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PHASE I ARCHAEOLOGICAL AND CULTURAL HERITAGE IMPACT ASSESSMENT SPECIALIST REPORT FOR THE PROPOSED 400KV POWER LINE FROM THE EXISTING ESKOM JUNO SUBSTATION TO THE EXISTING ESKOM GROMIS SUBSTATION IN THE WESTERN AND NORTHERN CAPE PROVINCES RESPECTIVELY.

August, 2016

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DECLARATION

ABILITY TO CONDUCT THE PROJECT

Munyadziwa Magoma is a professional archaeologist, having obtained his BA degree in Archaeology and Anthropology at University of South Africa (UNISA), an Honours degree at the University of Venda (UNIVEN), and an Masters degree at the University of Pretoria (UP). He is an accredited Cultural Resource Management (CRM) member of the Association for southern African Professional Archaeologists (ASAPA) and Amafa aKwaZulu-Natali. Munyadziwa is further affiliated to the South African Archaeological Society (SAAS), the Society of Africanist Archaeologists (SAfA), and the International Council of Archaeozoology (ICAZ). He has more than seven years' experience in heritage management, having worked for different CRM organisations and government heritage authorities. As a CRM specialist, Munyadziwa has completed well over hundred Archaeological Impact Assessments (AIA) for developmental projects situated in several provinces of the Republic of South Africa. The AIAs projects he has been involved with are diverse, and include the establishment of major substation, upgrade and establishment of roads, establishment and extension of mines. In addition, he has also conducted Heritage Impact Assessments (HIAs) for the alteration to heritage buildings and the relocation of graves. His detailed CV is available on request.

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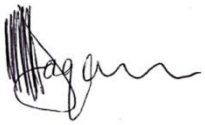

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EXECUTIVE SUMMARY

Introduction and Background

Vhubvo Archaeo-Heritage Consultant Cc has been requested by Nsovo Environmental Services to conduct Phase I Archaeological and Cultural Heritage Impact Assessment for the proposed 400KV power line from Eskom Juno Substation to Eskom Gromis Substation with specific reference to the Landing strip, Tronox mine and Kamieberg mine area which are located within the jurisdiction of both the Western and Northern Cape Province. The aim of the study was to identify and document archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed development, these will in turn assist the developer in ensuring proper conservation measure in line with the National Heritage Resource Act, 1999 (Act 25 of 1999).

Need of the Project

Eskom is facing serious constrains to meet the needs of the nation due to growth rates of the economy. Like many other region in the country, the Cape District is faced by electricity problem. In the Western Cape Province for example, the local growth rates exceed the national average. In addition, Koeberg power station is also requiring downtime. Eskom is thus responding to this situation by expanding generation and distribution capacity of electricity. This will be done in many ways and will involve among others construction of two Open Cycle Gas Turbine power stations. These power stations would thus supply additional power during periods of peak electricity usage.

Receiving Environment

The proposed development is a linear track and is located in two provinces, Northern and Western Cape and transverse over several local and district municipality covering an area of approximately 230km, from Gromis substation in the Northern Cape to Juno substation in Western Cape. In general, this development is located in the area commonly known as Namaqua District. From Eskom Gromis substation the line crossways on an area which is by the shoreline, and will slantways agricultural and deserted landscape until it reaches its destination at Eskom Juno substation. In short, this power line will traverses over an arid western side of the Republic of South Africa ranging from Namaqualand outcrops, coastal flatlands and mostly on sand dunes, as well as Namaqua National Park and area demarcated for mining purposes, some of these area are rehabilitated land. Furthermore, it also transverses over major river and wetland features. From Juno, the power line extends parallel other existing power lines. However, it substantially diverts onto the new escarpment establishing a new corridor.

Methodological Approach

The field survey was commissioned during the months of March and April 2016 and the entire power line was surveyed with emphasis on every pylon position. However, due to other technical implications, deviations from the original power line were proposed and they are as follows:

- Landing strip: The proposed transmission line will be moved approximately 4.1 km from the authorised corridor;
- Tronox mine: The proposed transmission line will be moved approximately 3km from the authorised corridor;
- Kamieberg mine (proposed new mine): The proposed transmission line will be moved approximately 7.2 km from the authorised corridor.

Research Background Studies

Archaeological Sites

Although the Namaqua area is rich of archaeological sites, it has until recent remained unknown to archaeologists in the country. The first studies of the area can be accredited to Robershaw (1977) and Webley (1984). After these researches it became clear that the dry areas of the Namaqua were astonishingly archaeologically rich. The primary inhabitants of Namaqua were probably Khoi-San – the ancestors of the present day Nama-speakers. Hundreds of Stone Age archaeological sites have since been documented in the wider area of the Namaqua (Parkington and Hart 1991; Parkington and Poggenpoel 1990; Parkington and Hart 1993; Halkett and Hart 1997; Hart and Lanham 1997; Penn 1995; Ross 2003; Steenkamp 1975). Nonetheless, few archaeological impact assessments have yielded several stone artefacts close to the proposed area. These have been documented by amongst others Hart (2007); Kaplan (2010); Mackay *et al. (*2010); Magoma (2014); Orton (2010a, 2010b, 2011, 2012, 2013); Orton and Hart (2011); Orton *et al.* (2011). Most of these Stone Age tools are generally in poor context, and do not constitutes a site. Researches in the area have revealed that scattered Stone material are found in numbers, however, they remain hidden under the sand, and tend to be seen where the Aeolian sands have eroded, exposing the underlying dorbank layers (Hart 2006). Chances of finding Stone tools during construction stages in the area are thus considered a possibility.

Graves and Burials

Most of the graves in the Namaqualand have been documented in the coastline, very few have been documented inland (Dewar 2008; Jerardino *et al.* 1992; Morris 1992). Farm graveyards are known to exist in the area throughout, however, these are marginal since majority of the farms do not have graveyards, and farm owners (and workers) are buried in the nearest town graveyard (Hart 2006). Possibility of exposing graves (or its content) in this area is considered very low.

Built Environment

People were first granted farms in this area from the 19th century, as a result, historical resources predating this era are rare (Hart 2006). Farm structures with historical significance are as a result found throughout the area (Orton and Hart 2011). However, these are limited to farm houses.

Restrictions and Assumptions

As with any survey, archaeological materials may be under the surface and therefore unidentifiable to the surveyor until they are exposed once construction resume. As a result, should any archaeological/ or grave site be observed during construction stage, a heritage specialist monitoring the development must immediately be notified. In the mean time, no further disturbance may be made until such time as the heritage specialist has been able to make an assessment of the find in question. It is the responsibility of the contractor to protect the site from publicity (i.e., media) until all assessments are made.

Table 1: Possibility of archaeological/ Heritage materials on sites.

Landscape type	Description	Occurrence still possible	Likely occurrence
Archaeology	Early, Middle and Late Stone Age; Iron Age;	Yes Yes	Rather Likely Chance find
Burial and Graves	Pre-colonial burials; Graves of victims of conflict; Graves older than 100 years; Graves older than 60 years; Graves younger than 60 years;	Yes	Likely
Built Environment	Formal public spaces; Historical structures; Area associated with social identity/ displacement;	Yes	Likely
Historic Farmland	Historical farm yards; Historical farm workers villages; Irrigation furrows; Historical routes; Distinctive types of planting;	Yes	Likely
Landscape usage	Sites associated with living heritage e.g., initiation school sites; Sites of political conflict; Sites associated with a historic event/ person;	Yes	Unlikely
Historic rural Town	Historic mission settlements;	Yes	Likely

Survey Findings

The Phase I Archaeological and Cultural Heritage Impact Assessment for the proposed Juno-Gromis 400KV power line has identified no archaeological or cultural heritage material on the area proposed for Landing strip, Tronox mine and Kamieberg mine. Stone tools are almost ubiquitous in the wider region of Namaqualand, their unavailability in the proposed area is however unexpected, impacts to archaeological objects are unlikely next to the shoreline due to sparse nature of human settlement away from the coast.

Recommendations and Discussions

In compliance with the National Heritage Legislature, there was no observable development activities associated with the proposed project.

The developer is reminded that archaeological material (e.g. pottery, remains of stone-walling, graves, etc) and fossils are often located underground. Thus, unavailability of archaeological material does not mean absenteeism, archaeological material might be hidden underground, as such, the client is reminded to take precautions during construction activities, should any archaic material be unearthed, activities should be halted immediately and SAHRA be consulted during construction.

Pre-construction education and awareness training

Prior to construction, contractors should be given training on how to identify and protect archaeological remains that may be discovered during the project. The pre-construction training should include some limited site recognition training for the types of archaeological sites that may occur in the construction areas. Below are some of the indicators of archaeological site that may be found during construction:

- Flaked stone tools, bone tools and loose pieces of flaked stone;
- Ash and charcoal;
- Bones and shell fragments;
- Artefacts (e.g., beads);
- Packed stones which might be uncounted underground, and might indicate a grave or collapse stone walling.

In the event that any of the above are unearthed, construction on the affected pylon site should cease and the area be demarcated by a danger tape. Accordingly, a professional archaeologist or SAHRA officer should be contacted immediately. In the meantime, it is the responsibility of the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement of SAHRA.

Conclusions

The proposed development can proceed without further archaeological or cultural heritage assessment.

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ACRONYMS AND ABBREVIATIONS

AIA	Archaeological Impact Assessment
EMP	Environmental Management Plan
HIA	Heritage Impact Assessment
LIA	Late Iron Age
MIA	Middle Iron Age
EIA	Early Iron Age
HMP	Heritage Management Plan
LSA	Late Stone Age
MSA	Middle Stone Age
ESA	Early Stone Age
NASA	National Archives of South Africa
NHRA	National Heritage Resources Act
PHRA	Provincial Heritage Resources Authority
SAHRA	South African Heritage Resources Agency

GLOSSARY OF TERMS

The following terms used in this Archaeology are defined in the National Heritage Resources Act [NHRA], Act Nr. 25 of 1999, South African Heritage Resources Agency [SAHRA] Policies as well as the Australia ICOMOS Charter *(Burra Charter)*:

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 artifacts, human and hominid remains, and artificial features and structures.

Artefact: Any movable object that has been used, modified or manufactured by humans.

Conservation: All the processes of looking after a site/heritage place or landscape including maintenance, preservation, restoration, reconstruction and adaptation.

Cultural Heritage Resources: refers to physical cultural properties such as archaeological sites, palaeolontological sites, historic and prehistorical places, buildings, structures and material remains, cultural sites such as places of rituals, burial sites or graves and their associated materials, geological or natural features of cultural importance or scientific significance. This include intangible resources such religion practices, ritual ceremonies, oral histories, memories indigenous knowledge.

Cultural landscape: "the combined works of nature and man" and demonstrate "the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both internal and external".

Cultural Resources Management (CRM): the conservation of cultural heritage resources, management, and sustainable utilization and present for present and for the future generations

Cultural Significance: is the aesthetic, historical, scientific and social value for past, present and future generations.

Chance Finds: means 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.

Compatible use: means a use, which respects the cultural significance of a place. Such a use involves no, or minimal, impact on cultural significance.

Conservation means all the processes of looking after a place so as to retain its cultural significance.

Expansion: means the modification, extension, alteration or upgrading of a facility, structure or infrastructure at which an activity takes place in such a manner that the capacity of the facility or the footprint of the activity is increased.

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.

Heritage impact assessment (HIA): Refers to the process of identifying, predicting and assessing the potential positive and negative cultural, social, economic and biophysical impacts of any proposed project, plan, programme or policy which requires authorisation of permission by law and which may significantly affect the cultural and natural heritage resources. The HIA includes recommendations for appropriate mitigation measures for minimising or avoiding negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

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

Impact: the positive or negative effects on human well-being and / or on the environment.

***In situ* material:** means material culture and surrounding deposits in their original location and context, for instance archaeological remains that have not been disturbed.

Interested and affected parties Individuals: communities or groups, other than the proponent or the authorities, whose interests may be positively or negatively affected by the proposal or activity and/ or who are concerned with a proposal or activity and its consequences.

Interpretation: means all the ways of presenting the cultural significance of a place.

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

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

Mitigate: The implementation of practical measures to reduce adverse impacts or enhance beneficial impacts of an action.

Place: means site, area, land, landscape, building or other work, group of buildings or other works, and may include components, contents, spaces and views.

Protected area: means those protected areas contemplated in section 9 of the NEMPAA and the core area of a biosphere reserve and shall include their buffers.

Public participation process: A process of involving the public in order to identify issues and concerns, and obtain feedback on options and impacts associated with a proposed project, programme or development. Public Participation Process in terms of NEMA refers to: a process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to specific matters.

Setting: means the area around a place, which may include the visual catchment.

Significance: can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of significance and acceptability). It is an anthropocentric concept, which makes use of value judgments and science-based criteria (i.e. biophysical, physical cultural, social and economic).

Site: a spatial cluster of artifact, structures, organic and environmental remains, as residues of past human activity.

1. Introduction

At the request of Nsovo Environmental Services, Vhubvo Archaeo-Heritage Consultant Cc conducted a Phase I Archaeological and Cultural Heritage Impact Assessment study for the proposed construction and operation of 400Kv power line from Eskom Juno Substation to Eskom Gromis Substation located within the jurisdiction of both Western and Northern Cape Province.

2. Sites Location and Description

The field survey was commissioned during the months of March and April 2016 and the entire power line was surveyed with emphasis on every pylon position. However, due to other technical implications, deviations from the original power line were proposed and they are as follows:

- Landing strip: The proposed transmission line will be moved approximately 4.1 km from the authorised corridor;
- Tronox mine: The proposed transmission line will be moved approximately 3km from the authorised corridor;
- Kamieberg mine (proposed new mine): The proposed transmission line will be moved approximately 7.2 km from the authorised corridor.

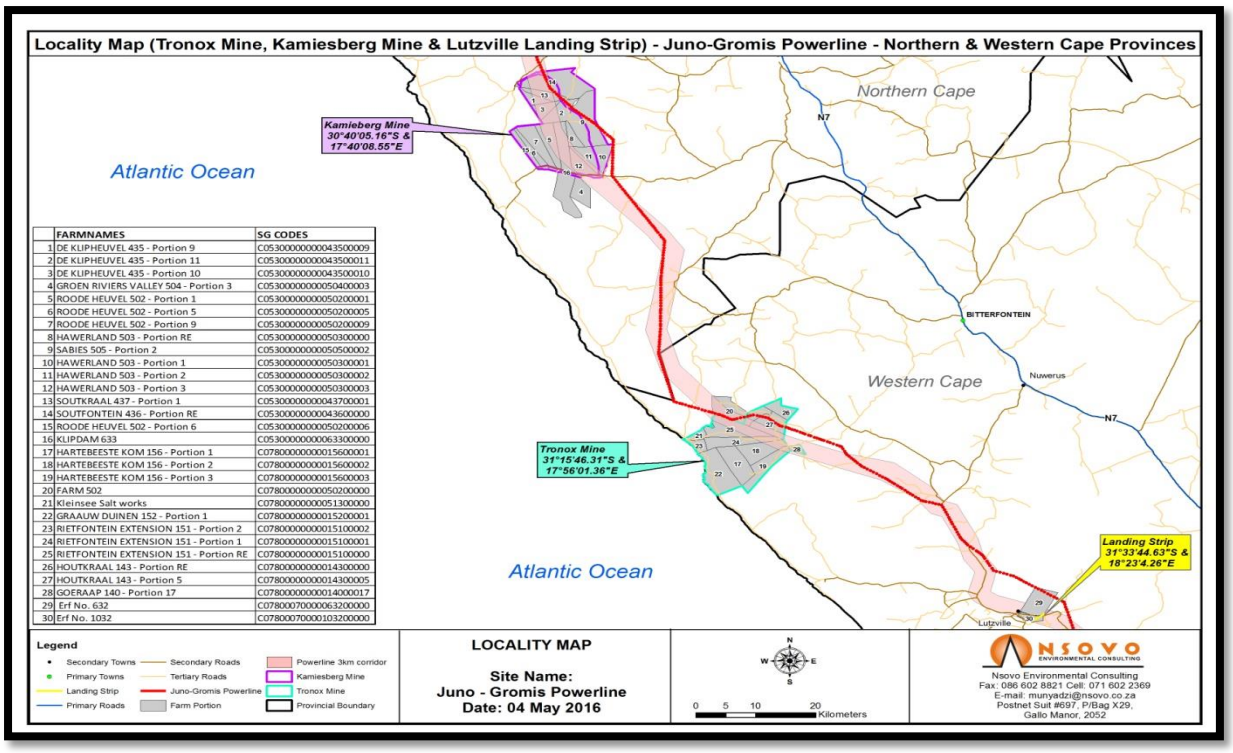

Figure 1: An overview of the area proposed for 400kv power line from Gromis to Juno substation as indicated by a red line.

Figure 2: View of the area proposed for power line in the Kamieberg Mine.

Figure 3: An overview of the area that will be impacted by the proposed power line in the Tronox mine.

Figure 4: An overview of the area proposed for the construction of the power line at the landing strip.

Figure 5: View of some of the area in the proposed site that were seriously inspected for any sign of archaeological resources.

3. Nature of the proposed project

Eskom is facing serious constrains to meet the needs of the nation due to growth rates of the economy. Like many other region in the country, the Cape District is faced by electricity problem. In the Western Cape Province for example, the local growth rates exceed the national average. In addition, Koeberg power station is also requiring downtime. Eskom is thus responding to this situation by expanding generation and distribution capacity of electricity. This will be done in many ways and will involve among others construction of two Open Cycle Gas Turbine power stations. These power stations would thus supply additional power during periods of peak electricity usage.

4. Purpose of the Cultural Heritage Study

The purpose of the Phase I Archaeological and Cultural Heritage Impact Assessment study was to identify and document other archaeological sites, cultural resources, sites associated with oral histories, graves, cultural landscapes, and any structure of historical significance that may be affected by the proposed construction. Impact assessments highlight many issues

facing sites in terms of their management, conservation, monitoring and maintenance, and the environment in and around the site. Therefore, this study involves the following:

- Identification and recording of heritage resources that maybe affected by the proposed 400Kv pylon position of the power line,
- Providing recommendations on how best to appropriately safeguard identified heritage sites. Mitigation is an important aspect of any development on areas where heritage sites have been identified.

5. Methodological Approach

Background study introduction

The methodological approach is informed by the 2012 SAHRA Policy Guidelines for impact assessment. As part of this study, the following tasks were conducted: 1) literature review, 2), consultations with the developer and appointed consultants, 3), completion of a field survey and 5), analysis of the acquired data, leading to the production of this report.

Physical survey

The field survey lasted from the 1st to the 15th of March 2016, and it was adjourned due to issue related to access. Thus, most of the area is sand dunes which make it almost impossible to access, and henceforth a helicopter was suggested, and the survey was thus completed by a helicopter from the 12th of April to the 15th of April 2016. An archaeologist from Vhubvo, along with other specialists conducted the survey. The landscape of every pylon position was explained and recorded photographically (see Table 2). As above said, the aim of the survey was to express the significance of heritage resources that may be found in the proposed area, as well as to be able to determine whether the proposed project was feasible or not, from an archaeological point of view. As a supplement to the survey, oral interview was initiated with farm owners. The oral interviews aim to understand the cultural landscapes and/ or intangible heritage of the proposed area.

Documentation

The general project area was documented. This documentation included taking photographs using cameras a 10.1 mega-pixel Sony Cybershort Digital Camera. Plotting of finds was done by a Garmin etrex Venture HC.

Restrictions and Assumptions

As with any survey, archaeological materials may be under the surface and therefore unidentifiable to the surveyor until they are exposed once construction resume. As a result, should any archaeological/ or grave site be observed during construction, a heritage specialist must immediately be notified. In addition, activities related to the conduction of geo-technical service as noted on site have significantly disturbed the area, such that certain sites could have been disturbed.

6. Applicable heritage legislation

Several legislations provide the legal basis for the protection and preservation of both cultural and natural resources. These include the National Environment Management Act (No. 107 of 1998); Mineral Amendment Act (No 103 of 1993); Tourism Act (No. 72 of 1993); Cultural Institution Act (No. 119 of 1998), and the National Heritage Resources Act (Act 25 of 1999). Section 38 (1) of the National Heritage Resources Act requires that where relevant, an Impact Assessment is undertaken in case where a listed activity is triggered. Such activities include:

(a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
(b) the construction of a bridge or similar structure exceeding 50 m in length; and
(c) any development or other activity which will change the character of an area of land, or water -
(i) exceeding 5 000 m² in extent;
(ii) involving three or more existing erven or subdivisions thereof; or
(iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
(iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a Provincial Heritage Resources Authority;
(d) the re-zoning of a site exceeding 10 000 m2 in extent; or
(e) any other category of development provided for in regulations by SAHRA or a Provincial Heritage Resources Authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

Section 3 of the National Heritage Resources Act (25 of 1999) lists a wide range of national resources protected under the act as they are deemed to be national estate. When conducting a Heritage Impact Assessment (HIA) the following heritage resources have to be identified:

(a) Places, buildings structures and equipment of cultural significance
(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 of cultural significance

(e) Geological sites of scientific or cultural importance
(f) Archaeological and paleontological sites
(g) Graves and burial grounds including-
- *(i) ancestral graves*
- *(ii) royal graves and graves of traditional leaders*
- *(iii) graves of victims 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) moveable objects, including -
- *(i) objects recovered from the 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) objects of scientific or technological interest; and*
- *(vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1 of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).*

Section 3 of the National Heritage Resources Act (No. 25 of 1999) 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 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 organisation of importance in the history of South Africa; and
(i) Sites of significance relating to the history of slavery in South Africa.

Other sections of the Act with a direct relevance to the AIA are the following:
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.*

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 palaeontological site or any meteorite*

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

- *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 formal cemetery administered by a local authority; or*
- *bring onto or use at a burial ground or grave any excavation equipment, or any equipment which assists in detection or recovery of metals.*

7. Degree of significance

This category requires a broad, but detailed knowledge of the various disciplines that might be involved. Large sites, for example, may not be very important, but a small site, on the other hand, may have great significance as it is unique for the region.

Significance rating of sites

(i) High (ii) Medium (iii) Low

This category relates to the actual artefact or site in terms of its actual value as it is found today, and refers more specifically to the condition that the item is in. For example, an archaeological site may be the only one of its kind in the region, thus its regional significance is high, but there is heavy erosion of the greater part of the site, therefore its significance rating would be medium to low. Generally speaking, the following are guidelines for the nature of the mitigation that must take place as Phase 2 of the project.

High

- This is a 'do not touch' situation, alternative must be sought for the project, examples would be natural and cultural landscapes like the Mapungubwe Cultural Landscape World Heritage Site, or the house in which John Langalibalele resided.

- Certain sites, or features may be exceptionally important, but do not warrant leaving entirely alone. In such cases, detailed mapping of the site and all its features is imperative, as is the collection of diagnostic artefactual material on the surface of the site. Extensive excavations must be done to retrieve as much information as possible before destruction. Such excavations might cover more than half the site and would be mandatory; it would also be advisable to negotiate with the client to see what mutual agreement in writing could be reached, whereby part of the site is left for future research.

Medium

- Sites of medium significance require detailed mapping of all the features and the collection of diagnostic artefactual material from the surface of the site. A series of test trenches and test pits should be excavated to retrieve basic information before destruction.

Low

- These sites require minimum or no mitigation. Minimum mitigation recommended could be a collection of all surface materials and/ or detailed site mapping and documentation. No excavations would be considered to be necessary.

In all the above scenarios, permits will be required from the South African Heritage Resources Agency (SAHRA) or the appropriate PHRA as per the legislation (the National Heritage Resources Act, no. 25 of 1999). Destruction of any heritage site may only take place when a permit has been issued by the appropriate heritage authority. The following table is used to grade heritage resources.

Table 3: Grading systems for identified heritage resources in terms of National Heritage Resources Act (Act 25 of 1999).

Level		Significance		Possible action
National (Grade I)		Site of National Value		Nominated to be declared by SAHRA
Provincial (Grade II)		Site of Provincial Value		Nominated to be declared by PHRA
Local Grade (IIIA)		Site of High Value Locally		Retained as heritage
Local Grade (IIIB)		Site of High Value Locally		Mitigated and part retained as heritage
General Protected Area A		Site of High to Medium		Mitigation necessary before destruction
General Protected Area B		Medium Value		Recording before destruction
General Protected Area C		Low Value		No action required before destruction

8. Discussion of (Pre-) History of the South Africa

South Africa has one of the longest sequences of human development in the world. The prehistory and history of South Africa span the entire known life span of human on earth. It is thus difficult to determine exactly where to begin, a possible choice could be the development of genus *Homo* millions of years ago. South African scientists have been actively involved in the study of human origins since 1925 when Raymond Dart identified the Taung child as an infant halfway between apes and humans. Dart called the remains *Australopithecus africanus*, southern ape-man, and his work ultimately changed the focus of human evolution from Europe and Asia to Africa, and it is now widely accepted that humankind originated in Africa (Robbins *et al.* 1998). In many ways this discovery marked the birth of palaeoanthropology as a discipline. Nonetheless, the earliest form of culture known in South Africa is the Stone Age. These prehistoric period during which humans widely used stone for tool-making, stone tools were made from a variety of different sorts of stone. For example, flint and chert were shaped for use as cutting tools and weapons, while basalt and sandstone were used for ground stone. Stone Age can be divided into Early, Middle and Late, it is argued that there are two transitional period. Noteworthy that the time

frame used for Stone Age period is an approximate and differ from researcher to researcher (see Korsman & Meyer 1999, Mitchell 2002, Robbins *et al.* 1998).

Stone Age period

Although a long history of research on the Early Stone Age period of southern Africa has been conducted (Mason 1962, Sampson 1974, Klein 2000, Chazan 2003), it still remains a period were little is known about. These may be due to many factors which includes, though not limited to retrieval techniques used, reliance on secondary, at times unknown sources, and the fact that few fauna from this period has been analysed (Chazan 2003). According to Robbins *et al.* (1998) the Stone Age is the period in human history when stone was mainly used to produce tools. This period began approximately 2.5 million years ago and ended around 200 000 years ago. During this period human beings became the creators of culture and was basically hunters and gatherers, this era is identified by large stone artefacts.

The Middle Stone Age overlap with the EIA and possibly began around 100 000 to about 200 000 years ago and extends up to around 35 000 years ago. This period is marked by smaller tools than in ESA. MSA people made a wide range of stone tools from both coarse- and fine-grained rock types. Sometimes the rocks used for tools were transported considerable distances, presumably in bags or other containers; as such tool assemblages from some MSA sites tend to lack some of the preliminary cores and contain predominantly finished products like flakes and retouched pieces.

Microlithic Later Stone Age period began around 35 000 and extend to the later 1800 AD. According to Deacon (1984), LSA is a period when human being refined small blade tools, conversely abandoning the prepared-core technique. Thus, refined artefacts such as convex-edge scrapers, borers and segments are associated with this period. Moreover, large quantity of art and ornaments were made during this period. Prehistoric rock art in Northern Cape is found in the form of both paintings and engravings. Rock paintings and engravings are generally found on cave and shelter walls in the coastal regions and in mountain ranges along Postmansburg to Danielskuil (Boshier and Beaumont 1974).

Several sites dating to the Stone Age are known to exist around the larger geographical area of the proposed development. The most well-known of all is Wonderwerk Cave in the Kuruman Hills, this site which is about 150km north-east of the proposed area, and constitutes a very large cave, extends for almost 140m into the base of a low foothill on the eastern flank of the Kuruman Hills. Wonderwerk Cave has been the subject of a number of archaeological investigations since the first published description by Malan and Wells in 1943 (Thackeray *et al.* 1981). Another site Blinkklipkop (Tsantsabane), this site is about 100km north of the proposed area, and it appears that activities at the site began 1200 B.P. Lithic artefacts, including crudely worked scrapers and miscellaneous pieces were found in the site, this site was marred by debate in the 1970 and 1980, with faunal material analysed and reanalysed, with contradictory results. Not far away from Blinkklipkop, there is another site, Doornfontein, dates to the same time range as Blinkklipkop. Results of excavations at the Blinkklipkop speculate that mining began some time before A.D. 800. The mining was probably conducted by Khoi and San people before the seventeenth century. Also, the Tswana people appear to have utilised the area. The excavations also provide evidence for the presence of domestic animals and pottery in the Cape Province by A.D. 800.

Iron Age

The Iron Age is the name given to the period of human history when metal was mainly used to produce artefacts. Recently, they have been a debate about the use of the name. Other archaeologist have argued that the word “Iron Age” is problematic and does not precisely explain the event of what happen in southern Africa, as such, the word farming communities has been proposed (Segobye 1998). Nonetheless, in South Africa this period can be divided into two phases. Early (200 - 1000 A.D) and Late Iron Age (1000 - 1850 A.D). Huffman (2007) has indicated that a Middle Iron Age (900 - 1300 A.D) should be included. According to Huffman (2007:361), until the 1960s and 1970s most archaeologists had not yet recognised a Middle Iron age. Instead they began the Late Iron Age at AD 1000. The Middle Iron Age (AD 900 - 1300) is characterised by extensive trade between the Limpopo Confluence and the East Coast of Africa. This has been debated, with other researchers, arguing that the period should be restricted to Shashe-Limpopo Confluence.

According to Schapera (1952:6) the Kgalagadi, who are believed to have originated somewhere in the vicinity of the Great-Lakes of East-Africa, were the first group of the Tswana to have encountered the San in Northern Cape and North West Province (Levitas 1983). However, Breutz (1989:1) argued that since from oral tradition it is stated that they originated from the area were "the sun stood on the other side", it means they lived north of the equator, which would probably be southern Sudan, and not Great Lakes, which is on the Equator. Levitas (1983:168) argued that the name Kalahari was derived from the Kgalakgari people.

The Rolong and Tlhaping group of the Tswana were the next to arrive, on arrival they absorbed the Kgalagadi and San people who were found in the area (Schapera 1652). The Tlhaping were referred to as Briqua (goat people) by the Khoi people, and they ate fish which is unusual among the Bantu-speaking people (Breutz 1989:11). Breutz (1989) and Levitas (1983) indicated that these groups arrived between 1200 and 1350. According to Maggs (1972), the area around the proposed area is associated with the Tlhaping group. Dithakong which was an important Batlhaping capital during the time of Chief Molehebangwe, is about 60km of the proposed area. The early traveller accounts refer to an impressively large town consisting of mud houses, traces of which have yet to be located archaeologically. However, stone walls dating to the Late Iron Age period has been documented. According to Maggs (1972:57), Dithakong is unique in the quality of the historical and ethnological information of the Tswana. This site appears to be the only area in which there is direct archaeological evidence for settlement in the form of stone walling.

Historical period

Since the arrival of the white settlers - c. AD 1650s - in this part of the country, these settlers were largely self-sufficient, relying on cattle/sheep farming and also hunting. Few towns were established and farming remains the most dominant economy.

9. Survey Findings

The Phase I Archaeological and Cultural Heritage Impact Assessment for the proposed Juno-Gromis 400KV power line has identified no archaeological or cultural heritage material on

the area proposed for Landing strip, Tronox mine and Kamieberg mine. Stone tools are almost ubiquitous in the wider region of Namaqualand, their unavailability in the proposed area is however unexpected, impacts to archaeological objects are unlikely next to the shoreline due to sparse nature of human settlement away from the coast.

10. Recommendations

In compliance with the National Heritage Legislature, there was no observable development activities associated with the proposed project.

The developer is reminded that archaeological material (e.g. pottery, remains of stone-walling, graves, etc) and fossils are often located underground. Thus, unavailability of archaeological material does not mean absenteeism, archaeological material might be hidden underground, as such, the client is reminded to take precautions during construction activities, should any archaic material be unearthed, activities should be halted immediately and SAHRA be consulted during construction.

Pre-construction education and awareness training

Prior to construction, contractors should be given training on how to identify and protect archaeological remains that may be discovered during the project. The pre-construction training should include some limited site recognition training for the types of archaeological sites that may occur in the construction areas. Below are some of the indicators of archaeological site that may be found during construction:

- Flaked stone tools, bone tools and loose pieces of flaked stone;
- Ash and charcoal;
- Bones and shell fragments;
- Artefacts (e.g., beads);
- Packed stones which might be uncounted underground, and might indicate a grave or collapse stone walling.

In the event that any of the above are unearthed, construction on the affected pylon site should cease and the area be demarcated by a danger tape. Accordingly, a professional archaeologist or SAHRA officer should be contacted immediately. In the meantime, it is the responsibility of the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. Noteworthy that any measures to cover up the suspected archaeological

material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement of SAHRA.

11. Conclusions

The proposed development can proceed without further archaeological or cultural heritage assessment.

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APPENDIX 1: SITE SIGNIFICANCE

The following guidelines for determining site *significance* were developed by SAHRA in 2003. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

(a) Historic value

- Is it important in the community, or pattern of history?
- Does it have strong or special association with the life or work of a person, group or organization of
  importance in history?
- Does it have significance relating to the history of slavery?

(b) Aesthetic value

- Is it important in exhibiting particular aesthetic characteristics valued by a community or cultural group?

(c) Scientific value

- Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage?
- Is it important in demonstrating a high degree of creative or technical achievement at a particular period?

(d) Social value

- Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons?

(e) Rarity

- Does it possess uncommon, rare or endangered aspects of natural or cultural heritage?

(f) Representivity

- Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects?
- What is the 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?
- Is it important 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?