

Heritage Impact Assessment

Heritage Impact Assessment for the proposed new
Oxidation Ponds at Tubatse Ext. 7 north of Burgersfort,
Limpopo Province.

Compiled for:

Tekplan Environmental

Survey conducted & Report compiled by:

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Executive Summary

Site name and location: Proposed development of new oxidation ponds at Tubatse Ext. 7 approximately 10km north of Burgersfort in the Limpopo Province.

Local Authority: Sekhukhune District Municipality.

Developer: The Greater Tubatse Local Municipality.

Date of field work: 23 February 2012.

Date of report: March 2012.

Findings: One site with five graves was identified during the study. The graves will not be directly affected by the proposed development as they fall outside of the area earmarked for development. It is however important to take note of the identified graves and to adhere to the recommendations as outlined in this report to avoid any accidental damage of the graves during the development of the new oxidation ponds and sewer system.

No further site-specific actions or any heritage mitigation measures are recommended as no further heritage resource sites or finds of value or significance were identified in the indicated study area. The proposed development of the Tubatse oxidation ponds can continue from a heritage point of view if the recommendations as outlined in this report are adhered to.

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. Hutten Heritage Consultants 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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1. Introduction

Hutten Heritage Consultants was contracted by TEKPLAN ENVIRONMENTAL to conduct a Heritage Impact Assessment (HIA) on the proposed development of new oxidation ponds at Tubatse Ext. 7, approximately 10km north of Burgersfort in the Limpopo Province.

The aim of the study was to identify all heritage sites, to document and to assess their significance within Local, Provincial and National context. The report outlines the approach and methodology implemented before and during the survey, which includes in Phase 1: Information collection from various sources and social consultations; Phase 2: Physical surveying of the area on foot and by vehicle; and Phase 3: Reporting the outcome of the study.

This HIA forms part of the Environmental Impact Assessment (EIA) as required by various Acts and Laws as described under the next heading and is intended for submission to the provincial South African Heritage Resources Agency (SAHRA) for peer review.

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 representing professional archaeology in the Southern African Development Community (SADC) region. As a member of ASAPA, these standards are trying to be adhered to.

The extent of the proposed development sites were determined as well as the extent of the areas to be affected by secondary activities (access routes, construction camps, etc.) during the development.

2. Legislative Requirements

The identification, evaluation and assessment of any cultural heritage site, artefact or find in the South African context is required and governed by the following legislation:

National Environmental Management Act (NEMA) Act 107 of 1998

National Heritage Resources Act (NHRA) Act 25 of 1999

Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002

Development Facilitation Act (DFA) Act 67 of 1995

The following sections in each Act refer directly to the identification, evaluation and assessment of cultural heritage resources.

National Environmental Management Act (NEMA) Act 107 of 1998

Basic Environmental Assessment (BEA) – Section (23)(2)(d)

Environmental Scoping Report (ESR) – Section (29)(1)(d)

Environmental Impacts Assessment (EIA) – Section (32)(2)(d)

Environmental Management Plan (EMP) – Section (34)(b)

National Heritage Resources Act (NHRA) Act 25 of 1999

Protection of Heritage resources – Sections 34 to 36; and

Heritage Resources Management – Section 38

Minerals and Petroleum Resources Development Act (MPRDA) Act 28 of 2002
Section 39(3)
Development Facilitation Act (DFA) Act 67 of 1995
The GNR.1 of 7 January 2000: Regulations and rules in terms of the Development Facilitation Act, 1995. Section 31

3. Proposed Project

The Greater Tubatse Local Municipality has proposed the development of new oxidation ponds at Tubatse Ext. 7, approximately 10km north of Burgersfort in the Limpopo Province.

The existing oxidation ponds at Tubatse are located in the middle of a new residential development area. This can result in health hazards for the resident population. These oxidation ponds therefore have to be decommissioned and be relocated to a new position not closer than 600m from the new residential area.

This new development will consist of the construction of a number of dams and oxidation ponds that will be able to receive and treat up to 800 kℓ / day. These will cover an area of approximately 6ha. A new outfall sewer of 600mm in diameter and approximately 1.9km long will also be constructed. This sewer will connect the oxidation ponds to new and existing sewerage systems. The purpose of the study was to determine if the proposed area was suitable for the development of the new oxidation ponds from a heritage point of view.

The project was tabled during February 2012 and the developer intends to commence as soon as possible after receipt of the ROD from the Department of Environmental Affairs.

4. Project Area Description

The proposed development of the new oxidation ponds will be situated at Tubatse Ext. 7 approximately 10km north of Burgersfort in the Limpopo Province.

The proposed location for the new oxidation ponds was situated adjacent and on the western banks of the Steelpoort River which flowed from the south to the north. It was also situated adjacent and on the southern side of the D2537 tar road from Penge to Burgersfort (photo 1).

The area was predominantly flat and consisted of red/brown sandy soils. The proposed site and adjacent areas were cleared of all natural vegetation and were subject to years of intensive agricultural activities. The area was ploughed and planted for many years as part of a government agricultural project (photo 2). An overhead irrigation system was still present on the site during the investigations.

The outfall sewer will be situated adjacent and on the southern side of the Penge / Burgersfort tar road and will connect the proposed oxidation ponds with new and existing sewerage systems further to the north-west (photo 3).

The existing oxidation ponds will be decommissioned and this area will form part of the new residential development (photo 4).

The proposed development will be approximately 6ha in size and was situated on the Remainder of the Farm Praktiseer 275 KT. The proposed development will be situated on the Burgersfort 2430 CB 1:50 000 topographical map (See Appendix B: Location Maps).

5. Archaeological History of the Area

The examination of archival records, historical data and cartographic resources represents a critical additional tool for locating and identifying heritage resources and in determining the historical and cultural context of the study area. Therefore an internet literature search was conducted and relevant archaeological and historical texts were also consulted. Relevant topographic maps and satellite imagery were studied. Researching the National Archive records as well as the SAHRA APM Report Mapping Project records, it was determined that eight previous archaeological or historical studies had been performed within grid square 2430CB:

Roodt, F., 2002. **Phase 1 Archaeological Impact Assessment (Scoping) Tubatse Water Supply**. An unpublished report by R & R Cultural Resource Consultants on file at SAHRA as 2002-SAHRA-0052.

Birkholtz, P.D., 2005. **Phase 1 Heritage Impact Assessment, Motaganeng Project on Portions of the Farm Aapiesdoorndraai 298 KT**. An unpublished report by Archaeology Africa CC on file at SAHRA as 2005-SAHRA-0157.

Pistorius, J.C.C., 2005. **An Assessment of the Heritage Potential for a Proposed New Route for a 132 kV Power Line Between the Merensky Substation and the Proposed New Burgersfort Substation in the Mpumalanga and Limpopo Provinces of South Africa**. An unpublished report by Archaeologist and Cultural Heritage Management Consultants on file at SAHRA as 2005-SAHRA-0289.

Fourie, W. & van der Walt, J., 2006. **Heritage Impact Assessment: Modulakgogo Eco Estate Mooifontein 313 KT, Tubatse Municipality, Limpopo Province**. An unpublished report by Matakoma Heritage Consultants (Pty) Ltd on file at SAHRA as 2006-SAHRA-0417.

Gaigher, S., 2007. **Heritage Impact Assessment for the Proposed Mooihoek, Burgersfort Bulk Water Supply Phase 2.1 and 2.2 Project, Limpopo**. An unpublished report by Archaeo-Info on file at SAHRA as 2007-SAHRA-0352.

Gaigher, S., 2007. **Exemption of the Following Proposed Vodacom Base Stations and Masts from Full Heritage Impact Assessment Investigation, Riverscross, Burgersfort Town and Van Collerspas.** An unpublished report by Archaeo-Info on file at SAHRA as 2007-SAHRA-0441.

Pelser, A.J. & van Vollenhoven, A.C., 2008. **A Report on a Cultural Heritage Impact Assessment on Portion 14 of the Farm Sterkfontein 318 KT, Burgersfort/Steelpoort Area, Limpopo.** An unpublished report by Archætnos CC on file at SAHRA as 2008-SAHRA-0507.

Roodt, F., 2008. **Phase 1 Heritage Resources Scoping Report: Burgersfort Extension 65 and 74 Burgersfort, Mpumalanga.** An unpublished report by R & R Cultural Resource Consultants on file at SAHRA as 2008-SAHRA-0509.

In addition, this author undertook a historical impact assessment immediately adjacent to the current study area in 2009:

Hutten, M., 2009. **Heritage Impact Assessment for the Proposed Residential Township on the farm Leeuwvallei at Burgersfort, Limpopo Province.** An unpublished report by Hutten Heritage Consultants compiled for Africa Geo-Environmental Services.

The historical background and timeframe of the study area and other areas in Southern Africa can be divided into the Stone Age, Iron Age and Historical period. These can be divided as follows:

Stone Age sites

The Stone Age is divided into the Early, Middle and Late Stone Age. The *Early Stone Age* (ESA) includes the period from 2.5 million years B.P. to 250 000 years B.P. and is associated with Australopithecines and early *Homo* species who practiced stone tool industries such as the Oldowan and Acheullian. The *Middle Stone Age* (MSA) covers various tool industries, for example the Howiesons Poort industry, in the period from 250 000 years B.P. to 25 000 years B.P. and is associated with archaic and modern *Homo sapiens*. The *Late Stone Age* (LSA) incorporates the period from 25 000 years B.P. up to the Iron Age and Historical Periods and contact between hunter-gatherers and Iron Age farmers or European colonists. This period is associated with modern humans and characterised by lithic tool industries such as Smithfield and Robberg.

Excavations at several well known sites in the region attest to ESA occupation, for example at Makapansgat to the north-west of the study area which provided evidence of long occupation, initially by *Australopithecus africanus* from approximately 3.3 million years B.P. (Bergh 1999). Bushman Rock Shelter, some 30 km to the east of the study site has yielded evidence of a long history of occupation characteristic of the MSA and subsequently the LSA and dating from circa 13,000 B.P. to 8,500 B.P. (Plug 1981). Rock paintings at this site are further evidence of LSA occupation of the area (Louw 1969).

Iron Age

The Iron Age incorporates the arrival and settlement of Bantu speaking people and overlaps the Pre-Historic and Historical Periods. It can be divided into three phases. The *Early Iron Age* includes the majority of the first millennium A.D. and is characterised by traditions such as Happy Rest and Silver Leaves. The *Middle Iron Age* spans the 10th to the 13th Centuries A.D. and includes such well known cultures as those at K2 and Mapungubwe. The *Late Iron Age* is taken to stretch from the 14th Century up to the colonial period and includes traditions such as Icon and Letaba.

A 1968 survey of aerial photographs by Mason documented the presence of 1 792 Iron Age settlements in the drainage basins of the Steelpoort, Sabi, Crocodile and Komati rivers although the modification of the techniques used indicated that this was likely an underestimate (Evers 1975). The well known site at Sterkspruit near Lydenburg yielded the Lydenburg Heads dated to the Early Iron Age of 500 A.D. (Von Bezing & Inskeep 1966). Evers (1975) presents archaeological and anthropological evidence for the contemporaneity of both Early Iron Age and second millennium Iron Age sites on the Escarpment and in the lowveld. Lowveld sites such as Harmony and Eiland contain Lydenburg ceramics and equally the site at Sterkspruit has typical lowveld Early Iron Age ceramics (Evers 1975).

Late Iron Age peoples and the Historical Period

The beginning of the Historical Period overlaps the demise of the late Stone and Iron Ages and is characterised by the first written accounts of the region from 1600 A.D. A number Late Iron Age peoples were settled in the wider region at the beginning of the nineteenth century including the Pedi, Roka, Koni and Tau (Bergh 1999). According to Schoeman (1997), when the BaPedi settled in the Sekhukhuneland region (their heartland being located in the area between the Olifants and Steelpoort Rivers) during the second half of the 17th century they encountered a number of groups such as the Kweni, Roka, Koni and Tau who had preceded them. The 1820s saw the arrival of the Khumalo Ndebele of Mzilikazi in the region and during their short residence in the area they attacked the Koni of Makopole in the vicinity of present-day Lydenburg, before attacking the BaPedi of Maroteng during 1822 during which the Pedi paramount leader Phetedi as well as most of his brothers were killed. However, Sekwati, one of his brothers, managed to escape northwards. Sekwati returned to the area in 1828 and settled at Phiring, from where he started to rebuild the Maroteng kingdom. (Bergh 1999).

The 1830's saw the arrival of voortrekkers in the area under the leadership of Andries Hendrik Potgieter and it is estimated that by August 1845 there were already a thousand settlers resident, precipitating the development of the town of Ohrigstad. As Ohrigstad developed the surrounding countryside was also increasingly settled and during the period between August 1845 and December 1847 406 farms were proclaimed, many of them along the Spekboom River from its source to the confluence with the Steelpoort River. However, Ohrigstad rapidly declined as a result of discord between the habitants, malaria and poor trade opportunities with Delagoa Bay and in 1849 the *Volksraad* in Potchefstroom decided that a new town, 'Leidenburg' was to be established in a more healthy area to the south (Bulpin 1958).

In July 1845 Potgieter had negotiated a settlement with Sekwati aimed at allowing settlers to establish farms. However, by August 1852, relations had so deteriorated that Potgieter led an unsuccessful commando against Sekwati. A peace agreement concluded between the Boers and Sekwati in 1857 did not last long and the 1860s and 1870s were characterized by land disputes and generally unfriendly relations which culminated in open warfare during the latter part of the 1870s. The role of Sekwati's successor Sekhukhune (who succeeded Sekwati in 1861) was very significant. On 16 May 1876, the *Volksraad* declared war on the BaPedi. After a number of successes, the Z.A.R. forces attacked Tshate, the new capital of Sekhukhune (Bergh, 1999). As the first attacks proved unsuccessful, the decision was made to hold the line of the Steelpoort River against Sekhukhune and a fort was built within the junction of the Steelpoort and Spekboom Rivers which was named Fort Burgers, after President Burgers, after initially being referred to as Fort Steelpoort (Kinsey 1973a). The remains of Fort Burgers are approximately 8 km south west of the study area near the modern day town of Burgersfort. Although a peace agreement was signed on 16 February 1877, Sekhukhune was not in agreement with all of the provisions. The subsequent British annexation of the Transvaal in April of that year allowed Sekhukhune a measure of strategic space. Although negotiations were undertaken with the new British authorities, the relations between the British and the BaPedi eventually resulted in the outbreak of war which ended in the attack on Sekhukhune's capital Tshate on 28 November 1879. Although Sekhukhune managed to escape, he was captured on 2 December 1879, and imprisoned at Pretoria (Bergh, 1999). The war saw the pillaging of Fort Burgers (by the BaPedi and the establishment of a number of new forts in the area. One such fort was Fort Faugh-a-ballagh (approximately 15 km southeast of the study area), built of stone in 1878 to protect the Kromskloof pass to Ohrigstad (Kinsey 1973b). This fort and the pass it protects (the route of the 'ou voortrekkerpad') are indicated on the 2430 CB 1:50,000 topographical map.

6. Methodology

Physical Survey

The extent of the proposed development sites were determined as well as the extent of the areas to be affected by secondary activities (access route, construction camp, etc.) during the development.

The physical survey was conducted on foot over the entire area proposed for development. Priority was placed on the undisturbed areas. A systematic inspection of the area on foot along linear transects resulted in the maximum coverage of the proposed area. The survey was conducted on February 23, 2012 and was performed by M. Hutten and field worker T. Mulaudzi.

No sampling was done as no sites or finds of heritage value or significance were found.

Interviews

Passersby were interviewed or questioned during the survey. These people only indicated the graves as discussed later in this report as being of heritage value and importance.

Restrictions

Vegetation proved the major restriction in accessibility to some of the areas and also contributed to poor surface visibility after the spate of recent good rains.

Documentation

All sites/findspots located during the foot surveys were briefly documented. The documentation included digital photographs and descriptions as to the nature and condition of the site and recovered materials. The sites/findspots were plotted using a Global Positioning System (GPS) (Garmin GPSmap 60CSx) and numbered accordingly.

7. Assessment Criteria

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

- The unique nature of a site
- The amount/depth of the archaeological deposit and the range of features (stone walls, activity areas etc.)
- The wider historic, archaeological and geographic context of the site
- The preservation condition and integrity of the site
- The potential to answer present research questions.

Site Significance

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.

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

(LS)			advised
Local Significance (LS)	Grade 3B	High Significance	Mitigation (Part of site should be retained)
Generally Protected A (GP.A)	Grade 4A	High / Medium Significance	Mitigation before destruction
Generally Protected B (GP.B)	Grade 4B	Medium Significance	Recording before destruction
Generally Protected C (GP.C)	Grade 4C	Low Significance	Destruction

Impact Rating

VERY HIGH

These impacts would be considered by society as constituting a major and usually permanent change to the (natural and/or cultural) environment, and usually result in severe or very severe effects, or beneficial or very beneficial effects.

Example: The loss of a species would be viewed by informed society as being of VERY HIGH significance.

Example: The establishment of a large amount of infrastructure in a rural area, which previously had very few services, would be regarded by the affected parties as resulting in benefits with a VERY HIGH significance.

HIGH

These impacts will usually result in long term effects on the social and /or natural environment. Impacts rated as HIGH will need to be considered by society as constituting an important and usually long term change to the (natural and/or social) environment. Society would probably view these impacts in a serious light.

Example: The loss of a diverse vegetation type, which is fairly common elsewhere, would have a significance rating of HIGH over the long term, as the area could be rehabilitated.

Example: The change to soil conditions will impact the natural system, and the impact on affected parties (e.g. farmers) would be HIGH.

MODERATE

These impacts will usually result in medium- to long-term effects on the social and/or natural environment. Impacts rated as MODERATE will need to be considered by the

public or the specialist as constituting a fairly unimportant and usually short term change to the (natural and/or social) environment. These impacts are real, but not substantial.

Example: The loss of a sparse, open vegetation type of low diversity may be regarded as MODERATELY significant.

Example: The provision of a clinic in a rural area would result in a benefit of MODERATE significance.

LOW

These impacts will usually result in medium to short term effects on the social and/or natural environment. Impacts rated as LOW will need to be considered by society as constituting a fairly important and usually medium term change to the (natural and/or social) environment. These impacts are not substantial and are likely to have little real effect.

Example: The temporary changes in the water table of a wetland habitat, as these systems are adapted to fluctuating water levels.

Example: The increased earning potential of people employed as a result of a development would only result in benefits of LOW significance to people living some distance away.

NO SIGNIFICANCE

There are no primary or secondary effects at all that are important to scientists or the public.

Example: A change to the geology of a certain formation may be regarded as severe from a geological perspective, but is of NO SIGNIFICANCE in the overall context.

Certainty

DEFINITE: More than 90% sure of a particular fact. Substantial supportive data exist to verify the assessment.

PROBABLE: Over 70% sure of a particular fact, or of the likelihood of an impact occurring.

POSSIBLE: Only over 40% sure of a particular fact, or of the likelihood of an impact occurring.

UNSURE: Less than 40% sure of a particular fact, or of the likelihood of an impact occurring.

Duration

SHORT TERM: 0 – 5 years

MEDIUM: 6 – 20 years

LONG TERM: more than 20 years

DEMOLISHED: site will be demolished or is already demolished

Mitigation

Management actions and recommended mitigation, which will result in a reduction in the impact on the sites, will be classified as follows:

- **A** – No further action necessary
- **B** – Mapping of the site and controlled sampling required
- **C** – Preserve site, or extensive data collection and mapping required; and
- **D** – Preserve site

8. Assessment of Sites and Finds

This section will contain the results of the heritage site/find assessment.

Tubatse Oxidation Ponds

Site TOP 001 (Graves):

GPS 24° 34' 51.3" S
30° 19' 48.1" E

A small, informal cemetery with five graves was identified at this location. The graves were situated approximately 150m to the north-west of the existing oxidation ponds. This location was outside of the proposed area for the development, but the graves are included in this report due to their close proximity to the proposed development and the developer is made aware of these graves to avoid any possible damage to these graves.

The graves were not fenced. The graves were placed in two uneven lines next to each other and all were orientated from the west to the east. One of the graves had a formal granite dressing and an inscribed granite headstone (photo 5). Another grave had a cement slab and slate stone as dressing (photo 6). The rest of the graves had informal mounds of packed rocks as dressings. No grave goods were found with the graves. The graves were not well maintained and were overgrown with grass and other vegetation.

Field Rating:	Generally Protected A (4A)
Heritage Significance:	High Significance
Impact:	Negative
Certainty:	Possible
Duration:	Long Term
Mitigation:	C – Preserve site, or data collection and mapping required.

No further sites or finds of any heritage potential were identified during the investigations.

9. Recommendations

The following steps and measures are recommended regarding the investigated area:

Tubatse Oxidation Ponds

Site TOP 001 (Graves):

The identified graves fall outside of the area intended for development, but the developer should take note of the location of these graves and also of the recommendations as outlined in this report regarding them.

Graves older than 60 years (or presumed older) and/or not in a municipal graveyard are protected in terms of the National Heritage Act (No. 25 of 1999). Human remains (graves) younger than 60 years may only be handled by a registered undertaker or institution declared under the Human Tissues Act.

The developer is required to follow the process described in the legislation (section 36 of Act No. 25 and its associated regulations) if he wants to develop in or near an area where there are graves present.

It is therefore recommended that the area with the graves should be avoided.

If the developer decides to plan the development around the identified graves and leave it undisturbed, adequate arrangements should be made to protect the graves from the impact of the development. These should include the following:

- It is important to understand that the identified graves could have significant heritage value to the relevant families (if identified) and should therefore be preserved.
- The relevant families should be identified (if possible) and should be informed about the proposed activities which could possibly affect their graves.
- It is recommended that the identified graves should be clearly marked with danger tape during the entire duration of the project and especially during earth-moving/bush clearing activities and a 10m - 20m buffer zone must be allowed around the graves.
- A watching brief performed by a suitable qualified person is recommended during the bush clearing and construction phases of the project. This person should see to it that the graves are safe and protected during these phases.
- It is advisable to fence the graves to prevent future mistakes. A buffer zone of at least 10m around the graves is recommended.
- The proposed earth-moving/bush clearing activities should be altered and should be planned around the graves in order to protect it from any damage or other negative impacts.
- Bush clearing crews should be made aware of the graves in order that the graves will not be accidentally damaged during the earth-moving activities.
- The planning team should **ensure that access to the graves is not limited in any way.**

A small management plan should be set up to ensure the future safety, access and maintenance of the graves next to the proposed development.

If the above recommendations can not be adhered to, further steps and measures should be taken to move the graves and relocate it to one of the official graveyards in the area. This should only be done as last resort if no other options deem to be possible. The following process is then required:

- A process of consultation with the affected families and communities, if identified, should then be initiated to start the relocation of the graves.
- Various applications to various Departments should be put into motion to obtain the necessary permissions and permits to perform the relocation of the graves. These applications and permits are required by law.

Only after all the required permissions and permits have been obtained, can the relocation of the graves continue as performed by professionals.

Furthermore for the rest of the project:

- The proposed area to be developed was largely subject to intensive agricultural activities over an extended period of time. These agricultural activities across most of the proposed area disturbed and most probably destroyed any possible finds of heritage value or significance if any were present.
- No further site-specific actions or any further heritage mitigation measures are recommended as no sites or finds with heritage value or significance were identified in the indicated study area.
- The proposed development of the Tubatse oxidation ponds and outfall sewer in the indicated area can continue from a heritage point of view.

10. References

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APPENDIX A

Photographs



Photo 1: View of the Penge /Burgersfort tar road.



Photo 2: General view of the proposed site from the north.



Photo 3: View of the outfall sewer route next to the tar road.



Photo 4: View of the existing oxidation ponds.



Photo 5: View of one of the identified graves.



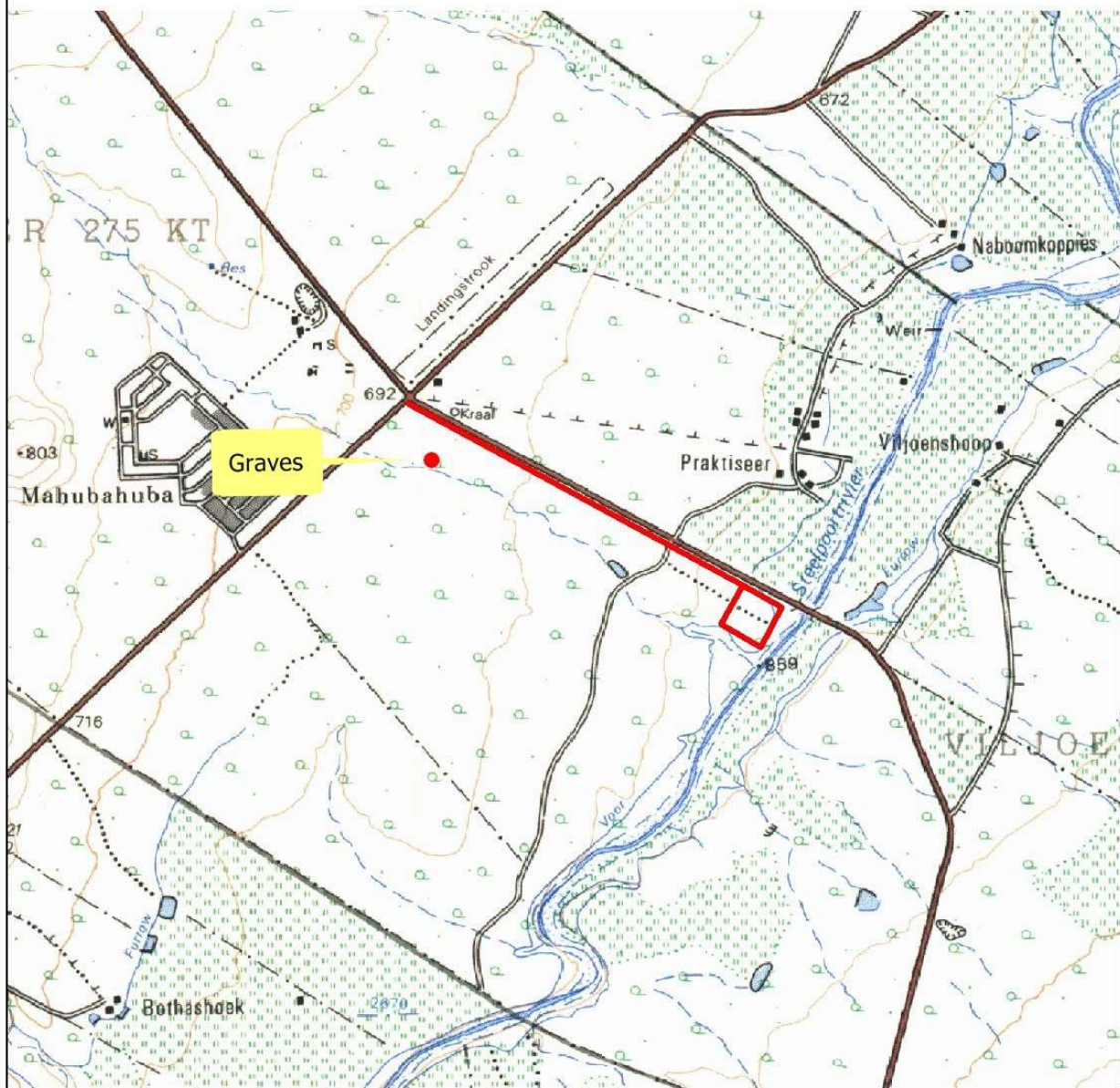
Photo 6: View of another one of the identified graves.

APPENDIX B

Location Maps

Tubatse Extension 7

Oxidation ponds: new and closure



0 2 Kilometers

Scale: 1:20,000



- Graves
- Study Area

Map: 1:50,000 series Burgersfort 2430 CB
Datum: WGS 84

Tubatse Extension 7

Oxidation ponds: new and closure



0 2 Kilometers

Scale: 1:20,000



● Graves
— Study Area

Image: Spot 5 National Mosaic 2430 C
Datum: WGS 84

Tubatse Extension 7

Oxidation ponds: new and closure



0 1 Kilometers

Scale: 1:10,000



● Graves
— Study Area

Image: Spot 5 National Mosaic 2430 C
Datum: WGS 84