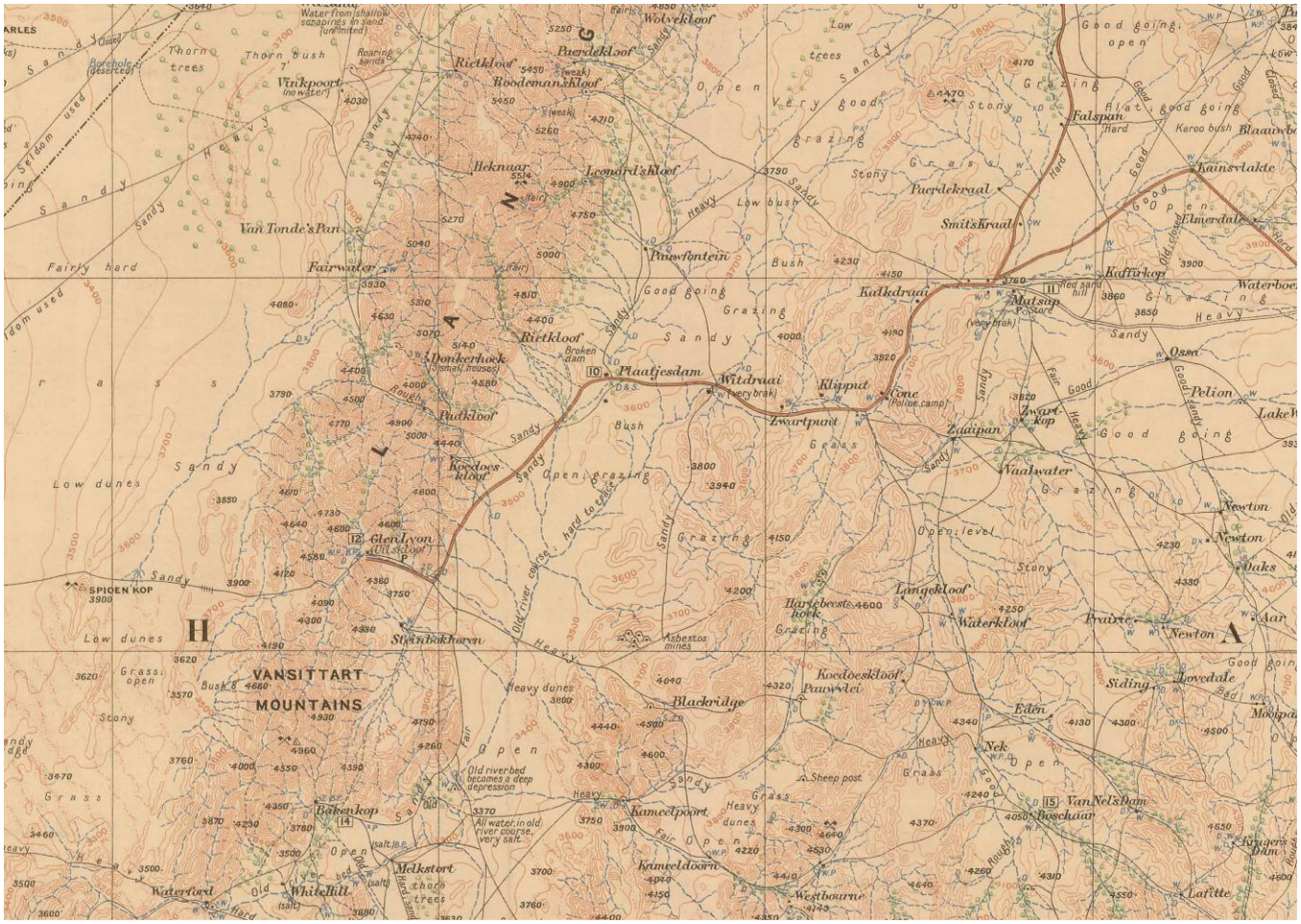
**SAHRA CASE NO. 8459**

# INTEGRATED HERITAGE IMPACT ASSESSMENT IN TERMS OF SECTION 38(8) OF THE NATIONAL HERITAGE RESOURCES ACT, 1999 (ACT 25 OF 1999)

## PROPOSED DEVELOPMENT OF AEP LEGOKO SOLAR FACILITY, ASSOCIATED TRANSMISSION LINES AND ACCESS ROADS ON PORTIONS OF THE FARMS LEGOKO 460/2 AND SEKGAME 461/REMAINDER (KATHU), KURUMAN DISTRICT, GAMAGARA LOCAL MUNICIPALITY, JOHN TAOLO GAETSEWE DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE




**On behalf of: AEP Legoko Solar (Pty) Ltd**

**September 2015**

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**REFERENCES and ACKNOWLEDGEMENTS:**

1. Cape Town Archives
2. Surveyor General Office
3. Phase 1a Archaeological Impact Assessment, Proposed development of the AEP Legoko Solar Facility on Portion 2 of the Farm 460 Legoko, Kathu, Northern Cape Province, Dr. Peter Nilssen, August 2015
4. Palaeontological Desktop study, Proposed development of the AEP Legoko Solar Facility on Portion 2 of the Farm 460 Legoko, Kathu, Northern Cape Province, Dr. John Almond, April 2015
5. Visual Statement, Proposed development of the AEP Legoko Solar Facility on Portion 2 of the Farm 460 Legoko, Kathu, Northern Cape Province, VRM Africa, May 2015

 

6. Scoping Report for Proposed development of the AEP Legoko Solar Facility on Portion 2 of the Farm 460 Legoko, Kathu, Northern Cape Province, Cape Environmental Practitioners (Pty) Ltd, 31st July 2015

**ABBREVIATIONS:**

1. NGSI - National Geo-Spatial Information, Department of Rural Development and Land Reform, Mowbray
2. DEA – Department of Environmental Affairs
3. HIA – Heritage Impact Assessment
4. NHRA - National Heritage Resources Act, 1999 (Act 25 of 1999)
5. SAHRA - South African Heritage Resources Agency

***COVER:*** *Extract from 1906-1914 mapping for the study area and its environs (Source: 08_Langeberg_Reconnaissance_1906-1914, NGIS).*

## 1. INTRODUCTION

*PERCEPTION Planning* was appointed by *AEP Legoko Solar (Pty) Ltd* to undertake an Integrated Heritage Impact Assessment (HIA) in terms of Section 38(8) of the National Heritage Resources Act, 1999 (Act 25 of 1999) as part of a proposal to establish a commercial solar energy facility, together with associated transmission lines and access roads - currently referred to as AEP Legoko Solar - on portions of the farms Legoko 460/2 and Sekgame 461/Remainder.

The farm Legoko 460/2 is about 865 ha in extent, while the affected portion of the property is approximately 220 ha in extent. The proposed alternative transmission line alignments and access roads would traverse the farm Sekgame 461/Remainder as described in detail in Section 4 of this report. Both the above cadastral land units are situated about 8km SE of Kathu in the Northern Cape Province.

***Note the proposed development site to which this proposal relates is directly north of the proposed AEP Mogobe Solar Energy Facility, which is the subject of a separate application.***

## 2. INDEPENDENCE OF ASSESSOR

With relation to the author's appointment as an independent specialist (Heritage Impact Assessment Manager) responsible for the compilation of an Integrated Heritage Impact Assessment in terms of Section 38(8) of the National Heritage Resources Act, 1999 (Act 25 of 1999) for this project, it is hereby declared that the undersigned:

- Or this consultancy is not a subsidiary, legally or financially, of the proponents;
- act as an independent specialist in this application;
- Remuneration for professional services by the proponent in relation to this proposal is not linked to approval by any decision-making authority responsible for permitting this proposal;
- Nor this consultancy, nor the author has any interests in secondary or downstream activities as a result of the authorisation of this project;
- Regard the information contained in this report as it relates to my specialist input/study to be true and correct;
- Have disclosed, to the applicant, EAP and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010;
- Am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543.

It is further hereby certified that the author has 18 years professional experience as urban planner (3 years of which were abroad) and 9 years professional experience as heritage practitioner. The author is professionally registered/ affiliated as follows:

- Professional Heritage Practitioner (Association for Professional Heritage Practitioners)
- Professional Planner (South African Council for Planners, South African Planning Institute)
- ExCo: International Council for Monuments and Sites (ICOMOS) South Africa

## 3. METHODOLOGY

Compilation of the Integrated HIA report for the proposed development activity (including relevant development alternatives) includes professional inputs from the following specialist reports sanctioned as part of the HIA process:

- Basic archival background research, Cultural landscape assessment, Built environment analysis and assimilating inputs from various specialist report (*Perception Planning, S. de Kock*);
- Visual Impact Assessment (*VRM Africa, S Stead*)
- Archaeological Impact Assessment (*Dr. Peter Nilssen*);
- Desktop Palaeontological Impact Assessment (*Natura Viva, Dr. J. Almond*).

 

As part of the compilation of this Integrated HIA report the site and its environs was studied, visited, photographed and assessed, which more specifically involved the following (for broad overview of HIA process refer to explanatory flow diagram below):

- Field work carried out by *Dr. Peter Nilssen* from 11th to 15th May 2015 ;
- Liaising with project manager, environmental consultant and various specialist consultants;
- Assimilating findings and recommendations emanating from specialist inputs into HIA;
- Identification of heritage-related issues and concerns;
- Analysis of development site and its environs;
- Identification of contextual spatial informants;
- Establishing cultural significance, based on criteria set out in NHRA;
- Identification of heritage-related design informants based on the above;
- Focussed public participation process to be coordinated as part of Environmental Impact Assessment facilitated by *Cape Environmental Impact Assessment Practitioners (Pty) Ltd;*
- Assess conformity of final proposed site layout to design informants identified;
- Submission to competent authorities (*SAHRA* and *Ngwao Boswa Kapa Bokoni)* via SAHRIS.

## 4. DESCRIPTION OF STUDY AREA

The proposed development site (± 220ha in extent) forms part of the farm Legoko 460/2 (±865ha in extent) and is situated approximately 8km southeast of the town of Kathu, Northern Cape - on the eastern side of the N14 National road as illustrated through Figure 1 below. The site is ±6km east of the Kumba Iron Mine and ±70km north of Postmasburg. Photographs of the site and the environs are attached as part of the Archaeological Impact Assessment (Annexure 1). The following field observations were recorded by Dr. Peter Nilssen during field work undertaken 4 - 11 May 2015[1]:

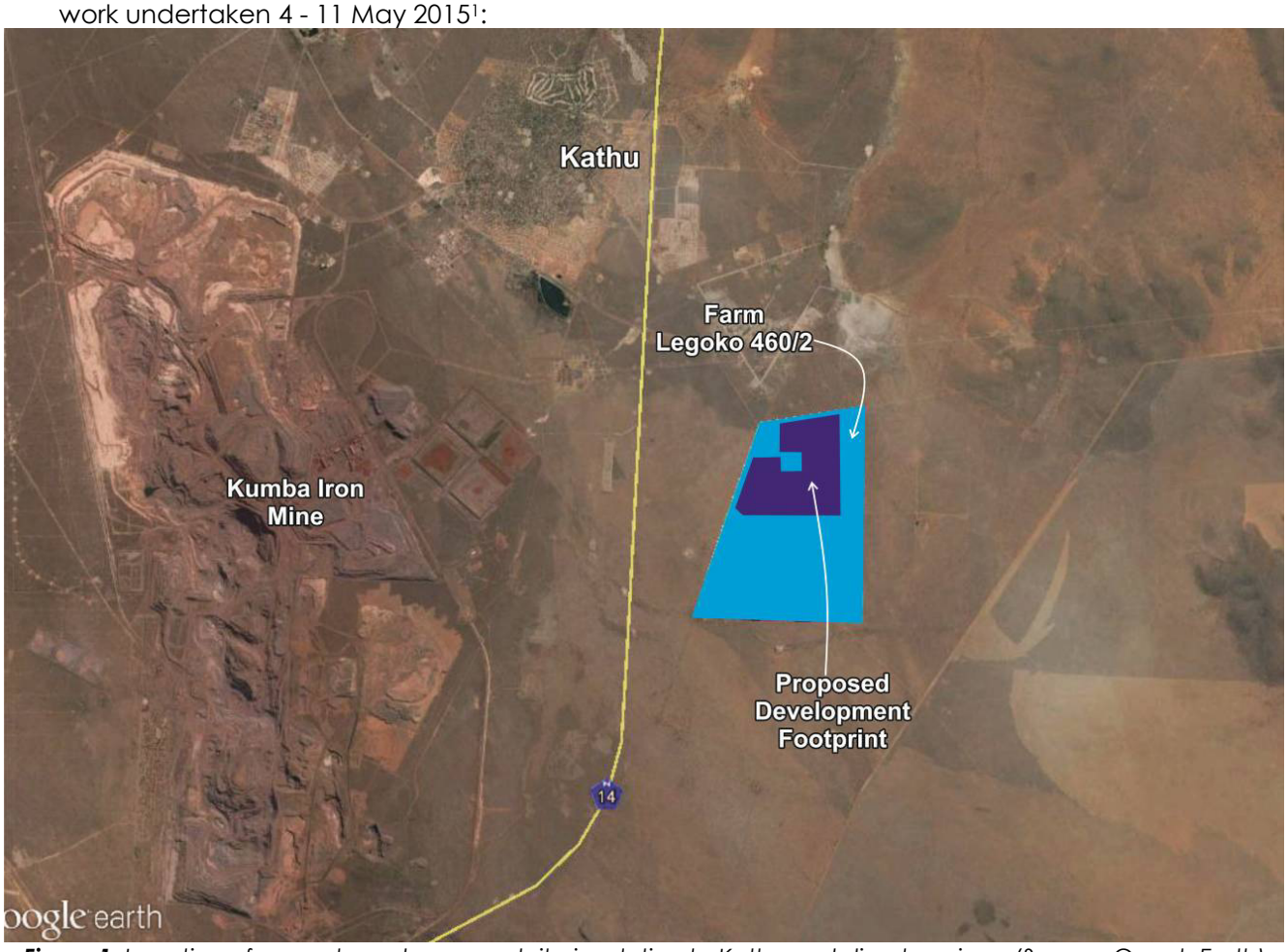


***Figure 1:*** *Location of property and proposed site in relation to Kathu and direct environs (Source: GoogleEarth)*

[1] *Used with permission from author*

*"The terrain is essentially flat with very minor undulation in places. A few small, shallow pans or depressions were noted, however, and these are likely to collect rain water and may have been attractive to game animals and hunters in the past. Surface sediments consist mostly of orange-red Hutton Sands that overlie a very flat plane of calcrete. The latter is intermittently exposed at the surface and is variably solid and nodular. Vegetation is generally open, but not sparse, and consists of grasses, bush and some thorny shrubs as well as a variety of thorny Acacia trees. The surrounding land use is agricultural and undeveloped and is mainly used for the grazing of domestic stock (cattle, sheep and goats) and game animals. Recent human related disturbances to the environment include a road (N14), vehicle tracks, fencing, farmsteads and associated structures and infrastructure, minor earthmoving activities and overhead power lines. Natural disturbances include burrowing by large and small animals".*

While several modern structures associated with agricultural use were noted during field work, none of said structures are older than 60 years, nor are they of any cultural significance. No gravesites and/or burial grounds were noted within the study area or its direct environs.

## 5. DEVELOPMENT PROPOSAL

The proposal is to develop a 75MW (Installed capacity ±86.25MW) Solar Photovoltaic (PV) Facility as well as associated infrastructure that will include an on-site substation, auxiliary buildings, access and internal roads, overhead electrical transmission line and perimeter fencing.

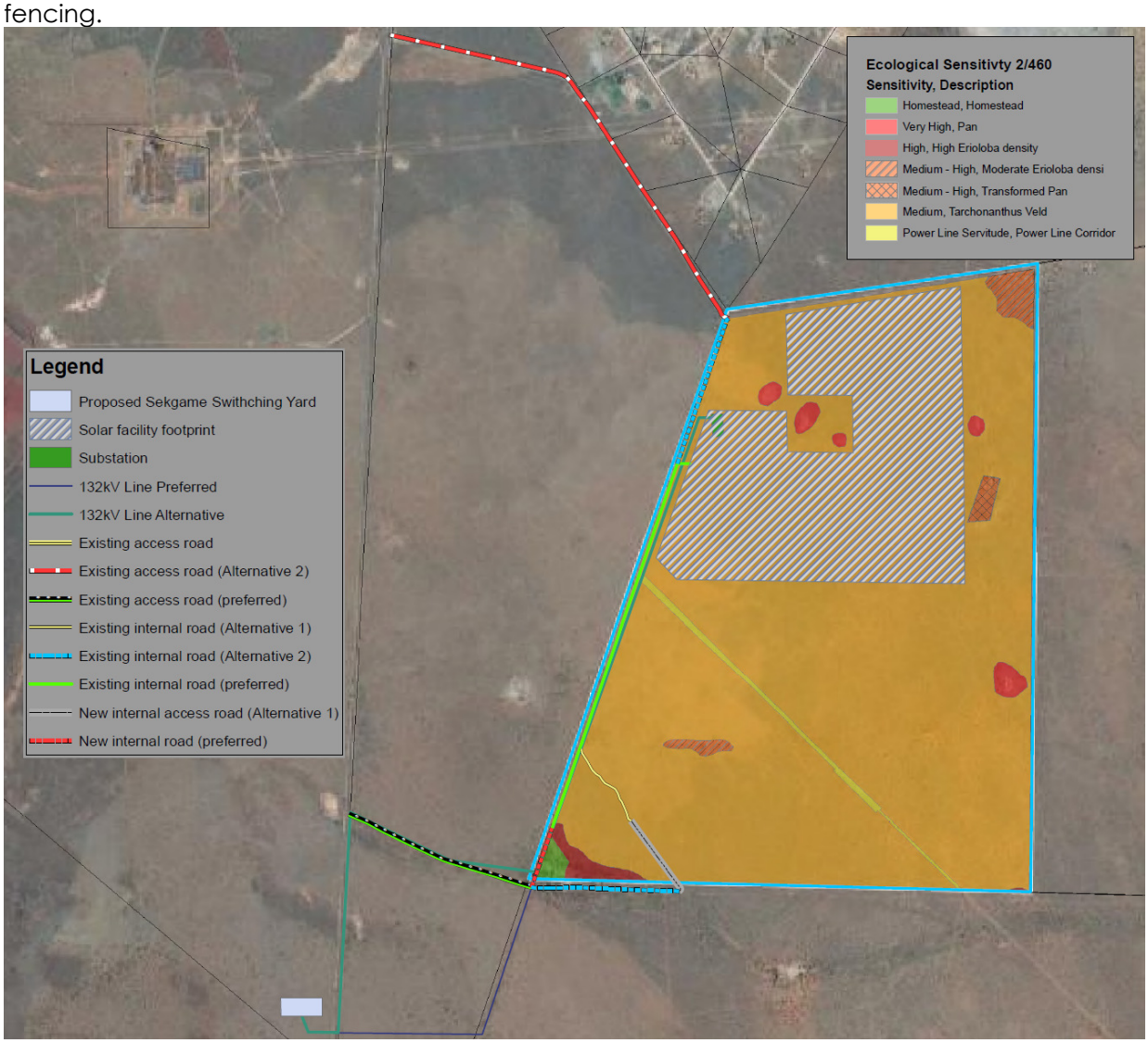


***Figure 2:*** *Proposed development components (Source: Scoping Report, CapeEAPrac, 31st July 2015)*

 

### *5.1 Technology proposed*

Type of technology proposed are Photovoltaic (PV) and/or concentrated PV units with fixed, single or double axis tracking technology. The height of the proposed PV structures will not exceed 6m and the overall development footprint will not exceed 220ha. Structure orientation will either be (a) Fixed-tilt, north-facing or (b) Mounted on horizontal axis tracking from east to west. The total laydown area required would measure 2ha to maximum 5ha in extent.

### *5.2 Grid connection details*

The project intends connecting to the National Grid via the proposed Sekgame Switching Station. The Sekgame Switching Station is situated approximately 5km south of the existing Ferrum Substation. The option to loop into the new 132kV network currently proposed by Eskom (Kuruman 66 kV upgrade) will also be investigated. The Ferrum Substation is physically constrained in terms of access, however currently has in excess of 500 MW capacity to evacuate generated power. It is understood from Eskom that the Sekgame Switching Station will interconnect with Ferrum MTS and allow Independent Power Producers to connect. Overhead transmission lines required would include one 132kV line from the on-site facility substation to the proposed Sekgame Switching Station. Two grid connection alternatives have been incorporated into the Environmental Process (refer Figure 2). The height of overhead lines would not exceed 32m and an appropriate servitude (30m-40m width) would be required.

### *5.3 Additional infrastructure*

Additional Infrastructure would include auxiliary buildings of approximately 2 ha. Functions to be incorporated into these buildings would include (but will not limited to) a gate house, ablutions, workshops, storage and warehousing area, site offices, substation and control centre. Perimeter fencing would not exceed 5m in height. The main access road will not exceed 6m in width and the internal road will not exceed 5m in width.

### *5.4 Alternatives*

*5.4.1 Layout Alternatives*

Preliminary Layout Alternative 1 - During project inception an initial project footprint was considered that was directly adjacent to the main access road and bordering on the Western and Northern Boundary. Due to unavoidable ecological/ environmental impacts, this alternative was eliminated from further investigation and assessment in this environmental process.

Layout Alternative 2 (Preferred Alternative) - In order to avoid highly sensitive areas identified by the ecological specialist, a proposed site layout (as reflected in Figure 2) has been selected that excludes all areas of Medium – high, high and very high ecological sensitivity.

*5.4.2 Access Road and Entrance Alternatives*

The AEP Mogobe Solar PV Energy Facility will gain access directly from the N14 at the existing intersection. Two main access roads are being considered off the N14 to the proposed AEP Mogobe Solar PV Energy Facility, as depicted in Figure 2. Both the abovementioned access road options are considered to be viable from environmental and technical viewpoints. The required access roads would be gravel and approximately 5m in width.

*5.4.3 Grid Connection Alternatives*

It is proposed to connect the SEF directly to the planned Sekgame Switching Station (SS) located ± 5km to the south of the existing Ferrum MTS. The SEF substation will be approximately 120m x 70m in size and feature a step-up transformer/s to transmit electricity via a 132 kV OH line directly to the Sekgame SS. The OH power line is envisaged to be ± 4.5 - 5km in length, a maximum height of 32m and occupy a servitude width of between 31m – 40m.

## 6. PLANNING CONTEXT

A Professional Planner will be appointed for this project and will be responsible for compiling and lodging the necessary applications, which we include:

- A land use change application for the rezoning of approximately 220ha, from Agricultural

 

Zone I to Special Zone, will be lodged at the Gamagara Local Municipality, in accordance with the Spatial Planning and Land Use Management Act, 2013 (Act 16 of 2013);
- If there are restrictive Title Deed conditions burdening the proposed development, an application for the removal thereof will be included in the above application;
- Parallel to the rezoning application, a long term lease application will be lodged at the National Department of Agriculture, in accordance with the Subdivision of Agricultural Land Act (Act 70 of 1970);
- Relevant planning documents, on all spheres of Government, will be evaluated before any land use change application is launched.

## 7. BRIEF HISTORICAL BACKGROUND

Basic historic background research focussed on primary sources obtained through the Cape Town Archives, Deeds Office, Surveyor General's Office as well as existing research as referenced.

### *7.1 Basic Pre-Colonial perspectives (LSA[2])*

There is archaeological evidence that specularite deposits in this part of the Northern Cape were mined during the Later Stone Age. Beaumont and Boshier (1974) excavated a prehistoric pigment (specularite) mine four (4) kilometers to the west of Bleskop at Jonas Vlakte on Doornfontein 446. The Doornfontein site represents a number of chambers which have been dug into a hillside. Archaeological excavations resulted in the discovery of large numbers of stone artefacts comprising mainly stone choppers and hammerstones which had been used to mine the specularite. In addition, the archaeologists discovered pottery, decorated ostrich eggshell pieces, beads and bone implements as well as faunal (bone) remains which provide information on the diet of the pre-colonial miners (Beaumont & Boshier 1974). Radiocarbon dates place the mining activities at about 1200 BP (00 AD). Fragmentary human remains from the Blinkklipkop mine which is 5km to the north-east of Postmasburg suggest that the early miners were of Khoisan physical type rather than representing Iron Age settlement.

During his survey Morris (2005a) found a Later Stone Age shelter site on Wolhaarkop. Small specularite workings were pointed out on Wolhaarkop. Beaumont and Boshier (1974) also refer to some engraving sites nearby at Paling which is located on Driehoekspan 435 as well as on Beeshoek to the west of Postmasburg. These roughly pecked engravings occur on shale outcrops.

According to Humphreys and Thackeray, Iron Age farmers only settled in the Northern Cape after A.D. 1600. The main area of Iron Age settlement and the only area, in which there is direct archaeological evidence for such settlement in the form of stone walling, are to the north-east of Kuruman. By the time the first European travellers arrived in this area they met only Iron Age Tswana-speaking people such as the Tlhaping. The Tswana settlement of Dithakong was located to the north-east of Kuruman in an area with many large springs. During the Webley et al (2010) survey, a site on the farm Gaston (to the west of MaCarthy) was discovered with pottery and stone tools. The remains could relate to the Koranna, a Khoekhoen group who were active along the Orange River in the 18th century, or conversely the Iron Age Tswana – although they are believed to have settled more to the north-east.

### *7.2 Colonial perspectives*

Morris (1990) points out that numerous early travellers, such as Lichtenstein, Campbell, Burchell, Backhouse and others visited and described the site of Blinkklipkop (ancient specularite mine which were mined by indigenous peoples in pre-colonial times) to the north of Postmasburg. However, European missionaries and farmers only began to settle in the Northern Cape during the 19th century. Their numbers were relatively small until the use of borehole water for agricultural purposes became a reality.

[2] *ACO Associates, November 2014*

 

Both the farms Legoko and Sekgame were first surveyed in 1893[3] and transferred to the Government of the Colony of the Cape of Good Hope. The original extent of these farms was stated as being: Legoko - 3,850 morgen (±3,298 ha) and Sekgame - 4,860 morgen (±4,163 ha).

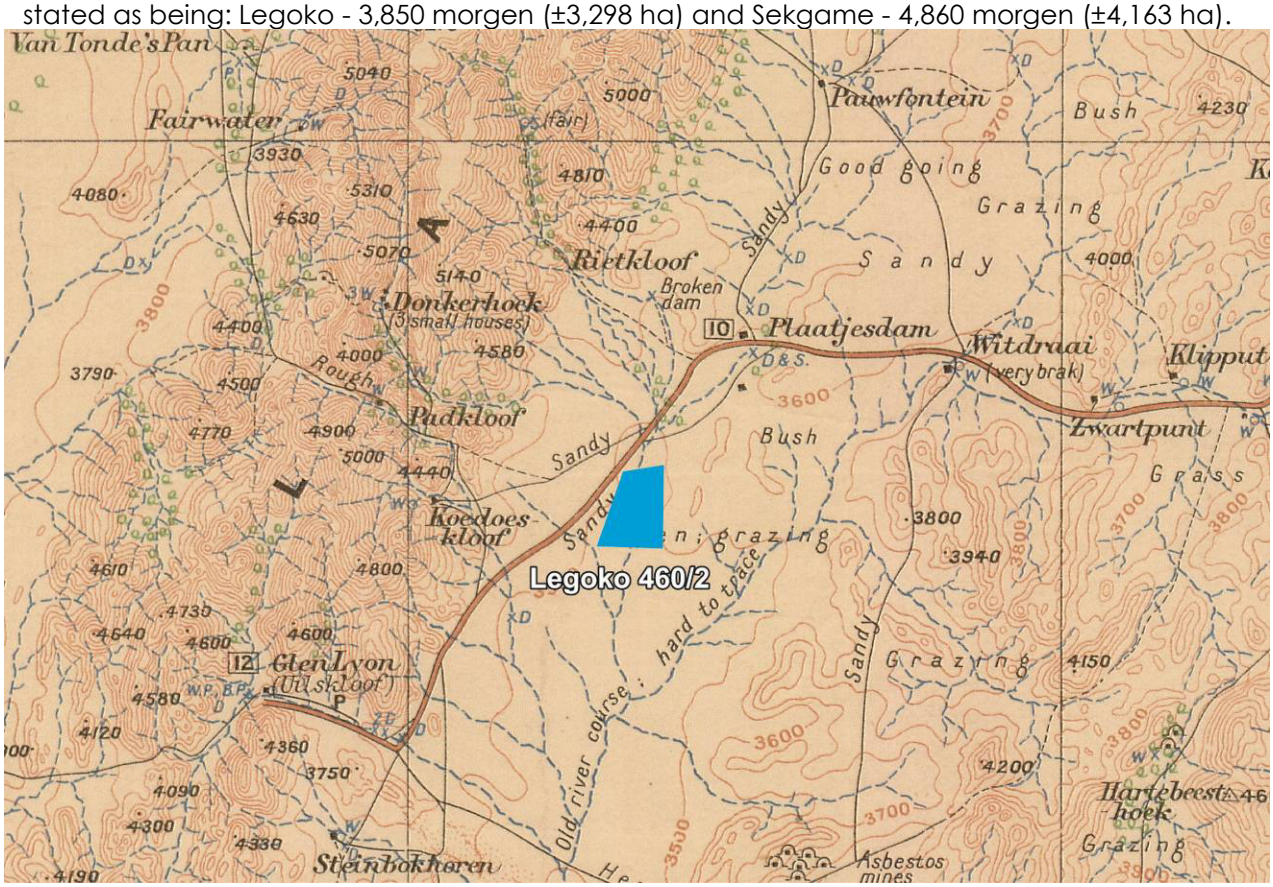


***Figure 3:*** *Approximate locate of site transposed onto extract from 1906-1914 mapping for the study area and its environs (Source: 08_Langeberg_Reconnaissance_1906-1914, NGIS)*

While early (1904-1914 mapping for the area highlights the location of several early farmsteads (e.g. Steinbokhoren, Uilskloof, Koedoeskloof, Padkloof, Donkerhoek, Rietkloof, Plaatjesdam and Witdraai), none of these were situated in or within the environs of the proposed development site (Figure 3). Early mapping provides insight into Pre-Modern (traditional) land use patterns within the study area, highlighting for example the alignment of historic roads and, interestingly, asbestos mines, some distance southeast of the proposed development site. Annotations to the map describe water availability at the farmsteads of Glen Lyon and Plaatjesdam to be "unlimited" and of "fair quality". Further annotations do however allude to water scarcity during dry periods. It furthermore records several dams, wind pumps and boreholes at both location and mentions a "considerable amount of cattle" at Plaatjesdam at the time of survey. The mapping highlights topographical features, describes vegetation as "bush" and indicates the alignment and condition of roads, river courses, etc.

Basic historic background research did not identify or highlight any significant historic or other heritage-related themes, which may be negatively impacted through the proposed development.

## 8. HERITAGE RESOURCES AND ISSUES

### *8.1 Cultural landscape context*

The term "*cultural landscape*" refers to the imprint created on a natural landscape through human habitation and cultivation over an extended period of time. While the Cape has been inhabited for many hundreds of thousands of years (pre-colonial history) prior to Western settlement (colonial history), the nomadic lifestyles of early inhabitants are not always as

[3] *SG Diagrams 411 and 412, respectively*

 

evident within the landscape as the significant imprints made by humans during the last two – three hundred years and more. Unlike ancient landscapes in parts of the world where environmental conditions allowed more intensive cultivation over periods much longer than locally have allowed natural and cultural components of the landscape to become interwoven, landscape components Northern Cape have not yet developed in such a manner. The fact that natural and cultural landscape components in the region is therefore more distinguished means that the cultural landscape is likely to be very vulnerable to the cumulative impact of inappropriate large-scale development.

Ultimately, definition of a cultural landscape can be informed by the following elements, weighed through professional opinion, public values and statutory (legal) framework:

- Natural Landscape
- Public Memory
- Social History
- Historical Architecture
- Palaeontology
- Archaeology

The site forms part of an arid rural landscape defined by a myriad of mining activities - particularly between Olifantshoek and Postmasburg. While relatively flat, the landscape is interspersed with low koppies, most of which have been scarred through mining activities. The Lohatla military base is just east of the proposed development site, while the Blinkklipkop specularite mine, (ancient specularite mine which were mined by indigenous peoples in pre-colonial time), is just south of Postmasburg.

From a broad, regional perspective the cultural landscape is considered highly complex and potentially significant in terms of pre-colonial as well as pre-modern (traditional) landscape patterns. Given the cumulative impact of mining activities and more recent development patterns, it is therefore recommended that the relevant authority commission a broad-scale mapping, as meant within the context of this paragraph, as required in terms of Section 30(5) of the National Heritage Resources Act, 1999 (Act 25 of 1999).

Without the benefit of the above research and mapping and given the pattern of existing development on and within the direct proximity of the site, it is therefore our contention that from a cultural landscape perspective, the proposed development site is of no local cultural significance.

## 8.2 Archaeology

The Archaeological Impact Assessment (AIA), compiled by *Dr Peter Nilssen*, is attached as Annexure 1, the findings of which are summarised below with permission from authors. Kindly refer to specialist's full report and findings.

*"Previous archaeological studies in the area showed that the surroundings of Kathu are rich in archaeological resources, particularly those of the Stone Age period. It was surprising, therefore, that no significant archaeological sites were identified during this investigation. Although several Later Stone Age stone artefacts were identified, they occur in the main as isolated finds or in very low density scatters that are in unstratified contexts and that lack organic remains and other cultural materials. No other tangible heritage resources of value were identified. Consequently, the archaeological record in the studied areas is considered to be of low significance, and therefore, it is recommended that no further archaeological studies are required prior to the development.*

*From an archaeological perspective there are no fatal flaws, and therefore, no objections to the authorization of the proposed development of the AEP Legoko Solar Facility, associated grid connection routes and access road.*

*Recommended Mitigation Measures;*

- *Archaeological resources identified during this study do not require further recording/studies, and because they are considered to be of low heritage value and have been adequately recorded through this assessment, it is suggested that they can be disturbed or damaged without a permit from SAHRA.*

 

*Required Mitigation Measures;*

- *In the event that excavations and earthmoving activities expose significant archaeological or heritage resources, such activities must stop and SAHRA must be notified immediately.*
- *If significant archaeological or heritage resources are exposed during construction activities, then they must be dealt with in accordance with the National Heritage Resources Act (No. 25 of 1999) and at the expense of the developer.*
- *In the event of exposing human remains during construction, the matter will fall into the domain of the South African Heritage Resources Agency (Mrs Colette Scheermeyer) and will require a professional archaeologist to undertake mitigation if needed. Such work will also be at the expense of the developer."*

**8.3 Palaeontology**

The findings and recommendations from a desktop palaeontological study (summarised below), compiled by *Natura Viva* (Dr. John Almond) conclude that no further related studies or mitigation would be required. Kindly refer to specialist's full report and recommendations (Annexure 2).

*"According to geological maps, satellite images and recent palaeontological assessments in the Kathu area (e.g. Almond 2013a, 2014), the flat-lying Magobe Solar PV Solar Energy Facility study area is underlain by a considerable thickness of Plio-Pleistocene to Recent sediments of the Kalahari Group. The underlying Precambrian bedrocks – viz. dolomites, cherts and possible iron formations of the Transvaal Supergroup – are too deeply buried to be directly affected by the proposed development. The Kalahari Group succession near Kathu mainly comprises well-developed calcretes or surface limestones (Mokolanen Formation) that may total 30 m or more in thickness in the region, together with a thin (probably < 1 m) surface veneer of aeolian sands (Gordonia Formation), alluvial deposits and sparse near-surface gravels. In general the Kalahari Group calcretes and sands are of low palaeontological sensitivity, mainly featuring widely-occurring plant and animal trace fossils (e.g. invertebrate burrows, plant root casts). Recent palaeontological field assessments in the Sishen – Hotazel region by the author have not recorded significant fossil material within these near-surface Kalahari sediments.*

*A very important fossil assemblage of Pleistocene to Holocene mammal remains - predominantly teeth with scarce bone material associated with Earlier, Middle and Later Stone Age artefacts, well-preserved peats and pollens - is recorded from unconsolidated doline (solution hollow) sediments at the well-known Kathu Pan site, located some 5.5 km northwest of Kathu. There are at present no obvious indications of comparable fossiliferous, tool-bearing solution hollow infills exposed at present within the study area but such sediments might conceivably be present but hidden beneath cover sands.*

*The overall impact significance of the proposed solar energy development, including the grid connection to the new Sekgame Substation, is rated as LOW as far as palaeontological heritage is concerned. Likewise, cumulative impacts are likely to be of LOW significance, given the scarcity of important fossils (especially vertebrate remains) within the sedimentary rock units concerned as well as the huge outcrop area of the Kalahari Group as a whole. The degree of confidence for this assessment is rated as medium because of the uncertainty surrounding the presence or absence of potentially fossiliferous buried doline infill deposits within the study area. Due to the inferred low impact significance of the proposed Magobe Solar PV Solar Energy Facility development, as far as fossil heritage resources are concerned, no further specialist palaeontological studies or monitoring are recommended at this stage.*

*The following mitigation measures to safeguard fossils exposed as chance finds on site during the construction phase are recommended:*

- *The ECO and / or the Site Engineer 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 substantial fossil remains (e.g. vertebrate bones, teeth, horn cores) are found during construction SAHRA should be notified immediately (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Phone: +27 (0)21 462 4502.*

 

*Fax: +27 (0)21 462 4509. Web: www.sahra.org.za) so that appropriate mitigation (i.e. recording, sampling or collection) by a palaeontological specialist can be considered and implemented, at the developer's expense.*

- *A chance-find procedure should be implemented so that, in the event of fossils being uncovered, the ECO / Site Engineer will take the appropriate action, which includes:*
  - *Stopping work in the immediate vicinity and fencing off the area with tape to prevent further access;*
  - *Reporting the discovery to the provincial heritage agency and/or SAHRA;*
  - *Appointing a palaeontological specialist to inspect, record and (if warranted) sample or collect the fossil remains;*
  - *Implementing further mitigation measures proposed by the palaeontologist; and*
  - *Allowing work to resume only once clearance is given in writing by the relevant authorities.*

*If the mitigation measures outlined above are adhered to, the residual impact significance of any construction phase impacts on local palaeontological resources is considered to be low. The mitigation measures proposed should be incorporated into the Environmental Management Programme (EMP) for the Magobe Solar PV Solar Energy Facility project. The palaeontologist concerned with mitigation work will need a valid collection permit from SAHRA. All work would have to conform to international best practice for palaeontological fieldwork and the study (e.g. data recording fossil collection and curation, final report) should adhere to the minimum standards for Phase 2 palaeontological studies recently published by SAHRA (2013)".*

### 8.4 Visual - Spatial issues

The findings and recommendations from a Visual Statement (summarised below), compiled by VRM Africa (Stephen Stead) conclude that no further related studies or mitigation would be required. Kindly refer to specialist's full report and recommendations (Annexure 3).

*"The visibility of the proposed PV and power lines projects is rated **low.** Visibility of the proposed 4m high PV structures would effectively dissipate outside of the 2km high exposure zone. Topographic screening to the north and east, and from Sishen dumps to the west, localise the viewshed. Exposure is rated **medium to high** with the main receptors, the N14 National Highway, located approximately 1.7km to the west. Two of the Reitzhof smallholdings residents are located in a high exposure zone and are 870m to the north of the proposed site. The proposed power line component is rate **high** due to the adjacent alignment, and crossing over the N14 National Road.*

*Scenic quality for all proposed development areas was rated **low**, due to the strong negative influence of the Sishen Mine as well as the two Eskom transmission line corridors located north of the proposed site. Receptor sensitivity to landscape change for all the proposed development areas was rated **low.** Current direct usage of the property views are limited by the surrounding vegetation which does includes some small trees, between the N14 users and the site. Given the strong mining landscape context of the site and the domination of mining within the local economy, it is likely that public interest in maintaining visual quality is low.*

*Other than the two pans located adjacent to the proposed development area, no significant visual resources were identified on the site. Regarding the proposed power line crossing of the N14, possible repetitive constraints exist in terms of having two power lines crossing the road within 500m of each other if the southern Eskom routing be authorised".*

### 8.5 Eco-Tourism[4]

One of the goals of ecotourism is to offer tourists insight into the impact of human beings on the environment, and to foster a greater appreciation of our natural habitats and from an economic perspective, heritage resources may prove to be valuable resources when used in

[4] *Section included in accordance with requirements set by National Department of Environmental Affairs*

 

sustainable manner through eco-tourism. This may for example include investment in adaptive reuse of historic buildings so as to conserve and enhance the unique character and historic themes pertinent to this area. Heritage tourism can therefore serve as a driver for economic development, including infrastructure development and poverty alleviation through job creation.

Given the location as well as pattern of existing land use within the proximity of the site and furthermore, the relative low density of heritage resources considered of cultural significance noted as part of this assessment, we do not consider that the proposed development would offer significant heritage-related eco-tourism opportunities associated with the development site.

## 9. HERITAGE INFORMANTS AND INDICATORS

According to the requirements of Section 38(3) of the NHRA, land use planning and EIA processes must be informed by and incorporate heritage informants and indicators (as done through the mapping and grading of relevant heritage resources in Section 8 of this report). It is the purpose of this Section to define heritage informants and indicators pertaining to the way in which heritage resources must be incorporated into the overall layout and design of the proposed development as read in conjunction with preceding Sections.

### *9.1 Cultural landscape issues*

From a regional and natural landscape perspective, the proposed development site forms part of a highly-transformed landscape altered through mining activities. While potentially significant, there is a lack of broad-scaled recording and mapping of regional cultural landscape patterns and therefore, based on the information available as well as the pattern of existing development within the proximity of the site, it is considered that the proposal would not a cultural landscape of significance.

### *9.2 Archaeology*

All recommendations contained in AIA, as summarised in Section 8.2 of this HIA report shall be adhered to.

### *9.3 Palaeontology*

It is recommended that no further palaeontological studies or mitigation be undertaken in respect of the proposed development site. All recommendations contained in PIA, as summarised in Section 8.3 of this HIA report shall be adhered to.

### *9.4 Visual - Spatial issues*

No further visual assessment is required.

## 10. PUBLIC PARTICIPATION

Due to the fact that there are no known local heritage conservation bodies in the Kathu/Sishen area (registered as such with the relevant provincial heritage resources authority in terms of Section 25 of the National Heritage Resources Act, 1999 (Act 25 of 1999)), the Public Participation Process (PPP) for this HIA will be coordinated with that of the EIA Process facilitated by *Cape Environmental Assessment Practitioners (Pty) Ltd* (Cape EAPrac) in terms of the National Environmental Management Act, 1998 (Act 107 of 1998), so as to solicit possible heritage-related comments with relation to the proposed development.

## 11. LIMITATIONS AND ASSUMPTIONS

- This report is limited to the assessment of the potential impact of the proposed facility on heritage resources found on/ within the proximity of the development site as defined in this report;

 

- There is a limitation in terms of understanding the cumulative impacts of the project when taken in conjunction with other similar future development projects in the surrounding area.

## 12. RECOMMENDATION

Having regard to the above assessment, it is recommended that:
12.1 That the following recommendations be applicable to the proposed development and that the Department of Environmental Affairs be informed accordingly:

| | ***Recommended Conditions of Approval*** |
|---|---|
| *AIA-1* | *In the event that excavations and earthmoving activities expose significant archaeological or heritage resources, such activities must stop and SAHRA must be notified immediately.* |
| *AIA-2* | *If significant archaeological or heritage resources are exposed during construction activities, then they must be dealt with in accordance with the National Heritage Resources Act (No. 25 of 1999) and at the expense of the developer.* |
| *AIA-3* | *In the event of exposing human remains during construction, the matter will fall into the domain of the South African Heritage Resources Agency (Mrs Colette Scheermeyer) and will require a professional archaeologist to undertake mitigation if needed. Such work will also be at the expense of the developer.* |
| *PIA-1* | The ECO and / or the Site Engineer 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 substantial fossil remains (*e.g.* vertebrate bones, teeth, horn cores) are found during construction SAHRA should be notified immediately (Contact details: SAHRA, 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000, South Africa. Phone: +27 (0)21 462 4502. Fax: +27 (0)21 462 4509. Web: www.sahra.org.za) so that appropriate mitigation (*i.e.* recording, sampling or collection) by a palaeontological specialist can be considered and implemented, at the developer's expense. |
| *PIA-2* | *A chance-find procedure should be implemented so that, in the event of fossils being uncovered, the ECO / Site Engineer will take the appropriate action, which includes:*<br>– *Stopping work in the immediate vicinity and fencing off the area with tape to prevent further access;*<br>– *Reporting the discovery to the provincial heritage agency and/or SAHRA;*<br>– *Appointing a palaeontological specialist to inspect, record and (if warranted) sample or collect the fossil remains;*<br>– *Implementing further mitigation measures proposed by the palaeontologist; and*<br>– *Allowing work to resume only once clearance is given in writing by the relevant authorities.* |

**PERCEPTION Planning**
**21st September 2015**

**SE DE KOCK**
***B-Tech(TRP) EIA Mgmt (IRL) Pr Pln PHP***