

Heritage Impact Assessment Report

Heritage Impact Scoping Report for the Mining Rights
Application for the Remaining Portions 2,3,4 & 5 of the
Farm Kapstewel 436 near the town of Postmasburg in the
Northern Cape Province

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***Disclaimer;** Although all possible care is taken to identify all sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. G&A Heritage and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.*

Statement of Independence

As the duly appointed representative of G&A Heritage, I Stephan Gaigher, hereby confirm my independence as a specialist and declare that neither I nor G&A Heritage have any interests, be it business or otherwise, in any proposed activity, application or appeal in respect of which the Environmental Consultant was appointed as Environmental Assessment Practitioner, other than fair remuneration for work performed on this project.

SIGNED OFF BY: STEPHAN GAIGHER



EXECUTIVE SUMMARY

Site name and location: Mining Rights Application for the Remaining Portions 2,3,4 & 5 of the Farm Kapstewel 436

Municipal Area: Tsantsabane Local Municipalities.

Developer: Autumn Skies Resources and Logistics (Pty) Ltd

Consultant: G&A Heritage, PO Box 522, Louis Trichardt, 0920, South Africa. 38A Voster Str. Louis Trichardt, 0920

Date of Report: 11 March 2014

The purpose of the management summary is to distil the information contained in the report into a format that can be used to give specific results quickly and facilitate management decisions. It is not the purpose of the management summary to repeat in shortened format all the information contained in the report, but rather to give a statement of results for decision making purposes.

This study focuses on the mining rights application for the Remainder of Portion 2,3,4 & 5 of the Farm Kapstewel 436.

This study encompasses the heritage impact investigation. A preliminary layout has been supplied to lead this phase of this study.

The purpose of this study is to determine the possible occurrence of sites with cultural heritage significance within the study area. The study is based on archival and document combined with fieldwork investigations of several alternative alignments.

Archival Research

• Historic Maps

The following historic map sets were consulted during the archival study

- Griquatown Sheet of the Cape of Good Hope Reconnaissance Series, 1914
- Geology Map of the Postmasburg Manganese Deposits, 1927 – 1928
- First Edition of the 2823AA Topographical Sheet of 1970

None of the above maps showed any developments on the farm Kapstewel with the exception of the old Samancor mining activities.

• Previous Heritage Studies on the SAHRIS Database

- Research into the SAHRIS database indicated that the complete study area was subjected to a Heritage Impact Assessment by *Pelser & van Vollenhoven* in 2009 titled; *A REPORT ON A HERITAGE IMPACT ASSESSMENT STUDY FOR PROPOSED MINING DEVELOPMENT ON THE REMAINING EXTENT AND PORTIONS 2,3,4 AND 5 OF KAPSTEWEL 436, KURUMAN REGISTRATION DISTRICT, SIYANDA DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE*. This study identified seven site of heritage importance. All the sites were classified as having moderate significance and stemmed from the Iron Age (possibly) (Site 2), the Historic Age (Sites 1, 4, 5, 6 & 7) and grave sites (Site 3).
- Other studies in the vicinity include Lita Webley and David Halkett's study at **Doornpan** (Webley & Halkett, 2010) which identified two Stone Age sites as well as their work at **Driehoekspan** (Webley & Halkett, 2010) where three possible Stone Age sites were identified. Van Vollenhoven & Pelser also undertook a study on the farm Paling (Pelser &



van Vollenhoven, 2010). At Paling seven sites were identified (3 x MSA/LSA sites, 1 x cemetery site and 3 x historic sites). None of the sites were deemed of high heritage significance.

Palaeontology

The palaeontological sensitivity of the area did not form part of this study. There have however been previous evaluations done in the area as per the SAHRIS database, indicating the likely sub-surface occurrence of stromatolite structures in the underlying *Campbell* and *Postmasburg Groups* of the *Transvaal Supergroup* (Birkholtz, 2014).

Findings

Eight sites of heritage significance were identified during this study.

Recommendations

It is recommended that the location of finds be supplied to the mine-planning desk for incorporation into their development program. Should any of the sites be found to be within an area proposed for mining the appropriate mitigation measures should be followed.

Fatal Flaws

No fatal flaws were identified.

Significance

Heritage parameter	Issues	Rating prior to mitigation	Average	Rating post mitigation	Average
Mining site	Site 1	36	34	8	
Pre-contact site	Site 2	33	34	8	
Burial Site	Site 3	36	34	8	
Mining Site	Site 4	36	34	8	
Mining Site	Site 5,6 & 7	36	34	8	
Mining Site	Site 8	36	34	8	
			- 34		-8
			Medium Negative Impact		Low Negative Impact

Comparison of summarised impacts on environmental parameters



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LIST OF ABBREVIATIONS

Bp	Before Present
EIA	Early Iron Age
ESA	Early Stone Age
Fm	Femtometre (10^{-15} m)
GPS	Geographic Positioning System
HIA	Heritage Impact Assessment
LIA	Late Iron Age
LSA	Late Stone Age
MYA	Million Years Ago
MSA	Middle Stone Age
NHRA	National Heritage Resources Act no 22 of 1999
SAHRA	South African Heritage Resource Agency
S&EIR	Scoping & Environmental Impact Reporting
Um	Micrometre (10^{-6} m)
WGS 84	World Geodetic System for 1984



Heritage Impact Report

Heritage Impact Report for the Proposed Mining Rights Application on the Farm Kapstewel, Northern Cape.

Introduction

Legislation and methodology

G&A Heritage was appointed by M&S Consultants to undertake a heritage scoping assessment for the proposed mining rights application on Portions 2,3,4 & 5 of the farm Kapstewel 436 near Postamsburg in the Northern Cape Province. Section 38 (A) and 3 (2) of the South African Heritage Resources Act (25 of 1999) requires that a heritage study be undertaken for:

- (a) construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;
- (b) construction of a bridge or similar structure exceeding 50 m in length; and
- (c) any development, or other activity which will change the character of an area of land, or water –
 - (1) exceeding 10 000 m² in extent;
 - (2) involving three or more existing erven or subdivisions thereof; or
 - (3) involving three or more erven, or subdivisions thereof, which have been consolidated within the past five years; or
- (d) the costs of which will exceed a sum set in terms of regulations; or
- (e) any other category of development provided for in regulations.

A heritage impact assessment is not limited to archaeological artefacts, historical buildings and graves. It is far more encompassing and includes intangible and invisible resources such as places, oral traditions and rituals. A heritage resource is defined as any place or object of cultural significance i.e. of aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. This includes the following:

- (a) places, buildings, structures and equipment;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and paleontological sites;
- (g) graves and burial grounds, including –
 - (1) ancestral graves,
 - (2) royal graves and graves of traditional leaders,
 - (3) graves of victims of conflict (iv) graves of important individuals,
 - (4) historical graves and cemeteries older than 60 years, and
 - (5) other human remains which are not covered under the Human Tissues Act, 1983 (Act No.65 of 1983 as amended);
- (h) movable objects, including ;
 - (1) objects recovered from the soil or waters of South Africa including archaeological and paleontological objects and material, meteorites and rare geological specimens;
 - (2) ethnographic art and objects;
 - (3) military objects;
 - (4) objects of decorative art;
 - (5) objects of fine art;
 - (6) objects of scientific or technological interest;
 - (7) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings; and



- (8) any other prescribed categories, but excluding any object made by a living person;
- (i) battlefields;
 - (j) traditional building techniques.

A **'place'** is defined as:

- (a) A site, area or region;
- (b) A building or other structure (which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure);
- (c) a group of buildings or other structures (which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures); and (d) an open space, including a public square, street or park; and in relation to the management of a place, includes the immediate surroundings of a place.

'Structures' means any building, works, device, or other facility made by people and which is fixed to land and any fixtures, fittings and equipment associated therewith older than 60 years.

'Archaeological' means:

- (a) material remains resulting from human activity which are in a state of disuse and are in or on land and are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;
- (b) rock art, being a form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and is older than 100 years including any area within 10 m of such representation; and
- (c) wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land or in the maritime cultural zone referred to in section 5 of the Maritime Zones Act 1994 (Act 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which are older than 60 years or which in terms of national legislation are considered to be worthy of conservation;
- (d) features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

'Paleontological' means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

'Grave' means a place of interment and includes the contents, headstone or other marker of and any other structures on or associated with such place. The South African Heritage Resources Agency (SAHRA) will only issue a permit for the alteration of a grave if it is satisfied that every reasonable effort has been made to contact and obtain permission from the families concerned.

The removal of graves is subject to the following procedures as outlined by the SAHRA:

- Notification of the impending removals (using English, Afrikaans and local language media and notices at the grave site);
- Consultation with individuals or communities related or known to the deceased;
- Satisfactory arrangements for the curation of human remains and / or headstones in a museum, where applicable;
- Procurement of a permit from the SAHRA;
- Appropriate arrangements for the exhumation (preferably by a suitably trained archaeologist) and re-interment (sometimes by a registered undertaker, in a formally proclaimed cemetery);
- Observation of rituals or ceremonies required by the families.

The limitations and assumptions associated with this scoping study are as follows;

- Sites were evaluated by means of description of the cultural landscape and analysis of written sources and available databases.
- It was assumed that the layout as provided by M&S Consulting is accurate.
- We assumed that the public participation process performed as part of the Scoping and Environmental Impact Reporting (S&EIR) process would be sufficiently encompassing not to be repeated in the Heritage Scoping Phase.
- Access to certain areas of the study area was limited due to security issues,



Table 1. Impacts on the NHRA Sections

Act	Section	Description	Possible Impact	Action
National Heritage Resources Act (NHRA)	34	Preservation of buildings older than 60 years	No impact	None
	35	Archaeological, paleontological and meteor sites	Possible Impact	None
	36	Graves and burial sites	Possible Impact	HIA
	37	Protection of public monuments	No impact	None
	38	Does activity trigger a HIA?	Yes	HIA

Table 2. NHRA Triggers

Action Trigger	Yes/No	Description
Construction of a road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length.	No	N/A
Construction of a bridge or similar structure exceeding 50m in length.	No	N/A
Development exceeding 5000 m ²	Yes	Mining rights application Kapstewel
Development involving more than 3 erven or sub divisions	No	N/A
Development involving more than 3 erven or sub divisions that have been consolidated in the past 5 years	No	N/A
Re-zoning of site exceeding 10 000 m ²	Yes	N/A
Any other development category, public open space, squares, parks or recreational grounds	No	N/A



Background Information

Mining Rights Application

Project Description

Autumn Skies Resources and Logistics (Pty) Ltd has applied for two mining rights.

The first application is over the Remaining Extent of Portion 2 (Lemoenpoort) and the Remaining Extent of Portion 3 (a portion of portion 2) of the Farm Kapstewel 436, under DMR file reference number (NC)30/5/1/2/2/10038MR.

The second application is over the Remaining Extent and Portion 5 (a portion of portion 3) of the Farm Kapstewel 436, under DMR file reference number (NC)30/5/1/2/2/10039MR.

The Department of Mineral Resources accepted both of these mining right applications on 18 September 2013.

Commodity: Iron Ore & Manganese Ore

Life of operation applied for: 30 Years

Autumn Skies will mine the detrital iron ore and manganese ore immediately after granting and execution of the mining right and continue to do so until such time that the detrital resource has been depleted. Mining of the high grade iron ore and manganese ore will commence in year 3 of the mining operation. Opencast mining will take place, which will include blasting.

The iron ore will be processed with a modular crushing, screening and JIG plant. The manganese ore will be processed with a modular crushing & screening plant.

Planned production:

NC 10038 MR – Iron Ore 30 000 tpm / Manganese Ore 10 000 tpm

NC 10039 MR – Iron Ore 38 000 tpm / Manganese Ore 12 500 tpm

Employees:

NC 10038 MR 50 – 60 employees

NC 10039 MR 70 – 80 employees

Autumn Skies plans to establish the following, amongst other, infrastructure:

- Modular crushing, screening & JIG plant (iron ore)
- Modular crushing & screening plant (manganese ore)
- Weighbridges (x 2)
- Gensets (2 x 640kVA)
- Diesel tank (3 x 23 000 litre)
- Water dam (2 x 2 500m³)
- Wash-bay
- Buildings:
 - Offices
 - Workshop
 - Storage facilities
 - Laboratory
 - Ablution facilities
 - Security control point
 - Weighbridge control rooms



Site Location

The study area is located on the Remaining Portions 2,3,4,&5 of the Farm Kapstewel 436. This study area is located approximately 15,7km north from the town of Postmasburg along the R324. The total study area is 2767 ha in size.

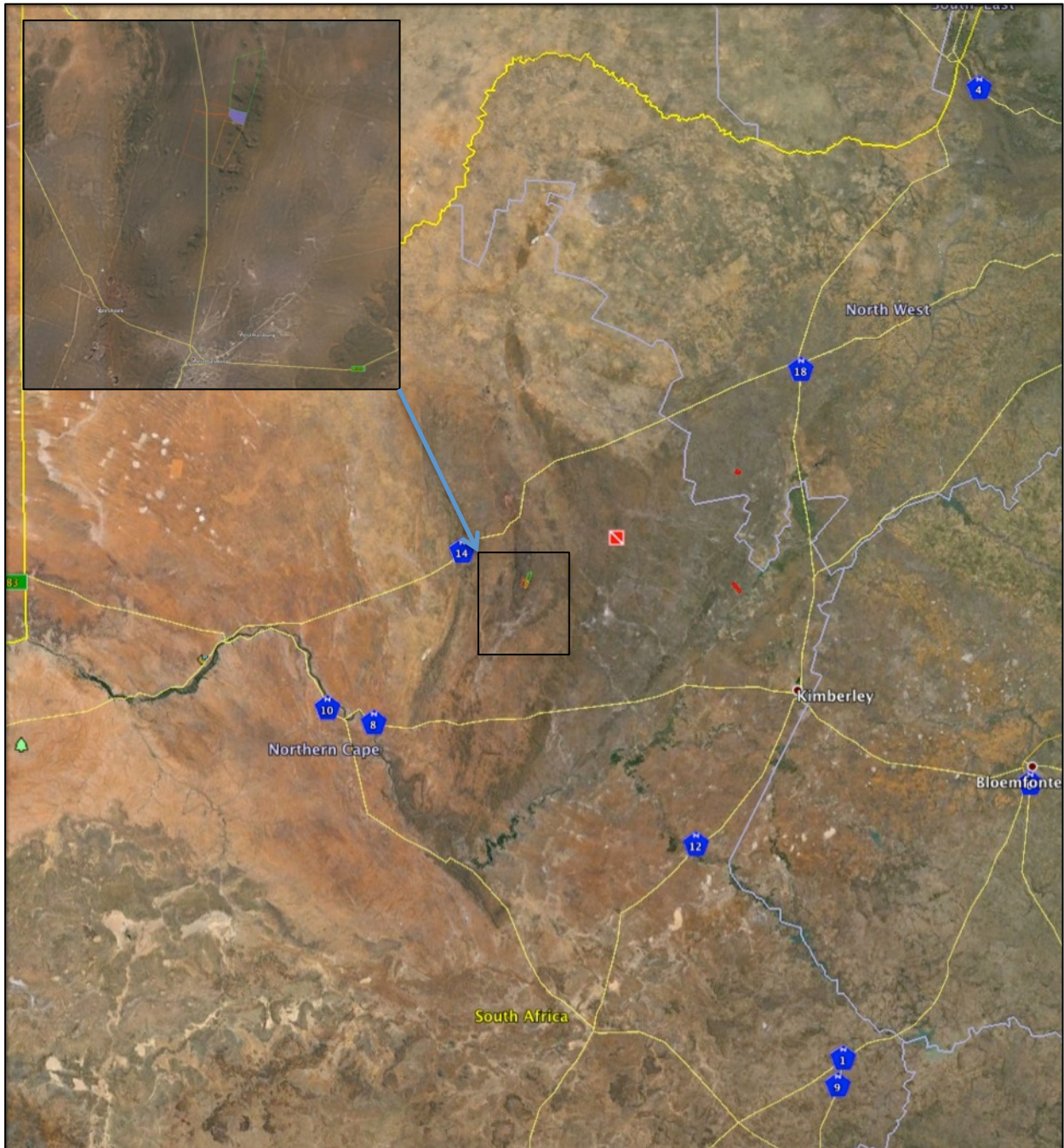


Figure 1. Location map

The study area varies from low lying flat areas to hills and rocky outcrops. The whole study area is characterised by dense concentrations of iron ore making the surface difficult to traverse. At the time of the study the area had been subjected to unseasonably high rainfall and as a result dense vegetation was encountered on site making surveying difficult.

The site is currently undergoing exploration bulk sampling as part of the prospecting rights on the site. As a result consecutive parallel transects had been cleaned of vegetation for the purposes of the geotechnical investigations. These transects made surveying easier, however they do pose a significant threat to any unidentified sites.





Figure 2. General landscape with current mining in the background



Figure 3. Geotechnical excavations showing magnetite rocks



Figure 4. Geotechnical excavations with iron bearing ore



Figure 5. Hillock investigated for shelters

METHODOLOGY

This study defines the heritage component of the EIA process being undertaken for the mining rights application for the farm Kapstewel. It is described as a Heritage Impact Assessment (HIA). This report attempts to evaluate the accumulated heritage knowledge of the area.

IMPACT ASSESSMENT COMPONENTS

The evaluation of this site was performed in three phases;

1. Archival and database research

This component involved the identification of previous studies in the area, accumulation of scientific and popular publications on the area and the evaluation of historic map sets.

2. Field investigations

This component involves the physical investigation of the study area on the ground and aims at identifying any sites of heritage potential visually. The field investigations were performed on 26 February 2014 by a professional archaeologist and an experienced fieldworker. Where sites were identified it was documented photographically and plotted using GPS with the WGS 84 datum point as reference.

3. Reporting

This phase of the investigation in which the results of the previous two phases of investigation is reported on and evaluations are given regarding the heritage sensitivity of the area as well as recommendations on further actions needed.

ARCHIVAL RESEARCH

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

- 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

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 Blinkklikop 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.

The literature study of the above publications resulted in several findings that guided investigations regarding the site at Kapstewel; The main points are;

- The identification of five pre-colonial specularite mines in the immediate vicinity of Postmasburg as identified by P.B. Beaumont and A.K. Boshier. These are as follows;
 1. Doornfontein – This is a site with a maximum length of 100m consisting of four chambers from which at least an estimated 45 000 metric tons of specularite was removed (Beaumont & Boshier, 1974). Although the specularite mining is discussed in detail there is however no discussion on the reasons for these large scale excavation. It is clear that the workings were that of Stone Age peoples and since specularite does not deliver good material for stone tool manufacture it begs the question why these extensive excavations exist in the first place.



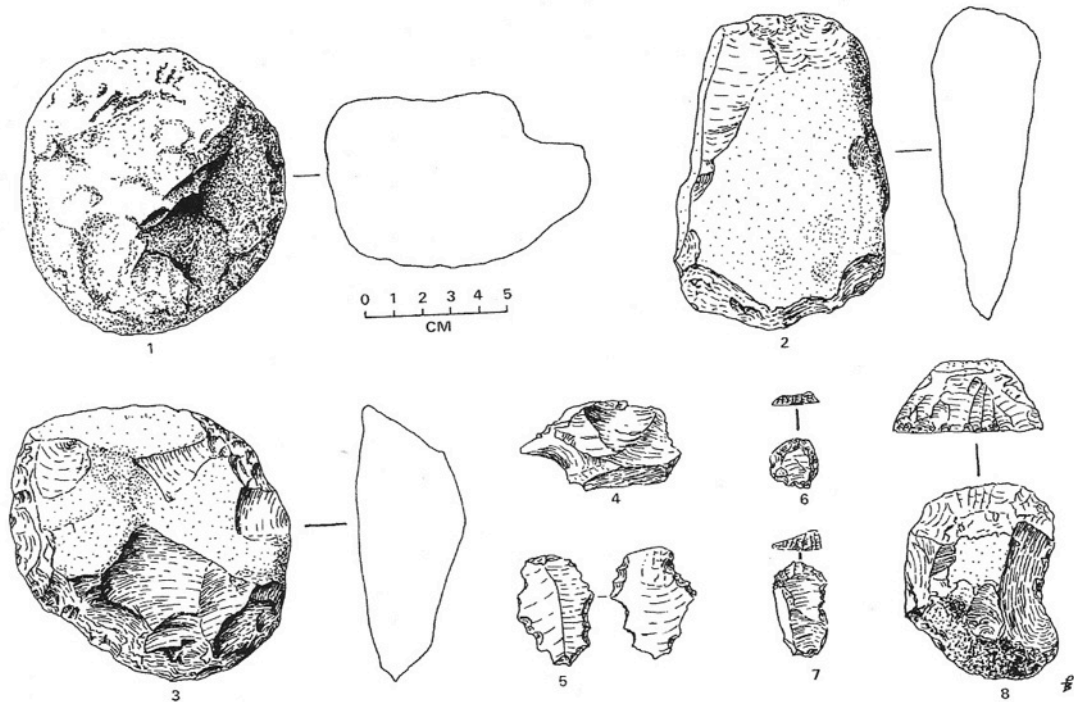


Figure 6. Stone Tools from Doornfontein (Beaumont & Boshier, 1974)

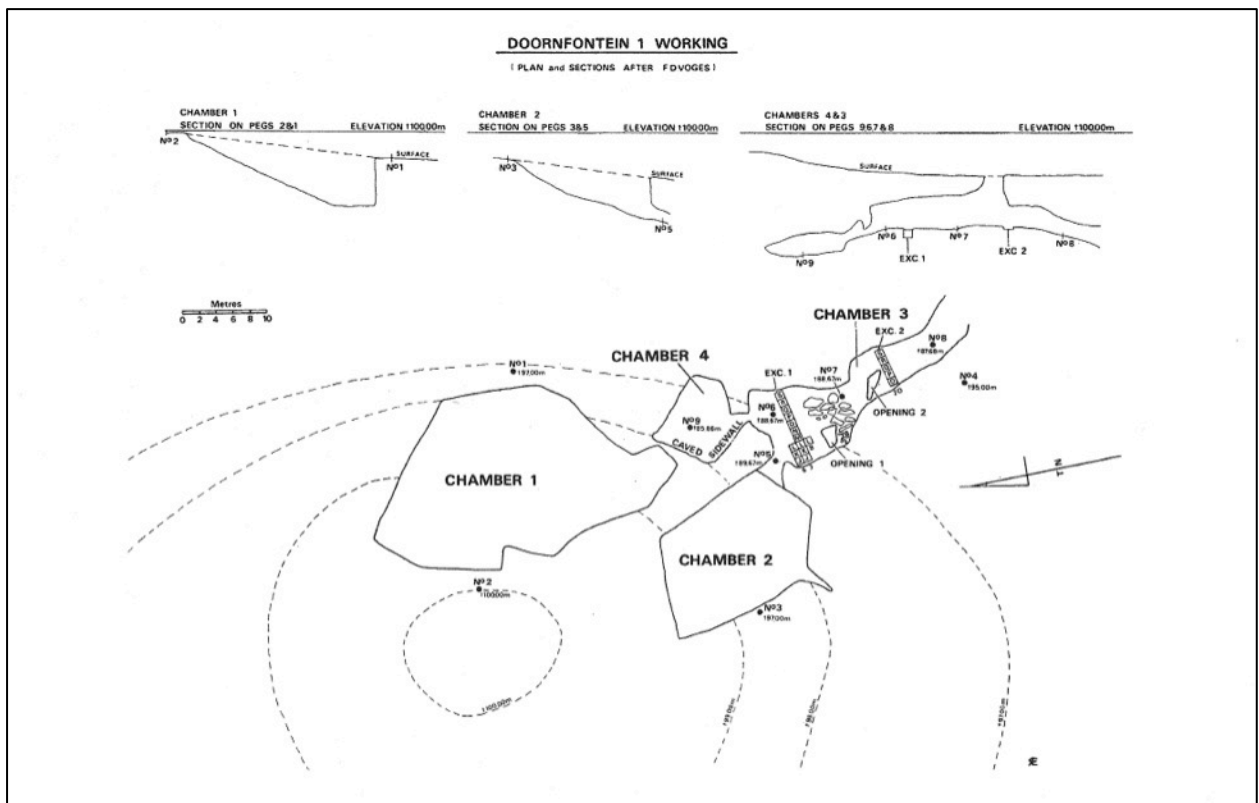


Figure 7. Layout figure for Doornfontein (Beaumont & Boshier, 1974)

2. Blinkklipkop – This is another pre-colonial specularite mine on a hill known as Blinkklipkop or Gatkoppies, 5km north-east of Postmasburg. In this analysis the authors gives a much more detailed description of the use of specularite as a decorative element for body decoration or



even pottery decoration. Further examples of specularite use is also described in Burchell (1822-4), Cumming (1850 I:232), Livingstone (1858), Borchers (1861 : 73-4) and Stow (1905 : 436) (Thackeray, Thackeray & Beaumont, 1983). The size and extent of deposits at Blinkklipkop makes this probably the most important of the five sites.

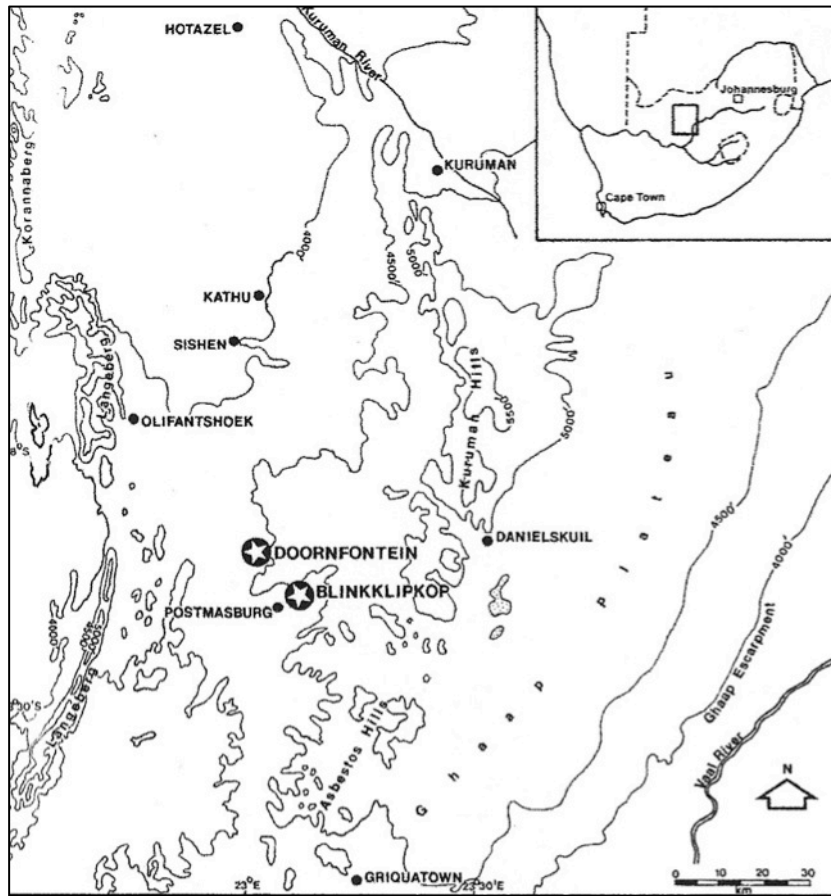


Figure 8. Location of pre-colonial specularite mines (Thackeray, Thackeray & Beaumont, 1983)

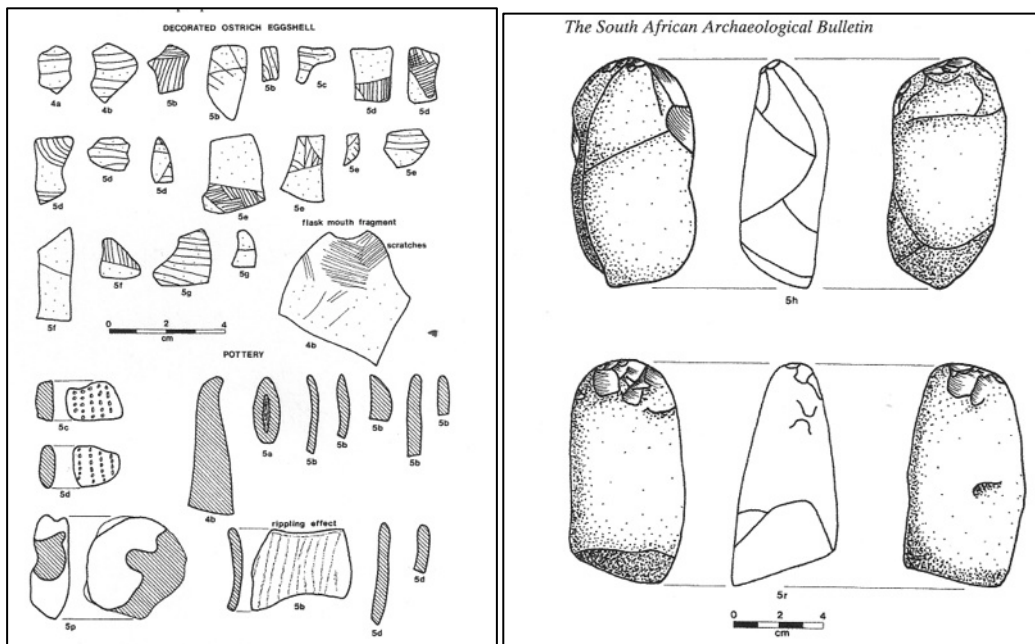


Figure 9. Decorated OEG and mining tools from Blinkklipkop (Thackeray, Thackeray & Beaumont, 1983)



3. Paling – Another large concentration of specularite is located on the farm Paling M87, 16km northwest of Postmasburg. The author does not indicate the extent of pre-colonial mining that actually took place here (Thackeray, Thackeray & Beaumont, 1983) .
 4. Gloucester – A pre-colonial specularite mine is found on the farm Gloucester, 13,24km north of Postmasburg. Only mining pits are observed here (Thackeray, Thackeray & Beaumont, 1983).
 5. Huxley – The final documented occurrence of specularite mining is on the farm Huxley, 15,30km north of Postmasburg. Only mining pits located at this site (Thackeray, Thackeray & Beaumont, 1983).
- 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).

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);

- Cape of Good Hope Reconnaissance Series – *Griquatown Sheet* (1914)
- Postmasburg Manganese Deposits, Geology Maps (1927 – 28)
- 2823 AA Topographic Sheet, First Edition Cadastral Survey (1971)

Significance of Scientific Information for the Study Area

The above information when analysed in detail forms a matrix within which the study area at Kapstewel can be analysed, it furthermore also gives guidance to investigators to ensure that fieldwork is focussed on the possible occurrence of sites and features as outlined in these studies. The main points that have been derived from these studies are the possible occurrence of the following features within the study area;

- Possible pre-colonial specularite mining activities.
- Sites with petroglyph rock art.
- Sites with mining implements from the Stone Age
- Stone tool manufacturing sites

SAHRIS DATABASE STUDIES

The following heritage reports could be identified on the SAHRIS database which are connected to the study area;

- Beaumont P.B., 2012. CONSULTATION IN TERMS OF SECTION 40 OF MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT 2002, (ACT 28 OF 2002) IN RESPECT OF SAND FOR THE APPROVAL OF AN ENVIRONMENTAL MANAGEMENT PLAN FOR A MINING PERMIT ON A PORTION OF THE FARM FULLER NO.578, SITUATED IN THE MAGISTERIAL DISTRICT OF SIYANDA, NORTHERN CAPE REGION.
- Beaumont, P.B., 2007. PHASE 1 HERITAGE IMPACT ASSESSMENT REPORT ON THE FARM PORTIONS POTENTIALLY AFFECTED BY A PROPOSED DIRECT RAIL LINK BETWEEN THE SISHEN SOUTH MINE NEAR POSTMASBURG AND THE SISHEN-SALDHANA LINE, SIYANDA DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE.
- Fourie, W., 2013. Heritage Impact Assessment for the Humansrus Solar Thermal Energy Power Plant, Postmasburg.
- Pelser, A., 2012. A REPORT ON A ARCHAEOLOGICAL IMPACT ASSESSMENT (AIA) FOR THE PROPOSED BOICHOKO TOWNSHIP DEVELOPMENT ON PORTIONS 11 & 12 OF PENS FONTEIN 449, POSTMASBURG, NORTHERN CAPE PROVINCE.
- Fourie, W., 2012. 132 kV Power line connection to the Humasrus Solar Thermal Energy Power plant, Postmasburg.
- Orton, J., 2014. SCOPING HERITAGE IMPACT ASSESSMENT FOR PROPOSED PROSPECTING ON FARMS 53, 56, 566 AND 567, HAY MAGISTERIAL DISTRICT, NORTHERN CAPE.



- Morris, D., 2013. Archaeological and heritage phase 1 predictive impact assessment for prospecting on Magoloring portions 4 and 5 (Japies Rust), near Glosam, Northern Cape Province.
- Morris, D., 2013. Archaeological and Heritage Phase 1 predictive impact assessment for prospecting on Magoloring Portions 4 and 6 (Japies Rust), near Glosam, Northern Cape Province.
- Morris, D., 2010. Archaeological and Heritage Phase 1 Impact Assessment for the Portions Boskop on Macarthy 559, north of Postmasburg, Northern Cape.
- Becker, E., 2012. Proposed Skeifontein PV power plant and power lines, near Postmasburg, Northern Cape.
- Beaumont, P.B., 2008. Phase 1 Archaeological Impact Assessment Report on Three Portions of the Farm Lohattha 673 North of Postmasburg, Siyanda District Municipality, Northern Cape Province.
- Beaumont, P.B., 2011. Baseline Archaeological Reconnaissance Report on the Farm Lomoteng 669, North of Postmasburg in the Siyanda District Municipality of the Northern Cape Province.
- Kusel, U., 2011. Heritage Management Plan for Kolomela Mine In the Postmasburg District Municipality of the Northern Cape Province.
- Birkholtz, P.D., 2014. Coza Iron Ore Project: Heritage Impact Assessment on sections of Portion 1 of the farm Doornpan 445, north of Postmasburg, Northern Cape Province.
- Pelser, A., 2012. A 2ND REPORT ON A HERITAGE IMPACT ASSESSMENT FOR THE UPGRADE OF TRANSNET'S GLOSAM SIDING FOR PMG'S BISHOP MINE (LOADING BAY) ON PORTION 2 AND THE REMAINDER OF GLOUCESTER 674 NEAR POSTMASBURG, TSANTSABANE LOCAL MUNICIPALITY, NORTHERN CAPE.
- Beaumont, P.B., 2007. Phase 1 Heritage Assessment Report on the Farm Makganyene 667, Between Postmasburg and Olifantshoek, Siyanda District Municipality, Northern Cape Province.
- Beaumont, P.B., 1998. Action Plan: Engraving Site on the Farm Beeshoek 448, Postmasburg District, Northern Cape.
- Van Vollenhoven, A., 2012. A REPORT ON THE HERITAGE RELATING TO THE CLOSURE EMP OF THE ASSMANG GLOSAM MINE CLOSE TO POSTMASBURG , NORTHERN CAPE.
- Webley, L. & Halkett, D., 2012. ARCHAEOLOGICAL IMPACT ASSESSMENT: PROPOSED PROSPECTING ON THE FARM DRIEHOEKSPAN 435, POSTMASBURG, NORTHERN CAPE.
- Webley, L. & Halkett, D., 2010. ARCHAEOLOGICAL IMPACT ASSESSMENT: PROPOSED PROSPECTING ON THE FARM JENKINS 562 (EAST), POSTMASBURG, NORTHERN CAPE.
- Webley, L., & Halkett, D., 2010. ARCHAEOLOGICAL IMPACT ASSESSMENT: PROPOSED PROSPECTING ON THE KOPJE BLESKOP, FARM DOORNPAN 445, POSTMASBURG, NORTHERN CAPE.
- Becker, E., 2011. Proposed Skeifontein PV power plant and power lines, near Postmasburg, Northern Cape.
- Van Vollenhoven, A., 2011. A REPORT ON A HERITAGE IMPACT ASSESSMENT FOR THE UPGRADE OF TRANSNET'S GLOSAM SIDING FOR PMG'S BISHOP MINE (LOADING BAY) ON PORTION 2 AND THE REMAINDER OF GLOUCESTER 674 NEAR POSTMASBURG, TSANTSABANE LOCAL MUNICIPALITY, NORTHERN CAPE.
- Van der Ryst, M., 2011. Specialist report on the Stone Age and other heritage resources at Kolomela, Postmasburg, Northern Cape.
- Kusel, U., 2013. Phase I AIA report on archaeological contexts and heritage resources on the farms Heuningkranz 364 and Langverwacht 432 in the Postmasburg District Municipality of the Northern Cape Province.
- Van Vollenhoven, A., A Report on a Heritage Impact Assessment Study for Proposed Mining Development on the Remaining Extent and Portions 2, 3, 4 and 5 of Kapstewel 436, Kuruman Registration District, Siyanda District Municipality, Northern Cape Province.
- Van Vollenhoven, A.C., 2009. AIA for the Proposed Mining Activities at Kareepan.

Relevance of Listed Heritage Studies for the Study Area

From the above it is obvious that the area around Postmasburg has been subject to extensive heritage investigations in the recent past. Although not all the reports were deemed to fulfil the minimum standards for heritage reports as outlined by SAHRA, the following guidelines could be extracted from them;

- Petroglyph sites seemed to be found primarily south and west of Postmasburg. There is a distinct lack of these sites to the north and this only changes once the area around Kathu is reached.
- Most specularite sites in the area around Postmasburg seemed to have been subjected to some sort of pre-colonial mining in the past. It is therefore imperative that any specularite deposits be investigated for such sites.



- The areas with high concentrations of magnetite and manganese does not seem to contain any Stone Age deposits with the exception of banded iron stone tools.
- Pans and rocky outcrops are high significance areas for finding heritage sites in this area.
- Some Stone Age shelters are found on rocky hills in the area.
- The two Kapstewel and Kareepan reports compiled by Van Vollenhoven in 2009 covered some areas that could not be visited during the current study because of security issues. The reports are however unclear and conflicting in their findings since the same areas of Kapstewel were investigated during each study, however different results were found.

The historic map study shows none of the modern structures, with the exception of the 1971 Topographic Map. This indicated that the structures identified are not of historic nature.

FIELD INVESTIGATIONS

The study area was investigated during the later part of February 2014. Due to the extent of the study area as well as issues around access to different part, the study area was divided into three sections that will be described separately. These were as follows;

- Section A - Portion 3 and 5 of the farm Kapstewel 436
- Section B – Portion 2 of the farm Kapstewel 436
- Section C – Remainder of Portion 4 of the farm Kapstewel 436

Section A

This section includes Portions 3 and 5 of the farm Kapstewel 436. The majority of the recent mining activities are located on this section. The Manganore Railway Siding and its associated railway line divide the two sections.

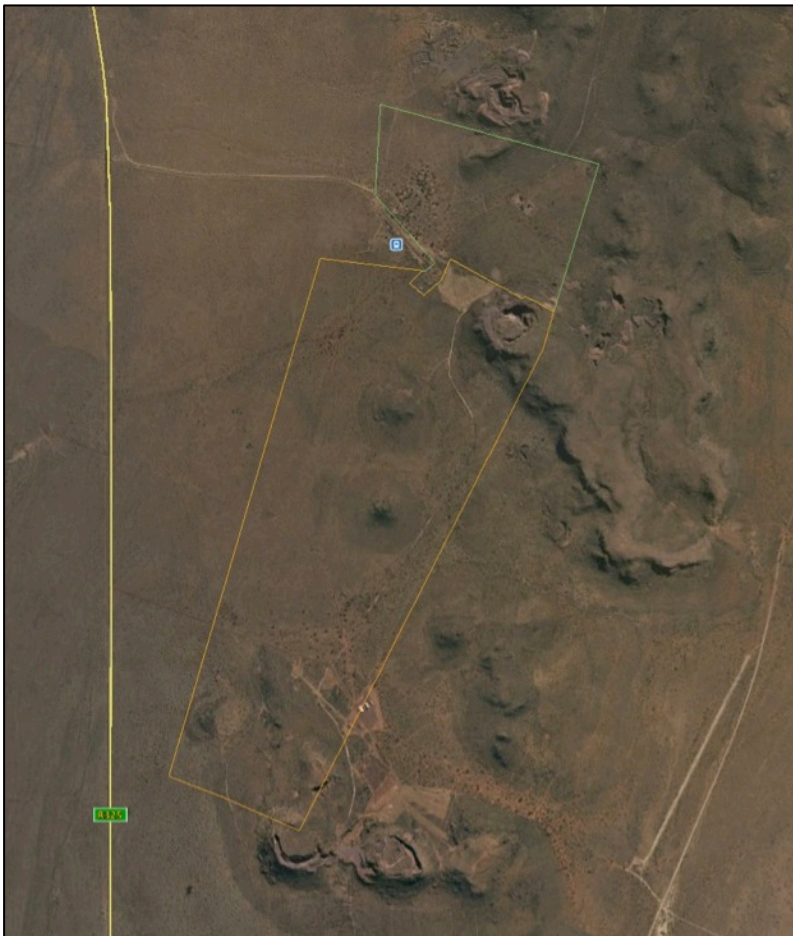


Figure 10. Section A

The area to the south of this section as well as the north-eastern corner of Portion 3 has been subjected to extensive modern mining activities centred around manganese recovery. Archaeologically the site was

homogeneous with the exception of two manganese outcrops in the northern half of Portion 3 and a ridgeline in the northeastern corner of Portion 3. The ridgeline extends southeast from this corner, however the part that is situated within the study area has been subject to major alteration through mining activities.

The two manganese outcrops were investigated for shelters and petroglyphs, however none could be identified.

The whole study area was characterised by a predominance of manganese and magnetite rocks. Geotechnical trenches indicated that this feature extended to well over two metres sub-surface. No instances of banded ironstone or specularite were noticed during the field investigations.

No permanent water sources could also be identified during the investigation.

Recent mining structures and equipment were evident in the northeast corner as well as in the south of the site.

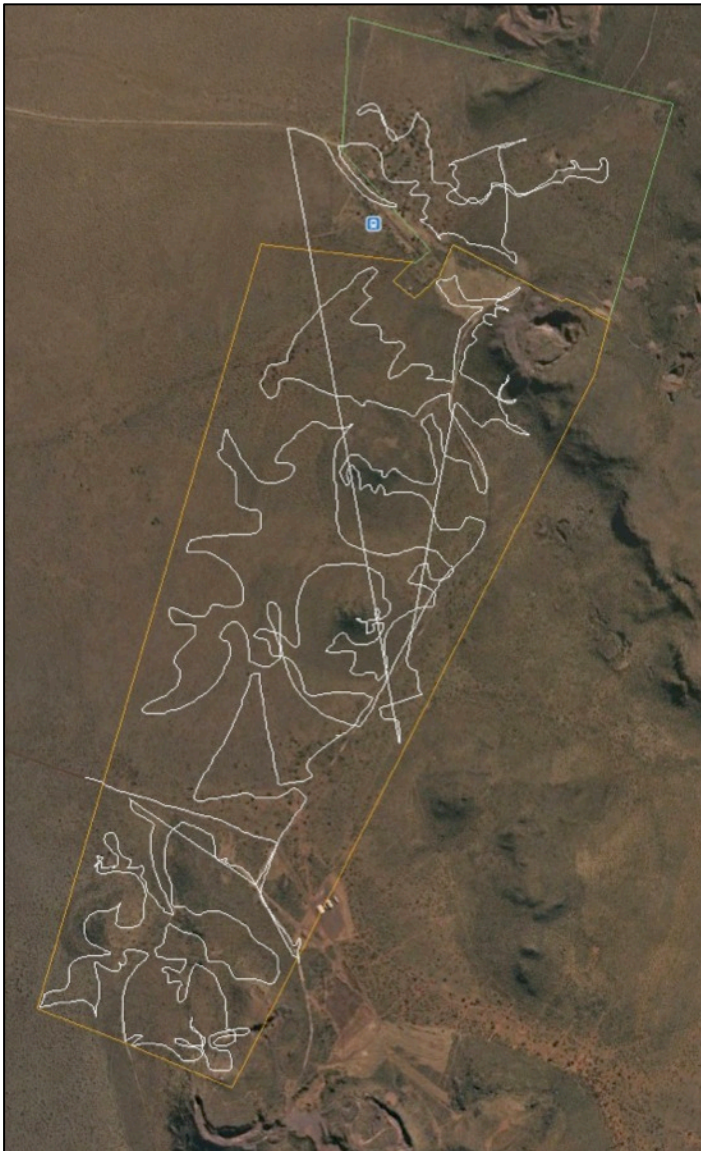


Figure 11. GPS Track Paths followed for Section A

Section B

This consists of Portion 2 of the farm Kapstewel 463. This section is divided into a larger and smaller section by the east-west running railway line. This section is also bisected north-south by the R325 tar road. Access could only be acquired from the railway line culvert.



Figure 12. Section B

This section proved to be distinct in its lack of heritage sites. In this area it is expected to find some indications of Stone Age sites in most study areas. This section produced no such sites. Although the two previous studies performed on this site also failed to identify any sites, it is relevant to mention the significant vegetation on site during the study as a result of exceptional recent rainfall. This could very well have obscured any sites.

The only geographic feature that could guide the investigations is a drainage ditch running diagonally through the site. This did not however produce any finds.

Some water reservoirs of recent origin were noted in the middle of the section on the western side of the R325.



Figure 13. GPS Track Paths for Section B

Section C

This forms the remainder of Portion 4 of the farm Kapstewel 436. This section had a problem with access during the investigations. The access to this site was limited due to illegal mining activities that were reported in the area. As a result a private security company enforced the mine shutdown access to the site and this. Some areas could be accessed from the Mangandre Sub-station. Due to fears concerning the safety of fieldworkers, only the open fields to the north of the station were accessed. This site was however investigated extensively by Van Vollenhoven and Pelsers in 2009 (Van Vollenhoven, 2009).

After discussion with the mine management, it was indicated that the area would probably not be mined in the near future. It is therefore suggested that this area be investigated in more detail, should the mine decide to continue with mining activities here.



Figure 14. Section C

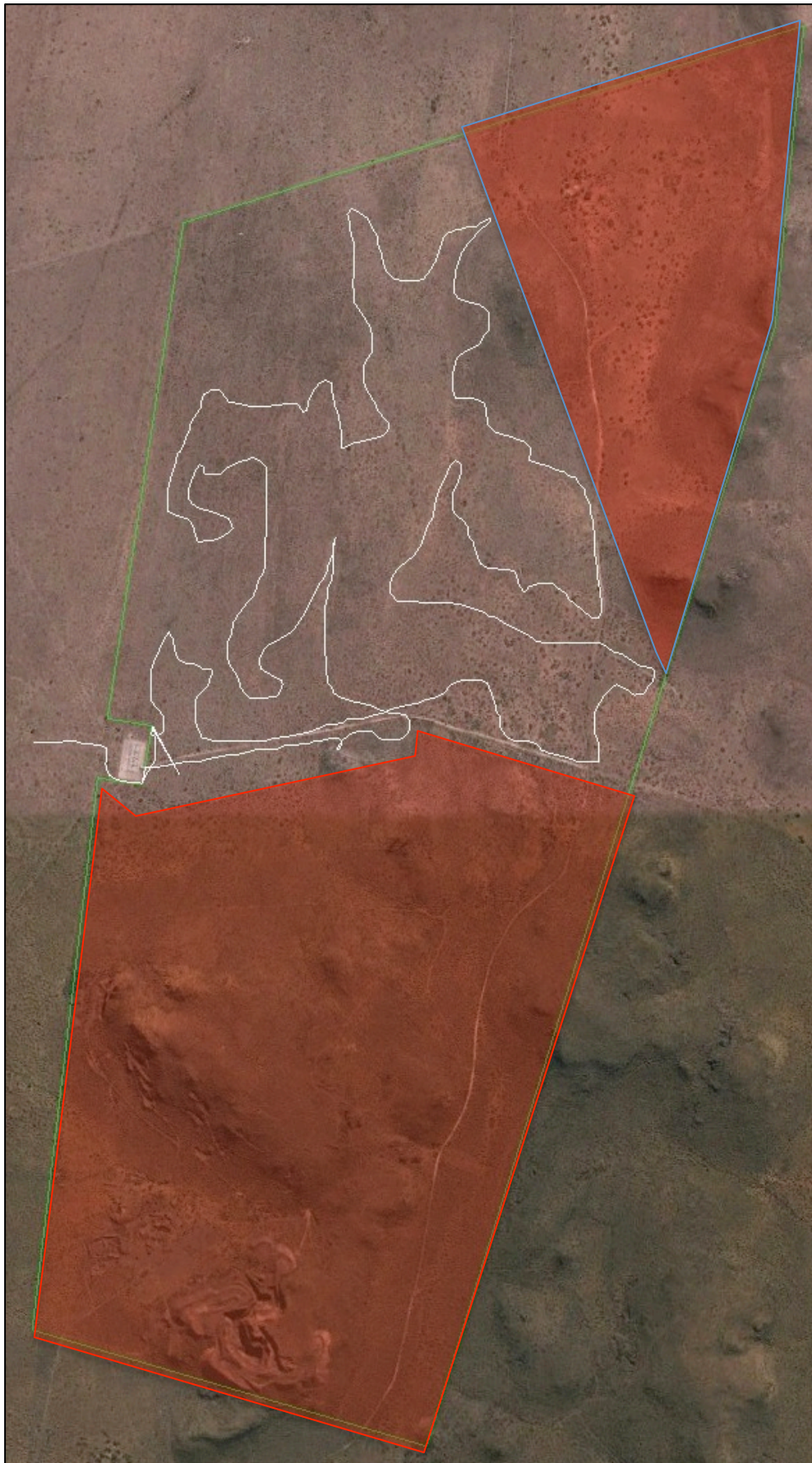


Figure 15. GPS Track paths for Section C (Red areas shows no-go areas indicated by security)

ASSESSING VISUAL IMPACT

Visual impacts of developments result when sites that are culturally celebrated are visually affected by a development. The exact parameters for the determination of visual impacts have not yet been rigidly defined and are still mostly open to interpretation. CNdV and DEAP (2006) have developed some guidelines for the management of the visual impacts of wind turbines in the Western Cape, although these have not yet been formalized. In these guidelines they recommend a buffer zone of 1km around significant heritage sites to minimize the visual impact.

The visually prominent areas of the study area are the small hills and the prominent ridgeline close to the railway line. These features have already been seriously altered by existing mining activities. It is however possible that further mining could compound the problem. The impact will however not be on any sites of heritage significance.



Figure 16. Extensive mining activities on site

HERITAGE INDICATORS WITHIN THE RECEIVING ENVIRONMENT

REGIONAL CULTURAL CONTEXT

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).

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.

IRON AGE

Although there is documentary evidence of a large Iron Age Tswana village – Dithakong, located in the general area of the site 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 Gatlhose 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).



HISTORIC ERA

The area of Postmasburg was originally known only for the site of Blinkklipkop where the pre-colonial specularite mines were located. The site at Blinkklipkop was successively occupied by vagrants to explorers (often the same category during this time) and Carl Lichtenstein gives colourful descriptions of this site during his visit of 1805 (Lichtenstein 1930).

The Blinkklipkop (Blinkklip) site researched by Thackeray and Beaumont in the 1980's, could also be identified from sketches and descriptions by Burchell documented during his 1813 expedition through the area (Thackeray, 1983).

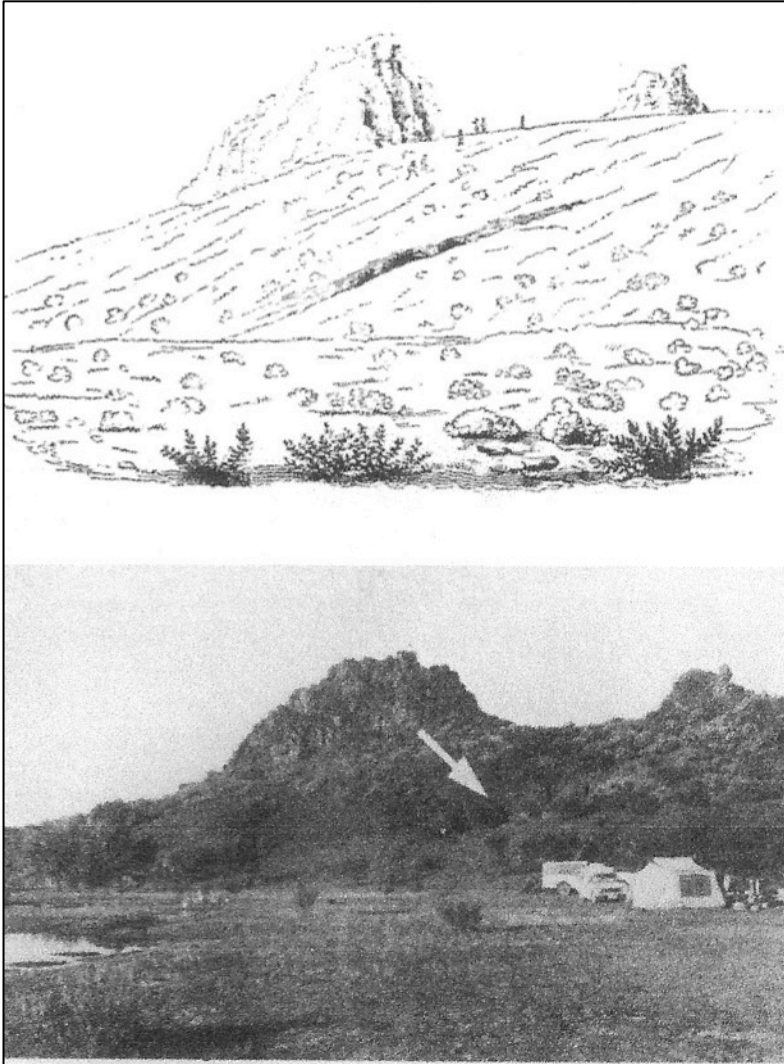


Figure 17. Sketch by Burchell compared by Thakeray (Thakeray, Thackeray & Beaumont, 1983)

By 1820 the Griqua was settling in the Blinkklipkop area (Legassick, 2010) to be followed by the Thlaro group under Isaak Thupane who settled close to present day Postmasburg (Breutz 1963). During the 1860's diamonds were discovered in the area leading to the British annexation of Griqualand in 1871 and the renaming as *Griqua Land West* (Legassick, 2010).

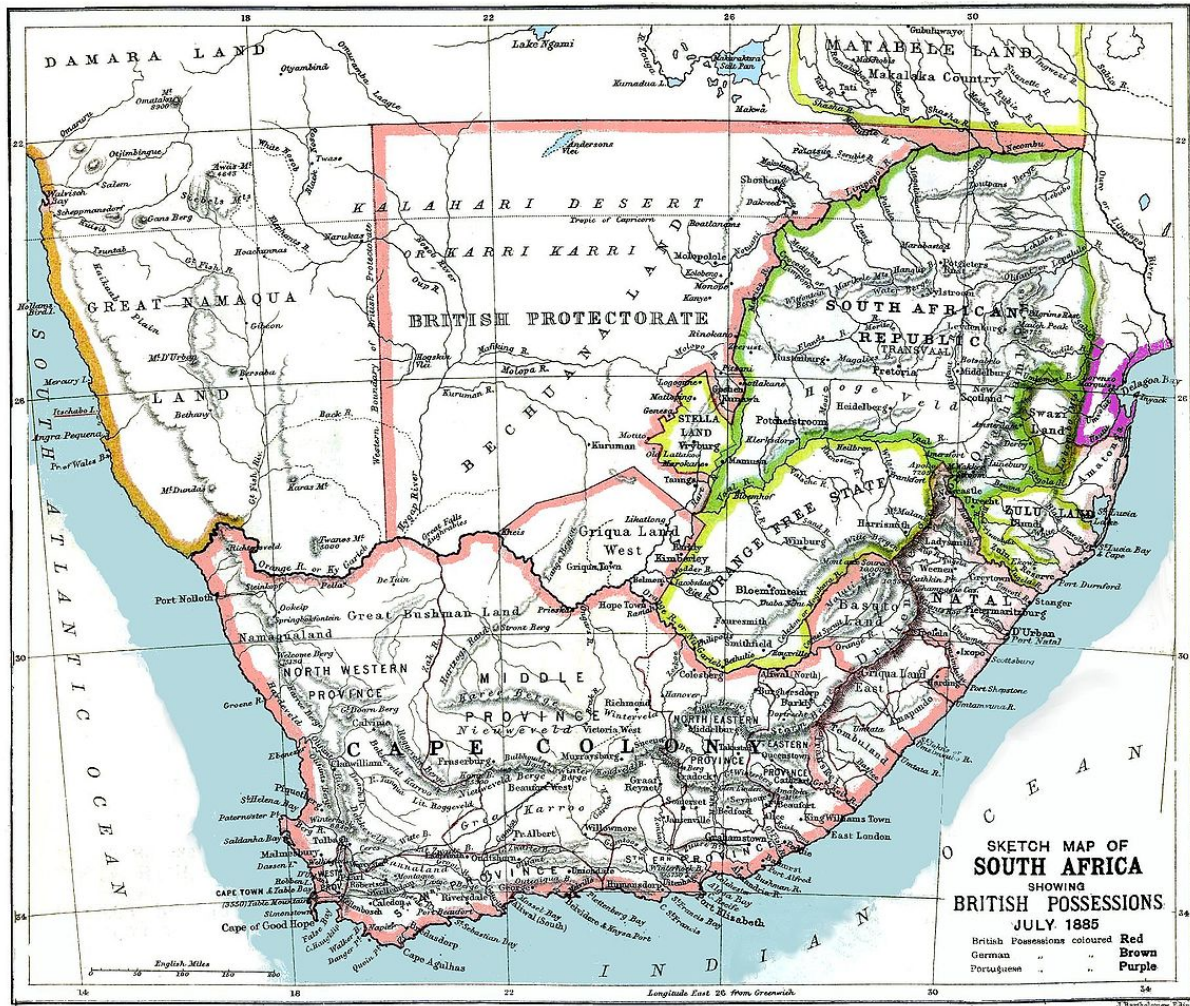


Figure 18. Historic map showing Griqua Land West (Scottish Geographic Magazine, 1885)

With the outbreak of war between the British and the Boer Republics on 11 October 1899, this area was annexed by Boer Commandoes and was held for the next eight months. By March 1900 the whole Griqua Land West was under the control of Boer commander P J de Villiers.



Figure 19. Cmdr. P.J. de Villiers



11/03/2014

When the Boer Republics surrendered in May 1902, control of Griqua Land West was returned to the British (Strydom 1937).

From 1918 onwards the area was known for diamond mines focussed on kimberlite pipes. Until its closure in 1930, the West End Diamond Mine near Postmasburg produced more than 180 000 carats of diamonds (Snyman, 1977).

Geological prospectors working for the South African Manganese Ltd. Company finally investigated the study area, Kapstewel farm in 1927. Extensive manganese deposits were identified, however mining did not commence due to a lack of transport infrastructure (SA Manganese, 1977). From 1930 – 1932 manganese was well mined at the farm Kapstewel by this company to a limited extent, however with the upgrading of the railway line to Kapstewel and the additional construction of the Manganore siding, mining grew exponentially from 1937 onwards (SA Manganese, 1977). During this time the need for employee accommodation grew and eventually the Associated Manganese Mines of South Africa (AMMOSAL) constructed a staff village on the farm Kapstewel. Work here continued until the closure of the mine in the late 1970's (Snyman, 1983). The remains of this village is most probably associated with the mining structures located on Portion 5 of the farm Kapstewel.



MEASURING AND EVALUATING THE CULTURAL SENSITIVITY OF THE STUDY AREA

In 2003 the SAHRA compiled the following guidelines to evaluate the cultural significance of individual heritage resources:

TYPE OF RESOURCE

- Place
- Archaeological Site
- Structure
- Grave
- Paleontological Feature
- Geological Feature

TYPE OF SIGNIFICANCE

1. HISTORIC VALUE

It is important in the community, or pattern of history

- Important in the evolution of cultural landscapes and settlement patterns
- Important in exhibiting density, richness or diversity of cultural features illustrating the human occupation and evolution of the nation, province, region or locality.
- Important for association with events, developments or cultural phases that have had a significant role in the human occupation and evolution of the nation, province, region or community.
- Important as an example for technical, creative, design or artistic excellence, innovation or achievement in a particular period.

It has strong or special association with the life or work of a person, group or organisation of importance in history

- Importance for close associations with individuals, groups or organisations whose life, works or activities have been significant within the history of the nation, province, region or community.

It has significance relating to the history of slavery

- Importance for a direct link to the history of slavery in South Africa.

2. AESTHETIC VALUE

It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group.

- Important to a community for aesthetic characteristics held in high esteem or otherwise valued by the community.
- Importance for its creative, design or artistic excellence, innovation or achievement.
- Importance for its contribution to the aesthetic values of the setting demonstrated by a landmark quality or having impact on important vistas or otherwise contributing to the identified aesthetic qualities of the cultural environs or the natural landscape within which it is located.
- In the case of an historic precinct, importance for the aesthetic character created by the individual components which collectively form a significant streetscape, townscape or cultural environment.

3. SCIENTIFIC VALUE

It has potential to yield information that will contribute to an understanding of natural or cultural heritage



- Importance for information contributing to a wider understanding of natural or cultural history by virtue of its use as a research site, teaching site, type locality, reference or benchmark site.
- Importance for information contributing to a wider understanding of the origin of the universe or of the development of the earth.
- Importance for information contributing to a wider understanding of the origin of life; the development of plant or animal species, or the biological or cultural development of hominid or human species.
- Importance for its potential to yield information contributing to a wider understanding of the history of human occupation of the nation, Province, region or locality.
- It is important in demonstrating a high degree of creative or technical achievement at a particular period
- Importance for its technical innovation or achievement.

4. SOCIAL VALUE

- It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons
- Importance as a place highly valued by a community or cultural group for reasons of social, cultural, religious, spiritual, symbolic, aesthetic or educational associations.
- Importance in contributing to a community's sense of place.

DEGREES OF SIGNIFICANCE

1. RARITY

It possesses uncommon, rare or endangered aspects of natural or cultural heritage.

- Importance for rare, endangered or uncommon structures, landscapes or phenomena.

2. REPRESENTIVITY

- It is important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects.
- Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class.
- Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality.

The table below illustrates how a site's heritage significance is determined

Spheres of Significance	High	Medium	Low
International			
National			
Provincial			
Regional			
Local			
Specific Community			

Assessment of Heritage Potential

Assessment Matrix

Determining Heritage Sensitivity

In addition to guidelines provided by the National Heritage Resources Act (Act No. 25 of 1999), a set of criteria based on Deacon (J) and Whitelaw (1997) for assessing archaeological significance has been developed for Northern Cape settings (Morris 2007a). These criteria include estimation of landform potential (in terms of its capacity to contain archaeological traces) and assessing the value to any archaeological traces (in terms of their attributes or their capacity to be construed as evidence, given that evidence is not given but constructed by the investigator).

Estimating site potential

Table 1 (below) is a classification of landforms and visible archaeological traces used for estimating the potential of archaeological sites (after J. Deacon and, National Monuments Council). Type 3 sites tend to



be those with higher archaeological potential, but there are notable exceptions to this rule, for example the renowned rock engravings site Driekopseiland near Kimberley which is on landform L1 Type 1 – normally a setting of lowest expected potential. It should also be noted that, generally, the older a site the poorer the preservation, so that sometimes any trace, even of only Type 1 quality, could be of exceptional significance. In light of this, estimation of potential will always be a matter for archaeological observation and interpretation.

Table 1. Classification of landforms and visible archaeological traces for estimating the potential for archaeological sites (after J. Deacon, NMC as used in Morris)

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

Table 2. Site attributes and value assessment (adapted from Whitelaw 1997 as used in Morris)

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

Assessing site value by attribute

Table 2 is adapted from Whitelaw (1997), who developed an approach for selecting sites meriting heritage recognition status in KwaZulu-Natal. It is a means of judging a site's archaeological value by



ranking the relative strengths of a range of attributes (given in the second column of the table). While aspects of this matrix remain qualitative, attribute assessment is a good indicator of the general archaeological significance of a site, with Type 3 attributes being those of highest significance.

Findings

In this section the results of the survey will be given. The sites will be described and evaluated and their locations given. This section is divided into sites identified during fieldwork and sites identified during previous studies as found during the document study. We will start with the latter;

FINDINGS BY VAN VOLLENHOVEN IN 2009 JULY 2009 REPORT ON FARM KAPSTEWEL (PORTIONS 2,3,4,&5)

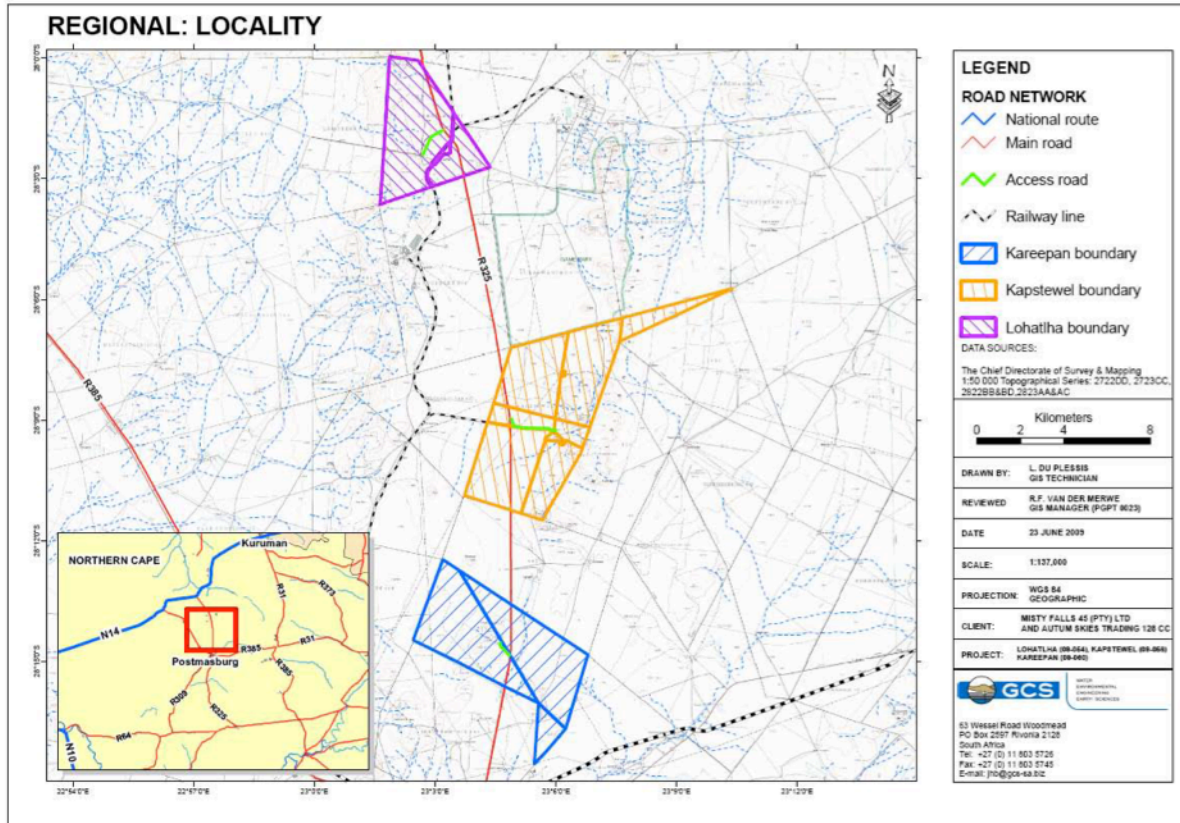


Figure 20. Study area as indicated in Van Vollenhoven 2009 (Present study area included in yellow hatching) (Van Vollenhoven, 2009)

Site 1 (Site 1 in Van Vollenhoven)

GPS 28,13266° E
23,11854° S

“...This site contains the remains of an old mining complex. There are various prospecting trenches, mine buildings and an ore crushing facility. Scrap metals, building rubble and old vehicle parts scatter the area. The site is probably less than 60 years of age and is deemed of low significance. The documentation (recording and photographs taken) done during the survey is seen as sufficient mitigation measures....”(Van Vollenhoven, 2009).





Figure 21. Ore Crushing Facility (Van Vollenhoven 2009)



Figure 22. Ore dump (Van Vollenhoven, 2009)

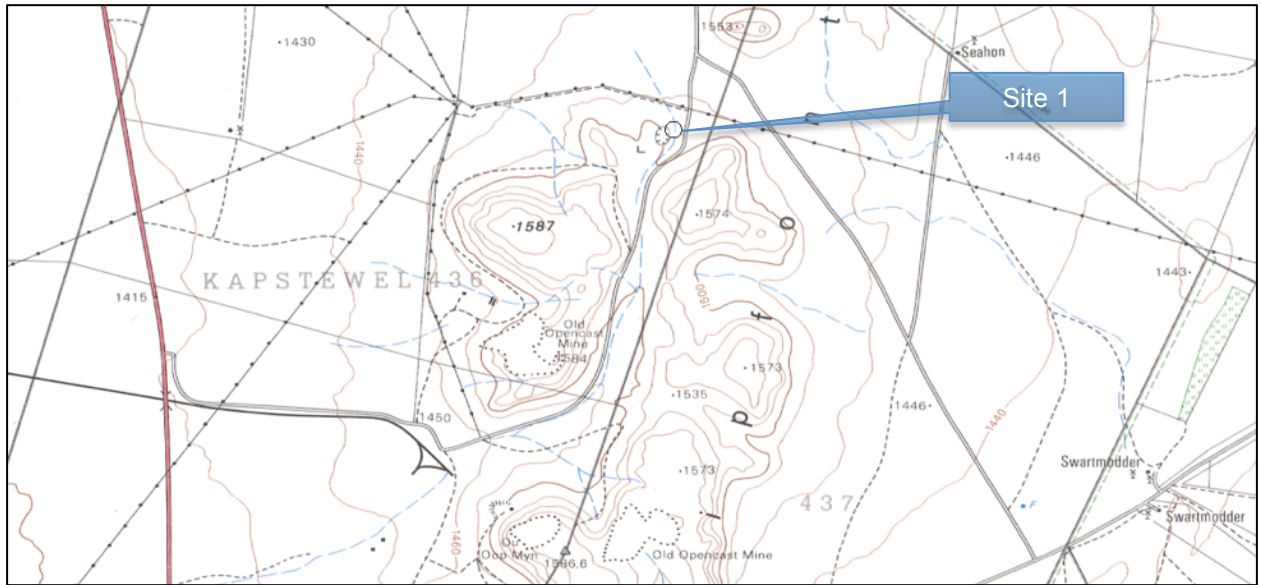


Figure 23. Location of Site 1

Site 2

GPS 28,14171° E
23,11661° S

“...This is a site with some low stone walled features, possibly dating to either the Iron Age or to earlier Later Stone Age hunter-gatherers. There are at least 3 circular and semi-circular features that might represent either windbreaks for shelters or dwellings. No artifacts were identified. The exact function or age of these features is unknown at this stage, and more investigation is needed. The site is deemed to be of medium to high significance, and some mitigation measures need to be implemented should mining operations take place in this area. This will include mapping and drawing...” (Van Vollenhoven, 2009)



Figure 24. Stone walling at Site 2 (Van Vollenhoven)

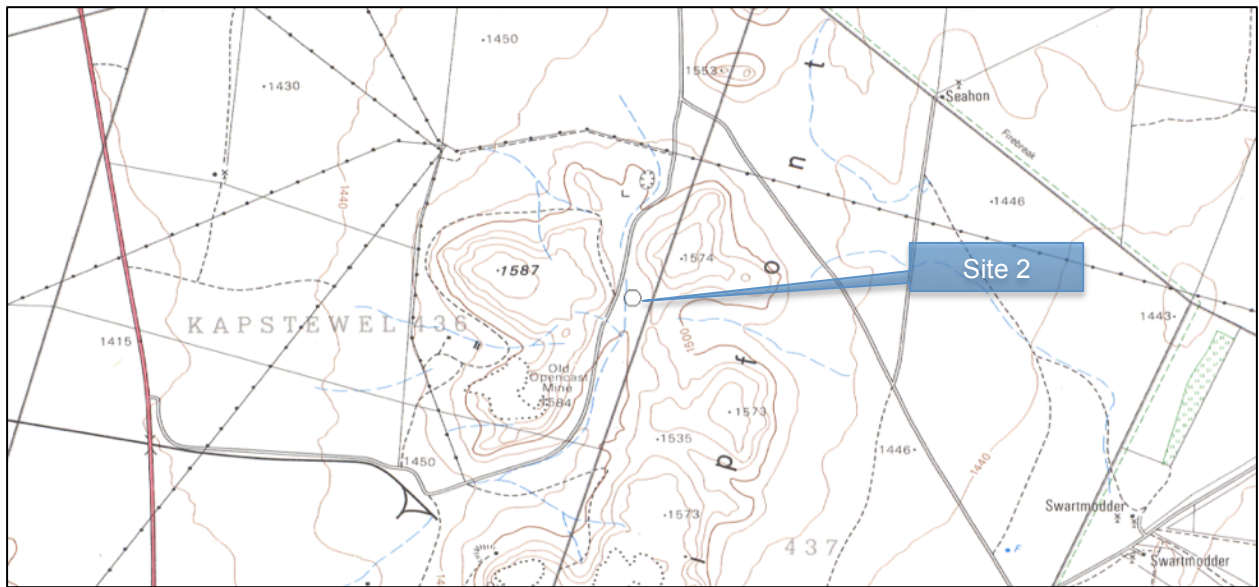


Figure 25. Location of Site 2

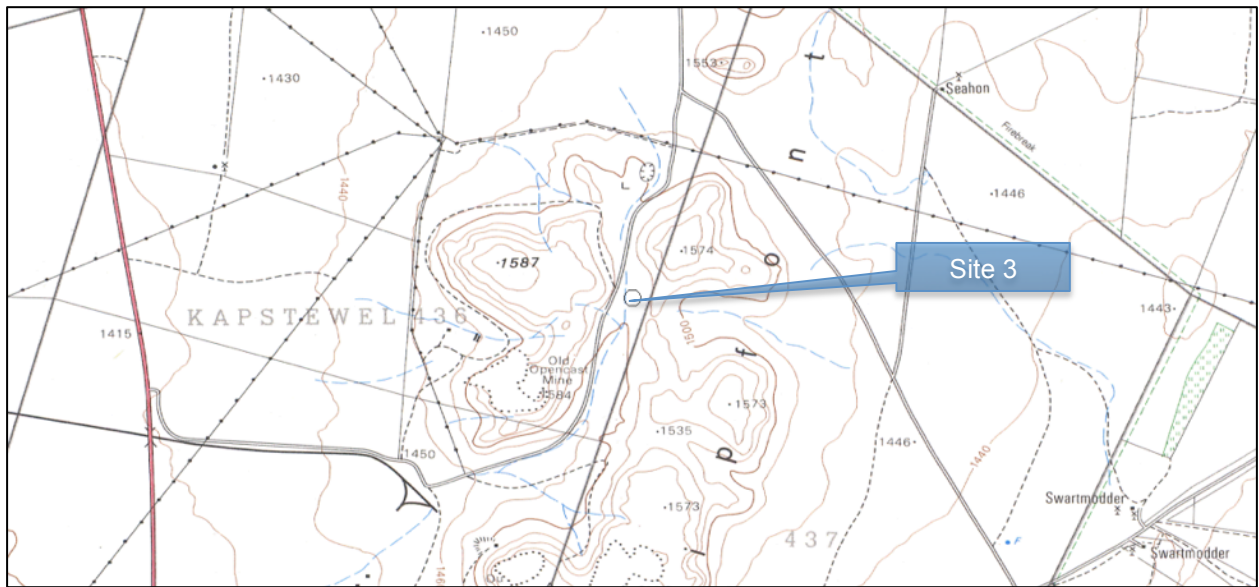
SITE 3

GPS 28,14229° E
23,11664° S

“...This is a possible grave. It is a stone packed, rectangular-shaped feature with no visible headstone. Some pieces of undecorated porcelain were found near to it. If this is indeed an unknown grave it is of high significance. If the mining operations are to impact directly on this area, this will have to be taken into consideration and the mining plans will have to be altered in order to avoid disturbing the grave. If not possible, the grave will have to be exhumed and relocated after all necessary processes related to graves have been undertaken...” (Van Vollenhoven, 2009)



Figure 26. Possible grave structure at Site 3 (Van Vollenhoven, 2009)



SITE 4

GPS 28,14735° E
23,11530° S

“...The site contains at least 9 circular (stone-lined) depressions, stretched in a row along an old mine prospecting road. The function or exact age of these features is unknown, but it is possible that it is related to the recent historic mining activities in the area and that it represents a mine camp where tents were pitched. The linear layout of the site does not conform to the Iron Age and its location next to the road does seem to favor the mine camp conclusion. Bottles and other cultural material found in the vicinity also seems to date the site to the 1960’s/70’s. The site has low significance, as it most probably is less than 60 years of age. The documentation done during the survey is deemed sufficient enough mitigation...” (Van Vollenhoven, 2009)



Figure 27. Circular depressions at Site 4 (Van Vollenhoven)



Figure 28. Old Pepsi Bottle at Site 4 (Van Vollenhoven)

SITE 5

GPS (Not Provided by Author)

"...This is an old farmstead, with a number of buildings and features on it. It is less than 60 years of age and not very significant. It will be revamped and used as part of the new mining infrastructure. Impacted on by the mining activities. The documentation (recording and photographs taken) done during the survey deemed sufficient..."(Van Vollenhoven, 2009)



Figure 29. Farmstead at Site 4 (Van Vollenhoven)

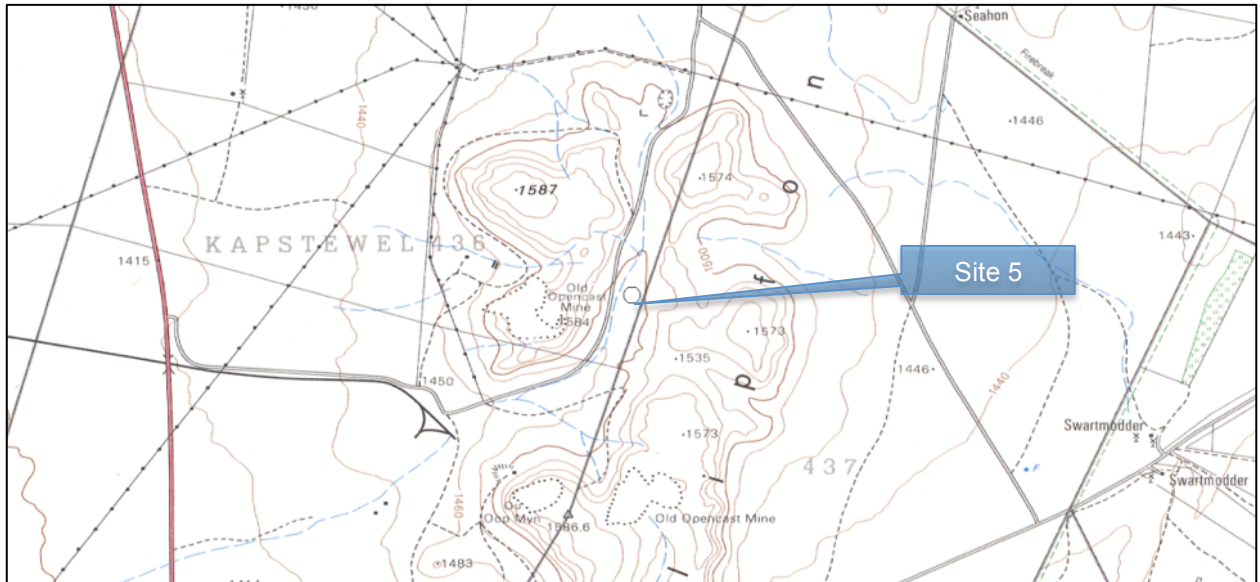


Figure 30. Location of Site 5

SITE 6 & 7

GPS 28,14735° E
23,11530° S

"...This site represents the old mine offices and complex of the old SAMANCOR Manganore mining operations. It contains various buildings and features. This could be re-used for the new mining operations. It is less than 60 years of age (dating to around the 1970's to 1990's). It has low cultural heritage significance and the documentation done during the survey is sufficient enough to be regarded as mitigation..."(Van Vollenhoven, 2009)

No photographs provided by author

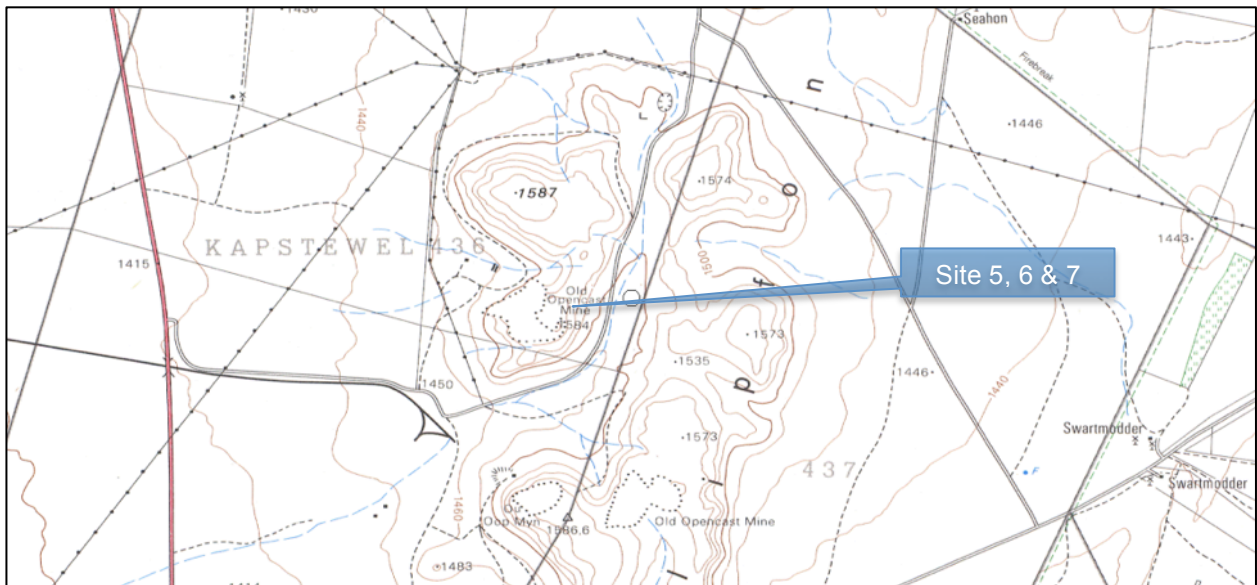


Figure 31. Site 5,6,7



FINDINGS BY VAN VOLLENHOVEN – KAREEPAN HIA REPORT, 2009

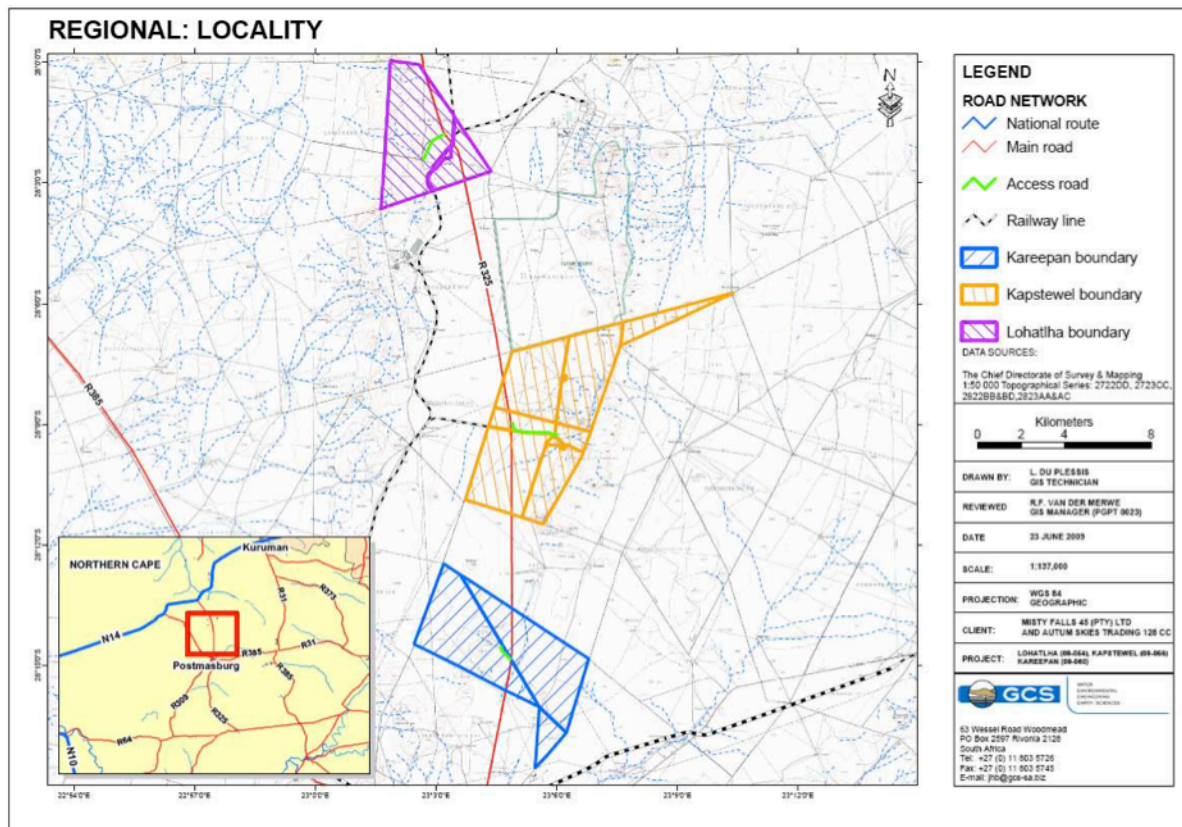


Figure 32. Study area as per Van Vollenhoven with present study area included in yellow hatching. (Van Vollenhoven, 2009)

No heritage sites were noted within this project’s study area during this investigation by Van Vollenhoven. All the Stone Age sites documented fell outside of this study area.

FIELDWORK FINDINGS – 2014
 SITE 8

GPS 28,16111° S
 23,10186° E

These are the remains from the SAMANCOR Manganese Mine originally developed by AMMOSAL. Although the site was abandoned in the early 1970’s (Snyman, 1983) it is possible that some of the structures date back to the 1930’s when the South African Manganese Company Ltd initiated prospecting on the farm Kapstewel. The remains consists mainly of some industrial mining structures such as conveyor belts and several dilapidated buildings. Some of the multi-story buildings seem to be in danger of imminent collapse.



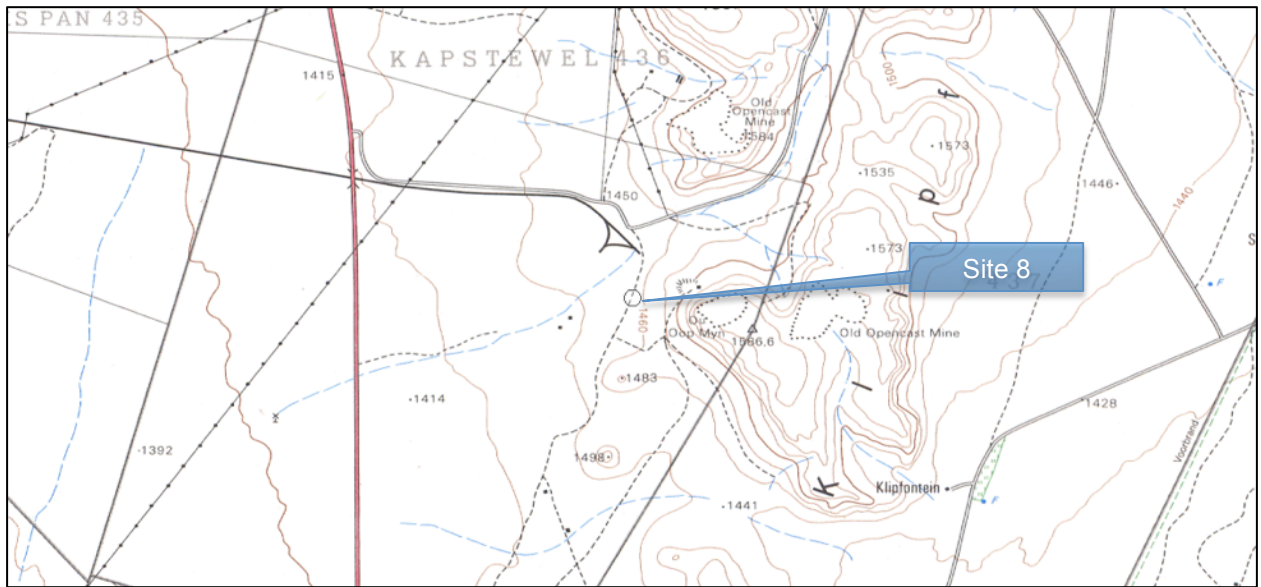


Figure 33. Site 8 location



Figure 34. Dilapidated building at Site 7



Figure 35. Dilapidated housing structure at Site 7

IMPACT STATEMENT

PALEONTOLOGICAL SITES

Should bedrock be affected a specialized paleontological study will be required.

Mitigation

Paleontological Impact Assessment.

PRE-CONTACT SITES

It is not anticipated that any sites of the pre-contact phase will be encountered. The predominant pre-colonial sites expected in these areas are Stone Age sites and specularite mining sites. No specularite is present in the study area. The area is also characterised by the high concentration of manganese ore. This is not suitable for the manufacture of Stone Tools and there were also no occurrences of banded ironstone noted.

Two possible shelter sites were investigated, however no deposits or indication of rock art could be identified. This could be attributed to the lack of a permanent water source in the direct vicinity.

Van Vollenhoven identified one site of possible Stone Age or Iron Age origin in the area not accessed by the fieldworkers for safety reasons. The site was designated Site 2 and has a **moderate heritage significance**.

POST-CONTACT SITES

The 2009 study by Van Vollenhoven covered the part of Kapstewel 436 Portion 4 that was inaccessible for security reasons by the present investigators. This study identified five sites on this portion and one site on Portion 5.

Site 1 was deemed a modern crushing plant and although the author states that the site is probably younger than 60 years he still attributes a significance rating of **Moderate** to this site. Should the site prove to be of recent origin this rating should be reduced to **Low**.

Site 3 is a possible grave structure and is attributed a significance rating of **Moderate** by Van Vollenhoven. The site seems very likely to be a grave site and as such automatically retains a heritage significance of **High**.

Site 4 is described as possibly being a temporary mining camp of the 1960/70's. In the text description the author indicated a heritage significance of **Low**, however in the table description it is indicated as being of **Moderate** significance. This site should be afforded a **Low** heritage significance rating.

Site 5, 6 & 7 are also variously described by Van Vollenhoven as being of "...not very significant nature..." as well as having **Moderate** significance. Due to the area's connection with the mining history it should be attributed a significance rating of **Moderate**.

Site 8 is also associated with the mining industry and some of the structures could date back as far as the 1930's when large-scale exploration was performed in the area. For this reason it is attributed a significance rating of **Moderate**.

CULTURAL LANDSCAPE

The following landscape types could possibly be present in the study area.

Landscape Type	Description	Occurrence still possible?	Likely occurrence?
1 Paleontological	Mostly fossil remains. Remains include microbial fossils such as found in Baberton Greenstones	Yes, sub-surface	Unlikely
2 Archaeological	Evidence of human occupation associated with the following phases – Early-, Middle-, Late Stone Age, Early-, Late Iron Age, Pre-Contact Sites, Post-Contact Sites	Yes	Unlikely
3 Historic Built Environment	<ul style="list-style-type: none"> - Historical townscapes/streetscapes - Historical structures; i.e. older than 60 years - Formal public spaces - Formally declared urban conservation areas - Places associated with social identity/displacement 	No	No
4 Historic Farmland	These possess distinctive patterns of settlement and historical features such as: <ul style="list-style-type: none"> - Historical farm yards - Historical farm workers villages/settlements - Irrigation furrows - Tree alignments and groupings - Historical routes and pathways - Distinctive types of planting - Distinctive architecture of cultivation e.g. planting blocks, trellising, terracing, ornamental planting. 	Yes	Likely
5 Historic rural town	<ul style="list-style-type: none"> - Historic mission settlements - Historic townscapes 	No	No
6 Pristine natural landscape	<ul style="list-style-type: none"> - Historical patterns of access to a natural amenity - Formally proclaimed nature reserves - Evidence of pre-colonial occupation - Scenic resources, e.g. view corridors, viewing sites, visual edges, visual linkages - Historical structures/settlements older than 60 years - Pre-colonial or historical burial sites 	Yes	Unlikely



	- Geological sites of cultural significance.		
7 Relic Landscape	- Past farming settlements - Past industrial sites - Places of isolation related to attitudes to medical treatment - Battle sites - Sites of displacement,	Yes, Siege of Mafikeng	Unlikely
8 Burial grounds and grave sites	- Pre-colonial burials (marked or unmarked, known or unknown) - Historical graves (marked or unmarked, known or unknown) - Graves of victims of conflict - Human remains (older than 100 years) - Associated burial goods (older than 100 years) - Burial architecture (older than 60 years)	Yes,	Yes
9 Associated Landscapes	- Sites associated with living heritage e.g. initiation sites, harvesting of natural resources for traditional medicinal purposes - Sites associated with displacement & contestation - Sites of political conflict/struggle - Sites associated with an historic event/person - Sites associated with public memory	No	No
10 Historical Farmyard	- Setting of the yard and its context - Composition of structures - Historical/architectural value of individual structures - Tree alignments - Views to and from - Axial relationships - System of enclosure, e.g. defining walls - Systems of water reticulation and irrigation, e.g. furrows - Sites associated with slavery and farm labour - Colonial period archaeology	No	No
11 Historic institutions	- Historical prisons - Hospital sites - Historical school/reformatory sites - Military bases	No	No
12 Scenic visual	- Scenic routes	No	No
13 Amenity landscape	- View sheds - View points - Views to and from - Gateway conditions - Distinctive representative landscape conditions - Scenic corridors	No	No

IMPACT EVALUATION

This HIA Methodology assists in evaluating the overall effect of a proposed activity on the heritage environment. The determination of the effect of a heritage impact on a heritage parameter is determined through a systematic analysis of the various components of the impact. This is undertaken using information that is available to the heritage practitioner through the process of the heritage impact assessment. The impact evaluation of predicted impacts was undertaken through an assessment of the significance of the impacts.



DETERMINATION OF SIGNIFICANCE OF IMPACTS

Significance is determined through a synthesis of impact characteristics, which include context, and intensity of an impact. Context refers to the geographical scale i.e. site, local, national or global whereas Intensity is defined by the severity of the impact e.g. the magnitude of deviation from background conditions, the size of the area affected, the duration of the impact and the overall probability of occurrence. Significance is calculated as shown in the table below.

Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

IMPACT RATING SYSTEM

Impact assessment must take account of the nature, scale and duration of effects on the heritage environment whether such effects are positive (beneficial) or negative (detrimental). Each issue / impact is also assessed according to the project stages:

- planning
- construction
- operation
- decommissioning

Where necessary, the proposal for mitigation or optimisation of an impact should be detailed. A brief discussion of the impact and the rationale behind the assessment of its significance has also been included.

RATING SYSTEM USED TO CLASSIFY IMPACTS

The rating system is applied to the potential impact on the receiving environment and includes an objective evaluation of the mitigation of the impact. Impacts have been consolidated into one rating. In assessing the significance of each issue the following criteria (including an allocated point system) is used:

NATURE		
Include a brief description of the impact of the heritage parameter being assessed in the context of the project. This criterion includes a brief written statement of the heritage aspect being impacted upon by a particular action or activity.		
GEOGRAPHICAL EXTENT		
This is defined as the area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment of a project in terms of further defining the determined.		
1	Site	The impact will only affect the site
2	Local/district	Will affect the local area or district
3	Province/region	Will affect the entire province or region
4	International and National	Will affect the entire country
PROBABILITY		



This describes the chance of occurrence of an impact		
1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between a 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than a 75% chance of occurrence).
REVERSIBILITY		
This describes the degree to which an impact on a heritage parameter can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures
2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and no mitigation measures exist.
IRREPLACEABLE LOSS OF RESOURCES		
This describes the degree to which heritage resources will be irreplaceably lost as a result of a proposed activity.		
1	No loss of resource.	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.
DURATION		
This describes the duration of the impacts on the heritage parameter. Duration indicates the lifetime of the impact as a result of the proposed activity		
1	Short term	The impact and its effects will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase (0 – 1 years), or the impact and its effects will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0 – 2 years).
2	Medium term	The impact and its effects will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2 – 10 years).
3	Long term	The impact and its effects will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter (10 – 50 years).



4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered transient (Indefinite).
CUMULATIVE EFFECT		
This describes the cumulative effect of the impacts on the heritage parameter. A cumulative effect/impact is an effect, which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question.		
1	Negligible Cumulative Impact	The impact would result in negligible to no cumulative effects
2	Low Cumulative Impact	The impact would result in insignificant cumulative effects
3	Medium Cumulative impact	The impact would result in minor cumulative effects
4	High Cumulative Impact	The impact would result in significant cumulative effects
INTENSITY / MAGNITUDE		
Describes the severity of an impact		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/ component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired (system collapse). Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.
SIGNIFICANCE		
Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. This describes the significance of the impact on the heritage parameter. The calculation of the significance of an impact uses the following formula:		
(Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity.		
The summation of the different criteria will produce a non weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and		



assigned a significance rating.		
Points	Impact Significance Rating	Description
6 to 28	Negative Low impact	The anticipated impact will have negligible negative effects and will require little to no mitigation.
6 to 28	Positive Low impact	The anticipated impact will have minor positive effects.
29 to 50	Negative Medium impact	The anticipated impact will have moderate negative effects and will require moderate mitigation measures.
29 to 50	Positive Medium impact	The anticipated impact will have moderate positive effects.
51 to 73	Negative High impact	The anticipated impact will have significant effects and will require significant mitigation measures to achieve an acceptable level of impact.
51 to 73	Positive High impact	The anticipated impact will have significant positive effects.
74 to 96	Negative Very high impact	The anticipated impact will have highly significant effects and are unlikely to be able to be mitigated adequately. These impacts could be considered "fatal flaws".
74 to 96	Positive Very high impact	The anticipated impact will have highly significant positive effects.

IMPACT ASSESSMENT

SITE 001

IMPACT TABLE FORMAT	
Heritage component	<i>Post-contact mining site</i>
Issue/Impact/Heritage Impact/Nature	<i>Damage to mining site</i>
<i>Extent</i>	<i>Site</i>
<i>Probability</i>	<i>Probable</i>
<i>Reversibility</i>	<i>Partly reversible</i>
<i>Irreplaceable loss of resources</i>	<i>Marginal loss of resources</i>
<i>Duration</i>	<i>Medium term</i>
<i>Cumulative effect</i>	<i>Low cumulative effect</i>
<i>Intensity/magnitude</i>	<i>High</i>



<i>Significance Rating</i>	<i>36 points. The impact will have a medium scale negative effect.</i>	
	Pre-mitigation impact rating	Post mitigation impact rating
Extent	1	1
Probability	3	2
Reversibility	2	1
Irreplaceable loss	2	2
Duration	2	1
Cumulative effect	2	1
Intensity/magnitude	3	1
Significance rating	36 (medium negative)	8 (low negative)
Mitigation measure	<i>The mining site should be further investigated to ensure that it is not older than 60 years and associated with the early mining activities at Kapstewel Farm.</i>	

Rating of impacts

SITE 002

IMPACT TABLE FORMAT		
Heritage Component	<i>Possible pre-contact site of Stone Age or Iron Age origin</i>	
Issue/Impact/Heritage Impact/Nature	<i>Demolition of site due to mining activities</i>	
<i>Extent</i>	<i>Site</i>	
<i>Probability</i>	<i>Probable</i>	
<i>Reversibility</i>	<i>Partly reversible</i>	
<i>Irreplaceable loss of resources</i>	<i>Marginal loss of resource</i>	
<i>Duration</i>	<i>Short term</i>	
<i>Cumulative effect</i>	<i>Low cumulative effect</i>	
<i>Intensity/magnitude</i>	<i>High</i>	
<i>Significance Rating</i>	<i>The site has local socio-cultural significance</i>	
	Pre-mitigation impact rating	Post mitigation impact rating
Extent	1	1
Probability	3	2
Reversibility	2	1
Irreplaceable loss	2	2
Duration	1	1
Cumulative effect	2	1



Intensity/magnitude	3	1
Significance rating	33 (medium negative)	8 (low negative)
Mitigation measures	<i>Should the site be within the planned excavation area of the mine it should undergo further investigation to determine it's cultural affiliation. At this stage the mine indicated that this area would not be mined.</i>	

SITE 003

IMPACT TABLE FORMAT		
Heritage Component	<i>Post-contact burial site</i>	
Issue/Impact/Heritage Impact/Nature	<i>Physical damage to grave</i>	
<i>Extent</i>	<i>Site</i>	
<i>Probability</i>	<i>Probable</i>	
<i>Reversibility</i>	<i>Partly reversible</i>	
<i>Irreplaceable loss of resources</i>	<i>Marginal loss of resources</i>	
<i>Duration</i>	<i>Medium term</i>	
<i>Cumulative effect</i>	<i>Low cumulative effect</i>	
<i>Intensity/magnitude</i>	<i>High</i>	
<i>Significance Rating</i>	<i>36 points. The impact will have a medium scale negative effect.</i>	
	Pre-mitigation impact rating	Post mitigation impact rating
Extent	1	1
Probability	3	2
Reversibility	2	1
Irreplaceable loss	2	2
Duration	2	1
Cumulative effect	2	1
Intensity/magnitude	3	1
Significance rating	36 (medium negative)	8 (low negative)
Mitigation measure	<i>Should the area be earmarked for excavation mining, the grave should be relocated.</i>	

Rating of impacts

SITE 004

IMPACT TABLE FORMAT



Heritage component	<i>Possible post-contact mine camp site</i>	
Issue/Impact/Heritage Impact/Nature	<i>Damage to mining site</i>	
<i>Extent</i>	<i>Site</i>	
<i>Probability</i>	<i>Probable</i>	
<i>Reversibility</i>	<i>Partly reversible</i>	
<i>Irreplaceable loss of resources</i>	<i>Marginal loss of resources</i>	
<i>Duration</i>	<i>Medium term</i>	
<i>Cumulative effect</i>	<i>Low cumulative effect</i>	
<i>Intensity/magnitude</i>	<i>High</i>	
<i>Significance Rating</i>	<i>36 points. The impact will have a medium scale negative effect.</i>	
	Pre-mitigation impact rating	Post mitigation impact rating
Extent	1	1
Probability	3	2
Reversibility	2	1
Irreplaceable loss	2	2
Duration	2	1
Cumulative effect	2	1
Intensity/magnitude	3	1
Significance rating	36 (medium negative)	8 (low negative)
Mitigation measure	<i>The mining site should be further investigated to ensure that it is not older than 60 years and associated with the early mining activities at Kapstewel Farm.</i>	

Rating of impacts

SITES 005, 006 & 007

IMPACT TABLE FORMAT	
Heritage component	<i>Possible post-contact mine infrastructure</i>
Issue/Impact/Heritage Impact/Nature	<i>Damage to mining site</i>
<i>Extent</i>	<i>Site</i>
<i>Probability</i>	<i>Probable</i>
<i>Reversibility</i>	<i>Partly reversible</i>



<i>Irreplaceable loss of resources</i>	<i>Marginal loss of resources</i>	
<i>Duration</i>	<i>Medium term</i>	
<i>Cumulative effect</i>	<i>Low cumulative effect</i>	
<i>Intensity/magnitude</i>	<i>High</i>	
<i>Significance Rating</i>	<i>36 points. The impact will have a medium scale negative effect.</i>	
	Pre-mitigation impact rating	Post mitigation impact rating
Extent	1	1
Probability	3	2
Reversibility	2	1
Irreplaceable loss	2	2
Duration	2	1
Cumulative effect	2	1
Intensity/magnitude	3	1
Significance rating	36 (medium negative)	8 (low negative)
Mitigation measure	<i>The mining site should be further investigated to ensure that it is not older than 60 years and associated with the early mining activities at Kapstewel Farm.</i>	

Rating of impacts

SITE 008

IMPACT TABLE FORMAT	
Heritage component	<i>Possible post-contact mine infrastructure</i>
Issue/Impact/Heritage Impact/Nature	<i>Damage to mining site</i>
<i>Extent</i>	<i>Site</i>
<i>Probability</i>	<i>Probable</i>
<i>Reversibility</i>	<i>Partly reversible</i>
<i>Irreplaceable loss of resources</i>	<i>Marginal loss of resources</i>
<i>Duration</i>	<i>Medium term</i>
<i>Cumulative effect</i>	<i>Low cumulative effect</i>
<i>Intensity/magnitude</i>	<i>High</i>
<i>Significance Rating</i>	<i>36 points. The impact will have a medium scale negative effect.</i>



	Pre-mitigation impact rating	Post mitigation impact rating
Extent	1	1
Probability	3	2
Reversibility	2	1
Irreplaceable loss	2	2
Duration	2	1
Cumulative effect	2	1
Intensity/magnitude	3	1
Significance rating	36 (medium negative)	8 (low negative)
Mitigation measure	<i>The mining site should be further investigated to ensure that it is not older than 60 years and associated with the early mining activities at Kapstewel Farm.</i>	

Rating of impacts

RECOMMENDATIONS

This study analysed the documented data available as well as investigated the surface occurrences of heritage sites for the Farm Kapstewel 436 in the Northern Cape Province, close to the town of Postamsburg. It was found that Van Vollenhoven and Pelsler had surveyed the same property in 2009 (Van Vollenhoven, 2009) for two different studies. Due to security risks, Portion 4 & 5 of the farm Kapstewel was not accessible to the fieldworkers for this study. It is therefore fortunate that this part of the property was surveyed in 2009.

The 2009 study evaluated an area larger than the present study, however it included the whole of the present study area. The only sites identified were on Portions 4 and 5. This study also identified a further site on Portion 3.

According to mine employees the areas on Portion 4 & 5 were not earmarked for immediate mining at this stage and as a result it is recommended that if this should change that these areas be investigated once the security issues are resolved.

Due to the possible historic nature of the mining structures identified during the study it is also recommended that these undergo further study should it be decided to mine in this area. This is not planned at this stage.

The gravesite should be relocated if mining activities in the area proceed.

CONCLUSION

Although a number of sites were identified during this study, previous experience in the area indicated that the occurrence of Stone Age sites is very common in these areas. It was therefore noteworthy that no such sites were found within the study area either by the 2009 or the 2014 surveys. This fact is attributed to the predominance of manganese ore as a rock substrate. This does not seem to be a useful material for the manufacture of stone tools. There is also no source of permanent water in the area that would have resulted in settlement by Stone Age peoples either.

The main pre-colonial activities associated with this area are the exploitation of specularite mines. Here mining implements are found, however they are manufactured from rock imported into the area from other sites. No signs of specularite were observed in the study area.

Most of the sites identified during the 2009/2014 surveys were associated with the mining industry in this area. Although most of the structures were found not to be of historic origin there is a possibility that some of the structures were associated with the manganese prospecting in the area that has been performed here since the 1890's.



REFERENCES

- 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.
- Bergh, J.S. 1999 *Geskiedenisatlas van die Vier Noordelike Provinsies*. Van Schaik, Pretoria.
- Breutz, P.J. 1963. *The Tribes of the Districts of Kuruman and Postmasburg*. Department of Bantu Administration and Development, Ethnological Publication No. 49.
- Couzens, R., Sadr, K. *Rippled Ware at Blinklipkop, Northern Cape*. The South African Archaeological Bulletin, Vol. 65, No. 192 (December 2010), pp. 196 – 203.
- 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.
- 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.
- 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.
- Legassick, M. 2010. *The politics of a South African frontier: the Griqua, the Sotho - Tswana and the missionaries, 1780 - 1840*. Basler Afrika Bibliographien, Basel.
- Mitchell, P. 2002. *The Archaeology of Southern Africa*. Cambridge University Press, Cambridge.
- S.A. Manganese, 1977. *Kalahari Wealth: The Story of Manganese 1926 - 1976*. Purnell, Cape Town.
- Snyman, P.H.R. 1983. *Postmasburg: 'n Geskiedkundige Oorsig*. Human Sciences Research Council, Pretoria.
- Snyman, P.H.R. 1983. *Die Ontstaan en Groei van Postmasburg in Contree No. 13*, pp. 4 - 26.
- Thackeray, A.I., Thackeray J.F., Beaumont, P.B. *Excavations at the Blinkklikop Specularite Mine near Postmasburg, Northern Cape*. The South African Archaeological Bulletin, Vol. 38, No. 137 (Jun., 1983), pp. 17-25.
- Rudner, J., Rudner, I. *Rock-Art in the Thirstland Areas*. The South African Archaeological Bulletin, Vol.23, No. 91 (Dec., 1968), pp. 75-89.
- Strydom, C.J.S., *Kaapland en die Tweede Vryheidsoorlog (Kaatstad, 1937)*, pp. 107-108 en 113.



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