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**REPORT ON A PHASE 1 HERITAGE IMPACT ASSESSMENT
FOR THE SEFATENG CHROME MINE PROJECT
60KM NORTH-WEST OF BURGERSFORT, SEKHUKHUNE DISTRICT
MUNICIPALITY**

For:

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REPORT: APAC018/75

by:

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October 2018

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A handwritten signature in black ink, appearing to be 'A. Pelser', written in a cursive style.

SUMMARY

APelser Archaeological Consulting (APAC) was appointed by Red Kite Environmental Solutions (Pty) Ltd to undertake a Phase 1 HIA for the Sefateng Chrome Mine Project (section located on Zwartkoppes 413KS), Sekhukhune District Municipality, Limpopo Province. The study area is located approximately 60km north-west of Burgersfort. Underground mining operations, to be accessed from existing mining shafts, are proposed.

A number of known cultural heritage sites (archaeological and/or historical) exist in the larger geographical area within which the study area falls, as well as in the Sefateng Chrome Mine area (Zwartkoppies and Witkop sections). Previous work in the study area recorded a number of cultural heritage (archaeological and historical) sites here. No sites were identified in the study area focused on in the October 2018 assessment. The report will discuss the results of the desktop study and field assessment and provide recommendations on the way forward at the end of the document.

From a Cultural Heritage point of view the proposed Mining operations and related actions can continue, taking into consideration the mitigation measures proposed at the end of the report.

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1. INTRODUCTION

APelser Archaeological Consulting (APAC) was appointed by Red Kite Environmental Solutions (Pty) Ltd to undertake a Phase 1 HIA for the Sefateng Chrome Mine Project (section located on Zwartkoppes 413KS), Sekhukhune District Municipality, Limpopo Province. The study area is located approximately 60km north-west of Burgersfort. Underground mining operations, to be accessed from existing mining shafts, are proposed.

A number of known cultural heritage sites (archaeological and/or historical) exist in the larger geographical area within which the study area falls, as well as in the Sefateng Chrome Mine area (Zwartkoppies and Witkop sections). Previous work in the study area recorded a number of cultural heritage (archaeological and historical) sites here. No sites were identified in the study area focused on in the October 2018 assessment.

The client indicated the location and boundaries of the study area, and the assessment focused on this. Due to community issues, as well as extensive illegal mining taking place, the specialist team was accompanied to the study area by a staff member of Sefateng and security members of Sefateng during the fieldwork. This hampered movement to some degree, while the difficult terrain characterizing the study area (steep and hilly/mountain terrain) also made access problematic.

2. TERMS OF REFERENCE

The Terms of Reference for the study was to:

- 1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the portion of land that will be impacted upon by the proposed development;*
- 2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;*
- 3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;*
- 4. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;*
- 5. Review applicable legislative requirements;*

3. 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).

3.1 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 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. Sites of 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 (AIA) only looks at archaeological resources. 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.

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 to) 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)**.

3.2 The National Environmental Management Act

This 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 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.

4. METHODOLOGY

4.1 Survey of literature

A survey of available literature was undertaken in order to place the development area in an archaeological and historical context. The sources utilized in this regard are indicated in the bibliography.

4.2 Field survey

The field assessment section of the study was conducted according to generally accepted HIA practices and aimed at locating all possible objects, sites and features of heritage significance in the area of the proposed development. The location/position of all sites, features and objects was determined by means of a Global Positioning System (GPS), while detailed photographs were also taken where possible.

4.3 Oral histories

People from local communities are sometimes 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.

4.4 Documentation

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

5. DESCRIPTION OF THE AREA

The study area (Sefateng Chrome Mine) is located around 60km north-west of Burgersfort in the Sekhukhune District Municipality of the Limpopo Province. Sefateng Chrome Mine consists of two sections (Waterkop & Zwartkoppies) located on the farms Waterkop 113KT & Zwartkoppies 413KS. The October 2018 assessment focused on new mining areas in the Zwartkoppies section.

The topography of the study area is mostly steep hilly/mountaineous area. It forms part of the Leolo Mountain Range. Surrounding areas (around the foothills) have been transformed through past agricultural activities, as well as informal and formal settlements and extensive recent (existing) and older mining activities. The steep slopes of the mountain/hilly area would have made human settlement here very difficult. If any sites do exist on top of the mountain the new underground mining activities at Sefateng Chrome Mine is also unlikely to negatively impact on it.

The layout/location of new mining areas (provided by the client and evident on Google Earth) shows that the largest portion of the areas that had to be assessed is located in already existing mining zones and an assessment of these locations were therefore not undertaken. Only areas where no mining had taken place and that were seen as somewhat pristine and unchanged were focused on. Besides the steep slopes and difficult terrain that had to be traversed during the assessment, vegetation was also fairly dense in sections. Visibility was however relatively good. Other limitations included large-scale illegal mining activities close and in some of the areas, and for safety and security reasons these sections were not accessed as well.

No sites, features or material of any cultural heritage (archaeological and/or recent historical) origin or significance were identified during the assessment however. The results of the physical assessment and the desktop study will be presented in the next section.

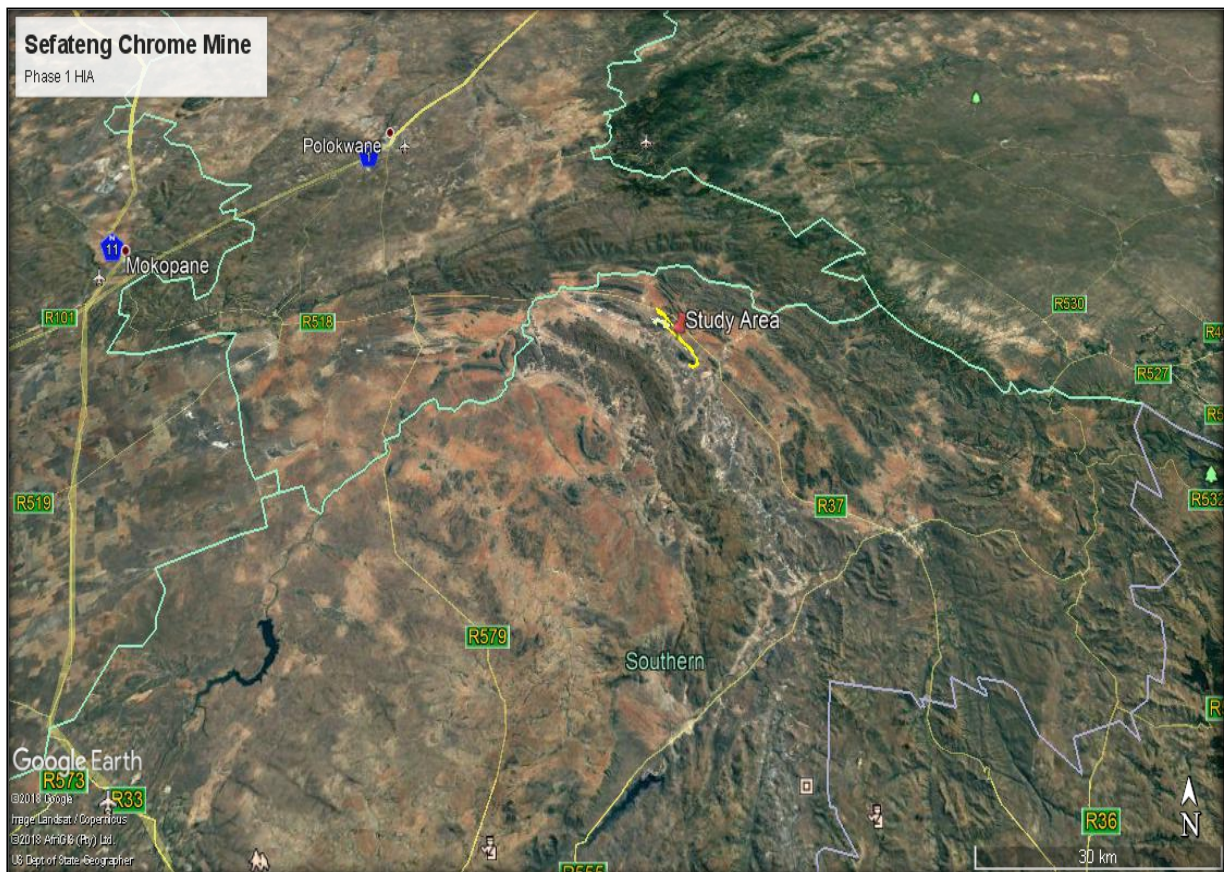


Fig.1: General location of study area (Google Earth 2018).

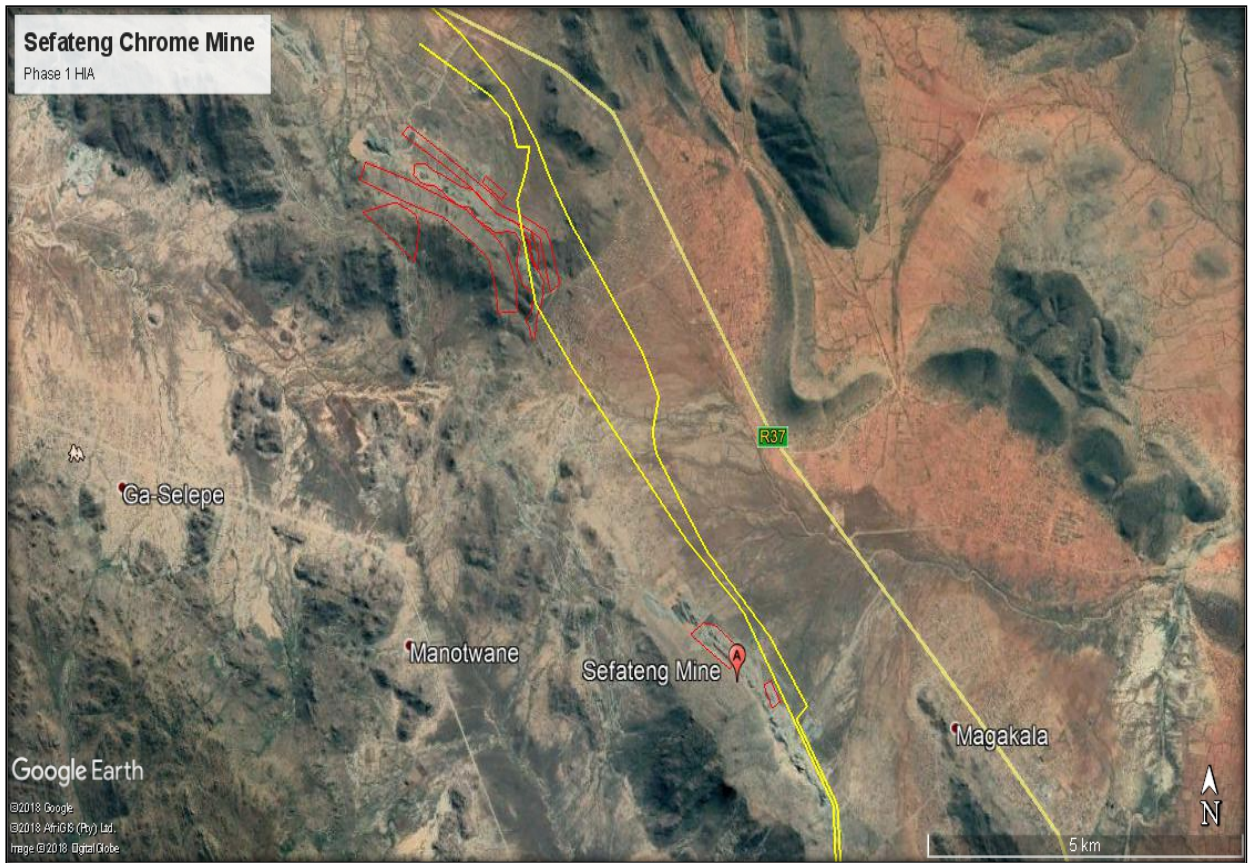


Fig.2: Closer view of study area location and areas that had to be assessed (Google Earth 2018).

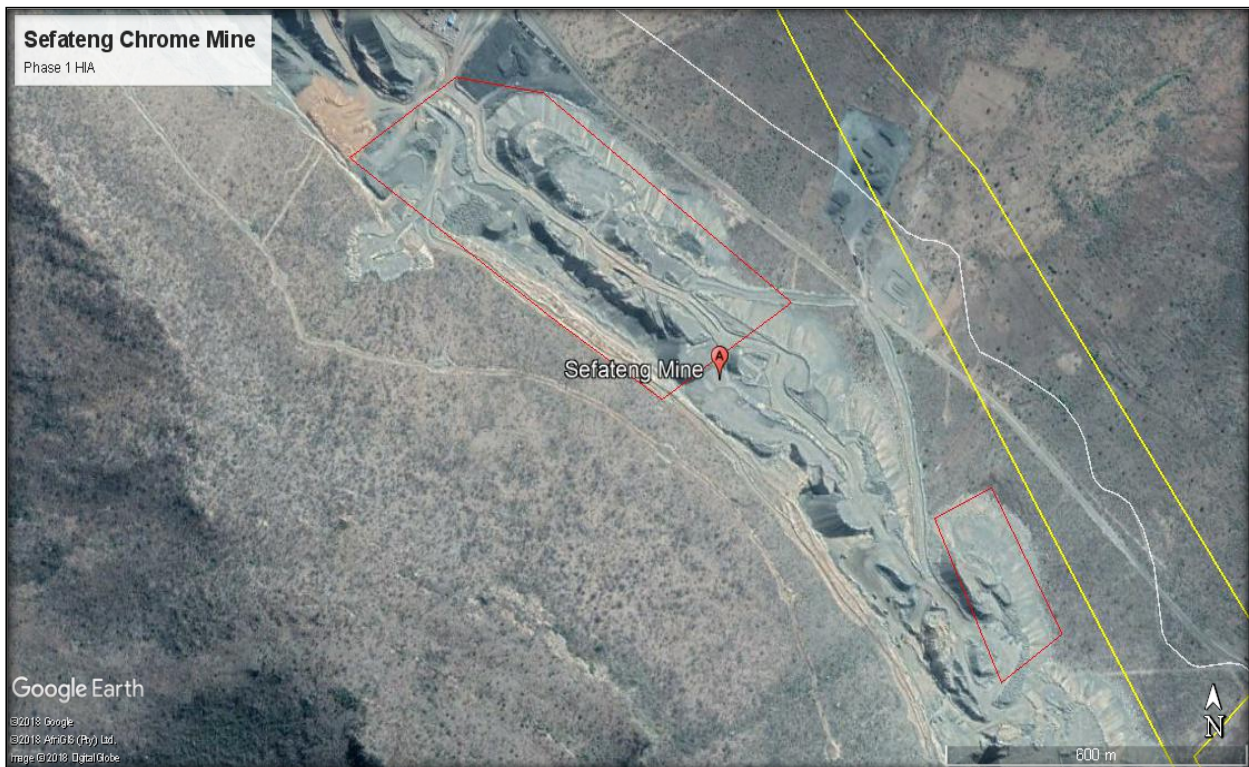


Fig.3: Closer view of some of the areas to be assessed. It is clear that they are in extensively mined areas.

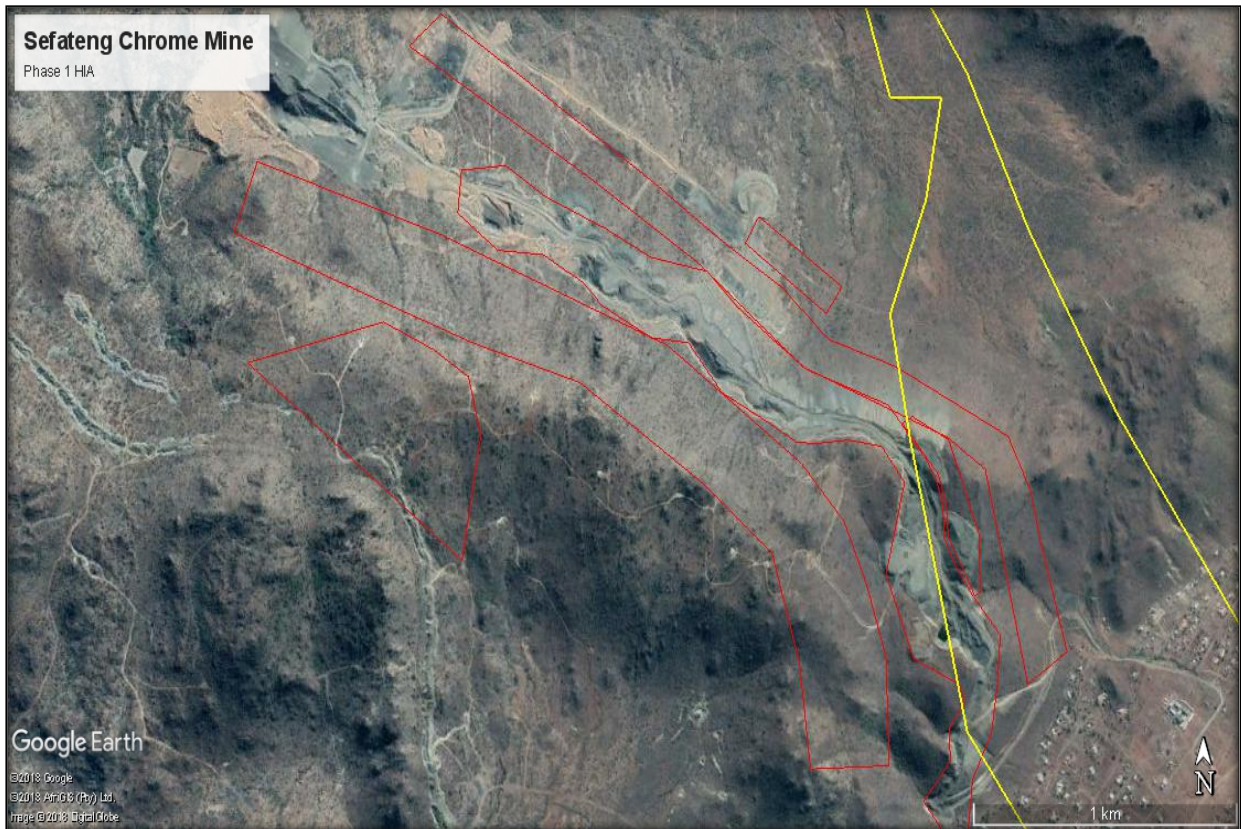


Fig.4: Closer view of other areas that had to be assessed. Although the largest portions are in already mined areas, some sections are not and those were focused on during the fieldwork (Google Earth 2018).



Fig.5: View of a section of the study area. Note the steep slopes & hilly terrain.



Fig.6: View of current mining activities.



Fig.7: Another view of the mining impact on the area.



Fig.8: Further view of the existing mining's impact.



Fig.9: View of section of study area with illegal mining activities visible in close proximity.



Fig.10: A general view of the area from the top of the mountain. The current mining (stock pile & opencast) impact is clearly visible.



Fig.11: Another view showing the mining area and general landscape around it.

6. DISCUSSION

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools. In South Africa the Stone Age can be divided basically into three periods. It is however important to note that dates are relative and only provide a broad framework for interpretation. A basic sequence for the South African Stone Age (Lombard et.al 2012) is as follows:

Earlier Stone Age (ESA) up to 2 million – more than 200 000 years ago

Middle Stone Age (MSA) less than 300 000 – 20 000 years ago

Later Stone Age (LSA) 40 000 years ago – 2000 years ago

It should also be noted that these dates are not a neat fit because of variability and overlapping ages between sites (Lombard et.al 2012: 125).

Evidence of Stone Age material has been found in the surrounding areas during previous Heritage and Archaeological surveys by other specialists (specifically in the large donga systems in the area). These tools date to between the Early and Middle Stone Ages mainly (Pistorius 2008; Coetzee 2017).

A single Stone Age tool (MSA flake-tool) was identified in the study area during the October 2018 assessment. There might however be more of these tools (scattered and in single locations) in the areas assessed during the recent fieldwork, but this cannot be determined without a doubt.

The Iron Age is the name given to the period of human history when metal was mainly used to produce artifacts. In South Africa it can be divided in two separate phases (Bergh 1999: 96-98), namely:

Early Iron Age (EIA) 200 – 1000 A.D.

Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) indicates that a Middle Iron Age should be included. His dates, which are 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.

There are a number of known Iron Age sites in the larger area geographical area, identified and recorded during previous surveys (Roodt 2002 & 2003; Pistorius 2008; Karodia 2013; Coetzee 2017). These sites were located mostly around the foothills of the mountain range and hills in the area.

No Iron Age sites, features or material were found during the October 2018 assessment of the study areas.

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. The first European group to pass close by the area was that of Schoon in 1836, followed by the Voortrekkers from the 1840's onwards (Bergh 1999: 13-14).

A large number of archaeological/historical sites are located in the Tjate Valley (a few km's south of the study area). The Tjate Valley was declared a Provincial Heritage Site in 2007. A Phase 1 Heritage Impact Assessment was undertaken by Küsel (2008) on the Provincial Heritage site, followed by an assessment of an prospecting area on the farms Djate 249 KT, Fernkloof 539 KS and Quartzhill 542 KS. The area hosts two Royal Capitals of the Ba-Pedi people – the Sekhukhune and the Sekwati capitals. There are also Iron Age sites dating from

approximately AD 700, as well as potentially an ancient copper mine. The first Berlin Mission Station and school in Sekhukhune were built in the Tjate Valley. In 1879 the valley was the scene of the Sekhukhune War between the Ba-Pedi and the British. Numerous sites associated with the battle are still visible and the battle is well documented. Rock art exists on the northern border of the declared site. There are a number of sacred sites and 26 cemeteries.

Pistorius (2008) and Coetzee (2017) recorded a number of recent historical sites (including the remains of recent dwellings and cemeteries) in the area during previous surveys. Most of the graves and grave sites found during the earlier work has been exhumed and relocated from the Sefateng Chrome Mine area already.

No historical sites or features were identified in the study area during the October 2018 assessment.

Results of the October 2018 Fieldwork

The sections of Sefateng Chrome Mine that had to be assessed for cultural heritage (archaeological and/or historical) resources are dominated by hilly/steep slopes and mountain areas. Human settlement in the past here would have been hampered by the terrain, and earlier settlement and utilization of the area (as it today) would have focused around the gentle foothills and valleys in the area. These areas will not be impacted directly by the proposed mining. Large sections have also already been extensively mined in the recent past and were therefore not assessed during the current field survey.

The underground mining that will take place in the study area will also have limited impact on the surface area, with mining areas accessed through existing and new shafts. Mined material will be taken out of these areas and stockpiled at the existing Stock Pile area at Sefateng (Pers. Comm: Mr. J.Steyn 2018-10-26).

However, there is obviously always the possibility of unknown and invisible sites being present in the specific and larger area surrounding the mining operations. It is clear from earlier surveys in the area that there are both prehistoric archaeological remains (Stone Age & Iron Age), as well as recent historical (homestead remains and graves/cemeteries) present. If any are found during the mining development, an expert should be called in to investigate and recommend on the best way forward.

It should also be noted that although all efforts are made to cover a total area during any assessment and therefore to identify all possible sites or features of cultural (archaeological and/or historical) heritage origin and significance, that there is always the possibility of something being missed. This will include low stone-packed or unmarked graves. This aspect should be kept in mind when development work commences and if any sites (including graves) are identified then an expert should be called in to investigate and recommend on the best way forward. The hilly terrain made access difficult, while some sections were avoided for safety and security reasons due to extensive illegal mining activities in these areas. If any sites do/did exist in these sections the current activities would also have impacted to a large degree on any sites, features or material of an archaeological or recent historical nature and/or significance.

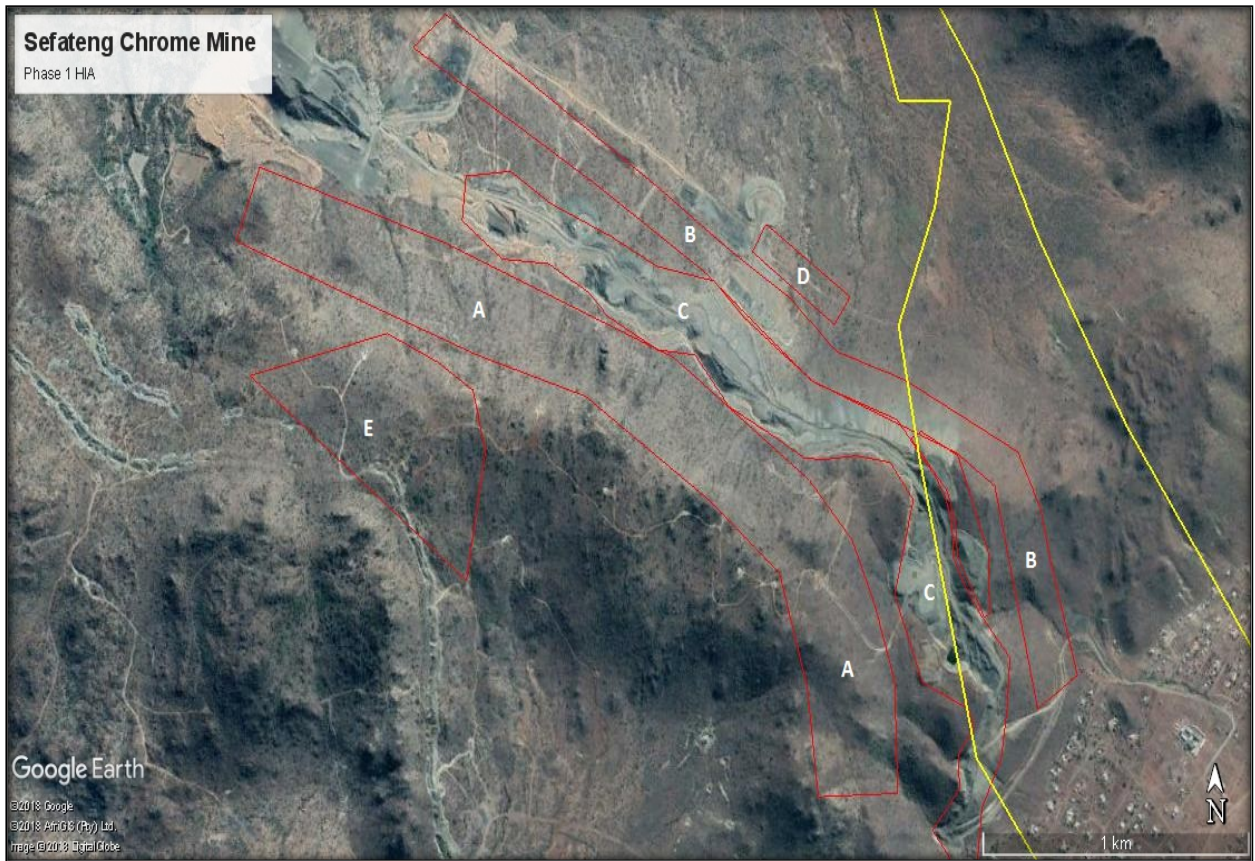


Fig.12: Aerial view of areas assessed (Numbered A – E) during October 2018 (Google Earth 2018).



Fig.13: A view of a section of the area between Area B & C.



Fig.14: A view of a section of Area B & C.



Fig.15: A view of section between Area B, C & D.



Fig.16: A view from Area D towards Area B, C & A.



Fig.17: A general view of Area D landscape.



**Fig.18: Another general view of Area D.
Note the stock pile area adjacent.**



Fig.19: Another view of Area D.



Fig.20: An MSA flake-tool (scraper) found in Area D.



Fig.21: A view of a section of Area A. This area is located above existing mining areas (B & C) and will be mined through underground mining methods.



Fig.22: A view of Area A with current mining below.



Fig.23: A view from a section of Area C towards Area B & D below.



Fig.24: A view from on top of the hill showing the steep slopes & and mining below. This is on the way to Area E.



Fig.25: A view from the top towards Area D. Area D is located to the east of the stock pile.



Fig.26: A view from roughly the center of Area E showing the illegal mining activities in the area.



Fig.27: A view of the Area E topography & landscape.



Fig.27: Another view of a section of Area E & the general landscape.



Fig.28: A view from Area E to the bottom.

7. CONCLUSIONS AND RECOMMENDATIONS

APelser Archaeological Consulting (APAC) was appointed by Red Kite Environmental Solutions (Pty) Ltd to undertake a Phase 1 HIA for the Sefateng Chrome Mine Project (section located on Zwartkoppes 413KS), Sekhukhune District Municipality, Limpopo Province. The study area is located approximately 60km north-west of Burgersfort. Underground mining operations, to be accessed from existing mining shafts, are proposed.

A number of known cultural heritage sites (archaeological and/or historical) exist in the larger geographical area within which the study area falls, as well as in the Sefateng Chrome Mine area (Zwartkoppes and Witkop sections). Previous work in the study area recorded a number of cultural heritage (archaeological and historical) sites here. No sites were identified in the study area focused on in the October 2018 assessment.

Due to community issues, as well as extensive illegal mining taking place, the specialist team was accompanied to the study area by a staff member of Sefateng and security members of Sefateng during the fieldwork. This hampered movement to some degree, while the difficult terrain characterizing the study area (steep and hilly/mountain terrain) also made access problematic.

The sections of Sefateng Chrome Mine that had to be assessed for cultural heritage (archaeological and/or historical) resources are dominated by hilly/steep slopes and mountain areas. Human settlement in the past here would have been hampered by the terrain, and earlier settlement and utilization of the area (as it today) would have focused around the gentle foothills and valleys in the area. These areas will not be impacted directly by the proposed mining. Large sections have also already been extensively mined in the recent past and were therefore not assessed during the current field survey.

It is evident from earlier surveys in the area that there are both prehistoric archaeological remains (Stone Age & Iron Age), as well as recent historical (homestead remains and graves/cemeteries) present. If any are found during the mining development, an expert should be called in to investigate and recommend on the best way forward.

Finally, it should be noted that although all efforts are made to locate, identify and record all possible cultural heritage sites and features (including archaeological remains) there is always a possibility that some might have been missed as a result of grass cover and other factors. The subterranean nature of these resources (including low stone-packed or unmarked graves) should also be taken into consideration. Should any previously unknown or invisible sites, features or material be uncovered during any development actions then an expert should be contacted to investigate and provide recommendations on the way forward.

From Cultural Heritage point of view the development should therefore be allowed to continue, taking cognizance of the above recommendations.

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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 of a 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:

- i. National Grade I significance: should be managed as part of the national estate
- ii. Provincial Grade II significance: should be managed as part of the provincial estate
- iii. Local Grade IIIA: should be included in the heritage register and not be mitigated (high significance)
- iv. Local Grade IIIB: should be included in the heritage register and may be mitigated (high/medium significance)
- v. General protection A (IV A): site should be mitigated before destruction (high/medium significance)
- vi. General protection B (IV B): site should be recorded before destruction (medium significance)
- vii. 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.