



CTS HERITAGE

HERITAGE SCREENER

CTS Reference Number:	CTS21_283
SAHRA Case No.	TBA
Client:	Savannah
Date:	February 2022
Title:	Proposed development of a solar photovoltaic (PV) energy facility and associated infrastructure with a generation capacity of up to 10MWac, located near Sasolburg in the Free State Province
Recommendation:	RECOMMENDATION It is unlikely that the proposed development will impact on significant archaeological and palaeontological heritage. However an HIA is required to assess impacts to these identified heritage resources and to provide appropriate mitigation measures to prevent negative impact..

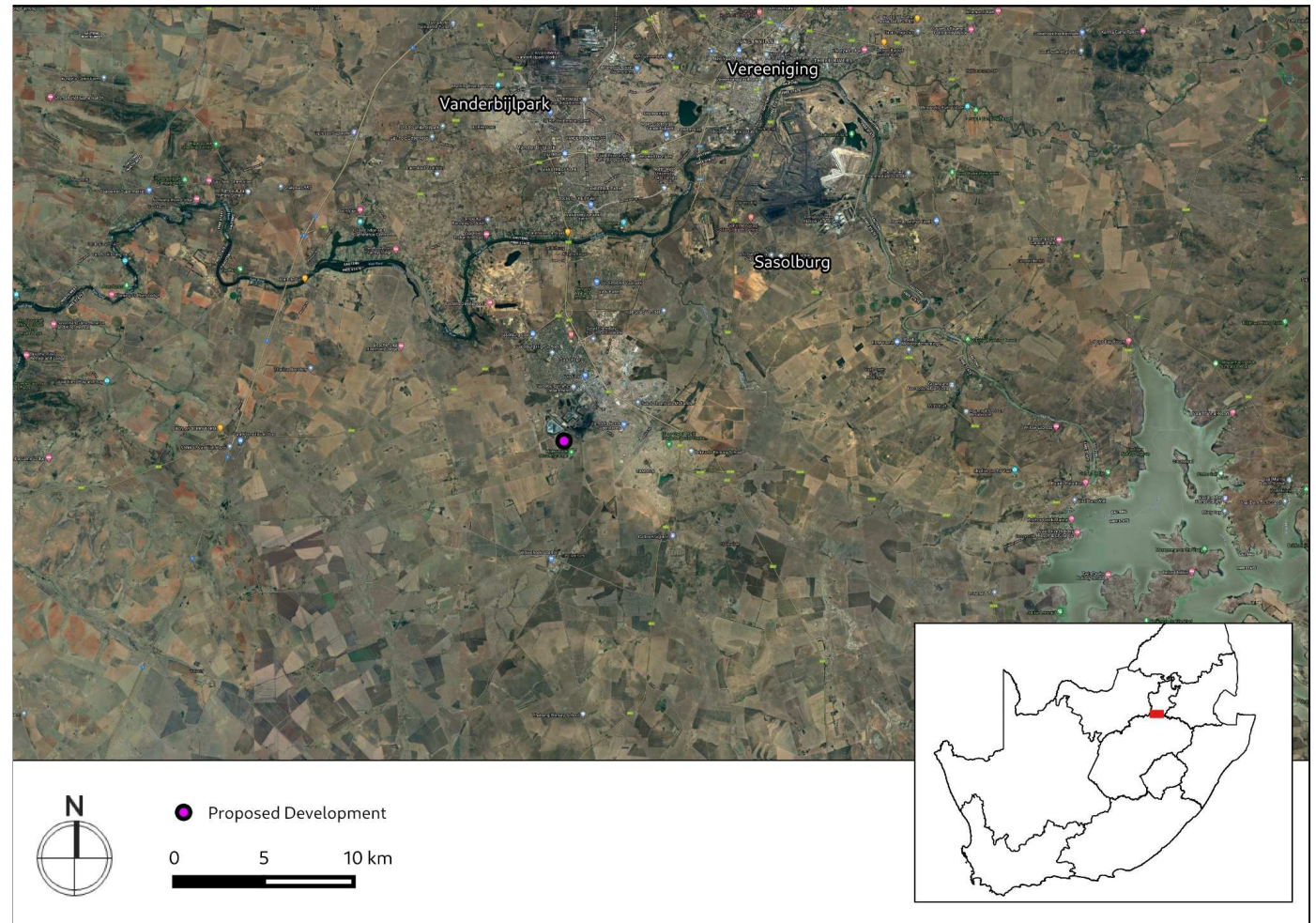


Figure 1a. Satellite map indicating the location of the proposed development in the North West Province

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1. Proposed Development Summary

Becrux Solar PV Project Two (Pty) Ltd is proposing to develop a 10MW ac Solar Photovoltaic (PV) Energy Facility and associated infrastructure on Portion 1 of the Farm Saltberry Plain 137 and the Remaining Extent of Portion 1 of the Farm Roseberry Plain 250, located 4km southeast of the town Sasolburg, within jurisdiction of the Metsimaholo Local Municipality and the Fezile Dabi District Municipality in the Free State Province. The purpose of the facility will be to generate electricity for exclusive use by Sasol Limited.

A development area of up to ~30ha and a development footprint of up to ~19.99ha have been identified within the project site (~339.87ha) by Becrux Solar PV Project Two (Pty) Ltd for the development of the Becrux II Solar PV Energy Facility. Infrastructure associated with the Solar PV Energy Facility will include the following:

- Solar PV array comprising PV modules and mounting structures.
- Inverters and transformers.
- Cabling between the panels.
- 11kV onsite containerised/non-containerised substation.
- 11kV overhead power line for the distribution of the generated power, which will be connected to the existing Sigma Substation.
- Main access gravel road and internal gravel roads.
- Operations and Maintenance (O&M) building, including a sewage/conservancy tank and water storage tanks.
- Site office, workshop area, storage area, and laydown area.
- Fire break and fencing around the site, including an access gate.

2. Application References

Name of relevant heritage authority(s)	SAHRA
Name of decision making authority(s)	Free State Department of Economic, Small Business Development, Tourism & Environmental Affairs

3. Property Information

Latitude / Longitude	26°50'52.74"S 27°50'22.45"E
Erf number / Farm number	- Portions 1 and 7 of Roseberry Plan 250 - Portion 0 of Saltberry Plan 422
Local Municipality	Metsimaholo Local Municipality
District Municipality	Fezile Dabi District Municipality
Province	Free State

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Current Use	Agriculture and Mining
Current Zoning	Agriculture and Mining

4. Nature of the Proposed Development

Total Surface Area	Up to 19.99ha
Depth of excavation (m)	Approximately less than 5m in depth
Height of development (m)	Up to 3 meters for the PV panel modules (when installed) and up to 20m for the overhead 11kV power line.

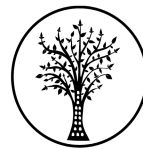
5. Category of Development

x	Triggers: Section 38(8) of the National Heritage Resources Act
	Triggers: Section 38(1) of the National Heritage Resources Act
	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):

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6. Additional Infrastructure Required for this Development

Solar PV array comprising PV modules and mounting structures, Inverters and transformers, Cabling between the panels, onsite MV substation, overhead power line for the distribution of the generated power, which will be the existing Sigma Substation, Laydown area, Access gravel road (existing) and internal gravel roads, Security booth, O&M building, workshop, storage area and site office.

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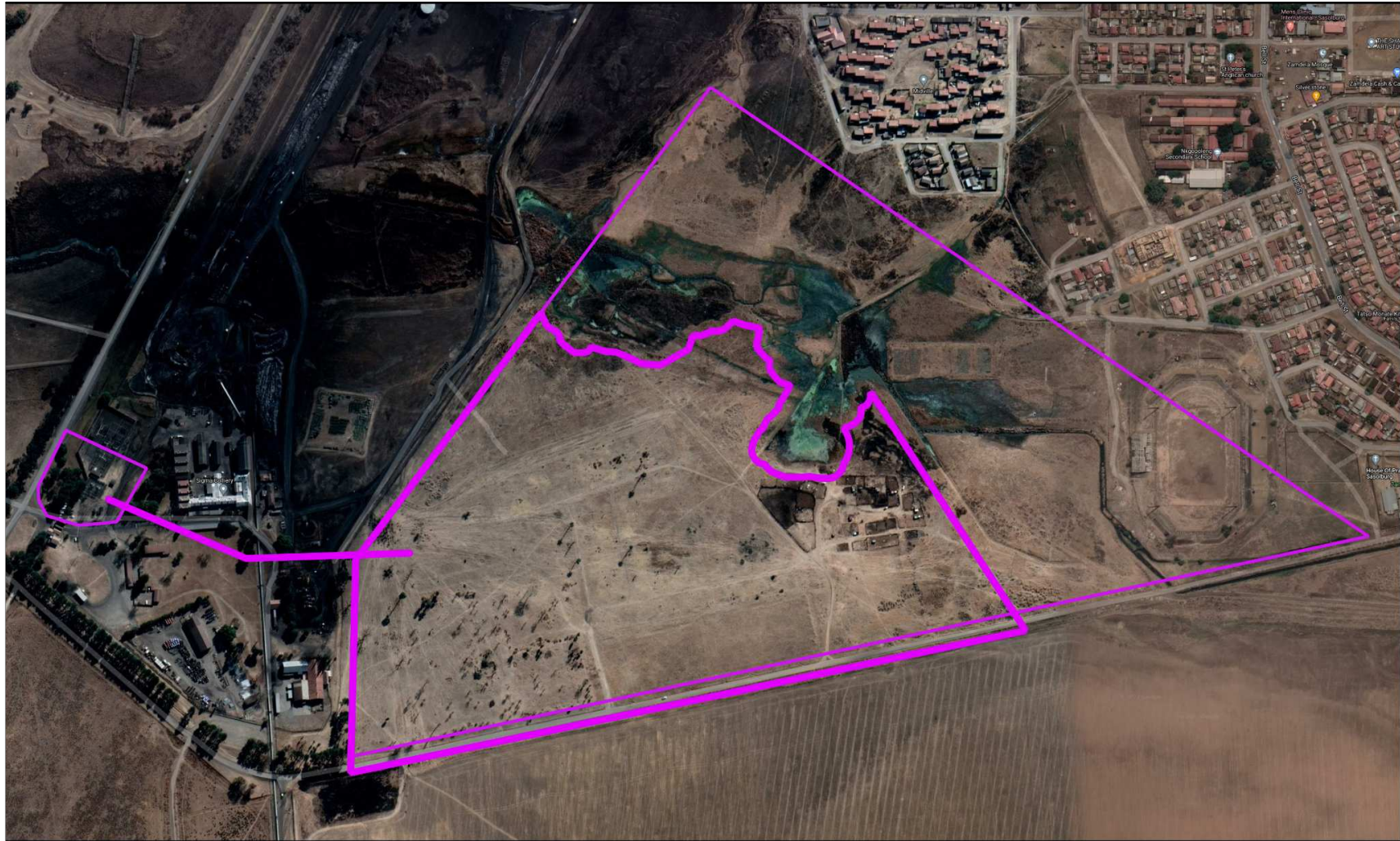
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7. Mapping (please see Appendix 3 and 4 for a full description of our methodology and map legends)



Figure 1b Overview Map. Satellite image (2019) indicating the proposed study area



- Proposed Powerline
- Becrux PV II Development Area
- Becrux PV II Project Area

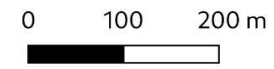
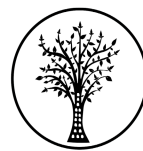
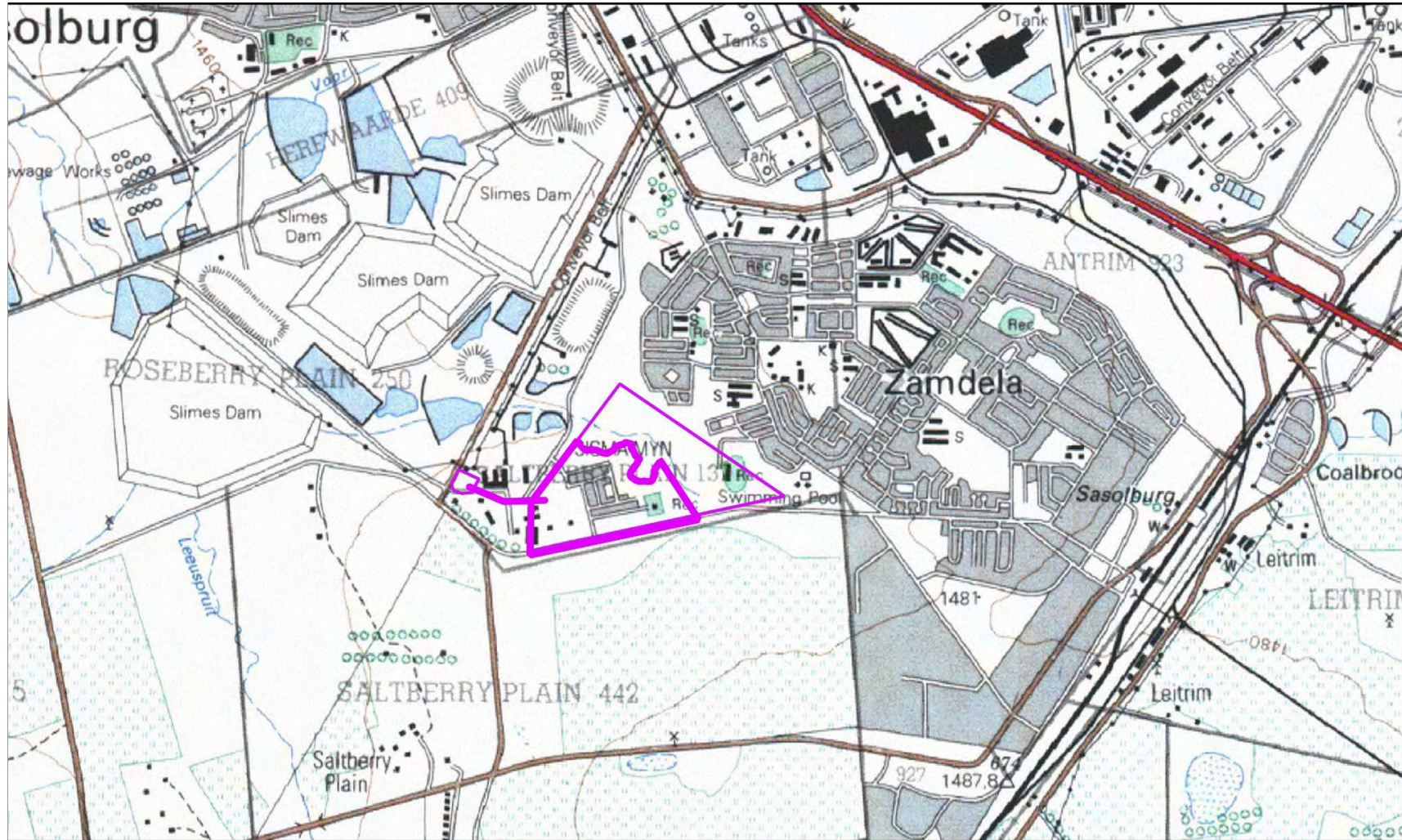


Figure 1c. Overview Map. Satellite image (2019) indicating the proposed study area at closer range.

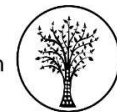


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- Proposed Powerline
- Becrux PV II Development Area
- Becrux PV II Project Area

0 0,5 1 km



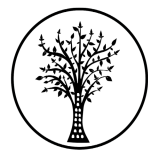
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Figure 1d. Overview Map. 1:50 000 Topo Map indicating the proposed study area at closer range.

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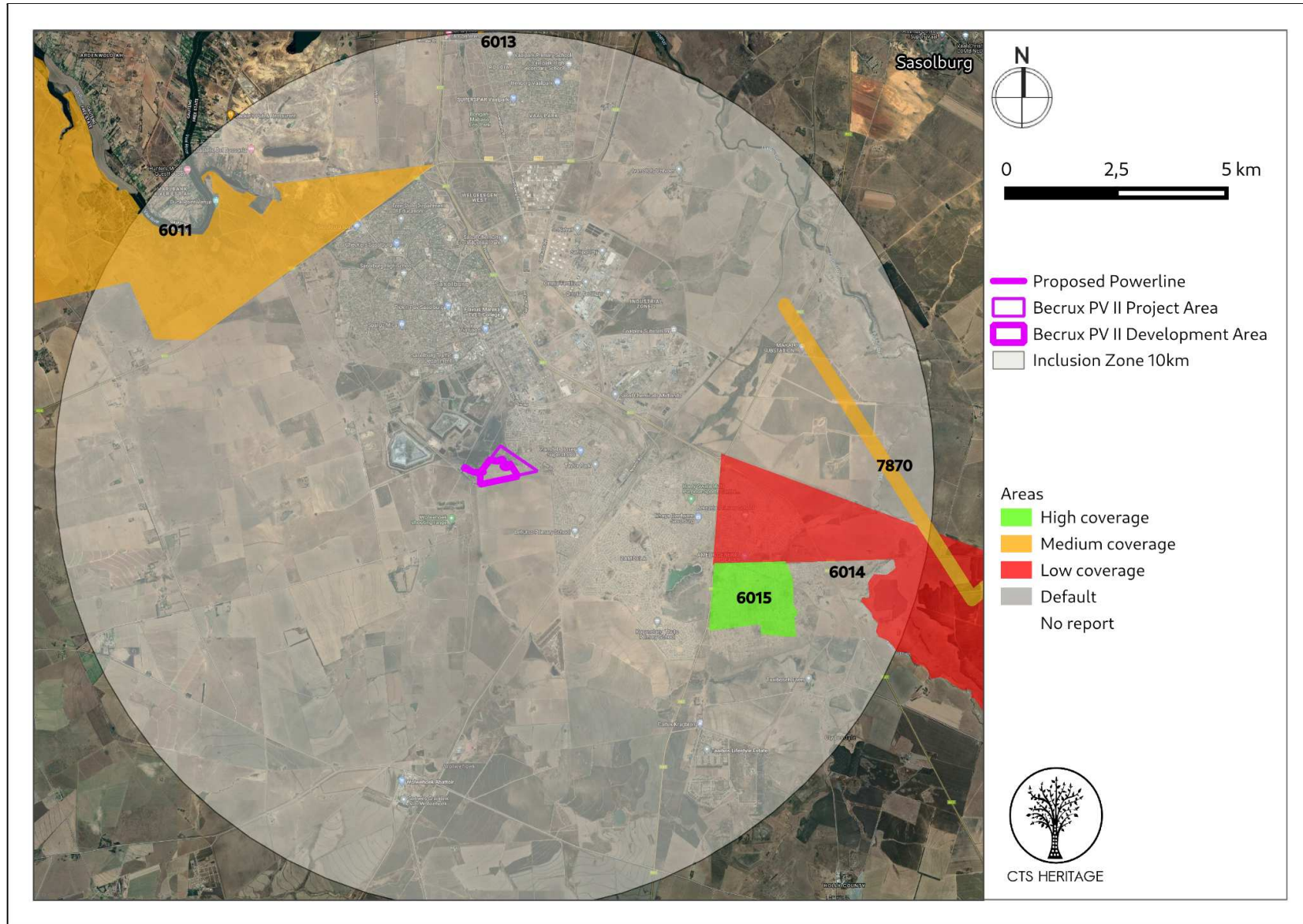


Figure 2. Previous HIAs Map. Previous Heritage Impact Assessments surrounding the proposed study area within 10km, with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.

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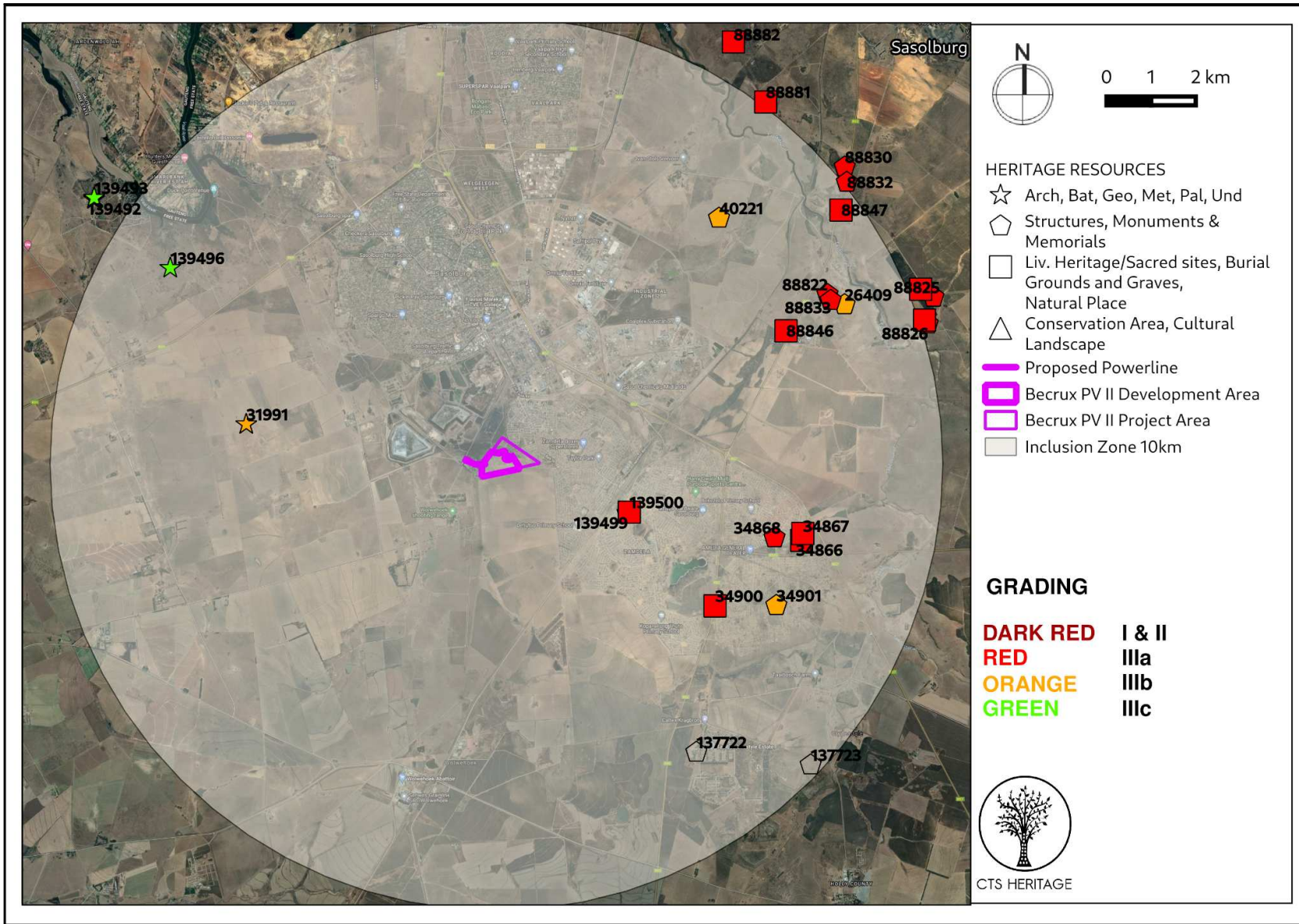


Figure 3. Heritage Resources Map. Heritage Resources previously identified in and near the study area, with SAHRIS Site IDs indicated. Please See Appendix 4 for a full description of heritage resource types.

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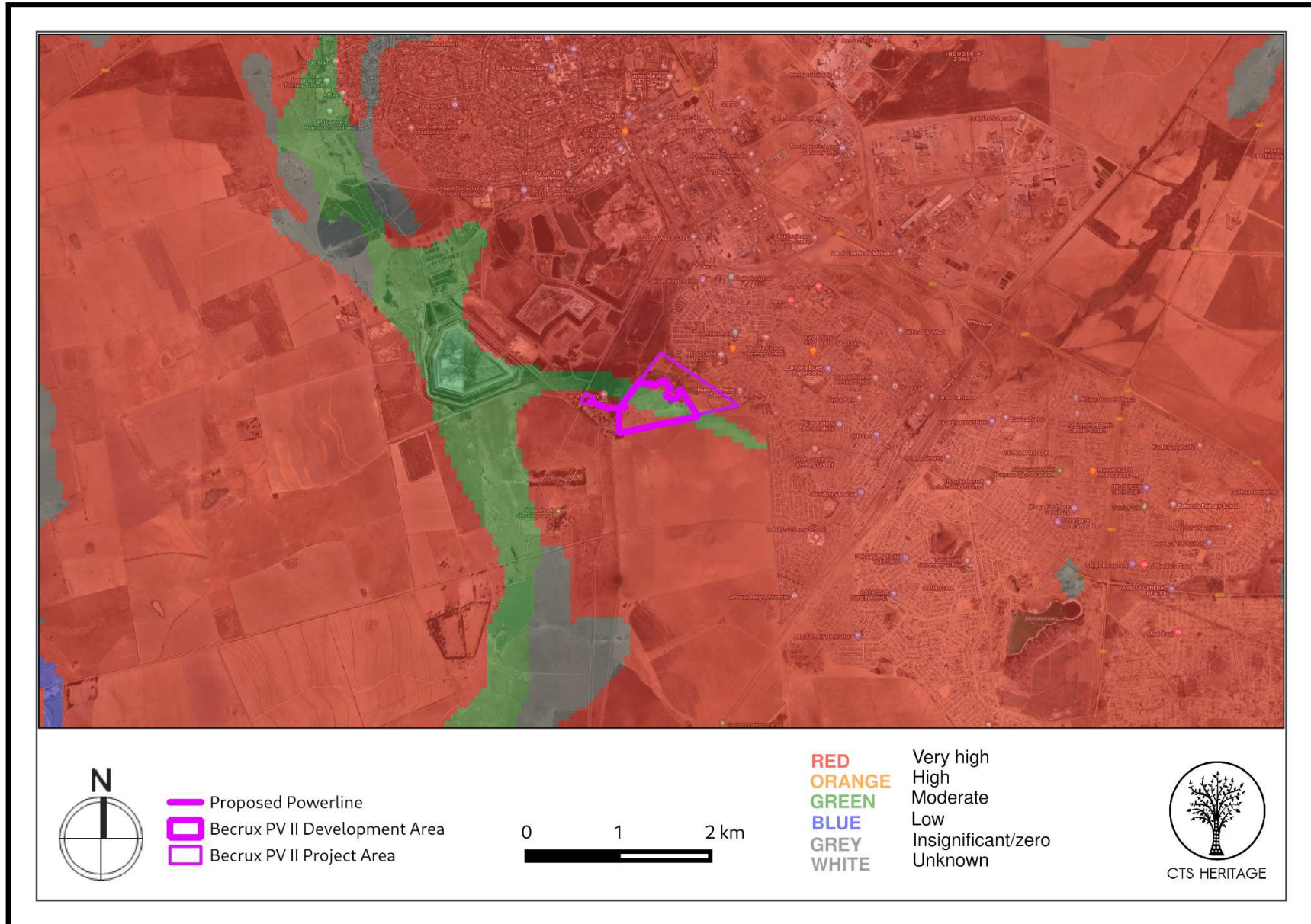
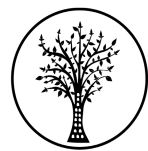


Figure 4a. Palaeosensitivity Map. Indicating varied fossil sensitivity underlying the study area. Please See Appendix 3 for full guide to the legend.



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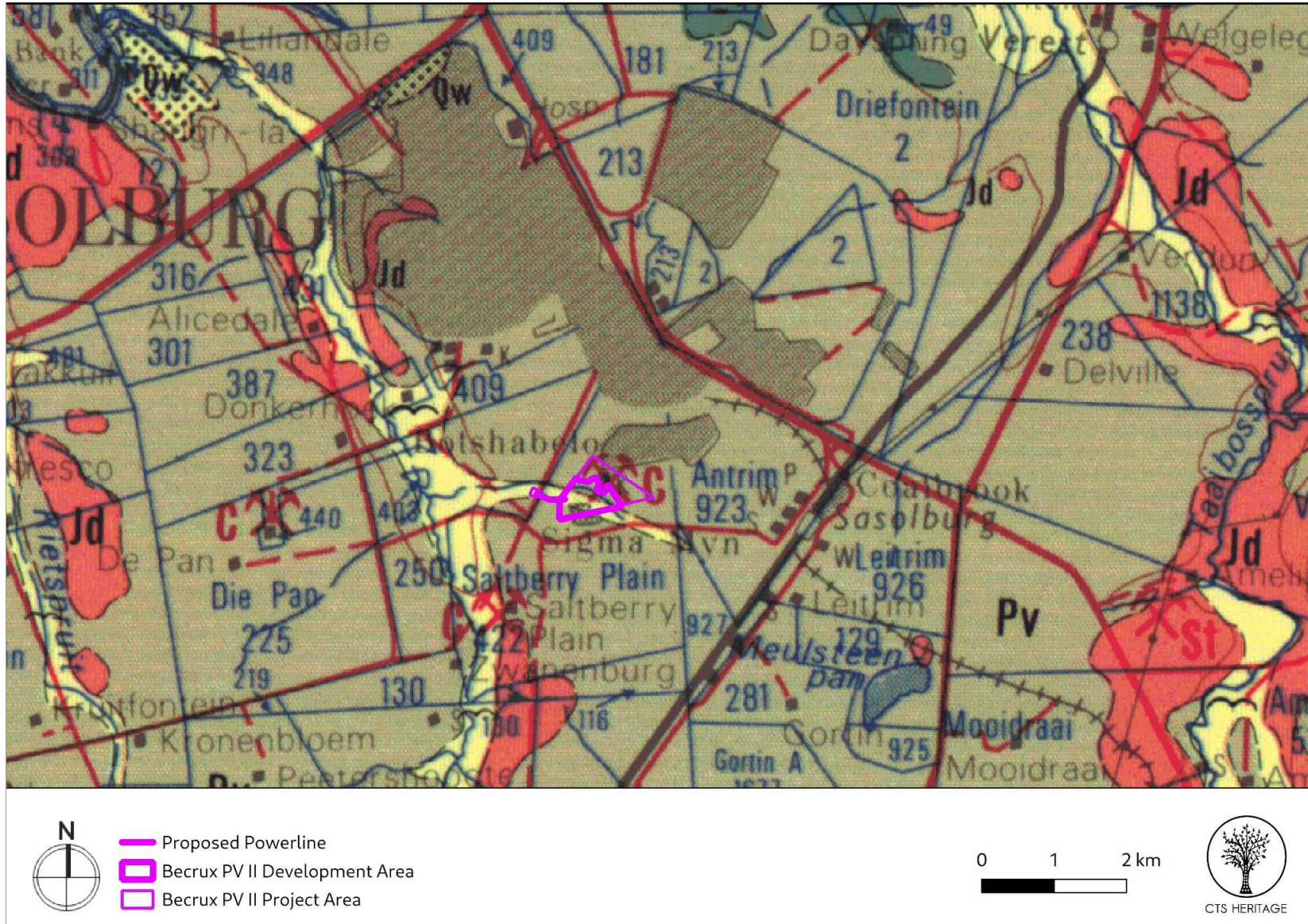


Figure 4b. Geology Map. Extract from the CGS 2626 West Rand Map indicating that the development area is underlain by the following sediments: Jd: Jurassic Dolerite and Pv: Vryheid Formation of the Ecca Group and Quaternary Sands

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8. Heritage statement and character of the area

Background

Sasol Limited is an integrated energy and chemical company based in Sandton, South Africa. The company was formed in 1950 in Sasolburg, South Africa and has a large operation in Sasolburg and Secunda, Mpumalanga. The town of Sasolburg was established in 1954 to provide housing and other facilities for Sasol employees. The company issued a request for information (RFI) in May 2020 for the supply, by IPPs, of up to 600 MW of renewable energy to its South African operations. Sasol indicated on August 3, 2020 that the decision to issue an RFP for two 10 MW solar PV facilities represented the “first step” towards the group realising its commitment to eventually procure 600 MW of renewable- energy capacity. Chief sustainability officer Hermann Wenhold said the RFP also formed part of the group’s broader aspiration to reduce greenhouse gas emissions by 10% by 2030. Sasol is one of several large South African corporates to indicate that they intended to introduce renewable self-generation at their operations, with several mining companies also moving ahead with projects. The self-generation projects were being pursued to both bolster security of supply and improve tariff visibility in a context of steeply rising Eskom and municipal tariffs and an ongoing risk of load-shedding (Creamer 03 August 2020). Due to its strategic infrastructure, Sasolburg was subject to a number of attacks as part of the struggle against Apartheid. The strategic infrastructure at Sasolburg remains a National Key Point.

Cultural landscape and the Built Environment

The area proposed for development has been extensively previously disturbed through mining infrastructure (Becrux PV II is proposed to be located at the Sigma Mine - Figure 1d). The ground intended for the proposed 10MWac solar PV plant is immediately adjacent to the existing Sigma Coal Mine. The installation of a solar PV plant is therefore in keeping with the broader development character of the immediate surroundings which lie on the peri-urban edge of Sasolburg and the massive Sigma coal mine nearby to the east and northwest.

A number of monuments, burial grounds and significant historical structures are located within 10km of the development area (Figure 3) however none of these heritage resources are anticipated to be impacted directly or indirectly by the proposed development.

Archaeology

A number of archaeological and heritage impact assessments have been completed in the area as a result of the ongoing mining activity here. According to Higgitt et al. (2015, SAHRIS ID 349672), “Archaeologically, sites associated with the Stone Age have been identified in the local study area. Pistorius (2007) notes the numerous Stone Age sites discovered along the ancient banks of the Vaal and Klip Rivers at localities such as Klipplaatdrift, the Klip River Quarry site and the Duncanville Archaeological Reserve. Van Schalkwyk (1998) makes reference to the Vaal River basin and its association with the ESA. Here it is noted that the Vaal River gravels remain an important source of information on the ESA which is associated with the Oldowan and Acheulian industries.” In the broader area, Higgitt et al. (2015) note the presence of both Middle (Van Vollenhoven, 2008) and Later Stone Age archaeology (Fourie, 2007). Higgitt et al. (2015) also note that the rock engraving site of Leeuwkuil is located in the broader area. This site is described as being located on a small island in the Vaal River where engravings are concentrated on the south-eastern part of the peninsula. Eland and other antelope dominated the images depicted, which appeared to be in the San hunter-gatherer engraving tradition. Although the area proposed for development is located some distance (approximately 7km) from the Vaal River, there is a small tributary of the Vaal that runs adjacent to Becrux PV II.

According to SAHRIS, one archaeological site is located within 10km of the development area - SAHRIS Site ID 31991 on Farm Woodlands 407RD. This site is graded IIIB however no additional information about this site, no site description and no source for the information about this site is recorded along with the site recording on SAHRIS and as such, it is impossible to determine the accuracy of this information. Although the areas proposed for the development of Becrux PV II have been extensively previously disturbed, significant archaeological heritage is known from the broader area and as such, it is possible that the proposed development may negatively impact on similar archaeological heritage.



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Palaeontology

According to the SAHRIS Palaeosensitivity Map (Figure 4a), the area proposed for development is underlain by sediments of very high and moderate palaeontological sensitivity. According to the extract from the CGS 2626 West Rand Map, the moderately sensitive sediments underlying the development area are ascribed to Quaternary Sands. The very highly sensitive sediments are ascribed to the Vryheid Formation of the Ecca Group. According to a letter from Bamford (2019, SAHRIS ID 522976), the Vryheid Formation contains coal seams and fossil plant impressions of the Glossopteris flora. Bamford (2019) goes on to note that the coal seams in the Sigma Colliery are more than 150m below the surface and they are covered by mostly dolerite with some sandstone and sandstone intercalated with shale. There is no chance, therefore, of surface activities in this vicinity having any impact on palaeontology on the basis that this area has been disturbed by mining activities. Based on the information available, it is very unlikely that the proposed development of the 10MWac PV facility will negatively impact on significant palaeontological heritage; however it was recommended by Bamford (2019) in her letter that a Chance Fossil Finds Procedure be adopted. This recommendation is reiterated for this project.

RECOMMENDATION

It is unlikely that the proposed development will impact on significant archaeological and palaeontological heritage. However an HIA is required to assess impacts to these identified heritage resources and to provide appropriate mitigation measures to prevent negative impact.

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APPENDIX 1: List of heritage resources in proximity to the development area

Site ID	Site no	Full Site Name	Site Type	Grading
40221	Clydesdale North substation	Clydesdale North substation	Building	Grade IIIb
31991	2627DA1	Farm Woodlands 407RD	Archaeological	Grade IIIb
88846	VAALC014	Vaal Colliery 014	Burial Grounds & Graves	Grade IIIa
26409	9/2/335/0003	Muller House, Wonderfontein, Sasolburg District	Building	Grade IIIb
88822	VAALC002	Vaal Colliery 002	Building	Grade IIIa
34868	AME003	Frits Pistorius Memorial Cairn, Zamdela	Monuments & Memorials	Grade IIIa
34900	MOOI001	Moidraai 001	Burial Grounds & Graves	Grade IIIa
88833	VAALC012	Vaal Colliery 012	Building	Grade IIIa
34866	AME001	Amelia 001	Burial Grounds & Graves	Grade IIIa
34867	AME002	Amelia 002	Burial Grounds & Graves	Grade IIIa
137722	Old Farm school	Old Farm school	Monuments & Memorials	
34901	MOOI002	Moidraai 002	Building	Grade IIIb

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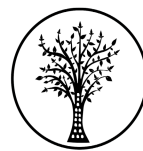
APPENDIX 2: Reference List

Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title
6011	AIA Phase 1	Johnny Van Schalkwyk, M Naude	01/11/1996	A Survey of Cultural Resources in the Proposed Sigma Colliery North West Strip Mine, Sasolburg District, Free State Province
6014	AIA Phase 1	Cobus Dreyer	10/06/2005	First Phase Archaeological and Cultural Heritage Assessment of the Proposed Residential Developments at Amelia 518, Sasolburg
6015	AIA Phase 1	Karen Van Ryneveld	23/10/2007	Mooirdraai Township Establishment (Zamdela Ext. 17), Portions of Portion 1 and the Remainder of the Farm Mooirdraai 44, Sasolburg, Free State, South Africa
6016	AIA Phase 1	Polke Birkholtz	15/02/2008	Phase 1 Heritage Impact Assessment Proposed Lefapha Housing Development Situated on the Remaining Extent of the Farm Leitrim 926, Metsimaholo Local Municipality, Free State Province
7870	AIA Phase 1	Julius CC Pistorius	01/07/2008	A Phase I Heritage Impact Assessment Study for Sasol's Proposed New Gas and Liquid Pipelines (Along a Corridor) from Sasol Synfuels in Secunda (Mpumalanga) to Sasol Infrachem and Natref in Sasolburg (Free State) on the Highveld in the Republic of South Af
158942	Heritage Statement	Shahzaadee Karodia Khan, Johan Nel		HERITAGE STATEMENT FOR THE SASOL MINING SIGMA COLLIERY ASH BACKFILLING PROJECT, SASOLBURG, FREE STATE PROVINCE
177559	Heritage Statement	Justin du Piesanie	03/10/2014	
324834	Heritage Impact Assessment Specialist Reports	Natasha Higgitt, Justin du Piesanie	27/07/2015	Heritage Watching Brief Report for the Sasol Sigma Mooikraal 7Mâ,“ Pipeline

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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)
DEFF	Department of Environment, Forest and Fisheries (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 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 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.

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