



Archaetnos Culture & Cultural
Resource Consultants
BK 98 09854/23

**A REPORT ON A HERITAGE IMPACT ASSESSMENT FOR THE
PROPOSED ERP EXTENSION AREA 2 OR ERP EXTENSION 2,
EKURHULENI, GAUTENG PROVINCE**

For:

Prime Resources Environmental Consultants
E-mail: Louise Jones - louise@resources.co.za

REPORT: **AE01926V**

By:

Prof. A.C. van Vollenhoven (L. Akad. S.A.)
Accredited member of ASAPA
Accredited member of SASCH
&
Johan Smit, BA (Hons)

11 June 2019

Archaetnos
P.O. Box 55
GROENKLOOF
0027
Tel: **083 2916104**
Fax: 086 520 4173
E-mail: antonv@archaetnos.co.za

Members: AC van Vollenhoven BA, BA (Hons), DTO, NDM, MA (Archaeology) [UP], MA (Culture History) [US], DPhil (Archaeology) [UP], Man Dip [TUT], DPhil (History) [US]

**©Copyright
Archaetnos**

The information contained in this report is the sole intellectual property of Archaetnos CC. It may only be used for the purposes it was commissioned for by the client.

DISCLAIMER:

Although all possible care is taken to identify all sites of cultural importance during the survey of study areas, the nature of archaeological and historical sites is as such that it always is possible that hidden or subterranean sites could be overlooked during the study. Archaetnos and its personnel will not be held liable for such oversights or for costs incurred as a result thereof.

The South African Heritage Resources Agency (SAHRA) or one of its subsidiary bodies needs to comment on this report and clients are advised not to proceed with any action before receiving these. It is the responsibility of the client to submit this report to the relevant heritage authority.

EXECUTIVE SUMMARY

Archaetnos cc was appointed by Prime Resources Environmental Consultants to conduct a cultural heritage impact assessment (HIA) study for the proposed ERPM Extension Area 2 or ERPM Extension 2. This is on Portions 5 and 19 of the farm Witpoortje 117 IR in the Ekurhuleni South East Magisterial District in the City of Ekurhuleni, Gauteng Province.

The HIA is done as part of the draft EIA. The type of development will consist of underground mining. ERPM Extension 1 plans to consolidate the underground resources. The Far East Vertical (FEV) shaft and FEV vent shaft will be refurbished and used to access underground workings. An additional twin shaft (includes both access and vent shaft), termed Windmill Shaft, is proposed to be constructed to allow access to the underground operations and will include the development of the associated head gear. An existing vent shaft on Portion 19 of the Farm Witpoortje 117 IR (Witpoortje Vent Shaft) will also be reopened and re-equipped for use.

A survey of literature was undertaken in order to obtain background information regarding the area. The field survey was conducted according to generally accepted HIA practices and was aimed at locating all possible objects, sites and features of cultural significance in the area of proposed development.

Three sites of cultural heritage importance were identified.

The final recommendations are as follows:

- Site no. 1 and 2 is of negligible heritage importance. It may be demolished upon approval by the relevant heritage authority.
- Site no. 3 are graves which has a high heritage significance.
- Two possibilities exist. The first option would be to fence the graves in and have a management plan drafted for the sustainable preservation thereof. This should be written by a heritage expert. This usually is done when the graves are in no danger of being damaged, but where there will be a secondary impact due to the development activities.
- The second option is to exhume the mortal remains and then to have it relocated. This usually is done when the graves are in the area to be directly affected by the development activities. For this a specific procedure should be followed which includes social consultation. For graves younger than 60 years, only an undertaker is needed. For those older than 60 years and unknown graves an undertaker and archaeologist is needed. Permits should be obtained from the Burial Grounds and Graves unit of SAHRA.
- The type of development makes it possible to keep the graves *in situ*. It is therefore recommended that it be included in the development planning and that Option 1 be implemented.

- The development may continue after receiving the necessary approval from SAHRA and the implementation of mitigation measures as indicated above.
- It should be remembered that due to archaeological sites being subterranean in essence, it is possible that all cultural sites may not have been identified. Care should therefore be taken when development work commences that, if any more artifacts are uncovered, a qualified archaeologist be called in to investigate.

CURRICULUM VITAE
Prof. Anton Carl van Vollenhoven

PERSONAL INFORMATION

- Born: 20 January 1966, Pretoria, RSA
- Address: Archaetnos, PO Box 55, Groenkloof, 0027
- Cell phone: 083 291 6104
- Nationality: RSA
- E-mail: antonv@archaetnos.co.za

TERTIARY EDUCATION

- BA 1986, University of Pretoria
- BA (HONS) Archaeology 1988 (cum laude), University of Pretoria
- MA Archaeology 1992, University of Pretoria
- Post-Graduate Diploma in Museology 1993 (cum laude), University of Pretoria
- Diploma Tertiary Education 1993, University of Pretoria
- DPhil Archaeology 2001, University of Pretoria.
- MA Cultural History 1998 (cum laude), University of Stellenbosch
- Management Diploma 2007 (cum laude), Tshwane University of Technology
- DPhil History 2010, University of Stellenbosch

EMPLOYMENT HISTORY

- *1988-1991*: Fort Klapperkop Military Museum - Researcher
- *1991-1999*: National Cultural History Museum. Work as Archaeologist, as well as Curator/Manager of Pioneer Museum (1994-1997)
- *1999-2002*: City Council of Pretoria. Work as Curator: Fort Klapperkop Heritage Site and Acting Deputy Manager Museums and Heritage.
- *2002-2007*: City of Tshwane Metropolitan Municipality. Work as Deputy Manager Museums and Heritage.
- *August 2007* – present – Managing Director for Archaetnos Archaeologists.
- *1988-2003*: Part-time lecturer in Archaeology at the University of Pretoria and a part-time lecturer on Cultural Resources Management in the Department of History at the University of Pretoria.
- *2014-2015*: Part-time lecturer for the Honours degree in Museum Sciences in the Department of History and Heritage Studies at the University of Pretoria
- *Since 2015*: Extraordinary Professor of History at the Mahikeng campus of the Northwest University

OTHER

- Has published 34 peer-reviewed and 42 popular articles.
- Has written 11 books/book contributions/conference proceedings .
- Has been the author and co-author of over 911 unpublished reports on cultural resources surveys and archaeological work.
- Has delivered more than 72 papers and lectures at national and international conferences.
- Member of SAHRA Council for 2003 – 2006.
- Member of the South African Academy for Science and Art.
- Member of Association for South African Professional Archaeologists.

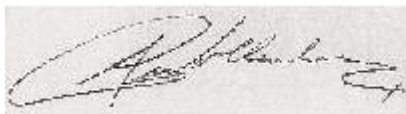
- Member of the South African Society for Cultural History (Chairperson 2006-2008; 2012-2014; 2018-2020).
- Has been editor for the SA Journal of Cultural History 2002-2004.
- Editorial member of various scientific journals.
- Member of the Provincial Heritage Resources Agency, Gauteng's Council.
- Member of Provincial Heritage Resources Agency, Gauteng's HIA adjudication committee (Chairperson 2012-2019).

A list of reports can be viewed on www.archaetnos.co.za.

DECLARATION OF INDEPENDENCE

I, Anton Carl van Vollenhoven from Archaetnos, hereby declare that I am an independent specialist within the field of heritage management.

Signed:



Date: 26 March 2019

LIST OF ACRONYMS:

AIA – Archaeological Impact Assessment
CMP – Cultural Management Plan
EAP – Environmental Assessment Practitioner
EIA – Environmental Impact Assessment
HIA – Heritage Impact Assessment
PIA – Palaeontological Impact Assessment
SAHRA – South African Heritage Resources Agency

CONTENTS

	Page
EXECUTIVE SUMMARY.....	3
CIRRICULUM VITAE OF SPECIALISTS	5
DECLARATION OF INDEPENDENCE	6
LIST OF ACRONYMS	6
CONTENTS	7
1. INTRODUCTION.....	8
2. TERMS OF REFERENCE.....	10
3. CONDITIONS AND ASSUMPTIONS	11
4. LEGISLATIVE REQUIREMENTS	12
5. THE INTERNATIONAL FINANCE CORPORATIONS' PERFORMANCE STANDARD FOR CULTURAL HERITAGE	15
6. METHODOLOGY	16
7. DESCRIPTION OF THE ENVIRONMENT	18
8. HISTORICAL CONTEXT.....	20
9. DISCUSSION OF SITES IDENTIFIED DURING THE SURVEY..	22
10. PUBLIC CONSULTATION.....	29
11. CONCLUSION AND RECOMMENDATIONS.....	31
12. REFERENCES.....	32
APPENDIX A – DEFENITION OF TERMS.....	33
APPENDIX B – DEFINITION/ STATEMENT OF SIGNIFICANCE	34
APPENDIX C – SIGNIFICANCE AND FIELD RATING	35
APPENDIX D – PROTECTION OF HERITAGE RESOURCES	37
APPENDIX E – HERITAGE MANAGEMENT IMPACT ASSESSMENT PHASES	38

1. INTRODUCTION

Archaeos cc was appointed by Prime Resources Environmental Consultants to conduct a cultural heritage impact assessment (HIA) study for the proposed ERP Extension Area 2 or ERP Extension 2. This is on Portions 5 and 19 of the farm Witpoortje 117 IR in the Ekurhuleni South East Magisterial District in the City of Ekurhuleni, Gauteng Province (Figure 1-2).

Central coordinates for the development are:

- Windmill Shaft - 26°18'25.52"S; 28°16'59.94"E
- Witpoortje Vent Shaft - 26°17'34.08"S; 28°20'53.41"

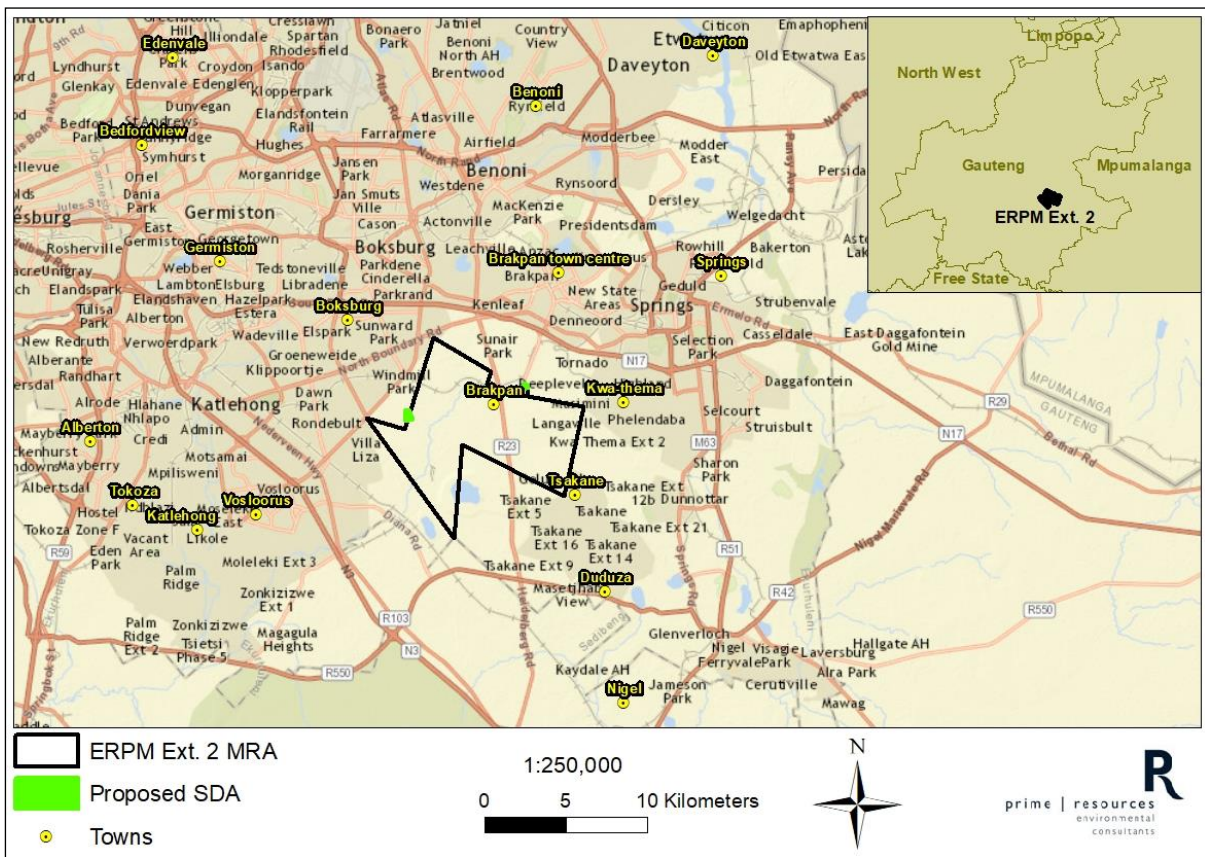


Figure 1: Location of the ERP project area (Prime Resources).

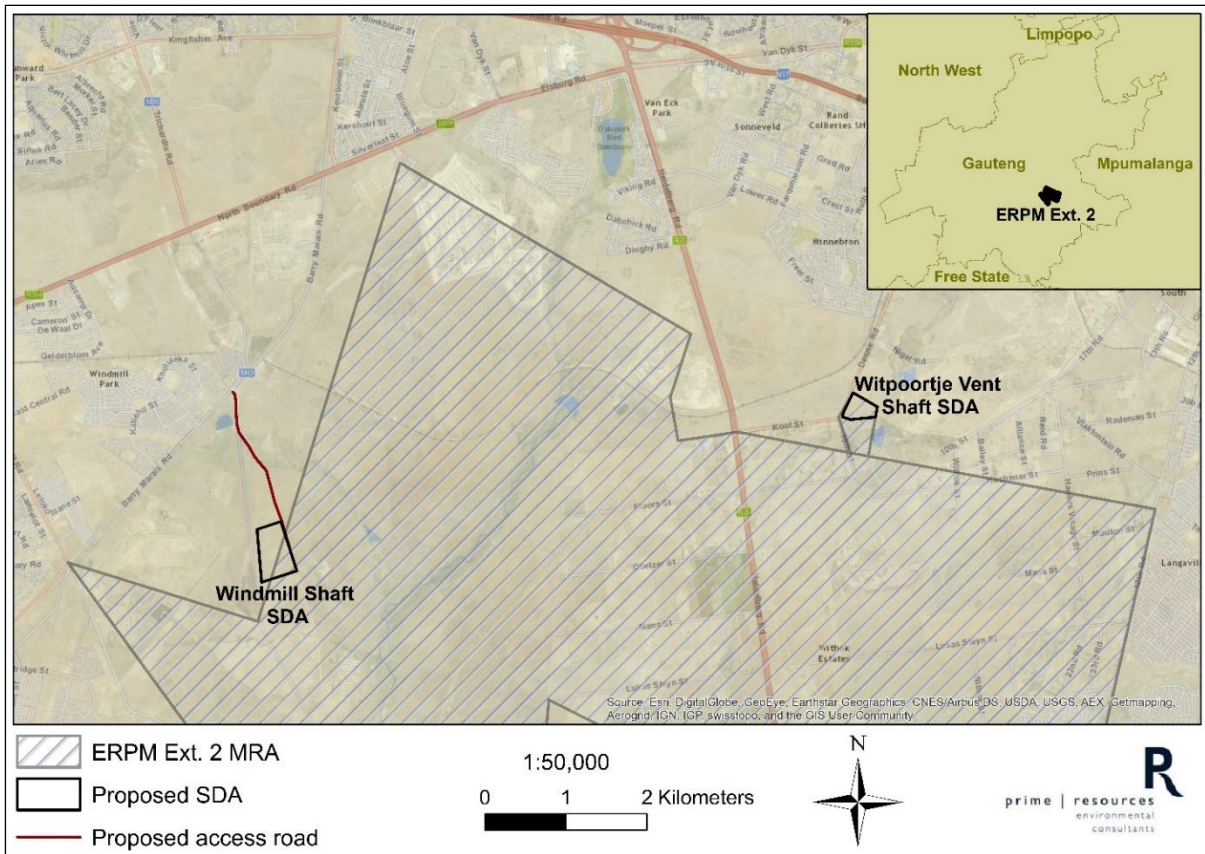


Figure 2: Location of the two surveyed sites within the project area (Prime Resources).

The HIA is done as part of the draft EIA and the relevant reference number is: GP 30/5/1/2/2 10078 MR. The type of development will consist of underground mining. ERP Extension 1 plans to consolidate the underground resources. The Far East Vertical (FEV) shaft and FEV vent shaft will be refurbished and used to access underground workings. An additional twin shaft (includes both access and vent shaft), termed Windmill Shaft, is proposed to be constructed to allow access to the underground operations and will include the development of the associated head gear.

Ore that is mined below ground will be crushed and mixed with groundwater to form a slurry and will be brought to surface via a hydraulic hoist system and transported via existing pipelines to either the Knights Plant (via the Knight Plant Pipeline) to the north-west of the surface development area or the Ergo Plant (via the Ergo Plant Pipeline) to the north-east of the surface development area. An existing vent shaft on Portion 19 of the Farm Witpoortje 117 IR (Witpoortje Vent Shaft) will also be reopened and re-equipped for use.

Surface infrastructure associated with the development of Windmill Shaft, is to be developed within the proposed surface development areas (SDAs) of approximately 20 Ha. The surface infrastructure required for development is as follows:

- Twin shaft with headgear and winder and vent shaft;

- A refrigeration plant, that will allow for the cooling of underground mining operations;
- Change house, administrative buildings, workshops, salvage yard, and stores;
- A water treatment plant is potentially required for the treatment of underground water;
- Powerlines (power supply connection) will connect to existing power sources and water supply pipeline for both potable and service water supply from the municipal reticulation system;
- Stormwater and pollution control infrastructure, including diversion berms to divert clean run-off, dirty water storm water channels and a pollution control dam will be developed to catch run-off from the surface infrastructure area;
- A backup generator and a fuel supply tank within a bunded area;
- Explosives handling area;
- Waste rock dump;
- Existing access roads will be used as far as possible, however a small road network around the refrigeration plant and a parking area will be constructed; and
- A grout plant (backfill plant) will provide material to support underground mine workings.

Ore and waste rock will be stored below ground. Waste rock will be used as backfill material. It is proposed that any excess water from below ground, not used as service water by ERPM Extension 1, will be transferred to DRD Gold for use in their operations. Topsoil will be used to create a berm upstream of the infrastructure area and will further be vegetated to screen the residential areas from noise and visual impacts.

2. TERMS OF REFERENCE

The Terms of Reference for the survey were to:

1. Identify objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the property (see Appendix A).
2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value (see Appendix B).
3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.

4. Recommend suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed development.
5. Review applicable legislative requirements.

3. CONDITIONS & ASSUMPTIONS

The following conditions and assumptions have a direct bearing on the survey and the resulting report:

1. Cultural Resources are all non-physical and physical man-made occurrences, as well as natural occurrences associated with human activity (Appendix A). These include all sites, structure and artifacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development. Graves and cemeteries are included in this.
2. The significance of the sites, structures and artifacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. The various aspects are not mutually exclusive, and the evaluation of any site is done with reference to any number of these aspects.
3. Cultural significance is site-specific and relates to the content and context of the site. Sites regarded as having low cultural significance have already been recorded in full and require no further mitigation. Sites with medium cultural significance may or may not require mitigation depending on other factors such as the significance of impact on the site. Sites with a high cultural significance require further mitigation (see Appendix C).
4. The latitude and longitude of any archaeological or historical site or feature, is to be treated as sensitive information by the developer and should not be disclosed to members of the public.
5. All recommendations are made with full cognizance of the relevant legislation.
6. It has to be mentioned that it is almost impossible to locate all the cultural resources in a given area, as it will be very time consuming. Developers should however note that the report should make it clear how to handle any other finds that might occur. In this particular case the area was very large and some areas inaccessible due to the vegetation cover being high and dense in certain areas.
7. It never is possible to know all sites previously recorded in a certain area to be investigated. However, providing this background only gives a broad base as to what can be expected and apart from predicting what may be found, it has no influence on the study.

4. LEGISLATIVE REQUIREMENTS

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. These are the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

4.1 The National Heritage Resources Act

According to the above-mentioned act the following is protected as cultural heritage resources:

- a. Archaeological artifacts, structures and sites older than 100 years
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography
- c. Objects of decorative and visual arts
- d. Military objects, structures and sites older than 75 years
- e. Historical objects, structures and sites older than 60 years
- f. Proclaimed heritage sites
- g. Grave yards and graves older than 60 years
- h. Meteorites and fossils
- i. Objects, structures and sites of scientific or technological value.

The national estate (see Appendix D) includes the following:

- 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 features of cultural significance
- e. Geological sites of scientific or cultural importance
- f. Archaeological and palaeontological importance
- g. Graves and burial grounds
- h. Sites of significance relating to the history of slavery
- i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.)

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment only looks at archaeological resources. The different phases during the HIA process are described in Appendix E. An HIA must be done under the following circumstances:

- a. The construction of a linear development (road, wall, power line canal etc.) exceeding 300m in length
- b. The construction of a bridge or similar structure exceeding 50m in length
- c. Any development or other activity that will change the character of a site and exceed 5 000m² or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m²

- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority

Structures

Section 34 (1) of the mentioned act states that no person may demolish any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Alter means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

Archaeology, palaeontology and meteorites

Section 35(4) of this act deals with archaeology, palaeontology and meteorites. The act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial):

- a. destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- c. trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- d. bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.
- e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.

Human remains

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict

- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. human remains

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

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

Unidentified/unknown graves are also handled as older than 60 until proven otherwise.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the **Ordinance on Exhumations (Ordinance no. 12 of 1980)** (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated) before exhumation can take place. Human remains can only be handled by a registered undertaker or an institution declared under the **National Health Act (Act 61 of 2003)**.

4.2 The National Environmental Management Act

This act (Act 107 of 1998) states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made.

Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

5. THE INTERNATIONAL FINANCE CORPORATIONS' PERFORMANCE STANDARD FOR CULTURAL HERITAGE

This standard recognizes the importance of cultural heritage for current and future generations. It aims to ensure that clients protect cultural heritage in the course of their project activities.

This is done by clients abiding to the law and having heritage surveys done in order to identify and protect cultural heritage resources via field studies and the documentation of such resources. These need to be done by competent professionals (e.g. archaeologists and cultural historians). Possible chance finds, encountered during the project development, also needs to be managed by not disturbing it and by having it assessed by professionals.

Impacts on the cultural heritage should be minimized. This include the possible maintenance of such sites in situ, or when impossible, the restoration of the functionality of the cultural heritage in a different location. When cultural historical and archaeological artifacts and structures need to be removed is should be done by professionals and by abiding to the applicable legislation.

The removal of cultural heritage resources may however only be considered if there are no technically or financially feasible alternatives. In considering the removal of cultural resources, it should be outweighed by the benefits of the overall project to the effected communities. Again professionals should carry out the work and adhere to the best available techniques.

Consultation with affected communities should be engaged in. This entails that access to such communities should be granted to their cultural heritage if this is applicable. Compensation for the loss of cultural heritage should only be given in extra-ordinary circumstances.

Critical cultural heritage may not be impacted on. Professionals should be used to advise on the assessment and protection thereof. Utilization of cultural heritage resources should always be done in consultation with the effected communities in order to be consistent with their customs and traditions and to come to agreements with relation to possible equitable sharing of benefits from commercialization.

6. METHODOLOGY

6.1 Survey of literature

A survey of literature was undertaken in order to obtain background information regarding the area. Sources consulted in this regard are indicated in the bibliography.

6.2 Reference to other specialist studies

On the existing SAHRA Database (SAHRIS) there are a number of reports that were done in the wider Ekurhuleni area (SAHRIS database). The SAHRIS database is an

internet-based tool, updated constantly. Archaetnos has also done many surveys here in the past (Archaetnos database). The latter is a computer-based tool, updated constantly. However, there is only one study recorded on the farm Witpoortje 117 IR, which will be referred to below.

6.3 Field survey

The survey was conducted according to generally accepted HIA practices and was aimed at locating all possible objects, sites and features of cultural significance in the area of proposed development. If required, the location/position of any site was determined by means of a Global Positioning System (GPS)¹, while photographs were also taken where needed.

The size of the project area is approximately 27 ha - 19.6 ha comprises the surface development area and 7.3 ha comprise the re-opening and re-equipping of the Witpoortje Vent Shaft area. The survey was undertaken by a physical survey on foot and took 4 hours to complete (Figure 3-4). The survey was done in May 2019.

6.4 Oral histories

People from local communities are interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography.



Figure 3: Track route of the Windmill Shaft SDA.

¹ A Garmin Oregon 550 with an accuracy factor of a few meters.

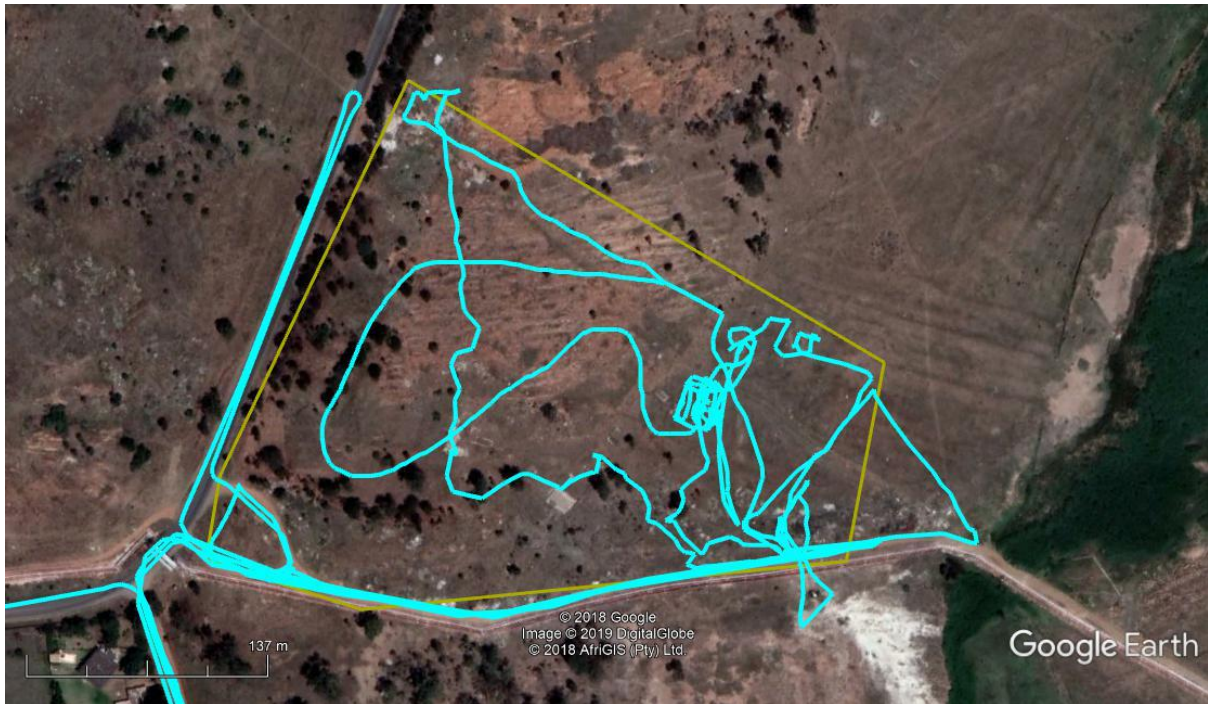


Figure 4: Track route at the proposed Witpoortje Vent Shaft.

6.5 Documentation

All sites, objects, features and structures identified were documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates of individual localities were determined by means of the Global Positioning System (GPS). The information was added to the description in order to facilitate the identification of each locality.

6.6 Evaluation of Heritage sites

The evaluation of heritage sites is done by giving a field rating of each (see Appendix C) using the following criteria:

- The unique nature of a site
- The integrity of the archaeological deposit
- The wider historic, archaeological and geographic context of the site
- The location of the site in relation to other similar sites or features
- The depth of the archaeological deposit (when it can be determined or is known)
- The preservation condition of the site
- Uniqueness of the site and
- Potential to answer present research questions.

7. DESCRIPTION OF THE ENVIRONMENT

Witpootjie:

The site is a flat with a slight slope to the southernly direction. From the google images it seems to have been cultivated farmland at one time. Currently is mainly consists of grassland with no features other than a pipeline to the east and a power line to the westerly direction. Vegetation cover varies between medium and high and is reasonably dense (Figure 5-6).

Accordingly this has a negative effect on both the horizontal and the vertical archaeological visibility. There are however some open patches in between where visibility is very good (Figure 7). Various contemporary structures from former industrial activities, e.g. cement floors are visible in the field (Figure 8).



Figure 5: General view of the environment at Witpootjie.



Figure 6: View of dense vegetation at Witpootjie.



Figure 7: One of the open patches at Witpoortjie.



Figure 8: Example of concrete feature found at Witpoortjie.

Windmill:

This site is generally flat sloping towards the south towards a wetland or stream. Vegetation in the area is mostly grassy with eucalyptus trees (Figure 9). Vegetation cover varies between medium and high and is reasonably dense. Accordingly this has a negative effect on both the horizontal and the vertical archaeological visibility.

Disturbances include dumping sites and pioneer plants, especially on the western side. The north-eastern area seems to have been disturbed by industrial activity and erosion.



Figure 9: General view of the Windmill site.

8. HISTORICAL CONTEXT

During the survey three sites of cultural heritage significance were located. In order to enable the reader to better understand archaeological and cultural features, it is necessary to give a background regarding the different phases of human history in the wider geographical area.

8.1 Stone Age

The Stone Age is the period in human history when lithic material was mainly used to produce tools (Coertze & Coertze 1996: 293). In South Africa the Stone Age can be divided in three periods. It is, however, important to note that dates are relative and only provide a broad framework for interpretation. The division for the Stone Age according to Korsman & Meyer (1999: 93-94) is as follows:

- Early Stone Age (ESA) 2 million – 150 000 years ago;
- Middle Stone Age (MSA) 150 000 – 30 000 years ago; and
- Late Stone Age (LSA) 40 000 years ago – 1850 - A.D.

A few Stone Age sites were identified in the vicinity of the surveyed area by other scholars. This includes Middle and Late Stone Age sites in and around Johannesburg (Bergh 1999:4). Rock art is usually also associated with LSA people. The closest to the surveyed area are rock engravings that have been found around Krugersdorp on the West Rand (Bergh 1999: 5).

Although no natural shelter was identified during the survey, the close proximity to a wetland/river makes the area very suitable for human habitation. The area probably provided good grazing and therefore it is possible that Stone Age people may have utilized the site for hunting purposes. One may therefore find Stone Age material lying around in the area.

8.2 Iron Age

The Iron Age is the name given to the period of human history when metal was mainly used to produce metal artefacts (Coertze & Coertze 1996: 346). In South Africa it can be divided in two separate phases according to Van der Ryst & Meyer (1999: 96-98), namely:

- Early Iron Age (EIA) 200 – 1000 A.D; and
- Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) however, indicates that a Middle Iron Age should be included. His dates, which now seem to be widely accepted in archaeological circles, are:

- Early Iron Age (EIA) 250 – 900 A.D.;
- Middle Iron Age (MIA) 900 – 1300 A.D.; and
- Late Iron Age (LIA) 1300 – 1840 A.D.

Previous research indicates 794 Iron Age sites in an area to the south of Johannesburg and the East Rand (Bergh 1999: 7). These date to the Late Iron Age. These would however be closer to hills and areas where building material is found.

Again, the presence of water and natural grass cover may have contributed to people settling in the surveyed area during the Iron Age. It is indicated that a Tswana group, the Khudu, inhabited the area to the south of the surveyed area previously as well as during the 19th century. It does not seem if someone settled closer to the surveyed area, but one has to take into consideration that the entire area may not have been researched yet (Bergh 1999: 10).

The subterranean presence of archaeological material is something that should however always be kept in mind. It also should be realized that the area may not have been surveyed before and therefore the possibility of finding new sites, or at least features, is always a reality.

8.3 Historical Age

The historical age began with the first recorded oral histories in the area. It includes the moving into the area of people that were literate. This era is often referred to as the Colonial era or the recent past.

Due to factors such as population growth and a decrease in mortality rates, more people inhabited the country during the recent historical past. Therefore, much more cultural heritage resources from this era have been left on the landscape.

It however is important to note that all cultural resources older than 60 years are potentially regarded as part of the heritage and that detailed studies are required in order to determine whether these indeed have cultural significance. Factors to be considered include aesthetic, scientific, cultural and religious value of such resources.

During the Difaquane, in this case ca. 1827, the Ndebele of Mzilikazi did move through this area (Bergh 1999: 11). The first white people to move through this area were the travellers Moffat and Archbell in 1829 (Bergh 1999: 12). Later other travellers also visited the area, being Harris in 1836 and Livingstone in 1847 (Bergh 1999: 13). The first white people to settle here were Voortrekkers during the 1839 and 1840 (Bergh 1999: 14-15).

The city of Johannesburg was established in 1886. The city of Germiston was established in 1909 and Kempton Park, which originally formed a part of Germiston, in 1977 (Bergh 1999: 21-25).

Historical structures, such as farm houses and infrastructure relating to these times, may be found in the surveyed area. It is also possible that graves, associated with the above, may be present. Gaigher (2015) located an old mining village on the farm Witpoortje. This is however situated about 12 km south east of the current study area.

The following information about graves were obtained from the Brakpan Museum: Mr. Lawrence Mkhonza and Sicelo Mavuso stated that according to historical records, the areas of Withok, Witpoortje, Glen Roy, Rand Collieries and Rooikraal were early settlements prior to the Anglo-Boer War 1899 – 1902. There is evidence that an Anglo-Boer War Black Concentration Camp existed in Brakpan and Cultural Heritage and Archaeological Impact Assessment Reports in the area confirm a large number of unmarked graves and burial grounds.

Identified unmarked graves, outside of the project area, are located at:

- Cnr Heidelberg Rd and Geluksdal Rd, Withok, Brakpan
- Heidelberg Rd West, opposite Mine Dump Tailings, towards Brakpan
- Nigel/Eikenhoff Rd and Heidelberg Rd, opposite Tskane Ext 22
- Denne Road, off Koot Street, opposite SPCA
- Rooikraal 156IR, next to Transnet Railways Electric Transformer.

9. DISCUSSION OF SITES IDENTIFIED DURING THE SURVEY

As indicated three sites of cultural heritage importance was identified within the surveyed area. These all date to the historical era.

9.1 Site no. 1 – demolished structure

This is a demolished structure with only one room. It has dimensions of about 10 x 8 m and is made of brick and stone. No historical artefacts were noted. The structure is overgrown (Figure 10).

GPS: 26°17'32.90"S
28°20'58.50"E



Figure 10: The remains of a demolished structure at site no. 1.

Cultural significance Table

A place is considered to be part of the national estate if it has cultural significance because of -	Applicable or not	Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High
Its importance in the community or pattern of South Africa's history	N	-
Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history	N	-
Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	N	-
Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects	N	-
Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group	N	-
Its importance in demonstrating a high degree of creative or	N	-

technical achievement at a particular period		
Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	Y	N
Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa	N	-
Sites of significance relating to the history of slavery in South Africa	N	-
Reasoned assessment of significance using appropriate indicators outlined above:		1 – Negligible

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

$$= 1 \text{ (Negligible)} \times 1$$

$$= 1$$

The site is regarded as having a **low** cultural significance. The field rating thereof is Local Grade Local Grade IIIC. The description in this phase 1 heritage report is seen as sufficient recording (low significance) and it may be granted destruction at the discretion of the relevant heritage authority without a formal permit application, subjected to the granting of Environmental Authorisation.

9.2 Site no. 2 – demolished structure

Again this is a demolished structure made from brick and stone and with only one room. It has dimensions of about 11 x 5 m. No historical artefacts were noted. The structure is overgrown (Figure 11).

GPS: 26°17'32.99"S
28°20'57.41"E



Figure 11: The remains of a demolished structure at site no. 2.

Cultural significance Table

A place is considered to be part of the national estate if it has cultural significance because of -	Applicable or not	Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High
Its importance in the community or pattern of South Africa's history	N	-
Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history	N	-
Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	N	-
Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects	N	-
Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group	N	-
Its importance in demonstrating a high degree of creative or technical achievement at a particular period	N	-

Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	Y	N
Its strong or special association with the life or work of a person, group or organization of importance in the history of South Africa	N	-
Sites of significance relating to the history of slavery in South Africa	N	-
Reasoned assessment of significance using appropriate indicators outlined above:	1 – Negligible	

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

$$= 1 \text{ (Negligible)} \times 1$$

$$= 1$$

The site is regarded as having a **low** cultural significance. The field rating thereof is Local Grade Local Grade IIIC. The description in this phase 1 heritage report is seen as sufficient recording (low significance) and it may be granted destruction at the discretion of the relevant heritage authority without a formal permit application, subjected to the granting of Environmental Authorisation.

9.3 Site no. 3 – grave yard

The site contains at least 48 graves (Figure 12). Nine of these are marked, and the rest are unmarked. The oldest date of death indicated is 1889 and the youngest is 1920. This means there two of the categories of graves are present being unknown graves and heritage graves (older than 60 years). Unknown graves are handled similar to heritage graves.

Surnames identified are Steyn, Horn and Kapp. Some of the graves have headstones and others not. Headstones are mainly made from slate, sandstone or granite. Grave dressing mainly consists of cement.

GPS: 26°17'34.07"S
28°20'56.46"E



Figure 12: Some of the graves at site no. 3.

Cultural significance Table

A place is considered to be part of the national estate if it has cultural significance because of -	Applicable or not	Rating: 1 - Negligible/ 2 -Low/ 3 - Low-Medium/ 4 - Medium/ 5 - Medium-High/ 6 - High/ 7 - Very High
Its importance in the community or pattern of South Africa's history	Y	H
Its possession of uncommon, rare, or endangered aspects of South Africa's natural or cultural history	N	-
Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage	N	-
Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects	Y	H
Its importance in exhibiting particular aesthetic characteristics valued by a community cultural group	N	-
Its importance in demonstrating a high degree of creative or	N	-

technical achievement at a particular period		
Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons	Y	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	N	-
Sites of significance relating to the history of slavery in South Africa	N	-
Reasoned assessment of significance using appropriate indicators outlined above:		6 – High

Integrity scale:

- 1 – Bad state of preservation, but no contextual information
- 2 – Bad state of preservation and includes contextual information
- 3 – Reasonable state of preservation, but no contextual information
- 4 – Reasonable state of preservation and includes contextual information
- 5 – Good state of preservation, but no contextual information
- 6 - Good state of preservation and includes contextual information
- 7 – Excellent state of preservation, but no contextual information
- 8 – Excellent state of preservation and includes contextual information

Field-rating = Cultural significance x Integrity

$$= 6 \text{ (High)} \times 4$$

$$= 24$$

Graves are always regarded as having a **high** cultural significance. The field rating thereof is Local Grade III B. It should be included in the heritage register but may be mitigated.

Two possibilities exist. The first option would be to fence the graves in and have a management plan drafted for the sustainable preservation thereof. This should be written by a heritage expert. This usually is done when the graves are in no danger of being damaged, but where there will be a secondary impact due to the development activities.

The second option is to exhume the mortal remains and then to have it relocated. This usually is done when the graves are in the area to be directly affected by the development activities. For this a specific procedure should be followed which includes social consultation. For graves younger than 60 years, only an undertaker is needed. For those older than 60 years and unknown graves an undertaker and archaeologist is needed. Permits should be obtained from the Burial Grounds and Graves unit of SAHRA.

The type of development makes it possible to keep the graves *in situ*. It is therefore recommended that it be included in the development planning and that Option 1 be implemented.

10. PUBLIC CONSULTATION

This is handled by the Environmental Impact Assessment Practitioner Site and newspaper notices were utilised (Figure 13-15), but a full report can be obtained from them. Comments related to heritage are included under the historical context of this report.

NOTIFICATION OF PUBLIC PARTICIPATION PROCESS

ERPM (Pty) Ltd (ERPM) is an underground mining operation, which was established more than 100 years ago on the Witwatersrand basin. ERPM currently owns two contiguous mining rights - GP151MR and GP150MR. Neither of the underground assets of GP150MR and GP151MR are economically robust on their own to justify long-term mining, nor do they allow for the optimal mining of the mineral resources in the area. Thus these two mining rights are currently non-operational and are in a care and maintenance phase.

ERPM Extension Area 1 (Pty) Ltd (ERPM Ext 1), a subsidiary of ERPM, holds a prospecting right (GP243PR) which it intends to convert into a Mining Right. GP243PR is located adjacent to GP150MR. ERPM Ext 1 plans to consolidate the underground resources of GP243PR (referred to as ERPM Extension Area 2 or ERPM Ext 2), with those of GP150MR and GP151MR, making use of the Far East Vertical (FEV) shaft and FEV vent shaft within GP151MR to access underground workings of all three mineral rights areas. The combined underground resources within these three areas justifies the large capital commitment to develop a long term, large scale mining operation.

ERPM Ext 1 is applying for Environmental Authorisation in terms of the National Environmental Management Act (1998) (NEMA), and for a Water Use Licence (WUL) in terms of the National Water Act (1998), for proposed mining and associated activities at the ERPM Extension Area 2, in the City of Ekurhuleni Municipality. The site is located approximately 10 km South-East of Boksburg Town and 8 km East of Vosloorus. Affected farm portions include portions of Witpoortje 117 IR, Withok 131 IR, Rooikraal 156 IR and Glen Roy 132 IR.

Environmental Authorisation is required for the following activities listed in terms of NEMA and the 2014 EIA Regulations (*as amended*): 2, 9, 10, 14, 16, 20, 25, 28 and 30 of Listing Notice 1 (*as amended* by GNR327 of 2017); 2, 4, 6, 7, 15, 17, 21 and 25 of Listing Notice 2 (*as amended* by GNR325 of 2017); and 4, 10, 12 and 15 of Listing Notice 3 (*as amended* by GNR324 of 2017). A Scoping and EIA process will be followed.

Prime Resources (Pty) Ltd has been appointed as the Environmental Assessment Practitioner to facilitate the above processes.

REGISTER AS AN INTERESTED AND AFFECTED PARTY (IAP)

Individuals and organisations can register as Interested and Affected Parties (IAPs) by submitting their contact details to Prime Resources. To register, submit your contact details (name, cell phone number, email address) and particular interest in the project via **SMS** to 066 283 3799 **OR e-mail** to prime@resources.co.za. Please use the subject line "**ERPM**".

PUBLIC COMMENT INVITED

The Scoping Report can be downloaded from <http://www.primeresources.co.za/downloads/> during the 30 day public commenting period, from **8 March to 8 April 2019**. The Scoping Report can also be viewed at the Vosloorus, Tsakane, Kwa-Thema, Geluksdal and Brakpan Public Libraries, or provided by email upon request. Please forward comments to Prime Resources by **8 April 2019**.

For more information, please contact Louise Jones or Itumeleng Morosele at Prime Resources.

(T) 011 447 4888 (F) 086 604 2219 (E) prime@resources.co.za (W) www.resources.co.za

Figure 13: Wording of notices.

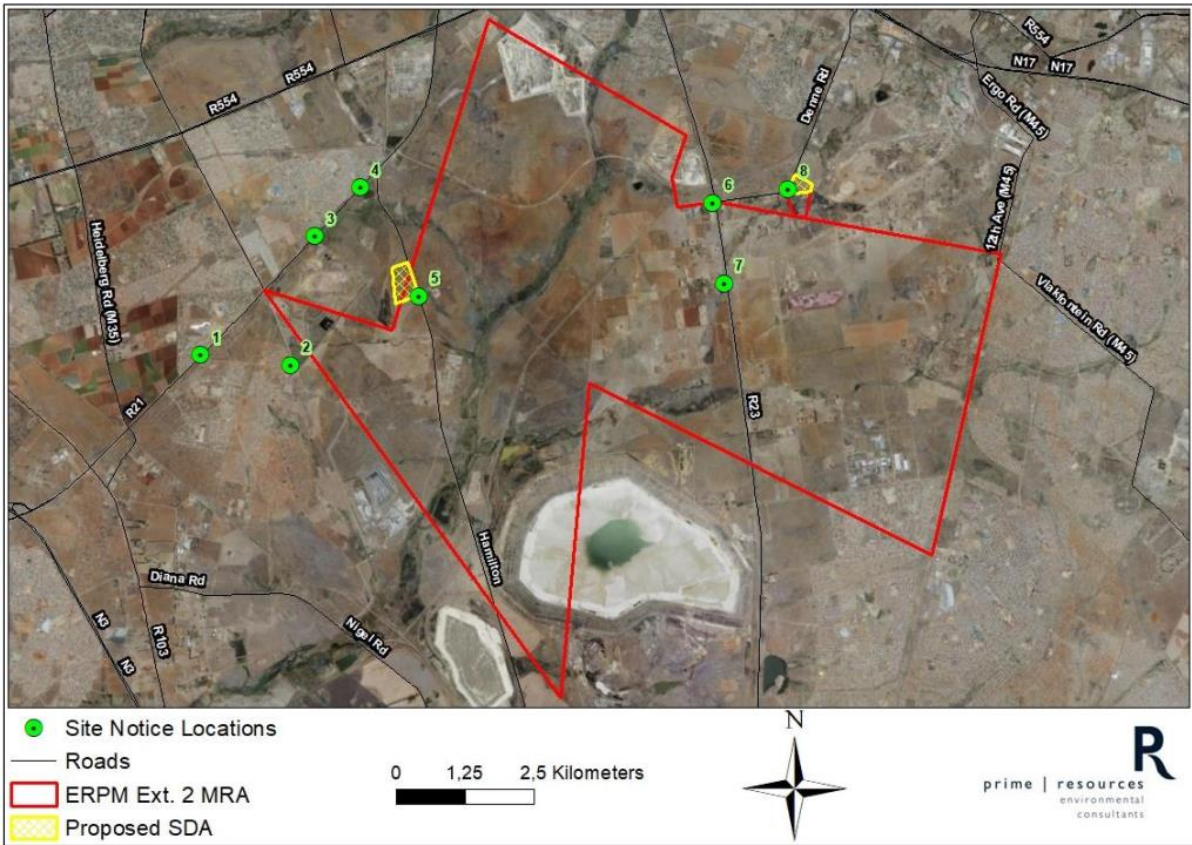


Figure 14: Location of site notices (Prime Resources).



Figure 15: Example of a site notice.

11. CONCLUSIONS AND RECOMMENDATIONS

It is concluded that the assessment of the area was conducted successfully. Three sites of cultural heritage significance were located, all within the Witpoortjie site (Figure 16).



Figure 16: Location of sites identified during the survey.

The final recommendations are as follows:

- Site no. 1 and 2 is of negligible heritage importance. It may be demolished upon approval by the relevant heritage authority.
- Site no. 3 are graves which has a high heritage significance.
- Two possibilities exist. The first option would be to fence the graves in and have a management plan drafted for the sustainable preservation thereof. This should be written by a heritage expert. This usually is done when the graves are in no danger of being damaged, but where there will be a secondary impact due to the development activities.
- The second option is to exhume the mortal remains and then to have it relocated. This usually is done when the graves are in the area to be directly affected by the development activities. For this a specific procedure should be followed which includes social consultation. For graves younger than 60 years, only an undertaker is needed. For those older than 60 years and unknown

graves an undertaker and archaeologist is needed. Permits should be obtained from the Burial Grounds and Graves unit of SAHRA.

- The type of development makes it possible to keep the graves *in situ*. It is therefore recommended that it be included in the development planning and that Option 1 be implemented.
- The development may continue after receiving the necessary approval from SAHRA and the implementation of mitigation measures as indicated above.
- It should be remembered that due to archaeological sites being subterranean in essence, it is possible that all cultural sites may not have been identified. Care should therefore be taken when development work commences that, if any more artifacts are uncovered, a qualified archaeologist be called in to investigate.

12. REFERENCES

Archaetnos database.

Bergh, J.S. (ed.). 1999. **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.** Pretoria: J.L. van Schaik.

Coertze, P.J. & Coertze, R.D. 1996. **Verklarende vakwoordeboek vir Antropologie en Argeologie.** Pretoria: R.D. Coertze.

Gaigher, S. 2015. **Heritage Impact Assessment for the proposed VanDyk Park Mixed Housing Development.** Unpublished report, Louis Trichardt, G&A Heritage.

Huffman, T.N. 2007. **Handbook to the Iron Age: The Archaeology of Pre-Colonial Farming Societies in Southern Africa.** Scottsville: University of KwaZulu-Natal Press.

Knudson, S.J. 1978. **Culture in retrospect.** Chicago: Rand McNally College Publishing Company.

Korsman, S.A. & Meyer, A. 1999. Die Steentydperk en rotskuns. Bergh, J.S. (red.). **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.** Pretoria: J.L. van Schaik.

Republic of South Africa. 1980. **Ordinance on Exhumations** (Ordinance no. 12 of 1980). The Government Printer: Pretoria.

Republic of South Africa. 2003. **National Health Act** (No 61 of 2003). The Government Printer: Pretoria.

Republic of South Africa. 1999. **National Heritage Resources Act** (No 25 of 1999). Pretoria: the Government Printer.

Republic of South Africa. 1998. **National Environmental Management Act** (no 107 of 1998). Pretoria: The Government Printer.

SAHRA's SAHRIS database.

Van der Ryst, M.M. & Meyer, A. 1999. Die Ystertydperk. Bergh, J.S. (red.). **Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.** Pretoria: J.L. van Schaik.

APPENDIX A

DEFINITION OF TERMS:

Site: A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artifacts, found on a single location.

Structure: A permanent building found in isolation or which forms a site in conjunction with other structures.

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

APPENDIX B

DEFINITION/ STATEMENT OF HERITAGE SIGNIFICANCE:

- Historic value: Important in the community or pattern of history or has an association with the life or work of a person, group or organization of importance in history.
- Aesthetic value: Important in exhibiting particular aesthetic characteristics valued by a community or cultural group.
- Scientific value: Potential to yield information that will contribute to an understanding of natural or cultural history or is important in demonstrating a high degree of creative or technical achievement of a particular period
- Social value: Have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons.
- Rarity: Does it possess uncommon, rare or endangered aspects of natural or cultural heritage.
- Representivity: Important in demonstrating the principal characteristics of a particular class of natural or cultural places or object or a range of landscapes or environments characteristic of its class or 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.

APPENDIX C

SIGNIFICANCE AND FIELD RATING:

APPENDIX C

SIGNIFICANCE AND FIELD RATING:

Cultural significance:

- Negligible – The site has no heritage significance, although it may be older than 60 years.
- Low - A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings. A site with minimal importance which is decreased by its bad state of decay.
- Low-Medium - A site of lesser importance, which is increased by a good state of preservation and contextual importance (e.g. a specific community).
- Medium - Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also, any important object found out of context.
- Medium-High - A site that has high importance due to its age or uniqueness, but which decreases due to its bad state of decay.
- High - Any site, structure or feature regarded as important because of its age or uniqueness. Also, any important object found within a specific context.
- Very High - A site of exceptional importance due to its age, uniqueness and good state of preservation.

Heritage significance:

- Grade I Heritage resources with exceptional qualities to the extent that they are of national significance
- Grade II Heritage resources with qualities giving it provincial or regional importance although it may form part of the national estate
- Grade III Other heritage resources of local importance and therefore worthy of conservation

Field ratings:

National Grade I significance: The site should be managed as part of the national estate, should be nominated as Grade I site, should be maintained in situ with a protected buffer zone and a CMP must be recommended. Score above 50.

Provincial Grade II significance: The site should be managed as part of the provincial estate, should be nominated as Grade II site, should be maintained in situ with a protected buffer zone and a CMP must be recommended. Score between 40 and 50.

Local Grade IIIA: The site should be included in the heritage register and not be mitigated (high significance), should be maintained in situ with a protected buffer zone and a CMP must be recommended. Score between 37 and 40.

Local Grade IIIB: The site should be included in the heritage register and may be mitigated (high/ medium significance). Mitigation is subject to a permit application lodged with the relevant heritage authority. Score between 6 and 36.

Local Grade IIIC: The description in the phase 1 heritage report is seen as sufficient recording (low significance) and it may be granted destruction at the discretion of the relevant heritage authority without a formal permit application, subjected to the granting of Environmental Authorisation. Score below 5.

APPENDIX D

PROTECTION OF HERITAGE RESOURCES:

Formal protection:

National heritage sites and Provincial heritage sites – grade I and II

Protected areas - an area surrounding a heritage site

Provisional protection – for a maximum period of two years

Heritage registers – listing grades II and III

Heritage areas – areas with more than one heritage site included

Heritage objects – e.g. archaeological, palaeontological, meteorites, geological specimens, visual art, military, numismatic, books, etc.

General protection:

Objects protected by the laws of foreign states

Structures – older than 60 years

Archaeology, palaeontology and meteorites

Burial grounds and graves

Public monuments and memorials

APPENDIX E

HERITAGE IMPACT ASSESSMENT PHASES

1. Pre-assessment or scoping phase – establishment of the scope of the project and terms of reference.
2. Baseline assessment – establishment of a broad framework of the potential heritage of an area.
3. Phase I impact assessment – identifying sites, assess their significance, make comments on the impact of the development and makes recommendations for mitigation or conservation.
4. Letter of recommendation for exemption – if there is no likelihood that any sites will be impacted.
5. Phase II mitigation or rescue – planning for the protection of significant sites or sampling through excavation or collection (after receiving a permit) of sites that may be lost.
6. Phase III management plan – for rare cases where sites are so important that development cannot be allowed.