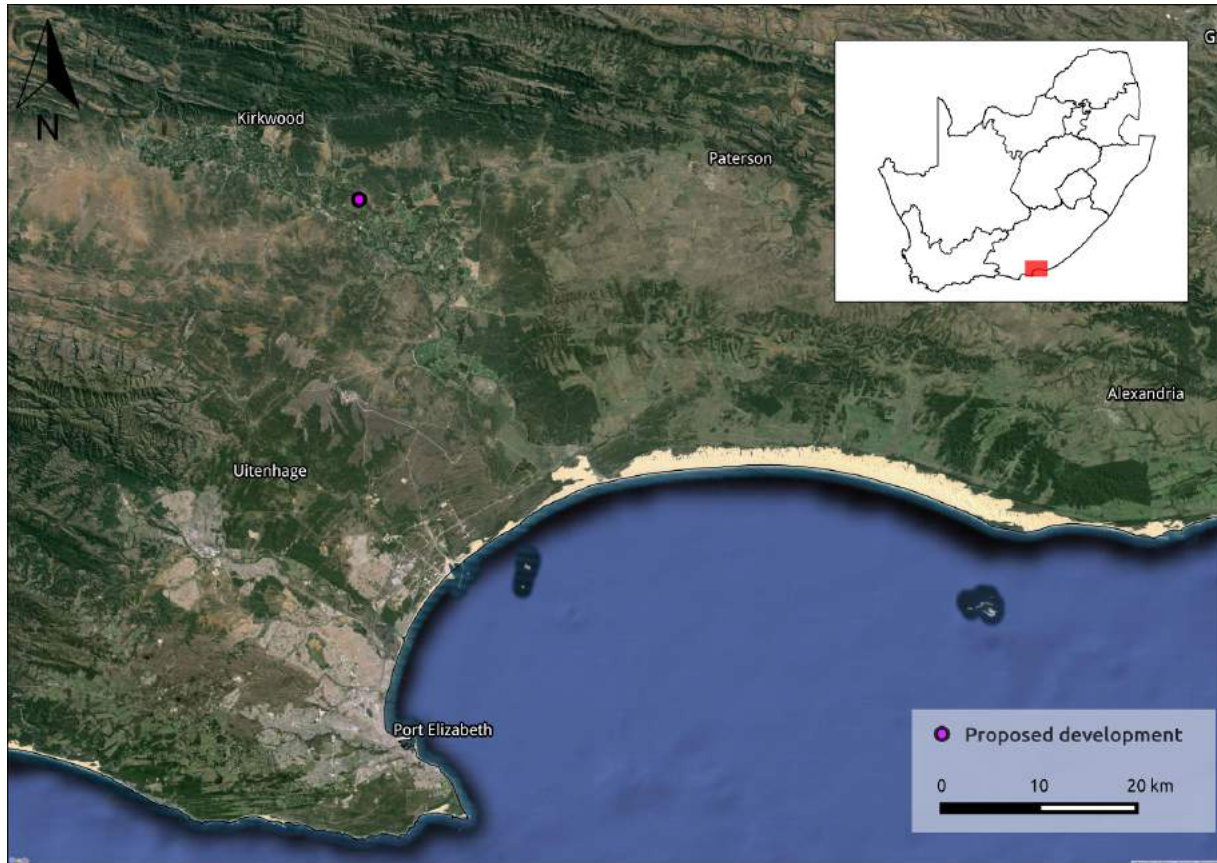


HERITAGE SCREENER

CTS Reference Number:	CTS16_014	
Client:	Public Process Consultants	
Date:	24 February 2016	
Title:	Dunbrody Citrus Farm, Kirkwood, Eastern Cape Province	
Recommendation by CTS Heritage Specialists: (Type 2)	<p>(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. It is recommended that:</p> <ul style="list-style-type: none">- an Archaeological Impact Assessment be conducted within the area proposed for expansion.- inspection by a palaeontologist during excavations in the Sundays River Formation is recommended.	



1. Proposed Development Summary

The applicant, Unifrutti South Africa Pty Ltd, proposes to expand citrus production on their existing operations at Dunbrody Estates, which measures 1 239.05 ha. The expansion of citrus is proposed to take place on the Farm Geelhoutboom 89, which measures 525.6 ha. It is proposed that 36 ha is cleared for the planting of citrus and associated infrastructure.

2. Application References

Name of relevant heritage authority(s)	Eastern Cape Provincial Heritage Resources Authority (ECPHRA)
Name of decision making authority(s)	Department of Economic Development, Environmental Affairs and Tourism (DEDEAT)

3. Property Information

GPS Coordinates	S33°27'33.902"; E25°34'58.731"
Farm Name and Number	Portion 14 of farm Geelhoutboom 89
Local Municipality	Sunday's River Valley
District Municipality	Cacadu
Previous Magisterial District	Kirkwood
Province	Eastern Cape
Current Use	Agricultural
Current Zoning	Agricultural
Total Extent	Approximately 36 ha

4. Nature of the Proposed Development

Surface area to be affected/destroyed	30ha
Depth of excavation (m)	NA
Height of development (m)	NA
Expected years of operation before decommission	NA

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	X
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 new dam on the southern section of the area proposed for cultivation, measuring 30 000 m³.
- A new 250mm irrigation pipeline under gravity feed, which will commence at the Lower Sundays River Water Users Irrigation canal system north of the property, for about 2km to the new dam on the area proposed for cultivation. The pipeline route will follow cleared areas on three neighbouring farms.



CEDAR TOWER
SERVICES

- Irrigation of the new orchards will be drip irrigation. Water will be pumped from the new proposed dam to the proposed orchards using either Eskom services or a generator.
- The new citrus development will be serviced via existing internal roads on the Dunbrody Farm which provides access the Unifrutti Packhouse, and vice versa.
- There is an existing shed on an adjacent property also owned by Unifrutti South Africa Pty Ltd, which will be used to service the area proposed for expansion. The shed will be used to store pallets, plastic crates, tractor trailers etc, thus there is no need for additional storage infrastructure on the area proposed for expansion.

7. Mapping - Please see Appendices 3 and 4 for legend keys and methodology.

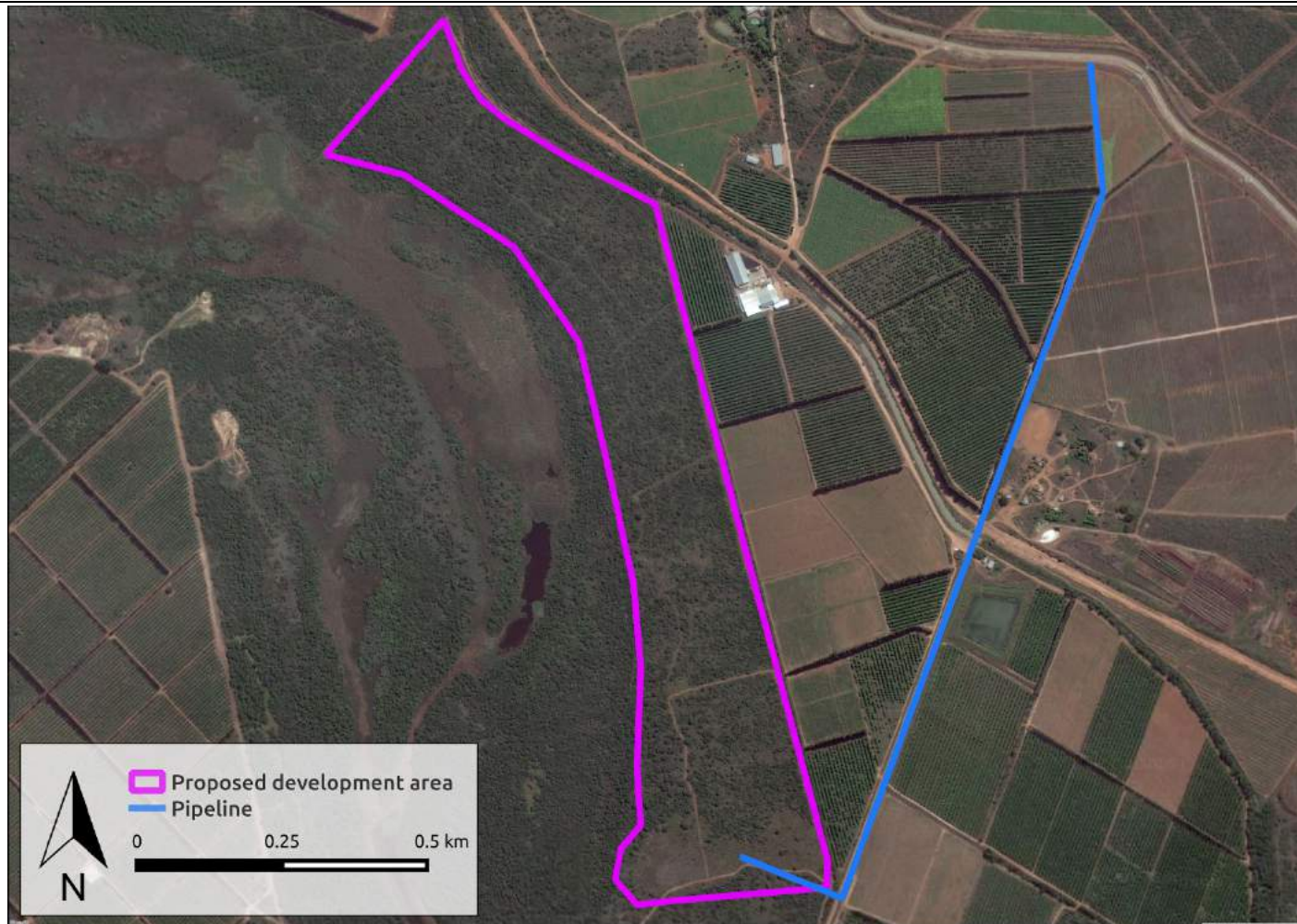
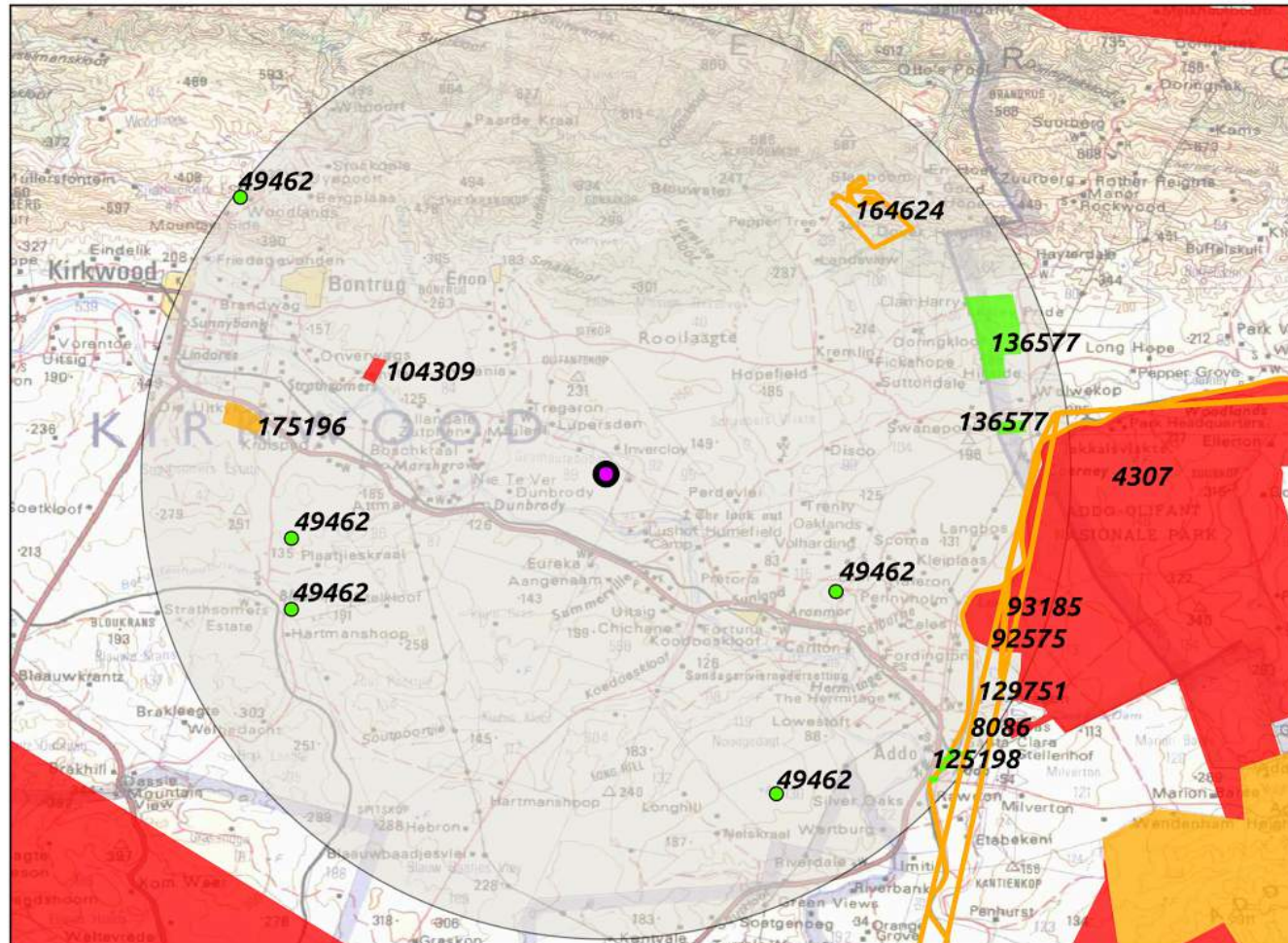


Figure 1b. Overview Map. Satellite image (2016) with proposed development indicated.



CEDAR TOWER
SERVICES



Legend

● Proposed development

□ Inclusion zone 15km

Previous assessments

■ High coverage

■ Medium coverage

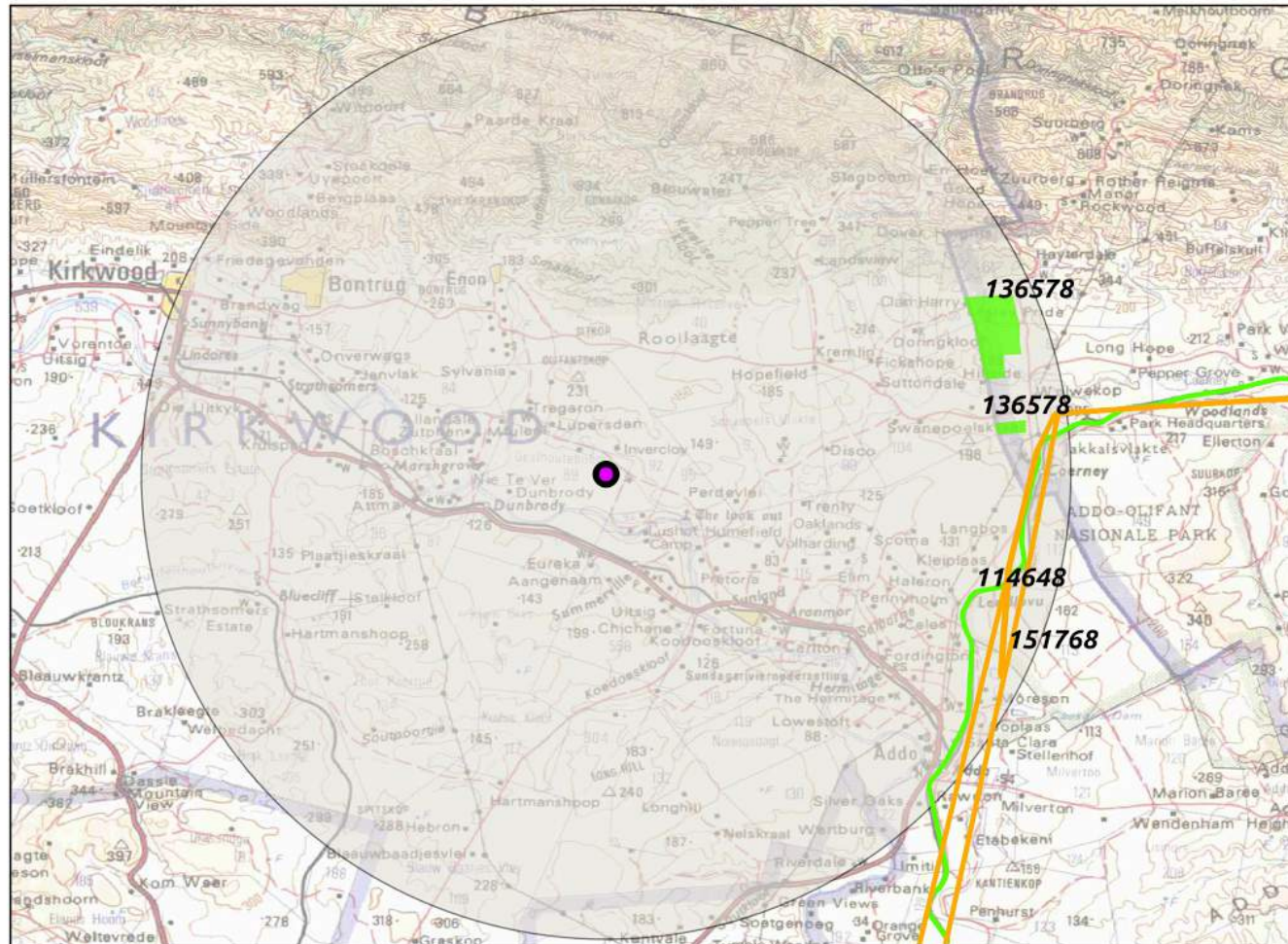
■ Low coverage

0 5 10 km

Figure 2a. HIAs Map. Previous Heritage Impact Assessments done in and near the proposed development area (PIAs excluded) with SAHRIS NID labels indicated.



CEDAR TOWER
SERVICES



Legend

- Proposed development
- Inclusion zone 15km
- Previous assessments
 - High coverage
 - Medium coverage

0 5 10 km

Figure 2b. HIAs Map. Close-up of previous surveys (PIAs excluded) with SAHRIS NID labels indicated.



CEDAR TOWER
SERVICES

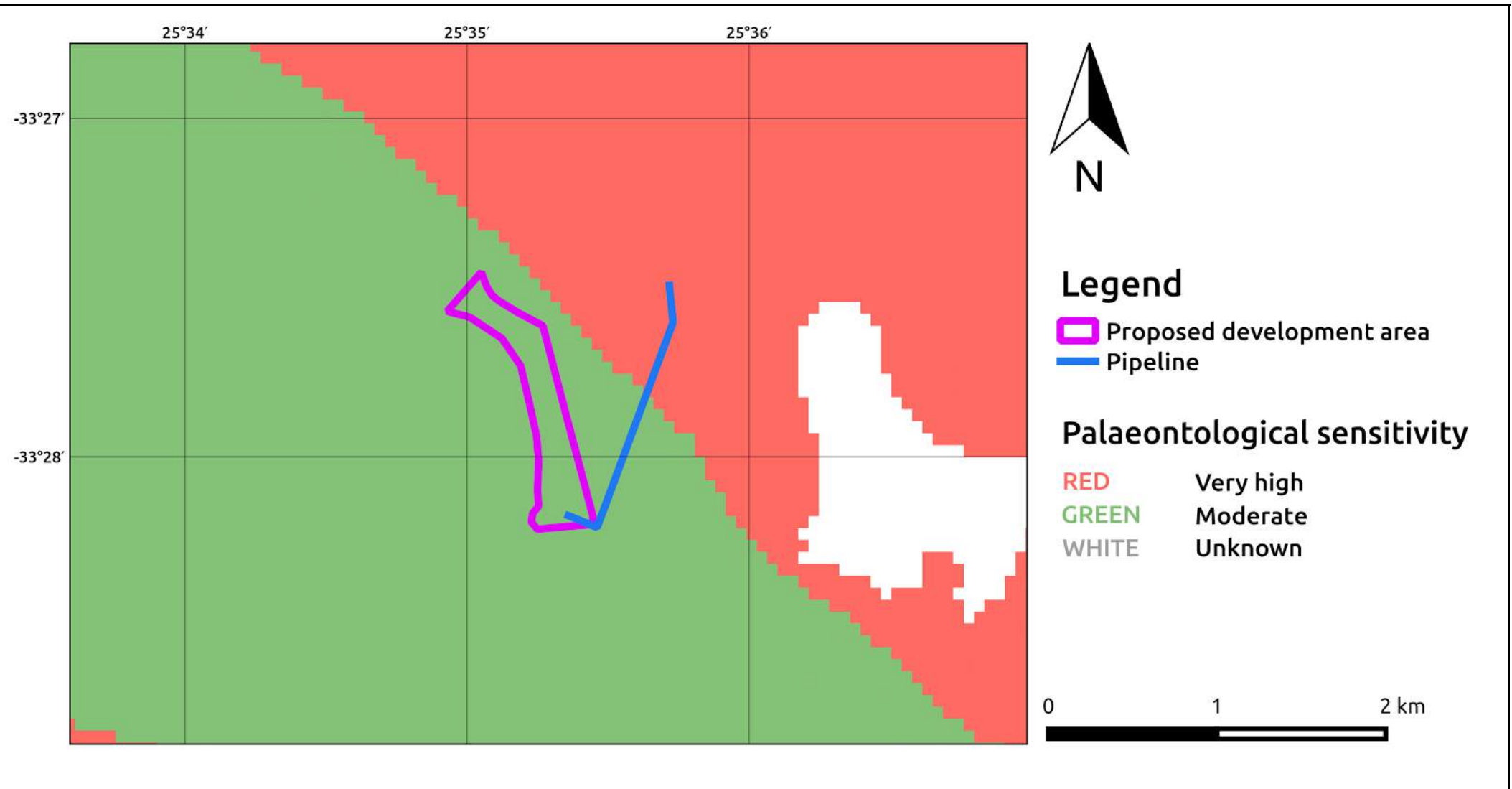
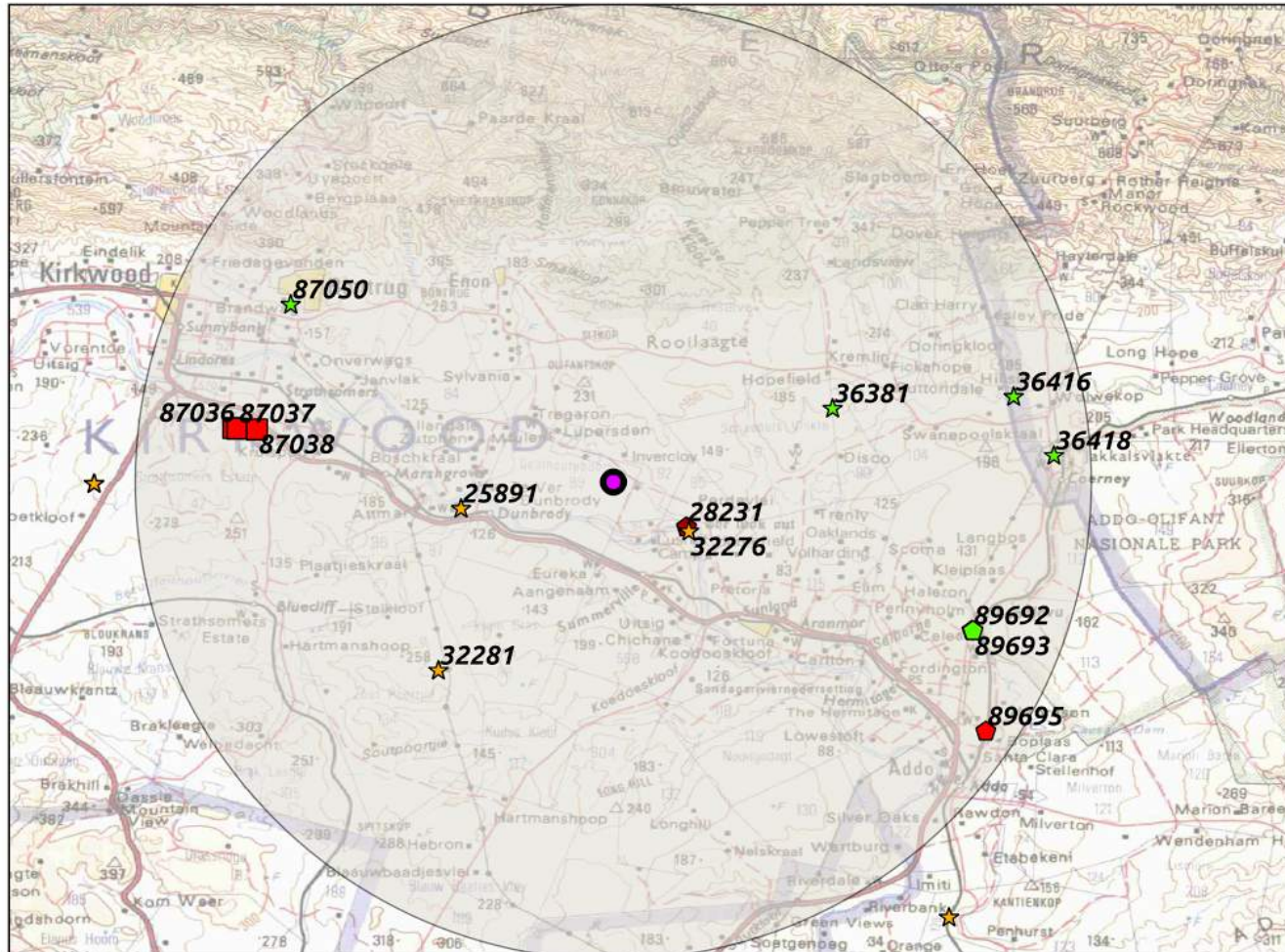


Figure 3. Palaeo Map. Palaeosensitivity of the study area. See Appendix 3 for full guide to the legend.



CEDAR TOWER
SERVICES



Legend

- Proposed development
- Inclusion Zone 15km

Heritage resources

Type

- ☆ Arch, Bat, Geo, Met, Pal, Und
- ◇ Structures, Monuments & Memorials
- Liv. Heritage/Sacred sites, Burial Grounds and Graves, Natural, Place
- △ Conservation Area, Cultural Landscape

Grading

- | | |
|----------|--------|
| DARK RED | I & II |
| RED | IIIa |
| ORANGE | IIIb |
| GREEN | IIIc |



Figure 4. Heritage Resources Map. Heritage resources previously identified in and near the study area, with SAHRIS Site IDs indicated.

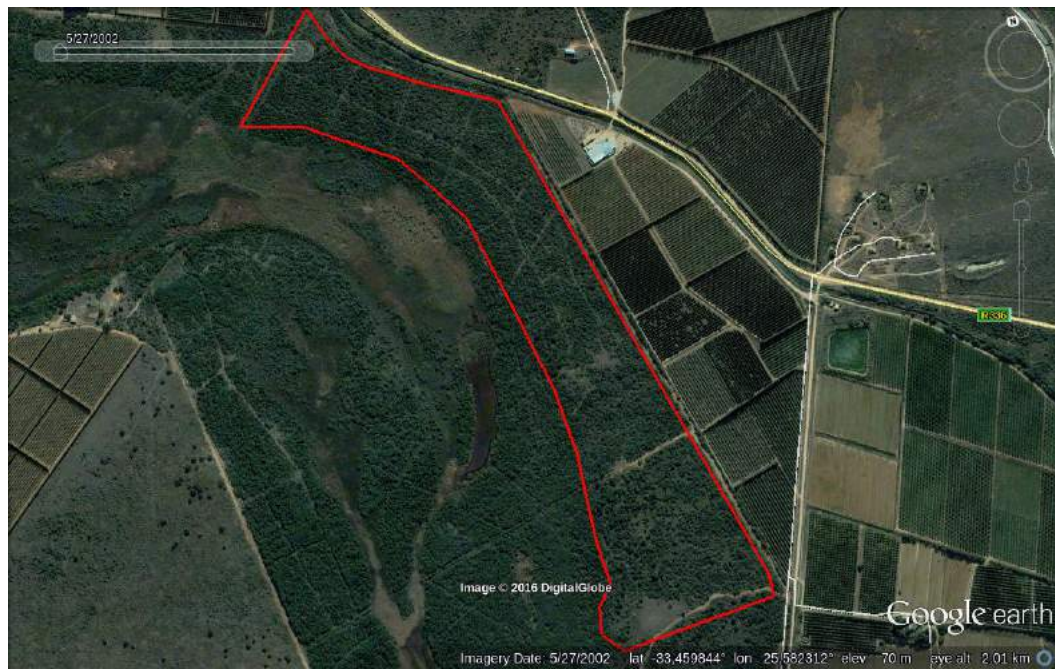


Figure 5a. Google Earth historical satellite image (2002)

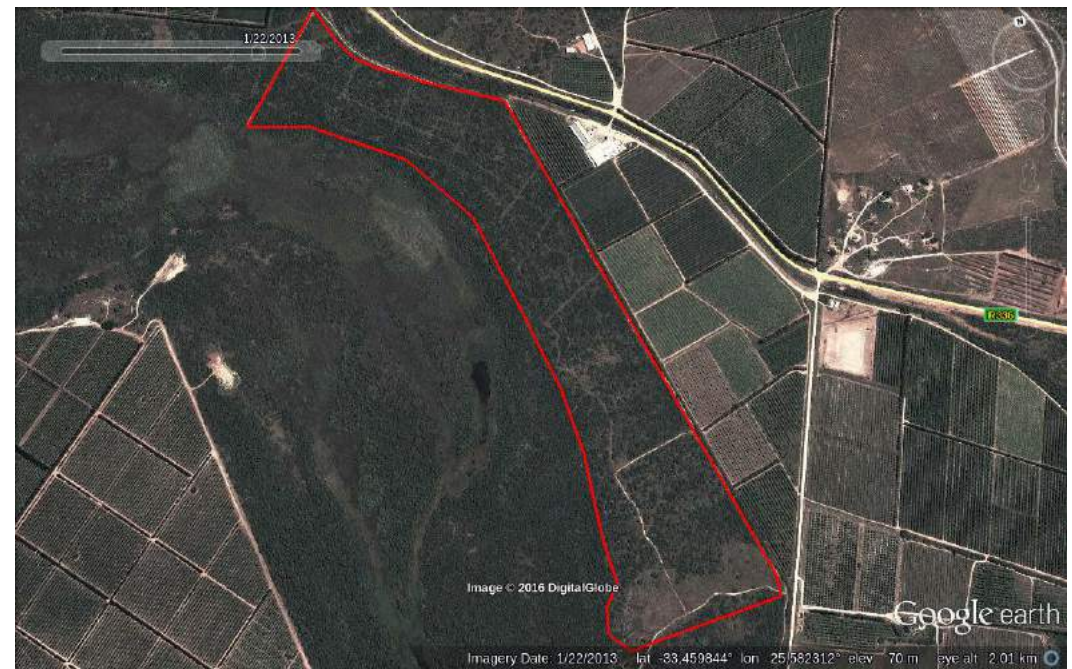


Figure 5b. Google Earth historical satellite image (2013)

8. Heritage statement and character of the area

Unifrutti South Africa Pty Ltd proposes to expand citrus production on their existing operations at Dunbrody Estates, which measures 1 239.05 ha. The expansion of citrus proposed to take place on the farm measures 525.6 ha. It is proposed that 30 ha is cleared for the planting of citrus and associated infrastructure. Cedar Tower Services has assessed the area within an inclusion zone of 15km, in terms of previous heritage and palaeontological assessments and previously recorded heritage resources.

No previous Heritage Impact Assessments (HIAs) have been conducted within the immediate vicinity of the proposed citrus expansion, and the closest Archaeological Impact Assessments (AIAs) were conducted approximately 6 km away. Several other assessments have been conducted within 15 km of the proposed development, including five other AIAs between 2008 and 2013, and five HIAs between 2012 and 2013. Significant heritage resources that have been recorded in this radius include one Provincial Heritage Site which is located approximately 2.5 km to the south-east of the proposed citrus expansion, called The Lookout - Kirkwood District. Several burial grounds were recorded approximately 10 km to the west and several archaeological sites (mostly Stone Age) have been recorded within the 15 km radius, but generally have a grading of low local significance (Grade IIIc). None of these known heritage resources will be impacted by the proposed citrus expansion.

However, as can be seen by the historical Google images of 2002 and 2013 (Figures 5a & 5b), as well as the current 2016 satellite image in Figure 1b of the proposed area for expansion, the landscape is generally undisturbed, and has only had a small amount of vegetation clearing in the southern portion. Any heritage resources found in this area would most likely be Stone Age artefact site. It is also possible that historical graves may exist. **It is therefore recommended that an Archaeological Impact Assessment be conducted within the area proposed for expansion.**

The area is underlain mostly by alluvium (moderate fossil sensitivity according to the palaeosensitivity map on SAHRIS) and by the Sunday's River Formation (very high fossil sensitivity) along 700m of the portion proposed for the pipeline in the north. Palaeontological excavation of Early Cretaceous flora was undertaken approximately 4.5 km to the west of the proposed expansion on Farm Attmar. Three Palaeontological Impact Assessments (PIAs) have been conducted by John Almond between 2012 and 2013, and all relatively far away from the proposed area of expansion (>10 km). Almond (2012a) discusses the "*overestimation of palaeontological sensitivity*" of certain formations, and in this case alluvium is one of them. Almond has also stated that the footprint for this project is mantled in young alluvial deposits of low palaeontological sensitivity (Almond personal communication, 25/02/2016). This is corroborated by Rose Prevec (25/02/2016), who also stated that the proposed dam is likely to impact on freshwater shell fossils within the bedrock (Sundays River Formation).

Furthermore, Almond (2012a) discusses the high fossil sensitivity of the Sundays River Formation in this particular area, in his assessment of the River Bend citrus farm near Addo, stating that "*Key Kirkwood fossil sites some 10 km or more to the west of the present River Bend study area at **Geelhout Boom (Dunbrodie)**, **Blue Cliff Station** and the junction of the Wit and Sundays Rivers **have yielded a range of fossil plants** (ferns, cycads, conifers, woods etc) **and vertebrate bones, including those of large dinosaurs** (McLachlan & Anderson 1976, p. 204 and their Fig. 4).*" Prevec (pers.comm. 25/02/2016) states that Early Cretaceous fossils and fossil shells are highly likely to be impacted by the proposed dam and pipeline which would be excavated into the Sundays River Formation. **Therefore, inspection by a palaeontologist during excavations in the Sundays River Formation is recommended.**

APPENDIX 1 - Site Lists

List of sites within 15km inclusion zone and outside proposed development area

Site ID	Site no	Full Site Name	Site Type	Grading	Declaration
28231	9/2/051/0003	The Look Out, Kirkwood District	Structure	Grade II	Provincial Heritage Site
87036	PCT001	Panzi Citrus 001	Burial Grounds & Graves	Grade IIIa	--
87037	PCT002	Panzi Citrus 002	Burial Grounds & Graves	Grade IIIa	--
87038	PCT003	Panzi Citrus 003	Burial Grounds & Graves	Grade IIIa	--
89695	LGBW007	Langbos Bulk Water Supply Services 007	Monuments & Memorials	Grade IIIa	--
32281	Atmar-001	Atmar	Archaeological	Grade IIIb	--
25891	Attmar	Attmar Farm	Palaeontological	Grade IIIb	--
32276	Look-out -001	Kirkwood District	Archaeological	Grade IIIb	--
87050	ADD005	Addo 005	Artefacts	Grade IIIc	--
36381	WIL005	Willowmore 005	Artefacts	Grade IIIc	--
36416	CBF001	Citrus Bend Farm 001	Artefacts	Grade IIIc	--
36418	CBF002	Citrus Bend Farm 002	Artefacts	Grade IIIc	--
89692	LGBW004	Langbos Bulk Water Supply Services 004	Building	Grade IIIc	--
89693	LGBW005	Langbos Bulk Water Supply Services 005	Building	Grade IIIc	--

APPENDIX 2 - Reference List

Nid	Report Type	Author/s	Date	Title
8086	AIA	Johan Nel	14/11/2008	Final Report Heritage Resources Scoping Survey & Preliminary Assessment Transnet Freight Line EIA, Eastern Cape and Northern Cape
49462	AIA	Karen Van Ryneveld	6/4/2012	Utilization Of Existing Gravel Borrow Pits, Cacadu District, Eastern Cape, South Africa
104309	AIA	Johan Binneman	1/5/2012	A Phase 1 Archaeological Impact Assessment for the proposed expansion of the existing agricultural activities on Falcon Ridge, Portion 274 of Strathomers estate no. 42, Sundays River Valley Municipality, Eastern Cape Province.
136577	AIA	Johan Binneman	5/9/2012	A Phase 1 Archaeological Impact Assessment For The Proposed Expansion Of The Existing Agricultural Activities On River Bend Citrus Farm, Remainder Of Farm 82 Wolve Kop, Portion 1 Of Farm 77 Wellshaven And Portion 3 Of Farm 77 Honeyvale, Near Addo, Sunday
92575	HIA	Elize Becker	10/10/2012	Phase 1 Heritage Impact Assessment Kimberley to De Aar
93185	HIA	Elize Becker	1/11/2012	Phase 1 Heritage Impact Assessment Hotazel to Kimberley and De Aar to Port Ngqura
125198	HIA	Stephan Gaigher	1/7/2013	Heritage Impact Assessment For The Proposed Upgrading Of Stormwater Infrastructure In Valencia, Addo, Sundays River Valley Municipality, Eastern Cape Province
129751	HIA	Elize Becker	20/02/2013	Phase 1 Heritage Impact Assessment Hotazel to Kimberley and De Aar to Port of Ngqura
164624	AIA	Johan Binneman	23/09/2013	Phase 1 Archaeological Impact Assessment For The Proposed Clearing Of Indigenous Vegetation For The Construction Of A Boundary Fence Around The South African Police Service's Training Facility At Slagboom, Near Addo, Sundays River Valley Municipality, Eastern Cape
4307	AIA	Lita Webley	11/6/2003	Addo Elephant National Park: Upgrading of Existing Tourist Road Network and Construction of Southern Access Road near Colchester - Phase 1 Archaeological Impact Assessment
175196	AIA	Johan Binneman	1/4/2013	A Phase 1 Archaeological Impact Assessment For The Proposed Clearing Of Land For Agricultural Purposes On Panzi Citrus Farm Near Kirkwood, Division Of Uitenhage, Sundays River Valley Municipality, Eastern Cape Province
136578	PIA	John E Almond	1/8/2012a	Palaeontological Specialist Study: Desktop Assessment Expansion Of River Bend Citrus Farm Near Addo, Sundays River Valley Municipality, Eastern Cape
114648	PIA	John E Almond	1/9/2012b	Palaeontological Specialist Assessment: Desktop Study. Proposed 16 Mtpa Expansion Of Transnet's Existing



CEDAR TOWER
SERVICES







				Manganese Ore Export Railway Line & Associated Infrastructure Between Hotazel And The Port Of Ngqura, Northern & Eastern Cape.
151768	PIA	John E Almond	1/11/2013	Palaeontological Specialist Assessment: Combined Desktop And Field-based Study: Proposed 16 Mtpa Expansion Of Transnet's Existing Manganese Ore Export Railway Line & Associated Infrastructure Between Hotazel And The Port Of Ngqura, Northern & Eastern

APPENDIX 3 - Keys/Guides

Key/Guide to Acronyms

AIA	Archaeological Impact Assessment
DEA	Department of Environmental Affairs
DEDEA	Department of Economic Development, Environmental Affairs and Tourism
DMR	Department of Mineral Resources
HIA	Heritage Impact Assessment
HWC	Heritage Western Cape
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.



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.

Grading of heritage sites which form part of the national estate is defined in s. 7 of the National Heritage Resources Act (NHRA) as:

*(a) **Grade I:** Heritage resources with qualities so exceptional that they are of special national significance; Examples of these sites are Mapungubwe Cultural Landscape, The Parliament of South Africa, Sarah Baartman Burial Site, Robert Sobukwe's grave, Lake Fundudzi, Voortrekker Monument, Union Buildings.*

*(b) **Grade II:** Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; they are normally declared Provincial Heritage Sites under s. 27 of the NHRA after the competent Provincial Heritage Resources Authority has established their significance. Many of the current Provincial Heritage Sites were declared National Monument under the previous heritage legislation and their status was changed to Provincial Heritage Sites when the National Heritage Resources Act was proclaimed in 1999. Amongst these sites, Mapoch's Caves in Limpopo, Umhlathuzana Rock Shelter in KwaZulu Natal, Van der Stel's Copper Mine in the Northern Cape, the old Cemetery in Grahamstown, Eastern Cape and Baboon Point, in the Western Cape.*

*(c) **Grade III:** Other heritage resources worthy of conservation, and which prescribes heritage resources assessment criteria, consistent with the criteria set out in section 3(3), which must be used by a heritage resources authority or a local authority to assess the intrinsic, comparative and contextual significance of a heritage resource and the relative benefits and costs of its protection, so that the appropriate level of grading of the resource and the consequent responsibility for its management may be allocated (...).*

The following sub-categories are currently in use for Grade III::

Grade IIIa sites are sites of such a high local significance that should be protected and retained. These sites should be included in the heritage register of each province as defined in s. 30 of the NHRA and should not be impacted upon. In the instance of buildings, any alteration must be regulated. Because of their nature, all human remains are considered of high significance. While relocation of graves is common practice, this should always be considered as the last option. Examples of these sites are all graves and burial grounds which have not been graded I or II, Peers Cave in Western Cape,



Grade IIIb sites are resources of medium local significance. They should preferably be retained where possible, but where not possible the site must be fully investigated and/or mitigated. After mitigation they may be impacted upon.

Grade IIIc sites are of low local significance. These resources must be satisfactorily studied before destruction. In many instances the recording and description of the site undertaken at the heritage impact assessment level is sufficient and further recording or mitigation may not be required. These sites include for instance small knapping sites which have been sufficiently recorded at the archaeological impact assessment level, palaeontological fossils of low significance which do not require recovery. In the case of the built environment, IIIc structures will only require protection and regulation if the significance of the environs in which they are located is sufficient to warrant protective measures.

The heritage specialist in the field should suggest a grading for the site, but it will then need to be ratified and accepted by the competent heritage authority.

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.

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.**