

HERITAGE INDICATORS WITHIN THE RECEIVING ENVIRONMENT

3. REGIONAL CULTURAL CONTEXT

3.1 PALAEOLOGY

TABLE 1: FOSSIL HERITAGE IN THE COPPERTON AREA				
GEOLOGICAL UNIT	ROCK TYPES & AGE	FOSSIL HERITAGE	PALAEONTOLOGICAL SENSITIVITY	RECOMMENDED MITIGATION
Gordonia Formation KALAHARI GROUP	mainly aeolian sands <i>plus</i> minor fluvial gravels, freshwater pan deposits PLEISTOCENE	calcretised rhizoliths & termitaria, ostrich egg shells, land snail shells, rare mammalian and reptile (e.g. tortoise) bones, teeth freshwater units associated with diatoms, molluscs, stromatolites etc	LOW	none recommended any substantial fossil finds to be reported by ECO to SAHRA
Mbizane Formation DWAYKA GROUP	tillites, interglacial mudrocks, deltaic & turbiditic sandstones, minor thin limestones LATE CARBONIFEROUS – EARLY PERMIAN	sparse petrified wood & other plant remains, palynomorphs, trace fossils (e.g. arthropod trackways, fish trails, U-burrows) possible stromatolites in limestones	LOW	none recommended any substantial fossil finds to be reported by ECO to SAHRA
Vogelstruis-bult Formation JACOBSMYN PAN GROUP	high grade metamorphic rocks (e.g. banded gneisses, migmatites) MID PROTEROZOIC = LATE PRECAMBRIAN	none	ZERO	none recommended
Spioenkop Formation MARYDALE GROUP	metamorphic rocks (e.g. quartzites, schists, amphibolites) ARCHEAN = EARLY PRECAMBRIAN	none	ZERO	none recommended

Figure 6. Stone formation table

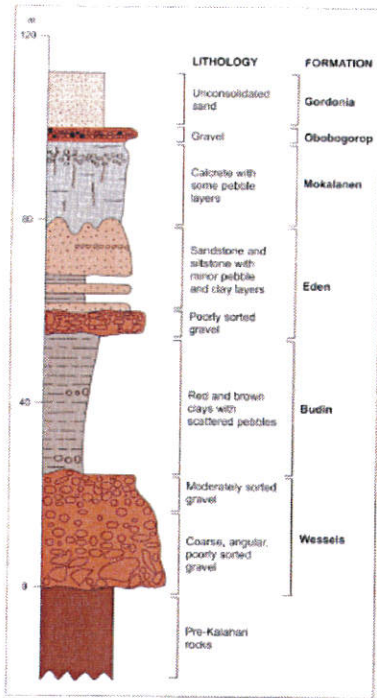


Figure 7. Stratigraphy of the Kalahari Group (from Partridge, 2006)

The Palaeontology Sensitivity Map published by SAHRA on the South African Heritage Resources Information System (SAHRIS) gives guidelines for the management of paleontological sensitive areas.

The study area falls within the green zone.

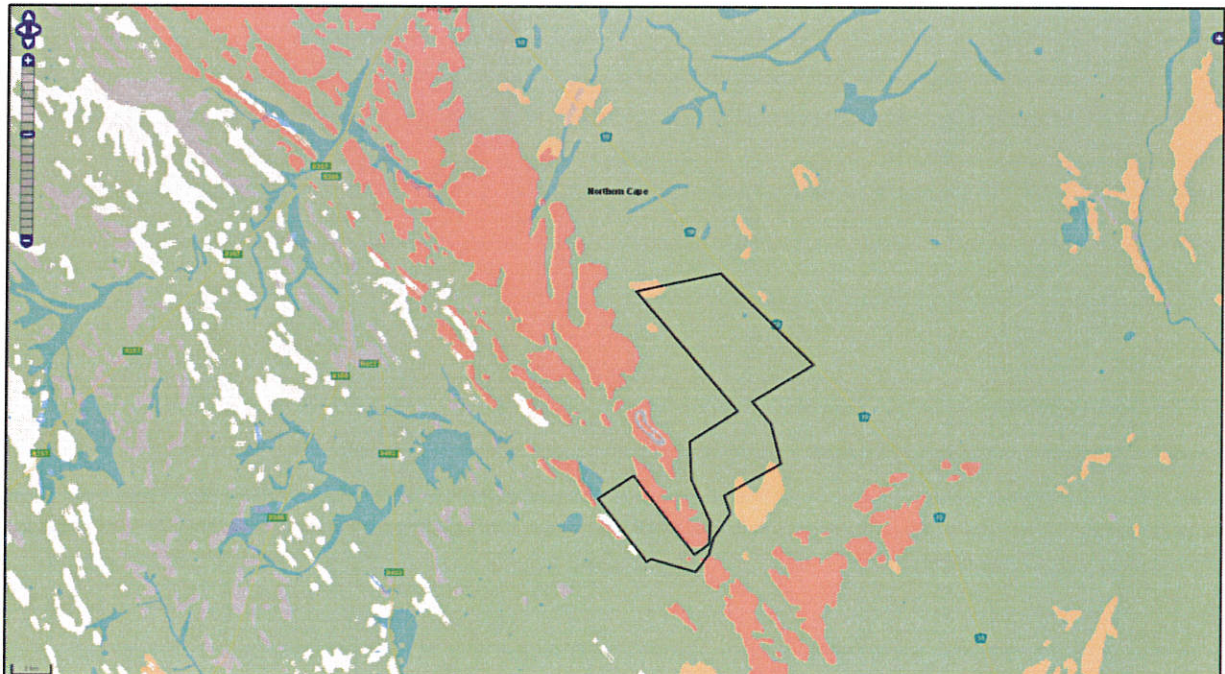


Figure 8. PalaeoSensitivity Map

Table 3. Palaeontological Sensitivity

Colour	Sensitivity	Action Required
RED	VERY HIGH	Field assessment and protocol for finds is required.
ORANGE / YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study, a field assessment is likely.
GREEN	MODERATE	Desktop study is required.
BLUE	LOW	No Palaeontological studies are required however, a protocol for finds is required.
GREY	INSIGNIFICANT / ZERO	No Palaeontological studies are required.
WHITE / CLEAR	UNKNOWN	These area will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

3.2 STONE AGE

This area is home to all three of the known phases of the Stone Age, namely: The Early- (2.5 million – 250 000 years ago), Middle- (250 000 – 22 000 years ago) and Late Stone Age (22 000 – 200 years ago). The Late Stone Age in this area also contains sites with rock art from the San and Khoi San cultural groups. Early to Middle Stone Age sites are less common in this area, however rock-art sites and Late Stone Age sites are much better known (Clark 1959).

Archaeological and heritages studies in the Northern Cape indicate that the area is of high Stone Age archaeological and heritage significance. It is in fact a cultural landscape where Stone Age, Iron Age and Historical period sites contribute the bulk of the cultural heritage of the region (also see Hart, 2005; Kaplan, 2010; Kiberd, 2006; Morris, 1990; Orton, 2011). A study conducted by Schalkwyk (2011) for the establishment of a mainstream renewable solar power in Prieska region revealed that most sites in this region belong to the Stone Age that are the Early Stone Age (ESA), Middle Stone Age (MSA) and Late Stone (LSA). Similar observations were made by Morris (2000). Kiberd (2001, 2006) who also excavated Budu Pan 25 -30 km northwest of Prieska where a profile ESA, MSA and LSA deposits was recorded. Several LSA sites in the northwest and south of the Prieska region were also investigated by Beaumont et al., (1995), Smith (1995a), and Parsons (2003, 2004, 2007). Rock engraving sites are also found in the Prieska region. Kuil and Driekopseiland are some of the rock engraving sites in the region (Beaumont et al., 1995, Beaumont and Vogel 1989, Rudner and Rudner 1968, Rush and Parkington 2010, Wilman 1933). Orton (2012) found scrapped engravings between Prieska and Vanwyksvlei. Stone circles belonging to the LSA were also recorded further along the Orange River by Orton (2012) in addition to what Sampson (1968) had earlier recorded. Cave sites also exist in the landscape eastern Northern Cape regions with MSA deposits. A British fort at Prieska is one of the heritage sites that is ruminant of the late 19-century Anglo-Boer war. In addition, there are also war graves in the region (also see Southerncape 2010, Orton 2012). A study conducted by Orton (2012) revealed also historical sites in Klipgat Pan.

SOURCE: Archaeological and Heritage Impact Assessment Report for the Proposed 75 MWP Photovoltaic Power Plant and its Associated Infrastructure on a Portion of the Remaining Extent of Erf 1 Prieska, Northern Cape – “ABC Prieska Solar 1 Project”

Most archaeological material in the Northern Cape is found near water sources such as rivers, pans and springs, as well as on hills and in rock shelters. Sites usually comprise of open sites where the majority of evidence of human occupation is scatters of stone tools (Parsons 2003).

The survey found that Stone Age archaeological material was present throughout the study area. The vast majority of it was considered to be background scatter, the “low density lithic scatter” of Beaumont et el. (1995:240).

During the Middle Stone Age, 200 000 years ago, modern man or Homo sapiens emerged, manufacturing a wider range of tools, with technologies more advanced than those from earlier periods (Deacon 1984). This enabled skilled hunter-gatherer bands to adapt to different environments.

From this time onwards, rock shelters and caves were used for occupation and reoccupation over very long periods of time.

The Late Stone Age, considered to have started some 20 000 years ago, is associated with the predecessors of the San and Khoi Khoi. Stone Age hunter-gatherers lived well into the 19th century in some places in SA. Stone Age sites may occur all over the area where an unknown number may have been obliterated by mining activities, urbanisation, industrialisation, agriculture and other development activities during the past decades.

Specifically, the Wonderwerk Cave in the Kururman hills has provided much Stone Age information (Beaumont 1984, 2006).

Specularite mining is noted by Beaumont and Bashier (1974) at Doornfontein and Blinkklipkop between 800AD – 820AD.

A limited number of Rock-Art sites are located in this area, mostly due to the lack of suitable shelter sites.

3.3 IRON AGE

Although there is documentary evidence of a large Iron Age Tswana village – Dithakong, located in the general area the occurrence of this is still hotly contested and the findings of Cobbing have been largely discredited (Cobbing 1988, SAHRA ARC pers. comm).

More recent research by Jacobs shows occupational Tswana sites to occur during the later “Bantu Expansion” and “Proto-Difqane between c1750 and 1830 in the study area. Specifically the Tlhaping and Tlharo chiefdoms are referred to here (N. J. Jacobs, 199). It is even suggested that some Sotho-Tswana people might have preceded the Tlhaping and Tlharo in this region. This is however not a recent postulations since Ellenberger and MacGregor already proposed earlier Iron Age communities in these areas as early as 1912 (Ellenberger & MacGregor, 1912).

Tswana Industry groups might have continued the specularite mining noted in the Stone Age during the Iron Age in this area from 1600 on.

According to Breutz (1963) Iron Age settlements could be found as far south as Gathlose and Majeng, which are both within 25km of the study area. Such sites have also been identified at Danielskuil (Snyman, 1986). These groups were eventually driven from the area by the Kora (Snyman, 1986).

3.4 THE HISTORIC ERA

The study area was most likely settled by white farmers relatively late in South Africa’s history. Very little of the region’s recent history is recorded. Neither the Genealogical Society nor the Monuments Database at Google Earth have any recorded sites in the study area.

Copper and Zinc was discovered in the region in 1968 and the Prieska Copper Mines, owned by Anglovaal Mining Ltd. was established. It became one of the South Africa’s major base-metal mines, one of the first to have a decline from the surface, using trackless mining methods.

Prieska saw its heyday between 1970 and the end of the 20th century when the town housed mine workers and their families. The copper and zinc mine which opened in 1972 was shut down by the Anglovaal Mining Group in 1991. Most of the buildings were demolished and only a few houses are presently used by Armscor, who operate the weapons testing center at Alkantspan. Their primary purpose was initially to test artillery, rockets, short range missiles, mortars and anti-aircraft weapons for the then SA Defense Force. Present day, the Alkantspan Test Range has become a major asset for its owners. It is today not only used by the SA National Defence Force (SANDF) but finds itself hosting foreign militaries as well as foreign munitions manufacturers.

Sources:

- http://www.defenceweb.co.za/index.php?option=com_content&view=article&id=36798

- http://www.sahra.org.za/sahris/sites/default/files/otherrefsdecisions/1-DSR%20Hoekplaas%20PV2-11_0.pdf
- <http://www.nersa.org.za/Admin/Document/Editor/file/Consultations/Electricity/Presentations/Mulilo%20Renewable%20Energy%20Solar%20PV%20Prieska.pdf>
- Van Der Walt, J. 2013. Archaeological Impact Assessment Report for the Garob to Kronos Power Line, near Prieska in the Northern Cape.
- Orton, J. 2015. Heritage Impact Assessment for three Proposed Solar Energy Facilities and three Associated Transmission Lines near Prieska, Prieska Magisterial District, Northern Cape.

3.5 CULTURAL LANDSCAPE

Most of the areas investigated is being used for small livestock farming. Small farm homesteads and associated outbuildings as well as farming structures such as water troughs and livestock enclosures abound in the area.

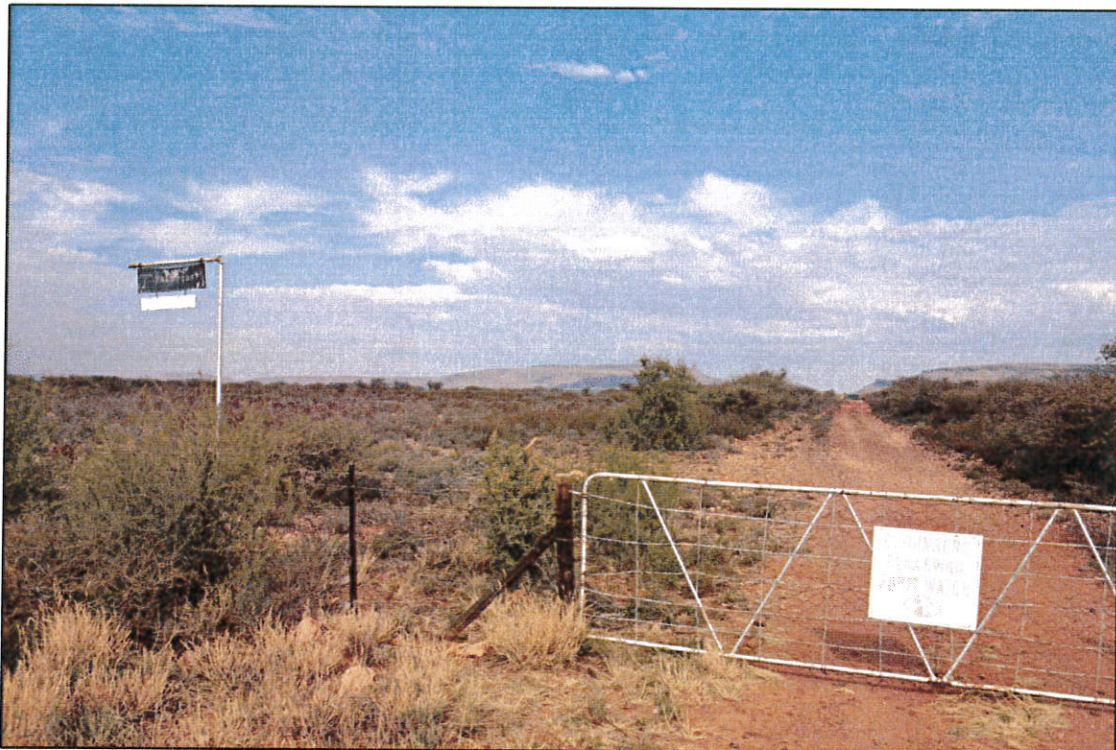


Figure 9. General Landscape of the Farm Keikamspoor 71 Portion 16



Figure 10. Access road

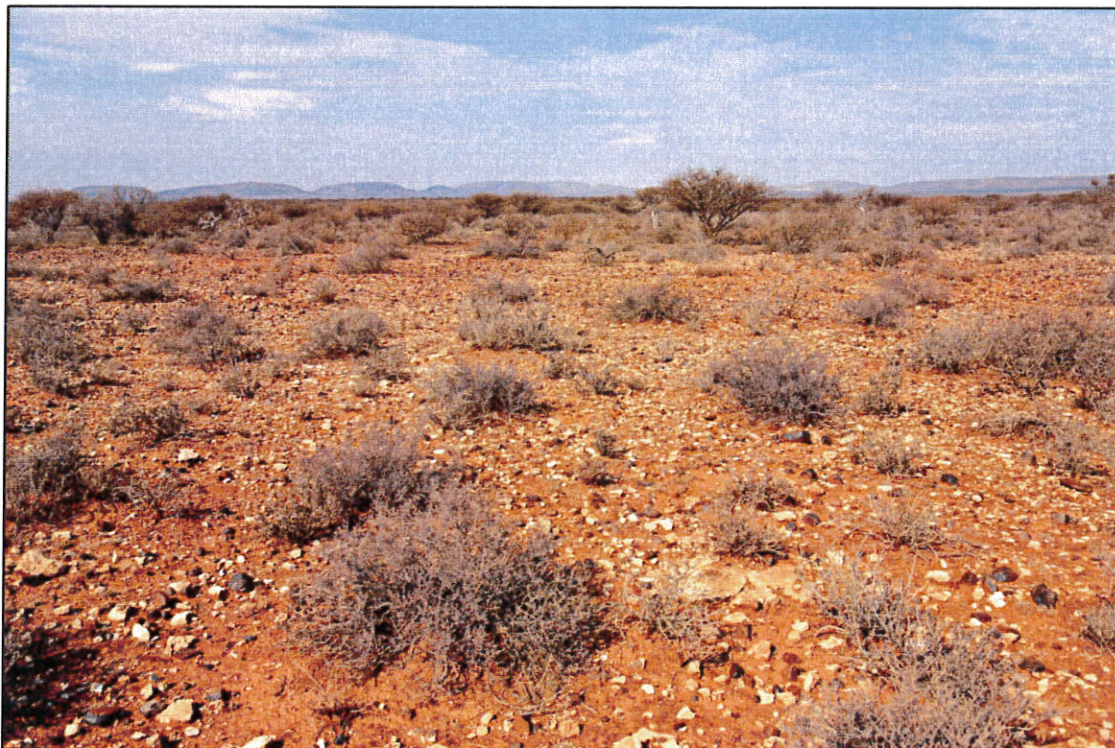


Figure 11. Scatters of calcrete and banded iron stone



Figure 12. Calcrete and magnetite outcrop



Figure 13. Large concentrations of banded iron stone



Figure 14. Calcrete and banded iron stone deposit



Figure 15. Red Kalahari Sand mixed with magnetite



Figure 16. Shepherd's tree or Wit-gat (*Boscia albitrunca*)



Figure 17. The "Valley" at Keikamspoor indicating homogenous Red Kalahari Sands



Figure 18. Scatters of magnetite in the "Valley"



Figure 19. Large concentration of magnetite and banded iron stone



Figure 20. Magnetite outcrop with variations in plant cover (some recent mud brick remains)



Figure 21. Red Kalahari Sands



Figure 22. Prominent magnetite outcrops close to homestead



Figure 23. View towards the north over the "Valley"



Figure 24. Magnetite and banded iron stone concentrations



Figure 25. View towards the north and the pass



Figure 26. Changes in stone sediment on northern slopes



Figure 27. The plains on the northern side of the ridge



Figure 28. Looking south from the plains



Figure 29. Calcrete and iron stone deposits



Figure 30. Looking south



Figure 31. Iron stone deposits next to access road

3.6 ARCHIVAL RESEARCH

Three main sources of information regarding the heritage sensitivity of this area could be identified. These were;

35
HIA: Keikamspoor 71

- Scientific publications on heritage related research in the area
- Previous heritage studies in the area as per the SAHRIS database
- Historic maps and figures as available in the National Archive

3.6.1 SCIENTIFIC PUBLICATIONS

Several publications on heritage related work in this area could be sourced. These include, but are not limited to;

- Beaumont, P.B. and Boshier A.K. (1974). *Report on Test Excavations in a Prehistoric Pigment Mine near Postmasburg, Northern Cape*. The South African Archaeological Bulletin, Vol.29, No 113/114 (Jun., 1974), pp. 41 – 59.
- Humphreys, A.J.B. *Note on the Southern Limits of Iron Age Settlement in the Northern Cape*. The South African Archaeological Bulletin, Vol 31, No. 121/122 (jun., 1976), pp. 54-57.
- Thackeray, A.I., Thackeray J.F., Beaumont, P.B. *Excavations at the Blinkklipkop Specularite Mine near Postmasburg, Northern Cape*. The South African Archaeological Bulletin, Vol. 38, No. 137 (Jun., 1983), pp. 17-25.
- Forssman, T.R., Kuman, K, Leader, G.M., Gibbon, R.J. *A Later Stone Age Assemblage from Canteen Kopje, Northern Cape*. The South African Archaeological Bulletin, Vol. 65, No. 192 (December 2010), pp. 204-214.
- Couzens, R., Sadr, K. *Rippled Ware at Blinklipkop, Northern Cape*. The South African Archaeological Bulletin, Vol. 65, No. 192 (December 2010), pp. 196 – 203.
- Rudner, J., Rudner, I. *Rock-Art in the Thirstland Areas*. The South African Archaeological Bulletin, Vol.23, No. 91 (Dec., 1968), pp. 75-89.
- Humphreys, A.J.B., *Cultural Material from Burials on the Farm St. Cair, Douglas Area, Northern Cape*. The South African Archaeological Bulletin, Vol 37, No. 136 (Dec., 1982), pp. 68-70.

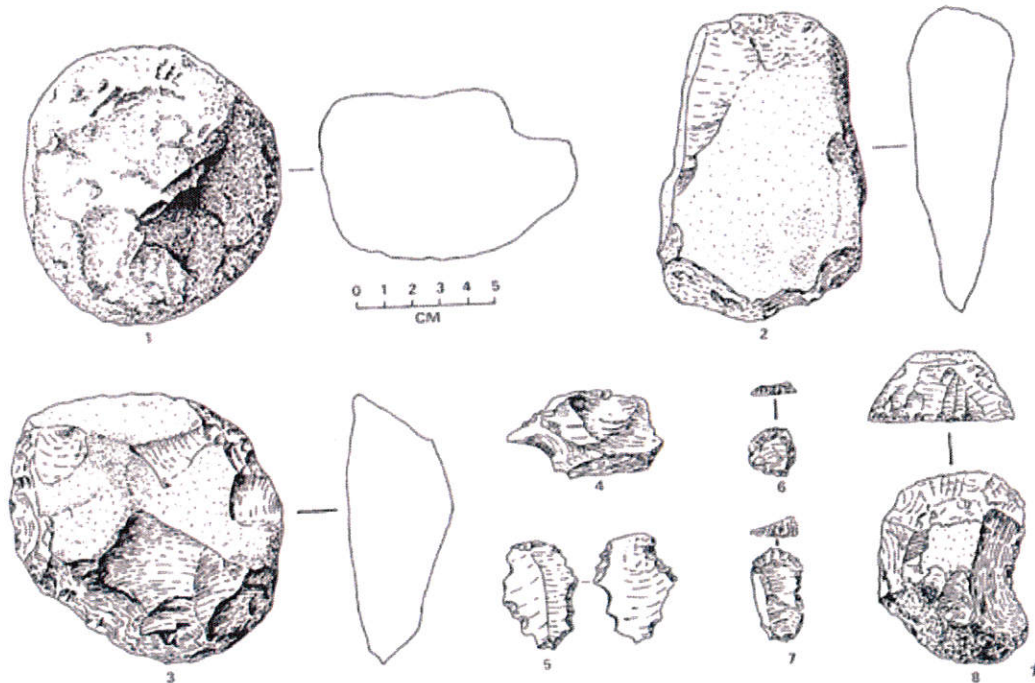


Figure 32. Stone tools

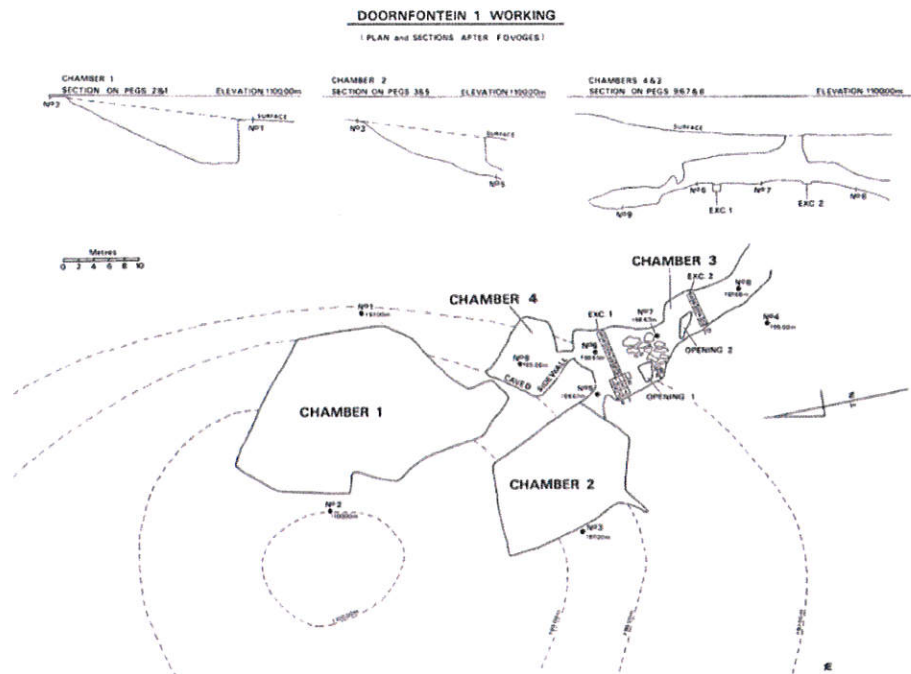


Figure 33. Stone Tools and Layout figure for Doornfontein (Beaumont & Boshier, 1974)

- The identification of petroglyphs of elephant, kudu, ostrich, etc. on the farm Beeshoek. Some geometric symbols similar to *Late Red Art* is also identified here by Judner in 1968 (Judner & Judner, 1969).
- Petroglyphs are also identified at Koegrabie on the farm Eindgoed (Rudner & Rudner, 1968).

3.6.2 SAHRIS DATABASE STUDIES

An extensive research into the SAHRIS database resulted in the identification of the following heritage related studies that have been performed over the last decade in the study area. Only studies within a radius of 50km from the study area were considered.

- Lavin, J., Bluff, K. 2016. Heritage Screener: CTS16_056 ACRM WEF Access Road Prieska
- Kaplan, J., Wiltshire, N. 2011. Archaeological Impact Assessment of Proposed Wind Energy Facility, Power Line and Landing Strip in Prieska, Siyathemba Municipality, Northern Cape.
- Kaplan, J. 2010. Archaeological Scoping Study and Impact Assessment of a Proposed Photovoltaic Power Generation Facility in Prieska Northern Cape.
- Attwell, M. Heritage Assessment Proposed Wind Energy Facility and Related Infrastructure, Struisbult Farm 103, Portions 4 and 7, Prieska, Prieska.
- Almond, J.E. 2011. PIA Desktop Study: Proposed Plan 8 Wind Energy Facility Near Prieska, Northern Cape Province.
- Almond, J.E. 2011. Palaeontological Impact Assessment: Desktop Study – Proposed 100MW Concentrating Solar Power (CSP) Generation Facility: Prieska, Northern Cape.
- Orton, J. 2013. Heritage Impact Assessment for Multiple Proposed Solar Energy Facilities on Farm Hoekplaas 146, Prieska, Northern Cape.
- Orton, J. 2015. Heritage Impact Assessment for four Proposed Borrow Pits on Remainder of Farm Vogelstruisbult 104/1, Prieska Magisterial District, Northern Cape.
- Orton, J. 2014. Archaeological Mitigation of Later Stone Age Sites on the Remainder of Portions 4 of Klippgats Pan 117, Prieska Magisterial District, Northern Cape.

- Van Der Walt, J. 2013. Archaeological Impact Assessment for the Proposed Bosjesmansberg PV Center Solar Energy Facility, located close to Prieska in the Northern Cape.
- Orton, J. 2012. Heritage Impact Assessment for a Proposed Photovoltaic Energy Plant on the Farm Hoekplaas near Prieska, Northern Cape.
- Almond, J.E., Smuts, K. 2012. Palaeontological Specialist Assessment: Desktop Study Proposed Photovoltaic Energy Plant on Farm Hoekplaas (Remainder of Farm 146) near Prieska, Northern Cape Province.
- Orton, J. 2012. Heritage Impact Assessment for a Proposed Photovoltaic Energy Plant on the Farm Vogelstruisbult near Prieska, Northern Cape.
- Van Der Walt, J. 2012. Archaeological Impact Assessment Report for the Proposed Garob Wind Energy Facility Project, located close to Prieska in the Northern Cape.
- Almond, J.E. 2012. Palaeontological Desktop Study for the Proposed Photovoltaic Energy Plant on the Farm Struisbult (Portion 1 of Farm 104) near Prieska, Northern Cape.
- Orton, J. 2016. Heritage Impact Assessment for a Proposed Photovoltaic Energy Plant on The Farm Klippgats Pan Near Prieska, Northern Cape.
- Van Der Walt, J. 2013. Archaeological Impact Assessment Report for the Garob to Kronos Power Line, near Prieska in the Northern Cape Province.
- Orton, J. 2015. Heritage Impact Assessment for three Proposed Solar Energy Facilities and three Associated Transmission Lines near Prieska, Prieska Magisterial District, Northern Cape.
- Almond, J.E. 2015. Environmental Impact Assessment Process: Proposed 75 Megawatt Kronos Photovoltaic Facilities 1 – 3 and Associated Transmission Lines 1 – 3 near Prieska, Northern Cape.
- Webley, L. 2014. Archaeological Impact Assessment: Proposed Construction of Humansrus PV 2 Grid Connection (associated with the Humansrus PV Energy Facility, previously named RE Capital 14 Solar Development) on the Remainder of the Farm Humansrus 147 near Prieska, Northern Cape.
- Fourie, W. 2015. Three 75MW Solar Photovoltaic (PV) Energy Facilities – Helena Projects.

3.6.3 HISTORIC MAPS

Especially during the evaluation of historic structures, the use of archived historic maps is very handy. They give a direct chronological reference for such sites and also lead the investigation on the ground.

The following historic map sets are relevant for this study (in chronological order);

- 2922 DD Topographic Sheet, First Edition Cadastral Survey (1965, 1988 & 2005)

2922 DD 1965 Keikamspoort 71, Portion 16

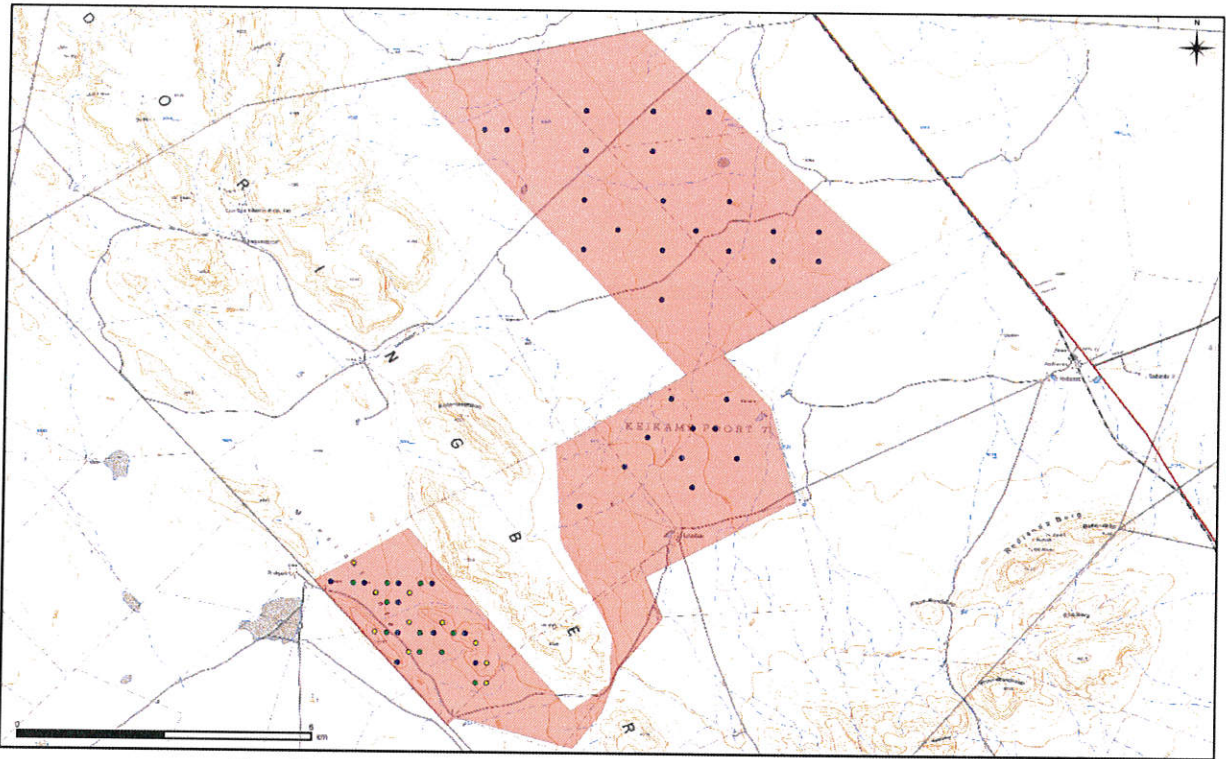


Figure 34. 2922 DD (1965)

2922 DD 1988 Keikamspoor 71, Portion 16

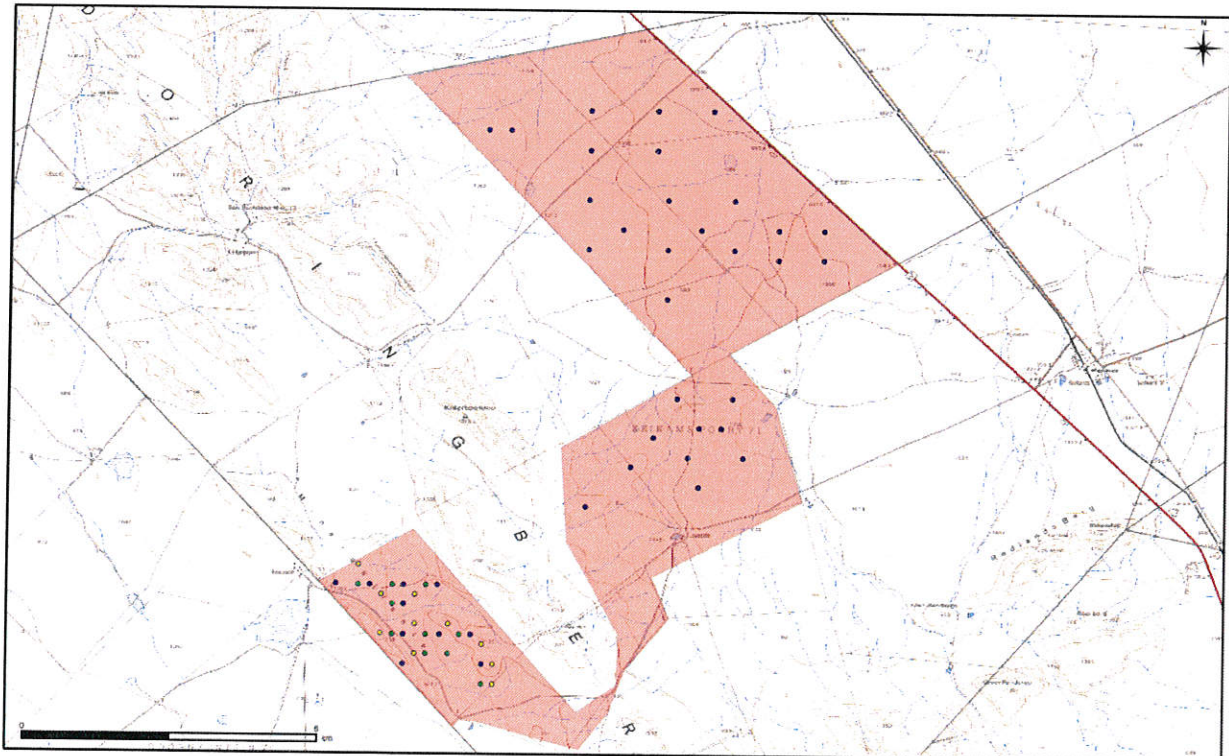


Figure 35. 2229 DD (1988)