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CTS Reference Number:	CTS22_315
Client:	Nala
Date:	December 2022
Title:	Proposed Amendment processes for the 100MW Loeriesfontein 3 PV Facility and associated infrastructure, Northern Cape

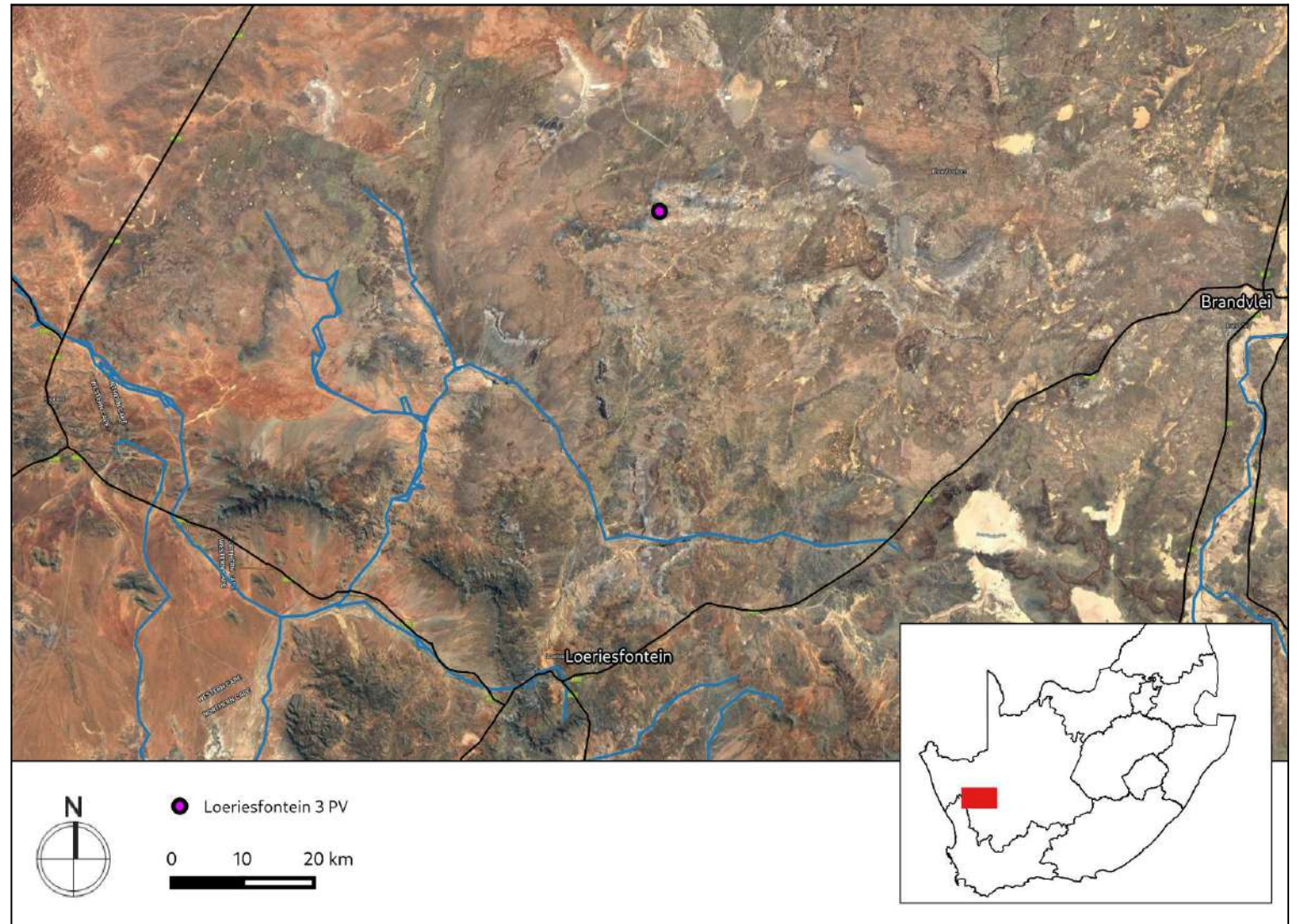


Figure 1a. Satellite map indicating the location of the proposed development in the Northern Cape



1. Proposed Development Summary

Extension of validity to the Environmental Authorisation (EA) for the 100 MW Loeriesfontein 3 Photovoltaic (PV) Solar Energy Facility (SEF), 33/132kV Independent Power Producer (IPP) Portion of the Shared On-site Substation (including Transformer) and associated infrastructure, near Loeriesfontein, Hantam Local Municipality, Northern Cape Province – DFFE Reference Number: 12/12/20/2321/2/1

South Africa Mainstream Renewable Power Loeriesfontein 3 (Pty) Ltd received the original Environmental Authorisation (EA) for the 100MW Loeriesfontein 3 PV SEF and Grid Connection infrastructure on 29 October 2012 (DFFE Ref: 12/12/20/2321/2). Further to this, the original EA was amended on 10 July 2014 (DFFE Ref: 12/12/20/2321/2/A1), 27 October 2015 (DFFE Ref: 12/12/20/2321/2/AM2), 04 October 2017 (DFFE Ref: 12/12/20/2321/2/AM3) and 24 September 2019 (DFFE Ref: 12/12/20/2321/2/AM4). In addition, following the 2019 amendment, the EA was subsequently split into two separate EAs (1 for the 100MW PV SEF and 1 for the grid connection infrastructure), both dated 21 May 2021, as follows:

- 1) EA for the 100MW Loeriesfontein 3 PV SEF, 33/132kV IPP portion of the shared on-site substation (including Transformer) and associated infrastructure (DFFE Ref: 12/12/20/2321/2/1); and
- 2) EA for the 132kV Grid Alignment and 132kV Eskom Portion of the shared on-site substation to service the 100 MW Loeriesfontein 3 PV SEF (DFFE Ref: 12/12/20/2321/2/2).

It should be noted that the split EAs for the Loeriesfontein 3 PV SEF (DFFE Ref: 12/12/20/2321/2/1) and Grid Connection infrastructure (DFFE Ref: 12/12/20/2321/2/2) dated 21 May 2021 respectively replaced the original EA dated 29 October 2012, as well as the subsequent amendments. **This report however addresses the Loeriesfontein 3 PV SEF EA extension application specifically, and the EA extension application for the Grid Connection infrastructure has been assessed and reported on as part of a separate standalone report.**

The validity of the split EA for the 100MW Loeriesfontein 3 PV SEF and associated infrastructure lapsed on 29 October 2022, however, a Part 1 EA Amendment Application was submitted to the Department of Forestry, Fisheries and the Environment (DFFE) on 26 October 2022 to extend the validity of the EA by 5 years (i.e., EA lapses on 29 October 2027). It is important to note that according to Regulation 28(1B) of the National Environmental Management Act (NEMA) Environmental Impact Assessment (EIA) Regulations of 2014 (as amended), *“an environmental authorisation which is the subject of an amendment application contemplated in this Chapter remains valid pending the finalisation of such amendment application.”* The Part 1 EA Amendment Application was acknowledged by the DFFE on 07 November 2022 and additional information was requested to be submitted to the DFFE for consideration. Following this, comparative assessments are to be undertaken to motivate why the Department should extend the validity period of the EA for a further 5 years.

The 100MW Loeriesfontein 3 PV SEF and associated infrastructure will comprise the following (as authorised as part of split EA dated 21 May 2021 with reference: 12/12/20/2321/2/1):

- PV array with a height of between 5-10m on approximately 405,77 hectares;
- Internal cabling network to connect the PV panels to the substation;



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- A new substation of approximately 10 800m² and associated transformers (IPP portion of the shared on-site substation);
- Access roads of 6-10m wide which includes an internal road network;
- Temporary construction area; and
- Administration and warehouse building with a maximum area of up to 5000m².

As mentioned above, the EA for the Loeriesfontein 3 PV SEF and associated infrastructure (as authorised under 12/12/20/2321/2, and as amended in 12/12/20/2321/2/A1; 12/12/20/2321/2/AM2; 12/12/20/2321/2/AM3; 12/12/20/2321/2/AM4 and 12/12/20/2321/2/1) lapsed on 29 October 2022, however, this did not provide sufficient time for the IPP to obtain funding and for construction of the SEF and associated infrastructure to commence before the EA lapsed. The Applicant therefore wishes to extend the validity period of the EA for a period of five (5) years (i.e., EA lapses on 29 October 2027). As mentioned, Regulation 28(1B) of the NEMA EIA Regulations of 2014 (as amended) state that “*an environmental authorisation which is the subject of an amendment application contemplated in this Chapter remains valid pending the finalisation of such amendment application.*” A Part 1 EA Amendment Application to extend the validity of the EA was submitted to the DFFE on 26 October 2022 and acknowledged on 07 November 2022.

It should be noted that the authorised SEF is considered to be strategically important for South Africa in terms of electricity generation, as it will aid in reducing dependency on coal-fired power stations as well as assisting with loadshedding. Without the extension of the validity period of the EA, the project would not be able to feed electricity into the national grid and meet the identified need of providing a renewable energy source for South Africa. Therefore, not granting the extension of the EA will prevent the construction of the SEF project and will ultimately be detrimental to the country’s aim of addressing the issue of climate change, as well as alleviating load shedding. In addition, the construction and operation of the SEF is anticipated to result in several positive socio-economic impacts, such as job creation and local economic investment, which will not be realised if the EA is not extended to allow for construction.

2. Application References

Name of relevant heritage authority(s)	South African Heritage Resources Agency - SAHRA
Name of decision making authority(s)	Department of Forestry, Fisheries and the Environment - DFFE

3. Property Information

Latitude / Longitude	30°21'56.10"S 19°35'24.03"E
Erf number / Farm number	Portion 1 and 2 of the Farm Aan De Karee Doorn Pan No.213
Local Municipality	Hantam

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District Municipality	Namakwa
Province	Northern Cape
Current Use	Agriculture
Current Zoning	Agriculture

4. Nature of the Proposed Development

Total Area	405,77ha
Depth of excavation (m)	TBA
Height of development (m)	5m and 10m

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

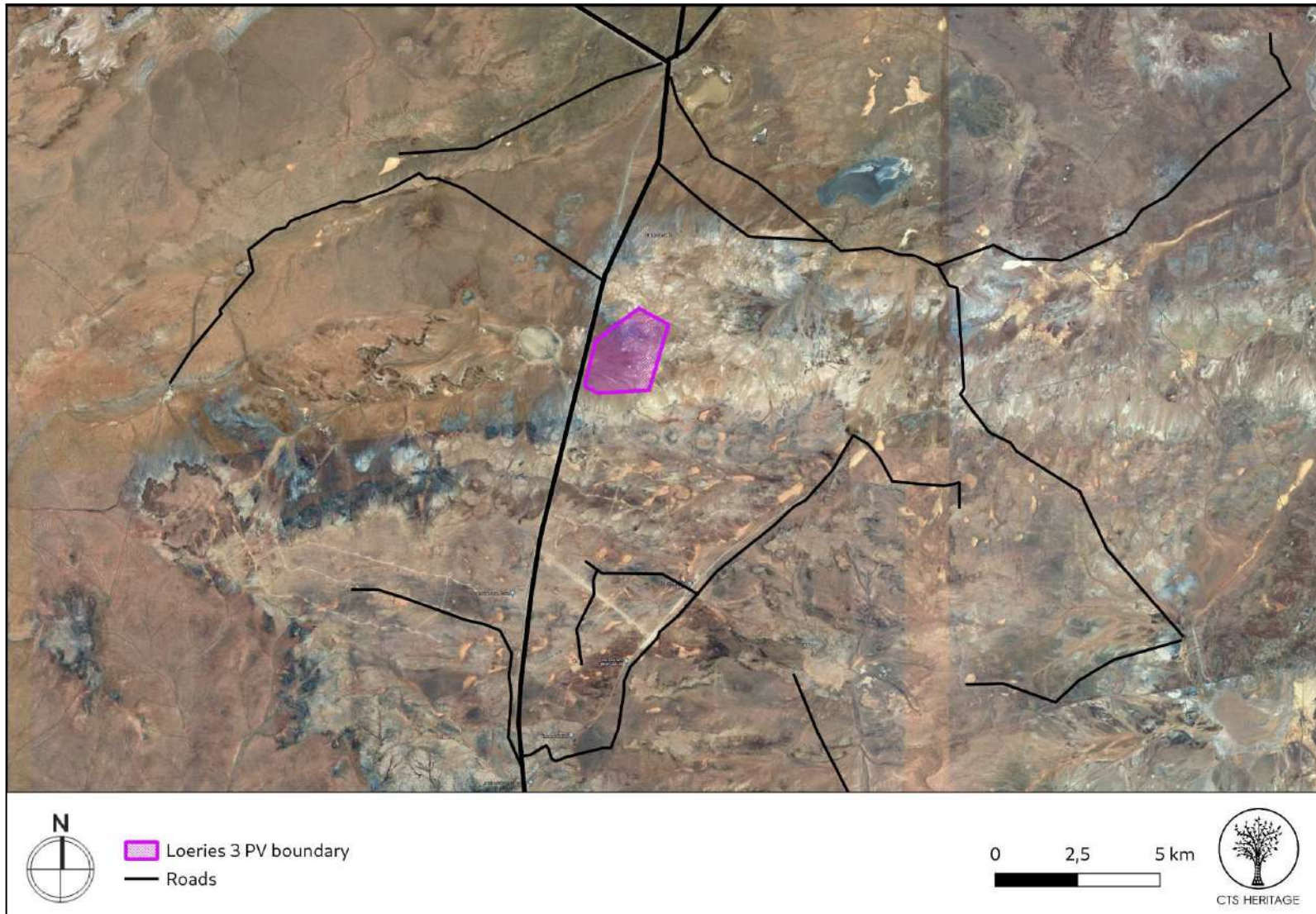


Figure 1b. Overview Map. Satellite image (2022) indicating the proposed development area

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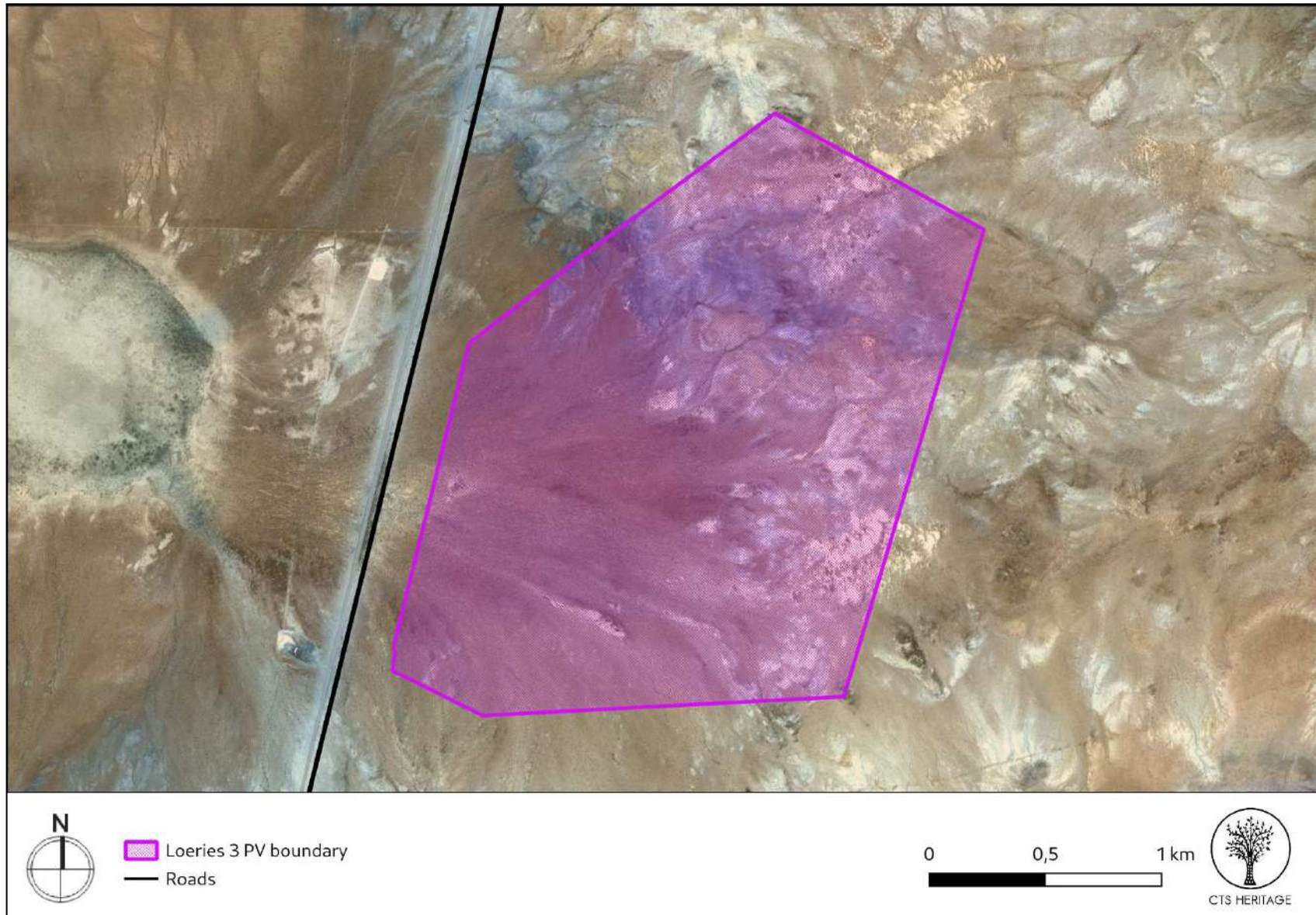


Figure 1c. Overview Map. Satellite image (2022) indicating the proposed development area



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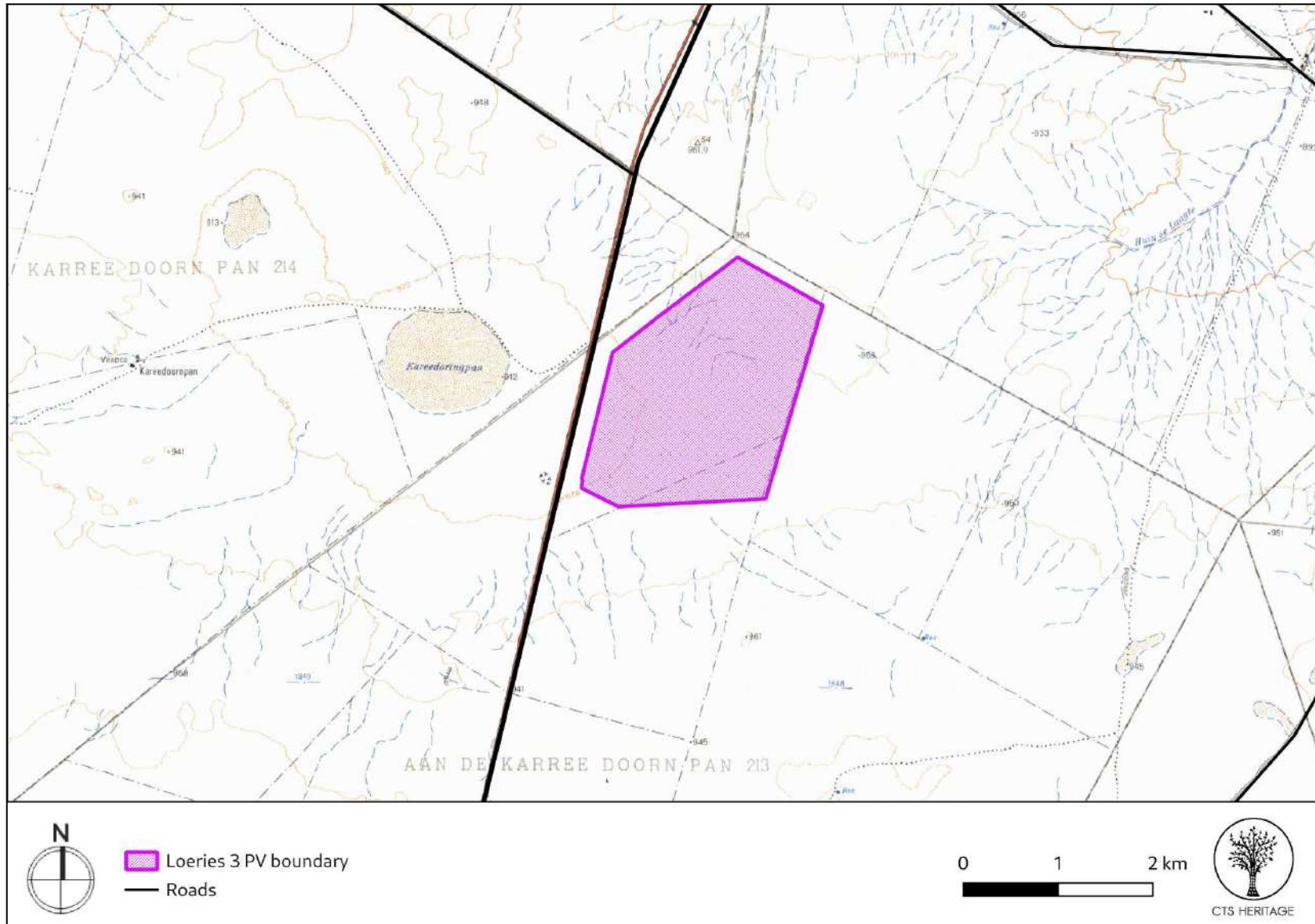


Figure 1d. Overview Map. Extract from 1:50 000 Topo

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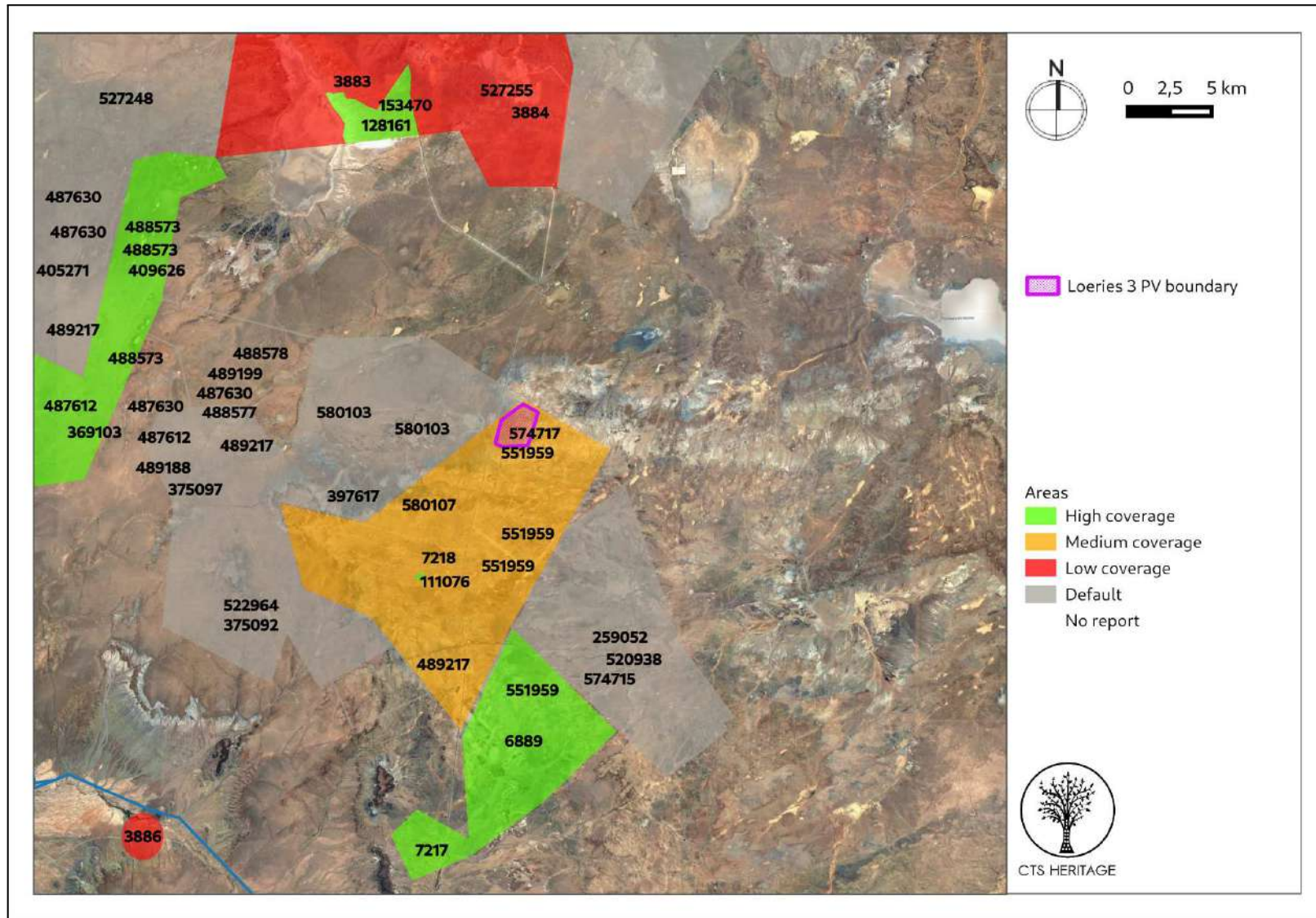


Figure 2a. Previous HIAs Map. Previous Heritage Impact Assessments covering the proposed development area with SAHRIS NIDS indicated. Please see Appendix 2 for a full reference list.

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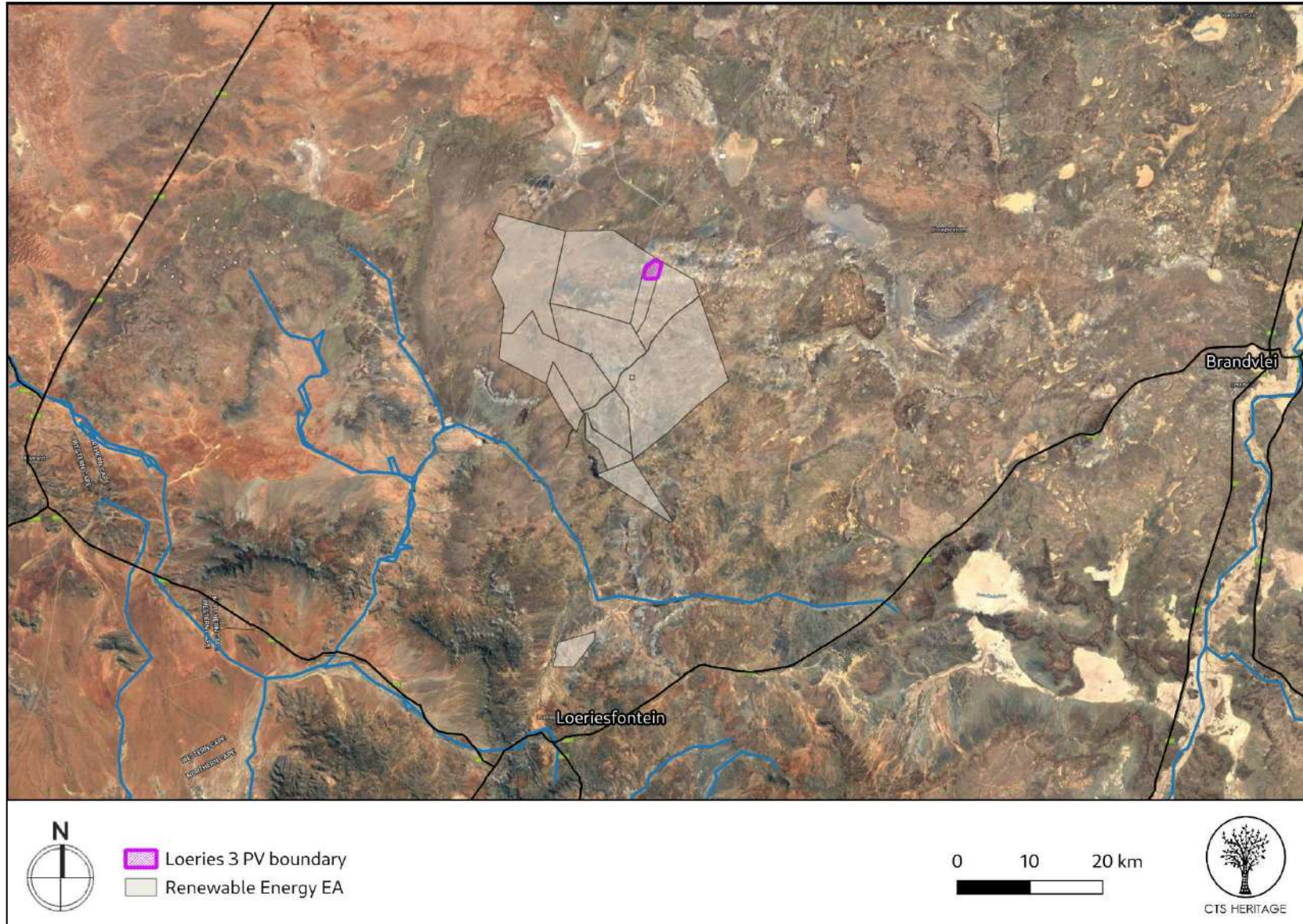


Figure 2b. Renewable Energy EA. Existing EAs for REPs, outside of a REDZ area

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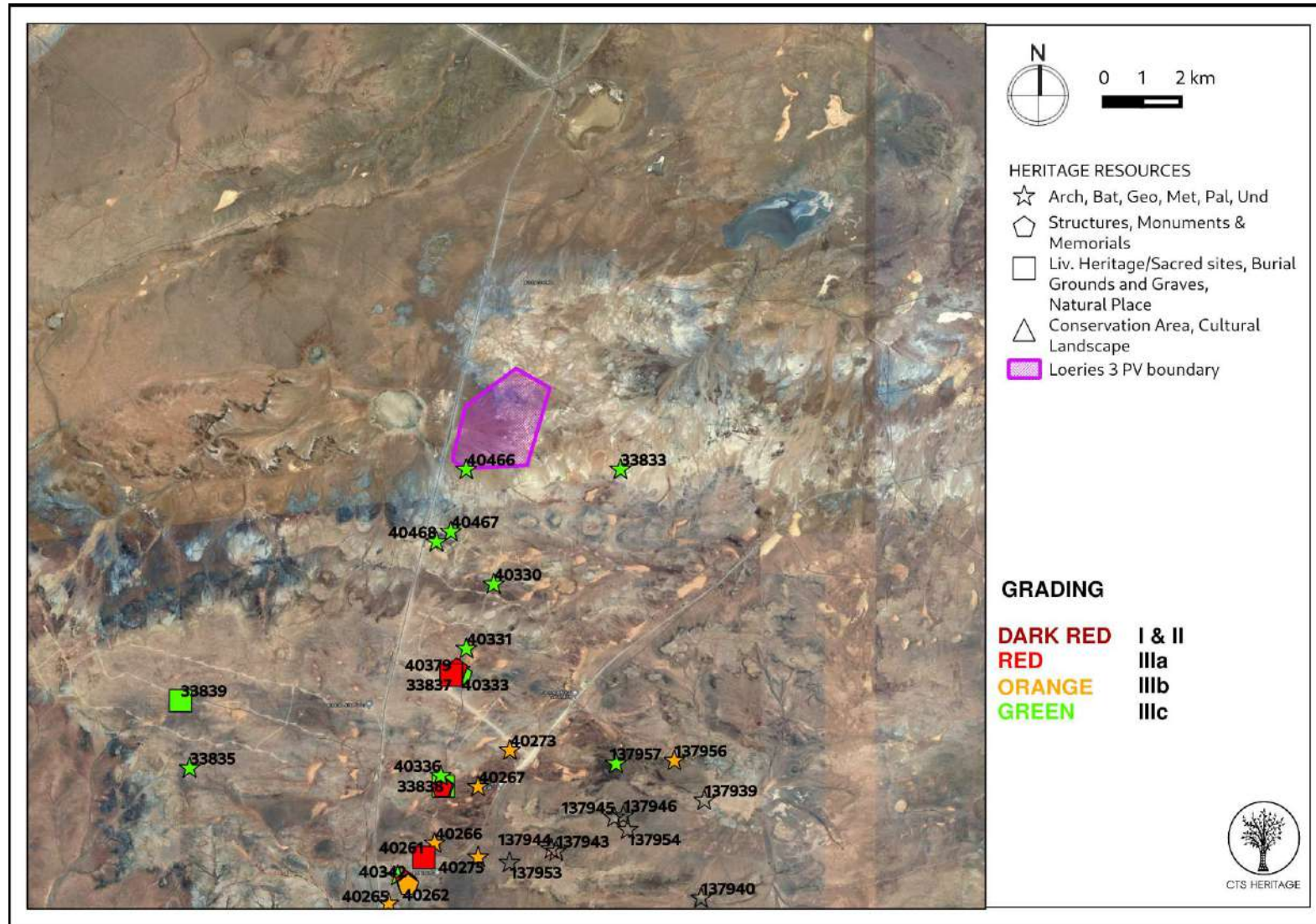


Figure 3. Heritage Resources Map. Heritage Resources previously identified within the study area, with SAHRIS Site IDs indicated in the insets below. Please See Appendix 4 for full description of heritage resource types.



Figure 3a. Heritage Resources Map showing heritage resources near the proposed development



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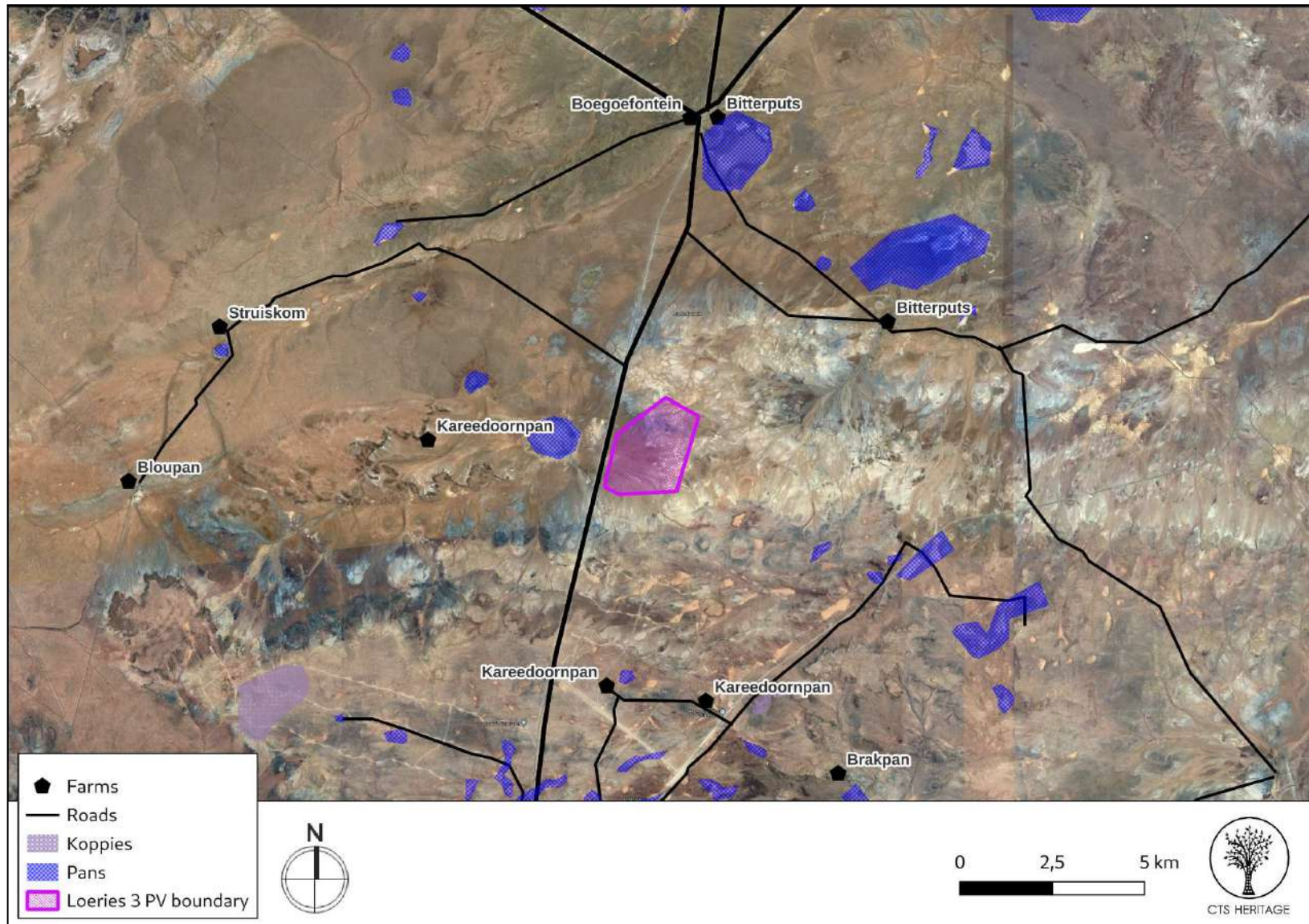


Figure 3b. Heritage Resources Map showing potential heritage resources and areas of high sensitivity near the development

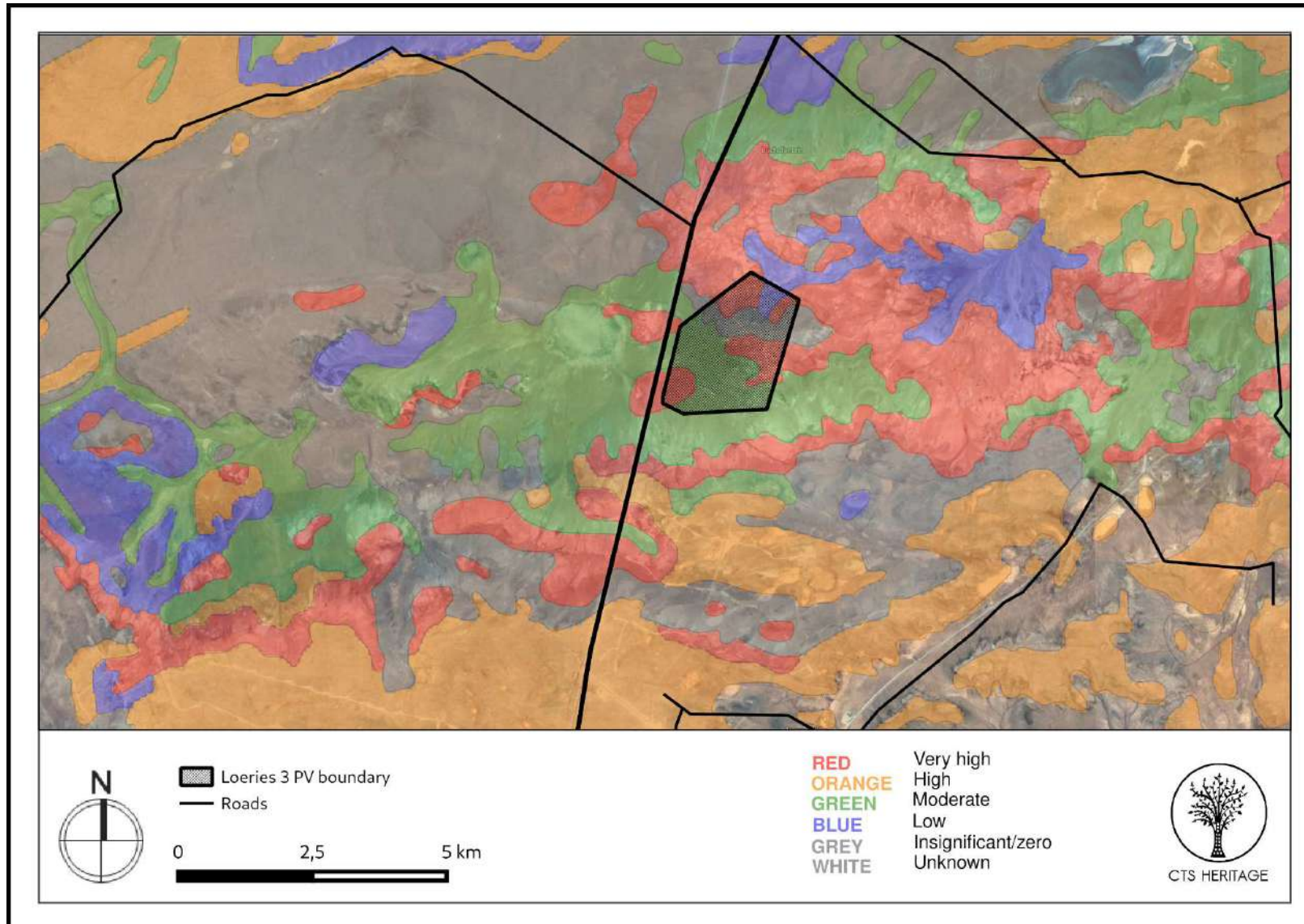


Figure 4a. Palaeosensitivity Map. Indicating fossil sensitivity underlying the study area. Please See Appendix 3 for a full guide to the legend.



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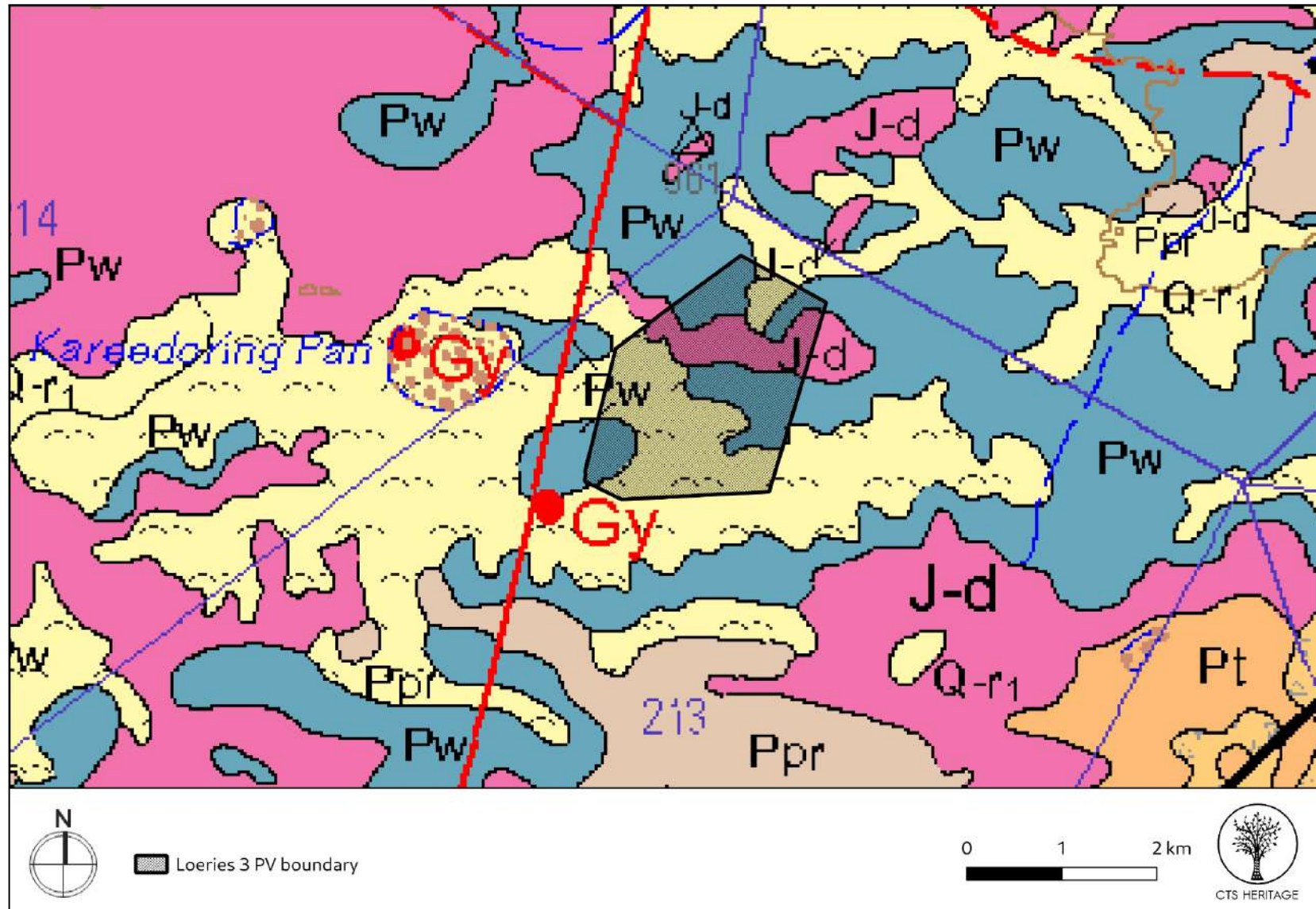


Figure 4b. Geology Map. Extract from the CGS 3018 Loeriesfontein Map indicating that the development area is underlain by Quaternary Sands (yellow), Jd - Jurassic Dolerite, Pw - Whitehill Formation, Pt - Tierberg Formation, and Ppr - Prince Albert Formation

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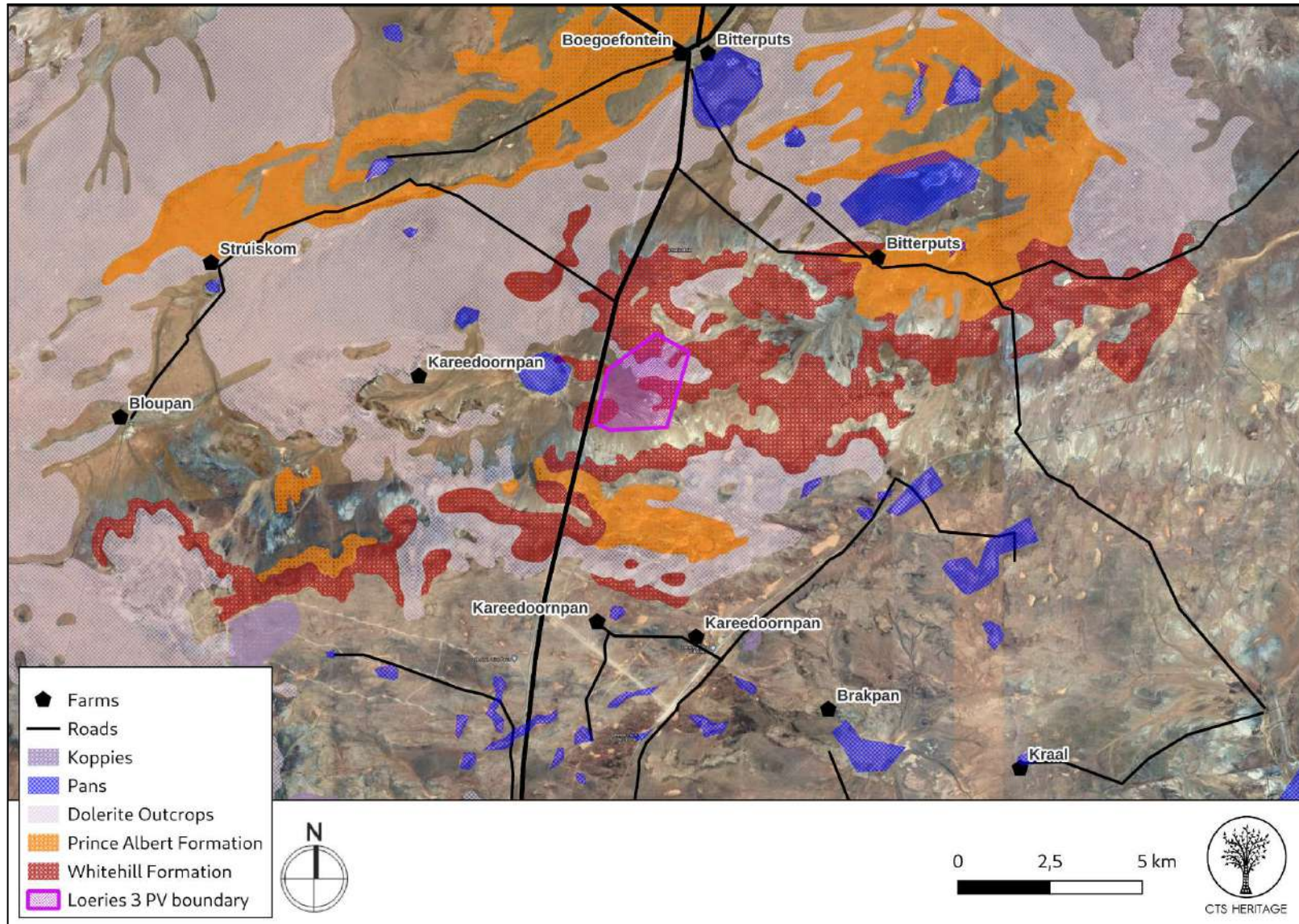


Figure 5. Cumulative Heritage Sensitivity Map.

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7. Heritage Assessment

Background

This report constitutes a comparative assessment to motivate for the extension of the validity period of the EA for the Loeriesfontein 3 PV SEF (granted in October 2012) for a further 5 years. The Loeriesfontein 3 PV SEF is located approximately 60km north of the town of Loeriesfontein in the Northern Cape Province. The town grew around a general store established in 1894 by a travelling Bible salesman and became a municipality in 1958. The town of Loeriesfontein is within a basin surrounded by mountains and the broader area around the town forms part of Namaqualand, famous for its flower season. This area is recognised as one of the highest yield areas for renewable energy in South Africa, however, this area falls outside of a Renewable Energy Development Zone (REDZ) area. Due to these high yields, there are existing and approved renewable energy facilities located immediately adjacent to the area under consideration here.

Cultural Landscape and Built Environment

According to an impact assessment completed for the original EA application for the Loeriesfontein PV SEF (Webley and Halkett, 2012), an adjacent farm is named “Klein Rooiberg” because the area south of the study area is dominated by outcropping regions (“koppies”) which are reddish in colour. The assessment goes on to note that “*The site is covered by low lying vegetation of the Succulent Karoo Biome. A number of drainage lines were identified crossing the study area... The drainage systems are associated with the Volstruisnesholte River catchment.*” (Webley and Halkett, 2012). The study area is considered to be fairly natural succulent Karoo shrubland with low intensity sheep grazing on the site. There are two existing transmission lines near the site, including a 66kV transmission line that runs along the district road towards the substation and a 400kV transmission line that runs to the west of the site in the direction of Klein Rooiberg. There is a district road which runs adjacent to the project site. The predominant context of this area is wilderness landscape dominated by topographic features such as koppies and rivers, as well as existing renewable energy facilities. In his assessment of the Kokerboom WEF located south of this development area, Orton (2021) notes that “*The landscape is also considered to be a heritage resource but its cultural component is very limited and a new layer of electrical infrastructure is starting to dominate the landscape...*”

As can be seen in Figure 3b, the area proposed for development is scattered with farm werfs and connecting roads. According to Webley and Halkett (2012), “*from approximately 1850 onwards, Dutch Trekboers started making seasonal use of the summer grazing around the large pans in the area. Many contemporary farmers in Namaqualand still own two farms, one in the Bushmanland and the other in Namaqualand. The livestock is transported between their farms by truck.*” Orton (2021) notes that “*It is unlikely that many earlier farmsteads (than the earlier 20th Century) would be present because this harsh landscape was only permanently settled in relatively recent times.*” According to Van Schalkwyk’s assessment of the area proposed for the Loeriesfontein 3 PV SEF, “*An investigation of the Title Deeds of most of the farms under consideration indicated that they were surveyed during the latter part of the nineteenth century, implying that they would have been occupied since then. Both the farms Sous and Aan de Karree Dorn Pan were first surveyed in 1898.*” (Van Schalkwyk, 2012). Based on this desktop assessment, the nearest farm werfs are all located more than 5km away from the PV area, and the heritage significance of these has yet to be ascertained. **No direct or indirect impact is anticipated to the heritage value of these werfs as a result of the PV facility.**

It is also clear from Figure 3b how the evolution of the occupation of this area has been guided by the presence of pans. It is clear that the location of farm werfs and roads are linked to the presence of pans nearby or as the destination at the ends of the roads. Prior to colonial settlement, this region was occupied by San hunter-gatherers and remained here living around the salt pans until they were “*forced off the land as the farms were surveyed and made available to European farmers. Some of these “Basters”, of mixed descent, travelled north and settled in the southern Richtersveld. Many of the farms were only allocated after the introduction of the wind pump to South Africa in the 1870s made the more arid lands accessible and suitable for grazing.*” The salt pans of this area therefore have associated cultural landscape value, however, **no salt pans are evident within the area proposed for development.**



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Archaeology

As a result of the renewable energy facilities proposed in this area, a number of Heritage Impact Assessments have been completed that are relevant here, and a number of significant archaeological resources identified (Figure 3, 3a and 3b). Orton (2021) and Webley and Halkett (2012) both found extensive evidence of Middle and Later Stone Age archaeology in the broader area, noting that MSA artefacts tend to be more prevalent on the lowlands and generally attributable to background scatter whereas LSA scatters tend to be associated with topographical features such as koppies, dolerite outcrops, rivers and salt pans. It is likely that this pattern remains applicable within the development area. These features are therefore considered to be highly sensitive in terms of potential impacts to significant archaeology. An archaeological assessment was completed for the proposed PV facility by Van Schalkwyk in 2012. His assessment identified MSA artefact scatters across the broader area (**none within the proposed PV area**). These sites consist of low density surface scatters of MSA material, mostly of hardened shale and chalcedony. Van Schalkwyk (2012) notes that *“There must be hundreds of similar occurrences in the larger region. As they are all surface finds, their significance is judged to be low.”* **Additional sites identified by Van Schalkwyk (2012) all fall outside of the development area** and include sites associated with the colonial occupation of the area including farm werfs, farm infrastructure and burial grounds.

In 2013, Morris conducted a heritage assessment for the Khobab WEF and grid, which overlaps somewhat with the grid alignment proposed for the Loeriesfontein 3 PV SEF. Morris (2013) notes that *“In the wider region, van der Walt (2012) examined the proposed site for the Hantam PV Solar Energy Facility on the farm Naronsies 228, immediately south east of Sous, finding no sites of heritage significance. A similar paucity of sites is reported by Morris (2007) examining borrow pit sites in the region along the Sishen-Saldanha railway. In marked contrast to these observations on the relatively featureless, eroded plains north of Loeriesfontein, a wealth of Later Stone Age sites has been recorded on dunes on the fringes of large pans in the wider vicinity, e.g. at Klawer Vlei (farms Commissioners Vley, T’Boop and Tafel Kop – Beaumont & Morris 1985), and at Waterkuil (Morris 1996) where lithics, ceramics and ostrich eggshell container fragments are densely scattered at numerous sites. E.J. Dunn (1873) described artefacts from Klawervlei in the 1870s, also having met /Xam people still making stone tools in the area. He remarked upon “the enormous quantities of broken eggshells (ostrich) [which] create astonishment, and convey some rough idea of the numbers of Bushmen and the length of time they must have lived in this neighbourhood”. It is clear from previous surveys in the area that the distribution of sites may be highly structured relative to resources, principally water (Beaumont et al. 1995).”* Morris (2013) identified a small number of isolated artefacts with very low scientific significance. These observations are mapped relative to the development in Figure 3 and 3a and are reflected as **sites 40466, 40467, 40468 and 40469. No impact to these sites is anticipated.**

In 2020, Fourie conducted a heritage assessment for the BESS associated with the Loeriesfontein 3 PV SEF and located within the area proposed for the Loeriesfontein 3 PV SEF. Their site visit identified no heritage resources of any significance located within the area proposed for the BESS development (which partially covers the Loeriesfontein 3 PV area). These findings all corroborate the findings of a recent field assessment conducted by CTS Heritage for a site located south of the Loeriesfontein 3 PV area in 2022. The results of this field assessment noted that *“extensive remains of Stone Age material were found. These date both to the Middle Stone Age generally spread across the entire study area as well as Later Stone Age and terminal LSA/historical period where ceramics, metal and glass items appear in the assemblages. The riverine floodplain systems contain the bulk of the sites located and much of MSA is likely buried in the terraces overlooking the three non-perennial streams crisscrossing the farm.”*

Based on the results of various assessments in the area, it seems that the significant archaeological resources known from the area are associated with river systems, pans and koppies. **None of these features are located within the Loeriesfontein PV 3 development area. As such, it is unlikely that the proposed development will negatively impact on significant archaeological heritage.**

Palaeontology

According to the SAHRIS Palaeosensitivity Map (Figure 4a), the area proposed for development is underlain by geology of variable palaeontological sensitivity, ranging from very high to moderate and zero. According to the Council of GeoScience Map for Loeriesfontein, the area proposed for development is underlain by the Whitehill Formation (very high sensitivity) of the Ecca Group of the Karoo Supergroup, Jurassic dolerite (zero palaeontological sensitivity) and quaternary sands (moderate sensitivity).

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In the PIA completed for the Loeriesfontein 3 PV project, Almond (2011) concludes that “*Important fossil material of aquatic vertebrates (mesosaurid reptiles, fish), invertebrates (e.g. crustaceans) and petrified wood is known from the Whitehill Formation and to a lesser extent from the Prince Albert and Tierberg Formations. However fossils other than trace assemblages are generally sparse and most of the Eccca sediments are of low overall palaeontological sensitivity. Their palaeontological potential may well have been locally compromised by chemical weathering and dolerite intrusion. Furthermore, a substantial portion of the Eccca Group outcrop area is mantled by superficial sediments (downwashed gravels, alluvium etc) of low palaeontological sensitivity.*” This conclusion is reiterated by Butler (2020) in her palaeontological assessment for the Loeriesfontein BESS located within the development area. Butler (2020) recommends that a Chance Fossil Finds Procedure be implemented for the duration of excavation activities in this area.

Statement on environmental processes impacting on archaeological and palaeontological heritage

Archaeological and palaeontological heritage resources reflect the environments of the deeper past and are unlikely to change significantly in as short a geological time span as 10 years. Some changes to heritage resources may result from processes of erosion and deflation but, in this particular ecological setting, this is unlikely to have an impact on the conclusions of the results of the previous heritage assessments completed. In this context, **the findings of the assessments completed by Van Schalkwyk (2012), Fourie (2020), Almond (2011) and Butler (2020) remain appropriate and applicable for this development.**

Furthermore, since the initial HIA completed by Van Schalkwyk (2012), additional work has been completed in the area as noted above and furthermore, a Heritage Management Plan was drafted for the Loeriesfontein WEF which has been approved by SAHRA. Throughout these processes, **no heritage resources of significance have been identified as being impacted by the Loeriesfontein 3 PV SEF. The heritage impact assessments completed in this area previously provide sufficient, appropriate and relevant information for the purposes of this application and no additional heritage, archaeological and palaeontological field assessments are recommended.**

Validity Extension

In light of the above, there is **no heritage objection to granting the extension to the validity to develop the Loeriesfontein 3 PV SEF based on the current site conditions on condition that the relevant recommendations included in the previous heritage assessments conducted are implemented, including that the attached Chance Fossil Finds Procedure (Appendix 6) is added to the EMP.**

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8. Impact Tables

Since 2012, the broader understanding of heritage significance and impacts to these resources has developed and evolved. As such, while the findings and recommendations from the initial assessments remain valid and applicable, the methodology used for the assessment of impact with regard to the tables has changed. Furthermore, the heritage impact assessments (including impact ratings, where required) completed in this area previously provide sufficient, appropriate and relevant information for the purposes of this application and no additional heritage, archaeological and palaeontological field assessments are recommended. The findings of the initial assessments have therefore been re-evaluated below to align with our current understanding of heritage significance and impacts. In light of the above, the relevant recommendations included in the previous heritage assessments conducted remain valid.

Impact table for Cultural Landscape Heritage Resources impacted by the Loeriesfontein 3 PV Facility

NATURE: The broader context of the area proposed for development has cultural significance that may be impacted by the proposed development				
		Before Mitigation		After Mitigation
MAGNITUDE	H (8)	The cultural value of the pristine Karoo Landscape is very high however the location of the proposed development away from significant roads and farm werfs is unlikely to impact this significance	H (8)	The cultural value of the pristine Karoo Landscape is very high however the location of the proposed development away from significant roads and farm werfs is unlikely to impact this significance
DURATION	H (4)	Where manifest, the impact will be long term - for the duration of the grid infrastructure lifetime	H (4)	Where manifest, the impact will be long term - for the duration of the grid infrastructure lifetime
EXTENT	H (5)	Regional	H (5)	Regional
PROBABILITY	L (2)	It is extremely unlikely that any significant cultural landscape resources will be impacted	L (2)	It is extremely unlikely that any significant cultural landscape resources will be impacted
SIGNIFICANCE	M	$(8+4+5) \times 2 = 34$	M	$(8+4+5) \times 2 = 34$
STATUS		Neutral		Neutral
REVERSIBILITY	L	Any impacts to heritage resources that do occur are reversible once the infrastructure is removed	L	Any impacts to heritage resources that do occur are reversible once the infrastructure is removed
IRREPLACEABLE LOSS OF RESOURCES?	L	Unlikely	L	Unlikely
CAN IMPACTS BE MITIGATED		NA		
MITIGATION: NA				
RESIDUAL RISK: NA				



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Impact table for Archaeological Heritage Resources impacted by the Loeriesfontein 3 PV Facility

NATURE: The area proposed for development is known to conserve heritage resources of archaeological significance that may be impacted by the proposed development			
		Before Mitigation	After Mitigation
MAGNITUDE	H (7)	Some significant archaeological resources were identified within the broader area but none within the specific development area	H (7) Some significant archaeological resources were identified within the broader area but none within the specific development area
DURATION	H (5)	Where manifest, the impact will be permanent.	H (5) Where manifest, the impact will be permanent.
EXTENT	L (1)	Localised within the site boundary	L (1) Localised within the site boundary
PROBABILITY	L (1)	It is extremely unlikely that any significant archaeological resources will be impacted	L (1) It is extremely unlikely that any significant archaeological resources will be impacted
SIGNIFICANCE	L	(7+5+1)x1=13	L (7+5+1)x1=13
STATUS		Neutral	Neutral
REVERSIBILITY	L	Any impacts to heritage resources that do occur are irreversible	L Any impacts to heritage resources that do occur are irreversible
IRREPLACEABLE LOSS OF RESOURCES?	L	Unlikely	L Unlikely
CAN IMPACTS BE MITIGATED		Yes	
MITIGATION: NA			
RESIDUAL RISK: Should any significant archaeological resources be impacted (however unlikely) residual impacts may occur, including a negative impact due to the loss of potentially scientific cultural resources			

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Impact table for Palaeontological Heritage Resources impacted by the Loeriesfontein 3 PV Facility

NATURE: The area proposed for development is known to conserve heritage resources of palaeontological significance that may be impacted by the proposed development				
		Before Mitigation		After Mitigation
MAGNITUDE	H (8)	No highly significant palaeontological resources were identified within the development area, however the geology underlying the development area is very sensitive for impacts to significant fossils	H (8)	No highly significant palaeontological resources were identified within the development area, however the geology underlying the development area is very sensitive for impacts to significant fossils
DURATION	H (5)	Where manifest, the impact will be permanent.	H (5)	Where manifest, the impact will be permanent.
EXTENT	L (1)	Localised within the site boundary	L (1)	Localised within the site boundary
PROBABILITY	H (5)	It is extremely likely that significant palaeontological resources will be negatively impacted	L (1)	It is extremely unlikely that any significant paleontological resources will be negatively impacted
SIGNIFICANCE	H	$(1+5+8) \times 5 = 70$	L	$(1+5+8) \times 1 = 14$
STATUS		Neutral		Neutral
REVERSIBILITY	L	Any impacts to heritage resources that do occur are irreversible	L	Any impacts to heritage resources that do occur are irreversible
IRREPLACEABLE LOSS OF RESOURCES?	H	Likely	L	Unlikely
CAN IMPACTS BE MITIGATED		Yes		
MITIGATION: The attached Chance Fossil Finds Procedure must be implemented for the duration of construction activities				
RESIDUAL RISK: Should any significant palaeontological resources be impacted (however unlikely) residual impacts may occur, including a negative impact due to the loss of potentially scientific cultural resources				

It should be noted that although new impact ratings have been provided in this assessment, the recommendations of the initial assessment remain valid, while the mitigation measures provided in the initial assessment are also still applicable. There are thus no new mitigation measures which need to be included into the EA, should the validity period be extended. It is however reiterated that the Chance Fossil Finds Procedure (Appendix 6) must be included in the EMP.

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Cumulative Impact table for Heritage Resources impacted by the Loeriesfontein 3 PV Facility

Nature: The broader context of the area proposed for development has cultural significance that may be impacted by the proposed development		
	Overall impact of the proposed project considered in isolation	Cumulative impact of the project and other projects in the area
Extent	Regional	Regional
Duration	Where manifest, the impact will be long term - for the duration of the grid infrastructure lifetime	Where manifest, the impact will be long term - for the duration of the grid infrastructure lifetime
Magnitude	The cultural value of the pristine Karoo Landscape is very high and the location of the proposed development will impact this significance	The cultural value of the pristine Karoo Landscape is very high and the location of the proposed development will impact this significance
Probability	It is extremely likely that a significant cultural landscape resources will be impacted	It is extremely likely that a significant cultural landscape resources will be impacted
Significance	HIGH	HIGH
Status (positive or negative)	Negative	Negative
Reversibility	High	Low
Irreplaceable loss of resources?	Yes	Yes
Can impacts be mitigated?	Yes	Yes
Confidence in findings: High.		
Mitigation: NA		

With regard to cumulative impacts to heritage resources, this is discussed in detail in the section of text regarding impacts to the Cultural Landscape. In general, the sense of place of this area has been significantly altered due to the extensive renewable energy development taking place here. At this stage, there is the potential for the cumulative impact of the proposed PV facility and associated infrastructure to negatively impact the cultural landscape due to a change in the landscape character from rural to semi-industrial. Based on the available information, a few renewable energy facilities and their associated grid infrastructure (power lines and substations) have been approved in the immediate vicinity of the proposed development. It is noted that it is preferable to have renewable energy facility development and associated infrastructure focused in an area such as a REDZ or Strategic Transmission Corridor so that this infrastructure is clustered on the landscape and not spread out.

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APPENDIX 1

List of heritage resources within the development area

Site ID	Site no	Full Site Name	Site Type	Grading
40322	LOE008	Loeriesfontein 008	Structures	Grade IIIc
33833	LOERIE1	Loeriesfontein 1	Archaeological	Grade IIIc
33834	LOERIE2	Loeriesfontein 2	Archaeological	Grade IIIc
33835	LOERIE3	Loeriesfontein 3	Archaeological	Grade IIIc
33836	LOERIE4	Loeriesfontein 4	Building	Grade IIIc
33838	LOERIE6	Loeriesfontein 6	Natural	Grade IIIc
33839	LOERIE7	Loeriesfontein 7	Natural	Grade IIIc
40327	LOE011	Loeriesfontein 011	Artefacts, Structures	Grade IIIc
40328	LOE012	Loeriesfontein 012	Structures, Artefacts	Grade IIIa
40332	LOE016	Loeriesfontein 016	Artefacts	Grade IIIc
40333	LOE017	Loeriesfontein 017	Artefacts, Structures	Grade IIIc
40325	LOE009	Loeriesfontein 009	Artefacts	Grade IIIb
40326	LOE010	Loeriesfontein 010	Artefacts	Grade IIIc
40330	LOE014	Loeriesfontein 014	Artefacts	Grade IIIc
40331	LOE015	Loeriesfontein 015	Artefacts	Grade IIIc
40336	LOE018	Loeriesfontein 018	Artefacts	Grade IIIc
40340	LOE019	Loeriesfontein 019	Artefacts	Grade IIIc

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40342	LOE020	Loeriesfontein 020	Artefacts, Building	Grade IIIa
40343	LOE021	Loeriesfontein 021	Artefacts	Grade IIIc
40344	LOE022	Loeriesfontein 022	Artefacts	Grade IIIc
40345	LOE023	Loeriesfontein 023	Artefacts	Grade IIIc
40346	LOE024	Loeriesfontein 024	Artefacts	Grade IIIc
40349	LOE025	Loeriesfontein 025	Artefacts	Grade IIIc
40351	LOE026	Loeriesfontein 026	Artefacts	Grade IIIb
40353	LOE027	Loeriesfontein 027	Artefacts	Grade IIIc
40329	LOE013	Loeriesfontein 013	Structures, Building	Grade IIIa
40377	LOE028	Loeriesfontein 028	Artefacts	Grade IIIb
40378	LOE029	Loeriesfontein 029	Artefacts	Grade IIIb
40466	KHO001	Khobab 001	Artefacts	Grade IIIc
40467	KHO002	Khobab 002	Artefacts	Grade IIIc
40468	KHO003	Khobab 003	Artefacts	Grade IIIc
40469	KHO004	Khobab 004	Building	Grade IIIa
40262	HEL02	Helios 02	Structures	Grade IIIb
40263	HEL03	Helios 03	Artefacts	Grade IIIb
40264	HEL04	Helios 04	Artefacts	Grade IIIb
40265	HEL05	Helios 05	Artefacts	Grade IIIb
40266	HEL06	Helios 06	Artefacts	Grade IIIb

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40267	HEL07	Helios 07	Artefacts	Grade IIIb
40273	HEL09	Helios 09	Artefacts	Grade IIIb
40275	HEL08	Helios 08	Artefacts	Grade IIIb
33837	LOERIE5	Loeriesfontein 5	Burial Grounds & Graves	Grade IIIc
40379	LOE030	Loeriesfontein 030	Burial Grounds & Graves	Grade IIIa
40261	HEL01	Helios 01	Burial Grounds & Graves	Grade IIIa
137939	DRG-001	Dwarsrug	Artefacts	Grade IV
137940	DRG-002	Dwarsrug	Artefacts	Grade IV
137941	DRG-003	Dwarsrug	Artefacts	Grade IV
137942	DRG-004	Dwarsrug	Artefacts	Grade IV
137943	DRG-005	Dwarsrug	Artefacts	Grade IV
137944	DRG-006	Dwarsrug	Artefacts	Grade IV
137945	DRG-007	Dwarsrug	Artefacts	Grade IV
137946	DRG-008	Dwarsrug	Artefacts	Grade IV
137947	DRG-009	Dwarsrug	Artefacts	Grade IV
137949	DRG-011	Dwarsrug	Artefacts	Grade IV
137950	DRG-012	Dwarsrug	Artefacts	Grade IV
137951	DRG-013	Dwarsrug	Artefacts	Grade IV
137952	DRG-014	Dwarsrug	Artefacts	Grade IV
137953	DRG-015	Dwarsrug	Artefacts	Grade IV

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137954	DRG-016	Dwarsrug	Artefacts	Grade IV
137956	DRG-018	Dwarsrug	Artefacts	Grade IIIb
137957	DRG-019	Dwarsrug	Artefacts	Grade IIIc
137958	DRG-020	Dwarsrug	Artefacts	Grade IV
137959	DRG-021	Dwarsrug	Artefacts	Grade IV
137960	DRG-022	Dwarsrug	Artefacts	Grade IV
137961	DRG-023	Dwarsrug	Artefacts	Grade IIIc

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APPENDIX 2

Reference List with relevant AIAs and PIAs

Heritage Impact Assessments				
Nid	Report Type	Author/s	Date	Title
111076	Archaeological Specialist Reports	David Morris	31/01/2013	Power Line Route Options, Access Road and Substation Positions for the Khobab WEF
128161	AIA Phase 1	Jaco van der Walt	05/08/2013	Archaeological Impact Assessment For the Mining Right Application on the Farm Dikpens 182 Portions 2 and 4 situated in the District of Calvinia (Northern Cape Province)
128167	PIA Desktop	Barry Millstead	14/06/2013	DESKTOP PALAEOLOGICAL HERITAGE IMPACT ASSESSMENT REPORT ON THE SITE OF A PROPOSED EXTENSION OF THE BUSHMANLAND GYPSUM MINE TO BE LOCATED ON THE FARM DIKPENS 182 PORTION 2 AND PORTION 4, CALVINIA DISTRICT, NORTHERN CAPE PROVINCE
153470	Archaeological Specialist Reports	Jaco van der Walt	05/08/2013	AIA for Mining Right Application on Dikpens 182 Portions 2 and 4
166787	PIA Phase 1	Barry Millstead	14/06/2014	FULL PALAEOLOGICAL HERITAGE IMPACT ASSESSEMENT REPORT ON THE SITE OF A PROPOSED EXTENSION OF THE BUSHMANLAND GYPSUM MINE TO BE LOCATED ON THE FARM DIKPENS 182 PORTION 2 AND PORTION 4, CALVINIA DISTRICT, NORTHERN CAPE PROVINCE
259052				Dwarsrug Heritage Impact Report
369103		Timothy Hart		
375092	Palaeontological Specialist Reports	John Almond	18/10/2016	Palaeontological heritage assessment: combined desktop and field-based scoping study for the proposed Kokerboom 1 Wind Farm near Loeriesfontein, Namaqua District Municipality, Northern Cape.
375097	Palaeontological Specialist Reports	John Almond	18/10/2016	Palaeontological heritage assessment: combined desktop and field-based scoping study for the proposed Kokerboom 2 Wind Farm near Loeriesfontein, Namaqua District Municipality, Northern Cape.
3883	AIA Phase 1	David Morris	01/09/1996	An Archaeological Impact Assessment at Dikpens, Konnes, Calvinia District

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3884	AIA Phase 1	David Morris	01/09/1996	An Archaeological Impact Assessment at Flamink, Waterkuil, Calvinia District
3886	AIA Phase 1	David Morris	01/01/2007	Archaeological Specialist Input with Respect to Upgrading Railway Infrastructure on the Saldanha Ore Line in the Vicinity of New Loop 7A near Loeriesfontein
6889	AIA Phase 1	Jaco van der Walt, Marlize Lombard	06/01/2012	AIA for the proposed Hantam PV Solar Energy Facility on the Farm Narosies 228, Loeriesfontein, Northern Cape Province
7217	AIA Phase 1	Lita Webley, Dave Halkett	01/05/2012	HERITAGE IMPACT ASSESSMENT: PROPOSED LOERIESFONTEIN PHOTO-VOLTAIC SOLAR POWER PLANT ON PORTION 5 OF THE FARM KLEIN ROOIBERG 227, NORTHERN CAPE PROVINCE
7218	AIA Phase 1	Johnny Van Schalkwyk	29/02/2012	HIA for the proposed establishment of a wind farm and PV facility by mainstream renewable power in the Loeriesfontein region, Northern Cape Province
8961	PIA Phase 1	John E Almond	01/06/2011	Proposed mainstream wind farm near Loeriesfontein, namaqua District Municipality, Northern Cape Province.
9118	HIA Phase 1	Lita Webley, Dave Halkett, John Pether	01/05/2012	Heritage Impact Assessment: Proposed Loeriesfontein Photo-voltaic Solar Power Plant on Portion 5 of the Farm Klein Rooiberg 227, Northern Cape Province
	HIA Phase 1	Wouter Fourie	29/09/2020	HIA: Proposed construction and operation of the Battery Energy Storage System (BESS) and associated infrastructure and inclusion of additional listed activities for the authorised Loeriesfontein 3 PV Solar Energy Facility located near Loeriesfontein in the Hantam Local Municipality in the Northern cape
	PIA Phase 1	Elize Butler	29/09/2020	PIA: Proposed construction and operation of the Battery Energy Storage System (BESS) and associated infrastructure and inclusion of additional listed activities for the authorised Loeriesfontein 3 PV Solar Energy Facility located near Loeriesfontein in the Hantam Local Municipality in the Northern cape

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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 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
- undertaking mitigation measures requested in previous assessments/records of decision.



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(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.

IMPACT ASSESSMENT TABLES

Direct, indirect and cumulative impacts associated with the projects must be assessed in terms of the following criteria:

- The nature, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The extent, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional, and a value between 1 and 5 will be assigned as appropriate (with 1 being low and 5 being high).
- The duration, wherein it will be indicated whether:
 - The lifetime of the impact will be of a very short duration (0 – 1 years) – assigned a score of 1.
 - The lifetime of the impact will be of a short duration (2 – 5 years) – assigned a score of 2.
 - Medium-term (5 – 15 years) – assigned a score of 3.
 - Long term (> 15 years) – assigned a score of 4.
 - Permanent – assigned a score of 5.
- The consequences (magnitude), quantified on a scale from 0 – 10, where 0 is small and will have no effect on the environment, 2 is minor and will not result in an impact on processes, 4 is low and will cause a slight impact on processes, 6 is moderate and will result in processes continuing but in a modified way, 8 is high (processes are altered to the extent that they temporarily cease), and 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- The probability of occurrence, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale of 1 – 5, where 1 is very improbable (probably will not happen), 2 is improbable (some possibility, but low likelihood), 3 is probable (distinct possibility), 4 is highly probable (most likely) and 5 is definite (impact will occur regardless of any prevention measures).
- The significance, which shall be determined through a synthesis of the characteristics described above and can be assessed as low, medium or high.
- The status, which will be described as either positive, negative or neutral.
- The degree to which the impact can be reversed.
- The degree to which the impact may cause irreplaceable loss of resources.
- The degree to which the impact can be mitigated.

The significance is calculated by combining the criteria in the following formula:

$$S = (E + D + M) \times P$$

S = Significance weighting

E = Extent

D = Duration

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M = Magnitude
P = Probability

The significance weightings for each potential impact are as follows:

- < 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area).
- 30 – 60 points: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated).
- > 60 points: High (i.e. where the impact must have an influence on the decision process to develop in the area).

APPENDIX 5 - Summary of Specialist Expertise

Jenna Lavin, an archaeologist with an MSc in Archaeology and Palaeoenvironments, and currently completing an MPhil in Conservation Management, heads up the heritage division of the organisation, and has a wealth of experience in the heritage management sector. Jenna's previous position as the Assistant Director for Policy, Research and Planning at Heritage Western Cape has provided her with an in-depth understanding of national and international heritage legislation. Her 8 years of experience at various heritage authorities in South Africa means that she has dealt extensively with permitting, policy formulation, compliance and heritage management at national and provincial level and has also been heavily involved in rolling out training on SAHRIS to the Provincial Heritage Resources Authorities and local authorities.

Jenna is a member of the Association of Professional Heritage Practitioners (APHP), and is also an active member of the International Committee on Monuments and Sites (ICOMOS) as well as the International Committee on Archaeological Heritage Management (ICAHM). In addition, Jenna has been a member of the Association of Southern African Professional Archaeologists (ASAPA) since 2009. Recently, Jenna has been responsible for conducting training in how to write Wikipedia articles for the Africa Centre's WikiAfrica project.

Since 2016, Jenna has drafted over 200 Heritage Impact Assessments throughout South Africa.

APPENDIX 6 - Terms of Reference

The Terms of Reference (ToR) for the specialist inputs into the provision of a specialist statement for the Application for Amendment of the EA to extend the validity period require:

- Description of the status (baseline) of the environment that was assessed during the initial assessment.
- Confirmation of the current status of the assessed environment.
- Description and assessment of any changes to the environment that has occurred since the initial EA was issued, if any.
- Indication if the impact rating as provided in the initial assessment remains valid; if the mitigation measures provided in the initial assessment are still applicable; or if there are any new mitigation measures which need to be included into the EA/EMPr, should the request to extend the commencement period, and other proposed amendments, be granted by the Department.
- Indication if there are any new assessments and/or guidelines which are now relevant to the authorised development which were not undertaken as part of the initial assessment, must be taken into consideration, and addressed in the specialist statement/ report.
- Description and an assessment of the surrounding environment, in relation to new developments or changes in land use which might impact on the authorised project, the assessment must consider the following:
 - Similar developments within a 30km radius.
 - Identified cumulative impacts must be clearly defined, and where possible the size of the identified impact must be quantified and indicated, i.e., hectares of cumulatively transformed land.



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- Detailed process flow and proof must be provided, to indicate how the specialist's recommendations, mitigation measures and conclusions from the various similar developments in the area were taken into consideration in the assessment of cumulative impacts and when the conclusion and mitigation measures were drafted for this project.
- The cumulative impacts significance rating must also inform the need and desirability of the proposed development.
- A cumulative impact environmental statement on whether the proposed development must proceed.

The study must conclude the following:

- Has the baseline status of the receiving environment changed significantly since the original Archaeological and Palaeontological Assessments in 2012?
- Is the initial impact rating undertaken during the initial assessment still valid?
- Are the mitigation measures provided in the initial assessment (or subsequent updated assessments) still applicable?
- Are there any new mitigation measures that should be added to the EA/EMPr, should the DFFE approve the amendments?
- Describe any update/new mitigations (or refer to them in the EMPr update report), where relevant.
- Are the proposed amendments, including proposed extension of the validity period, acceptable (relative to your area of expertise)?

APPENDIX 7 - Chance Fossil Finds Procedure

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CHANCE FINDS OF PALAEOLOGICAL MATERIAL

(Adopted from the HWC Chance Fossils Finds Procedure: June 2016)

Introduction

This document is aimed to inform workmen and foremen working on a construction and/or mining site. It describes the procedure to follow in instances of accidental discovery of palaeontological material (please see attached poster with descriptions of palaeontological material) during construction/mining activities. This protocol does not apply to resources already identified under an assessment undertaken under s. 38 of the National Heritage Resources Act (no 25 of 1999).

Fossils are rare and irreplaceable. Fossils tell us about the environmental conditions that existed in a specific geographical area millions of years ago. As heritage resources that inform us of the history of a place, fossils are public property that the State is required to manage and conserve on behalf of all the citizens of South Africa. Fossils are therefore protected by the National Heritage Resources Act and are the property of the State. Ideally, a qualified person should be responsible for the recovery of fossils noticed during construction/mining to ensure that all relevant contextual information is recorded.

Heritage Authorities often rely on workmen and foremen to report finds, and thereby contribute to our knowledge of South Africa's past and contribute to its conservation for future generations.

Training

Workmen and foremen need to be trained in the procedure to follow in instances of accidental discovery of fossil material, in a similar way to the Health and Safety protocol. A brief introduction to the process to follow in the event of possible accidental discovery of fossils should be conducted by the designated Environmental Control Officer (ECO) for the project, or the foreman or site agent in the absence of the ECO. It is recommended that copies of the attached poster and procedure are printed out and displayed at the site office so that workmen may familiarise themselves with them and are thereby prepared in the event that accidental discovery of fossil material takes place.



Actions to be taken

One person in the staff must be identified and appointed as responsible for the implementation of the attached protocol in instances of accidental fossil discovery and must report to the ECO or site agent. If the ECO or site agent is not present on site, then the responsible person on site should follow the protocol correctly in order to not jeopardize the conservation and well-being of the fossil material.

Once a workman notices possible fossil material, he/she should report this to the ECO or site agent. Procedure to follow if it is likely that the material identified is a fossil:

- The ECO or site agent must ensure that all work ceases immediately in the vicinity of the area where the fossil or fossils have been found;
- The ECO or site agent must inform SAHRA of the find immediately. This information must include photographs of the findings and GPS co-ordinates;
- The ECO or site agent must compile a Preliminary Report and fill in the attached Fossil Discoveries: Preliminary Record Form within 24 hours without removing the fossil from its original position. The Preliminary Report records basic information about the find including:
 - The date
 - A description of the discovery
 - A description of the fossil and its context (e.g. position and depth of find)
 - Where and how the find has been stored
 - Photographs to accompany the preliminary report (the more the better):
 - A scale must be used
 - Photos of location from several angles
 - Photos of vertical section should be provided
 - Digital images of hole showing vertical section (side);
 - Digital images of fossil or fossils.

Upon receipt of this Preliminary Report, SAHRA will inform the ECO or site agent whether or not a rescue excavation or rescue collection by a palaeontologist is necessary.



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- Exposed finds must be stabilised where they are unstable and the site capped, e.g. with a plastic sheet or sand bags. This protection should allow for the later excavation of the finds with due scientific care and diligence. SAHRA can advise on the most appropriate method for stabilisation.
- If the find cannot be stabilised, the fossil may be collect with extreme care by the ECO or the site agent and put aside and protected until SAHRA advises on further action. Finds collected in this way must be safely and securely stored in tissue paper and an appropriate box. Care must be taken to remove the all fossil material and any breakage of fossil material must be avoided at all costs.

No work may continue in the vicinity of the find until SAHRA has indicated, in writing, that it is appropriate to proceed.

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FOSSIL DISCOVERIES: PRELIMINARY RECORDING FORM		
Name of project:		
Name of fossil location:		
Date of discovery:		
Description of situation in which the fossil was found:		
Description of context in which the fossil was found:		
Description and condition of fossil identified:		
GPS coordinates:	<i>Lat:</i>	<i>Long:</i>
If no co-ordinates available then please describe the location:		
Time of discovery:		
Depth of find in hole		
Photographs (tick as appropriate and indicate number of the photograph)	<i>Digital image of vertical section (side)</i>	
	<i>Fossil from different angles</i>	
	<i>Wider context of the find</i>	
Temporary storage (where it is located and how it is conserved)		
Person identifying the fossil Name:		
Contact:		
Recorder Name:		
Contact:		
Photographer Name:		
Contact:		

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