



19 July 2023

Ms Joanne Thomas  
Savannah Environmental (Pty) Ltd  
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Dear Ms Thomas,

**THE EXTENSION OF VALIDITY TO THE EA - GRASPAN SEF  
SAHRIS Case: 717, 17867 and 17821**

Engie Solar is proposing to amend the Environmental Authorisation (EA) for the Graspan PV project and the EA for its associated grid connection infrastructure by extending the EA validity by an additional two (2) years. Extension of the validity of the EA will ensure that the EA remains valid for the undertaking of the authorised activities. This project is a preferred bidder project under Round 5 of the REIPPPP and construction is planned to commence in the near future following Financial and Commercial Close.

To this end, CTS Heritage has been requested to make a statement regarding the proposed extension of the validity of the EA for another 2 years. The following sections summarise the findings of the previous heritage assessments completed for this and other relevant projects.

On 30 April 2013, Environmental Authorisation (EA) was granted for the proposed construction of a commercial photovoltaic (PV) solar energy facility (known as the Graspan PV Facility) as well as all associated infrastructure on Portion on the Farm Graspan (no. 172), situated between the N12 highway (west) and the border of the Northern Cape and Free State (east) between Heuningskloof to the north and Witput to the south.

The area proposed for the Graspan PV Facility was thoroughly assessed for impacts to heritage resources in a Heritage Impact Assessment conducted by ACO Associates (2012, SAHRIS NID 92728) and a Palaeontological Impact Assessment by Botha-Brink (2012, SAHRIS NID 8924). These reports are referred to below in order to determine the likely heritage sensitivity of the area proposed for development.

**Archaeology and Built Environment Heritage**

A broad summary of the archaeology of the area is included in the ACO Report (2012) and is not included here. It is sufficient to note that scattered throughout the Karoo is evidence of historic and prehistoric occupation in the form of Early, Middle and Later Stone Age lithics and other material remains. The descendants of the historic and prehistoric occupants of the region are found in the indigenous Khoe and San, as well as modern inhabitants of the area. In their field assessment, the ACO identified stone artefact scatters, dolerite boulders with grinding surfaces, a single incidence of historical graffiti on a dolerite boulder, a circular stone structure near the railway line, some calcrete cairns and a distribution of late 19th/early 20th century historical dump material along the railway line. These sites are all mapped relative to the proposed development area in Figure 4.1, 4.2 and 4.3 below.

According to the ACO report (2012), this area is of historical importance because of the Battle of Graspan (also known as Enslin or Rooilaagte) which took place over a large area, commencing some 2.5km to the north of the proposed facility. The battle was an important engagement of the Second Anglo-South African War of 1899-1902. The Battle of Graspan dates to 25 November 1899. British troops advanced across the open countryside and stormed the Boer's hilltop positions. After taking the koppies, they gave chase to the Boers as they rode away across the veld. Most of the military action therefore seems to have taken place between Graspan station and the



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surrounding hills. The British casualties amounted to some 197 men, while the Boers are thought to have lost around 20 men. The dead were buried in graves near to the battlefield, but according to Morris were exhumed in 1963 and re-interred in the Garden of Remembrance, West End Cemetery, Kimberley. Since the exhumation was undertaken by an undertaker, it is possible not all human remains were recovered and that some might still be located at the original place of burial.

The Graspan PV facility development area has been thoroughly assessed by ACO Associates in their report dated May 2012. In this assessment, 4 sites of heritage significance were identified which need to be considered for the development of the expanded Graspan PV facility.

- GRAS001 (Grade IIIB) SAHRIS ID 86031

Two concentric stone circles, inner with diameter of 4m, outer with diameter of 1m. Made of substantial stone boulders. Next to the railway line. Late 19th century history tin and glass debris nearby, also a flat dolerite boulder with scratch marks. According to the ACO report (2012), "The circular stone structure may be the remnants of a fortification dating to the South African War, built expressly to protect the railway line. However, it is unlikely that it dates to the battles of Belmont and Graspan, as the military moved through this area fairly rapidly. Nevertheless, the dense distribution of historic dump material alongside the railway line is of interest. The material may have been dumped over a long period of time, from the construction of the line in 1885, and does not necessarily relate to the Battles of Belmont and Graspan of 1899."

- GRAS049 (Grade IIIC) SAHRIS ID 86109

Clear bottle glass fragments, a broken wine bottle and several bits of barbed wire in the area.

- GRAS050 (Grade IIIC) SAHRIS ID 86110

Grindstone/rubbed stone.

- GRAS052 (Grade IIIC) SAHRIS ID 86112

2 tin cans, wire, 1 ceramic (railways), several wire fragments, cans and barbed wire spindle: ISCOR, Barbed wire 100lbs, IOWA pattern 535 yds min.

In order to mitigate any impact to the historical material identified in proximity to the railway line and the circular stone structure, the ACO recommended that no development takes place within 100m of the railway line to ensure the stone structure and historical material relating to the railway line (and possibly the South African War), are not destroyed. Based on the information provided regarding the proposed amendment, there is no archaeological objection to the proposed validity extension on condition that, as per the recommendations made previously for the area expansion, the boundary of the expanded area should be moved to respect the recommended 100m buffer around the railway line (Figure 4.3).

### **Palaeontology**

According to the SAHRIS Palaeosensitivity Map, the area proposed for the PV Facility is underlain by sediments of high and zero palaeontological sensitivity (Figure 5). According to the extract from the CGS 2924 Koffiefontein Map, the development area is underlain by Quaternary Sand sediments and Jurassic Dolerite (Figure 4b). Botha-Brink (2012) completed a palaeontological field assessment of the development area.

In the report, it is noted that in the area proposed for development part of the Ecca Group "is overlain by Late Cenozoic superficial deposits, which are approximately 2.6 million years old (Quaternary) to Recent (Walker and Geissman, 5 2009). Those on Graspan contain Quaternary Calcrete. Although the flatter areas containing these deposits generally contain few fossils,



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numerous quaternary fossils have been found in river gulleys. These fossils are known as the Florisian Mammal Fauna. Most species of this time have modern counterparts, but there are some extinct animals such as the giant long-horned buffalo *Pelorovis* and the giant hartebeest, *Megalotragus*. The Florisian Mammal fauna includes mostly mammals such as lagomorphs, rodents, carnivores, perissodactyls, numerous artiodactyls and bovids. Amphibians, reptiles and birds are rarely found in Florisian deposits (Brink, 1987).” The PIA report also notes that “The Eccca Group sediments on Graspan are intruded by non-fossiliferous Early Jurassic Karoo dolerite and cover a large portion of the development area. The Karoo Dolerite Suite comprises a network of igneous intrusions (dykes, sills) that intruded into older sediments of the Beaufort Group in the main Karoo Basin. These intrusions represent major eruptions of volcanic lava, which were triggered by the separation of Gondwana (an amalgamation of today’s southern continents) approximately 183 million years ago.”

Based on the information provided, the proposed expanded PV area is located in such a way that it will only impact areas that contain non-fossiliferous Jurassic dolerite (Figure 5). However, it must be noted that Quaternary deposits and rocks of the Tierberg Formation, Eccca Group may also be impacted. According to Botha-Brink (2012), “Quaternary fossils are usually found in gulleys (dry river beds) and the low-lying relief and absence of potentially fossiliferous gulleys suggests that fossils of this geological age are absent here. Fossils from the Eccca Group are exceedingly rare, and only a small portion of the development will encroach into rocks of this age. Thus, considering the rarity of fossil-bearing sediments and lack of appropriate exposure (i.e. steep-sided gulleys) at the proposed site, the impact on palaeontological material is negligible (rated Low or negative).”

Botha-Brink (2012) recommends that “The ECO responsible for the development must remain aware that all sedimentary deposits have the potential to contain fossils and he/she should thus monitor all substantial excavations into sedimentary bedrock for fossil remains; In the case of any significant fossils (e.g. vertebrate teeth, bones, burrows, petrified wood) being found during construction, they must be safeguarded and the relevant heritage management authority (SAHRA) be informed so that a professional palaeontologist should be consulted in order to facilitate the necessary rescue operations.”

### **Impact Ratings**

The impact ratings articulated in the ACO Report (2012) remain appropriate and applicable.

### **Cumulative Impacts**

The cumulative impact of a development is the impact that development will have when its impact is added to the incremental impacts of other past, present or reasonably foreseeable future activities that will affect the same environment. It is important to note that the cumulative impact assessment for a particular project, like what is being done here, is not the same as an assessment of the impact of all surrounding projects. The cumulative assessment for this project is an assessment only of the impacts associated with this project, but seen in the context of all surrounding impacts. It is concerned with this project’s contribution to the overall impact, within the context of the overall impact. But it is not simply the overall impact itself.

The most important concept related to a cumulative impact is that of an acceptable level of change to an environment. A cumulative impact only becomes relevant when the impact of the proposed development will lead directly to the sum of impacts of all developments causing an acceptable level of change to be exceeded in the surrounding area. If the impact of the development being assessed does not cause that level to be exceeded, then the cumulative impact associated with that development is not significant.



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In REDZ areas, there is a reasonable expectation that the cultural landscape of an area will be changed to be dominated, or at least heavily altered, by renewable energy development. In fact, this is the intention of the REDZ areas. It must be noted that this development is NOT located within a REDZ.

In terms of cumulative impacts to heritage resources, impacts to archaeological and palaeontological resources are sufficiently dealt with on a case by case basis. The primary concern from a cumulative impact perspective would be to the cultural landscape. The cultural landscape is defined as the interaction between people and the places that they have occupied and impacted. In some places in South Africa, the cultural landscape can be more than 1 million years old where we find evidence of Early Stone Age archaeology (up to 2 million years old), Middle Stone Age archaeology (up to 200 000 years old), Later Stone Age archaeology (up to 20 000 years old), evidence of indigenous herder populations (up to 2000 years old) as well as evidence of colonial frontier settlement (up to 300 years old) and more recent agricultural layers.

Modern interventions into such landscapes, such as renewable energy development, constitute an additional layer onto the cultural landscape which must be acceptable in REDZ areas. The primary risk in terms of negative impact to the cultural landscape resulting from renewable energy development lies in the eradication of older layers that make up the cultural landscape. There are various ways that such impact can be mitigated.

In terms of impacts to heritage resources, it is preferred that this kind of infrastructure development is concentrated in one location and is not sprawled across an otherwise agricultural landscape. The proposed development is therefore unlikely to result in unacceptable risk or loss, nor will the proposed development result in a complete change to the sense of place of the area or result in an unacceptable increase in impact due to its location. The landscape within which the proposed project areas are located, is not worthy of formal protection as a heritage resource and has the capacity to accommodate such development from a heritage perspective.

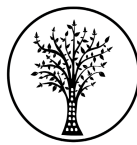
No additional heritage cumulative impacts were identified by the specialist as a result of the proposed extension. Therefore, the cumulative impacts identified by the Heritage Impact Assessment (2012) remain unchanged and would be applicable for the proposed extension.

### **Statement on the likely impacts of extending the validity of the EA on archaeological and palaeontological heritage**

Archaeological and palaeontological heritage resources reflect the environments of the past and are unlikely to change drastically in as short a geological time span as 10 years. Some changes to the visible heritage resources may take place through processes of erosion and deposition but these finds tend to represent heavily disturbed contexts.

In light of the above, there is no heritage objection to granting the extension to the validity to develop the Graspan SEF based on the current site conditions on condition that the relevant recommendations included in the previous heritage assessments conducted are implemented. these are included below:

- The Environmental Officer (EO) responsible for the development must remain aware that all sedimentary deposits have the potential to contain fossils and he/she should thus monitor all substantial excavations into sedimentary bedrock for fossil remains. If any fossils are found during construction, SAHRA should be notified immediately;
- No construction should be allowed on the koppie to the north and south of the proposed facility. This includes access roads, underground cabling or power lines;



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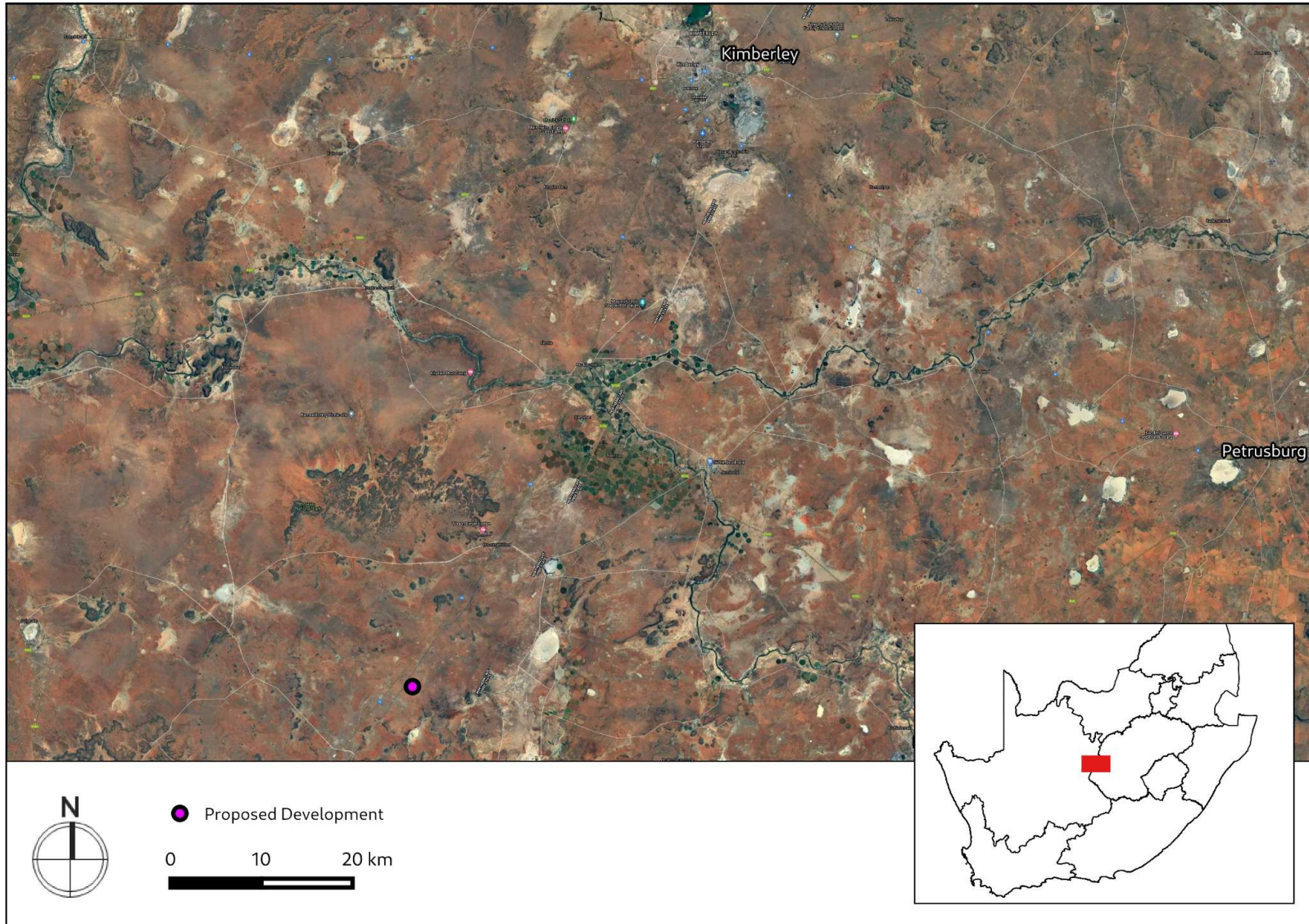
- No development takes place within 100m of the railway line to ensure the stone structure and historical material relating to the railway line and possibly the South African War, are not destroyed;
- If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to SAHRA so that systematic and professional investigation/ excavation can be undertaken.

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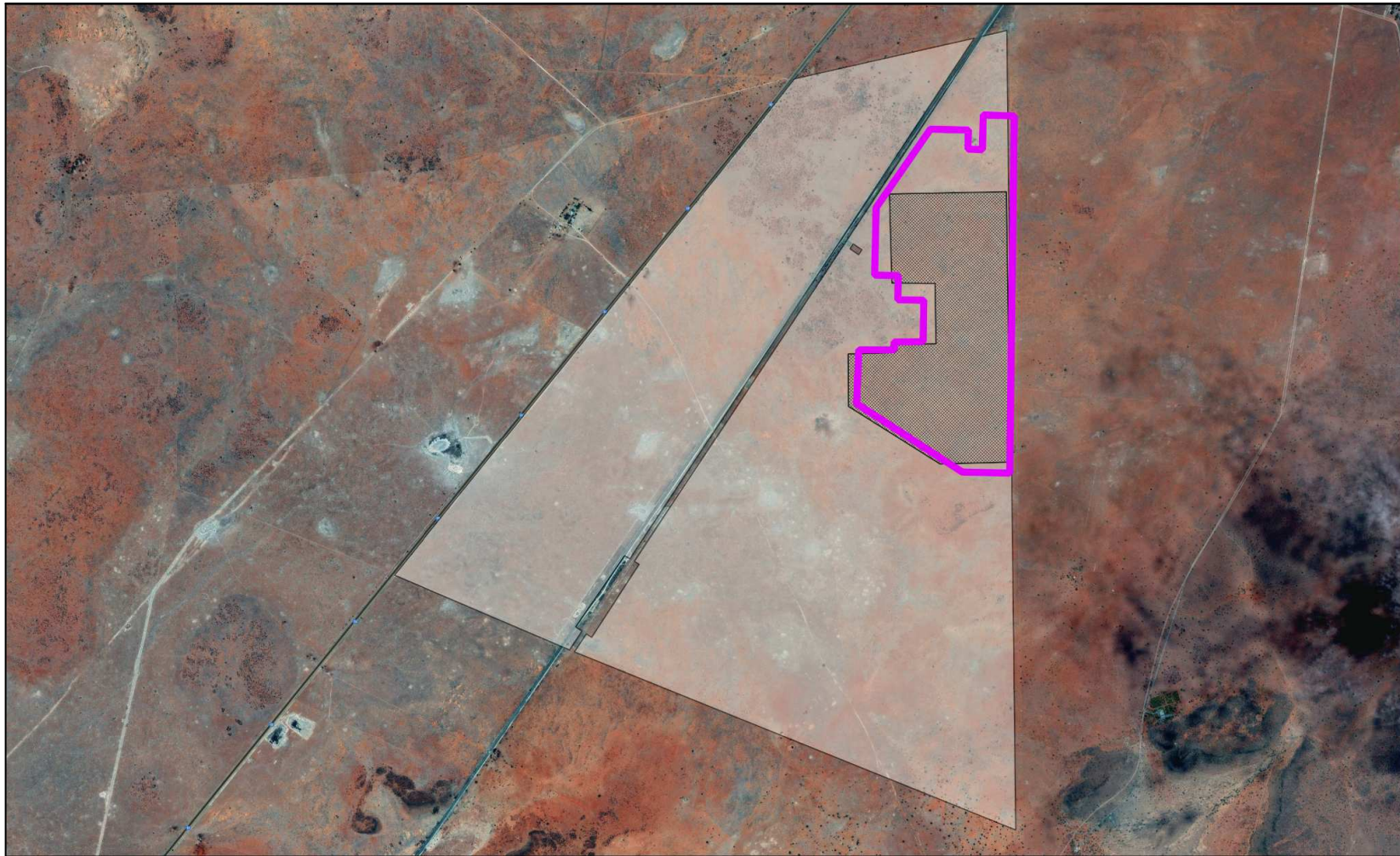
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Map 1: Location of proposed development



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-  Proposed Expanded Area
-  Approved PV Area
-  Project Boundary

0 0,75 1,5 km



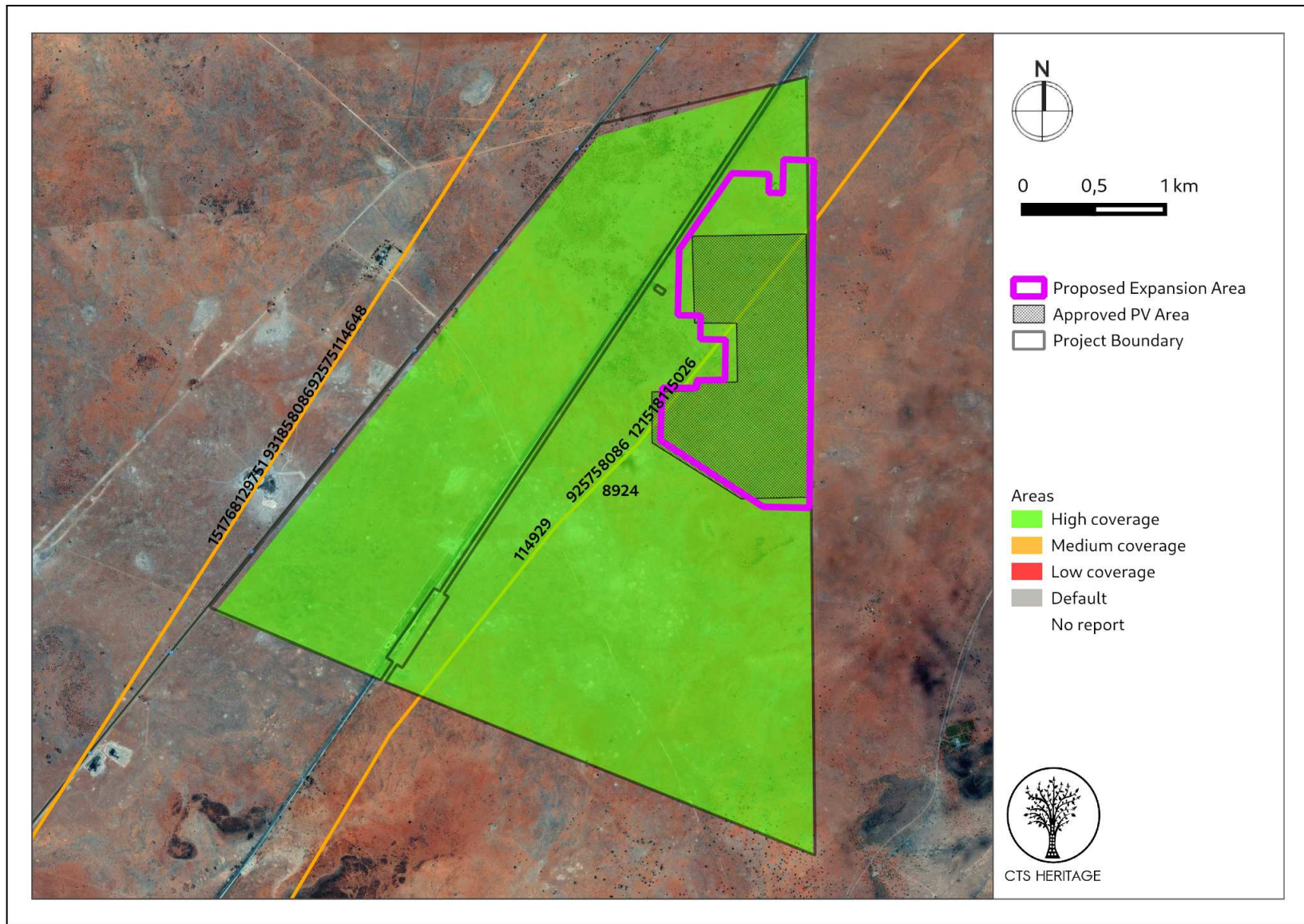
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**Map 2: Layout of proposed development**

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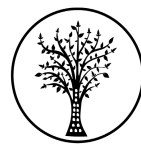


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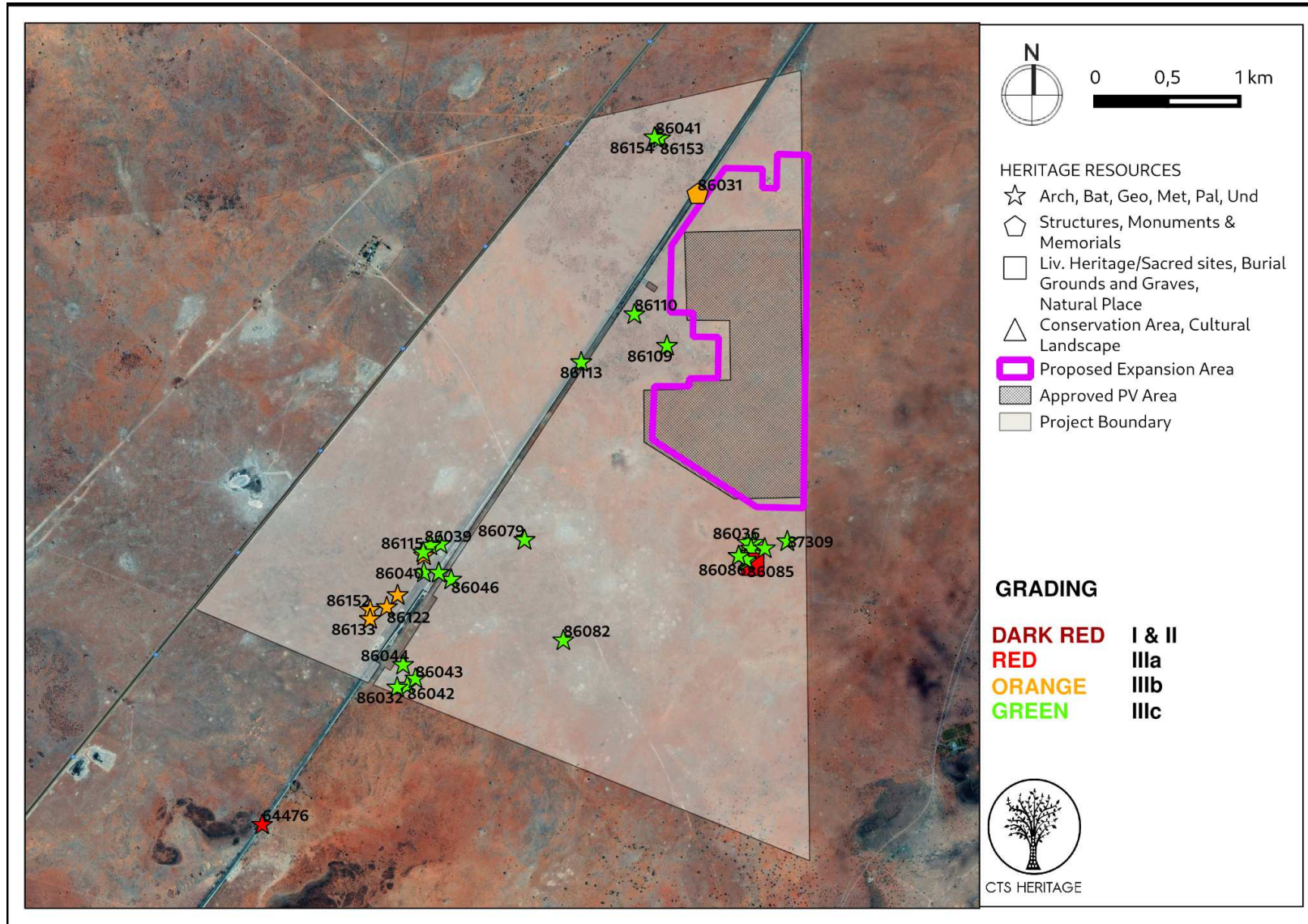


Map 3: Map of previous assessments completed





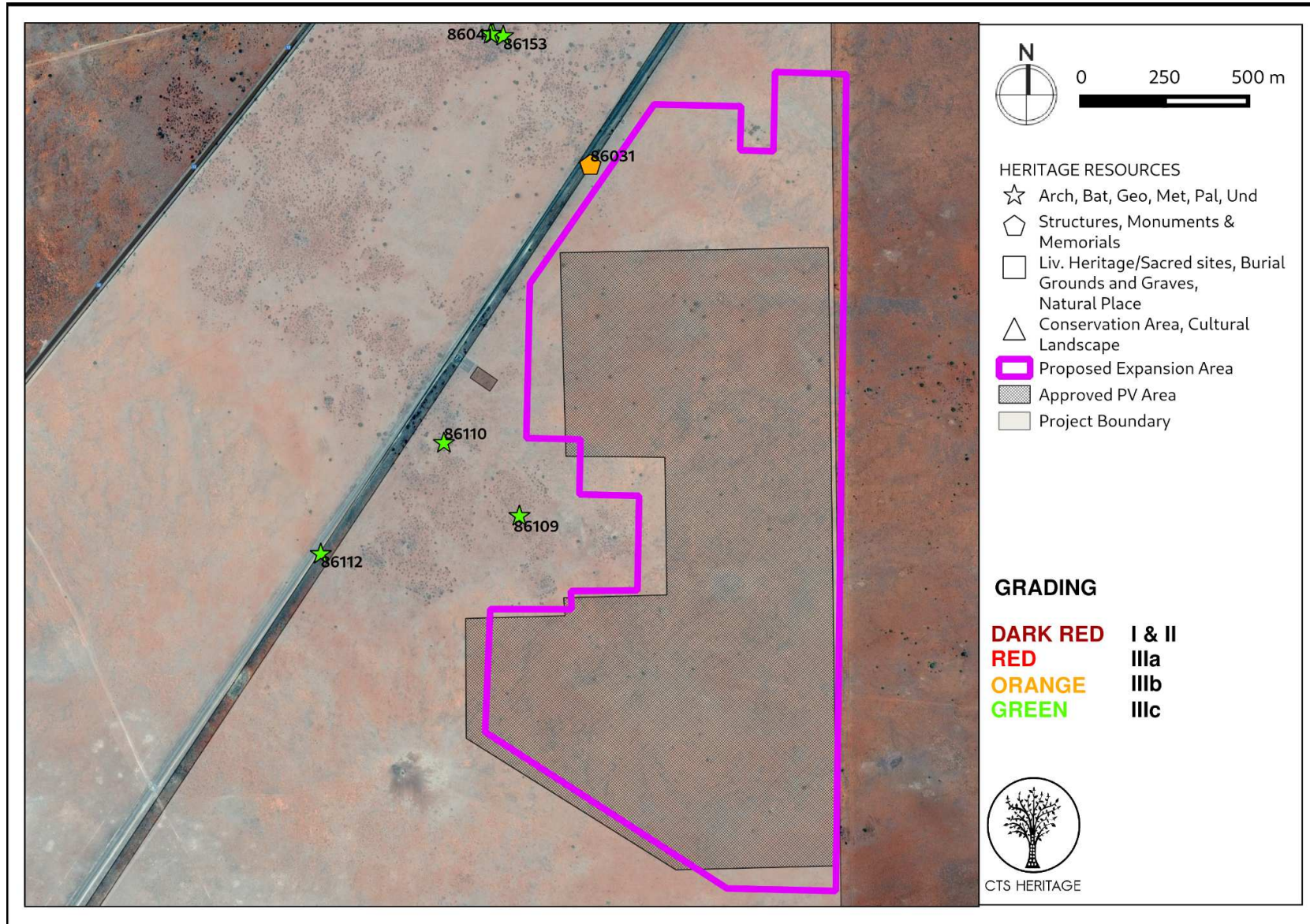
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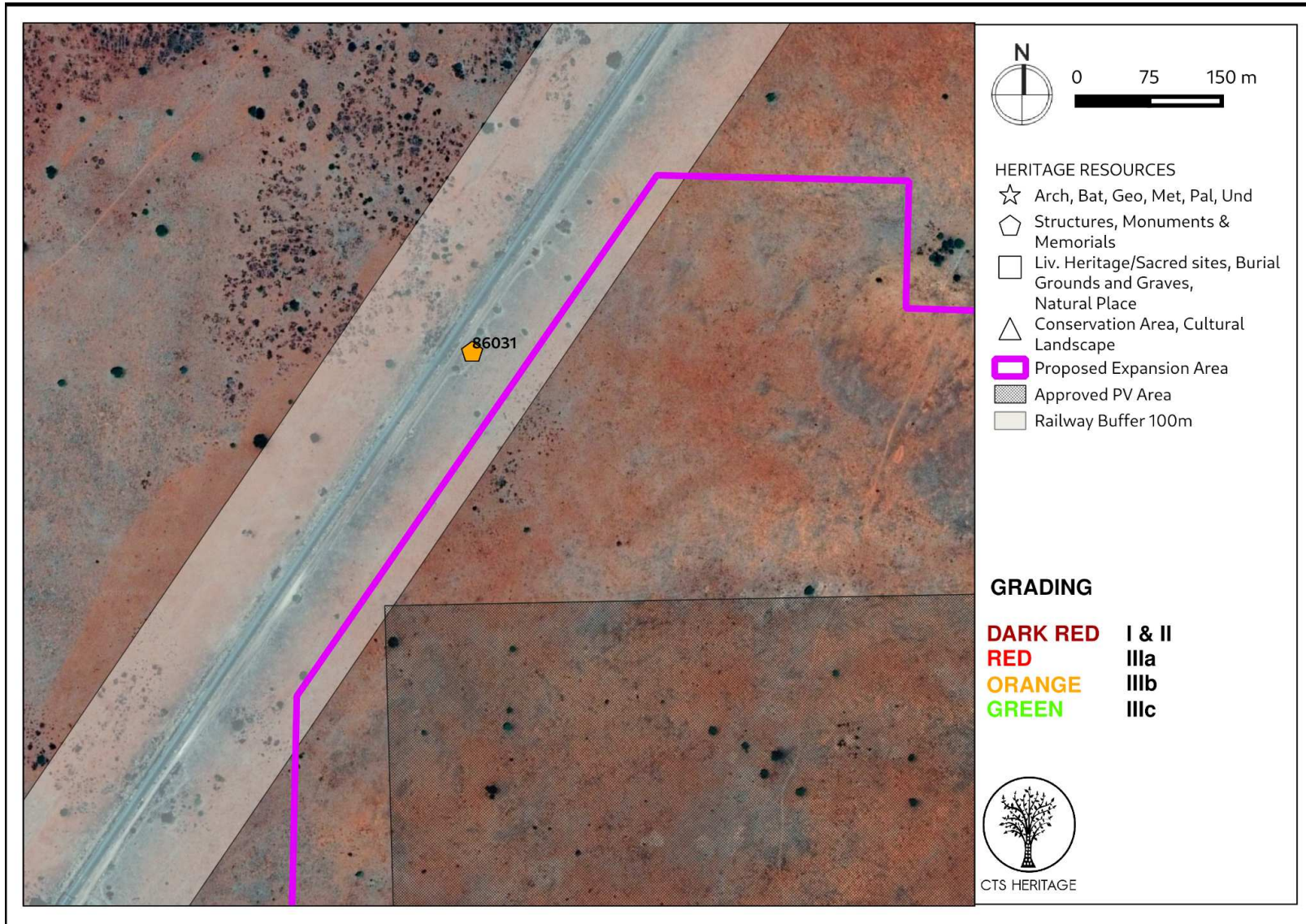
Map 4.1: Map of heritage resources previously identified



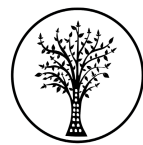
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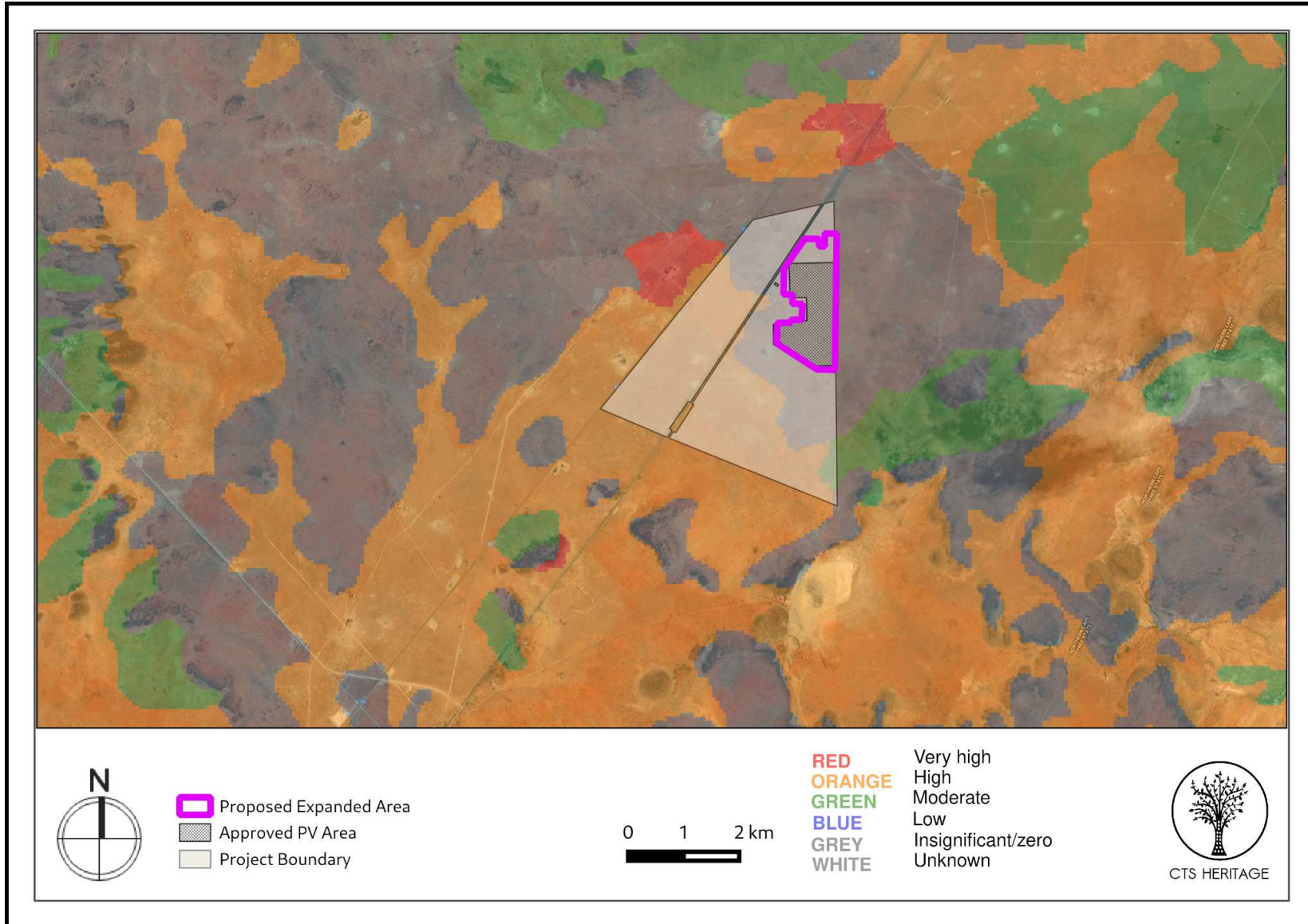
Map 4.2: Map of heritage resources previously identified



**Map 4.3: Map of heritage resources previously identified**



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**Map 5: Map of palaeontological sensitivity of the development area (zero)**