

A PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT FOR THE PROPOSED ESTABLISHMENT OF THE NAAUPOORT SOLAR ENERGY FACILITY ON THE REAMINDER OF THE FARM NAAUWPOORT 1, NEAR NOUPOORT, UMSOBOMVU MUNICIPALITY, NORTHERN CAPE PROVINCE.

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TABLE OF CONTENTS

1. EXECUTIVE SUMMARY	2.
2. BACKGROUND INFORMATION	4.
3. BRIEF LEGISLATIVE REQUIREMENTS	5.
4. BRIEF ARCHAEOLOGICAL BACKGROUND	6.
5. DESCRIPTION OF THE PROPERTY	10.
6. ARCHAEOLOGICAL INVESTIGATION	13.
7. DESCRIPTION OF SITES	34.
8. GPS CO-ORDINATES AND SITES FOR THE PROPOSED NAAUWPOORT SOLAR ENERGY FACILITY.	36.
9. ASSESSMENT OF THE SIGNIFICANCE AND OF THE ARCHAEOLOGICAL HERITAGE RESOURCES FOR THE PROPOSED NAAUWPOORT SOLAR ENERGY FACILITY.	40.
10. RECOMMENDATIONS	43.
11. CONCLUSION	44.
12. GENERAL REMARKS AND CONDITIONS	45.
13. REFERENCES	46.
APPENDIX A: GRADING SYSTEM	47.
APPENDIX B: IDENTIFICATION OF ARCHAEOLOGICAL FEATURES AND MATERIAL FROM INLAND AREAS: guidelines and procedures for developers	48.

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NOTE: This report follows the minimum standard guidelines required by the South African Heritage Resources Agency (SAHRA) for compiling a Phase 1 Archaeological Impact Assessment (AIA).

1. EXECUTIVE SUMMARY

1.1. Purpose of the Study

The purpose of the study was to conduct and compile a phase 1 archaeological impact assessment (AIA) for the proposed establishment of the Naauwpoort Solar Energy Facility, near Noupoort, Northern Cape Province. The survey was conducted to establish the range and importance of the exposed and *in situ* archaeological heritage material remains, sites and features; to establish the potential impact of the development; and to make recommendations to minimize possible damage to the archaeological heritage.

1.2. Brief Summary of Findings

A large concentration of predominantly Middle Stone Age stone artefacts were observed within an exposed area occurring around the dam in the northern section of the development area. The exposed surface area has either been naturally eroded or the disturbance was created by the construction of the dam. Isolated stone artefact occurrences were observed on the surface in both the north and south section of the development area. No associated archaeological material or organic remains were documented with the stone artefact surface occurrences.

Several dry-packed stonewalling features occur on the Farm Naauwpoort 1 within and on the boundaries the proposed development zone. One large dry-packed stonewalling kraal was identified outside, but on the boundary, of the proposed development area. Glass and porcelain fragments as well as metal artefacts were documented within this area. Other built environment structures included disused and functional reservoirs.

Two stone packed informal graves were recorded adjacent to one of the internal farm gravel roads in the south section of the proposed development area. A few fragments of porcelain were observed within the vicinity of the stone packed features.

1.3. Recommendations

The area is of a medium-high cultural sensitivity, the following recommendations must be considered:

1. Once the final layout (including the positions of the solar panels; underground cabling; overhead power line; additional internal access roads, and the workshop area) of the proposed Naauwpoort Solar Energy Facility has been finalised an archaeological ground-truthing should be conducted and further recommendation be made to protect the archaeological heritage within the area proposed for development. The areas that have not been covered in this study owing to recent changes must be included when the final layout has been determined; and / or
2. A professional archaeologist must be appointed during all construction and development activities including vegetation clearing and the excavation activities to monitor and identify possible archaeological material remains and features that may occur below the surface and make further appropriate recommendations on removing and / or protecting the archaeological material remains and features.
3. The black demarcated area on Figure 5 must be regarded as a no-go zone whereby no development may take place within the area including a 20 m buffer zone declared around the black demarcated area. This will include the protection of the concentration of stone artefacts near the dam as well as the stonewalling features occurring in the North Site.
4. A 20 m buffer zone must be erected around the stonewalling complex occurring in the South Site so that the development activities do not negatively affect the features.
5. The stone packed features (NSW7-1 and NSW7-1) must be appropriately fenced and 20 m buffer zone established. The features occur within 10 m of the internal farm road and must be clearly demarcated so as to avoid any negative impact from the proposed development activities.
6. If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or MacGregor Museum (053 839 2706) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/ excavation can be undertaken.
7. Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.

2. BACKGROUND INFORMATION

The phase 1 archaeological impact assessment (AIA) report has been prepared as part of the Environmental Impact Assessment (EIA) phase.

The proposed activity includes the development of a photovoltaic solar energy facility with a generating capacity of up to 75 MW and associated infrastructure within a broader area of approximately 2 104 ha. The solar energy facility would comprise the following infrastructure:

- Arrays of photovoltaic panels with a generation capacity of up to 75 MW and concrete foundations or rammed steel piles;
- Cabling between the project components, to be laid underground where practical;
- A new on-site substation;
- Connection to the grid via a new or upgraded overhead power line or via loop-in loop-out connection to the existing 132kV line;
- Workshop, maintenance and storage facilities;
- Internal access roads and perimeter fencing.

Developer:

Terra Solar Energy

Applicant:

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Terms of Reference (ToR)

- Provide an indication of the methodology used in determining the significance of potential environmental (archaeological heritage) impact by conducting and compiling the phase 1 archaeological impact assessment (AIA);

- Describe all environmental issues (archaeological heritage) that were identified during the phase 1 archaeological impact assessment (AIA);
- Assess the significance of direct, indirect and cumulative impacts on the environment (archaeological heritage);
- Describe and comparatively assess all of the alternatives identified during the environmental impact assessment process;
- Make recommendations regarding practical mitigation measures for potentially significant impacts;
- Provide an indication of the extent to which the issue could be addressed by the adoption of mitigation measures;
- Describe any assumptions, uncertainties and gaps in knowledge; and
- Provide an environmental impact statement.

3. BRIEF LEGISLATIVE REQUIREMENTS

Parts of sections 34 (1), 35(4), 36(3) and 38(1) (8) of the National Heritage Resources Act 25 of 1999 apply:

Structures

34. (1) No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority

Archaeology, palaeontology and meteorites

35 (4) No person may, without a permit issued by the responsible heritage resources authority—

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;*
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;*
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.*

Burial grounds and graves

36. (3) (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority—

- (a) *destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;*
- (b) *destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or*
- (c) *bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.*

Heritage resources management

38. (1) *Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorized as –*

- (a) *the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
- (b) *the construction of a bridge or similar structure exceeding 50m in length;*
- (c) *any development or other activity which will change the character of the site –*
 - (i) *exceeding 5000m² in extent, or*
 - (ii) *involving three or more erven or subdivisions thereof; or*
 - (iii) *involving three or more erven or divisions thereof which have been consolidated within the past five years; or*
 - (iv) *the costs of which will exceed a sum set in terms of regulations by SAHRA, or a provincial resources authority;*
- (d) *the re-zoning of a site exceeding 10 000m² in extent; or*
- (e) *any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must as the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*

4. BRIEF ARCHAEOLOGICAL BACKGROUND

Please Note: A desktop heritage scoping study for the proposed Naauwpoort Solar Energy Facility (75MW), near Noupoort, Northern Cape Province was prepared by Nkosinathi Tomose in April 2012. This “Brief Archaeological Background” has been included as part of the minimum requirements for Phase 1 Archaeological Impact Assessment reports.

Substantial Later Stone Age Research of the last 20 000 years has been conducted within the surrounding areas of the proposed area for development within the Seacow River Valley between Hanover and Richmond. Blydefontein Rock Shelter east of Noupoort has also been a focus of substantial Later Stone age research. Several recent

archaeological impact assessments for wind and solar energy facilities have been conducted around Noupoot and towards Middelburg that have documented several surface scatters and archaeological sites as well as historical features.

EARLY STONE AGE (1.5 million – 250 000 years ago)

Early Stone Age stone artefacts endure for long periods and generally occur as open air surface scatters either as isolated occurrences or in large quantities and very rarely in association with other archaeological heritage, plant and material remains. Significant South African sites include Wonderwerk in the Northern Cape near Kimberly, and Montagu Cave in the Western Cape Province situated on the outskirts of the small town of Montagu in the Western Cape, and Amanzi Springs near to the small town of Uitenhage close to Port Elizabeth in the Eastern Cape, whereby some bone and plant material was found to be *in situ* and associated with the stone artefacts. The Albany Museum database includes records of occurrences of Acheulian handaxes between Middelburg and the Camdeboo National Park near Graaff Reinet, as well as a collection of stone artefacts from the Cradock area. Sampson (1985) located a large number of sites to the west of the proposed area of development within the Seacow River Valley.

MIDDLE STONE AGE (250 000 – 30 000 years ago)

The Middle Stone Age spans a period from 250 000 - 30 000 years ago and focuses on the emergence of modern humans by the change in technology, behaviour, physical appearance, art, and symbolism. Surface scatters of these flake and blade industries occur widespread across southern Africa although rarely with any associated botanical and faunal remains. It is also common for these stone artefacts to be found between the surface and approximately 50 - 80cm below ground. Fossil bone may be associated with Middle Stone Age occurrences. These stone artefacts are usually observed in secondary context with no other associated archaeological material. The Albany Museum database holds records of the occurrence of Middle Stone Age stone artefacts around the Cradock area and has Middle Stone Age stone artefacts in its collection from the Cradock area including Highlands Rock Shelter excavated by H.J. Deacon during the 1970's. Sampson on the other hand reported many open-air MSA sites which he assigned to the Orangian Industry (dating between 128 000 - 75 000 years old), Florisbad and Zeekoegat Industries dating between 64 000 and 32 000 years old. Relevant archaeological impact assessments conducted by the Albany Museum have recorded surface scatters of Middle Stone Age stone artefacts in the Cradock vicinity, (Binneman & Booth 2008) as well as Middelburg (Booth 2012) and Noupoot (Booth 2011, Booth 2012).

THE LATER STONE AGE (30 000 – recent) and PASTORALISM

The Later Stone Age spans a period from 30 000 years ago to the historical period (the last 500 years) until 100 years ago and is associated with the archaeology of San hunter-gatherers. The majority of archaeological sites date from the past 10 000 years where San hunter-gatherers inhabited the landscape living in rock shelters and caves as well as on the open landscape, inland and along the coast. The open sites are difficult to

locate because they are in the open veld. The preservation of these sites is poor and it is not always possible to date them (Deacon & Deacon 1999). Caves and rock shelters, however, in most cases, provide a more substantial preservation record of pre-colonial human occupation. The Later Stone Age archaeology of the Karoo is rich and varied. Various studies (Beaumont & Morris 1990, Beaumont & Vogel 1984, Morris & Beaumont 1990, Sampson 1985) have shown that the general area has been relatively marginal regarding pre-colonial human settlement, but is in fact exceptionally rich in archaeological sites and rock art. Bifacial and tanged barbed arrow heads made on very fine-grained dark or black chalcedony are distributed over the southern two-thirds of the Free State, the Kimberly area in the west, Lesotho in the east and along the southern boundary of this area as far south as Britstown and Steynsburg (Humphreys 1969).

Some 2 000 years ago Khoekhoen pastoralists entered into the region and lived mainly in small settlements. They were the first food producers in South Africa and introduced domesticated animals (sheep, goats and cattle) and ceramic vessels to southern Africa. Often, these archaeological sites are found close to the banks of large streams and rivers and along the coast. Large piles of freshwater mussel shell (called freshwater middens) usually mark the large stream and river sites and large piles of marine shellfish middens mark the coastal sites.

One of the most complete archaeological research surveys in South Africa was conducted in the Agter Sneeuberg region (northern side of the Sneeuberg) in the central and upper Seacow River Area that covered an area of 734 square kilometres between Hanover, Richmond and Noupoot in the Northern Cape (Sampson 1985). Later Stone Age Lithics and rare Khoekhoe pottery sherds were uncovered during systematic surveys of the area (Sadr & Sampson 1999). Several dense clusters of Smithfield settlement sites are concentrated among the lower dolerite hills and ridges in preference to flats and mountains. In the Free State, this particular stone artefact industry may be traced back to the 8th century AD, however, only occurs in the Northern Cape as late as the 14th century AD. Today the term Smithfield is only used for stone tool assemblages with backed bladelets and long end scrapers dating within the last 1000 years and replaces the term Smithfield B (Sampson 1988). Typical Smithfield assemblages contain flaked lithics (most commonly of unpatinated blue-black hornfels), grinding and pounding equipment, bored stones, and sherds of a highly characteristic bowl form decorated with stamp-impressed motifs and date within the last 1000 years (Sampson 1988). Endscrapers dominate the flaked stone artefact, the only other formal tools being reamers, single platform cores recycled as trimming hammers, and rare convex scrapers commonly called thumbnail scrapers. Almost 5000 Smithfield sites were recorded during the 1979-1981 survey. These predominantly open sites, were categorized according to size, setting and artefact and included categories such as camps, chipping stations (or factories / manufacture areas), lookouts, quarries (for hornfels raw material), and mussel camps. However, these sites may also be attributed to rock shelters that have been occupied. Waterholes or natural springs were attractive areas for settlement and three different kinds of camps emerge when associated with water holes such as camp-clusters near waterholes, camp-clusters occurring singly or in pairs within some strong

and many weak site clusters more than 1km from water and isolated camps far from water (Sampson 1984). In the southern Seacow Valley the presence of Khoekhoen ceramics and stone circular kraals demonstrates a dense occupation by herders, 30 – 40km south west of the town of Noupoot and the proposed area for development. In addition, Blydefontein Rock Shelter, situated about within 15km to the west of the town of Noupoot in the upper reaches of the Oorlogspoort River drainage in the Kikvorsberg Mountain Range, has been excavated and researched extensively (Bousman 2005). Hunter-gatherers occupied Blydefontein Rock Shelter sporadically during the Late Pleistocene and throughout the Holocene. The stratigraphic profile and associated ^{14}C dates range between $11\,850 \pm 150$ BP and 1810 ± 50 BP and include several stone artefact industries. The cultural sequence consists of the Robberg, Lockshoek, Interior Wilton, and Smithfield components. Discarded stone artefacts, lithic manufacturing debris, bone refuse and hearths scattered throughout the stratified rock shelter's deposits, as well as the occasional potsherd in the later components, represent the enduring record of hunter-gatherer settlement occupation. The majority of formal tools in the Blydefontein sequence consists of endscrapers and backed microliths.

Relevant archaeological impact assessments conducted by the Albany Museum have recorded surface scatters of Middle Stone Age stone artefacts in the Cradock vicinity, (Binneman & Booth 2008) as well as Middelburg (Booth 2012) and Noupoot (Booth 2011, Booth 2012).

ROCK ART (Engravings and Paintings)

Rock art is generally associated with the Later Stone Age period mostly dating from the last 5000 years to the historical period. It is difficult to accurately date the rock art without destructive practices. The southern African landscape is exceptionally rich in the distribution of rock art which is determined between paintings and engravings. Rock paintings occur on the walls of caves and rock shelters across southern Africa. Rock engravings, however, are generally distributed on the semi-arid central plateau, with most of the engravings found in the Orange-Vaal basin, the Karoo stretching from the Eastern Cape (Cradock area) into the Northern Cape as well as the Western Cape, and Namibia. At some sites both paintings and engravings occur in close proximity to one another especially in the Karoo and Northern Cape. The greatest concentrations of engravings occur on the andesite basement rocks and the intrusive Karoo dolerites, but sites are also found on about nine other rock types including dolomite, granite, gneiss, and in a few cases on sandstone (Morris 1988). Maria Wilman recorded engraving sites between Colesburg and Middelburg (Parkington *et al.* 2008:33). Rock art of the Middelburg area includes a site with numerous styles such as fine-lined paintings of antelope and human figures, probably done by San individuals, as well as red, yellow, black, orange and white finger dots done in the Khoekhoen style. Other figures include medium-grained white chalky paints with red accents such as fat-tailed sheep; two horse-and riders; a black rhinoceros; and two stretched-out and spotted animal skins or aprons (Ouzman. 2005: 106).

HISTORICAL ARCHAEOLOGY

In the early days of colonialism the Karoo was still a sparse and unknown area. It was only until the early travellers and pioneer European farmers ventured into this harsh landscape and documented their encounters with the San hunter-gatherers and Khoekhoen that had originally inhabited the landscape. Therefore, the towns of the Great Karoo were established much later. Between the years 1860 and 1875, there was an increase of travels through the Karoo between Graaff Reinet, Middelburg and Colesburg, due to the improvement of the Frontier Wagon Track or Public Roads Network (Neville *et al.* 1994).

Noupoort (or Naauwpoort) was established on the Farm Hartebeeshoek, a part of Carolus Poort, which belonged to the descendent Comdt. Tjaart van Walt. The railway reached Noupoort in 1884 which became an important junction for trains travelling from Port Elizabeth to Hanover (east) and Colesberg (north) (Potgieter 1973). Noupoort was utilised to accommodate base camps for several British infantries during the Anglo-Boer War (1899-1902). Noupoort also acted as a headquarters for General French. Although no skirmishes between the English and Boers took place in the town of Noupoort, a battle occurred south-east of the town in the area known as Noupoort (Naauwpoort) Nek, the narrow section of the route between Carolus Poort and Noupoort.

5. DESCRIPTION OF THE PROPERTY

5.1. Area Surveyed

The proposed area for the Naauwpoort Solar Energy Facility is located on the remaining extent of the Farm Naauwpoort 1 situated about 10 km south of the small town of Noupoort on the N9 towards Middelburg. The farm is situated between the N9 national road to Hanover and the N10 national road to Noupoort. The proposed area for development of the solar facility is approximately 2104 ha in extent and is bordered by *koppies* to the north and a large flat-top *koppie* referred to as Carlton Hills to the south. Dry water courses and heavy erosion areas were avoided in the selection of the development areas; however, these occur in some areas surrounding the development area boundaries. Therefore, very little erosion and surface disturbances occur within the proposed development area. The proposed development is covered in typical Karoo shrubs and grasses with dense grass vegetation dominating the landscape. Archaeological visibility varied during the survey. Most of the area was dominated by dense grass vegetation cover that heavily obscured archaeological visibility. However, the sparse grass vegetation made archaeological visibility relatively good. A section of the north site had been burnt as a method of veld management by the farmer, this opened up of the dense grass covered areas to allow for better archaeological visibility.

5.2. Map

1:50 000 MAP: 3124BD CARLTON

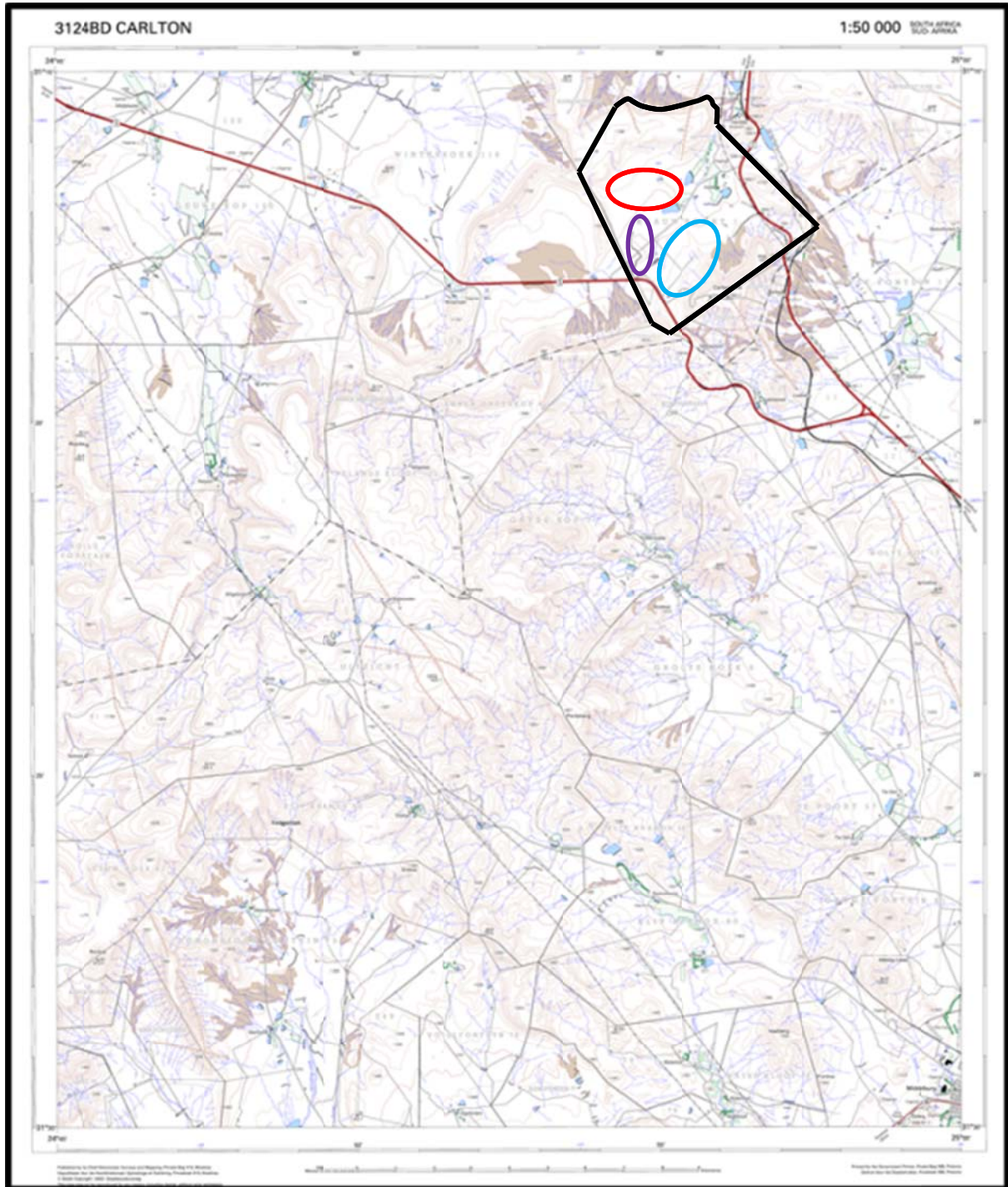


Figure 1. Map 1. 1:50 000 topographic map 3124BD CARLTON showing the location of the area proposed for the Naauwpoort Solar Energy Facility (Black: farm boundary; Red: North Site; Blue: South Site; Purple: West Site).



Figure 2. Aerial view of the area proposed Naauwpoort Solar Energy Facility.

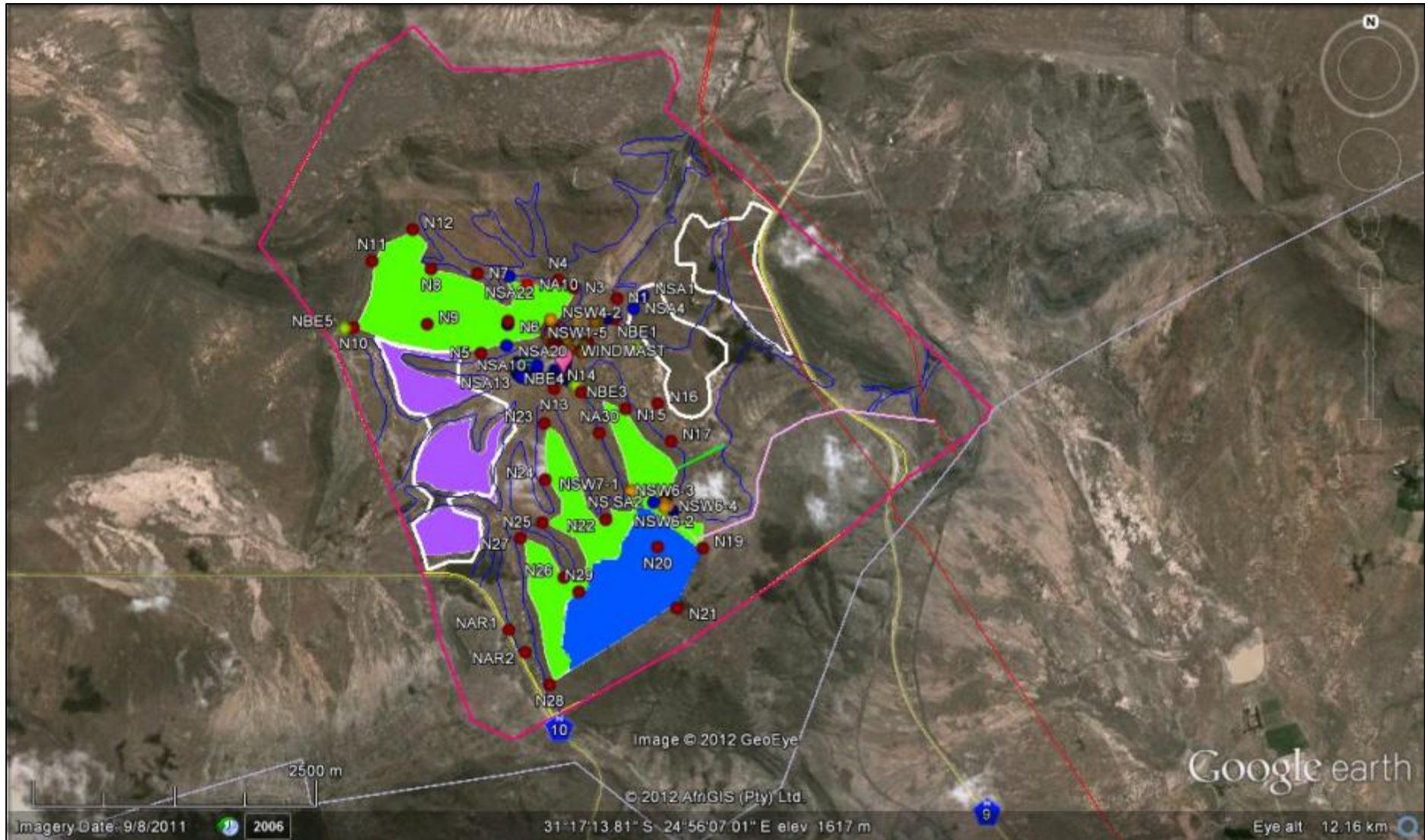


Figure 3. Map 3. Close-up aerial view of the area proposed for the Naauwpoort Solar Energy Facility and extent of area surveyed.

6. ARCHAEOLOGICAL INVESTIGATION

The archaeological investigation was conducted on foot focusing on the proposed area for the Naauwpoort Solar Energy Facility and the immediate surrounding environment. Only the North and South Sites were surveyed. The west site was added owing to the southern boundary of the South Site position on the hills (this has been addressed in the recommendations). The GPS co-ordinate readings and photographs were taken using a Garmin Oregon 550 unit. The survey and findings of the North Site and South Site will be described separately.



Figure 5. Map 5. Close-up aerial view of the North Site of proposed area for the Naauwpoort Solar Energy Facility.

North Site:

The North Site of proposed development is covered in typical Karoo shrubs and grasses with dense grass vegetation dominating the landscape (Figure 6). Dry water courses and heavy erosion areas were avoided in the selection of the development areas; however, these occur in some areas surrounding the development area boundaries. Therefore, very little erosion and surface disturbances occur within the proposed development area. A small koppie runs north-south within the eastern area and man-made dam is situated south outside of the boundaries of the study area (Figure 7).

Some of the surface area has been disturbed by the construction of the dam, internal farm roads, internal farm fences, telephone line, and burrowing animals that churn up soil deposit exposing possible archaeological heritage remains that may be buried below the surface (Figures 8-9). Archaeological visibility was relatively good in the exposed surface and disturbed areas including the recently burned areas, but heavily obscured in the dense grass vegetation (Figure 10).



Figure 6. View of the landscape showing the sparsely and densely vegetated areas.



Figure 7. View of the small outcrop and man-made dam.



Figure 8. Internal farm roads and fences as disturbed surface areas.



Figure 9. Telephone lines and internal farm fences as disturbed surface areas.



Figure 10. Recently burned areas.

Isolated surface occurrences of mainly Middle Stone Age stone artefacts occurred within the immediate area proposed for the development (Figures 11-18). Most of the stone artefacts were manufactured on a fine-grained black (hornfels or lydianite) raw material and mostly weathered and patinated. Other raw materials included shale and quartzite. The stone artefacts comprised mostly of varying small and large flakes and miscellaneous retouched pieces. Several of the flakes showed evidence of secondary retouch and some showed evidence of edge-damage that may indicate utilisation. Some prepared core or faceted platform flakes were also identified within the proposed area. Several stone artefacts also showed fresh flaking that may have been caused recently by trampling by domestic stock and/or human and farming activity.

During the preliminary field survey as part of the scoping study, three areas containing stone artefact scatters were observed (NaauwP-1 – NaauwP-2), outside of the area for the proposed development. These scatters comprised Middle Stone Age stone artefacts and possible late Early Stone Age or early Middle Stone Age stone artefacts that could indicate an archaeological site (NaauwP-3). These areas were investigated for additional stone artefacts and other possible archaeological heritage remains. The stone artefacts have been uncovered by the construction of the dam and further natural erosion and are visible within the 450 m x 100 m exposed area. The stone artefacts occur between the surface and 30 cm below ground (Figures 19-20).

It is unlikely that the surface scatters of stone artefacts would be *in situ* and are regarded as being in a secondary and out of context position as they have been washed into the exposed areas and have been disturbed by domestic animal and human activities. It is also possible that stone artefacts may occur below the vegetation cover between the surface and 50 – 80 cm below the ground as shown by the stone artefact scatter within the exposed dam area.



Figure 11. Examples of stone artefacts (flakes).



Figure 12. Examples of stone artefacts (flakes and blades).



Figures 13-14. Examples of stone artefacts (left - core; right – weathered handaxe).



Figures 15-16. Examples of stone artefacts (flake and blades).



Figures 17-18. Examples of stone artefacts (flakes).



Figure 19. View of the edge of the exposed area bordering the dam.



Figure 20. Showing the depth of a large portion of the area around the dam.

During a preliminary field survey as part of the scoping study, the author identified stone walling and a potential block house circular foundation on a ridge bordering the proposed development area. It was suggested that the circular stonewalling foundation resembled typical block house foundation. Only one block house was built in Noupoort and is situated on the Farm Carlton immediately north of the small town of Noupoort. The block house is still intact ($32^{\circ}10'30.86''S$; $24^{\circ}56'52.25''E$).

The stonewalling previously documented includes a complex of a relatively large, square, dry packed stonewalling kraal situated on the slope below the remains of the dry packed stonewalling foundations situated on top of the ridge and a smaller circular kraal situated north-west along the ridge. The kraal situated on the slope of the ridge and is approximately 35 m x 35 m in extent (Figure 21). The remains of the foundation of the circular dry packed stonewalling feature is more than likely a dwelling, historically occupied by the shepherd that tended the flocks (Figures 22-23). The smaller circular dry packed stonewalling feature situated north-west along the ridge is approximately 2.5 m x 2.5 m in extent and is probably a kraal / pen used to keep smaller stock (possibly lambs or kids) (Figure 24).

A larger dry packed stonewalling feature approximately 290 m x 175 m in extent is situated north-east of the above documented stonewalling complex at the foot of the ridge. Three stone pillars are also associated with this feature. Most of the stonewalling has collapsed and has been buried underneath the surface deposit (Figures 25-27). Fragments of broken glass and porcelain were documented within this area (Figures 28-32). Some stone artefacts (possibly Later Stone Age) were also documented within this area along what would have been the northern wall of the feature.

Most of these stonewalling features occur outside of the proposed development area except the smaller circular kraal / pen that is situated within the boundary of the north section of the development. It is unlikely that the proposed development activities would have a negative impact on this feature as the solar energy facility should not be constructed on the ridge.



Figure 21. Showing the square kraal on the slope of the ridge.



Figure 22. Close-up of the side of the remains of the circular foundation on the ridge.



Figure 23. View of the remains of the foundation of the circular feature on the ridge,



Figure 24. View of the smaller pen / kraal.



Figure 25. View of the stonewalling occurring at the foot of the ridge onto the flat surface with the pillars in the distance (red circle).



Figure 26. A section of the stonewalling still intact.



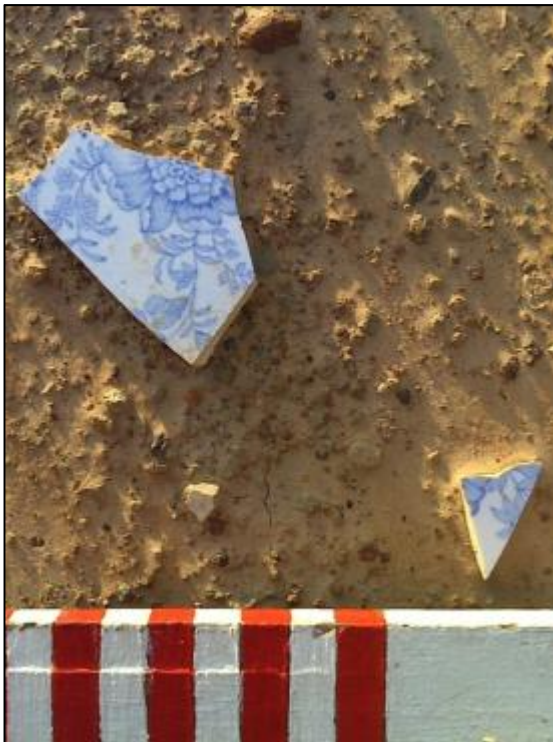
Figure 27. A section of the stonewalling that has been covered by soil deposit.



Figure 28. Porcelain and glass artefacts within the stonewalling area.



Figures 29-30. Examples of the glass fragments observed.



Figures 31-32. Porcelain (left) and a metal nail (right) documented within the large stonewalling area.

The North Site for the proposed development of the Naauwpoort Solar Energy Facility is considered as having a relatively low cultural significance as only surface occurrences of mainly Middle Stone Age stone artefacts were documented within the exposed and visible surface areas. The area south and east, including the area on the ridge included in the proposed development area, bordering the proposed area for development, however, is considered as having a high cultural significance. The stone artefact scatter occurring in the exposed man-made dam area may be an indication of incidences of stone artefacts occurring underneath surface areas that have not yet been disturbed. The dry packed stonewalling features and associated artefacts are historically significant. Other structures include functional and unused reservoirs and troughs. These structures are continuously being maintained and may date to within the last 60 years.

It is, therefore, recommended that the area be demarcated as a no-go zone and be protected during the construction and development activities (see black demarcated area on Figure 5).



Figure 33. Close-up aerial view of the South Site for the proposed area for the Naauwpoort Solar Energy Facility.

South Site:

The South Site of proposed development is covered in typical Karoo shrubs and grasses with dense grass vegetation dominating the landscape (Figures 34-35). Dry water courses and heavy erosion areas were avoided in the selection of the development areas; however, these occur in some areas surrounding the development area boundaries. Therefore, very little erosion and surface disturbances occur within the proposed development area. A small koppie runs north-south and becomes part of the Carlton Hills Mountain. The southern boundary for the proposed development included a rocky section that runs along the southern area of the proposed development. This section is no longer included as part of the South Site for the proposed development, therefore, additional sites – East (purple) and

West (white) (Figure 4) have been added. These areas have been included recently and have been dealt with in the “recommendations” section of the report.

Some of the surface area has been disturbed by the construction of internal farm roads, internal farm fences, power line, and burrowing animals that churn up soil deposit exposing possible archaeological heritage remains that may be buried below the surface (Figures 36-37). Erosion areas and gullies were also investigated for possible archaeological remains. Most of the area is covered in dense grass vegetation that made archaeological visibility difficult.



Figure 34. View of the dense grass vegetation and the ridge joining to the Carlton Hills Mountain.

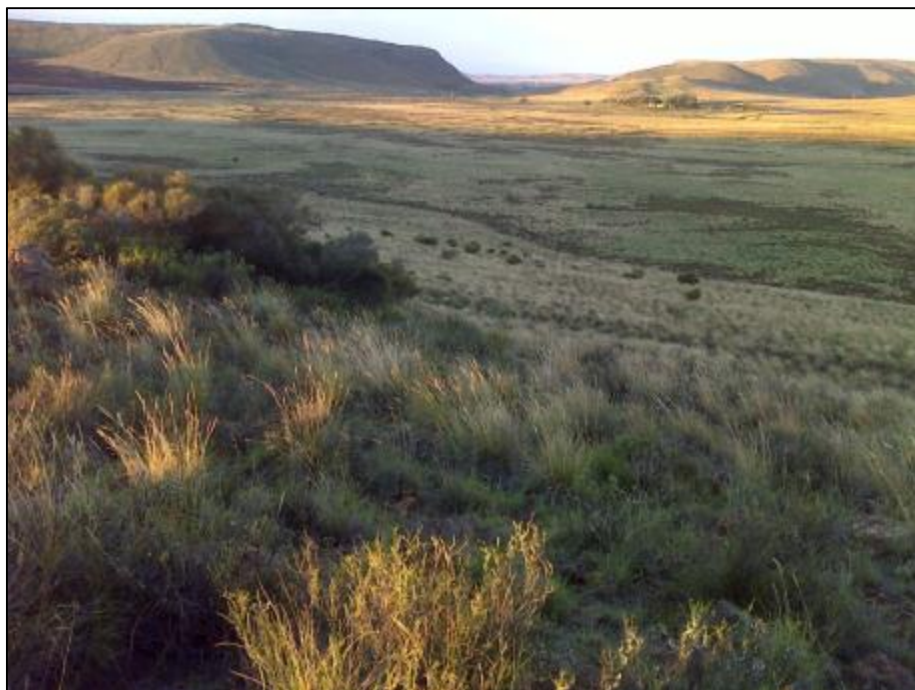


Figure 35. View of the landscape.



Figure 36. View of the landscape and power line.



Figure 37. View of the landscape and internal farm roads and fences.

Only two Middle Stone Age stone artefacts (NSA SA2 and NSA SA23, Figure 33; see Figures 11-18 for range of stone artefacts documented within the area) were documented in the eroded area near the foot of the ridge in the south-western area of the South Site. They comprised of flakes made on a fine-grained black raw material (hornfels / lydianite). It is unlikely that the two surface occurrences of stone artefacts would be *in situ* and are regarded as being in a secondary and out of context position as they have been washed into the exposed areas. It is also possible that stone artefacts may occur below the vegetation cover between the surface and 50 – 80 cm below the ground.

A dry packed stonewalling square kraal was documented on the slope at the eastern border of the proposed area for development. The kraal is approximately 20 m x 25 m in extent and has a smaller circular pen adjoined at the north-eastern corner that may have been used for smaller stock such as lambs and kids. The foundation of a circular structure (SW5, Figure 33); similar to that documented in the North Site is situated on a slight ridge overlooking the kraal. The circular foundation has been completely overgrown by vegetation and only some of the stonewalling is visible.



Figure 38. View of the dry packed stonewalling kraal against the slope.



Figure 39. View of the kraal looking towards the adjoining pen.



Figure 40. Close-up of the pen adjoining to the large square kraal.



Figure 41. View of the vegetation covered stonewalling foundation feature.



Figure 42. Close-up of the visible dry packed stonewalling foundation.

Two stone packed features (NSW7-1 and NSW7-2) were identified adjacent to the internal farm road within one of the boundary lines for the proposed development (Figure 43-44). It firstly appeared to resemble randomly packed stones owing to the dense vegetation cover. However, on closer inspection two stones resembling headstones usually associated with informal burials were situated on either side of one of the packed stone features (Figure 45). It has therefore been established that these stone packed features may indicate informal burials and must be protected from negative impact from the development activities. A few sherds of pure white porcelain was found within the vicinity of these features (Figure 46).

Other structures include functional and unused reservoirs and troughs. These structures are continuously being maintained and may date to within the last 60 years.



Figure 43. View of the packed stone features covered by dense grass vegetation.



Figure 44. View of the packed stone features in relation to the internal farm road.



Figure 45. View of one of the "headstones" visible through the dense grass vegetation.



Figure 46. View of the porcelain within the vicinity of the stone packed features.

The South Site for the Naauwpoort Solar Energy Facility is considered as having a medium-high cultural significance owing to the situation of the complex of dry packed stone walling features and the two stone packed features resembling informal burials falling on and within the boundary areas. Only two Middle Stone Age stone artefacts were documented in an *ex situ* context. The appropriate mitigation measures will be recommended to avoid any negative impact from the development activities.

7. DESCRIPTION OF SITES

7.1. Stone Artefact Occurrences and Scatters:

Surface scatters of mainly Middle Stone Age (MSA) stone artefacts are distributed over the areas proposed for the Naauwpoort Solar Energy Facility, however, a concentration of stone artefacts seem to have been uncovered by the construction of the dam and exposed surfaces. GPS co-dinate readings were taken to show the extent of the distribution of stone artefacts within and outside of the proposed area for development (NSA1 –NSA24). The stone artefacts were observed on the exposed surface and disturbed areas. The stone artefacts comprised mainly patinated and heavily weathered flakes and miscellaneous retouched pieces of varying sizes manufactured on a fine-grained (hornfels and lydianite) raw material. It is unlikely that the surface exposed stone artefacts occur *in situ* and are considered to be in a secondary and disturbed context. No other organic or material cultural remains were documented in association with the stone artefacts. However, it is also possible that stone artefact may occur below the vegetation cover between the surface and 50 – 80 cm below the ground.

The stone artefact occurrences and scatters are considered as having a medium-low cultural significance.

The stone artefact occurrences and scatters have been allocated a heritage grading of General Protection (NHRA 25 of 1999) as is standard with archaeological heritage remains.

7.2. Dry Packed Stonewalling

Three square dry packed stonewalling kraals were documented within and outside of the proposed area for development. A large square kraal is situated at the foot of the ridge in the eastern section of the North Site (NSW1-1 – NSW1-5). Broken glass and porcelain fragments and rusted metal nail was observed within the stonewalling area. Two square dry packed stonewalling kraals and associated smaller pens were documented on the North Site (NSW2-1 – NSW2-3; NSW4-1 – NSW2-2) and South Site (NSW 6-1 – NSW6-4) situated against slopes. The remains of foundations of what may have been shepherds' dwellings were documented in close proximity to the square kraals on both the North Site (NSW3-1) and South Site (NSW5).

The dry packed stonewalling features are considered as having a medium-high cultural significance.

The dry packed stonewalling features have been allocated a heritage grading of Grade III (NHRA 25 of 1999) being worthy of local conservation.

7.3. Historical Artefact Occurrences and Scatters

Broken fragments of glass and porcelains were mainly documented in association to the stonewalling complexes, however, isolated occurrences also occur within and surrounding the proposed areas for development.

The stone artefact occurrences and scatters are considered as having a medium-low cultural significance.

The stone artefact occurrences and scatters have been allocated a heritage grading of General Protection (NHRA 25 of 1999) as is standard with archaeological heritage remains.

7.4. Informal Stone Packed Graves

Two stone packed features were documented that resemble informal burials. The one stone packed feature had two flat rocks that resembled headstones at either end.

The stone packed features are considered as having a medium-high cultural significance.

The dry packed stonewalling features have been allocated a heritage grading of Grade III (NHRA 25 of 1999) being worthy of local conservation.

8. GPS CO-ORDINATES AND SITES FOR THE PROPOSED NAAUWPOORT SOLAR ENERGY FACILITY.

TABLE 8.1.: GPS CO-ORDINATES AND SITES FOR THE PROPOSED NAAUWPOORT SOLAR ENERGY FACILITY.

REFERENCE	DESCRIPTION	CO-ORDINATE	Heritage Rating
Stone Artefact Occurrences and Scatters			
NSA 1	Stone artefact occurrence	31°16'38.70"S; 24°55'42.40"E	General Protection
NSA 2	Stone artefact occurrence	31°16'42.40"S; 24°55'39.30"E	General Protection
NSA 3	Stone artefact occurrence	31°16'49.80"S; 24°55'18.70"E	General Protection
NSA 4	Stone artefact occurrence	31°16'50.20"S; 24°55'18.60"E	General Protection
NSA 5	Stone artefact occurrence	31°16'45.20"S; 24°55'30.50"E	General Protection
NSA 6	Stone artefact occurrence	31°17'03.00"S; 24°55'19.10"E	General Protection
NSA 7	Stone artefact (core in dam): exposed area	31°16'58.70"S; 24°55'17.60"E	General Protection
NSA 8	Stone artefact: exposed area	31°17'00.00"S; 24°55'14.20"E	General Protection
NSA9	Stone artefact: exposed area	31°17'01.00"S; 24°55'08.20"E	General Protection
NSA10	Stone artefact: exposed area	31°16'58.40"S; 24°55'08.40"E	General Protection
NSA11	Stone artefact: exposed area	31°16'58.80"S; 24°55'07.40"E	General Protection
NSA12	Stone artefact: exposed area	31°17'01.20"S; 24°55'04.30"E	General Protection
NSA13	Stone artefact: exposed area	31°17'02.10"S; 24°55'03.40"E	General Protection
NSA14	Stone artefact: exposed area	31°17'01.90"S; 24°55'03.20"E	General Protection
NSA15	Stone artefact: exposed area	31°17'01.50"S; 24°55'22.40"E	General Protection
NSA16	Stone artefact: exposed area	31°17'00.90"S; 24°55'01.70"E	General Protection
NSA17	Stone artefact: exposed area	31°16'58.90"S; 24°55'01.50"E	General Protection
NSA18	Stone artefact: exposed area	31°16'58.40"S; 24°55'01.90"E	General Protection
NSA19	Stone artefact: exposed area	31°16'58.10"S; 24°55'02.00"E	General Protection
NSA20	Stone artefact occurrence	31°16'53.50"S; 24°54'50.00"E	General Protection
NSA21	Stone artefact occurrence	31°16'47.60"S; 24°54'58.50"E	General Protection
NSA22	Stone artefact occurrence	31°16'34.30"S; 24°54'58.50"E	General Protection
NSA23	Stone artefact occurrence	31°17'38.30"S; 24°55'53.80"E	General Protection
NSA24	Stone artefact occurrence	31°17'36.00"S; 24°55'47.50"E	General Protection
Naauw P1	Tomose 2012	31°17'00.50"S; 24°55'05.50"E	N/A
Naauw P2	Tomose 2012	31°17'00.50"S; 24°55'04.30"E	N/A

Naauw P3	Tomose 2012	31°16'59.80"S; 24°55'05.50"E	N/A
Stonewalling			
NPIL1	2 stone pillars	31°16'45.80"S; 24°55'27.50"E	III
NSW1-1	Stonewalling kraal (near pillars)	31°16'49.00"S; 24°55'26.00"E	III
NSW1-2	Stonewalling kraal (corner)	31°16'54.90"S; 24°55'23.20"E	
NSW1-3	Stonewalling kraal (corner)	31°16'54.20"S; 24°55'18.90"E	
NSW1-4	Stonewalling kraal (corner)	31°16'52.00"S; 24°55'17.70"E	
NSW1-5	Stonewalling kraal (corner)	31°16'45.00"S; 24°55'21.10"E	
NSW2-1	Stonewalling kraal on slight gradient slope (corner)	31°16'52.40"S; 24°55'13.60"E	III
NSW2-2	Stonewalling kraal on slight gradient slope (corner)	31°16'51.60"S; 24°55'12.10"E	
NSW2-3	Stonewalling kraal on slight gradient slope (corner)	31°16'50.30"S; 24°55'12.50"E	
NSW3-1	Stone packed foundations (shepard's dwelling)	31°16'50.00"S; 24°55'13.60"E	III
NSW3-2	Stone packed foundations (shepard's dwelling)	31°16'49.50"S; 24°55'13.40"E	
NSW4-1	Stonewalling pen / small kraal on top of ridge	31°16'46.20"S; 24°55'12.40"E	III
NSW4-2	Stonewalling pen / small kraal on top of ridge	31°16'45.90"S; 24°55'12.40"E	
NSW5	Stone packed foundation (shepard's dwelling)	31°17'36.20"S; 24°55'50.70"E	III
NSW6-1	Stonewalling – Kraal	31°17'36.50"S; 24°55'51.50"E	III
NSW6-2	Stonewalling – Kraal	31°17'37.30"S; 24°55'51.10"E	
NSW6-3	Stonewalling – Kraal	31°17'36.80"S; 24°55'50.90"E	
NSW6-4	Stonewalling – Kraal	31°17'37.00"S; 24°55'51.80"E	
NSW7-1	Stone packed features (informal burials)	31°17'33.00"S; 24°55'40.00"E	III
NSW7-2	Stone packed features (informal burials)	31°17'32.90"S; 24°55'40.00"E	
Naauw P4	Desktop study site	31°16'49.70"S; 24°55'13.50"E	
Historical Artefact Occurrences and Scatters			
NA1	Ceramic sherd	31°16'45.30"S; 24°55'33.20"E	General protection
NA2	Sherds	31°16'45.30"S; 24°55'31.10"E	General protection
NA3	Glass next to stone walling	31°16'51.80"S; 24°55'24.60"E	General protection
NA4	Glass next to stonewalling	31°16'54.50"S; 24°55'22.30"E	General protection
NA5	Glass fragments	31°16'51.40"S; 24°55'18.00"E	General protection

NA6	Porcelain sherd	31°16'50.10"S; 24°55'18.60"E	General protection
NA7	Nail	31°16'49.20"S; 24°55'19.00"E	General protection
NA8	Bullet casing – probably modern (younger than 100 years)	31°16'52.50"S; 24°55'13.60"E	N/A
NA9	Glass fragment	31°16'48.10"S; 24°55'12.70"E	General protection
NA10	Bullet – probably modern (younger than 100 years)	31°16'36.50"S; 24°55'04.60"E	N/A
Other Built Structures			
NBE1	Old trough	31°16'53.40"S; 24°54'40.90"E	N/A
NBE2	Old trough	31°16'53.30"S; 24°54'23.40"E	N/A
NBE3	Old trough	31°17'04.20"S; 24°55'20.80"E	N/A
NBE4	Old trough	31°17'04.10"S; 24°55'21.10"E	N/A
NBE5	Reservoir	31°16'49.80"S; 24°54'05.60"E	N/A
General Readings			
N1	General reading	31°16'39.60"S; 24°55'38.30"E	N/A
N2	Dam wall	31°16'53.20"S; 24°55'15.00"E	N/A
N4	Landscape	31°16'34.80"S; 24°55'14.50"E	N/A
N5	General reading	31°16'55.80"S; 24°54'50.00"E	N/A
N6	General reading	31°16'46.70"S; 24°55'58.60"E	N/A
N7	General reading	31°16'33.70"S; 24°54'48.30"E	N/A
N8	General reading	31°16'32.80"S; 24°54'33.30"E	N/A
N9	General reading	31°16'48.10"S; 24°54'32.40"E	N/A
N10	General reading	31°16'49.60"S; 24°54'08.50"E	N/A
N11	General reading	31°16'31.20"S; 24°54'14.60"E	N/A
N12	General reading	31°16'22.10"S; 24°54'27.20"E	N/A
N13	Underground piping	31°17'05.20"S; 24°55'14.10"E	N/A
N14	General reading	31°17'05.90"S; 24°55'23.00"E	N/A
N15	General reading	31°17'10.30"S; 24°55'37.50"E	N/A
N16	General reading	31°17'08.60"S; 24°55'48.00"E	N/A
N17	General reading	31°17'18.90"S; 24°55'52.60"E	N/A
N18	General reading	31°17'34.70"S; 24°55'51.40"E	N/A
N19	General reading	31°17'48.30"S; 24°56'03.80"E	N/A
N20	General reading	31°17'48.10"S; 24°54'49.30"E	N/A
N21	General reading	31°18'04.20"S; 24°55'56.20"E	N/A

N22	General reading	31°17'41.10"S; 24°55'32.10"E	N/A
N23	Dense vegetation	31°17'14.90"S; 24°55'11.20"E	N/A
N24	Very dense vegetation	31°17'30.50"S; 24°55'12.00"E	N/A
N25	General reading	31°17'42.40"S; 24°55'11.50"E	N/A
N26	General reading	31°17'57.40"S; 24°55'19.00"E	N/A
N27	General reading	31°17'46.90"S; 24°55'04.50"E	N/A
N28	General reading	31°18'27.20"S; 24°55'15.30"E	N/A
N29	General reading	31°18'01.30"S; 24°55'24.00"E	N/A
N30	Power line	31°17'17.20"S; 24°55'29.20"E	N/A
WINDMAST	Windmast position	31°17'03.10"S; 24°55'19.10"E	N/A
NAR1	Existing access road	31°18'12.30"S; 24°55'01.60"E	N/A
NAR2	Existing access road	31°18'18.40"S; 24°55'07.10"E	N/A

9. ASSESSMENT OF THE SIGNIFICANCE AND OF THE ARCHAEOLOGICAL HERITAGE RESOURCES FOR THE PROPOSED NAAUWPOORT SOLAR ENERGY FACILITY.

TABLE 9.1.: ASSESSMENT OF THE SIGNIFICANCE THE PROPOSED NAAUWPOORT SOLAR ENERGY FACILITY: The destruction stone artefact occurrences.

Nature: The destruction of the stone artefact occurrences and scatters.		
	Without mitigation	With mitigation
Extent	Regional (5)	Low (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Very High (10)	Moderate (6)
Probability	Highly Probable (4)	Probable (3)
Significance	High (80)	Medium (36)
Status (positive or negative)	Negative	Negative
Reversibility	None	Low
Irreplaceable loss of resources?	Yes	Low
Can impacts be mitigated?	Yes	Yes
Mitigation:		
<ul style="list-style-type: none"> Once the final layout (including the positions of the solar panels; underground cabling; overhead power line; additional internal access roads, and the workshop area) of the proposed Naauwpoort Solar Energy Facility has been finalised an archaeological ground-truthing should be conducted and further recommendation be made to protect the archaeological heritage within the area proposed for development. The areas that have not been covered in this study owing to recent changes must be included when the final layout has been determined; and / or A professional archaeologist must be appointed during all construction and development activities including vegetation clearing and the excavation activities to monitor and identify possible archaeological material remains and features that may occur below the surface and make further appropriate recommendations on removing and / or protecting the archaeological material remains and features. If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or MacGregor Museum (053 839 2706) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/ excavation can be undertaken. Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. 		
Cumulative impacts:		
<ul style="list-style-type: none"> Irreplaceable loss of archaeological heritage resources. 		
Residual impacts:		
<ul style="list-style-type: none"> Irreplaceable loss of archaeological heritage resources. 		

TABLE 9.2.: ASSESSMENT OF THE SIGNIFICANCE THE PROPOSED NAAUWPOORT SOLAR ENERGY FACILITY: The destruction historical artefact scatters.

Nature: The destruction of the historical artefact scatters		
	Without mitigation	With mitigation
Extent	Regional (5)	Low (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Very High (10)	Moderate (6)
Probability	Highly Probable (4)	Probable (3)
Significance	High (80)	Medium (36)
Status (positive or negative)	Negative	Negative
Reversibility	None	Low
Irreplaceable loss of resources?	Yes	Low
Can impacts be mitigated?	Yes	Yes
Mitigation:		
<ul style="list-style-type: none"> Once the final layout (including the positions of the solar panels; underground cabling; overhead power line; additional internal access roads, and the workshop area) of the proposed Naauwpoort Solar Energy Facility has been finalised an archaeological ground-truthing should be conducted and further recommendation be made to protect the archaeological heritage within the area proposed for development. The areas that have not been covered in this study owing to recent changes must be included when the final layout has been determined; and / or A professional archaeologist must be appointed during all construction and development activities including vegetation clearing and the excavation activities to monitor and identify possible archaeological material remains and features that may occur below the surface and make further appropriate recommendations on removing and / or protecting the archaeological material remains and features. If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or MacGregor Museum (053 839 2706) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/ excavation can be undertaken. Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. 		
Cumulative impacts:		
<ul style="list-style-type: none"> Irreplaceable loss of archaeological heritage resources. 		
Residual impacts:		
<ul style="list-style-type: none"> Irreplaceable loss of archaeological heritage resources. 		

TABLE 9.2.: ASSESSMENT OF THE SIGNIFICANCE THE PROPOSED NAAUWPOORT SOLAR ENERGY FACILITY: The destruction of stonewalling and stone packed features NSW1 – NSW7.

Nature: The destruction of stonewalling and stone packed features NSW1 – NSW7.		
	Without mitigation	With mitigation
Extent	Regional (5)	Low (1)
Duration	Permanent (5)	Permanent (5)
Magnitude	Very High (10)	Moderate (6)
Probability	Highly Probable (4)	Probable (3)
Significance	High (80)	Medium (36)
Status (positive or negative)	Negative	Negative
Reversibility	None	Low
Irreplaceable loss of resources?	Yes	Low
Can impacts be mitigated?	Yes	Yes
Mitigation:		
<ul style="list-style-type: none"> • The black demarcated area on Figure 5 must be regarded as a no-go zone whereby no development may take place within the area including a 20 m buffer zone declared around the black demarcated area. This will include the protection of the concentration of stone artefacts near the dam as well as the stonewalling features occurring in the North Site. • A 20 m buffer zone must be erected around the stonewalling complex occurring in the South Site so that the development activities do not negatively affect the features. • The stone packed features (NSW7-1 and NSW7-1) must be appropriately fenced and 20 m buffer zone established. The features occur within 10 m of the internal farm road and must be clearly demarcated so as to avoid any negative impact from the proposed development activities. • Once the final layout (including the positions of the solar panels; underground cabling; overhead power line; additional internal access roads, and the workshop area) of the proposed Naauwpoort Solar Energy Facility has been finalised an archaeological ground-truthing should be conducted and further recommendation be made to protect the archaeological heritage within the area proposed for development. The areas that have not been covered in this study owing to recent changes must be included when the final layout has been determined; and / or • A professional archaeologist must be appointed during all construction and development activities including vegetation clearing and the excavation activities to monitor and identify possible archaeological material remains and features that may occur below the surface and make further appropriate recommendations on removing and / or protecting the archaeological material remains and features. • If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or MacGregor Museum (053 839 2706) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/ excavation can be undertaken. • Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. 		
Cumulative impacts:		
<ul style="list-style-type: none"> • Irreplaceable loss of archaeological heritage resources. 		

Residual impacts:

- Irreplaceable loss of archaeological heritage resources.

10. RECOMMENDATIONS

The area is of a medium-high cultural sensitivity, the following recommendations must be considered:

1. Once the final layout (including the positions of the solar panels; underground cabling; overhead power line; additional internal access roads, and the workshop area) of the proposed Naauwpoort Solar Energy Facility has been finalised an archaeological ground-truthing should be conducted and further recommendation be made to protect the archaeological heritage within the area proposed for development. The areas that have not been covered in this study owing to recent changes must be included when the final layout has been determined; and / or
2. A professional archaeologist must be appointed during all construction and development activities including vegetation clearing and the excavation activities to monitor and identify possible archaeological material remains and features that may occur below the surface and make further appropriate recommendations on removing and / or protecting the archaeological material remains and features.
3. The black demarcated area on Figure 5 must be regarded as a no-go zone whereby no development may take place within the area including a 20 m buffer zone declared around the black demarcated area. This will include the protection of the concentration of stone artefacts near the dam as well as the stonewalling features occurring in the North Site.
4. A 20 m buffer zone must be erected around the stonewalling complex occurring in the South Site so that the development activities do not negatively affect the features.
5. The stone packed features (NSW7-1 and NSW7-1) must be appropriately fenced and 20 m buffer zone established. The features occur within 10 m of the internal farm road and must be clearly demarcated so as to avoid any negative impact from the proposed development activities.
6. If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or MacGregor Museum (053 839 2706) and/or the South African Heritage Resources Agency (SAHRA) (021 642 4502) so that systematic and professional investigation/ excavation can be undertaken.
7. Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites.

11. CONCLUSION

The survey for the Naauwpoort Solar Energy Facility was conducted on foot by investigating the exposed surface and disturbed areas and recognising dry stone packed features on the landscape. Isolated surface occurrences of predominantly Middle Stone Age stone artefacts were observed within the proposed solar energy facility area and were found to be distributed over the extent of the proposed development area. A concentration of stone artefact exposed to the surface over time was documented south of the North Site. It is unlikely that the stone artefact surface scatters that occur on the exposed surface areas are positioned *in situ*, however, stone artefacts may occur between 50 – 80 cm below the surface.

Most of the dry packed stonewalling features occur outside of the boundary of the proposed development area. Those that do occur within the proposed development area, including the packed stone features resembling informal burials, are mainly situated on the boundary lines and can be mitigated. The appropriate mitigation measures and recommendations have been suggested.

The proposed development would have negative implications on the archaeological heritage remains documented within the proposed area during all phases of the development. The negative implications include the destruction of the surface scatters of stone artefacts and further occurrences that are not immediately visible as well as the stone packed and stonewalling features. The recommendations must be considered as appropriate mitigation measures to protect and conserve the archaeological heritage remains observed within the proposed development area and further archaeological remains that may occur and are not immediately visible on the surface.

12. GENERAL REMARKS AND CONDITIONS

NOTE: This report is a phase 1 archaeological impact assessment (AIA) only and does not include or exempt other required specialist assessments as part of the heritage impact assessments (HIAs).

The National Heritage Resources Act (Act No. 25 of 1999, Section 35 [Brief Legislative Requirements]) requires a full Heritage Impact Assessment (HIA) in order that all heritage resources including all places or objects of aesthetics, architectural, historic, scientific, social, spiritual, linguistic, or technological value or significance are protected. Thus any assessment should make provision for the protection of all these heritage components including archaeology, shipwrecks, battlefields, graves, and structures older than 60 years, living heritage, historical settlements, landscapes, geological sites, palaeontological sites and objects.

It must be emphasized that the conclusions and recommendations expressed in this phase 1 archaeological impact assessment (AIA) are based on the visibility of archaeological remains, features and, sites and may not reflect the true state of affairs. Many archaeological remains, features and, sites may be covered by soil and vegetation and will only be located once this has been removed. In the event of such archaeological heritage being uncovered (such as during any phase of construction activities), archaeologists or the relevant heritage authority must be informed immediately so that they can investigate the importance of the sites and excavate or collect material before it is destroyed. The onus is on the developer to ensure that this agreement is honoured in accordance with the National Heritage Resources Act No. 25 of 1999 (NHRA 25 of 1999).

Archaeological Specialist Reports (desktops and AIA's) will be assessed by the relative heritage resources authority. The final decision rests with the heritage resources authority that may confirm the recommendations in the archaeological specialist report and grant a permit or a formal letter of permission for the destruction of any cultural sites.

13. REFERENCES

- Beaumont, P. B. & Morris, D. 1990. *Guide to archaeological sites in the Northern Cape*. Kimberly: McGregor Museum.
- Beaumont, P.B. & Vogel, J.C. 1984. Spatial patterning of the Ceramic Later Stone Age in the Northern Cape Province, South Africa. *In*: Hall, M.; Avery, G.; Avery, D. M.; Wilson, M. L. & Humphreys, A. J. B. *Frontiers: southern African archaeology today*. Oxford: BAR International Series 207.
- Binneman, J.N.F. & Booth, C. 2008. A phase 1 Archaeological Heritage Impact Assessment for the proposed construction and operation of an ethanol production plant on Erven 31, 32, 33 and the remaining extent of Erf 1, Cradock, Inxuba Yethemba local municipality, Eastern Cape Province
- Booth, C. 2012. A Phase 1 Archaeological Impact Assessment For The Proposed Establishment of the ACED Middelburg Solar Park (Park 1 And Park 2) On The Farm Tweefontein Remainder Of Farm 11 (Solar Park 1) and Tweefontein Portion 4 of Farm 11 (Solar Park 2), Middelburg, Eastern Cape Province. Prepared for Savannah Environmental (Pty) Ltd.
- Bousman, C. B. 2005. Coping with Risk: Later Stone Age technological strategies at Blydefontein Rock Shelter, South Africa. *Journal of Anthropological Archaeology* 24: 193-226.
- Deacon, J. 1974. Patterning in the radiocarbon dates for the Wilton/Smithfield complex in southern Africa. *The South African Archaeological Bulletin* 25:3-18.
- Deacon, H.J. & Deacon, J. 1999. *Human beginnings in South Africa*. Cape Town: David Phillips Publishers.
- Goodwin, A.J.H. & Lowe, C. van Riet. 1929. The Stone Age cultures of South Africa. *Annals of the South African Museum*.
- Humphreys, A.J.B. 1991. On the distribution and dating of bifacial and tanged arrowheads in the interior of South Africa. *The South African Archaeological Bulletin*, 46(153): 41-43.
- Morris, D. 1988. Engraved in place and time: a review of variability in the rock art of the Northern Cape and Karoo. *South African Archaeological Bulletin*, Vol. 43:109-121.
- Morris, D. & Beaumont, P.B. 1990. Renosterkop: an archaeological impact assessment at the site of the proposed Trans Hex Tin Mine, Kakamas District, South Africa. Unpublished report submitted to Trans Hex Group Ltd and the National Monuments Council, November 1990.
- National Heritage Resources Act (NHRA) 25 of 1999
- Ouzman, S. 2005. The magical arts of a raider nation: Central South Africa's Korana rock Art. *South Africa Archaeological Society Goodwin Series* 9:101-113.
- Sadr, K & Sampson, G. 1999. Khoekhoe ceramics of the upper Seacow Valley. *South Africa Archaeological Bulletin*, 54:3-15.
- Sampson, C. G. 1984. Site clusters in the Smithfield settlement patterns. *Southern African Archaeological Bulletin* 39 (139): 5-23.
- Sampson, C. G. 1985. *Atlas of Stone Age Settlement in the Central and Upper Seacow Valley*. *Memoirs van die Nasionale Museum Bloemfontein*, Vol. 20:1-116.
- Sampson, C.G. 1988. *Stylistic boundaries among mobile hunter-foragers*. Washington: Smithsonian Institution Press
- Tomose, N. 2012. A Heritage Scoping Study for the Proposed Naauw Poort Solar Energy Facility (75MW), near Noupoot, Northern Cape Province. Prepared for Savannah

Environmental (Pty) Ltd.

APPENDIX A: GRADING SYSTEM

The NHRA stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- Grade I: Heritage resources with qualities so exceptional that they are of special national significance;
- Grade II: Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- Grade III: Other heritage resources worthy of conservation on a local authority level.

The occurrence of sites with a Grade I significance will demand that the development activities be drastically altered in order to retain these sites in their original state. For Grade II and Grade III sites, the applicable mitigation measures would allow the development activities to continue.

1. Human Remains:

All human remains exposed during all the phases of the construction activities must be reported to the archaeologist, nearest museum or relevant heritage resources authority. Construction must be halted until the archaeologist has investigated and removed the human remains. Human remains may be exposed when a grave or informal burial has been disturbed. In general, the remains are buried in a flexed position on the side and may also be buried in a sitting position with a flat stone capping the location of the burial. Developers are requested to be aware of the exposing human remains.

2. Stone Artefacts:

Stone artefacts are difficult for the layman to identify. Large accumulations of flaked stones that do not appear to have been distributed naturally must be reported. If the stone artefacts are associated with bone / faunal remain or any other associated organic and material cultural artefacts development must be halted immediately and reported to the archaeologist, nearest museum or relevant heritage resources authority.

3. Large Stone Features:

Large stone features occur in different forms and sizes, however, are relatively easy to identify. The most common features are roughly circular stone walls (mostly collapsed), usually dry packed stone, and may represent stock enclosures, the remains of wind breaks or, cooking shelters. Other features consist of large piles of stones of different sizes and heights are known as *isisivane*. These features generally occur near river and mountain crossings. The purpose and meaning of the *isisivane* are not fully understood, however, interpretations include the representation of burial cairns and symbolic value.

4. Freshwater Shell Middens:

Accumulations of freshwater shell middens comprising mainly freshwater mussel occur along the muddy banks of rivers and streams and were collected by pre-colonial communities as a food resource. The freshwater shell middens generally contain stone artefacts, pottery, bone and, sometimes even human remains. Freshwater shell middens may be of various sizes and depths, an accumulation that exceeds 1m² in extent must be reported to the archaeologist, nearest museum or, relevant heritage resources authority.

5. Historical Artefacts and Features:

These are relatively easy to identify and include the foundations and remains of buildings, packed dry stone walling representing domestic stock kraals. Other items include historical domestic artefacts such as ceramics, glass, metal and military artefacts and dwellings.

6. Fossil Bone:

Fossil bones may be embedded in geological deposits. Any concentrations of bone whether fossilized or not must be reported.

Environmental Management Programme

Measures for inclusion in the draft Environmental Management Programme must be laid out as detailed below:

OBJECTIVE:

Reducing / No impact of the proposed Naauwpoort Solar Energy Facility development including the construction of the PV solar panels, power lines, and associated infrastructure on the archaeological, historical and other relevant heritage remains.

Project component/s	<ul style="list-style-type: none"> • PV solar panels and foundations; • Underground cabling between panels; • New / Upgraded power lines; • New internal access roads and perimeter fencing; • Workshop, maintenance and storage facilities and other associated infrastructure.
Potential Impact	Irreplaceable loss of the archaeological, historical and other relevant heritage remains.
Activity/risk source	<ul style="list-style-type: none"> • Construction of the new roads for the transportation of the equipment required for the establishment of the PV solar panels, the power lines, and the associated infrastructure; • Excavation and construction or upgrade of the new overhead power line pylons; • Excavation and construction of the foundation or footprint of the individual PV solar panels; • Excavation and installation for the underground cabling between the individual PV solar panels; • Excavation and construction of the workshop, maintenance, and storage facilities.
Mitigation: Target/Objective	<ul style="list-style-type: none"> • To protect and conserve the archaeological, historical and other relevant heritage remains by conducting an archaeological walk-through of the final layout of the proposed project and make the appropriate recommendation – Before construction begins; • To ensure that any archaeological, historical, and other relevant heritage objects, artefacts, features, and structures on site are treated appropriately and in accordance with the heritage legislation – During the construction phase and lifespan of the project; • To ensure that the cultural landscape and sense of place is maintained as far as possible – During the construction phase and lifespan of the project.

Mitigation: Action/control	Responsibility	Timeframe
<ul style="list-style-type: none"> • Once the final layout (including the positions of the solar panels; underground cabling; overhead power line; additional internal access roads, and the workshop area) of the proposed Naauwpoort Solar Energy Facility has been finalised an 	1. The South African Heritage Resources Agency (SAHRA) in the review comment for the project, the	1. To be decided by SAHRA and included during the planning phase before construction commences.

<p>archaeological ground-truthing should be conducted and further recommendation be made to protect the archaeological heritage within the area proposed for development. The areas that have not been covered in this study owing to recent changes must be included when the final layout has been determined; and / or</p> <ul style="list-style-type: none"> • A professional archaeologist must be appointed during all construction and development activities including vegetation clearing and the excavation activities to monitor and identify possible archaeological material remains and features that may occur below the surface and make further appropriate recommendations on removing and / or protecting the archaeological material remains and features. • No development should be conducted in the area demarcated as a no-go zone and should include a 20 m buffer zone. This will include the protection of the concentration of stone artefacts near the dam as well as the stonewalling features occurring in the North Site. • A 20 m buffer zone must be erected around the stonewalling complex occurring in the South Site so that the development activities do not negatively affect the features. • The stone packed features (NSW7-1 and NSW7-1) must be appropriately fenced and 20 m buffer zone established. The features occur within 10 m of the internal farm road and must be clearly demarcated so as to avoid any negative impact from the proposed development activities. • If concentrations of archaeological heritage material and human remains are uncovered during construction, all work must cease immediately and be reported to the Albany Museum (046 622 2312) and/or MacGregor Museum (053 839 2706) and/or the South African Heritage Resources Agency (SAHRA) (021 642 	<p>developer, the Environmental Control Officer (ECO), and the appointed archaeologist/s.</p> <p>2. SAHRA in the review comment for the project, the developer, the ECO, and the appointed archaeologist/s.</p> <p>3. SAHRA in the review comment for the project, the developer, the ECO, and the appointed archaeologist.</p> <p>4. SAHRA in the review comment for the project, the developer, the ECO, and the appointed archaeologist.</p> <p>5. SAHRA in the review comment for the project, the developer, the ECO, and the appointed archaeologist.</p>	<p>2. To be decided by SAHRA and included during the planning phase. Activity would be conducted during the vegetation clearing and excavation phase of the project.</p> <p>3. To be decided by SAHRA and included during the planning phase. Activity would be conducted during the before the commencement of the construction phase.</p> <p>4. To be decided by SAHRA and included during the planning phase. Activity would be conducted during the before the commencement of the construction phase.</p> <p>5. To be decided by SAHRA and included during the planning phase. Activity would be conducted during the before the commencement of the construction phase.</p>
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<p>4502) so that systematic and professional investigation/ excavation can be undertaken.</p> <ul style="list-style-type: none"> Construction managers/foremen should be informed before construction starts on the possible types of heritage sites and cultural material they may encounter and the procedures to follow when they find sites. 	<p>6. SAHRA in the review comment for the project, the developer, the ECO, and the appointed archaeologist.</p> <p>7. SAHRA in the review comment for the project, the developer, the ECO, the construction managers / foremen, and the appointed archaeologist to provide the appropriate information.</p>	<p>6. To be decided by SAHRA and included during the planning phase. Activity would be conducted during the construction phase if heritage materials are uncovered.</p> <p>7. To be decided by SAHRA and included during the planning phase. Activity would be conducted before and during the construction phase if heritage materials are uncovered.</p>
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<p>Performance Indicator</p>	<ul style="list-style-type: none"> The recommendations made in the report and agreed upon by the South African Heritage Resources Agency (SAHRA) in the the Review Comment have been considered and implemented and no negative impacts on the archaeological, historical, and other heritage remains can be witnessed;
<p>Monitoring</p>	<ul style="list-style-type: none"> Compliance with the recommendations made in the report and agrred upon by the South African Heritage Resources Agency (SAHRA) in the Review Comment; The terms of reference set for the appointed archaeologist and their letter of appointment; The reports required for implementation of the mitigation actions and controls.

REFERENCE	DESCRIPTION	CO-ORDINATE
Stone Artefact Occurrences and Scatters		
NSA 1	Stone artefact	31°16'38.70"S; 24°55'42.40"E
NSA 2	Stone artefact	31°16'42.40"S; 24°55'39.30"E
NSA 3	Stone artefact	31°16'49.80"S; 24°55'18.70"E
NSA 4	Stone artefact	31°16'50.20"S; 24°55'18.60"E
NSA 5	Stone artefact	31°16'45.20"S; 24°55'30.50"E
NSA 6	Stone artefact	31°17'03.00"S; 24°55'19.10"E
NSA 7	Stone artefact (core in dam): exposed area	31°16'58.70"S; 24°55'17.60"E
NSA 8	Stone artefact: exposed area	31°17'00.00"S; 24°55'14.20"E
NSA9	Stone artefact: exposed area	31°17'01.00"S; 24°55'08.20"E
NSA10	Stone artefact: exposed area	31°16'58.40"S; 24°55'08.40"E
NSA11		31°16'58.80"S; 24°55'07.40"E
NSA12	Stone artefact: exposed area	31°17'01.20"S; 24°55'04.30"E
NSA13	Stone artefact: exposed area	31°17'02.10"S; 24°55'03.40"E
NSA14	Stone artefact: exposed area	31°17'01.90"S; 24°55'03.20"E
NSA15	Stone artefact: exposed area	31°17'01.50"S; 24°55'22.40"E
NSA16	Stone artefact: exposed area	31°17'00.90"S; 24°55'01.70"E
NSA17		31°16'58.90"S; 24°55'01.50"E
NSA18	Stone artefact: exposed area	31°16'58.40"S; 24°55'01.90"E
NSA19	Stone artefact: exposed area	31°16'58.10"S; 24°55'02.00"E
NSA20	Stone artefact	31°16'53.50"S; 24°54'50.00"E
NSA21	Stone artefact	31°16'47.60"S; 24°54'58.50"E
NSA22	Stone artefact	31°16'34.30"S; 24°54'58.50"E
NSA23	Stone artefact	31°17'38.30"S; 24°55'53.80"E
NSA24	Stone artefact	31°17'36.00"S; 24°55'47.50"E
Naauw P1	Desktop study site	31°17'00.50"S; 24°55'05.50"E
Naauw P2	Desktop study site	31°17'00.50"S; 24°55'04.30"E
Naauw P3	Desktop study site	31°16'59.80"S; 24°55'05.50"E
Stonewalling		
NSW1-1	Corner / 1 m wide	31°16'49.00"S; 24°55'26.00"E
NSW1-2	South east corner of stonewalling	31°16'54.90"S; 24°55'23.20"E
NSW1-3	South west side of stonewalling	31°16'54.20"S; 24°55'18.90"E
NSW1-4	Stonewalling	31°16'52.00"S; 24°55'17.70"E
NSW1-5	Stonewalling	31°16'45.00"S; 24°55'21.10"E
NSW2-1	Stonewalling: Kraal? On slight gradient slope	31°16'52.40"S; 24°55'13.60"E
NSW2-2	South east corner stonewalling	31°16'51.60"S; 24°55'12.10"E
NSW2-3	Stonewalling	31°16'50.30"S; 24°55'12.50"E
NSW3-1	Stone packed foundations (shepard's hut?)	31°16'50.00"S; 24°55'13.60"E
NSW3-2	Stone walling foundations?	31°16'49.50"S; 24°55'13.40"E
NSW4-1	Stonewalling: Pen / Kraal	31°16'46.20"S; 24°55'12.40"E
NSW4-2	Pen/Kraal	31°16'45.90"S; 24°55'12.40"E
NSW5	Stonewalling – pen / kraal	31°17'36.20"S; 24°55'50.70"E
NSW6-1	Stonewalling – Kraal	31°17'36.50"S; 24°55'51.50"E
NSW6-2	Stonewalling – Kraal	31°17'37.30"S; 24°55'51.10"E
NSW6-3	Stonewalling – Kraal	31°17'36.80"S; 24°55'50.90"E
NSW6-4	Stonewalling – Kraal	31°17'37.00"S; 24°55'51.80"E
NSW7-1		31°17'33.00"S; 24°55'40.00"E
NSW7-2		31°17'32.90"S; 24°55'40.00"E
NPIL1	2 stone pillars	31°16'45.80"S; 24°55'27.50"E
Naauw P4	Desktop study site	31°16'49.70"S; 24°55'13.50"E
General Readings		
N1		31°16'39.60"S; 24°55'38.30"E
N2	Dam wall	31°16'53.20"S; 24°55'15.00"E
N4	Landscape	31°16'34.80"S; 24°55'14.50"E
N5	General	31°16'55.80"S; 24°54'50.00"E
N6	General	31°16'46.70"S; 24°55'58.60"E

N7		31°16'33.70"S; 24°54'48.30"E
N8		31°16'32.80"S; 24°54'33.30"E
N9		31°16'48.10"S; 24°54'32.40"E
N10		31°16'49.60"S; 24°54'08.50"E
N11		31°16'31.20"S; 24°54'14.60"E
N12		31°16'22.10"S; 24°54'27.20"E
N13	Underground piping	31°17'05.20"S; 24°55'14.10"E
N14		31°17'05.90"S; 24°55'23.00"E
N15		31°17'10.30"S; 24°55'37.50"E
N16		31°17'08.60"S; 24°55'48.00"E
N17		31°17'18.90"S; 24°55'52.60"E
N18		31°17'34.70"S; 24°55'51.40"E
N19		31°17'48.30"S; 24°56'03.80"E
N20		31°17'48.10"S; 24°54'49.30"E
N21		31°18'04.20"S; 24°55'56.20"E
N22		31°17'41.10"S; 24°55'32.10"E
N23	Dense vegetation	31°17'14.90"S; 24°55'11.20"E
N24	Very dense vegetation	31°17'30.50"S; 24°55'12.00"E
N25		31°17'42.40"S; 24°55'11.50"E
N26		31°17'57.40"S; 24°55'19.00"E
N27		31°17'46.90"S; 24°55'04.50"E
N28		31°18'27.20"S; 24°55'15.30"E
N29		31°18'01.30"S; 24°55'24.00"E
N30	Powerline	31°17'17.20"S; 24°55'29.20"E
WINDMAST	Windmast position	31°17'03.10"S; 24°55'19.10"E
NAR1	Existing access road	31°18'12.30"S; 24°55'01.60"E
NAR2	Existing access road	31°18'18.40"S; 24°55'07.10"E
Historical Artefact Occurrences and Scatters		
NA1	Ceramic sherd	31°16'45.30"S; 24°55'33.20"E
NA2	Sherds	31°16'45.30"S; 24°55'31.10"E
NA3	Glass next to stone walling	31°16'51.80"S; 24°55'24.60"E
NA4	Glass next to stonewalling	31°16'54.50"S; 24°55'22.30"E
NA5	Glass fragments	31°16'51.40"S; 24°55'18.00"E
NA6	Porcelain sherd	31°16'50.10"S; 24°55'18.60"E
NA7	Nail	31°16'49.20"S; 24°55'19.00"E
NA8	Bullet casing	31°16'52.50"S; 24°55'13.60"E
NA9	Hidden in vegetation	31°16'48.10"S; 24°55'12.70"E
NA10	Bullet	31°16'36.50"S; 24°55'04.60"E
Other Built Structures		
NBE1	Old trough	31°16'53.40"S; 24°54'40.90"E
NBE2	Old trough	31°16'53.30"S; 24°54'23.40"E
NBE3	Old trough	31°17'04.20"S; 24°55'20.80"E
NBE4	Old trough	31°17'04.10"S; 24°55'21.10"E
NBE5	Reservoir	31°16'49.80"S; 24°54'05.60"E