McGregor Museum
Department of Archaeology

RE Capital 3 Solar Development on the property Dyasons Klip west of Upington, Northern Cape: Archaeological Impact Assessment – proposed 'central' development footprint

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1. INTRODUCTION

The applicant is proposing the establishment of a commercial solar energy facility, known as the RE Capital 3 Solar Development and will be operated under the licence of a company bearing the same name, RE Capital 3 (Pty) Ltd.

The proposed development site is located on the Remainder of Farm 454, Dyason's Klip, which is situated within the jurisdiction of the Khai Garib local Municipality in the Northern Cape Province.

The purpose of the facility is to assist the government in providing much needed electricity by generating energy from a renewable energy source – the sun.

The proposed facility is planned and designed for the generation of approximately 225 MW. The project will consist of and be developed in three phases, consisting each of 75 MW, which will be fed into the national electricity grid. The proposed development site covers an area of approximately 500 hectares. The identified 500 ha for the development site is located on a section of the total farm (5725.2828 ha). The area is located 5-10 km from the planned new Eskom MTS Substation. The EIA for the new MTS is done independently by Eskom. The exact location of the MTS is still to be publically announced.

A scoping report on heritage was compiled in July 2013 (Morris 2013).

1.1 Focus and Content of this Heritage Impact Report

This heritage impact assessment report is focused on the proposed 'central' development footprint option of the solar energy facility with infrastructure including a series of solar PV arrays and inverters, internal electrical reticulation and an internal road network. An on-site substation with transformer would need to be constructed. Auxiliary buildings, including ablution, workshops and storage areas, are planned to be erected. A distribution line would also be required to distribute the generated electricity from the site to the Eskom substation and grid.

Relative to the anticipated impact of such a development, this report presents a baseline description based on a heritage impact study (archaeology and colonial era) on the areas indicated.

1.2 Heritage Specialist

The author of this report is a qualified archaeologist (PhD, University of the Western Cape) accredited as a Principal Investigator by the Association of Southern African Professional Archaeologists. The author has worked as a museum archaeologist in the Northern Cape since 1985 and has since the late 1980s carried out surveys in the general area of Upington (e.g. Morris & Beaumont 1991; Morris 2000 – 2012). In addition the author has a comprehensive knowledge of the

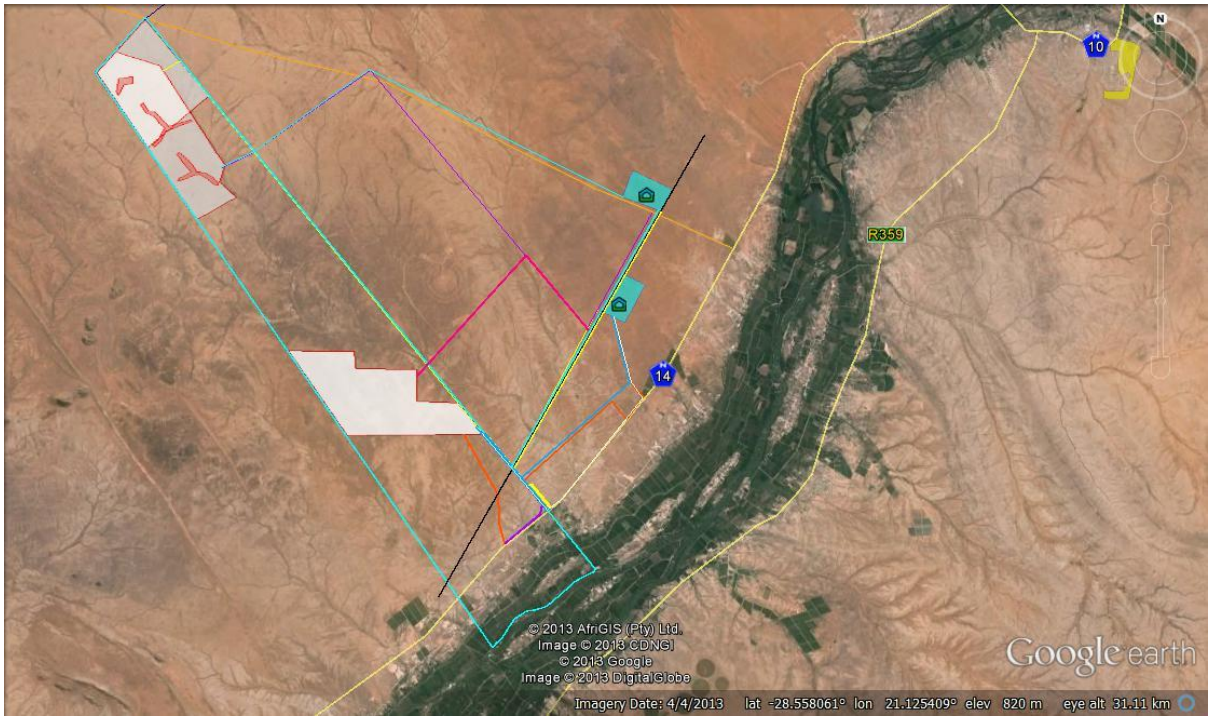
province's history and built environment, and received UCT-accredited training at a workshop on *Architectural and Urban Conservation: researching and assessing local (built) environments* (S. Townsend, UCT). He is also Chairman of the Historical Society of Kimberley and the Northern Cape.

The author is independent of the organization commissioning this specialist input, and provides this Specialist Report within the framework of the National Heritage Resources Act (No 25 of 1999).

The National Heritage Resources Act no. 25 of 1999 (NHRA) protects heritage resources which include archaeological and palaeontological objects/sites older than 100 years, graves older than 60 years, structures older than 60 years, as well as intangible values attached to places. The Act requires that anyone intending to disturb, destroy or damage such sites, objects and/or structures may not do so without a permit from the relevant heritage resources authority. This means that a Heritage Impact Assessment should be performed, resulting in a specialist report as required by the relevant heritage resources authority/ies to assess whether authorisation may be granted for the disturbance or alteration, or destruction of heritage resources.

2. DESCRIPTION OF THE AFFECTED ENVIRONMENT

The environment in question is arid, comprising relatively flat drainage plains stretching up to 15 km north west of the Orange River. The landscape is sparsely vegetated, with shallow soils, in consequence of which any surface archaeological traces tend to be highly visible.



Map indicating the northern and central Site Options and proposed powerline routes. The sparsely vegetated drainage plains, otherwise largely featureless, is apparent in this Google Earth image.

2.1 Heritage features of the region

No previous archaeological survey work by the McGregor Museum had been carried out on the farm Dyasons Klip. However previous survey work had documented archaeological observations on nearby properties including McTaggarts Camp 453. For the broader region the following comments can be made as background or baseline information from which certain heritage predictions may be made for testing in the full HIA study.

2.1.1 Colonial frontier

The eighteenth- and nineteenth-century records for this region (Penn 2005) pertain mainly to the areas south of and along the Orange River. The travellers Wikar and Gordon followed the river as far as and beyond this region in the 1770s, describing communities living along the river (see Morris & Beaumont 1991 for a summary). Dunn and others describe the situation a century later (Robinson 1978). Frontiersmen such as the colourful Stephanos can be linked with particular places in the landscape (Morris 2002). None of these accounts refer to the specific area of the proposed development.

Dyasons Klip derives its name (like the neighbouring McTaggarts Camp) from events during the Korana War of 1879-1880. A certain Captain Dyason of the Northern Border Police was killed by Korana adversaries while walking between two rocks at this place in 1880 (Van Vreeden 1961:271, citing *Gordonia News*, 11 Nov 1949). It is not recorded exactly where these stones are situated: most likely they would be near to the Orange River.

There was further military activity in the area in the early twentieth century in relation to Jacob Marengo, shot dead on 20 September 1907 near Eensaamheid Pan where, in an incident of "severe overkill", 5000 rounds were fired to exterminate the resistance leader, five other armed Nama and two accompanying women (Masson 1995). Eensaamheid is about 100 km north west of Upington.

Tungsten mining took place at the north western-most part of the adjoining farm McTaggarts Camp in the 1930s, with related infrastructure situated on the adjacent portion of Dyasons Klip (Morris 2012).

2.1.2 Later Stone Age

Late Holocene Later Stone Age (LSA) sites are frequently noted in surveys south of and south west of the region of proposed development and along the Orange River (e.g. Morris & Beaumont 1991; Beaumont *et al*. 1995). These are generally short-duration occupations by small groups of hunter-gatherers. In contrast, there are substantial herder encampments along the Orange River floodplain itself (Morris & Beaumont 1991) and in the hills north of Kakamas (Parsons 2003). In a range of hills north east of Keimoes, on Zovoorby, a rock shelter and specularite working (a sparkling mineral with known cosmetic and ritual use in the precolonial past) has been excavated (Smith 1995). LSA sites are usually focused on a particular feature in the landscape such as a hill or rocky outcrop and in relation to resources like water and associated habitats richer in animals and plant foods (Morris 2011).

2.1.3 Pleistocene: Middle and Earlier Stone Age

Beaumont *et al*. (1995:240-1) note a widespread low density stone artefact scatter of Pleistocene age across areas of Bushmanland to the south where raw materials, mainly quartzite cobbles, were derived from the Dwyka glacial till. Similar occurrences have been noted north of Upington in situations where raw materials are abundant. Systematic collections of this material at Olyvenkolk south west of Kenhardt and Maans Pannen east of Gamoep could be separated out by abrasion state into a fresh component of Middle Stone Age (MSA) with prepared cores, blades and points, and a large aggregate of moderately to heavily weathered Earlier Stone Age (ESA) (Beaumont *et al*. 1995).

The ESA included Victoria West cores on dolerite and quartzite (a fine example has been found at Hondeblaf north of Upington), long blades, and a very low incidence of handaxes and cleavers. The

Middle (and perhaps in some instances Lower) Pleistocene occupation of the region that these artefacts reflect must have occurred at times when the environment was more hospitable than today. This is suggested by the known greater reliance of people in Acheulean times on quite restricted ecological ranges, with proximity to water being a recurrent factor in the distribution of sites.

2.2 Description and evaluation of environmental issues and potential impacts

Heritage resources including archaeological sites are in each instance unique and non-renewable resources. Area and linear developments such as those envisaged can have a permanent destructive impact on these resources. The objective of an EIA would be to assess the sensitivity of such resources where present, to evaluate the significance of potential impacts on these resources and, if and where appropriate, to recommend no-go areas and measures to mitigate or manage said impacts.

Area impacts are possible in the case of the RE Capital 3 Solar Development and the proposed substation; the power lines and access roads would represent linear impacts.

2.2.1 Direct, indirect and cumulative impacts (in terms of nature, magnitude and extent)

The destructive impacts that are possible in terms of heritage resources would tend to be direct, once-off events occurring during the initial construction period. In the long term, the proximity of operations in a given area could result in secondary indirect impacts resulting from the movement of people or vehicles in the immediate or surrounding vicinity. The Environmental Management Plan should seek to minimize the latter impacts as far as possible.

With respect to the magnitude and extent of potential impacts, it has been noted that the erection of power lines would have a relatively small impact on Stone Age sites, in light of Sampson's (1985) observations during surveys beneath power lines in the Karoo (actual modification of the landscape tends to be limited to the footprint of each pylon), whereas a road or a water supply pipeline would tend to be far more destructive (modification of the landscape surface would be within a continuous strip), albeit relatively limited in spatial extent, i.e. width (Sampson compares such destruction to the pulling out of a thread from an ancient tapestry).

2.2.2 Issues potentially influencing choice of preferred development locales

Areas along natural drainage lines – water resources and ecology: Various considerations including possible concentration of past human activity (and hence archaeological traces) along water courses may suggest that the development footprint not be directly on or near the main drainage channels.

2.2.3 Observations derived from previous experience of the area

- Based on previous experience, the terrain on which the proposed RE Capital 3 Solar Development would be located was thought unlikely to be rich in archaeological traces of major significance.
- Should there be local sources of Dwyka tillite, these could have served as raw materials often drawn upon in Pleistocene times. If not, it might be expected that any archaeological traces would be sparse. Adjacent terrain has minimal Stone Age traces comprising widely scattered/isolated stone artefacts mainly based on jaspilite (banded ironstone) sourced from the banks and terraces of the Orange/Gariep River.

- There appeared to be none of the features such as hills or rocky features (such as Spitskop north of Upington) which in other parts of this landscape provide shelters with traces of precolonial Stone Age occupation/activity.
- Nineteenth- and twentieth-century cultural history and intangible heritage values attached to places could be difficult to recover owing to the sparse population. It was not thought likely that any significant intangible heritage values would be attached to the particular terrain in question.
- There appeared not to be colonial era built environment features in the areas of proposed Solar Development.
- The likelihood of palaeontological features of significance occurring would be subject to a desktop enquiry and fieldwork if deemed necessary.

3. PROPOSED METHODOLOGY FOR FULL HERITAGE STUDY

A site visit took place in November 2013 to inspect various parts of the terrain on foot, focusing on areas of expected impact including that of secondary infrastructure. Heritage traces noted during this survey are evaluated in terms of their archaeological significance (see tables below). The predictions set out in sections 2.2.2 and 2.2.3 above are tested by way of observations made on the ground.

3.1 Assumptions and constraints

It is assumed that, by and large in this landscape, with its sparse vegetation and shallow soil profiles, some sense of the archaeological traces to be found in the area would be readily apparent from surface observations (including assessment of places with erosion or past excavations that expose erstwhile below-surface features). Given a prevailing erosion regime in much of this landscape, it was not be considered necessary to conduct excavations as part of the full HIA to establish the potential of sub-surface archaeology.

A proviso is routinely given, however, that should sites or features of significance be encountered during construction (this could include an unmarked burial, an ostrich eggshell water flask cache, or a high density of stone tools, for instance), specified steps are necessary (cease work, report to heritage authority).

With regard to fossils, a report and/or field assessment of the likelihood of their occurring here should be obtained from a palaeontologist.

3.2 Potentially significant impacts to be assessed in the HIA process

Any area or linear, primary and secondary, disturbance of surfaces in the development locales could have a destructive impact on heritage resources, where present. In the event that such resources are found, they are likely to be of a nature that potential impacts could be mitigated by documentation and/or salvage following approval and permitting by the South African Heritage Resources Agency and, in the case of any built environment features, by Ngwao Boswa jwa Kapa Bokone (the Northern Cape Heritage Authority). Although unlikely, there may be some that could require preservation *in situ* and hence modification of intended placement of development features.

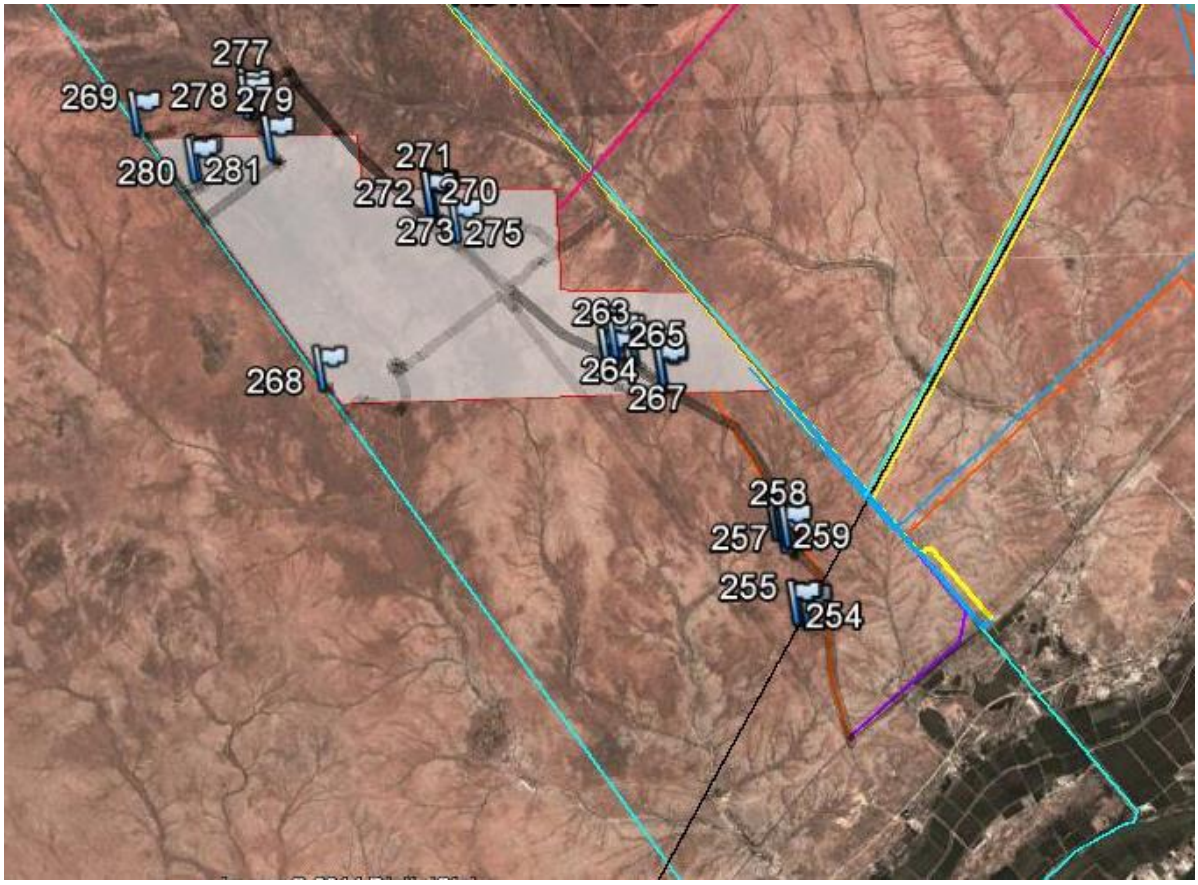
Disturbance of surfaces includes any construction: of a road, a pipeline, erection of a pylon, or preparation of a site for a sub-station, or plant, or building, or any other *clearance* of, or *excavation* into, a land surface. In the event of archaeological materials being present such activity would alter or destroy their context (even if the artefacts themselves are not destroyed, which is also obviously

possible). Without context, archaeological traces are of much reduced significance. It is the contexts as much as the individual items that are protected by the heritage legislation.

Some of the activities indicated here have a generally lower impact than others. For example, Sampson (1985) has shown that powerlines tend to be less destructive on Stone Age sites than roads since access along the route of the line during construction and maintenance tends to be by way of a 'twee-spoor' temporary roadway (not scraped, the surface not significantly modified). Individual tower positions might be of high archaeological significance (e.g. a grave, or an engraving). Note: the impact of a 'twee-spoor' could be far greater on Iron Age landscapes in other parts of South Africa, where stone walling might need to be breached.

3.4 Archaeological observations

The specific footprint of the proposed 'central' development area was traversed and investigated, as was adjacent terrain.

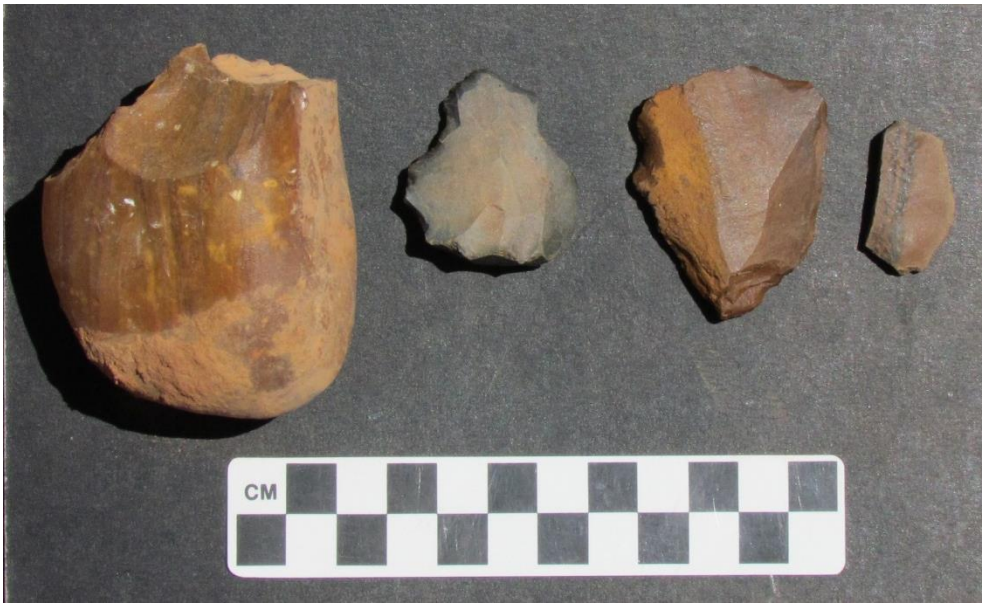


The landscape in question consists of gently sloping and relatively flat plains with shallow drainage lines running through it. In a very few places bedrock is exposed in outcrops potentially of archaeological interest in that they are places where water may remain for a short time after rains. There are also a few small vleis, two of which have been artificially deepened in order to catch and retain rain water. The vleis potentially also would have been 'magnets' for past human activity. The remainder of the terrain is veneered by shallow topsoil supporting sparse vegetation.

The following specific observations are relevant:

Obs No	Location	Landscape description	Archaeological features	Significance
1 (GPS point 255)	28.59667 21.09101	Plain adjacent to localised bedrock exposures.	Widely scattered/isolated stone artefacts (<1 per 10x10 m). Predominantly on jaspilite and most likely Middle Stone Age (MSA)	LOW (OUTSIDE DEVELOPMENT FOOTPRINT)

Observation 1: localized exposure of bedrock in a gently sloping plain.



A random selection of artefacts in the vicinity of 28.59667 S, 21.09101 E: flaked jaspilite probably derived from Orange River gravels.

2 (GPS point 259)	28.59015 21.09025	Extensive bedrock exposure with !gorras (hollows where water collects).	Twentieth century cement feature most likely related to farming activity/water provision to animals.	LOW (OUTSIDE DEVELOPMENT FOOTPRINT)

Observation 2: Cemented feature on bedrock

Bedrock outcrop with hollows retaining water after rains.

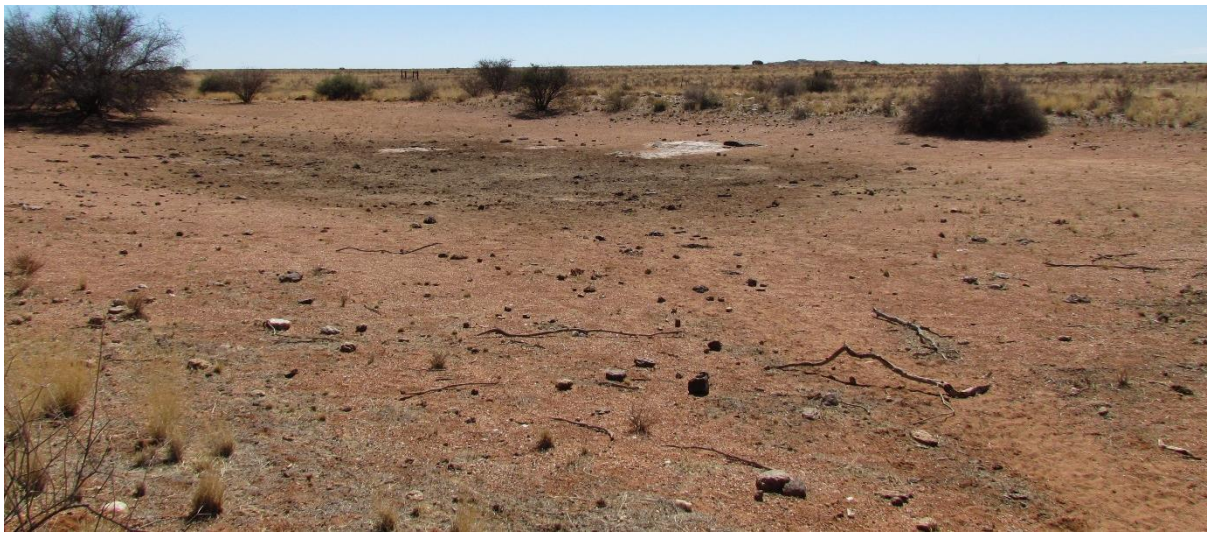
3 (GPS point 260)	28.58968 21.08932	Edge of bedrock exposure.	Higher density of stone artefacts, mainly jaspilite, MSA. Context (lag deposit in drainage line) is poor.	LOW (OUTSIDE DEVELOPMENT FOOTPRINT)

Observation 3.

4 (GPS point 262)	28.57582 21.07411	Flat terrain at southern edge of 'central' development footprint.	Isolated stone artefact – density of the order of 1 every few hundred metres.	LOW **WITHIN DEVELOPMENT FOOTPRINT**

Typically isolated, up to several tens and even a few hundred metres apart.
Finds such as this at comparable density were made across the entire development footprint.

5 (GPS point 464)	28.57436 21.07482	Artificially modified vlei.	Depression in landscape has been artificially deepened (twentieth century farming). Packed stone features at one end.	LOW **WITHIN DEVELOPMENT FOOTPRINT**



6 (GPS point 272)	28.56243 21.05805	Localised bedrock exposure.	About five grinding surfaces ranging from definite to less than certain. A small number of stone tools were found in the vicinity, as well as broken bottle glass.	LOW **WITHIN DEVELOPMENT FOOTPRINT**

Bedrock exposure with grinding grooves on it.

7 (GPS point 274)	28.56228 21.05834	Adjacent to localised bedrock exposure.	Lower grindstone. Later Stone Age flakes on surface in the vicinity	LOW-MEDIUM **WITHIN DEVELOPMENT FOOTPRINT**

Lower grindstone near to bedrock exposure, with nearby Later Stone Age flakes.

8 (GPS point 275)	28.56456 21.06042	Artificially deepened vlei.	Depression in landscape has been artificially deepened (twentieth century farming).	LOW **WITHIN DEVELOPMENT FOOTPRINT**

Sediment pushed up on two sides in this artificially deepened vlei – making it a twentieth century artefact.

9 (GPS point 281)	28.55907 21.03608	Small vlei	Very low density of widely scattered/isolated stone tools (expected higher density at margins of vlei, but this is not the case)	LOW **WITHIN DEVELOPMENT FOOTPRINT**

Artefacts occur on the margins of the vlei but not markedly more densely than in the surrounding plain.

10 (GPS point 276)	28.55377 21.04126	Ruin of mud-brick dwelling.	Collapsed structure, adjacent kraal (28.55408 S 21.04115 E), nearby ash-heap (28.55356 S 21.04116 E). This may have been a farm-workers' dwelling (see Observation 11, next).	LOW (OUTSIDE DEVELOPMENT FOOTPRINT)

Ruin of dwelling unit (above) and adjacent kraal (below).

11 (GPS point 279)	28.55748 21.04328	Ruin of mud-brick dwelling.	Collapsed structure (more substantial than that at 28.55377 S 21.04126 E [Observation 10, above], and includes what may have been a front porch). No definitive ash-heap was found: small quantities of glass, porcelain and metal was found in a swathe around the dwelling. Most likely age is mid twentieth century.	LOW **WITHIN DEVELOPMENT FOOTPRINT**

Detail of mud brick walling, cement feature and example of porcelain pieces found.

3.5 Determining archaeological significance

In addition to guidelines provided by the National Heritage Resources Act (Act No. 25 of 1999), a set of criteria based on Deacon (nd) and Whitelaw (1997) for assessing archaeological significance has been developed for Northern Cape settings (Morris 2000a). These criteria include estimation of landform potential (in terms of its capacity to contain archaeological traces) and assessing the value to any archaeological traces (in terms of their attributes or their capacity to be construed as evidence, given that evidence is not given but constructed by the investigator).

Estimating site potential

Table 1 (below) is a classification of landforms and visible archaeological traces used for estimating the potential of archaeological sites (after J. Deacon nd, National Monuments Council). Type 3 sites tend to be those with higher archaeological potential, but there are notable exceptions to this rule, for example the renowned rock engravings site Driekopseiland near Kimberley which is on landform L1 Type 1 – normally a setting of lowest expected potential. It should also be noted that, generally, the older a site the poorer the preservation, so that sometimes *any* trace, even of only Type 1 quality, can be of exceptional significance. In light of this, estimation of potential will always be a matter for archaeological observation and interpretation.

Assessing site value by attribute

Table 2 is adapted from Whitelaw (1997), who developed an approach for selecting sites meriting heritage recognition status in KwaZulu-Natal. It is a means of judging a site's archaeological value by ranking the relative strengths of a range of attributes (given in the second column of the table). While aspects of this matrix remain qualitative, attribute assessment is a good indicator of the general archaeological significance of a site, with Type 3 attributes being those of highest significance.

Table 1. Classification of landforms and visible archaeological traces for estimating the potential for archaeological sites (after J. Deacon, National Monuments Council).

Class	Landform	Type 1	Type 2	Type 3
L1	Rocky surface	Bedrock exposed	Some soil patches	Sandy/grassy patches
L2	Ploughed land	Far from water	In floodplain	On old river terrace
L3	Sandy ground, inland	Far from water	In floodplain or near feature such as hill	On old river terrace
L4	Sandy ground, Coastal	>1 km from sea	Inland of dune cordon	Near rocky shore
L5	Water-logged deposit	Heavily vegetated	Running water	Sedimentary basin
L6	Developed urban	Heavily built-up with no known record of early settlement	Known early settlement, but buildings have basements	Buildings without extensive basements over known historical sites
L7	Lime/dolomite	>5 myrs	<5000 yrs	Between 5000 yrs and 5 myrs
L8	Rock shelter	Rocky floor	Sloping floor or small area	Flat floor, high ceiling
Class	**Archaeo-logical traces**	**Type 1**	**Type 2**	**Type 3**
A1	Area previously excavated	Little deposit remaining	More than half deposit remaining	High profile site
A2	Shell or bones visible	Dispersed scatter	Deposit <0.5 m thick	Deposit >0.5 m thick; shell and bone dense
A3	Stone artefacts or stone walling or other feature visible	Dispersed scatter	Deposit <0.5 m thick	Deposit >0.5 m thick

Table 2. Site attributes and value assessment (adapted from Whitelaw 1997)

Class	Attribute	Type 1	Type 2	Type 3
1	Length of sequence/context	No sequence Poor context Dispersed distribution	Limited sequence	Long sequence Favourable context High density of arte/ecofacts
2	Presence of exceptional items (incl regional rarity)	Absent	Present	Major element
3	Organic preservation	Absent	Present	Major element
4	Potential for future archaeological investigation	Low	Medium	High
5	Potential for public display	Low	Medium	High
6	Aesthetic appeal	Low	Medium	High

7	Potential for implementation of a long-term management plan	Low	Medium	High

In terms of these criteria, all the archaeological observations made fell in the rage of: for Table 1, Landform Class 3 Type 1 (low significance); Archaeological attributes Class A3 Type 1 (low significance); and for Table 2: Type 1 for all Classes 1 to 7 (low significance).

3.6 Outcomes against scoping phase predictions

The manner in which archaeological and other heritage traces might be affected by the proposed RE Capital 3 Solar Development has been indicated above. In summary, it would be any act or activity that would result immediately or in the future in the destruction, damage, excavation, alteration, removal or collection from its original position, of any heritage material, object or value (as indicated in the National Heritage Resources Act (No 25 of 1999). The most obvious impact in this case would be land surface disturbance associated with infrastructure construction.

All the archaeological observations made were assessed as being of low significance (paragraphs 3.4 & 3.5 above). The following conclusions are offered relative to the predictions made in the scoping report (Morris, July 2013), based on previous work in the area and tested by fieldwork for this full Impact Assessment:

- Based on previous experience, the terrain on which the proposed RE Capital 3 Solar Development would be located was thought unlikely to be rich in archaeological traces of major significance.

  This prediction was sustained by this study: the terrain is not rich in archaeological traces and none of major significance was noted.

- Should there be local sources of Dwyka tillite, these could have served as raw materials often drawn upon in Pleistocene times. If not, it might be expected that any archaeological traces would be sparse.

  No tillites were exposed here and spreads of Stone Age material are diffusely scattered, with most widely scattered/isolated stone tools being made on jaspilite sourced from the banks and terraces of the Orange/Gariep River.

- There appeared to be none of the features such as hills or rocky features (such as Spitskop north of Upington) which in other parts of this landscape provide shelters with traces of precolonial Stone Age occupation/activity.

  This prediction was largely confirmed: even local outcrops of bedrock that provide !gorras (hollows in which water remains after rain) were (with minor exceptions) largely bereft of artefacts or other traces of past human activity.

- Nineteenth- and twentieth-century cultural history and intangible heritage values attached to places could be difficult to recover owing to the sparse population. It was not thought likely that any significant intangible heritage values would be attached to the particular terrain in question.

It would be difficult to recover any such intangible values where they might have existed. There were no very obvious places that might be a focus for such features but the likelihood of their having existed in a 'storied landscape' (Bleek & Lloyd 1911; cf. Green & Green 2009) cannot be discounted.

- There appeared not to be colonial era built environment features in the areas of proposed Solar Development.

  This prediction was falsified by the finding of the above-mentioned ruins of two dwellings. It is not considered that these two sites are of any major significance.

- The likelihood of palaeontological features of significance occurring would be subject to a desktop enquiry and fieldwork if deemed necessary.

  This report makes no further comment on this aspect.

3.7 Overall Impact Assessment and Conclusion

Impact assessment criteria for ensuring a comprehensive assessment of potential impacts are applied in order to determine the overall impact significance. Criteria with annotations and ratings are summarised in support of a final assessment of impact:

- *Extent and location of the impact*: The impact would be site specific, i.e. limited to the development footprint. Rating: LOW

- *Duration of the impact i.e. short term, long term, intermittent or continuous/permanent*: Where archaeological resources, albeit very low density, are disturbed the effect is a once-off permanent impact. Rating: PERMANENT

- *Magnitude/intensity of the impact i.e. high, medium, low*: No archaeological resources other than very widely dispersed, isolated 'off-site' occurrences, consistent with similar terrain outside the footprint and on adjacent properties. Rating: LOW

- *Likelihood or probability of the impact actually occurring*: A very low density of archaeological remains in the form of isolated, widely dispersed stone artefacts was found within and beyond the development footprint. Where they coincide with the development footprint they would definitely be impacted, but significance of impact would be considered low. Rating: DEFINITE.

- *Reversibility of impact*: Destructive impact of disturbance of archaeological remains is irreversible. Rating: LOW

- *Degree to which an impact may cause irreplaceable loss of a resource*: Where present, disturbed archaeological traces and contexts would be irreplaceable; however in archaeological terms (see 3.5 above) they are considered to be of low significance. Rating: LOW

- *Cumulative impacts*: Cumulative impacts within the development footprint are predicted to be low. Rating: LOW

- *Mitigatory potential of impacts*: No mitigation measures considered necessary.

- *Significance of the impact on a local, regional or global level*: The impacts on archaeological resources in the development footprint and beyond in the project area are assessed to be of low significance. Overall impact rating: LOW SIGNIFICANCE.

In conclusion, as far as archaeological and cultural heritage is concerned, it is recommended that the project in the proposed 'central' development footprint area may proceed with no specific recommendations for mitigation deemed necessary at this point. The management plan for the development should make provision for monitoring (by environmental compliance personnel) in case of accidental disturbance of previously undetected heritage features. In the event of any archaeological deposits or features (such as a grave or an ostrich eggshell cache) being encountered, relevant personnel should halt work and notify SAHRA immediately (Tel: 021 462 4502. Fax: 021 462 4509; 111 Harrington Street, Cape Town. PO Box 4637, Cape Town 8000) to allow for investigation and possible mitigation.

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