

Archaeological Impact Assessment

**ON REMAINDER OF PORTION 7 OF THE FARM
MODDERFONTEIN EAST 72 IQ, BENONI,
GAUTENG PROVINCE**

Prepared For

Eco Assessment Environmental Consultants

By



wits enterprise

Wits Commercial Enterprise (Pty) Limited
(Registration No: 2002/008461/07)
5th floor, Senate House, Jorissen Street, 2001 Braamfontein
Private Bag 3, 2050 Wits
South Africa

Service provider



UNIVERSITY OF THE WITWATERSRAND
SCHOOL OF GEOGRAPHY, ARCHAEOLOGY AND ENVIRONMENTAL STUDIES
PRIVATE BAG 3, P O WITS 2050
TEL: +27 82 373 8491. E –MAIL JACO.HERITAGE@GMAIL.COM

**VERSION 1.0
25 SEPTEMBER 2008**

MODDERFONTEIN EAST REM PTN7 - AIA

KNOWLEDGEMENT OF RECEIPT

CLIENT:

Eco Assessments Environmental Consultants

CONTACT PERSON:

Mark Custers

Tel: (011) 782 3428, Fax: (011) 888 9588

mark@ecoassessments.co.za

SIGNATURE:

LEADING CONSULTANT:

Wits Heritage Contracts Unit



CONTACT PERSON:

Jaco van der Walt

Field Director for Wits Heritage Contracts Unit

Professional Member of the Association of Southern
African Professional Archaeologist (#159)



SIGNATURE:

Executive summary

Site name and location: Proposed mixed use residential township development on Remainder of Portion 7 of the farm Modderfontein East 72 IR, Benoni, Gauteng Province.

EIA Consultant: Eco Assessments

AIA Consultant: Wits Heritage Contracts Unit. University of the Witwatersrand, School of Geography, Archaeology and Environmental Studies, Private Bag 3, P.O Wits 2050, Tel: +27 82 373 8491. E –mail jaco.heritage@gmail.com

1:50 000 Map number: 2628 AB

Date of field work: 18 September 2008

Date of Report: 25 September 2008

Findings of the Assessment: A locality map is provided in **Annexure A**

Site 1 is possibly associated with early gold mining in the Benoni area, however due to the poor preservation of the site a medium significance rating is attributed to the site. However the site is older than 60 years and therefore protected by legislation.

On the locality map it seems that the site might be located just outside of the development area. It is therefore recommended that it must first be established beyond doubt that the site is located outside of the development area. If this is the case no further action is necessary for this site. If the site falls inside the development area and will be impacted upon by the development the site must be documented by a conservation architect who will then assist the developer in obtaining a destruction permit from SAHRA to demolish the site.

The tracks of railway line dating from 1910 have been stolen and the railway line is not in use any more. No further action is necessary for this aspect.

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

General

Low ground visibility is present on portions of the site due to high vegetation growth and the possibility of the occurrence of unmarked or informal graves and subsurface finds can not be excluded. 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.

Disclaimer: *Although all possible care is taken to identify all 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.*

MODDERFONTEIN EAST REM PTN7 - AIA

Copyright: Copyright in all documents, drawings and records whether manually or electronically produced, which form part of the submission and any subsequent report or project document shall vest in Wits Heritage Contracts Unit. None of the documents, drawings or records may be used or applied in any manner, nor may they be reproduced or transmitted in any form or by any means whatsoever for or to any other person, without the prior written consent of Wits Heritage Contracts Unit. The Client, on acceptance of any submission by Wits Heritage Contracts Unit and on condition that the Client pays to Wits Heritage Contracts Unit the full price for the work as agreed, shall be entitled to use for its own benefit and for the specified project only:

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

CONTENTS

• 1. INTRODUCTION	6
1.2 TERMS OF REFERENCE	7
1.3 Nature of the development	8
1.4 Description of study area	8
2. APPROACH AND METHODOLOGY	8
2.1 PHYSICAL SURVEYING	8
3. Abbreviations and definitions.....	9
3.1 Abbreviations	9
3.2 Definitions	10
4. ARCHAEOLOGICAL LEGISLATION AND BEST PRACTICE	11
•	14
• 5. ASSESSMENT CRITERIA	14
5.1 Evaluation of Heritage sites	14
5.1.1 Heritage Site Significance and Mitigation Measures.....	14
• 5. Archaeological Context of study area	16
5.1 Previous Research within the study area.....	18
5.2 Probability of occurrence of sites	19
• 6. SITES OF SIGNIFICANCE.....	21
6.1 Site.1	21
• 7. ASSUMPTIONS AND LIMITATIONS	23
• 8. ASSESSMENT AND RECOMMENDATIONS	23
• 10. LIST OF PREPARES.....	24
• 11. REFERENCES.....	24
11.1 ARCHAEOLOGICAL PAPERS.....	24

ANNEXURE

Annexure A – Locality Map

FIGURES

Figure 1: <i>The depicted map represents an enlarged section of the 2628AB 1:50 000 topographical Map. The map was drawn by the Trigonometrical Survey Office in 1943.</i>	17
Figure 2: <i>Surface remains of ventilation shaft</i>	22
Figure 3: <i>Foundations of demolished buildings</i>	22

.1. INTRODUCTION

Wits Heritage Contracts Unit was contracted by Eco Assessments to conduct an Archaeological Impact Assessment for the proposed mixed use residential township development on Remainder of Portion 7 of the farm Modderfontein East 72 IR, Benoni, Gauteng Province. The report forms part of the Environmental Impact Assessment for the proposed project. The aim of the study is to identify all 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, three sites of heritage significance was identified. General site conditions and features on sites were recorded by means of photos, GPS location, and 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 all 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 ALL 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 application is for the establishment of mixed land use development.

1.4 Description of study area

The entire area is under cultivation. Refer to main EIA report for geographical, environmental and demographic issues.

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 of approximately 300 ha was surveyed over a period of one day, by means of vehicle and extensive surveys on foot.

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. 35mm photographs on digital film were taken at all the 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&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&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.

MODDERFONTEIN EAST REM PTN7 - AIA

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.

MODDERFONTEIN EAST REM PTN7 - AIA

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. ASSESSMENT CRITERIA

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.

MODDERFONTEIN EAST REM PTN7 - AIA

FIELD RATING	GRADE	SIGNIFICANCE	RECOMMENDED MITIGATION
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 (LS)	Grade 3B	High Significance	Mitigation (Part of site 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. Archaeological Context of study area

The historical background and timeframe of the study 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.

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

Middle Stone Age: Various lithic industries in SA dating from $\pm 250\,000$ yrs – $25\,000$ yrs before present. This period is first associated with archaic *Homo sapiens* and later *Homo sapiens sapiens*. Material culture includes stone tools with prepared platforms and stone tools attached to handles.

Late Stone Age: The period from $\pm 25\,000$ -yrs before present to the period of contact with either Iron Age farmers or European colonists. This period is associated with *Homo sapiens sapiens*. Material culture from this period includes: microlithic stone tools; ostrich eggshell beads and rock art.

Iron Age

The Iron Age as a whole represents the spread of Bantu speaking people and includes both the Pre-Historic and Historic periods. Similar to the Stone Age it can be divided into three 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.

Historic Timeframe

17th Century to present AD (1600 – 2000)

The historic timeframe intermingles with the later parts of the Stone and Iron Age, and can loosely be regarded as times when written and oral recounts of incidents became available.

MODDERFONTEIN EAST REM PTN7 - AIA

Wits Archaeological Data Base

No sites are recorded within or close to the present study area.

Public Consultation

Mr Eric Kumalo who resides close to the study area was consulted. He has intimate knowledge of the area and is not aware of any graves or heritage significant sites within the study area.

Archival Map

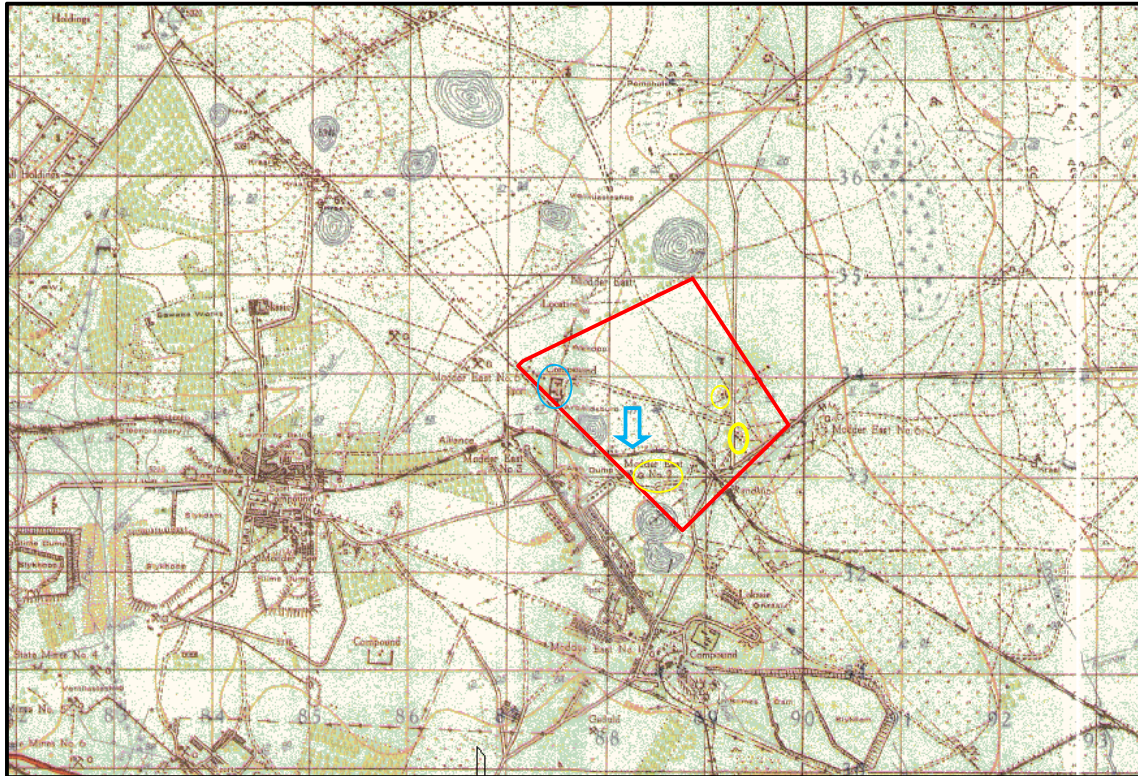


Figure 1: *The depicted map represents an enlarged section of the 2628AB 1:50 000 topographical Map. The map was drawn by the Trigonometrical Survey Office in 1943.*

On the Archival map several structures are indicated within the study area. During the field survey it was confirmed that only the structures indicated in blue still exists. Several dwellings, huts and graves are indicated outside of the study area.

5.1 Previous Research within the study area

Several other Phase 1 Impact Assessments was done in the general area under discussion. From this we know that the remains of archaeological sites in the area consist of scatters of Middle Stone Age artefacts. No record of Iron Age settlements occur in the area but several historical sites, including graves and black concentration camps can be expected within the general area.

A Archival study done on the presence of black concentration camps indicated the following.

The study has shown that although very little information with regards to black concentration camps along the wider region exists, it is known that these camps were almost always situated in close proximity to railway lines. During the South African War there was not a railway line that ran through the study area , the railway line that transect the study area was build after 1910 according to Berg 1999.

The list of black concentration camps in the then Transvaal Colony does not contain the name Modderbee. The closest camps to the study area were Boksburg and Brakpan, the names of which indicate them to have been situated in or very close to the towns. This was confirmed by the Boksburg Historical Association who indicated that the site of the old Boksburg camp is situated near the old railway line within present-day Boksburg.

Furthermore, the study area did not reveal any of the archaeological remains typical of black concentration camps such as neatly arranged rows of rocks (signifying the positions of the tents), ash middens as well as stone-packed black graves containing dates from the war years.

As a result it can be concluded that based on the available historical evidence no black concentration camps were situated within the study area.

5.2 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: *Low Probability*

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: *Low Probability*
- MSA: *Low Probability*
- LSA: *Low Probability*
- LSA –Herder: *Low Probability*

Iron Age Finds

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

MODDERFONTEIN EAST REM PTN7 - AIA

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: Medium Probability*

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

.6. SITES OF SIGNIFICANCE

6.1 Site.1

Co-ordinates: S26.167328 E028.428613

This is the location of foundations of several demolished buildings encompassing an area of approximately 3ha. Several other features are associated with the site like a ventilation shaft and a ash dump. According to the archival map the foundations are part of the mine compound.

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



Figure 2: *Surface remains of ventilation shaft*



Figure 3: *Foundations of demolished buildings*

.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. Low ground visibility is present on site due to exceptional high vegetation growth and the possibility of the occurrence of unmarked graves 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.

.8. ASSESSMENT AND RECOMMENDATIONS

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

Site 1 is possibly associated with early gold mining in the Benoni area, how ever due to the poor preservation of the site a medium significance rating is attributed to the site. How ever the site is older than 60 years and therefore protected by legislation.

On the locality map it seems that the site might be located just outside of the development area. It is therefore recommended that it must first be established beyond doubt that the site is located outside of the development area. If this is the case no further action is necessary for this site. If the site falls inside the development area and will be impacted upon by the development the site must be documented by a conservation architect who will then assist the developer in obtaining a destruction permit from SAHRA to demolish the site.

The tracks of railway line dating from 1910 have been stolen and the railway line is not in use any more. No further action is necessary for this aspect.

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

General

Low ground visibility is present on portions of the site due to high vegetation growth and the possibility of the occurrence of unmarked or informal graves and subsurface finds can not be excluded. 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.

.10. LIST OF PREPARES

Jaco van der Walt, BA (Hon) Archaeology (Wits)

.11. REFERENCES

11.1 ARCHAEOLOGICAL PAPERS

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

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

Bergh, J.S 1999. Geskiedenis Atlas van Suid Africa. Die vier Noordelike Provinsies. Van Schaik uitgewers.

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

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

Documents on Cultural Heritage Protection. 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.

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

ANNEXURE A:

Locality Map

MODDERFONTEIN EAST REM PTN7 - AIA

