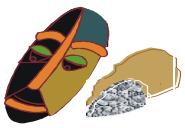

Archaetnos Culture & Cultural
Resource Consultants
BK 98 09854/23

A REPORT ON A CULTURAL HERITAGE IMPACT ASSESSMENT DONE FOR THE ANGLO AMERICAN PLATINUM AND AFRICAN RAINBOW MINERALS MODIKWA PLATINUM MINE SOUTH SHAFT 2 PROJECT, CLOSE TO BURGERSFORT, LIMPOPO PROVINCE

For:

SRK
PO Box 55291
Northlands
2116

REPORT NO.: AE01429V

By:

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April 2014

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SUBMISSION OF REPORT

Please note that the South African Heritage Resources Agency (SAHRA) or one of its subsidiary bodies needs to comment on this report.

It is the client's responsibility to do the submission via the SAHRIS System on the SAHRA website.

Clients are advised not to proceed with any action before receiving the necessary comments from SAHRA.

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 are 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.

EXECUTIVE SUMMARY

Archaetnos cc was requested by SRK Consulting to conduct a cultural heritage impact assessment (HIA) for the proposed Anglo American Platinum and African Rainbow Minerals Modikwa Platinum Mine South Shaft 2 Project. This is close to the town of Burgersfort and Steelpoort in the Limpopo Province.

The project includes three areas on the farms Onverwacht 292 KT and Winterveld 293 KT and entails the following development:

- A waste rock dump for the storage of waste rock generated at the South 2 Shaft (currently it is being trucked to the waste rock dump associated with the South 1 Shaft for storage and used for the construction of the South 2 Shaft terrace);
- An ore (reef) material transfer stockpile storage facility at the existing terrace area;
- A waste rock transfer storage facility at the existing terrace area;
- An ore silo and overland ore conveyor (to be situated closest to Onverwacht Hill), for the transportation of ore from South 2 Shaft to South 1 Shaft via the Onverwacht Hill for further processing;
- An additional ventilation shaft for the management of underground ventilation (on the farm Winterveld 293 KT); and
- Sewage sludge drying beds associated with the sewage treatment plant for the treatment of sewage during the further operational phase of the South 2 South project.
- Conservancy tank for the handling of sewage during the construction to operational phase
-
- The above proposed key infrastructure will have secondary infrastructure and activities associated with it. These include:
- River diversions associated with the waste rock dump;
- River crossings associated with the conveyor ;
- Access roads leading to the waste rock dump and ventilation shaft;
- Overland ore conveyor service road; and
- Drinking (potable) water purification plant to replace the current purification system at South 2 Shaft.

The Terms of Reference for the survey were to:

1. Identify as much as possible objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the property.

2. Study background information on the area to be developed.

3. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value.

4. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.

5. Recommend suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed development.

6. Review applicable legislative requirements.

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. 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.

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 case there were certain areas where the vegetation cover was very dense which had a negative effect on archaeological visibility.

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).

According to the National Heritage Resources 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.

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.

The act also 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 paleontological site or any meteorite;
b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological 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 paleontological material or object, or any meteorite; or
d. Bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and paleontological 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.

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.

All graves older than 60 years are called heritage graves and should be handled by an archaeologist. This includes archaeological graves, which are older than 100 years. Unidentified/unknown graves (which refers to date of death) 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 Excavations** (**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.

The National Environmental Management Act 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 be 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.

The field survey for the project 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. One regularly looks a bit wider than the demarcated area, as the surrounding context needs to be taken into consideration.

If required, the location/position of any site was determined by means of a Global Positioning System (GPS), while photographs were also taken where needed. The survey was undertaken by doing a physical survey via off-road vehicle and on foot and covered as much as possible of the area to be studied.

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 GPS. The information was added to the description in order to facilitate the identification of each locality.

The evaluation of heritage sites is done by giving a field rating of each 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.

Although the project area is divided into three areas, the general environmental characteristics are more or less the same. The topography of the broader geographical area wherein the surveyed area is located consists of high mountains with steep slopes. A number of rivers cut through these creating some valleys including flat level surfaces. The latter is mostly where the infrastructure will be placed.

No sites of cultural importance were identified in the project area during the survey. However, a number of sites found during previous surveys were visited. These are:

- Sites OWR005, OWR006 and WR008-OWR012 are all of a recent historical origin. It consists of residential structures made from clay or stone.

  OWR005 – 24° 40' 07" S 30° 07' 42" E – one MSA tool was found here during the current survey
  OWR006 – 24° 40' 08" S 30° 07' 54" E – Nothing was found during the current survey
  OWR008 – 24° 40' 43" S 30° 08' 32" E
  OWR009 – 24° 40' 57" S 30° 08' 24" E
  OWR010 – 24° 41' 04" S 30° 08' 21" E
  OWR011 – 24° 41' 13" S 30° 08' 22" E
  OWR012 – 24° 41' 22" S 30° 08' 24" E

- Site OWR007 is graves. However nothing was found here during the current survey. The GPS coordinates provided during the previous assessments was incorrect and has now been confirmed and changed to 24˚ 41' 13" S 30˚ 08' 22" E.

Five new sites were however identified outside of the project area. These consist of graves and clay walls similar to those at the sites discussed above. The GPS coordinates of the site are:

New clay walled site: 24˚ 40' 25" S 30˚ 07' 47" E.
Graves: Site 1 – 24˚ 40' 03.4S" 30˚ 07' 49.76" E.
Site 2 - 24˚ 40' 14.69" S 30˚ 07' 40.87 E.
Site 3 - 24˚ 40' 26.18 S 30˚ 07' 43.77" E.
Site 4 - 24˚ 39' 46.79" S 30˚ 07' 57.80" E.

Some trees were identified, which are believed to be of cultural importance. Community members of the Matimatjitji community indicated that these are important as it is believed that the ancestors sleep in the large old trees. The trees mentioned were Mohluludi, Marula, Molope, Sycamore and Acacia. No specific tree were identified and in general it was said that small trees may be demolished, but large ones not.

The following is recommended:

- No sites of heritage significance were found in any of the surveyed area. Therefore the proposed development may continue.

- The developer needs to take note of the other sites discussed. Apart from the graves, none is regarded as being of a high cultural significance. Since it is outside of the area to be developed it should be left *in situ*. No specific measures are needed.

- The grave sites (site OWR007 and sites 1-4) are of high importance. There are two possibilities of handling this.

    - 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 is recommended since it is outside of the area of direct impact.

    - However the mine should ensure that no direct impact is experience (e.g. caving in of the soil). Should any danger be posed to the graves, option 2 will have to be taken. This is to exhume the mortal remains and then to have it relocated. For this a detailed motivation will have to be written and applied for to SAHRA. If approved, the 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. This procedure is quite lengthy and involves social consultation.

- It is always is difficult when confronted with issues of a social, even supernatural matter. This is the case with the trees identified. Community members indicated that only the large ones are important as it is believed that the ancestors sleep in these. They indicated that the smaller ones may be demolished. However, no specific important trees were indicated and not many large ones were seen in the surveyed area. It is recommended that a fauna specialist identify any large trees of the species indicated inside of the area to be developed and that the community be consulted on these.

- After implementation of the mitigation measures recommended, the proposed development may continue.

- It should be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts is always a distinct possibility. Care should therefore be taken when development commences that if any of these are discovered, a qualified archaeologist be called in to investigate the occurrence.

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1. INTRODUCTION

Archaetnos cc was requested by SRK Consulting to conduct a cultural heritage impact assessment (HIA) for the proposed Anglo American Platinum and African Rainbow Minerals Modikwa Platinum Mine South Shaft 2 Project. This is close to the town of Burgersfort and Steelpoort in the Limpopo Province (Figure 1-5).

The project includes three areas on the farms Onverwacht 292 KT and Winterveld 293 KT and entails the following development:

- A waste rock dump for the storage of waste rock generated at the South 2 Shaft (currently it is being trucked to the waste rock dump associated with the South 1 Shaft for storage and used for the construction of the South 2 Shaft terrace);
- An ore (reef) material transfer stockpile storage facility at the existing terrace area;
- A waste rock transfer storage facility at the existing terrace area;
- An ore silo and overland ore conveyor (to be situated closest to Onverwacht Hill), for the transportation of ore from South 2 Shaft to South 1 Shaft via the Onverwacht Hill for further processing;
- An additional ventilation shaft for the management of underground ventilation (on the farm Winterveld 293 KT); and
- Sewage sludge drying beds associated with the sewage treatment plant for the treatment of sewage during the further operational phase of the South 2 South project.
- Conservancy tank for the handling of sewage during the construction to operational phase
-
- The above proposed key infrastructure will have secondary infrastructure and activities associated with it. These include:
- River diversions associated with the waste rock dump;
- River crossings associated with the conveyor ;
- Access roads leading to the waste rock dump and ventilation shaft;
- Overland ore conveyor service road; and
- Drinking (potable) water purification plant to replace the current purification system at South 2 Shaft.

The client indicated the area to be surveyed. The field survey was confined to this area and was done via off-road vehicle and on foot.

Figure 1 Location of the towns of Burgersfort and Steelpoort as well as the surveyed site in the Limpopo Province. North reference is to the top.

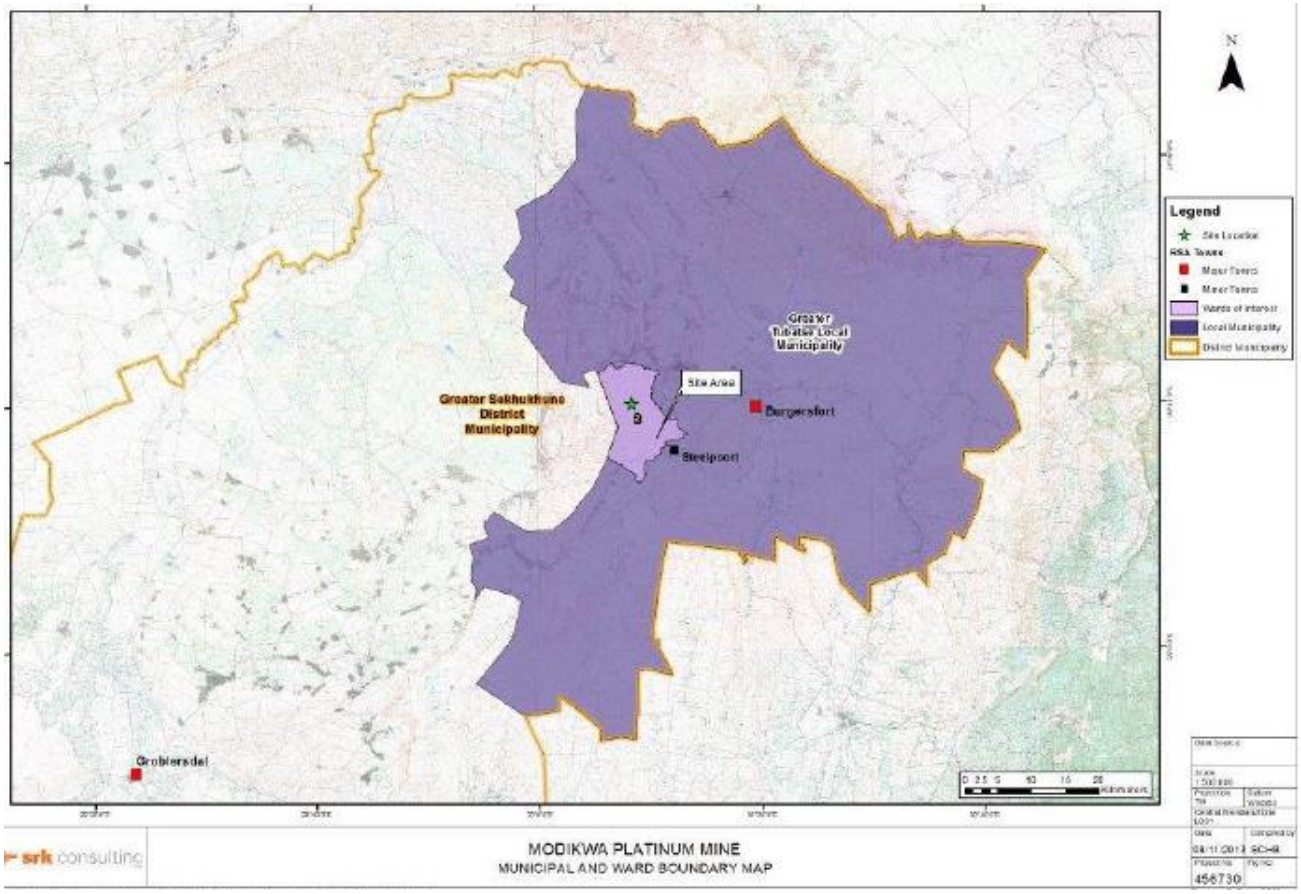

Figure 2 Location of the site in relation to Burgersfortl. North reference is to the top.

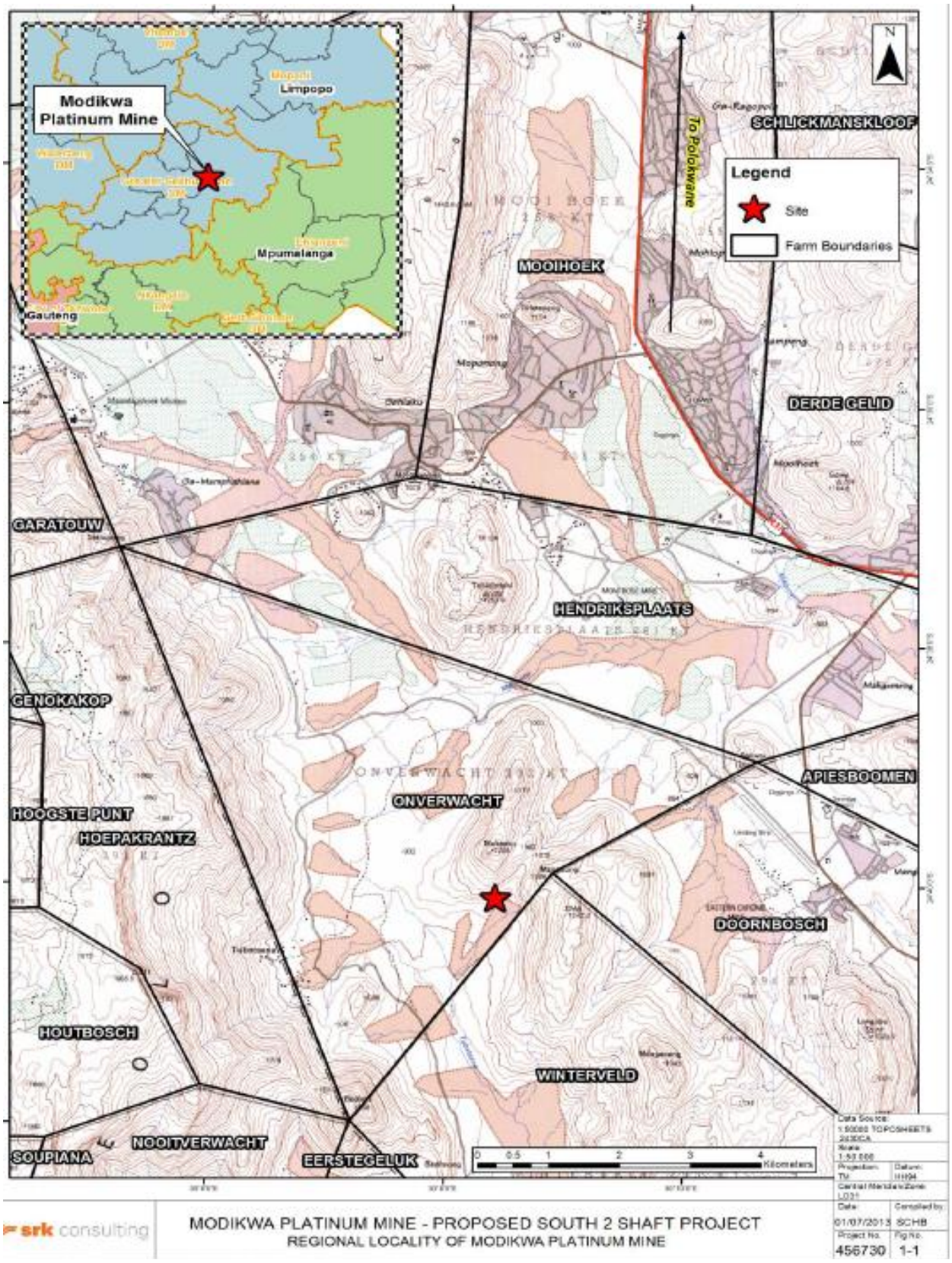

Figure 3 Map of the project area.

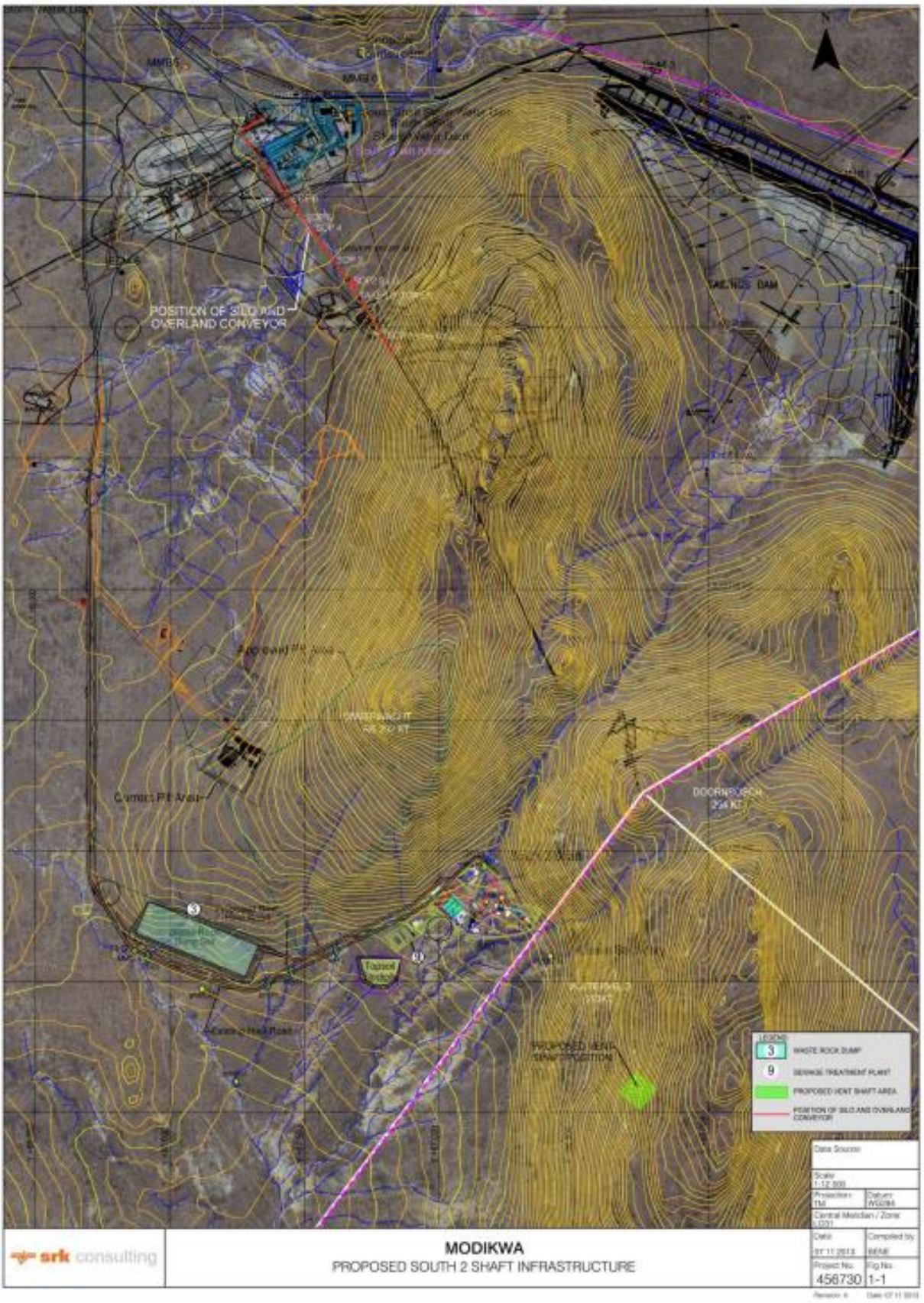

Figure 4 Map indicating the proposed development.

Figure 5 Existing South Shaft terrace area.

2. TERMS OF REFERENCE

The Terms of Reference for the survey were to:

1. Identify as much as possible objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the property (see Appendix A).

2. Study background information on the area to be developed.

3. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value (see Appendix B).

4. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.

5. Recommend suitable mitigation measures to minimize possible negative impacts on the cultural resources by the proposed development.

6. 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 case there were certain areas where the vegetation cover was very dense which had a negative effect on archaeological visibility.

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
j. 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 paleontological importance
g. Graves and burial grounds
h. Sites of significance relating to the history of slavery
i. Movable objects (e.g. archaeological, paleontological, 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 000m^2 or involve three or more existing erven or subdivisions thereof
d. Re-zoning of a site exceeding 10 000 m^2
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 paleontological site or any meteorite;
b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or paleontological 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 paleontological material or object, or any meteorite; or
d. Bring onto or use at an archaeological or paleontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and paleontological 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.

All graves older than 60 years are called heritage graves and should be handled by an archaeologist. This includes archaeological graves, which are older than 100 years. Unidentified/unknown graves (which refers to date of death) 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 Excavations** (**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 **Human Tissues Act** (**Act 65 of 1983 as amended**).

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 be 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 includes 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 it 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 affected 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 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. One regularly looks a bit wider than the demarcated area, as the surrounding context needs to be taken into consideration.

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 survey was undertaken by doing a physical survey via off-road vehicle and on foot and covered as much as possible of the area to be studied (Figure 6-7).

Certain factors, such as accessibility, density of vegetation, etc. may however influence the coverage. The length of the conveyor belt route is approximately 5 km and the size of the size of the area that was surveyed is less than 1 Ha at the ventilation shaft position (but against a high steep slope) and that of the terrace area and waste rock dump approximately 20 Ha. Two site visits were done - the first survey took twelve hours to complete and the second eight.

6.3 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.

6.4 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 GPS. The information was added to the description in order to facilitate the identification of each locality.

6.5 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.

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

Figure 7 GPS track of the surveyed area[2] (first site visit). North reference is to the top.

Figure 8 GPS track of the surveyed area[3] (second site visit). North reference is to the top.

[2] Two archaeologists, in radio contact, did the survey, but only one GPS unit was used.
[3] Two archaeologists, in radio contact, did the survey, but only one GPS unit was used.

7. DESCRIPTION OF THE AREA

Although the project development is divided into three areas, the general environmental characteristics are more or less the same. The area where the proposed ventilation shaft (on the farm Winterveld 293 KT) will be developed is almost on top of a very steep mountain. The area however has been completely disturbed by previous activities on site (Figure 9).

The proposed Waste Rock Dump (WRD) area is found in an area with a gentler slope and even surfaces. The general view of vegetation in the WRD area shows medium sized grass and plants with a dense under footing (Figure 10). The area is quite rocky with here and there signs of disturbance by previous mining and infrastructure developments.

The route of the conveyor belt goes through similar environmental conditions. However it mostly follows existing roads and infrastructure, therefore going through already disturbed areas. This includes roads, pipelines, power lines and the plant area (Figure 11-15).

The topography of the broader geographical area wherein the surveyed area is located consists of high mountains with steep slopes. A number of rivers cut through these creating some valleys including flat level surfaces. The latter is mostly where the infrastructure will be placed.

Figure 9 The area where the ventilation shaft will be placed.

Figure 10 General view of the WRD area.

Figure 11 View along road where the conveyor belt will be placed.

Figure 12 General view along the route for the conveyor belt.

Figure 13 View at plant area, where the conveyor belt will run through.

Figure 14 Another view along the conveyor belt route.

Figure 15 View where the conveyor belt will cross a river.

8. HISTORICAL CONTEXT

No sites of cultural heritage significance were located in the surveyed area. It is however known from previous studies done in the surrounding environment that

many such sites do exist. In order to place this within context and to understand possible finds that could be unearthed during construction activities, it is necessary to give a background regarding the different phases of human history in the 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
Late Stone Age (LSA) 40 000 years ago – 1850 - A.D.

No Stone Age sites are indicated in a historical atlas of this area. However one needs to take note that this may only indicate a lack of research in the area. The closest Stone Age sites indicated in the atlas is Middle and Late Stone Age sites close to Ohrigstad (Bergh 1999: 5).

Stone Age material was however found during various surveys in and around Burgersfort and Steelpoort (Archaetnos database; Pistorius 2006: 19). This includes rock paintings at the Two Rivers Mine (Archaetnos database). During a survey done on neighboring farms, some Middle Stone Age material was also recorded (Stegmann & Roodt (2012a & 2012b). Pistorius (2006: 27) also identified various stone tools, out of context, close to the South Shaft.

The environment definitely would be supportive to Stone Age activities. The nearby mountain gives natural shelter and material to make stone tools from. The streams would lure animals to the area and these people would therefore have hunted here. It however needs to be mentioned that the natural rock includes calcrete and other soft stones, meaning that that there is very limited resources from which to make stone tools. This would most likely be limited to the mountain tops. One should therefore be on the lookout for stone tools during construction work on the site.

Some stone tools were indeed identified during the survey (Figure 16-17). This was limited to chance finds, especially in the erosion dongas and the WRD area.

Figure 16 MSA hand axe from the WRD area.

Figure 17 MSA tools found in the erosion dongas.

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 artifacts (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.
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.
Late Iron Age (LIA) 1300 – 1840 A.D.

The nearest Early Iron Age site to the surveyed area is the sites at Lydenburg and Klingbeil to the south-east of the surveyed area. A large number of Late Iron Age sites have previously been identified in an area roughly stretching between Lydenburg, Nelspruit and Badplaas (Bergh 1999: 6-7). Other sites have also been identified by Archaetnos during surveys in the area (Archaetnos database). Stegmann & Roodt (2012a) has also found Iron Age remains on nearby farms.

Closer and within the mine boundary of the project area, Van Schalkwyk (2004: 12-14) has found a number of sites with iron smelting furnaces, during a previous heritage survey. Such sites are reasonably unique and therefore important. These were all on the farm Onverwacht. He has also identified other Iron Age remains, such as lower grinding stones and stone walling (Van Schalkwyk 2004: 13-14). Pistorius (2005) has documented a Late Iron Age site on the farm Onverwacht.

Therefore such sites may also be found higher up in the mountains. The environment of the surveyed area is suitable for Iron Age people. The mountain would give shelter and building material and the valley good grazing and ample water sources. One would therefore expect that Iron Age people may have utilized the area. The white settlers moved into this environment later on for the same reason.

In the WRD area a lower grinding stone was found in isolation. Loose pieces of pottery were also found in the erosion dongas and in the WRD area (Figure 18). Only one decorated shard was found. Although one cannot base a ceramic analysis on only one shard, it seems as if this could belong to the Garonga facies of the Urewe tradition which dates to 750 -900 AD (Huffman 1997: 130-133). This would place it within the EIA and would make the site very important should it be located.

Figure 18 Decorated pottery found during the survey.

8.3 Historical Age

The historical age started with the first recorded oral histories in the area. It includes the moving into the area of people that were able to read and write. This era is sometimes called 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 and because less time has passed, much more cultural heritage resources from this era have been left on the landscape. It 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 needed in order to determine whether these indeed have cultural significance. Factors to be considered include aesthetic, scientific, cultural and religious value of such resources.

It is known that one of the early trade routes passed along the Steelpoort River (Bergh 1999: 9). At the beginning of the 19th century the area was inhabited by the Koni, Tau, Pedi and Roka who are all of Sotho origin. During the Difaquane, in ca.1822, the Ndebele of Mzilikazi entered this area from the south. In 1825 a Zulu group under Zwide attacked the Ndebele here. As a result these other groups fled to the north. They returned later on (Bergh 1999: 10-11).

None of the early travelers who visited the old Transvaal visited this area. In 1836 the Voortrekker groups of Tregardt and Van Rensburg passed to the west of the Steelpoort River (Bergh 1999: 13-14). The land around Lydenburg, including the

Steelpoort River Valley was traded from the Swazi in 1846 and the first white settlers then started farming here (Bergh 1999: 16, 130-132).

Historical structures, such as farm houses and infrastructure may therefore be found in the area. Such buildings have been identified on neighboring farms during past surveys (Archaetnos database). Historical beacons, such as Thaba Mosego in the Leole Mountain Range. The Maandagshoek Mission Station and the Tsatse village of the Pedi, is located in this part of Sekhukhuneland (Pistorius 2006: 23-24). Stegmann & Roodt (2012a & 2012b) also have identified settlement remains in the vicinity. Signs of the earliest historical mining activities were also identified on adjacent farms (Archaetnos database; Stegmann & Roodt 2012a).

During a previous heritage survey in the area, Van Schalkwyk (2006: 13) identified old farm workers dwellings dating to the mid 1900's. This was on the farm Onverwacht. Pistorius (2005) has documented some early historical mining sites on the farm Onverwacht. During a survey in 2006 he also identified graves and a large number of homesteads or remains thereof from the recent past (Pistorius 2006: 28). Archaetnos has also identified many graves on surrounding farms during previous heritage surveys (Archaetnos database).

Many graves from this period are also known from other nearby farms (Archaetnos database; Stegmann & Roodt 2012a & 2012b). Pistorius (2005) has also documented a grave site on the farm Onverwacht.

Some of the sites indicated above were visited during the survey. It consists of a number of clay and stone walled structures, graves, middens etc. (Figure 19-22). These sites are numbered OWR008-OWR 012. Five additional sites were identified. The first of these consist of a clay walled structure (Figure 23). The other four are grave sites (Figure 24-27). It however is outside of the area to be developed. It is however believed that the co-ordinate given for site OWR007 within the WRD area is wrong and that the site is in-between these other sites. Some trees (Figure 28-32), which are also believed to be of cultural importance, were identified by community members (see Discussion). It is indicated that these are important as it is believed that the ancestors sleep in the old trees. The trees mentioned were Mohluludi, Marula, Molope, Sycamore and Acacia.

Figure 19 Clay walled structure, most likely site no.: OWR011.

Figure 20 Clay walled structures, most likely site no.: OWR012.

Figure 21 Stone walling, also most likely at site OWR012.

Figure 22 Artefacts found at a midden, most likely at site OWR 009. It is a decorated pottery shard and the metal part of a Remington 12 bore shotgun.

Figure 23 Clay walls at new site identified.

Figure 24 Grave site 1: it consist of three graves. Two are stone packed and one has a granite headstone and border. The latter is the only one with information. The grave belongs to Makokane Kgekeswane Molapo. No dates are indicated. Community members indicated that the other graves also are of the Molapo family, but they also did not know the dates of death.

Figure 25 Grave site 2: community members indicated that there are four graves, but only two stones could be seen underneath a fallen tree. No information is available and community members could also not provide any.

Figure 26 Grave site 3: it consist of one grave under a large sycamore tree. Only a few stones were visible. No information was available and community members also had nothing to add.

Figure 27 Grave site 4: it consist of three stone packed graves. No information was available, but community members indicated that the graves are of the Manana family. They did not know the dates of death.

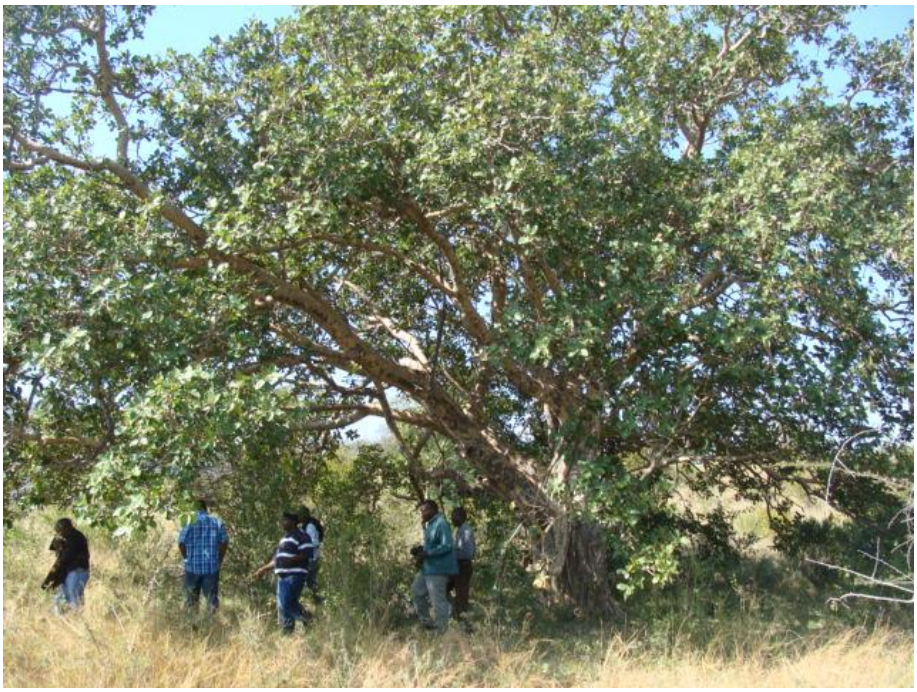

Figure 28 Large sycamore tree under which graves were identified.

Figure 29The Mohluludi tree.

Figure 30 Leaves of the Mohlululi tree.

Figure 31 The Molope tree.

Figure 32 Leaves of the Molope tree.

9. DISCUSSION

As indicated, no sites of cultural importance were identified inside of the area to be developed, during the survey. However, a number of sites found during previous surveys were visited. These need to be discussed briefly.

Sites OWR005, OWR006 and WR008-OWR012 are all of a recent historical origin. It consists of residential structures made from clay or stone.

- OWR005 – 24° 40' 07" S 30° 07' 42" E – one MSA tool was found here during the current survey
- OWR006 – 24° 40' 08" S 30° 07' 54" E – Nothing was found during the current survey
- OWR008 – 24° 40' 43" S 30° 08' 32" E
- OWR009 – 24° 40' 57" S 30° 08' 24" E
- OWR010 – 24° 41' 04" S 30° 08' 21" E
- OWR011 – 24° 41' 13" S 30° 08' 22" E
- OWR012 – 24° 41' 22" S 30° 08' 24" E

Site OWR007 is graves. However nothing was found here during the current survey. The GPS coordinates for this site given in the previous report are:

24° 40' 18" S 30° 07' 57" E, but these cannot be correct as the site could not be found again.

The site is described as “consisting of two graves about 10 m from the road. One was a cemented grave marked "Langwane Polwane" who died in 1962”. It however is further indicated that these graves could most probably be connected to some of the abandoned homesteads in the area. This clearly indicates that it cannot be located where indicated in the WRD area, but should be together with the other sites (OWR008-OWR012) along the road. The area was covered with sisal plants and there could possibly be more graves.

The correct GPS coordinates for Sitr OWR007 are: 24˚ 41’ 13” S 30˚ 08’ 22” E.

The new site identified (outside of the area to be developed) consists of clay walls similar to those at the sites discussed above. The GPS coordinates are: 24˚ 40’ 25” S 30˚ 07’ 47” E.

Four grave sites were also identified, also outside of the area to be developed. These are:

Site 1 – 24˚ 40’ 03.4S” 30˚ 07’ 49.76” E.
Site 2 - 24˚ 40’ 14.69” S 30˚ 07’ 40.87 E.
Site 3 - 24˚ 40’ 26.18 S 30˚ 07’ 43.77” E.
Site 4 - 24˚ 39’ 46.79” S 30˚ 07’ 57.80” E.

Site 1 consists of three graves. Two are stone packed and one has a granite headstone and border. The latter is the only one with information. The grave belongs to Makokane Kgekeswane Molapo. No dates are indicated. Community members indicated that the other graves also are of the Molapo family, but they also did not know the dates of death.

At site 2 community members indicated that there are four graves, but only two stones could be seen underneath a fallen tree. No information is available and community members could also not provide any.

Site 3 consists of one grave under a large sycamore tree. Only a few stones were visible. No information was available and community members also had nothing to add.

Site 4 consists of three stone packed graves. No information was available, but community members indicated that the graves are of the Manana family. They did not know the dates of death.

The trees identified, which are believed to be of cultural importance, were identified by community members of the Matimatjitji community. They indicated that these are important as it is believed that the ancestors sleep in the large old trees. The trees mentioned were Mohluludi, Marula, Molope, Sycamore and Acacia. No specific tree

were identified and in general it was said that small trees may be demolished, but large ones not. Some of these were not shown to the specialists by the community, but only mentioned.

10. CONCLUSION AND RECOMMENDATIONS

The survey of the indicated area was completed successfully. The sites discussed above are indicated in Figure 33. Other heritage sites identified during previous surveys were not discussed or visited since they are too far from the current development to be impacted on. All these sites are however indicated in Figure 34.

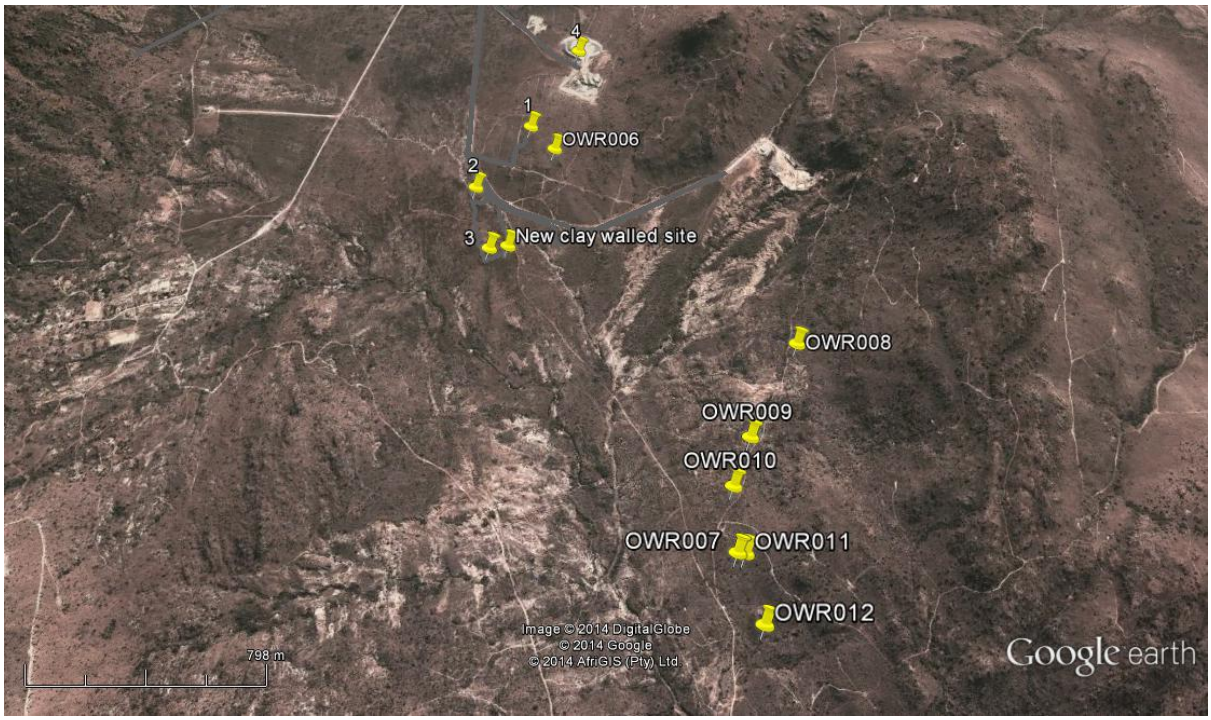

Figure 33 Google image of the sites discussed in this report.

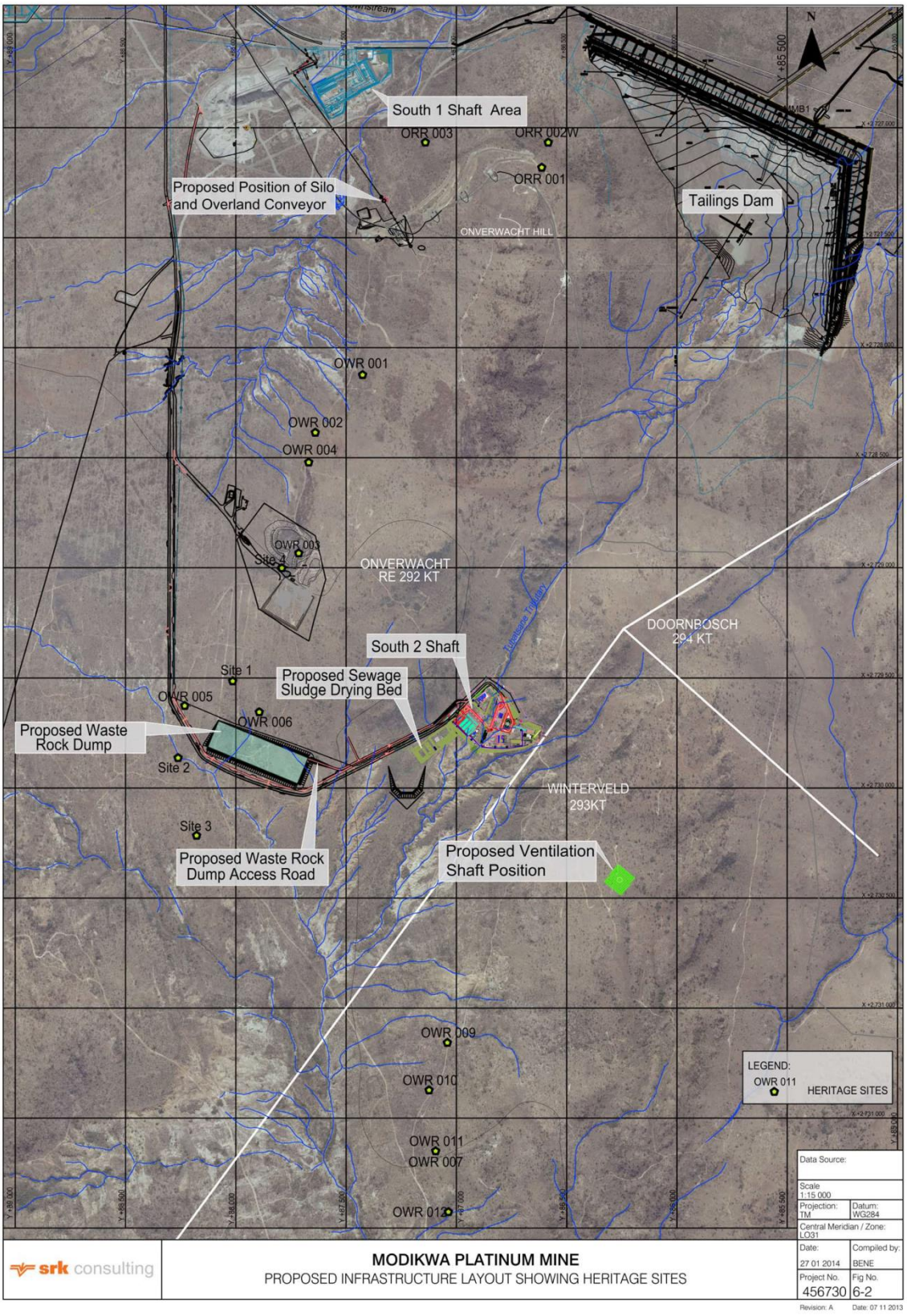

Figure 34 Map of heritage sites, associated with South 2 Shaft, identified during previous surveys.

The following is recommended:

- No sites of heritage significance were found in any of the surveyed areas (this include the new sites identified). Therefore the proposed development may continue.

- The developer needs to take note of the other sites discussed. Apart from the graves, none is regarded as being of a high cultural significance. Since it is outside of the area to be developed it should be left *in situ*. No specific measures are needed.

- The grave sites (site OWR007, and site 1-4) are of high importance. There are two possibilities of handling this.

    - 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 is recommended since it is outside of the area of direct impact.

    - However the mine should ensure that no direct impact is experience (e.g. caving in of the soil). Should any danger be posed to the graves, option 2 will have to be taken. This is to exhume the mortal remains and then to have it relocated. For this a detailed motivation will have to be written and applied for to SAHRA. If approved, the 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. This procedure is quite lengthy and involves social consultation.

- It is always is difficult when confronted with issues of a social, even supernatural matter. This is the case with the trees identified. Community members indicated that only the large ones are important as it is believed that the ancestors sleep in these. They indicated that the smaller ones may be demolished. However, no specific important trees were indicated and not many large ones were seen in the surveyed area. It is recommended that a fauna specialist identify any large trees of the species indicated inside of the area to be developed and that the community be consulted on these.

- After implementation of the mitigation measures recommended, the proposed development may continue.

- It should be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts is always a distinct possibility. Care should therefore be taken when development commences that if any of these are discovered, a qualified archaeologist be called in to investigate the occurrence.

11. REFERENCES

Archaetnos' database.

Bergh, J.S. (red.). 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.

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

International Finance Corporation. 2012. **Overview of performance standards on Environmental and Social Sustainability. Performance Standard 8, Cultural Heritage.** World Bank Group.

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

Matimatjitji Community members, 2014.05.14. Personal communication.

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.

Pistorius, J.C.C. 2005. **Results of a Phase II Heritage Impact Assessment study: An investigation of Late Iron Age (including initiation cairns) and mining heritage remains on the farm Onverwacht 292KT in the Mpumalanga and Limpopo Provinces of South Africa**. (Unpublished report, Pretoria).

Pistorius, J.C.C. 2006. **A Phase I Heritage Impact Assessment (HIA) study for Modikwa Platinum's South Shaft 3 Project Area in Steelpoort in the Limpopo and Mpumalanga Provinces of South Africa**. (Unpublished report, Pretoria).

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

Republic of South Africa. 1983. **Human Tissue Act** (Act 65 of 1983). 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.

Stegmann, L. & Roodt, F.E. 2012a (April). **Phase 1 Heritage Impact Assessment report Two Rivers Platinum Mine, Limpopo**. (Unpublished report, SHASA Heritage Consultants, Polokwane).

Stegmann, L. & Roodt, F.E. 2012b (June). **Phase 1 Heritage Impact Assessment report Two Rivers Platinum Mine, Limpopo**. (Unpublished report, SHASA Heritage Consultants, Polokwane).

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.

Van Schalkwyk, J.A., 2004. **Heritage Impact Assessment on a section of the farm Onverwacht 292 KT, Lydenburg District, Mpumalanga Province**. (Unpublished report, National Cultural History Museum, Sunnyside).

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:

Cultural significance:

- Low — A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.

- 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.

- High — Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as having high importance. Also any important object found within a specific context.

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:

ii. National Grade I significance — should be managed as part of the national estate
iii. Provincial Grade II significance — should be managed as part of the provincial estate
iv. Local Grade IIIA — should be included in the heritage register and not be mitigated (high significance)
v. Local Grade IIIB — should be included in the heritage register and may be mitigated (high/ medium significance)
vi. General protection A (IV A) — site should be mitigated before destruction (high/ medium significance)
vii. General protection B (IV B) — site should be recorded before destruction (medium significance)
viii. General protection C (IV C) — phase 1 is seen as sufficient recording and it may be demolished (low significance)

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.