

Archaeological Impact Assessment

FOR THE PROPOSED AMD PIPELINE, WESTERN BASIN, RANDFONTEIN ESTATES AREA

Prepared For

AECOM

By



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EXECUTIVE SUMMARY

Site name and location: The Witwatersrand Western Basin Acid Mine Drainage project is located in the Gauteng Province in the Randfontein estates area.

Purpose of the study: Phase 1 Archaeological Impact Assessment to determine the presence of cultural heritage sites and the impact of the proposed project on these resources within the study area.

1:50 000 Topographic map: 2627BA

Environmental Consultant: AECOM

Developer: Department of Environmental Affairs

Heritage Consultant: Heritage Contracts and Archaeological Consulting CC (HCAC).

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Date of Report: 25 July 2015

Findings of the Assessment:

The alignment of the proposed AMD pipeline of approximately 1.59 km was assessed in terms of the archaeological component of Section 35 of the NHRA. Considering that the larger study area has been highly disturbed by various land uses and activities (mostly mining) it is highly unlikely that any significant heritage resources are still present within the study area. This was confirmed during the survey and no surface indicators of archaeological (Stone or Iron Age) material were identified in the study area. Other studies for the area similarly recorded no archaeological sites of significance although cemeteries and historic structures were recorded (e.g. Karodia (2012), van Vollenhoven and Pelsler (2007)). In terms of the built environment of the area (Section 34), no structures occur in the study area.

As no archaeological, grave sites or structures older than 60 years were identified in the study area there are no fatal flaws in terms of the archaeological component to the project however management measures as made in section 7 of this report would need to be taken into account.

Due to the lack of significant heritage features in the study area there is from an archaeological point of view no reason why the development cannot commence based on approval from SAHRA.

General

Due to extensive land alteration, ground visibility was low on portions of the site during the survey. The possible occurrence of unmarked or informal graves and subsurface finds can thus not be excluded. If during construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped and a qualified archaeologist must be contacted for an assessment of the find.

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ABBREVIATIONS

AIA: Archaeological Impact Assessment
ASAPA: Association of South African Professional Archaeologists
BIA: Basic Impact Assessment
CRM: Cultural Resource Management
ECO: Environmental Control Officer
EIA: Environmental Impact Assessment*
EIA: Early Iron Age*
EIA Practitioner: Environmental Impact Assessment Practitioner
EMP: Environmental Management Plan
ESA: Early Stone Age
GPS: Global Positioning System
HIA: Heritage Impact Assessment
LIA: Late Iron Age
LSA: Late Stone Age
MEC: Member of the Executive Council
MIA: Middle Iron Age
MPRDA: Mineral and Petroleum Resources Development Act
MSA: Middle Stone Age
NEMA: National Environmental Management Act
PRHA: Provincial Heritage Resource Agency
SADC: Southern African Development Community
SAHRA: South African Heritage Resources Agency

**Although EIA refers to both Environmental Impact Assessment and the Early Iron Age both are internationally accepted abbreviations and must be read and interpreted in the context it is used.*

GLOSSARY

Archaeological site (remains of human activity over 100 years old)

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

The Iron Age (~ AD 400 to 1840)

Historic (~ AD 1840 to 1950)

Historic building (over 60 years old)

1 BACKGROUND INFORMATION

<i>Kind of study</i>	Archaeological Impact Assessment
<i>Type of development</i>	Acid Mine Drainage
<i>Consultant:</i>	Aecom

The Archaeological Impact Assessment (AIA) report forms part of the EMPr for the proposed project.

The aim of the study is to identify cultural heritage sites, document, and assess their importance within local, provincial and national context. It serves 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. It is also conducted to protect, preserve, and develop such resources 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: Phase 1, a review of the heritage scoping report that includes collection from various sources and consultations; Phase 2, the physical surveying of the area on foot and by vehicle; Phase 3, reporting the outcome of the study.

During the survey no archaeological sites were identified although a stone cairn was recorded. General site conditions and features on sites were recorded by means of photographs, GPS locations, and site descriptions. Possible impacts were identified and mitigation measures are proposed in the following report.

The Environmental Consultant must submit this report to SAHRA together with all relevant project information for peer review.

1.1 Terms of Reference

Desktop study

Conducting a brief desktop study where information on the area is collected to provide a background history of the area.

Field study

Conduct a field study to: a) systematically survey the proposed project area to locate, identify, record, photograph and describe sites of archaeological, historical or cultural interest; b) record GPS points identified as significant areas; c) determine the levels of significance of the various types of heritage resources recorded in the project area.

Reporting

Report on the identification of anticipated and cumulative impacts the operational units of the proposed project activity may have 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 studies and results comply with Heritage legislation and the code of ethics and guidelines of ASAPA.

To assist the developer in managing the discovered heritage resources in a responsible manner, and to protect, preserve, and develop them within the framework provided by the National Heritage Resources Act of 1999 (Act 25 of 1999).

1.2. Archaeological Legislation and Best Practice

Phase 1, an AIA or a HIA is 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 EIA, is required under the National Heritage Resources Act NHRA of 1999 (Act 25 of 1999), Section 23(2)(b) of the NEMA and section s.39(3)(b)(iii) of the MPRDA.

The AIA should be submitted, as part of the EIA, BIA or 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 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 or with a proven ability to do archaeological work.

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 ASAPA in collaboration with SAHRA. ASAPA is a legal body, based in South Africa, representing professional archaeology in the SADC region. ASAPA is primarily involved in the overseeing of ethical practice and standards regarding the archaeological profession. Membership is based on proposal and secondment by other professional members.

Phase 1 AIAs 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 guidelines 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 can only be conducted with 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 an 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 of a site, a destruction permit must be applied for from SAHRA by the client 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 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 this age category, located inside a formal cemetery administrated by a local authority, require the same authorisation as set out for graves younger than 60 years, in addition to 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 reinternment 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. 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).

1.3 Description of Study Area

1.3.1 Location Data

The Witwatersrand Western Basin Acid Mine Drainage project is located in the Gauteng Province in the Randfontein estates area (Figure 1). The proposed pipeline follows an existing road and starts at 26° 07' 30.0234" S, 27° 43' 37.1151" E and ends at 26° 08' 03.7478" S, 27° 43' 02.3625" E (Figure 2). The whole region was subjected to mining and mining related activities.

1.3.2. Location Map

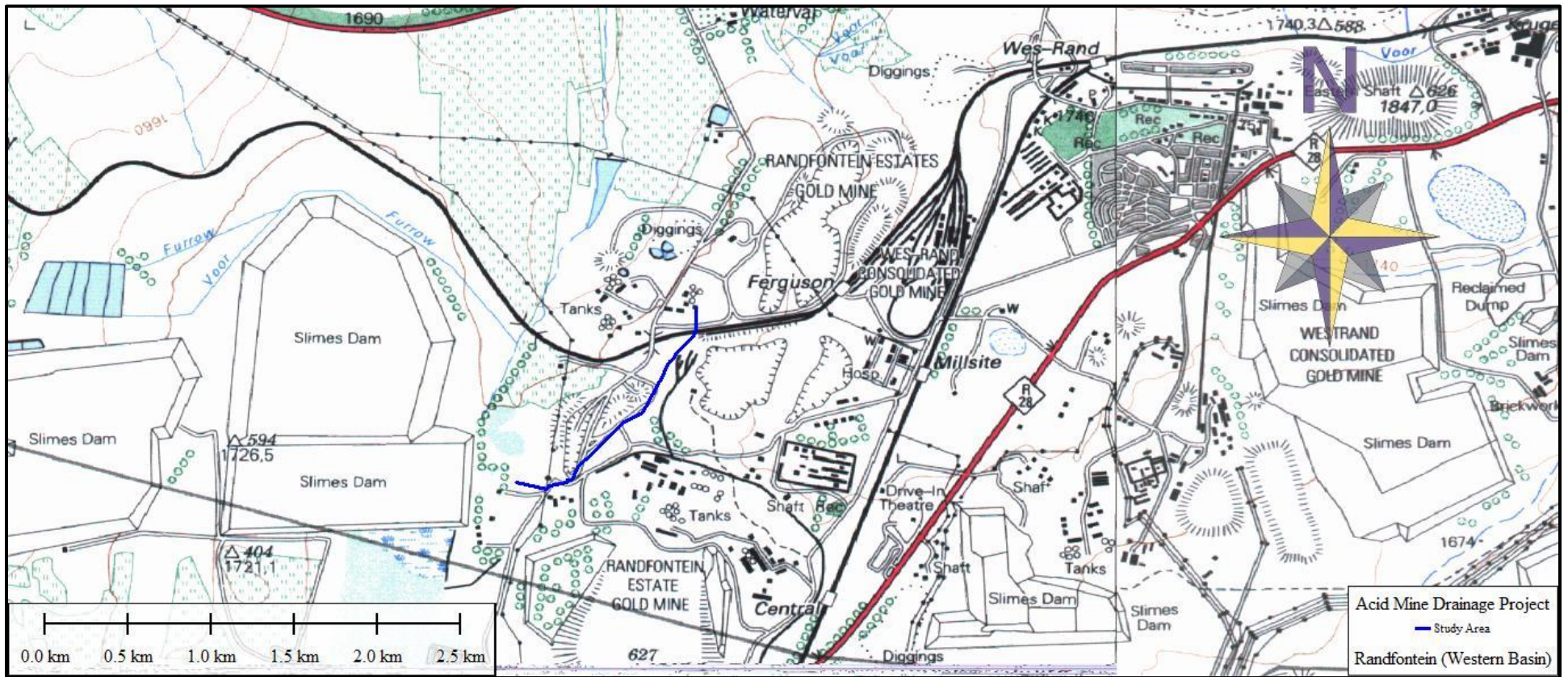


Figure 1: Study area

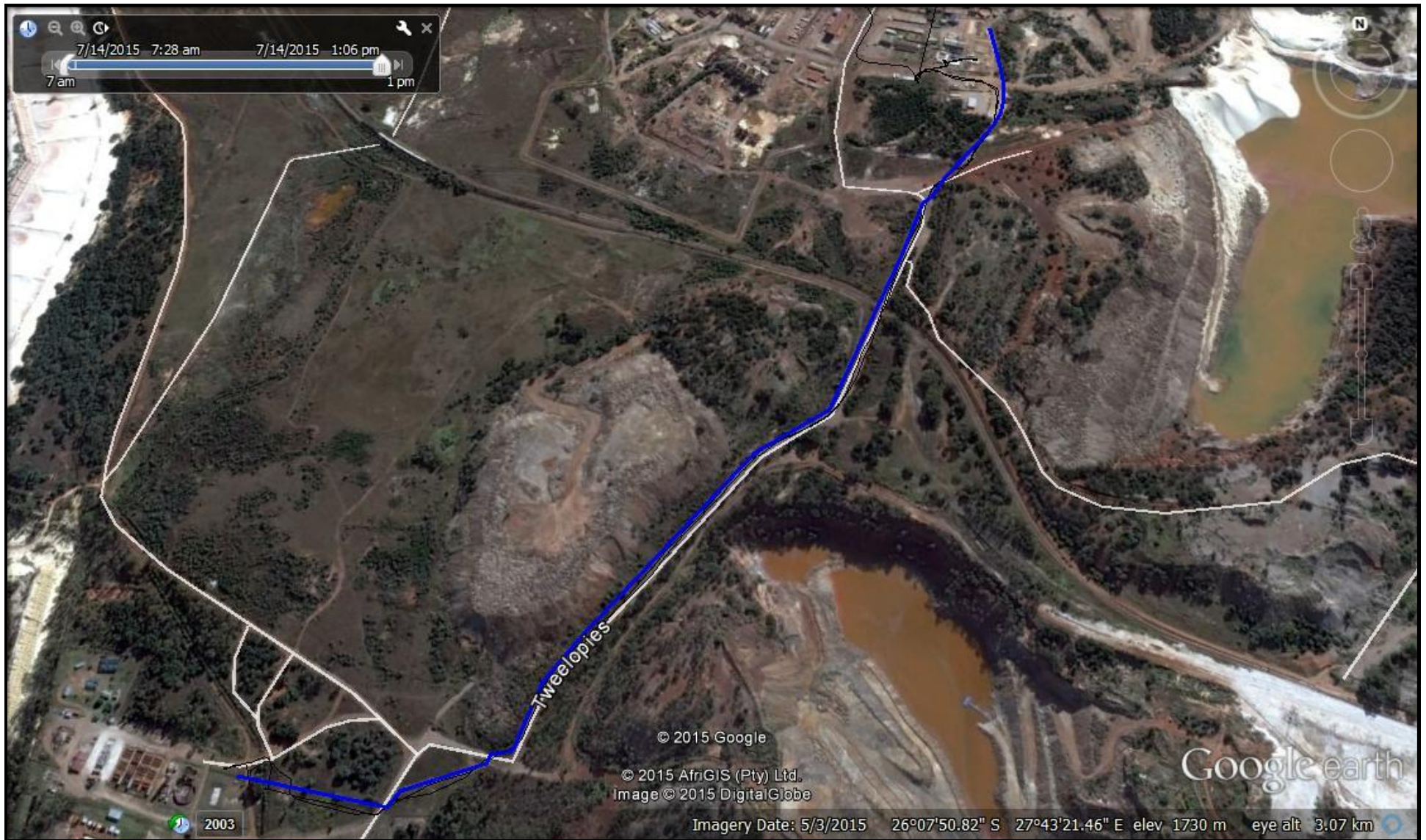


Figure 2: The study area in blue and areas covered during the survey indicated in black.

2. APPROACH AND METHODOLOGY

The aim of the study is to cover archaeological databases and historical sources to compile a background history of the study area followed by field verification; this was accomplished by means of the following phases.

2.1 Phase 1 - Desktop Study

The first phase comprised a desktop study, gathering data to compile a background history of the area in question. It included scanning existing records for archaeological sites, historical sites and graves, on the inhabitants of the area.

2.1.1 Literature Search

Utilising data for information gathering stored in the archaeological database at Wits and previous CRM reports done in the area. The aim of this is to extract data and information on the area in question.

2.1.2 Information Collection

SAHRIS was consulted to collect data from previously conducted CRM projects in the region to provide a comprehensive account of the history of the study area.

2.1.3 Consultation

No consultation was conducted by the heritage team as this is conducted as part of the BIA.

2.1.4 Google Earth and Mapping Survey

Google Earth and 1:50 000 maps of the area were utilised to identify possible places where sites of heritage significance might be located.

2.1.5 Genealogical Society of South Africa

The database of the Genealogical Society was consulted to collect data on any known graves in the area.

2.2 Phase 2 - Physical Surveying

Due to the nature of cultural remains, the majority of which occurs below surface, a field survey of the study area was conducted; focussing on drainage lines, hills and outcrops, high lying areas and disturbances in the topography. The study area was surveyed on foot by a professional archaeologist on 14 July 2015.

2.3. Assumptions and Limitations

Due to the fact that most cultural remains may occur below surface, the possibility exists that some features or artefacts may not have been discovered/ recorded during the survey. Low archaeological visibility is due to extensive ground disturbance, and the possible occurrence of unmarked graves and other cultural material cannot be excluded. Although Heritage Contracts and Archaeological Consulting CC surveyed the area as thoroughly as possible safety concerns limited coverage of the area, it is incumbent upon the developer to stop operations and inform the relevant heritage agency should further cultural remains, such as unmarked graves, stone tool scatters, artefacts, bones or fossils, be exposed during the process of development.

3. NATURE OF THE DEVELOPMENT

The site for the proposed Western Basin AMD water treatment plant for the short term intervention is close to the existing Rand Uranium Mine water treatment plant. Short term intervention activities for the Western Basin AMD plant will include:

- Abstraction of AMD via pumps in Shaft No 9 at a depth to achieve the ECL 1550 mamsl and transfer via pipeline to the Rand Uranium Treatment Works
- The pipeline will be above ground.

4. HISTORICAL AND ARCHAEOLOGICAL BACKGROUND OF THE STUDY AREA

4.1 Databases Consulted

Wits Archaeological Data Bases

8 Previously recorded sites are on record for the 2627 BA 1: 50 000 sheet at the Wits database. These sites consist of Stone Age (ESA & LSA) and Historic mining remains. None of these sites are located within or close to the project area but provide a background of to the sites that can be expected.

SAHRIS

At least four previous CRM projects were conducted in the general vicinity of the study area. The studies include a water pipeline project completed by Van Schalkwyk (2009). No sites were recorded, but the report mentions that structures older than 60 years occur in the area, Van Schalkwyk (2009) for a township development survey also recorded no sites. Huffman (2007) completed a study in Luipaardsvlei and recorded no sites of significance.

Genealogical Society and Google Earth Monuments

Neither the Genealogical Society nor the monuments database at Google Earth (Google Earth also include some archaeological sites and historical battlefields) have any recorded sites in the study area. The Steam Loco Kitty, a national monument is however indicated and is located over 100 meters to the east of the study area. This site will not be impacted on by the proposed development.

4.2 Archaeological and Historical Information Available on the Study Area

The report will endeavour to give an account of the history of this area and also a brief overview of the history of the wider area and district in which the study area is located.

4.2.1. Historiography and Methodology

Sources for the history of the area surrounding the study area include secondary source material, maps, electronic sources and archival documents. A brief history of human settlement and black and white interaction in the area is included in this report. The source of J. S. Bergh will be used to write a short history of the area.

4.2.2. Maps of The Area Under Investigation



Figure 3: 1904 Major Jackson Map of the Potchefstroom district with the approximate location of the study area marked in red.

4.2.3. Historical background of the area

J. S. Bergh's historical atlas of the four northern provinces of South Africa is a very useful source for the writing of local and regional history. The Difaqane (Sotho), or Mfekane ("the crushing" in Nguni) was a time of bloody upheavals in Natal and on the Highveld, which occurred around the early 1820's until the late 1830's. (Bergh 1999: 10) It came about in response to heightened competition for land and trade, and caused population groups like gun-carrying Griquas and Shaka's Zulus to attack other tribes. (Bergh 1999: 14; 116-119) It seems that, in 1827, Mzilikazi's Ndebele started moving through the area where Johannesburg is located today. This group went on raids to various other areas in order to expand their area of influence. (Bergh 1999: 11)

During the time of the Difaqane, a northwards migration of white settlers from the Cape was also taking place. Some travellers, missionaries and adventurers had gone on expeditions to the northern areas in South Africa, some already as early as the 1720's. One Bain travelled through, or close by the area where the present-day study area was located in 1831. One Harris also travelled through this area in 1836. (Bergh 1999: 13)

It was however only by the late 1820's that a mass-movement of Dutch speaking people in the Cape Colony started advancing into the northern areas. This was due to feelings of mounting dissatisfaction caused by economical and other circumstances in the Cape. This movement later became known as the Great Trek. This migration resulted in a massive increase in the extent of that proportion of modern South Africa dominated by people of European descent. (Ross 2002: 39) By 1939 to 1940, farm boundaries were drawn up in an area that includes the present-day Johannesburg and Krugersdorp. (Bergh 1999: 15).

4.2.2. Johannesburg

The city of Johannesburg was formally established in 1886 with the discovery of gold and the Witwatersrand reef on the farm Langlaagte. This gold discovery set off an influx of people from all over the world into the settlement to find gold. The new settlement was named after two officials of the Zuid-Afrikaansche Republiek (ZAR), Christiaan Johannes Joubert and Johannes Rissik, who both worked in land surveying and mapping.

4.2.3. History of Randfontein

Randfontein as a settlement area dates back to the 1550's when the AmaNdebele lived as one nation at Emhlangeni (translated today into the Sesotho language as Mohlakeng, one of the south eastern suburbs of Randfontein) under King Mhlanga around 1550-1580 (cpfrandfontein.co.za). In 1857 the Bootha and Jonker families arrive in the area. (Owners of the farm *Groot Elandsvlei* where the suburbs of Randgate, Loumarina, and Wilbotsdal are today).

Randfontein has a rich gold mining history. Gold was discovered in Blaauwbank stream near Magaliesburg in 1874 by Henry Lewis, an Australian prospector. Discovery of gold on the Rand by Harrison and Walker started the Reef gold rush in 1886 and in the same year JB Robinson (regarded by some as one of the founders of the modern day town) arrives on the Reef and starts prospecting in the Randfontein area.

In 1889 the Randfontein Estates Gold Mining Company (REGM) is registered. JB Robinson buys properties and farms in the Randfontein district in the following year. Randfontein was established formally in 1890 as well.

The first shop in Randfontein, Fedlers, opens in 1894. In 1901 the first car, owned by Hector Mackay, arrives in town.

Chinese miners arrive in Randfontein in 1904. On 1 April 1905, on the North Randfontein gold-mine in the Transvaal, a dispute between the Chinese labourers and the mine management erupted into violence. The entire Chinese work force on the mine premises was involved and mounted European police were used to resolve the outbreak. As a result of this dangerous dispute over wages, fifty-three Chinese were arrested, charged with public violence and assault with intent to do harm. After the arrests the Chinese returned to work. On 4 April, however, they received a wage offer which formed not only the basis of the settlement at the North Randfontein, but was to serve as a model upon which the Transvaal Chamber of Mines based its wage policy towards all Chinese labourers for the rest of their time on the Rand (Richardson 1976).

In 1929 the Randfontein Municipality was established; independent from Krugersdorp which managed the town from 1903.

4.2.4. Archaeology of the Johannesburg area

Although there are no well-known Stone Age sites located on or around the study area there is evidence of the use of the larger area by Stone Age communities for example along the Kliprivier where ESA and MSA tools were recorded. LSA material is recorded along ridges to the south of the current study area (Huffman 2008). Petroglyphs occur at Redan as well as along the Vaal River (Berg 1999).

Regarding the Iron Age, the well-known Smelting Site at Melville Koppies requires further mention. The site was excavated by Professor Mason from the Department of Archaeology of WITS in the 1980's. Extensive Stone walled sites are also recorded at Klipriviers Berg Nature reserve belonging to the Late Iron Age period. A large body of research is available on this area. These sites (Taylor's Type N, Mason's Class 2 & 5) are now collectively referred to as Klipriviersberg (Huffman 2007). These settlements are complex in that aggregated settlements are common, the outer wall sometimes includes scallops to mark back courtyards, there are more small stock kraals, and straight walls separate households in the residential zone. These sites dates to the 18th and 19th centuries and was built by people in the Fokeng cluster.

In this area the Klipriviersberg walling would have ended at about AD 1823, when Mzilikazi entered the area (Rasmussen 1978). This settlement type may have lasted longer in other areas because of the positive interaction between Fokeng and Mzilikazi.

5. HERITAGE SITE SIGNIFICANCE AND MITIGATION MEASURES

The presence and distribution of heritage resources define a 'heritage landscape'. In this landscape, every site is relevant. In addition, because heritage resources are non-renewable, heritage surveys need to investigate an entire project area, or a representative sample, depending on the nature of the project. In the case of the proposed development the local extent of its impact necessitates a representative sample and only the footprint of the areas demarcated for development were surveyed. In all initial investigations, however, the specialists are responsible only for the identification of resources visible on the surface.

This section 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/cultural heritage deposits;
- » 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/is known);
- » The preservation condition of the sites;
- » Potential to answer present research questions.

Furthermore, The National Heritage Resources Act (Act No 25 of 1999, Sec 3) distinguishes nine criteria for places and objects to qualify as 'part of the national estate' if they have cultural significance or other special value. These criteria are:

- » Its importance in/to the community, or pattern of South Africa's history;
- » Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
- » Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- » Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
- » Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- » Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- » Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- » Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa;
- » Sites of significance relating to the history of slavery in South Africa.

5.1. Field Rating of Sites

Site significance classification standards prescribed by SAHRA (2006), and approved by ASAPA for the SADC region, were used for the purpose of this report. The recommendations for each site should be read in conjunction with section 7 of this report.

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

6. BASELINE STUDY-DESCRIPTION OF SITES

It is important to note that the entire farm was not surveyed but only the 1.59 km AMD pipeline alignment as indicated in Figure 1 & 2. The proposed pipeline follows existing pipeline servitude (Figure 4) and for large parts this is located within the road reserve (Figure 5). The pipeline traverses an area where the whole region was subjected to mining and mining related activities (Figure 2). The pipeline starts and ends at existing facilities (Figure 6). All of these activities would have impacted on surface indicators of archaeological sites.

A Survey of the larger AMD project was conducted previously (Karodia 2012) who did not record any significant features in the area where the proposed pipeline is situated (heritage features was recorded in other areas). Other studies for the larger area similarly recorded no archaeological sites of significance although cemeteries and historic structures were recorded (e.g. Karodia (2012), van Vollenhoven and Pelsler (2007)).

Considering that the larger study area has been highly disturbed by various land uses and activities (mostly mining) it is highly unlikely that any significant heritage resources are still present within the study area. This was confirmed during the survey and no surface indicators of archaeological material (Section 35 of NHRA) were identified in the study area. In terms of the built environment of the area (Section 34), no structures occur in the study area.

Outside of the pipeline impact area a stone cairn was identified of which the purpose is unknown (Figure 7). This could be the result of a range of activities in the highly disturbed area but is difficult to ascertain for certain based on surface observations only. The cairn is located approximately 10 meters outside of the development footprint (Figure 8). The site is located at 26° 08' 04.7688" S, 27° 43' 08.6413" E. The cairn is round/oval in shape measuring approximately 1 meter in diameter. It is unlikely that it represents a grave but will have to be treated as such unless other information becomes available.



Figure 4: Western section of study area.



Figure 5: Pipeline located within the road reserve.



Figure 6: Existing treatment works.



Figure 7: Elongated stone cairn.

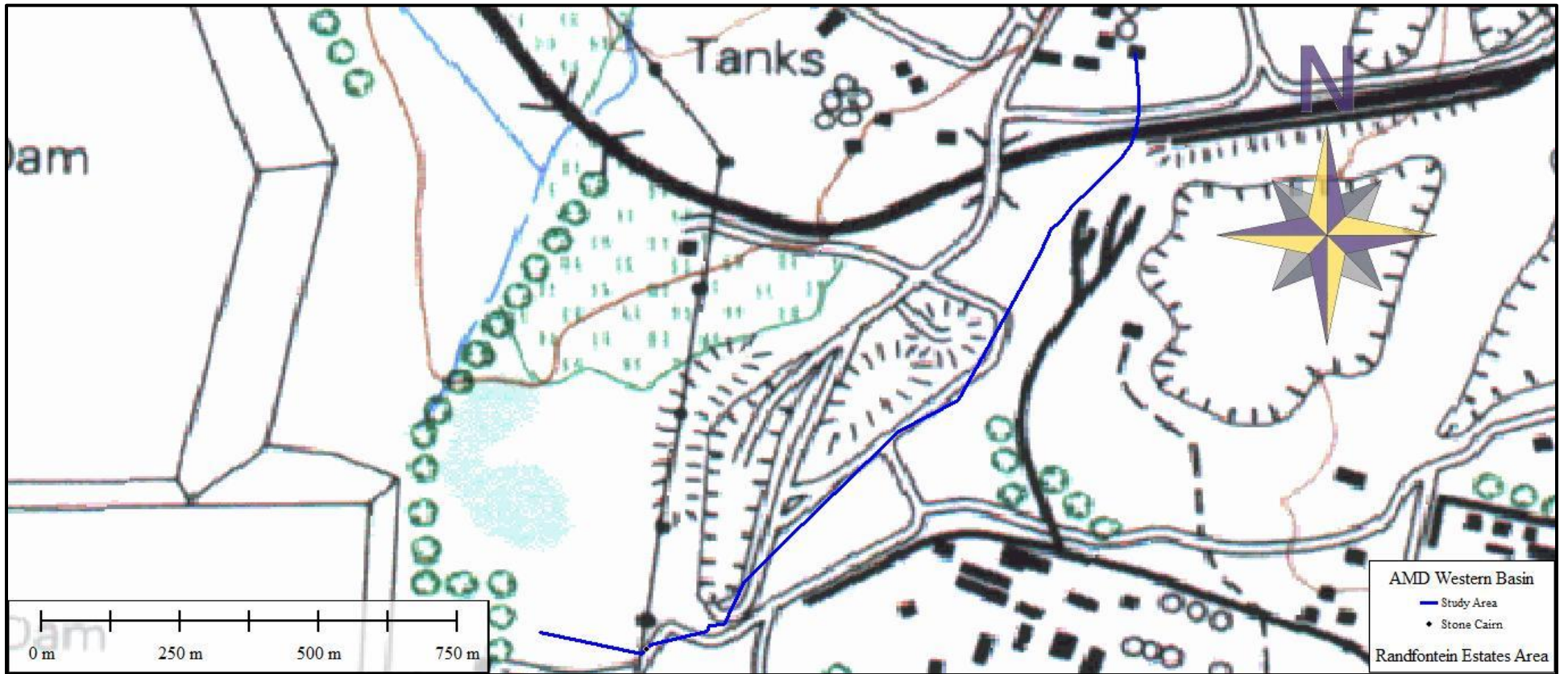


Figure 8: Location of stone cairn.

7. RECOMMENDATIONS AND CONCLUSIONS

The alignment of the proposed AMD pipeline of approximately 1.59 km was assessed in terms of the archaeological component of Section 35 of the NHRA. Considering that the larger study area has been highly disturbed by various land uses and activities (mostly mining) it is highly unlikely that any significant heritage resources are still present within the study area. This was confirmed during the survey and no surface indicators of archaeological (Stone or Iron Age) material was identified in the study area. Other studies for the area similarly recorded no archaeological sites of significance although cemeteries and historic structures were recorded (e.g. Karodia (2012), van Vollenhoven and Pelsler (2007)). In terms of the built environment of the area (Section 34), no structures occur in the study area. No cultural landscape elements were noted and visual impacts to scenic routes and sense of place are also considered to be low from a heritage perspective.

Outside (approximately 10 meters) of the pipeline impact area a stone cairn was identified of which the purpose is unknown. This could be the result of a range of activities in the highly disturbed area but is difficult to ascertain for certain based on surface observations only. It is unlikely that it represents a grave but will have to be treated as such unless other information becomes available. Therefore the following recommendations are applicable for the study area:

- The purpose and significance of the cairn is unknown and although no direct impact is foreseen on it, it is recommended that the cairn is demarcated with an 8 meter buffer zone during the construction phase of the pipeline to protect it against accidental damage by earth moving equipment.
- Due to the subsurface nature of archaeological material and graves the possibility of the occurrence of unmarked or informal graves and subsurface finds cannot be excluded. If during construction any possible finds such as stone tool scatters, artefacts or bone and fossil remains are made, the operations must be stopped and a qualified archaeologist must be contacted for an assessment of the find.

7.1 Reasoned Opinion

The proposed pipeline traverses an area already impacted on by various other activities (mining, road construction and existing pipeline servitude) and is above ground, therefore minimising the possible impact on heritage resources. If the above recommendations are adhered to and based on approval from SAHRA, HCAC is of the opinion that the development can continue as the impact of the development on heritage will not impact negatively on the archaeological record of the Randfontein area.

8. PROJECT TEAM

Jaco van der Walt, Project Manager and Archaeologist

Liesl Bester, Archival Study

9. STATEMENT OF COMPETENCY

I (Jaco van der Walt) am a member of ASAPA (no 159), and accredited in the following fields of the CRM Section of the association: Iron Age Archaeology, Colonial Period Archaeology, Stone Age Archaeology and Grave Relocation. This accreditation is also valid for/acknowledged by SAHRA and AMAFA.

I have been involved in research and contract work in South Africa, Botswana, Zimbabwe, Mozambique and Tanzania; having conducted more than 400 AIAs since 2000.

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MAPS

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