

MILLENNIUM HERITAGE GROUP (Pty) Ltd

PHASE 1

HERITAGE IMPACT ASSESSMENT RELATING TO THE PROPOSED PROSPECTING RIGHTS ON PORTION 1, 2 AND THE REMAINDER OF ZYPHERKUILC 59 WITHIN COLESBERG DISTRICT OF THE NORTHERN CAPE PROVINCE, SOUTH AFRICA



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EXECUTIVE SUMMARY

This report provides the results of a heritage impact assessment study for the proposed mineral (Uranium) prospecting rights on Portion 1 and 2 of the remainder of the farm Zypherkuil C59 near Colesberg, Northern Cape Province. The study area is located roughly 35.04 kilometers West of Colesberg Extension Five (5). The area is privately owned farmland dominated by both game (springbok) and livestock farming (sheep and cattle) activities. Very little is known of the archaeology of the area, however prior desktop study of the region has confirmed the presence of paleo- environments with fossil trees. Furthermore, the archaeology is dominated by both Middle and Later Stone Age artefacts commonly recorded around the Pans, calcrete deposits and river banks. The current setup of the most farms in the areas is characterized by isolated farm homesteads easily marked by the presence of *Eucalyptus* trees, buildings with vast farmlands stretching into distance.

Ndi Geological Consultants requested Millennium Heritage Group (Pty) Ltd, an independent heritage consulting company to assess the heritage sensitivity of the area proposed for mineral prospecting rights. A multi-stepped methodology was used to address the terms of reference. To begin with, a desktop study was carried out to identify any known heritage sites and their significance. This involved consulting contract archaeology reports filed on SAHRIS, research reports and academic publications. Finally, the study was guided by the National Heritage Resources Act of 1999 and SAHRA Minimum Standards for Impact Assessment. Desktop study was followed by fieldwork however, the size of the area meant that we were unable to conduct a detailed foot survey and we had to target specific areas which we considered, based on desktop studies, more likely to contain archaeological sites. Because the area falls within a very sensitive paleontological region, a systematic sampling approach was developed resulting in the selection of areas close to proposed sites for mineral prospecting activities. The sensitivity of the area dictated that assessment was restricted to around proposed locations targeted for drill holes and trench excavations. Based on this study, the following conclusions were reached:

1. The proposed development is scheduled to take place on the lower lying area and in between mountain ridges of the Karoo.
2. The identified types of heritage resources within the proposed development footprints include:
 - i. Historical homesteads identified by the presence of historical houses and associated infrastructure and several old *Eucalyptus* trees.

- ii. Well-preserved fossil plant remains with paleontological value.

Flowing from these conclusions, the following recommendations were reached:

It is strongly recommended that the planning of sites proposed for development activities including the design and siting of access routes must, where possible avoid heritage sites.

- ❖ The area is rich in paleontological heritage. Should exploration activities, proceed, paleontological sites must be avoided. If possible, a management plan and guidelines are required to ensure that this heritage is adversely affected by the development.
- ❖ A full Paleontological impact assessment must be conducted by a qualified Paleontologist to map the site distributions should the client proceed to apply for a mining license
- ❖ Should chance finds be recovered in the process of development, work must be stopped immediately. A report must be made to the nearest heritage authority.
- ❖ Notwithstanding the limitations of this study, it is recommended that the prospecting be authorized subject to the proviso that a management plan is devised together with guidelines for monitoring as per the provisions of the National Heritage Resources Act.

ACKNOWLEDGEMENTS:

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To comply with relevant legislations, the applicant Madiekana requires information on the heritage resources that occur within or near the proposed site for development and their significance. The objective of the study is to document the presence of archaeological, palaeontological and historical sites of significance to inform and provide guidance on the proposed mineral prospecting. The study contributes to the preservation of heritage resources, by ensuring that where possible, the development footprint is altered. In cases, where this is not possible, the heritage resources will be documented through mitigation to preserve them by record. This will enable the developer to advance mineral prospecting activities and at the same time minimizing potential impact on archaeological and heritage sites. Heritage Impact Assessments are conducted in line with the National Heritage Resources Act of 1999 (Act No. 25 of 1999). The Act protects heritage resources through formal and general protections. Furthermore, the Act provides that certain developmental activities require authorization from relevant heritage authorities. The National Heritage Resources Act (NHRA - Act No. 25 of 1999) protects all built structures and features older than 60 years (Section, 34), archaeological sites and materials (Section 35) and graves and burial sites (Section, 36). In addition to heritage legislation, the South African Heritage Resources Agency (SAHRA) has developed minimum standards for impact assessment. While these local standards are operational, they are strengthened and complemented by the International Council of Monuments and Sites (ICOMOS) guidelines for assessing impacts on heritage resources, both cultural and natural. In addition, the Burra Charter of 1999, requires a cautious approach to the management of sites and firmly establishes that the cultural significance of heritage places must guide all decisions when it comes to dealing with heritage. To comply with relevant legislation, the applicant requires information on the heritage resources, that occur in the area proposed for development and their significance. This will enable the Applicant to take pro-active measures to limit the adverse effects that the development could have on such heritage resources.

2. RELEVANT LEGISLATION

Two sets of legislation are relevant for the purposes of this study in as far as they contain provisions for the protection of tangible and intangible heritage resources including burials and burial grounds.

2.1. The National Heritage Resource Act (25 of 1999)

This Act established the South African Heritage Resource Agency (SAHRA) as the prime custodian of the heritage resources and makes provision for the undertaking of heritage

resources impact assessments for various categories of development as determined by Section 38. It also provides for the grading of heritage resources (Section, 7) and allocates the responsibility and functions for managing different categories of heritage to the State, Provincial and Local authorities, depending on the grade of heritage resources (Section, 8).

In terms of the National Heritage Resource Act 25, (1999) the following is of relevance:

Historical remains

Section 34 (1) No person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the relevant Provincial Heritage Resources Authority.

Archaeological remains

Section 35(3) Any person who discovers archaeological and paleontological materials and meteorites during development or agricultural activity must immediately report the find to the responsible heritage resource authority or the nearest local authority or museum.

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

- destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or paleontological site or any meteorite;
- destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological material or object or any meteorite;
- trade in, sell for private gain, export or attempt to export from republic any category of archaeological or paleontological material or object or any meteorite; or
- bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment which assist with the detection or recovery of metal or archaeological material or object or such equipment for the recovery of meteorites.

Section 35(5) When the responsible heritage resource authority has reasonable cause to believe that any activity or development which will destroy, damage or alter any archaeological or paleontological site is underway, and where no application for a permit has been submitted and no heritage resource management procedures in terms of section 38 has been followed, it may

- serve on the owner or occupier of the site or on the person undertaking such development an order for the development to cease immediately for such period as is specified in the order
- carry out an investigation for obtaining information on whether an archaeological or paleontological site exists and whether mitigation is necessary;
- if mitigation is deemed by the heritage resources authority to be necessary, assist the person on whom the order has been served under paragraph (a) to apply for a permit as required in subsection (4); and
- recover the cost of such investigation from the owner or occupier of the land on which it is believed an archaeological or paleontological site is located or from the person proposing to undertake the development if no application for a permit is received within two weeks of the order being served.

Subsection 35(6) the responsible heritage resource authority may, after consultation with the owner of the land on which an archaeological or paleontological site or meteorite is situated; serve a notice on the owner or any other controlling authority, to prevent activities within a specified distance from such site or meteorite.

Burial grounds and graves

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

- (i) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (ii) bring onto or use at a burial ground or grave any excavation equipment, or any equipment which assists in detection or recovery of metals.

Subsection 36 (6) Subject to the provision of any person who during development or any other activity discover the location of a grave, the existence of which was previously unknown, must immediately cease such activity and report the discovery to the responsible heritage resource authority which must, in co-operation with the South African Police service and in accordance with regulation of the responsible heritage resource authority-

- (l) carry out an investigation for obtaining information on whether such grave is protected in terms of this act or is of significance to any community; and
if such grave is protected or is of significance, assist any person who or community which is a direct descendant to decide for the exhumation and re-interment of the

contents of such grave or, in the absence of such person or community, make any such arrangement as it deems fit.

Cultural Resource Management

Section **38(1)** Subject to the provisions of subsection (7), (8) and (9), any person who intends to undertake a development*...

- must at the very earliest stages of initiating such development notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

development means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of the heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including:

- (i) Construction, alteration, demolition, removal or change of use of a place or a structure at a place;
- (ii) Any change to the natural or existing condition or topography of land, and
- (iii) Any removal or destruction of trees, or removal of vegetation or topsoil;

place means a site, area or region, a building or other structure

structure means any building, works, device or other facility made by people and which is fixed to the ground.

2.2. The Human Tissue Act (65 of 1983)

This act protects graves younger than 60 years, these falls under the jurisdiction of the National Department of Health and the Provincial Health Department. Approval for the exhumation and reburial must be obtained from the relevant provincial MEC as well as relevant Local Authorities.

3. TERMS OF REFERENCE

The terms of reference for the study were to undertake a Heritage Impact Assessment for the proposed mineral prospecting rights and submit a specialist report, which addresses the following:

- Executive summary
- Scope of work undertaken
- Methodology used to obtain supporting information
- Overview of relevant legislation
- Results of all investigations
- Interpretation of information
- Assessment of impact
- Recommendation on effective management measures
- References

4. TERMINOLOGY

The Heritage Impact Assessment (HIA) referred to in the title of this report includes a survey of heritage resources as outlined in the National Heritage Resources Act, 1999 (Act No 25 of 1999). Heritage resources, (Cultural resources) include all human-made phenomena and intangible products that are result of the human mind. Natural, technological or industrial features may also be part of heritage resources, as places that have made an outstanding contribution to the cultures, traditions and lifestyle of the people or groups of people of South Africa.

The term 'pre –historical' refers to the time before any historical documents were written or any written language developed in an area or region of the world. The historical period and historical remains refer, for the project area, to the first appearance or use of 'modern' Western writing brought to South Africa by the first colonists who settled in the Cape in the early 1652 and brought to the other different part of South Africa in the early 1800s.

The term 'relatively recent past' refers to the 20th century. Remains from this period are not necessarily older than sixty years and therefore may not qualify as archaeological or historical remains. Some of these remains, however, may be close to sixty years of age and may soon, qualify as heritage resources.

It is not always possible, based on the observation alone, to distinguish clearly between archaeological remains and historical remains or between historical remains and remains from the relatively recent past. Although certain criteria may help to make this distinction possible, these criteria are not always present, or when they are present, they are not

always clear enough to interpret with great accuracy. Criteria such as square floor plans (a historical feature) may serve as a guideline. However circular and square floors may occur together on the same site.

The 'term sensitive remains' is sometimes used to distinguish graves and cemeteries as well as ideologically significant features such as holy mountains, initiation sites or other sacred places. Graves are not necessarily heritage resources if they date from the recent past and do not have head stones that are older than sixty years. The distinction between 'formal' and 'informal' graves in most instances also refers to graveyards that were used by colonists and by indigenous people. This distinction may be important as different cultural groups may uphold different traditions and values regarding their ancestors. These values should be recognized and honored whenever graveyards are exhumed and relocated.

The term 'Stone Age' refers to the prehistoric past, although Late Stone Age people lived in South Africa well into the historical period. The Stone Age is divided into an Early Stone Age (3Million years to 150 000 thousand years ago) the Middle Stone Age (150 000 years ago to 40 years ago) and the Late Stone Age (40 000 years to 200 years ago).

The term 'Early Iron Age' and Late Iron Age respectively refers to the periods between the first and second millenniums AD.

The period covered by the term 'Late Iron Age' also includes the 17th and the 19th centuries and therefore includes the historical period.

Mining heritage sites refers to old, abandoned mining activities, underground or on the surface, which may date from the pre-historical, historical or relatively recent past.

The term 'study area' or 'project area' refers to the area where the developers wants to focus its development activities (refer to plan)

Phase I studies refer to survey using various sources of data in order to establish the presence of all possible types of heritage resources in a given area.

Phase II studies include in-depth cultural heritage studies such as archaeological mapping, excavating and sometimes laboratory work. Phase II work may include documenting of rock art, engravings or historical sites and dwellings; the sampling of archaeological sites or shipwrecks; extended excavation of archaeological sites; the exhumation of bodies and the relocation of grave yards, etc. Phase II work may require the input of specialist and require the co-operation and the approval of SAHRA.

5. METHODOLOGY

Sources of information

i. Desktop studies

A desktop study was performed to gain information on the heritage resources in the area. An analysis of previous impact assessment reports and academic publications shows that the Northern Cape is very rich in paleontological heritage. A paleontological sequence of fossil mammals, micro-mammals and invertebrates which provide a window onto faunal evolution, paleobiologic and paleoecology stretching back into the Pliocene is known from the area (Almond 2013). The works of John Pether and John Almond suggests that occasional terrestrial fossil remains that might be expected within the proposed study area include a wide spectrum of vertebrate and invertebrates remains, and plant fossils that are mostly found in the Kalahari Group sediments typical of the Colesberg area (Almonds, 2008; Almonds and Pether, 2009; Almonds, 2013). This palaeontological evidence represents a succession of paleo- ecosystems. Most of these studies make it clear that while the caves, breccias and strata from which quantities of fossils or tools have been extracted, together with the landscape are generally intact, palaeontological heritage is vulnerable to development pressures (Almonds, 2008; Almonds and Pether, 2009; Almonds, 2013).

Aside from paleontology, the Northern Cape region is world renowned sites that encompasses paleo-anthropological, paleo- environment and Stone Age traces all of which collectively bear testimony to the evolution of culture (Wilkins et al. 2012). Generally, the archaeology of human occupation within the study area stretches from the Early Stone Age up to the recent past (Calabrese, 1996; Huffman, 2007). As such, the region and its surrounding environs host significant evidence of the biological and cultural evolution of humanity as well as other animals (Chazan et al 2012; Walker, Chazan & Morris 2013). Typical Early Stone Age tools include hand axes and cleavers while prepared cores are a feature of the Middle Stone Age. The Later Stone Age is dominated by microlithic industries. Some of the sites bearing evidence of Stone Age occupation are

concentrated around pans (Wilkins et al. 2012). For the more recent periods, there are various but understudied Xhosa histories. From the 19th century onwards, the Karoo saw gradual occupation white farmers creating historical heritage. The current setup of the most farms in the areas is characterized by isolated farm homesteads easily marked by the presence of *Eucalyptus* trees, buildings with vast farmlands stretching into distance. The presence of this heritage from different times indicates that development activities must be monitored to ensure that this inheritance from the past is protected, and depending on circumstances, in situ or in record. The expectation from this desktop study is that it is highly possible to heritage belonging to these different phases.

ii. Field surveys

To identify sites on the ground and to assess their significance, a dedicated field visit was performed to the site of the proposed development (Fig 1). The fieldwork was performed by Mr. Mathoho Eric on the 18th of June 2018. The fieldwork followed systematic inspections of predetermined linear transects which resulted in the maximum coverage of the entire site. The sampling method selected was the stratified random technique. The proposed sites for prospecting were taken as strata with random field walking around them. Special attention was directed to pans and other areas where Stone Age materials were likely to be found. Consultations with local communities also pointed to known sites. Standard archaeological observation practices were followed. Identified sites were recorded by hand held GPS and plotted on 1:50 000 topographical maps. Archaeological/historical material and the general condition of the terrain were photographed with a Canon 1000D Camera. The survey identified historical farmsteads and fossil sites, the significance of which is presented below.

Assumption and Limitations

It must be pointed out that heritage resources can be found in unexpected places, and that surveys may not detect all the heritage resources in each project area, particularly that beneath the ground. While some remains may simply be missed during surveys (observation) others may occur below the surface of the earth and may be exposed once development (such as the construction of the proposed facilities) commences. Notwithstanding these limitations, great effort was invested in surveying areas that could be accessed.

6. ASSESSMENTS CRITERIA

This section describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The significance of archaeological and heritage sites was determined based on the following criteria:

- The unique nature of a site.
- The amount/depth of the archaeological deposit and the range of features (e.g. concentration of stone tools, activity areas etc.).
- The wider historic, archaeological and geographic context of the site.
- The preservation condition and integrity of the site.
- The potential to answer present research questions.

6.1 Site Significance

The site significance classification standards as prescribed in the guidelines and endorsed by the South African Heritage Resources Agency (2006) and approved by the Association for Southern African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region, were used in determining the site significance for this report.

The classification index is represented in the Table below that show grading and rating systems of heritage resources in South Africa.

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
National Significance (NS)	Grade 1	-	Conservation; National Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Site nomination
Local Significance (LS)	Grade 3A	High Significance	Conservation; Mitigation not advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)

Generally Protected A (GP.A)	Grade 4A	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	Grade 4B	Medium Significance	Recording before destruction
Generally Protected C (GP.C)	Grade 4C	Low Significance	Destruction

6.2 Impact Rating

VERY HIGH

These impacts would be considered by society as constituting a major and usually permanent change to the (natural and/or cultural) environment, and usually result in severe or very severe effects, or beneficial or very beneficial effects.

Example: The loss of a site would be viewed by informed society as being of VERY HIGH significance.

Example: The establishment of a large amount of infrastructure in a rural area, which previously had very few services, would be regarded by the affected parties as resulting in benefits with VERY HIGH significance.

HIGH

These impacts will usually result in long term effects on the social and /or natural environment. Impacts rated as HIGH will need to be considered by society as constituting an important and usually long-term change to the (natural and/or social) environment. Society would probably view these impacts in a serious light.

Example: The loss of a diverse vegetation type, which is common elsewhere, would have a significance rating of HIGH over the long term, as the area could be rehabilitated.

Example: The change to soil conditions will impact the natural system, and the impact on affected parties (e.g. farmers) would be HIGH.

MODERATE

These impacts will usually result in medium- to long-term effects on the social and/or natural environment. Impacts rated as MODERATE will need to be considered by the public or the specialist as constituting a unimportant and usually short-term change to the (natural and/or social) environment. These impacts are real, but not substantial.

Example: The loss of a sparse, open vegetation type of low diversity may be regarded as MODERATELY significant.

Example: The provision of a clinic in a rural area would result in a benefit of MODERATE significance.

LOW

These impacts will usually result in medium to short term effects on the social and/or natural environment. Impacts rated as LOW will need to be considered by society as constituting an important and usually medium-term change to the (natural and/or social) environment. These impacts are not substantial and are likely to have little real effect.

Example: The temporary changes in the water table of a wetland habitat, as these systems are adapted to fluctuating water levels.

Example: The increased earning potential of people employed because of a development would only result in benefits of LOW significance to people living some distance away.

NO SIGNIFICANCE

There are no primary or secondary effects at all that are important to scientists or the public.

Example: A change to the geology of a certain formation may be regarded as severe from a geological perspective but is of NO SIGNIFICANCE in the overall context.

6.3 Certainty

DEFINITE: More than 90% sure of a fact. Substantial supportive data exist to verify the assessment.

PROBABLE: Over 70% sure of a fact, or of the likelihood of an impact occurring.

POSSIBLE: Only over 40% sure of a fact, or of the likelihood of an impact occurring.

UNSURE: Less than 40% sure of a fact, or of the likelihood of an impact occurring.

6.4 Duration

SHORT TERM : 0 – 5 years

MEDIUM: 6 – 20 years

LONG TERM: more than 20 years

DEMOLISHED: site will be demolished or is already demolished

6.5 Mitigation

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be classified as follows:

- ✓ **A** – No further action necessary
- ✓ **B** – Mapping of the site and controlled sampling required
- ✓ **C** – Preserve site, or extensive data collection and mapping required; and
- ✓ **D** – Preserve site

7. Historical background a brief synthesis of the archaeology and heritage of the study area.

The Stone Age Periods

Conventionally speaking, the Stone Age period has been divided into the Early Stone Age (ESA) (3.5 million and 250 000 BP), the Middle Stone Age (MSA) (250 000 – 25000 BP) and the Later Stone Age (25000 – 2000 BP) (Phillipson 2005). Early Stone Age stone tool assemblages are made up of the earlier Oldowan and later Acheulian types. The Oldowan tools were very crude and were used for chopping and butchering. These were replaced by Acheulian ESA tools dominated by hand axes and cleavers which are remarkably standardized (Wadley, 2007; Sharon, 2009). Evidence presented from Sterkfontein, Swartkrans and Makapansgat caves shows that the first tool making hominids belong to either an early species of the Homo or an immediate ancestor which is yet to be discovered here in South Africa (Phillipson 2005; Esterhuysen, 2007). Both the Oldwan and Acheulian industries are well represented in the archaeology of Northern Cape South Africa (Kuman et al. 2005; Sumner and Kuman 2014).

The Middle Stone Age dates to between 250 000 ago and 25 000 years ago. In general, Middle Stone Age tools are characterized by a size reduction in tools such as hand axes, cleavers, and flake and blade industries. The period is marked by the emergence of modern humans and was accompanied by change in technology, behavior, physical appearance, art, and symbolism (Phillipson 2005). A variety of MSA tools includes blades, flakes, scraper and pointed tools that may have been hafted onto shafts or handles and used as spear heads. Surface scatters of these flake and blade industries occur widespread across southern Africa (Klein 2000; Thompson & Marean, 2008).

Recent excavation at pans in the Northern Cape province this includes research at Rooidam 11 and the Bundu farm have been used to extrapolate information on the typological definition, age and the ecological contexts (Chazan et al. 2012; Wilkins et al. 2015). The assemblages contain bifaces as well as blades, prepared core and Levallois unifacial points (Beaumont & Vogel 2006). Residue analyses on some of the stone tools indicate that these tools were certainly used as spear heads (Wadley, 2007). From about

25 000 BP, stone tool assemblages generally attributed to the Later Stone Age emerged. This period is marked by a reduction in stone tool sizes. Typical stone tools include microliths and bladelets. Later Stone Age stone tools were recovered throughout the Northern Cape Province (Forsman 2011). This period is also associated with the development of rock art whose distribution is known across southern Africa (Deacon and Deacon 1999; Phillipson 2005). Records of images on small boulders dominated by concentric circles surrounded by U- shapes, Eiland and Rhinoceros has been georeferenced in the region (Lewis- Williams & Blundell 1998).

The historical Periods

Historical archaeology could be associated with the unwelcome political authority at the Cape which drove Dutch farmers in search of greener pastures outside the British sovereignty, particularly from the early 19th century onwards (Parkington et al, 2008). This period is associated with the last 500 years when European settlers and colonialism entered southern Africa. Movement into the interior was closely linked with the change from farming to stock farming. The movement of Dutch into the interior got underway when Wilhelm Adrien van der Stel began to issue free grazing permits in 1703. The exoduses went hand in hand with hunting expeditions into the interior which not only provided the farmers with meat, but also enabled them to learn more about the resources of the hinterland. The British government made its laws which undermined the freedom of the Boers. The mounting conflict between African and white stock farmers played the dominant part. This led to the general dissatisfaction and a feeling of insecurity among the Afrikaners. The frontier wars of 1834/35 caused the frontier farmers to suffer heavy losses. To aggravate matters, land prices rose sharply during the 1820 and 1830 and drought was a serious problem. These conditions threatened the pastoral lifestyle. There was no land for the younger generations. They opted to migrate in search of land and grazing in the interior.

During the great trek into the interior they were already acquainted with conditions of the interior and with the main trek routes. They got available information from travelers, hunters and missionaries' documents. During the great trek, the Dutch came into contact with African tribes for example the Korana pastoralist and the San communities. It is these contacts that brought with it genocidal attacks on the San Communities in the region. The San communities specifically the Xam! Language speaker who inhabited the Karoo region

responded to whites' invasion. They armed themselves and resisted against their loss of sovereignty. However, the San lost their land in this conflict as well as their language and ended up being incorporated into the colonial society. Some of them were employed within the farms working for whites as shepherds, laborers and domestic workers (Parkington et al, 2008). Many of these farms have been in the ownership of Dutch families for generations. As a result, they possess a large corpus of information regarding the area and its history.

8. SITE LOCATION AND PROJECT DESCRIPTION

The proposed study area is located on Portion 1, 2 and the remainder of the farm Zypher Kuil C59 within Colesberg Magisterial District of the Northern Cape Province. The farms are situated roughly 35.04 West of Colesberg Extension Five (5) (Figures 2 & 3). The area is privately owned farmlands dominated by both game (Springbok) and livestock farming (Sheep and cattle) located on the following global positioning system co-ordinates (GPS S30.41.532 " & E 24°.42.431"). The landscape feature of the study area encompasses flats and gently sloping plains interspersed with hills and rocky areas of the upper Karroo. Vast area is dominated by dwarf microphyllous shrubs with ground covered by white grass dominated by *Aristida* and *Eragrostis* species. The grass cover became prominent along a gradient from southwest to north east of the farm. Site geology falls within the mudstone and sandstone of the Beaufort group that encompasses both Adelaide and the Tarkastad subgroups supporting duplex soils with both prisma-cutanic and pedocutanic diagnostic horizon. Shallow Glenrosa and Mispah soil are common in this area (Mucina & Rutherford 2006:341). The site has been subdivided into livestock grazing camps with visible isolated boreholes and livestock feeding and drinking troughs. Old homesteads are connected by twin tracks roads that transverse the site. Some old historical farm homestead could be noted due to the presence of tall *Eucalyptus* plantations. Some of the identifiable plant low shrubs include: *E. spinescens*, *Chrysocoma ciliate*, *Eriocephalus ericoides* pentzia *globose*, *pincana*, *Felicia muricata*, while the ground cover comprised of *Aristida congesta*, *A. diffusa*, *Eragrostis bergiana*, *sporobolus furmbiaus*, *erragrosti curvula*, *themedra triandra*.

The proposed development entails:

- ✓ Underground drillings of core rock sample to determine base geological stratigraphy with Uranium minerals.

9. ASSESSMENT OF SITES AND FINDS

This section contains the results of the heritage sites/finds assessment. The phase 1 heritage scoping assessment program as required in terms of the Section 38 of the National Heritage Resource Act (Act 25 of 1999) done for the proposed mineral prospecting.

Find Assessments Results: *the following heritage sites were geo-referenced in the study area.*

An old farm homestead house (GPS S30°.40.519 " & E 24°.41.461") (Fig 4) with associated, windmill, barn, pit latrine, remains of clay bricks baking kilns and bread baking clay oven. The main house had wooden floors and wooden floor ventilations. Some of the associated structures had dilapidated, with no roofs and were only represented by few standing walls. Information at our disposal shows that the farm home stead was also occupied and used during the Anglo Boer war by some army general.

Fossil remains (GPS S30°.40.36.02 "& E 24°.40.40.06") (Figures 5, 6 & 7) (Petrified wood) well – preserved trace fossil or plant remains were geo-referenced. In close proximity of the remains two excavation ditches which measured 3m x 3m in diameter and depth were encountered. The fieldwalking identified heritage resources which include fossil sites and historical homesteads (Figure 7). No Stone Age sites were observed. In general, fossils in the northern Cape have been rated as being of high significance. The historical homestead will not be affected by the proposed drilling. However, the identified fossil sites must be protected.

10. CONCLUSION AND RECOMMENDATIONS

In conclusion, and within limitations, the study established that there are heritage sites dating to different periods in the proposed development area. The study reached the following conclusions:

1. The proposed development is scheduled to take place on the lower lying area of the farm in between ridges. This is where heritage resources are likely to occur.
2. The identified types of heritage resources within the proposed development footprints include:

- iii. Historical homestead identified by the presence of historical houses and associated infrastructures and several *Eucalyptus* trees.
- iv. Well-preserved trace fossil or plant remains
- v. The sites are of high significance and must be avoided

Based on these conclusions, the following recommendations were reached:

- ❖ It is strongly recommended that the planning of the proposed development activities including the design and siting of access routes must where possible avoid these heritage sites.
- ❖ The identified fossil site must be avoided and protected in situ. Should exploration activities proceed, a 100meters radius fence should be demarcated before work starts. Guidelines may be drafted to secure the future of the site during and post-exploration.
- ❖ Prospecting activities should avoid the lower lying area, these activities should be conducted on the bottom slope of the mountain range.
- ❖ Based on the above a full Paleontological impact assessment must be conducted to map this site distributions by qualified Paleontologist professionals should the client proceed to apply for a mining license
- ❖ Should chance finds be recovered in the process of development, work must be stopped immediately. A report must be made to the nearest heritage authority.
- ❖ Notwithstanding the limitations of this study, it is recommended that the prospecting be authorized.

11. PROFESSIONAL DECLARATION

I, the undersigned Mr. Ndivhuho Eric Mathoho hereby declare that I am a Professional archaeologist accredited with the Association for South African Professional Archaeologists (ASAPA) and that Millennium Heritage Group (Pty) Ltd is an independent Consultants with no association or with no any other interest what so ever with any institution, organization, or whatever and that the remuneration earned from consulting work constitute the basis of company livelihood and income.

Mr. Mathoho Ndivhuho Eric



.....
Archaeologists and Heritage Consultants for Millennium Heritage Group (Pty) Ltd
ASAPA Member

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13. PHOTO ADDENDUM



Figure 2: Historical building



Figure 3: Associated infrastructures some dilapidated noted adjacent to the historical building



Figure 4: Bread baking clay oven west of the main historical building



Figure 5: Fossilized tree



Figure 6: Fossil tree stump



Figure 7: Some of the old infrastructures noted on the property

14. Addendum 1: Definitions and Acronyms

Archaeological Material remains resulting from human activities, which are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures.

Chance Finds Archaeological artefacts, features, structures or historical cultural remains such as human burials that are found accidentally in context previously not identified during cultural heritage scoping, screening and assessment studies. Such finds are usually found during earth moving activities such as water pipeline trench excavations.

Cultural Heritage Resources Same as Heritage Resources as defined and used in the South African Heritage Resources Act (Act No. 25 of 1999). Refer to physical cultural properties such as archaeological and paleontological sites; historic and prehistoric places, buildings, structures and material remains; cultural sites such as places of ritual or religious importance and their associated materials; burial sites or *graves* and their associated materials; geological or natural features of cultural importance or scientific significance. Cultural Heritage Resources also include intangible resources such as religion practices, ritual ceremonies, oral histories, memories and indigenous knowledge.

Cultural Significance The complexities of what makes a place, materials or intangible resources of value to society or part of, customarily assessed in terms of aesthetic, historical, scientific/research and social values.

Grave A place of interment (variably referred to as burial), including the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery.

Historic Material remains resulting from human activities, which are younger than 100 years, but no longer in use, including artefacts, human remains and artificial features and structures.

In Situ material *Material culture* and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Late Iron Age this period is associated with the development of complex societies and state systems in southern Africa.

Material culture Buildings, structure, features, tools and other artefacts that constitute the remains from past societies.

Site A distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

Acronyms

AIA	Archaeological Impact Assessment
EIA	Environmental Impact Assessment
EIA	Early Iron Age
EMP	Environmental Management Plan
MHG	Millenium Heritage Group(PTY) LTD
NEMA	National Environmental Management Act, 1998 (Act No.107 of 1998)
NHRA	National Heritage Resources Act, 1999 (Act No.25 of 1999)
SAHRA	South African Heritage Resources Agency
ESA	Early Stone Age
MSA	Middle Stone Age
LSA	Late Stone Age
IA	Iron Age
LIA	Late Iron Age
UNESCO	United Nations Educational, Scientific and cultural Organization
WHC	World Heritage Conventions of 1972

ADDENDUM 2: Types and ranges as outlined by the National Heritage Resource Act (Act 25 of 1999)

The National Heritage Act (Act No 25 of 1999, Art 3) outlines the following types and ranges of the heritage resources that qualify as part of the national estate, namely:

- (a) Places, buildings structures and equipment of cultural significance;
- (b) Places to which oral tradition are attached or which are associated with living heritage;
- (c) Historical settlement and townscapes
- (d) Landscape and natural features of cultural significance;
- (e) Geological sites of scientific or cultural importance
- (f) Archaeological and paleontological sites
- (g) Graves and burial ground including-
 - (I) Ancestral graves
 - (II) Royal graves and graves of traditional leaders
 - (III) Graves of victim of conflict
 - (IV) Graves of individuals designated by the minister by notice in the gazette;
 - (V) Historical graves and cemeteries; and
 - (VI) Other human remains which are not covered by in terms of the Human Tissue Act, 1983 (Act No 65 of 1983)
- (h) sites of significance relating to the history of slavery in South Africa;
- (i) movable objects, including-

- (I) object recovered from soil or waters of South Africa, including archaeological and paleontological objects and material, meteorites and rare geological specimens;
- (II) objects to which oral traditions are attached or which are associated with living heritage
- (III) ethnographic art and objects;
- (IV) military objects;
- (V) objects of decorative or fine art;
- (VI) object of scientific or technological interest; and
- (VII) books, records, documents, photographs, positive and negatives, graphic, film or video material or sound recording, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No 43 of 1996).

The National Heritage Resource Act (Act No 25 of 1999, Art 3) also distinguishes nine criteria for places and objects to qualify as 'part of the national estate if they have cultural significance or other special value... these criteria are the following:

- (a) its importance in the community, or pattern of South Africa's history;
- (b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- (c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons
- (h) its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa
- (i) Sites of significance relating to the history of slavery in South Africa.