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# Archaeological Impact Assessment

## CHRONIMET UNDERGROUND MINE AND PROCESS PLANT, AMANDELBULT, LIMPOPO PROVINCE

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Prepared For

**TWP Environmental Services**

By



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**3 AUGUST 2009**

## KNOWLEDGEMENT OF RECEIPT

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I, Jaco van der Walt as duly authorised representative of Wits Heritage Contract Unit, University of the Witwatersrand, hereby confirm my independence as a specialist and declare that neither I nor the Heritage Contract Unit have any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which TWP was appointed as Environmental Assessment practitioner in terms of the National Environmental Management Act, 1998 (Act No.107 of 1998), other than fair remuneration for work performed on this project.



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# Executive summary

**Site name and location:** Chronimet underground mine on the farms Schildpadnest 385 KQ, Zwartkop 369 KQ and process plant on the farm Moddergat 389 KQ.

**1:50 000 Map:** 2527 CB

**EIA Consultant:** TWP Environmental Services

**Developer:** Chronimet Chrome Mining South Africa.

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**Date of Report:** 3 August 2009

**Findings of the Assessment:** Thirty seven sites of heritage significance were identified during the survey. The sites range from Stone Age, Iron Age, cemeteries, structures older than 60 years and historic/recent mining. Please refer to section 9 of this report for recommendations.

If these recommendations are adhered to there is from a Heritage point of view no reason why the development can not commence.

## General

If during construction any possible finds are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find. The possibility of the occurrence of informal or unmarked graves and archaeological sites can not be excluded. It is important to note that the scope of service was to survey only the development area and not the entire property.

**Disclaimer:** *Although all possible care is taken to identify sites of cultural importance during the investigation of study areas, it is always possible that hidden or sub-surface sites could be overlooked during the study. Wits Heritage Contracts Unit and its personnel will not be held liable for such oversights or for costs incurred as a result of such oversights.*

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- The results of the project;
- The technology described in any report
- Recommendations delivered to the Client.

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## **.1. INTRODUCTION**

Wits Heritage Contracts Unit was contracted by TWP Environmental Services to conduct an Archaeological Impact Assessment for the proposed Chronimet underground mine on the farms Schildpadnest 385 KQ and Zwartkop 369 KQ. As well as the process plant on the farm Moddergat 389 KQ. The report forms part of the EIA for the proposed project. The aim of the study is to identify heritage sites, document, and assess their importance within Local, Provincial and national context. To assess the impact of the proposed project on non renewable heritage resources and to submit appropriate recommendations with regard to the responsible cultural resources management measures that might be required to assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

The report outlines the approach and methodology utilized before and during the survey, which includes in Phase 1: Information collection from various sources and consultations; Phase 2: Physical surveying of the area on foot and by vehicle; and Phase 3: Reporting the outcome of the study.

During the survey, 37 sites of heritage significance were identified. General site conditions and features on sites were recorded by means of photos, GPS location, and site description. Possible impacts were identified and mitigation measures are proposed in the following report.

This report must also be submitted to SAHRA provincial office for peer review.

## 1.2 TERMS OF REFERENCE

### **Conduct brief desktop study to:**

Review available literature, previous heritage studies and other relevant information sources. Gather data and compile a background history of the area. Identify known and recorded archaeological and cultural sites; and determine whether the area is renowned for any cultural and heritage resources, such as Stone Age sites, Iron Age sites, informal graveyards or historical homesteads.

### **Conduct a field study to:**

Consult with locals residing in the study area to gather information on oral history, local history, possible informal graves, cemeteries, and other areas of cultural significance. Systematically survey the proposed project area to locate, identify record, photograph and describe sites of archaeological, historical or cultural interest; and record GPS points of significant areas identified. Determine the levels of significance of the various types of heritage resources recorded in the project area;

### **Reporting**

Identify the anticipated impacts, as well as cumulative impacts, of the operational units of the proposed project activity on the identified heritage resources for all 3 phases of the project, i.e. construction, operation and decommissioning phases. Consider alternatives should any significant sites be impacted adversely by the proposed project. Ensure that all requirements of the local South African Heritage Resources Agency (SAHRA) are met; and ensure that all studies and results are sufficient to comply with the relevant requirements of the Equator Principles, World Bank Standards and IFC Principles and Performance Standards and National legislation. To assist the developer in managing the discovered heritage resources in a responsible manner, in order to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

## 1.3 Nature of the development

The Department of Minerals and Energy has accepted the application for a Mining Right to Cronimet Chrome Mining SA (Pty) Ltd. The proposed mining is located on the farms Schildpadness 385 KQ, Zwartkop 369 KQ, Elandskuil 378 KQ, Roodedam 368 KQ, Middellaagte 382 KQ and the proposed process plant will be located on the farm Moddergat 389 KQ within the Thabazimbi Local Municipality, Limpopo Province, South Africa.

The proposed underground mine will extract the Lower Group (LG) seam. The proposed underground mine is expected to have a ROM of 90 ktpm and a LOM of 20 years. The ore will be conveyed to the proposed process plant routed along the strike of the mine.

The proposed process plant will be a Heavy-Medium Separator (HMS) type of plant with spirals separating the chrome and silicates. Further to this, there will be a Platinum Group Metals (PGM) extraction plant with flotation cells for the separation of minerals. The waste material from the process plant will be collected on mine residue stockpiles including a rock dump.

## 1.4 Description of study area

Forming part of the Bushveld Igneous Complex, the Thabazimbi area is known for its iron ore. Topographically, the area is generally flat open veld with stretches of more dense vegetation (*Dichrostachys* shrubs) and a number of large hills and outcrops. The areas on Schildpadsnest and Zwarkop is disturbed by mining activities while Moddergat is utilized as a game farm. The Rietspruit runs through the abovementioned properties and would have been the water source for communities living in the area in antiquity.

## 2. APPROACH AND METHODOLOGY

The aim of the study is to extensively cover all data available to compile a background history of the study area; this was accomplished by means of the following phases.

### 2.1 PHYSICAL SURVEYING

Due to the nature of cultural remains, the majority that occurs below surface, a physical walk through of the study area was conducted. Wits Heritage Contract Unit was appointed to conduct a survey of the proposed development. The study area was surveyed by two professional archaeologists over a period of 5 days, by means of vehicle and extensive surveys on foot. In addition to that the survey team consulted several specialists in their respective fields and recommendations were made in conjunction with them. A Historian, Dr. A van Vollenhoven was sub contracted for the archival report. For the Stone Age component Prof K. Kuman was consulted in conjunction with Dr. L. Pollarolo from the University of the Witwatersrand. Prof. T. Huffman also from the University of the Witwatersrand gave specialist input with regards to the Iron Age component.

Aerial photographs and 1:50 000 maps of the area were consulted and literature of the area were studied before undertaking the survey. The purpose of this was to identify topographical areas of possible historic and pre-historic activity. All sites discovered both



inside and bordering the proposed development area was plotted on 1:50 000 maps and their GPS co-ordinates noted. Photographs on digital film were taken at significant sites.

## 3. Abbreviations and definitions

### 3.1 Abbreviations

<i>ASAPA</i> : Association of South African Professional Archaeologists	<i>BPEO</i> : Best Practicable Environmental Option
<i>CRM</i> : Cultural Resource Management	<i>DEA&amp;DP</i> : Department of Environmental Affairs and Development Planning
<i>DEAT</i> : Department of Environmental Affairs and Tourism	<i>DWAF</i> : Department of Water Affairs and Forestry
<i>EIA practitioner</i> : Environmental Impact Assessment Practitioner	<i>EIA</i> : Environmental Impact Assessment
<i>EIA</i> : Early Iron Age	<i>ESA</i> : Early Stone Age
<i>GPS</i> : Global Positioning System	<i>HIA</i> : Heritage Impact Assessment
<i>I&amp;AP</i> : Interested & Affected Party	<i>IDP</i> : Integrated Development Plan
<i>LSA</i> : Late Stone Age	<i>LIA</i> : Late Iron Age
<i>MSA</i> : Middle Stone Age	<i>MIA</i> : Middle Iron Age
<i>NEMA</i> : National Environmental Management Act	<i>NHR Act</i> : National Heritage Resources Act
<i>PHRA</i> : Provincial Heritage Resources Agency	<i>PSSA</i> : Palaeontological Society of South Africa
<i>ROD</i> : Record of Decision	<i>SACLAP</i> : South African Council for the Landscape Architect Profession
<i>SAHRA</i> : South African Heritage Resources Agency	<i>SAIA</i> : South African Institute of Architects
<i>SAPI</i> : South African Planning Institute	<i>SDF</i> : Spatial Development Framework

### 3.2 Definitions

#### **Archaeological resources:**

This includes material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;

#### **Rock art:**

Being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;

#### **Wrecks:**

Being any vessel or aircraft, or any part thereof which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation;

**Military:**

Features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

**Cultural significance:**

This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

**Development:**

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

- construction, alteration, demolition, removal or change in use of a place or a structure at a place;
- carrying out any works on or over or under a place;
- subdivision or consolidation of land comprising a place, including the structures or airspace of a place;
- constructing or putting up for display signs or hoardings;
- any change to the natural or existing condition or topography of land;
- any removal or destruction of trees, or removal or vegetation or topsoil

**Heritage resources:**

This means any place or object of cultural significance

**Stakeholders:**

A subgroup of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term includes the proponent, authorities and all interested and affected parties.

## 4. ARCHAEOLOGICAL LEGISLATION AND BEST PRACTICE

Phase 1 Archaeological Impact Assessments or Heritage Impact Assessments are a pre-requisite for development in South Africa as prescribed by SAHRA and stipulated by legislation. The overall purpose of a heritage specialist input is to:

- Identify any heritage resources, which may be affected;
- Assess the nature and degree of significance of such resources;
- Establish heritage informants/constraints to guide the development process through establishing thresholds of impact significance;
- Assess the negative and positive impact of the development on these resources;
- Make recommendations for the appropriate heritage management of these impacts.

The AIA or HIA, as a specialist sub-section of the Environmental Impact Assessment [EIA] is required under the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999), Section 38(1), Section 38(8) the National Environmental Management Act (NEMA) and the Mineral and Petroleum Resources Development Act (MPRDA).

The AIA should be submitted, as part of the EIA, BIA or Environmental Management Plan [EMP], to the PHRA if established in the province or to SAHRA. SAHRA will be ultimately responsible for the professional evaluation of Phase 1 AIA reports upon which review comments will be issued. 'Best practice' requires Phase 1 AIA reports and required additional development information, as per the EIA, BIA / EMP, to be submitted in duplicate to SAHRA after completion of the study. SAHRA accepts Phase 1 AIA reports authored by professional archaeologists, accredited with ASAPA. Minimum accreditation requirements include an Honours degree in archaeology or related discipline and 3 years post-university CRM experience (field supervisor level).

Minimum standards for reports, site documentation and descriptions are set by the Association of Southern African Professional Archaeologists [ASAPA] in collaboration with SAHRA. ASAPA is a legal body, based in South Africa, representing professional archaeology in the Southern African Development Community [SADC] region. ASAPA is primarily involved in the overseeing of archaeological ethical practice and standards. Membership is based on proposal and secondment by other professional members.

Phase 1 AIA's are primarily concerned with the location and identification of sites situated within a proposed development area. Identified sites should be assessed according to their significance. Relevant conservation or Phase 2 mitigation recommendations should be made. Recommendations are subject to evaluation by SAHRA.

Conservation or Phase 2 mitigation recommendations, as approved by SAHRA, are to be used as guidance in the developer's decision making process:

Phase 2 archaeological projects are primarily based on salvage / mitigation excavations preceding development destruction or impact on a site. Phase 2 excavations should be done under a permit issued by SAHRA to the appointed archaeologist. Permit conditions are

prescribed by SAHRA and includes as minimum requirements reporting back strategies to SAHRA and deposition of excavated material at a accredited repository.

In the event of a site conservation option being preferred by the developer a site management plan, prepared by a professional archaeologist and approved by SAHRA, will suffice as minimum requirement.

After mitigation is conducted on a site, a destruction permit must be applied for from SAHRA before development may proceed.

Human remains older than 60 years are protected by the National Heritage Resources Act, with reference to Section 36. Graves older than 60 years, but younger than 100 years fall under Section 36 of Act 25 of 1999 (National Heritage Resources Act) as well as the Human Tissues Act (Act 65 of 1983) and are the jurisdiction of the South African Heritage Resource Agency (SAHRA). The procedure for Consultation Regarding Burial Grounds and Graves (Section 36(5) of Act 25 of 1999) is applicable to graves older than 60 years that are situated outside a formal cemetery administrated by a local authority. Graves in the category located inside a formal cemetery administrated by a local authority will also require the same authorisation as set out for graves younger than 60 years over and above SAHRA authorisation. If the grave is not situated inside a formal cemetery but is to be relocated to one, permission from the local authority is required and all regulations, laws and by-laws set by the cemetery authority must be adhered to.

Human remains that are less than 60 years old are protected under Section 2(1) of the Removal of Graves and Dead Bodies Ordinance (Ordinance no. 7 of 1925) as well as the Human Tissues Act (Act 65 of 1983) and are the jurisdiction of the National Department of Health and the relevant Provincial Department of Health and must be submitted for final approval to the Office of the relevant Provincial Premier. This function is usually delegated to the Provincial MEC for Local Government and Planning, or in some cases the MEC for Housing and Welfare. Authorisation for exhumation and reinterment must also be obtained from the relevant local or regional council where the grave is situated, as well as the relevant local or regional council to where the grave is being relocated. All local and regional provisions, laws and by-laws must also be adhered to. In order to handle and transport human remains the institution conducting the relocation should be authorised under Section 24 of Act 65 of 1983 (Human Tissues Act).

## 5. Baseline Study

### 5.1 Evaluation of Heritage sites

This chapter describes the evaluation criteria used for determining the significance of archaeological and heritage sites. The following criteria were used to establish site significance:

- 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.

#### 5.1.1 Heritage Site Significance and Mitigation Measures

Site significance classification standards prescribed by the South African Heritage Resources Agency (2006) and approved by the Association for Southern African Professional Archaeologists (ASAPA) for the Southern African Development Community (SADC) region, were used for the purpose of this report.

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

(LS)			should be retained)
Generally Protected A (GP.A)	-	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium Significance	Recording before destruction
Generally Protected C (GP.C)	-	Low Significance	Destruction

## 5.2 Archaeological Context of study area

South Africa has one of the longest archaeological sequences in the world because humanity evolved in the area stretching from the Cape to Ethiopia. Most of this sequence covers the times when our ancestors used stone tools.

It is worthwhile, thus, to review the archaeological record for southern Africa and to place in context the known occurrences.

The archaeology of the area can be divided into the Stone Age, Iron Age and Historical timeframe. These can be divided as follows:

### **Stone Age**

The Stone Age is divided in Early; Middle and Late Stone Age and refers to the earliest people of South Africa who mainly relied on stone for their tools.

#### ***Earlier Stone Age: The period from $\pm 2.5$ million yrs - $\pm 250\,000$ yrs ago. Acheulean stone tools are dominant:***

The Early Stone Age in southern Africa is defined by the Oldowan complex, primarily found at the sites Sterkfontein, Swartkrans and Kroomdraai, situated within the Cradle of Humankind, just outside Johannesburg (Kuman, 1998). Within this complex, tools are more casual and expediently made and tools consist of rough cobble cores and simple flakes. The flakes were used for such activities as skinning and cutting meat from scavenged animals. This industry is unlikely to occur in the study area.

The second complex is that of the more common Acheulean, defined by large handaxes and cleavers produced by hominids at about 1.4 million years ago (Deacon & Deacon, 1999). Among other things these Acheulian tools were probably used to butcher large animals such as elephants, rhinoceros and hippopotamus that had died from natural causes. Acheulian artefacts are usually found near the raw material from where they were quarried, at butchering sites, or as isolated finds. No Acheulian sites are on record near the project area, but isolated finds are possible. However, isolated finds have little value. Therefore, the project is unlikely to disturb a significant site. The presence and significance of finds will be determined by a field investigation.

#### ***Middle Stone Age: Various lithic industries in SA dating from $\pm 250\,000$ yrs – 22 000 yrs before present.***

During the Middle Stone Age, significant changes start to occur in the evolution of the human species. These changes manifest themselves in the complexity of the stone tools created, as seen in the diversity of tools, the standardisation of these tools over a wide spread area, the introduction of blade technology, and the development of ornaments and art. What these concepts ultimately attest to is an increase or development of abstract



thinking. By the beginning of the Middle Stone Age (MSA), tool kits included prepared cores, parallel-sided blades and triangular points hafted to make spears (Volman, 1984). MSA people had become accomplished hunters by this time, especially of large grazing animals such as wildebeest, hartebeest and eland.

These hunters are classified as early humans, but by 100,000 years ago, they were anatomically fully modern. The oldest evidence for this change has been found in South Africa, and it is an important point in debates about the origins of modern humanity. In particular, the degree to which behaviour was fully modern is still a matter of debate. The repeated use of caves indicates that MSA people had developed the concept of a home base and that they could make fire. These were two important steps in cultural evolution (Deacon & Deacon, 1999). Accordingly, if there are caves in the study area, they may be sites of archaeological significance.

MSA artefacts are common through out southern Africa, but unless they occur in undisturbed deposits, they have little significance. Some MSA sites are on record close to the study area.

***Later Stone Age: The period from  $\pm$  22 000-yrs before present to the period of contact with either Iron Age farmers or European colonists.***

By the Late Stone Age, human beings are anatomically and culturally modern. Tools associated with this time period are specialised, and commonly associated with hunter-gatherer groups. It is also within this period that contacts with migrating groups occur throughout southern Africa. Initial contact was between hunter-gatherer groups and expanding Bantu farming societies, and secondly with the arrival of colonist along the coast.

San rock art has a well-earned reputation for aesthetic appeal and symbolic complexity (Lewis-Williams, 1981). Several rock art sites are on record to the north and east of the general project area.

In addition to art, LSA sites contain diagnostic artefacts, including microlithic scrapers and segments made from very fine-grained rock (Wadley, 1987). Spear hunting probably continued, but LSA people also hunted small game with bows and poisoned arrows. Sites in the open are usually poorly preserved and therefore have less value than sites in caves or rock shelters. If there are rock shelters or caves in the study area, they may contain LSA sites of significance.

***Iron Age (general)***

The Iron Age as a whole represents the spread of Bantu speaking people and includes both the pre-Historic and Historic periods. It can be divided into three distinct periods:

The Early Iron Age: Most of the first millennium AD.

The Middle Iron Age: 10th to 13th centuries AD

The Late Iron Age: 14th century to colonial period.

The Iron Age is characterised by the ability of these early people to manipulate and work Iron ore into implements that assisted them in creating a favourable environment to make a better living.

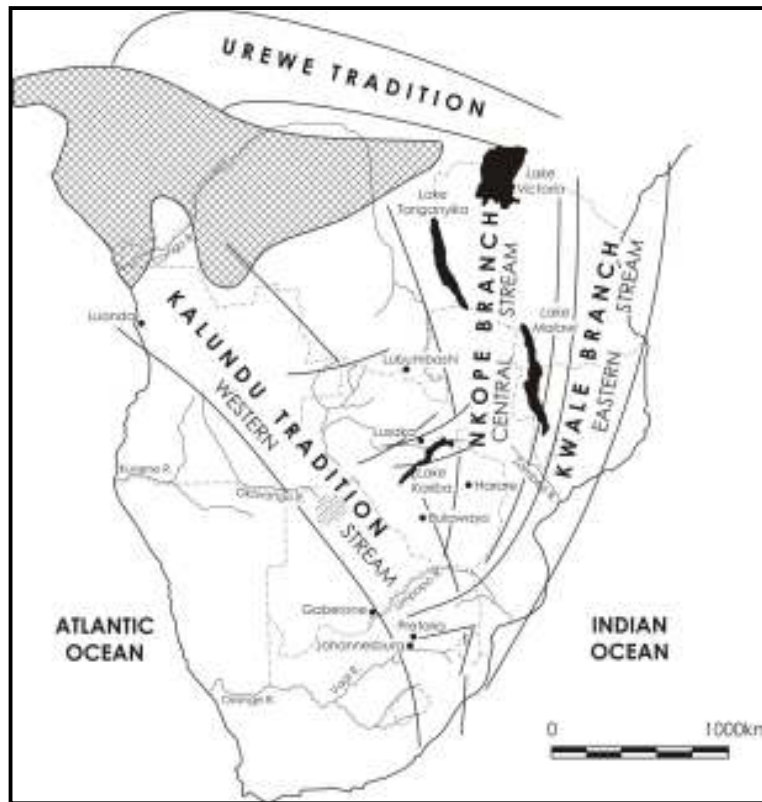


Figure 1: Movement of Bantu speaking farmers (Huffman 2007)

Several archival databases and previous phase 1 reports were utilised to give a comprehensive coverage of sites. Most extensively used is the site catalogue compiled by the Archaeology Department of the School of Geography, Archaeology, and Environmental Studies at the University of the Witwatersrand, Johannesburg.

Sites within the databases used were plotted into ArcGIS 9.1, overlaying the relevant 1:50000 topographic maps and the proposed study area. From this, relevant areas, in which a large portion of the sites clustered, were identified and the appropriate literature was reviewed.

Mitigation in the area by the National Cultural History Museum was conducted in 2004 on the farm Elandsfontein 386 KQ, Amandelbult Platinum Mine. This included the survey and mapping of sites in and around the Madeleine Robinson Nature Reserve of the Amandelbult Platinum Mine as part of the proposed extension of the mines operations into the area.

From the survey, several stone walled sites conforming to the CCP were identified along the base and between the saddle of the hills. Sites contained central kraals, smaller livestock enclosures, lower grindstones and ceramic scatters. These sites form part of a larger settlement complex dating to the Later Iron Age. Unfortunately, at the time of the mitigation, insufficient data resulted in the absence of identifying the cultural facies of the people who occupied the settlements.

Mitigation of the Rhino Andalusite Mine by Archaeological Resources Management (ARM) Unit in 2006 resulted in excavation and recording of several Early and Late Iron Age sites. Specifically, the *Happy Rest and Mzonjani facies* (EIA) and the *Icon and Madikwe facies* of the Moloko group (LIA) have been identified. Additionally, ancient mine workings for ochre have been identified (Figure 2).

A short literature review of known sites in the study area follows:

### ***Early Iron Age***

Early in the first millennium AD, there seem to be a significant change in the archaeological record of the greater part of eastern and southern Africa lying between the equator and Natal. This change is marked by the appearance of a characteristic ceramic style that belongs to a single stylistic tradition. These Early Iron Age people practised a mixed farming economy and had the technology to work metals like iron and copper. A meaningful interpretation of the Early Iron Age has been hampered by the uneven distribution of research conducted so far; this can be partly attributed to the poor preservation of these early sites.

Sites belonging to the EIA consisting of *Happy Rest and Mzonjani facies* have been recorded close to the project area. Happy Rest and Mzonjani pottery form part of two traditions (Kalundu and Urewe) that represent the spread of mixed farmers into southern Africa during the Early Iron Age (See Figure 1). This find is important as it provides evidence for early interaction between these groups. Later, by the 8<sup>th</sup> and 9<sup>th</sup> centuries, the two merged to form a new facies, *Doornkop*.

### ***Middle Iron Age***

No sites dating to this period are on record close to the study area.

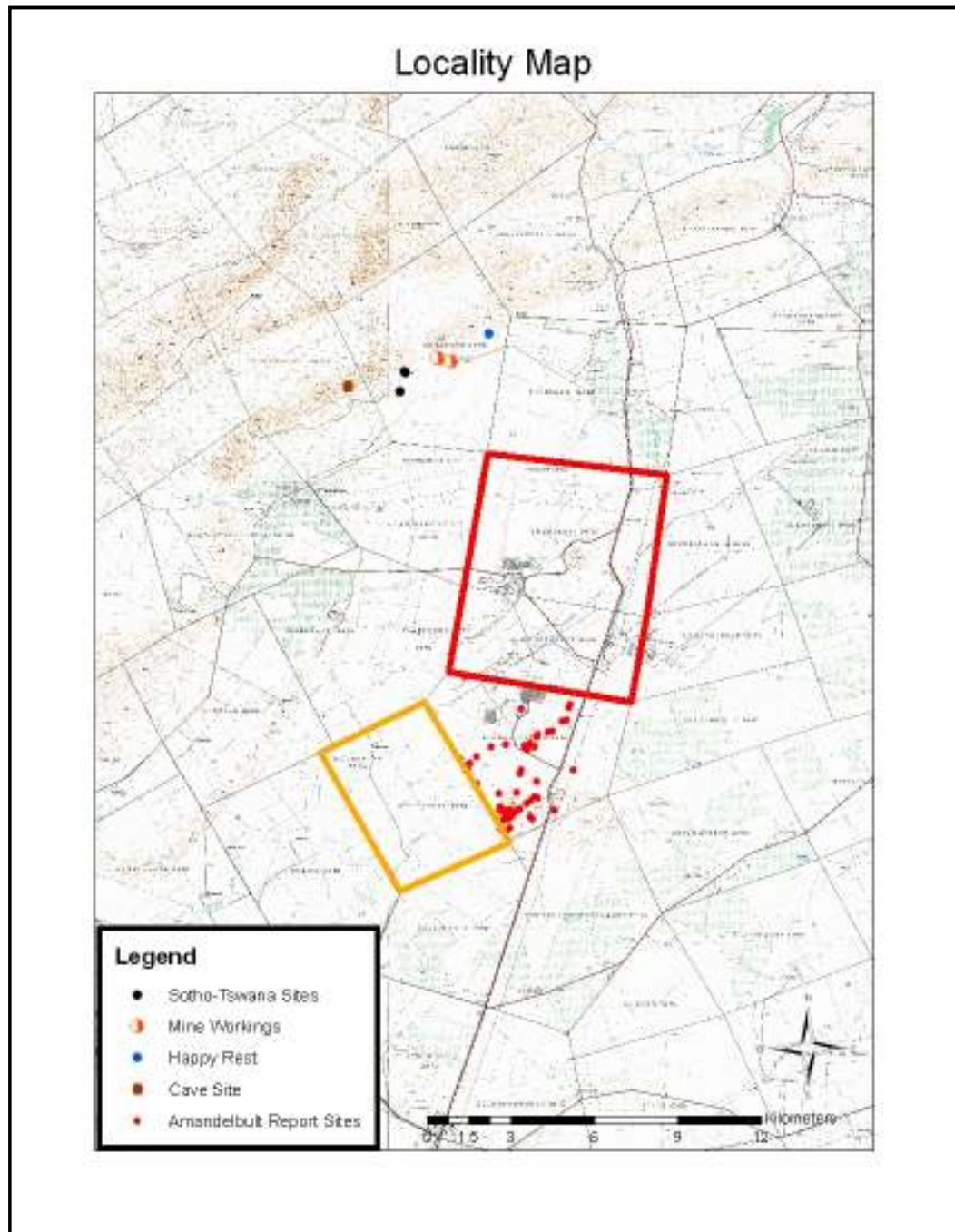
## **Late Iron Age**

For the area in question the history and archaeology of the Sotho Tswana are of interest. The ceramic sequence for the Sotho Tswana is referred to as Moloko and consists of different facies with origins in either the Icon facies or a different branch associated with Nguni speakers. Several sites belonging to the Madikwe and Olifantspoort facies (from Icon) have been recorded close to the project area. These sites date to between AD 1500 and 1700 and predate stone walling ascribed to Sotho-Tswana speakers. Sotho Tswana stonewalled sites with Uitkomst pottery have been found close to the study area and dates to the seventeenth to nineteenth centuries. Stone walled sites belonging to the LIA have also been identified next to the study area but so far have not been linked to a cultural group.

Late Iron Age peoples were attracted to the area because of the relatively fertile soils around the hills and valleys, and because of the iron ore and red ochre. Mining techniques associated with the ancient mine workings are the same as those found in the Rooiberg area some 30km from Thabazimbi (Huffman 2006). Three groups are found in the Rooiberg area, specifically Madikwe, Melora and Rooiberg groups. Strategraphically, the relationship between Madikwe and Rooiberg is evident where the Madikwe site 20/85 lies underneath the Rooiberg site 11/85, suggesting that Rooiberg is the more recent (Mason 1986). Ceramic evidence suggests then that at one time Sotho-Tswana people were mining at Rooiberg. The ceramic evidence from the Rhino Andalusite Mine shows that the Sotho-Tswana people living there were directly related to the miners at Rooiberg: both belonged to the Western Sotho-Tswana cluster. Therefore the relationship between the ochre mine and Madikwe settlements is great. Associated with the Madikwe settlements, in addition to the ochre mine is the several maize grindstones found.

Trade connections for ochre and tin have a bearing on the presence of maize. Trade networks spanned a wide area, up to the Zimbabwe culture area in the north, and as far as Maputo in the east before the arrival of the Dutch (Friede & Steel 1976). Maize came to Maputo sometime after the early 16<sup>th</sup> century through Portuguese trade with the New World. The grindstones found at the site CB14 in the Rhino Andalusite Mine indicate that maize was grown in the Thabazimbi area during the 17<sup>th</sup> century (Huffman 2006). If one accepts the grindstone as diagnostic, then maize was cultivated some 150 years earlier than in Kwazulu-Natal.

Evidence for Iron Age activity will most likely be concentrated along water courses and rocky outcrops marked by ceramic clusters or dry stone walling.



*Figure 2: Known sites close to the study area*

### ***Historic Timeframe***

The historic timeframe sometimes intermingles with the later parts of the Stone and Iron Age, and can loosely be regarded as times when written and oral accounts of incidents became available. An archival study on the farms in question revealed the following.

## **1. Introduction**

This report deals with the results of an archival investigation of the farms Zwartkop 369 KQ, Schilpadsnet 385 KQ and Moddergat 389 KQ. The farms are located in the Limpopo Province.

A number of 1046 documents relating to Zwartkop was found in the National Archives Depot in Pretoria. Only 2 documents relating to Schilpadsnest and 65 relating to Moddergat were identified. However, most of these documents refer to other farms with the same name as those investigated.

## **2. Methodology**

For this purpose research was conducted in the National Archives Depot (NAD) and the Deeds Office in Pretoria. In the Deeds office the old farm registers and old Surveyor-General's maps were consulted. Unfortunately the farm registers could not be obtained. Accordingly it was not possible to find old maps or farm owner information. The oldest history available on these farms were however obtained from the database at the Deeds Office, but these records does not go back further than the 1990's.

The specific archives that were consulted in the NAD are the South African Archives Depot (SAB), the Transvaal Archives Depot (TAD), the National Register of Manuscripts and Photographs, National Archives cartographic material, library material and copies (MAN), Archives Depot of Audio-Visual Material (OVM) and the all inclusive archives (RSA). The TAD deals with documents before 1910 and the SAD with those after 1910. The MAN deals with photographs, maps and other material indicated and OVM with audio-visual material.

The RSA is a combined database of all the other databases. This means that the number of documents found in all the other databases should also be found here. However experience has shown that it sometimes differs and therefore the search also had to be conducted here.

Key words that were used are the following: the farm names, with and without the farm numbers, or the combination thereof with the words Waterberg which is the district where they are situated. Very little information was found relating to these three farms.

## **3. Discussion**

### **Zwartkop 369 KQ**

No applicable information could be obtained from the Deeds Office (Deeds Office 1367526). Apparently the department is busy to computerize all records and transfer it to deeds offices in the different provinces resulting in it not being possible to trace everything at the moment.

The first white farmers however settled in this part of the country after 1841. It therefore is possible that these three farms may date back to the middle of the 19<sup>th</sup> century (Bergh 1999:

15). The district of Waterberg was established in 1866 (Bergh 1999: 139). This indicates that there must have been enough people to make the establishment of a district a viable option.

As indicated earlier, 1064 documents relating to the name Zwartkop was obtained from the National Archives Depot. Most of these related to farms at Kenhardt in the Northern Cape, Pietermaritzburg in Kwazulu-Natal and Pretoria in Gauteng. Only a few documents had useful information.

The oldest date obtained refers to the estate of the late CJ Becker. It indicates that he was the owner of this farm until his death in 1893 (NAD, TAB, SS000, R11460/93). Two other documents refer to amounts that are owed for taxes on the farm. These documents are both dated to 1894 (NAD, TAB, SP 41, SPR 111/94; NAD, TAB, SP 42, SPR 111/94). These documents give proof that the farm was established during the 19<sup>th</sup> century, but unfortunately not much more can be learned from them.

At some stage the farm was leased to a certain LMM Charlie, but unfortunately no date is given (NAD, SAB, URU 1138, 1723). It seems as if the farm was already used for mining ( or at least prospecting) during 1937 (NAD, SAB, LDE 2147, 104/1).

### **Schilpadsnest 385 KQ**

The only information that could be obtained from the Deeds Office, indicated that the farm was owned by the Government since at least 1992 (Deeds Office 1367526). The first white farmers however settled in this part of the country after 1841. It therefore is possible that these three farms may date back to the middle of the 19<sup>th</sup> century (Bergh 1999: 15). The district of Waterberg was established in 1866 (Bergh 1999: 139). This indicates that there must have been enough people to make the establishment of a district a viable option.

As indicated earlier, only 2 documents relating to the name Schilpadsnest was obtained from the National Archives Depot. Both relate to this particular farm. The first one indicate that the farm formed part of the South African Native Trust during 1933 – 1948 (NAD, SAB, NTS 10876, T6318). This information corroborates with that of the Deeds Office that it is a Government owned farm. The second document indicates that overhead power lines and underground cables were installed here during 1955 – 1963 (NAD, SAB, NTS 3827, 2845/308).

### **Moddergat 389 KQ**

The only information that could be obtained from the Deeds Office, indicated that the farm has two portions. The one is owned by First National Bank and the second by Phillippus Arnoldus van der Walt, both since 2000 (Deeds Office 1367526).

The first white farmers however settled in this part of the country after 1841. It therefore is possible that these three farms may date back to the middle of the 19<sup>th</sup> century (Bergh 1999: 15). The district of Waterberg was established in 1866 (Bergh 1999: 139). This indicates that there must have been enough people to make the establishment of a district a viable option.

As indicated earlier, 65 documents relating to the name Moddergat was obtained from the National Archives Depot. Only three of these are related to this particular farm.

It is indicated that the farm was leased to HE Woodward in 1921 (NAD, SAB, URU 505, 1259). This lease was cancelled in 1923 (NAD, SAB, URU 631, 1979). Between 1918 and 1923 LW Morgan was allowed to ranch his cattle on the farm (NAD, SAB, LDE 935, 18454/5).

#### **4. Conclusion**

It is a pity that the farm registers could not be located by the clerk in the Deeds Office as this gives the most useful information regarding farm history. Without this very little can be learned.

White farmers settled in this part of the Waterberg since 1841 and it is possible that these farms may be this old. However substantial documentation proving this could not be found.

The farm Zwartkop must have been established during the 19<sup>th</sup> century. CJ Becker owned the farm in 1893, but it is not known whether he was the first owner thereof. By 1937 mining activities were engaged in on the farm.

The farm Schilpadsnest was part of the South African Native Trust in 1933. Today it is still a government owned farm.

The farm Moddergat was at least established by 1918. The current owner of a portion thereof is Phillippus Arnoldus van der Walt.

#### **Social Consulting.**

The author interviewed the following persons with regards to the presence of graves and living heritage sites.

Mr. Jaco Meyer and Mr. Basie van Wyk of Chronimet Chrome Mine South Africa who owns the study area and has an intimate knowledge of the study area. Mr. Kwagga Selomo who is appointed as community leader and represented the community living in the study area. Mr. Patric Mokgote on the farm Zwartkop and Mr Bart Steyn and Jeffrey Makngena of the farm Moddergat.

In addition to that the survey team worked closely with Dr. Jan Perold of Aurecon who included heritage significant sites as part of the social consulting process. He reported that no sites were identified or brought under their attention during the social consultation process except for a large cemetery inside Smash Block.



## 5.3 Probability of occurrence of sites

From the above information it is clear that a medium possibility of the occurrence of cultural heritage sites could be expected in the study area.

### A. PALAEOONTOLOGICAL LANDSCAPE

#### CONTEXT

Fossil remains. Such resources are typically found in specific geographical areas, e.g. the Karoo and are embedded in ancient rock and limestone/calcrete formations. Exposed by road cuttings and quarry excavation: *Unknown*

### B. ARCHAEOLOGICAL LANDSCAPE

#### CONTEXT

NOTE: *Archaeology is the study of human material and remains (by definition) and is not restricted in any formal way as being below the ground surface.*

*Archaeological* remains dating to the following periods can be expected with in the study area:

#### Stone Age finds

- ESA: *Medium Probability*
- MSA: *High Probability*
- LSA: *Medium Probability*
- LSA –Herder: *Low Probability*

#### Iron Age Finds

- EIA: *High Probability*
- MIA: *Low Probability*
- LIA: *High Probability*

#### Historical finds

- Historical period: *Medium Probability*
- *Historical dumps: Medium Probability*
- *Structural remains: Medium Probability*

**Military Finds**

- *Battle and military sites: Low Probability*

**Burial/Cemeteries**

- *Burials over 100 years: Medium Probability*
- *Burials younger than 60 years: High Probability*

Subsurface excavations including ground levelling, landscaping, and foundation preparation can expose any number of these.

## 6. Impact Assessment

For the purposes of this report site descriptions are divided in to groups consisting of: Stone Age Sites, Iron Age simple ruins and Iron Age Complex ruins, Cemeteries, Farm worker Homesteads, European Homesteads and historic/recent mining.

Iron Age simple ruins consist of one or two dry stone walled enclosures where as Iron Age complex ruins consist of the stone walled remains of a Iron Age settlement, containing cattle kraals and smaller livestock (sheep/goat) enclosures, hut bays, granary platforms, the remains of huts and other associated features, such as ash middens and grinding hollows.

The following coordinates are available for the sites (WGS84).

Site Number	Type Site	Co-ordinates
Site 1	I.A	S24 46 39.7 E27 18 58.5
Site 1 Extend	I.A	S24 46 50.8 E27 18 56.2
Site 1 Extend	I.A	S24 46 40.7 E27 18 53.8
Site 1 Extend	I.A	S24 46 37.8 E27 18 53.0
Site 1 Extend	I.A	S24 46 36.4 E27 18 54.2
Site 1 Extend	I.A	S24 46 33.0 E27 18 53.1
Site 2	I.A /S.A	S24 46 24.1 E27 18 51.0
Site 3	Mine Adits	S24 47 25.0 E27 17 58.1
Site 4	I.A	S24 52 04.3 E27 17 07.5
Site 5	I.A	S24 51 53.3 E27 17 03.2
Site 5 Extend	I.A	S24 51 49.3 E27 17 00.4
Site 5 Extend	I.A	S24 51 42.4 E27 16 57.5
Site 6	I.A	S24 51 13.9 E27 16 43.6
Site 6 Extend	I.A	S24 51 15.0 E27 16 43.3
Site 7	S.A	S24 51 12.8 E27 16 40.4
Site 8	I.A	S24 51 01.4 E27 16 31.8
Site 9	S.A	S24 50 59.9 E27 16 32.2
Site 10	I.A	S24 51 09.8 E27 16 32.7
Site 11	I.A	S24 51 11.2 E27 16 23.1
Site 12	I.A	S24 51 14.5 E27 16 18.0
Site 12 Extend	I.A	S24 51 15.8 E27 16 17.4
Site 12 Extend	I.A	S24 51 11.2 E27 16 13.0
Site 13	I.A	S24 50 57.2 E27 15 58.2
Site 14	I.A	S24 50 52.2 E27 16 13.1
Site 15	I.A	S24 50 47.1 E27 16 20.9
Site 16	I.A	S24 51 40.8 E27 16 31.1
Site 17	I.A	S24 51 38.9 E27 16 22.3
Site 17 Extend	I.A	S24 51 37.5 E27 16 23.7
Site 18	I.A	S24 51 34.2 E27 16 31.1

Site 19	Cemetery	S24 47 31.8 E27 18 05.2
Site 20	I.A	S24 47 39.8 E27 18 08.8
Site 21	I.A	S24 47 35.6 E27 18 13.7
Site 22	I.A	S24 47 40.5 E27 18 14.1
Site 23	I.A	S24 47 37.9 E27 18 15.6
Site 24	I.A	S24 47 38.9 E27 18 18.8
Site 24 Extend	I.A	S24 47 36.0 E27 18 20.5
Site 25	I.A	S24 47 31.8 E27 18 26.4
Site 26	Cemetery	S24 49 56.8 E27 14 56.8
Site 27	European Structure	S24 50 01.2 E27 15 04.9
Site 28	I.A Find spot	S24 49 57.6 E27 15 53.5
Site 29	I.A	S24 47 35.3 E27 17 53.9
Site 29 Extend	I.A	S24 47 44.0 E27 18 01.8
Site 29 Extend	I.A	S24 47 47.2 E27 18 01.6
Site 29 Extend	I.A	S24 47 50.4 E27 18 01.5
Site 30	I.A	S24 47 44.2 E27 17 52.4
Site 31	Farm Labourer	S24 47 43.8 E27 17 56.6
Site 32	Farm Labourer	S24 47 48.4 E27 18 03.7
Site 33	Farm Labourer	S24 47 46.6 E27 17 53.0
Site 34	Farm Labourer	S24 47 44.3 E27 17 49.0
Site 34 extend	Farm Labourer	S24 47 41.7 E27 17 48.4
Site 35	Cemetery	S24 47 20.3 E27 16 29.2
Site 36	I.A	S24 48 20.3 E27 16 13.8
Site 37	European Homestead	S24 45 47.0 E27 19 17.0

## 6.1 Stone Age Sites

Three sites with Stone Age material were recorded. These sites are all open air sites situated around hills and rock outcrops:

- Site 2, the site is located on the farm Zwartkop and consists of a high concentration of artefacts scattered mostly on the northern side of Mooskop. Raw material is abundant in this area consisting of Quartzite, Chert, Banded Iron Stone and Rhyolite. Artefacts consist of diagnostic MSA tools and includes amongst other prepared cores and tools with facets on the striking platform. The tools are well preserved and do not show much weathering and contain clear diagnostic features.
- Site 7 and site 9 is located on the farm Moddergat and consist of a medium frequency of artefacts scattered around small hills close to the Bierspruit. Because of sheet erosion the artefacts are weathered and badly preserved and not much can be said about them. Diagnostic features on the tools consist of facets on the striking platform indicating Middle Stone Age occupation. Raw material consists of igneous rock, Hornfels and possibly Silcrete.



Figure 3: Stone tools from Site 7



*Figure 4: Stone tools from the farm Moddergat*

## 6.2 Iron Age Sites

Twenty nine Late Iron Age stone walled sites were recorded and one “find spot” site marked by cultural material in the form of a scatter of undecorated ceramics.

### Late Iron Age Complex Sites

- Site 1, this site is located on the farm Zwartkop to the east of Mooskop. Recent mine activities impacted negatively on the site destroying a large part of the settlement complex.
- Site 2, this site is also located on the farm Zwartkop and is situated on the north of Mooskop. The site is highly overgrown but fairly well preserved.
- Site 4, the site is situated on the farm Moddergat and is located on the eastern boundary of the farm. The farm road and the construction of power lines impacted negatively on the site. The site is located on turf soil but several decorated ceramic fragments were exposed by the impact of the road on the site.
- Site 5, the site is situated on the farm Moddergat around a small hill. Finds include ceramics, cattle enclosures hut bays en grinding hollows.
- Site 12, the site is located on the farm Moddergat and consists of several large cattle enclosures. The site is located on a low running ridge close to the Bierspruit.
- Site 17, the site consist of at least 6 enclosures of approximately 5 -10 meters in diameter. The site is located on the farm Moddergat.

- Site 20, the site is located on the farm Schildpadsnest. The site is highly overgrown and it is not possible to determine layout. This site is of interest because it might have an outer enclosing wall that so far has not been documented at the other complex sites.
- Site 21, the site consist of at least 5 enclosures with an average diameter of between 5 -10 meters next to a rock outcrop. The natural rock has been included in the design. The site is located on the farm Schildpadsnest.
- Site 24, the site is located on the farm Schildpadsnest and consist of several large cattle enclosures.
- Site 25, the site is located on a low running ridge at the eastern boundary of the farm Schildpadsnest and consist of several large cattle enclosures. The farm road next to fence impacted negatively on the site, destroying several enclosures.
- Site 29, the site is located on the farm Schildpadsnest and consists of an extensive settlement. The site is how ever badly preserved and some of the walling might have been robbed to construct farm labourer dwellings.

## **Late Iron Age Simple Sites**

- Site 6, the site is located on the farm Moddergat. Two enclosures interpreted as cattle kraals occur around a small hill. Grinding hollows are found on top of the small outcrop.
- Site 8, the site is located on the farm Moddergat. The site consists of a single cattle enclosure next to a small rock outcrop close to the Bierspruit.
- Site 10, the site consist of badly preserved stone walling around a small rock outcrop on the farm, Moddergat.
- Site 11, the site consist of badly preserved stone enclosures located in the saddle of a small hill on the farm Moddergat.
- Site 13, is located on the farm Moddergat. The site consists of a cattle enclosure on a low running ridge next to the Bierspruit.
- Site 14, is located on the farm Moddergat. The site consists of a cattle enclosure and grinding hollows on a low running ridge next to the Bierspruit
- Site 15, is located on the farm Moddergat. The site consists of a cattle enclosure.
- Site 16, consist of the well preserved dry stone walls of a cattle enclosure next to a rock outcrop. The natural rock has been incorporated into the design.
- Site 18, the site is located on the farm Moddergat and consists of a cattle kraal of approximately 20 meters in diameter.
- Site 22, the site is located on the farm Schildpadsnest. The site is overgrown and consists of a large cattle enclosure.
- Site 23, the site is located on the farm Schildpadsnest. The site is overgrown and consists of a large cattle enclosure.
- Site 28, the site is located on the western portion of the farm Moddergat far away from the river. The site is classified as a find spot, consisting of the undecorated ceramic fragments of 2 vessels. No other cultural material is present on site.

- Site 30, the site is located on the farm Schildpadsnest and consists of enclosure of approximately 7meter in diameter. The site is badly preserved and some of the walling has been robbed.
- Site 31, the site is located on the farm Schildpadsnest and consists of a badly preserved enclosure of approximately 7 meters in diameter.



*Figure 5: New mining activity that impacted on Site 1*





*Figure 6: Well preserved stone walls of a "complex I.A site"*

## 6.3 Cemeteries

Three cemeteries were found during the survey.

- Site 19, this is the location of a large overgrown cemetery on the farm Zwartkop. The graves are aligned east west and the grave dressings consist of stone packed graves and modern granite headstones. Some of the inscriptions that are visible is of the family Lehobye and Mpete. The oldest visible date of the deceased is 1921, giving the impression that some of the graves might be even older. Due to the fact that the site is so overgrown it was not possible to do a accurate count of the graves but it is estimated that there are more than 120 graves present
- Site 26, this is the location of a cemetery with a single grave on the farm Moddergat. The grave is of a child, Danie Groenewald who was born on the 22 June 1938 and passed away on the 13 July 1938.
- Site 35, this is the location of a large cemetery in Smash Block. The cemetery is located outside of the impact area of the mine, but is significant because this is where most of the recently deceased who resided in the study area will interred.



*Figure 7: Headstone of grave at site 19*



*Figure 8: Granite headstone at site 19*





Figure 9: Headstone of Danie Groenewald at site 26

## 6.4 Farm Labourer dwellings

During the survey the remains of at least 5 square stone wall foundations were found. The exact age of these structures is unknown.

- Site 31, the site is located on the farm Schildpadsnest and is marked by several sisal trees. The site is constructed in-between a Late Iron Age settlement and the occupants re-used the stones of the Iron Age site to construct the rectangular dwellings. The site is located on a low running ridge and several industrial artefacts are found on site like wire, glass etc. The site is in a bad state of preservation.
- Site 32; consist of the badly preserved remains of a rectangular dwelling. The site is located on the farm Schildpadsnest.
- Site 33, this is the location of the foundations of a rectangular structure. The dwelling consists of 3 rooms with a single entrance to the north. The site is located on the farm Schildpadsnest.
- Site 34, the site is located on the farm Schildpadsnest. The site consists of a rectangular dwelling and circular stone foundations probably used as cooking huts.



*Figure 10: Badly preserved stone wall foundations typical of farm labourer dwellings found in the study area*



## 6.5 European Homestead

Several modern structures occur through out the study area, but since these structures are at most not older than 20 years they were not considered as heritage significant and there for not recorded. How ever 2 structures were recorded that might be older than 60 years or approaching 60 years and therefore protected by legislation.

- Site 27, this is the remains of the demolished farmhouse of the farm Moddergat. The house was constructed with red sun dried bricks that was plastered. It is assumed that the structure is associated with the grave at site 26 and it can be deducted that the site then must be dating to the 1930's and therefore older than 60 years and protected by legislation.
- Site 37, this is the location of a farm house on a portion of the farm Zwartkop. The house is still being used and well preserved. The exact age of the structure could not be determined but based on the architecture it is assumed that the house could be approaching 60 years.



*Figure 11: Demolished remains of the old farm house on the farm Moddergat*

## 6.6 Historic/recent Mining

Site 3. The hill on the farm Zwarkop that is called Mooskop was previously mined in the recent past. At least four disused adits is all that remained of the old mine workings. According to Mr. Jaco Meyer of Chronimet this mining occurred in the 1940's.



*Figure 12: The red arrow indicate the remains of adits at Mooskop, site 3*

## 7. ASSUMPTIONS AND LIMITATIONS

Due to the nature of cultural remains that occur, in most cases, below surface, the possibility remains that some cultural remains may not have been discovered during the survey. Medium archaeological visibility is present on site but the possibility of the occurrence of informal and unmarked graves or archaeological remains can not be excluded. Although Wits Heritage Contracts unit surveyed the area as thorough as possible, it is incumbent upon the developer to inform the relevant heritage agency should further cultural remains be unearthed or laid open during the process of development. It is important to note that the scope of work was to survey only the development area and not the entire prospecting area.

## 8. ASSESSMENT AND RECOMMENDATIONS

*A locality map is provided in **Annexure A***

**Findings of the Assessment.** Thirty seven sites of heritage significance were identified during the survey. The sites range from Stone Age, Iron Age, cemeteries, structures older than 60 years and historic/recent mining.

Since a final layout plan is not available yet, the following recommendations are applicable for the sites if threatened by development.

### **Stone Age Sites**

All the stone tools found are diagnostic Middle Stone Age artefacts. The sites were given the following field rating:

<b>FIELD RATING</b>	<b>GRADE</b>	<b>SIGNIFICANCE</b>	<b>RECOMMENDED MITIGATION</b>
Generally Protected B (GP.B)	-	Medium Significance	Recording before destruction

Due to the high preservation of the artefacts at site 2 it is recommended that test pits are excavated around the base of the hill to determine what the depth of the Stone Age deposit is and to get a representative sample of artefacts.

The same recommendation is applicable for site 9.

## Iron Age Sites

All the sites found are associated with the Later Iron Age. Decorated ceramics found represent stamped ware and could possibly be related to the Rooiberg facies, but a bigger ceramic sample is needed to confirm this. The sites are important because of the alternative stone walled settlement layout. The sites consist of several kraals clustered together without a outer wall. These sites have research potential that could clarify the new stone walled arrangement represented here that has not yet been identified and could hold clues to the interaction between the Uitkoms ceramic facies and Madikwe that formed Rooiberg. The sites were given the following field rating:

### Complex Sites

<i><b>FIELD RATING</b></i>	<i><b>GRADE</b></i>	<i><b>SIGNIFICANCE</b></i>	<i><b>RECOMMENDED MITIGATION</b></i>
Generally Protected A (GP.A)	-	Medium Significance	Mitigation before destruction

### Simple Sites

<i><b>FIELD RATING</b></i>	<i><b>GRADE</b></i>	<i><b>SIGNIFICANCE</b></i>	<i><b>RECOMMENDED MITIGATION</b></i>
Generally Protected B (GP.B)	-	Medium Significance	Recording before destruction

The current opencast pit that impacted negatively on site 1 warrants rescue mitigation on this site to try and retrieve any data lost to the non renewable heritage resource. Mitigation will include text excavations at Site 1 and the mapping of **Site 2** to reconstruct the settlement pattern that was lost at Site 1.

If any of the complex sites are impacted upon (Sites 1, 2, 4, 5, 12, 17, 20, 21, 24, 25, and 29) the sites will have to mapped and where archaeological deposit is present test excavations conducted.

If any of the simple sites are impacted upon Sites 6, 8, 10, 11, 13, 14, 15, 16, 18, 22, 23, 28, 30 and 31) it is recommended that dung samples (if present) is taken at the livestock enclosures. This will contribute to current research themes.



## Cemeteries

The sites were given the following field rating:

<b>FIELD RATING</b>	<b>GRADE</b>	<b>SIGNIFICANCE</b>	<b>RECOMMENDED MITIGATION</b>
Generally Protected A (GP.A)	-	High / Medium Significance	Mitigation before destruction

It is recommended that the sites (Site 19, 26 and Site 36) be preserved and fenced of.

If the cemetery was to be preserved *in situ*, it will have to be fenced of and provided with a gate for access by family members. A buffer zone of at least 10 meters will have to be kept around the cemetery as to facilitate the protection of the site during development.

If it is not possible to incorporate the cemeteries in the mine layout they will have to be relocated. This must be seen as a last resort. The relocation process must be done with adherence to all legal requirements as well as an extensive social consultation process required within the process. It is well advised that a company with a proven record of accomplishment be used to manage and complete such a project

## Farm Labourer dwellings. (Sites 31 - 34)

These sites are impacted on to the extent that they can not contribute to research. The documentation of these structures as in the report will suffice for future research and no action is necessary for these sites. The sites were given the following field rating:

<b>FIELD RATING</b>	<b>GRADE</b>	<b>SIGNIFICANCE</b>	<b>RECOMMENDED MITIGATION</b>
Generally Protected C (GP.C)	-	Low Significance	Destruction

## European Homestead

These sites are possibly older than 60 years and therefore protected by legislation. The sites were given the following field rating:

<b><i>FIELD RATING</i></b>	<b><i>GRADE</i></b>	<b><i>SIGNIFICANCE</i></b>	<b><i>RECOMMENDED MITIGATION</i></b>
Generally Protected B (GP.B)	-	Medium Significance	Recording before destruction

Although the house at site 27 has been demolished there is enough information left to determine layout and construction methods. The site is also important since it is one of the original farm houses of the farm Moddergat, that is one of the oldest farms in the area. It is therefore recommended that if the site is impacted upon a conservation architect must assess the site and make recommendations.

If the structure at site 37 is impacted upon the age of the structure must be determined first. If protected by legislation a conservation architect must assess the site. If it is not older than 60 years no further action is necessary for the site.

## Historic/recent Mining

At this point it doesn't seem as if the adits at site 3 will be impacted upon by the proposed mining. And no further action is necessary for these sites.

<b><i>FIELD RATING</i></b>	<b><i>GRADE</i></b>	<b><i>SIGNIFICANCE</i></b>	<b><i>RECOMMENDED MITIGATION</i></b>
Generally Protected B (GP.B)	-	Medium Significance	Recording before destruction

## General

A heritage resources management plan must be developed for managing the heritage resources in the study area during construction and operation of the development. This can include basic training for construction staff on possible finds, action steps for mitigation measures, surface collections, excavations and communication routes to follow in the case of a discovery.

If these recommendations are adhered to there is from a Heritage point of view no reason why the development can not commence.

If during construction any possible finds are made, the operations must be stopped and a qualified archaeologist be contacted for an assessment of the find.

## 9. LIST OF PREPARES

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## 10. STATEMENT OF COMPETENCY

The author of the report is a member of the Association of Southern African Professional Archaeologists and is also accredited in the following fields of the Cultural Resource Management Section, member number 159. Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation.

Jaco sit on the council for the CRM Section of the Association of Southern African Association Professional Archaeologists and is also a accredited CRM Archaeologist with SAHRA and AMAFA.

Jaco has been involved in research and contract work in South Africa and Botswana and conducted well over 300 AIA's since he started his career in CRM in 2000. This involved several mining operations for amongst others, Hernic Ferrochrome, Harmony Gold, Hotazel Manganese Mines, New Vaal Colliery, Transvaal Gold Mining Estates Limited, Gvm Metals Limited, BHP Biliton, Simmer and Jack and Wesiszwe Platinum Mining. The results of several of these projects were presented at international and local conferences.

## 11. REFERENCES

Archaeological Database. University of the Witwatersrand

Australian Historic Themes. A Framework for use in Heritage Assessment and Management. Australian Heritage Commission. 2001.

Australia ICOMOS. The Burra Charter (The Australian ICOMOS charter for places of cultural significance). 2002

Bergh, J.S. (red.) 1998. *Geskiedenisatlas van Suid Afrika. Die vier noordelike provinsies*. J.L. van Schaik: Pretoria.

Deacon, H.J., Deacon, J., 1999. *Human beginnings in South Africa*. David Philip, Cape Town.

Deeds office, Pretoria. Database information 1367526.

Documents on Cultural Heritage Protection. 2002.

Evers, M. 1981. The Iron Age in the Eastern Transvaal, South Africa. In Voigt (ed.) *Guide to the archaeological sites in the northern and eastern Transvaal*. Pretoria: Southern African Association of Archaeologists.

Huffman, T.N. 1980. *Ceramics, classification and Iron Age entities*. African studies 39 ( 2 ): 123-174. Johannesburg.

Huffman, T.N. 1982. *Archaeology and Ethnohistory of the African Iron Age*. Annual Review of Anthropology 11:133-150

Huffman, T.N. 1989. *Ceramics, settlements and Late Iron Age migrations*. The African Archaeological Review (7):155-182.

Huffman, T.N. 2007. *A Handbook to the Iron Age: The Archaeology of Precolonial Farming Societies in Southern Africa*. Pietermaritzburg: Kwazulu-Natal University Press

Huffman T.N, Herbert. 1994. *A new perspectives on Eastern Bantu*. .Asania XXIX-XXX, 1994-1995:27-36.

Huffman, T.N. 2007a. *A Handbook to the Iron Age: The Archaeology of Precolonial Farming Societies in Southern Africa*. Pietermaritzburg: Kwazulu-Natal University Press.

Huffman, T.N, van der Walt J. Mafutha EBA: Desktop Cultural Heritage and Archaeology Report. Unpublished Report.

Inskeep, R.R. 1978. *The peopling of Southern Africa*. David Philip: Cape Town.

International Council of Monuments & Site Documents. Conventions, Charters and Guidelines. 2002.

International Council of Monuments & Site Documents. Guidelines to the Burra Charter: Conservation Policy. 1985.

International Council of Monuments & Site Documents. Guidelines to the Burra Charter: Cultural Significance. 1984.

Kuman, K., 1998. The earliest South African Industries. In: *Lower Palaeolithic Settlement of the Old World*. Eds by M.D. Petraglia and R. Korisetter, pp 151-186. Routledge Press, London.

Lewis-Williams, J.D., 1981. *Believing and Seeing: Symbolic Meanings in southern San Rock Paintings*. Academic Press, London.

Klein, R.G. 1984. Southern African Prehistory and Paleoenvironments. A.A. Balkema

MOFFAT, R. 1842. *Missionary Labours and Scenes in Southern Africa*. London: John Snow.

National Cultural History Museum. Unpublished report on The Surveying And Mapping Of Archaeological Sites On The Farm Elandsfontein 386 Kq, Amandelbult Platinum Mine Thabazimbi District, Limpopo Province

National Archives Depot, Pretoria: South African Archives Depot, LDE 935, 18454/5. 1918-1923.

National Archives Depot, Pretoria: South African Archives Depot, LDE 2147, 104/1. 1937.

National Archives Depot, Pretoria: South African Archives Depot, NTS 3827, 2845/308. 1955-1963.

National Archives Depot, Pretoria: South African Archives Depot, NTS 1197, 691/162, 1939-1954.

National Archives Depot, Pretoria: South African Archives Depot, NTS 10876, T6318. 1933-1948.

National Archives Depot, Pretoria: South African Archives Depot, URU 505, 1259. 1921.

National Archives Depot, Pretoria: South African Archives Depot, URU 631, 1979. 1923.

National Archives Depot, Pretoria: South African Archives Depot, URU 1138, 1723.

National Archives Depot, Pretoria: Transvaal Archives Depot, SP 41, SPR 111/94, 15.01.1894.

National Archives Depot, Pretoria: Transvaal Archives Depot, SP 42, SPR 686/94. 12.03.1884.

National Archives Depot, Pretoria: Transvaal Archives Depot, SS 000, R 11460/93. 12.09.1893.

Office of the Surveyor-General, Pretoria, KB84, Folio 35.

PARSONS, N. 1995: Prelude to Difaqane in the interior. In: Hamilton, C. (ed.): *The Mfecane Aftermath: Reconstructive Debates in Southern African History*: 322-349 Witwatersrand University Press & University of Natal Press.

Standard and Guidance for Archaeological Desk-Based Assessment. 1994.

Volman, T.P., 1984. Early prehistory of southern Africa. In: *Southern African Prehistory and Paleoenvironments*. Ed by R.G. Klein, pp. 169-220. A.A. Balkema, Rotterdam.

Wadley, L., 1987. *Later Stone Age Hunters and Gatherers of the southern Transvaal*. BAR International Series 380, Oxford.

**ANNEXURE A:**  
**Locality Map**  
**&**  
**Site Distribution Map**



