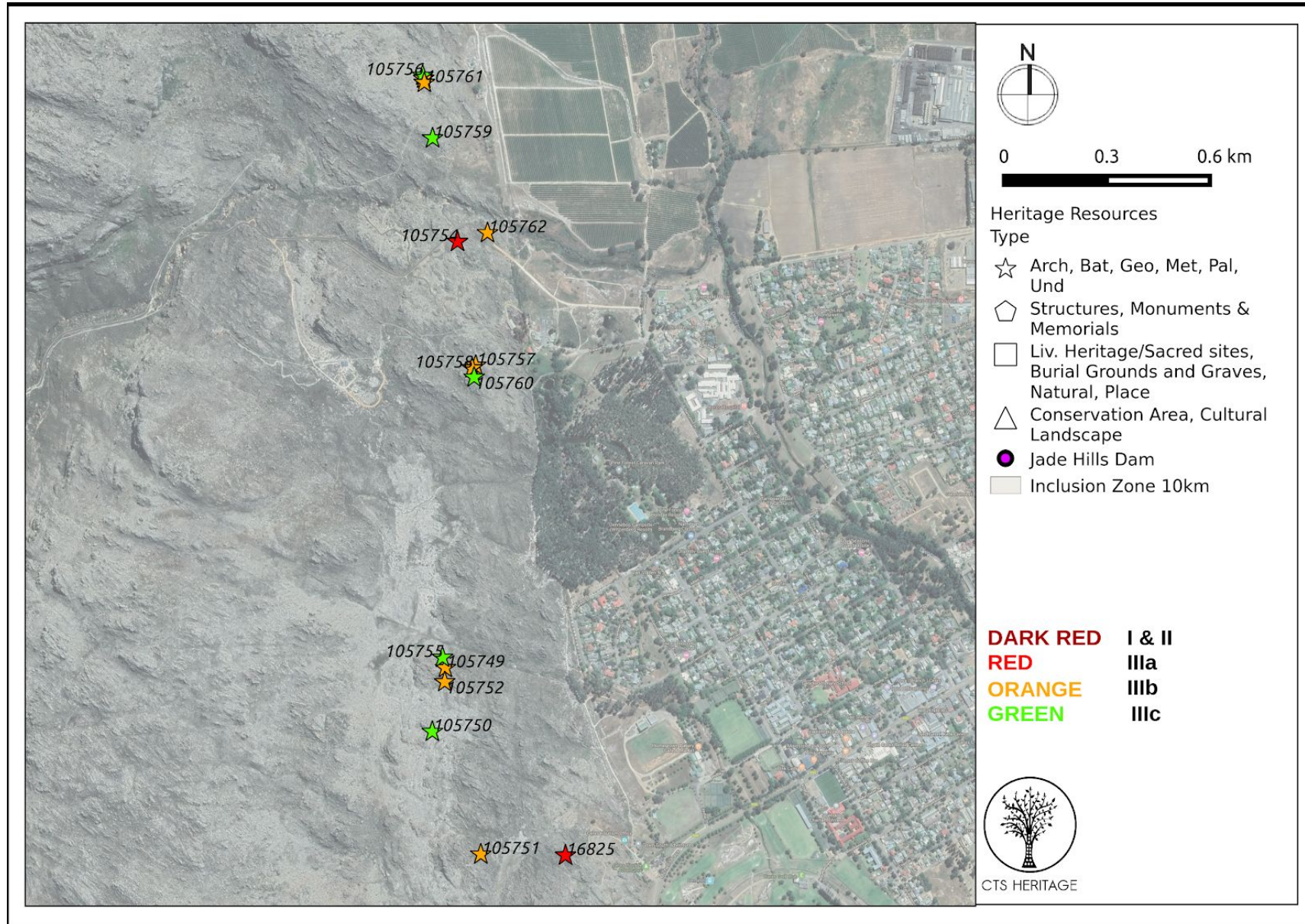
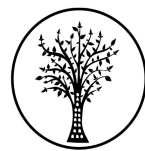


Figure 3a. Heritage Resources Map. Inset

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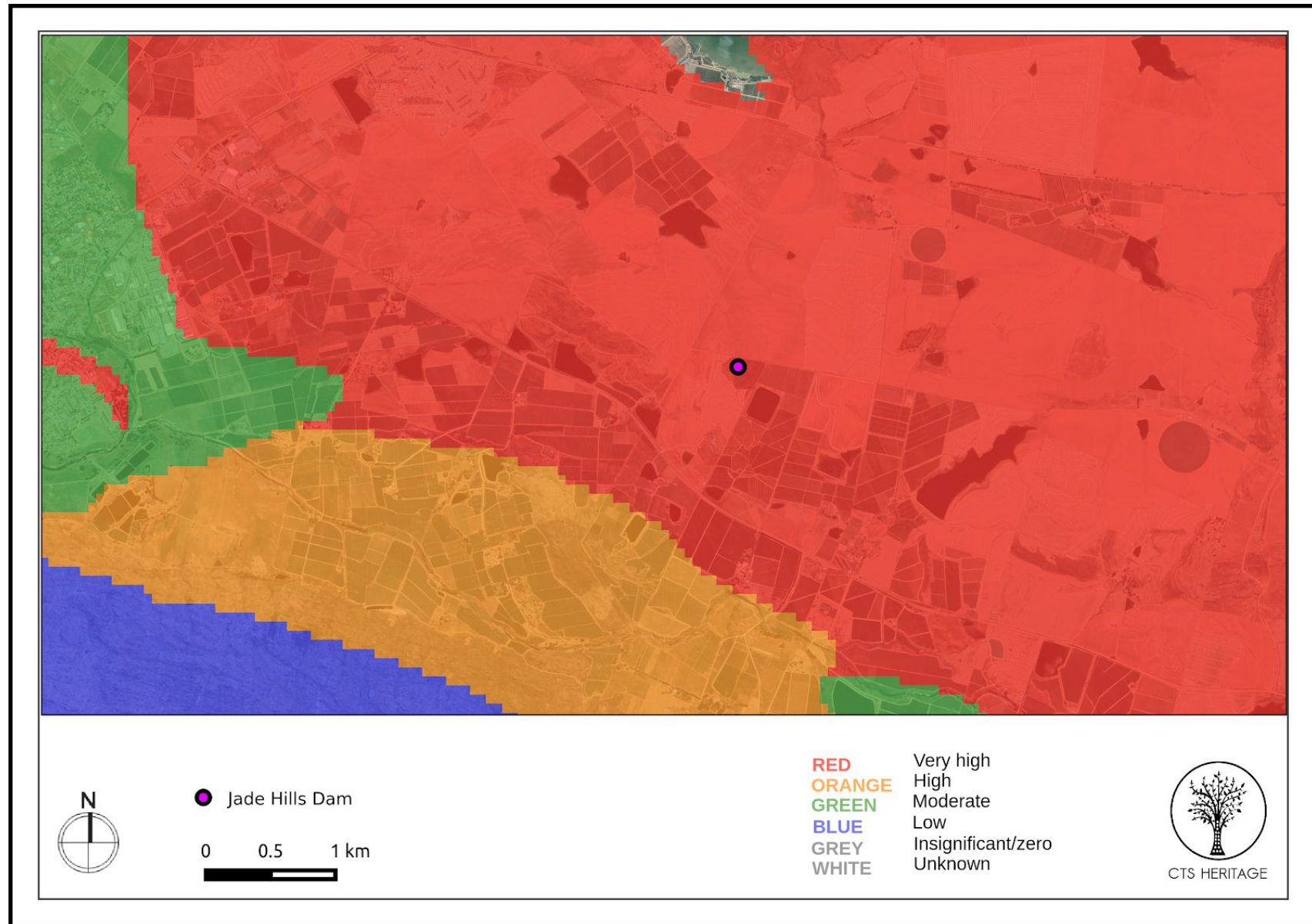
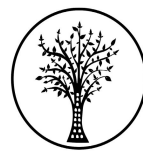


Figure 4. Palaeosensitivity Map. Indicating varied fossil sensitivity underlying the study area. Please See Appendix 3 for full guide to the legend.

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Figure 4a. Geology of the area proposed for development. Extract from CGS 3319 Worcester Tile indicating that the area proposed for the dam is underlain by the Voorstehoek Formation (Dv), the Gydo Formation (Dg) and the Gamka Formation (Dga) of the Bokkeveld Group

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8. Heritage statement and character of the area

This application is for the proposed establishment of a dam on Farm Stinkfontein in Ceres. Ceres is located at the north-eastern entrance to Michell's Pass and was the old route north between Cape Town and Johannesburg, which was later replaced by the N1 highway. The completion of Michell's Pass in 1848 made the town accessible to wagons, and one of the main routes to the diamond fields in Kimberley passed through Ceres. The proposed development is located outside of Ceres town, in its rural, heavily cultivated areas. Ceres is renowned for its agriculture and the areas around Ceres town have been extensively cultivated since 1849.

The area proposed for the dam contains no existing structures and the nearest identified structures of heritage significance are located within the town of Ceres. In addition, the proposed farm dam is in keeping with the agricultural context of the cultural landscape. As per Figure 2 and Appendix 2, very few Heritage Impact Assessments have been completed within 10km of the area proposed for the dam. As per Figure 3 and 3a, the archaeological resources known from this area occur predominantly in the kloofs of the Winterhoek Mountain areas. According to Kaplan (2009, SAHRIS NID 3995), rock art is well known from the Koue Bokkeveld of the Ceres region. In addition, Kaplan has identified some early Stone Age artefacts while conducting archaeological assessments in this area. However, due to the extensive cultivation of this area since the mid-1800's, it is very unlikely that significant *in situ* archaeological resources will be impacted by the proposed dam development.

The area proposed for development is underlain by sediments of the Voorstehoek, Gydo and Gamka Formations of the Bokkeveld Group (very high palaeontological sensitivity). The Voorstehoek Formation consists of dark grey fossiliferous shale, mudrock and siltstone and thin sandstone beds. The Gydo Formation consists of black to dark grey fossiliferous shale mudstone and siltstone and the Gamka Formation consists of dark grey lithic and feldspathic sandstone and siltstone. These formations belong to the Bokkeveld Group which is known for its rich trace fossil assemblages, shelly invertebrates (trilobites, brachiopods, echinoderms, molluscs *etc*) and microfossils in the lower Bokkeveld and important fish, vascular plant and trace fossil biotas in the upper Bokkeveld. It is therefore likely that the proposed dam development will impact on significant palaeontological heritage, however it is unlikely that a palaeontological field assessment will reveal any new information due to the extensively cultivated nature of the development area. It is recommended that a Chance Fossil Finds Procedure be implemented for the development of the dam.

RECOMMENDATION:

The proposed development is unlikely to impact on significant archaeology, built environment or cultural landscape heritage resources. However, the area proposed for development is underlain by formations of very high palaeontological sensitivity. It is recommended that no further studies are required, however a Chance Fossil Finds Procedure must be adopted for the development of the dam.

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APPENDIX 1

List of heritage resources within the 10km Inclusion Zone

Site ID	Site no	Full Site Name	Site Type	Grading
28979	9/2/021/0013	Jan Mostert's Road and Toll House, Mitchell's Pass, Ceres District	Building	Grade IIIb
28981	9/2/021/0001	Old Tollhouse, Michell's Pass, Ceres	Building	Grade II
34772	32/34Buiten Street	Buiten Street	Building	Ungraded
16825	CER015	Ceres Nature Reserve 15	Rock Art	Grade IIIb
18727	LSHF1	Lushof 1	Artefacts	Grade IIIa
18728	LSHF2	Lushof 2	Artefacts	Grade IIIb
20843	WITELS1	Wit Els Rivier 1	Rock Art	Grade IIIb
105749	CER004	Ceres Nature Reserve 04	Artefacts, Deposit, Rock Art	Grade IIIa
105750	CER006	Ceres Nature Reserve 06	Artefacts, Rock Art	Grade IIIc
105751	CER002	Ceres Nature Reserve 02	Artefacts, Rock Art	Grade IIIb
105752	CER005	Ceres Nature Reserve 05	Rock Art, Artefacts	Grade IIIb
105753	CER010	Ceres Nature Reserve 10	Rock Art	Grade IIIb
105754	CER001	Ceres Nature Reserve 01	Rock Art, Artefacts	Grade IIIa
105755	CER003	Ceres Nature Reserve 03	Rock Art	Grade IIIc
105756	CER011	Ceres Nature Reserve 11	Artefacts, Rock Art	Grade IIIc
105757	CER012	Ceres Nature Reserve 012	Rock Art	Grade IIIb
105758	CER013	Ceres Nature Reserve 013	Artefacts, Rock Art	Grade IIIb
105759	CER008	Ceres Nature Reserve 08	Rock Art	Grade IIIc
105760	CER014	Ceres Nature Reserve 014	Artefacts, Rock Art	Grade IIIc
105761	CER009	Ceres Nature Reserve 09	Rock Art, Artefacts	Grade IIIb
105762	CER007	Ceres Nature Reserve 07	Artefacts, Rock Art	Grade IIIb

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Reference List

Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title
3994	AIA Phase 1	Jonathan Kaplan	01/06/2005	Phase 1 Archaeological Impact Assessment Proposed Romansrivier Ceres 66 kV Powerline Refurbishment Western Cape Province
3995	AIA Phase 1	Jonathan Kaplan	01/02/1995	Archaeological Survey: New Koekedouw Dam, Ceres
3998	AIA Phase 1	Jonathan Kaplan	01/02/2007	Phase 1 Archaeological Impact Assessment: Proposed Ceres Golf Estate, Hotel and Housing Developments, Ceres, Western Cape Province
4000	PIA Phase 1	John E Almond	01/04/2007	Ceres Golf Estate, Hotel and Housing Developments: Palaeontological Impact Assessment, Desktop Study
6543	AIA Phase 1	Johnny Van Schalkwyk	25/04/2006	Heritage Scoping Assessment: Road DR 1458 and Borrow pits DR 1470/14 & DR 1479/2

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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 (National)
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)
DEDTEA	Department of economic Development, Tourism and Environmental Affairs (Free State)
DENC	Department of Environment and Nature Conservation (Northern Cape)
DMR	Department of Mineral Resources (National)
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.

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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 PALAEOONTOLOGICAL 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

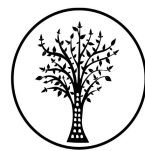
DETERMINATION OF THE COVERAGE RATING ASCRIBED TO A REPORT POLYGON

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.

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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.

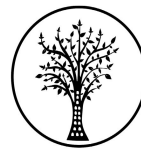
This recommendation is made in instances in which there are already some studies undertaken in the area and/or in the adjacent area for the proposed development. Further studies in a limited HIA may include:

- 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

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- 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.**

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