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PROJECT 2010/14

**HERITAGE IMPACT ASSESSMENT REPORT: PROPOSED
LAND USE CHANGE TO PROVIDE FOR THE EXTENSION OF
THE TOWN OF HOTAZEL KNOWN AS HOTAZEL PHASE III,
GAMAGARA LOCAL MUNICIPALITY, NORTHERN CAPE
PROVINCE**



PREPARED FOR

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DATE: 16 May 2010

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HOTAZEL ERF 1 LAND USE CHANGE HIA MAY 2010

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EXECUTIVE SUMMARY

This report contains a heritage impact assessment (HIA) investigation in accordance with the provisions of Sections 38(1) and 38(3) of the *National Heritage Resources Act (25/1999)* for purposes of authorising a proposed change of land use on a Portion of the Remainder of Erf 1, Hotazel. This HIA forms part of the process of obtaining the necessary environmental authorisations for the project, which comprises a change of land use to provide for the development of Hotazel Phase III, comprising residential areas, a mixed use development and a lodge. Hotazel is located 58 km north of the town of Kathu and forms part of the Gamagara Local Municipality and the magisterial district of Kuruman, Northern Cape Province.

The report is accompanied by a separate archaeological report (JA van Schalkwyk) and a separate palaeontological desktop study (B Rubidge).

The affected area has an irregular shape, determined by the residential boundaries of the western portions of the existing town of Hotazel, the main road (R 380) and railway line between Hotazel and Black Rock, the road to Vanzylsrus (R 31), the western access road to Hotazel and the Hotazel aircraft landing strip with its access road. The affected area consists of vacant, densely vegetated land with a few vehicle tracks, the remains of a dirt track (dirt bikes and quad bikes) and a few foundations of structures.

As a cultural landscape this flat and featureless environment can be classified as a relic landscape (former farm land) and, to a lesser extent, a historic archaeological landscape.

The study area itself consist of four smaller, separate areas, divided by the railway line, roads and aircraft landing strip, with the following central co-ordinates:

- Area 1 27°12'15.63"S 22°56'56.36"E
- Area 2 27°12'28.50"S 22°56'56.68"E (dirt track and foundations)
- Area 3 27°12'27.99"S 22°57'21.70"E
- Area 4 27°12'49.03"S 22°57'10.69"E

The intended development comprises the change of land use for a residential and commercial development and this provided the following "triggers" for an HIA:

- Development larger than 5000 square meters (about 149 hectares)
- The region is known for its Stone Age artefacts
- Possibility of fossil finds (discovered in the Kathu area in the 1970s)

The general aim of any HIA is to ensure that the needs of socio-economic development are balanced by the needs to preserve significant heritage resources.

The purpose of this report is to identify and assess features of heritage significance, identify possible impacts and propose management measures to mitigate negative impacts. This information must enable the relevant heritage authority to approve the proposed development as required in terms of Section 38 of the NHRA.

Heritage impacts are categorised as:

- Direct or physical impacts, implying alteration or destruction of heritage features within the project boundaries
- Indirect impacts, e.g. restriction of access or visual intrusion concerning the broader environment
- Cumulative impacts that are combinations of the above

From the above range, direct impacts do not apply since no significant heritage features were identified.

The development of houses, shops and a lodge does comprise a visual intrusion onto a flat landscape, which is, however, low due to the:

- The low appeal of the landscape that has been changed by infrastructure (roads, railway line, power lines) and a degraded natural environment

- The sense of place of the landscape that is already dominated by existing residential facilities and mining infrastructure
- The low scale of the proposed development that will mainly consist of single-storey buildings

Impact can be managed through one or a combination of the following measures:

- Mitigation
- Avoidance
- Compensation
- Enhancement (positive impacts)
- Rehabilitation
- Interpretation
- Memorialisation

From the above range, mitigation will be the proposed measure, applying to any hidden (buried) heritage features that could be exposed during site preparation activities.

This report complies as follows with the provisions of Section 38 (3) of the *National Heritage Resources Act* (Act 25 of 1999):

- (a) Identification and mapping of heritage resources
- (b) Cultural significance
- (c) Predicted impacts
- (f) Impact management measures

See Table 1 (below).

TABLE 1: Identification of heritage features, impacts and mitigation measures

S 3(2) NHRA heritage resource	(a) Identification		(b) Significance	(c) Impact		(d) Recommended impact management
	Site	GPS		Study area	Impact type, certainty and significance	
Buildings, structures, places and equipment of cultural significance	Dirt track and foundations	27° 12' 28.50"S 22° 56' 56.68"E	Low local	2	Definite destruction – low negative	None
Areas to which oral traditions are attached or which are associated with intangible heritage	None	-	-	-	-	-
Historical settlements and landscapes	None	-	-	-	-	-
Landscapes and natural features of cultural significance	None	-	-	-	-	-
Geological sites of scientific or cultural importance	None	-	-	-	-	None
Archaeological and palaeontological sites	Chance finds	Unknown	Low local?	Both	Unknown	Report and evaluate any graves or archaeological features and artefacts when found
Graves and burial sites	None	-	-	-	-	-
Features associated with labour history	None	-	-	-	-	-

S 3(2) NHRA heritage resource	(a) Identification		(b) Significance	(c) Impact		(d) Recommended impact management
	Site	GPS		Study area	Impact type, certainty and significance	
Movable objects	None	-	-	-	-	

(d) Social and economic benefits

The development will have no direct benefits related to the conservation of heritage resources (structures) since none of significance were identified and will be affected.

The socio-economic benefits are associated with the provision for additional housing in anticipating of demand resulting from the operation of the Hotazel Mines (Wessels and Mamantwan), the Black Rock Mine and the Ntsimbintle Mining's new Tshipi Mine near Hotazel.

(e) Public consultation

This is part of the EIA process.

(g) Mitigation during construction

Except for monitoring of any chance finds (graves, archaeological features) during site preparation and construction work, no mitigation measures apply.

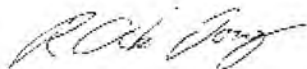
Findings

The four areas proposed for residential and commercial development are located in a cultural landscape classified primarily as relic farmland and secondarily as archaeological. This class of landscape is of low heritage sensitivity because it is able to absorb new development with some adverse effects through some mitigation.

The predicted impacts are of not of a direct and physical nature. Visual intrusion as an indirect impact is not an important issue since the proposed development will have a low visual scale and is surrounded by land that has been transformed by mining, housing and infrastructure. Noise, dust, pollution and restrictions of access patters as indirect impacts are also not issues.

Cultmatrix states that there are no compelling reasons not to authorise the proposed change of land use and that the proposed development can continue provided that the following mitigation measures are adopted as a heritage management tool:

1. Should any hidden human remains (highly unlikely) be disturbed, exposed or uncovered during (plant) site clearing and excavations, these should immediately be reported to an archaeologist. Burial remains should not be disturbed or removed until inspected by an archaeologist.
2. Site clearing and excavation activities must be monitored for the occurrence of any hidden palaeontological material (fossils), archaeological material (Stone Age tools) and similar chance finds and if any are exposed, this should be reported to an archaeologist so that an investigation and evaluation of the finds can be made.



RC DE JONG
Public Officer and Principal Investigator

Date: 16 May 2010

1. REPORT CONTEXT

1.1 General notes

1. The structure of this report is based on:
 - SOUTH AFRICAN HERITAGE RESOURCES AGENCY, Heritage Impact Assessment: Notification of intent to develop (form)
 - DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING, PROVINCIAL GOVERNMENT OF THE WESTERN CAPE, 2005, Guideline for involving heritage specialists in EIA processes (document)
 - DEPARTMENT OF ENVIRONMENT AFFAIRS AND TOURISM, Integrated Environmental Management Guidelines
 - SOUTH AFRICAN HERITAGE RESOURCES AGENCY, 2006, *Minimum standards: Archaeological and palaeontological components of impact assessment reports* (unpublished).
 - WORLD BANK, *Environmental Assessment Sourcebook Update No 8, September 1994: Cultural Heritage in Environmental Assessment*.
 - Best-practice HIA reports submitted by Cultmatrix and other heritage consultants
2. This report is informed by the *National Heritage Resources Act (25/1999)* (NHRA) and is consistent with the various ICOMOS charters for places of cultural significance.
3. Recommendations contained in this application do not exempt the applicant from complying with any national, provincial and municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA.
4. Rights and responsibilities that arise from this report are those of the applicant and not that of Cultmatrix cc. Cultmatrix cc assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report.
5. Cultmatrix assumes no responsibility whatsoever for any loss or damages that may be suffered as a direct or indirect result of information contained in this application. Any claim that may however arise is limited to the amount paid to Cultmatrix for services rendered to compile this report.

1.2 Purpose of the report

The purpose of this report is to identify and assess features of heritage significance, identify possible impacts and propose management measures to mitigate negative impacts. This information must enable the relevant heritage authority to approve the proposed development as required in terms of Section 38 of the NHRA.

The below table lists and describes the three general categories of heritage impact assessment studies and reports, which offices are involved (i.e. to which SAHRA or provincial offices reports should be submitted) and which type of response is required from these offices.

TABLE 2: Applicable category of heritage impact assessment study and report

Type of study and report	Aim	SAHRA office involved	Requested SAHRA response
Screening: Not this report	The aim of the screening investigation is to provide an informed heritage-related opinion about the proposed development by an appropriate heritage specialist. The objectives of this investigation are to screen potential heritage issues through a site inspection, to develop a broad understanding of heritage policy-related context, to review any existing data on the history and heritage significance of the site, to check if the site has any formal heritage status, to discuss the proposed development with heritage contacts and to scan the development proposals. The result of this investigation is a brief statement indicating potential heritage impacts/issues and the need for further investigation.	-	-
		-	-
		-	-

Type of study and report	Aim	SAHRA office involved	Requested SAHRA response
Scoping (basic assessment): Not this report	The aim of the scoping investigation is to analyse heritage issues and how to manage them within the context of the proposed development. The objectives are to assess heritage significance (involving site inspections and basic desktop and archival research); to identify the need for further detailed inputs by heritage specialists, to consult with local heritage groups and experts, to review the general compatibility of the development proposals with heritage policy and to assess the acceptability of the proposed development from a heritage perspective. The result of this investigation is a heritage scoping report indicating the presence/absence of heritage resources and how to manage them in the context of the proposed development.	-	-
		-	-
		-	-
Full HIA: This report	The aim of the full HIA investigation is to analyse and recommend heritage management mitigation measures and monitoring programmes. The objectives are to analyse heritage issues, to research the chronology of the site and its role in the broader context, to undertake a comprehensive assessment of heritage significance, to analyse the nature and scale of the proposed development, to consult with local heritage groups and experts as part of the broader EIA stakeholder engagement process, to establish the compatibility of the proposed development with heritage and other statutory frameworks and to assess alternatives in order to promote heritage conservation issues.	Northern Cape Provincial Heritage Resources Authority	Comments on built environment and approval of development
		SAHRA Palaeontology, Archaeology and Meteorites Unit	Comments
		-	-

1.3 Terms of reference

- To survey the proposed residential and commercial areas as well as the surrounding environment
- To identify and map heritage resources that may be affected directly and
- To assess the cultural significance of these heritage resources
- To assess the impact of the development on these heritage resources
- To assess the benefits of conserving these heritage resources in relationship to the socio-economic benefits of the development
- To provide the public with an opportunity to comment on the heritage aspects of the proposed development
- To consider alternatives if heritage resources will be affected in a negative manner
- To determine methods to mitigate negative impacts before, during and after construction activities
- To compare sections of the authorised route with sections of the amended route in terms of heritage impact risks

1.4 History of the report

This report is the first draft report and has not been preceded by other reports for this particular project.

1.5 Legal context of the report

ACT	COMPONENT	IMPLICATION	RELEVANCE	COMPLIANCE
NHRA	S 34	Impacts on buildings and structures older than 60 years	None	-
	S 35	Impacts on archaeological and palaeontological heritage resources	Graves and large/concentrated sites	Monitor during site preparation work
	S 36	Impacts on graves	None	-
	S 37	Impacts on public monuments	None present	-
	S 38	Developments requiring an HIA	Development is listed activity	Full HIA
NEMA	EIA Regulations	Activities requiring an EIA	Development is subject to an EIA	HIA is part of EIA
Other	-	-	-	-

1.6 Planning context of the report

No information was available but the assumption is that the proposed new residential and commercial development is part of the municipal SDF and IDP.

1.7 Development criteria in terms of Section 38 of the NHRA

1.7	Development criteria in terms of Section 38(1)	Yes/No details
1.7.1	Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	Yes
1.7.2	Construction of bridge or similar structure exceeding 50m in length	No
1.7.3	Development exceeding 5000 sq m	Yes
1.7.4	Development involving three or more existing erven or subdivisions	No
1.7.5	Development involving three or more erven or divisions that have been consolidated within past five years	No
1.7.6	Rezoning of site exceeding 10 000 sq m	Yes
1.7.7	Any other development category, public open space, squares, parks, recreation grounds	No

1.8 Property details

1.8	Property details	
1.8.1	Name and location of property	Hotazel Phase III
1.8.2	Erf or farm numbers	Portions of Remaining Extent of Erf 1, Hotazel 280, Kuruman RD
1.8.3	Magisterial district	Kuruman
1.8.4	Closest town	Hotazel
1.8.5	Local authority	Gamagara
1.8.5	Current use	Vacant
1.8.5	Current zoning	Agricultural
1.8.5	Predominant land use of surrounding properties	Agricultural, residential, manganese mining, game farming
1.8.9	Total extent of properties	149 hectares

1.9 Property ownership

1.9	Property owners	
1.9.1	Farms	Portion of Remainder of Erf 1 of Hotazel 280
1.9.2	Name and contract address	Not available
1.9.3	Telephone number	-
1.9.4	Fax number	-
1.9.5	E-mail	-

1.10 Developer

1.10	Developer	
1.10.1	Name and contact address	Not available
1.10.2	Telephone number	-
1.10.3	Fax	-
1.10.4	E-mail	-

1.11 Environmental practitioner

1.11	Environmental Specialist	
1.11.1	Name and contact address	Marquerite Geldenhuys, MEG Omgewingsimpakstudies, Private Bag X 5879, Postnet Suite 63, Upington 8800
1.11.2	Telephone number	(054) 491-3144
1.11.3	Fax	As above
1.11.4	E-mail	megeldenhuys@vodamail.co.za

1.12 Heritage assessment practitioners

1.12 Specialist (1)		
1.12.1	Name and contact address	Dr RC de Jong (Principal Member: Cultmatrix cc), PO Box 12013, Queenswood 0121, Pretoria
1.12.2	Qualifications and field of expertise	PhD (Cultural History) UP (1990), Post-Graduate Museology Diploma UP (1979), generalist heritage management specialist with experience in museums and heritage since 1983
1.12.3	Relevant experience in study area	Desktop studies for mining developments near Kenhardt
1.12.4	Telephone number	(082) 577-4741
1.12.5	Fax number	(086) 612-7383
1.12.6	E-mail	cultmat@iafrica.com

		Specialist 2
1.12.1	Name and contact address	Dr JA van Schalkwyk, PO Box 26389, Monument Park 0105
1.12.2	Qualifications and field of expertise	DLitt et Phil (UNISA), Post-Graduate Museology Diploma UP, general heritage management specialist with experience in museums and heritage, ASAPA accredited archaeologist
1.12.3	Relevant experience in study area	Archaeological studies for HIAs in the broader area
1.12.4	Telephone number	(012) 347-7270
1.12.5	Fax number	
1.12.6	E-mail	jvschalkwyk@mweb.co.za

2. DEVELOPMENT CONTEXT

2.1 Development site/area location and boundaries

Hotazel is located 58 km north of the town of Kathu and forms part of the Gamagara Local Municipality and the magisterial district of Kuruman, Northern Cape Province. The proposed development site is located on the western side of the town.

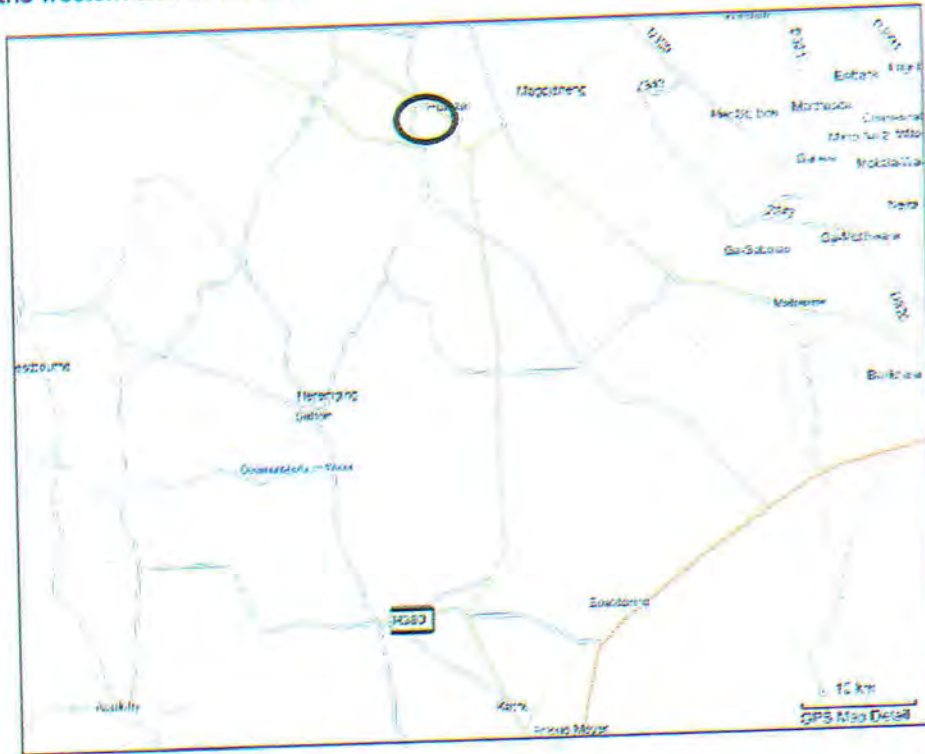


FIGURE 1: General location of the study area

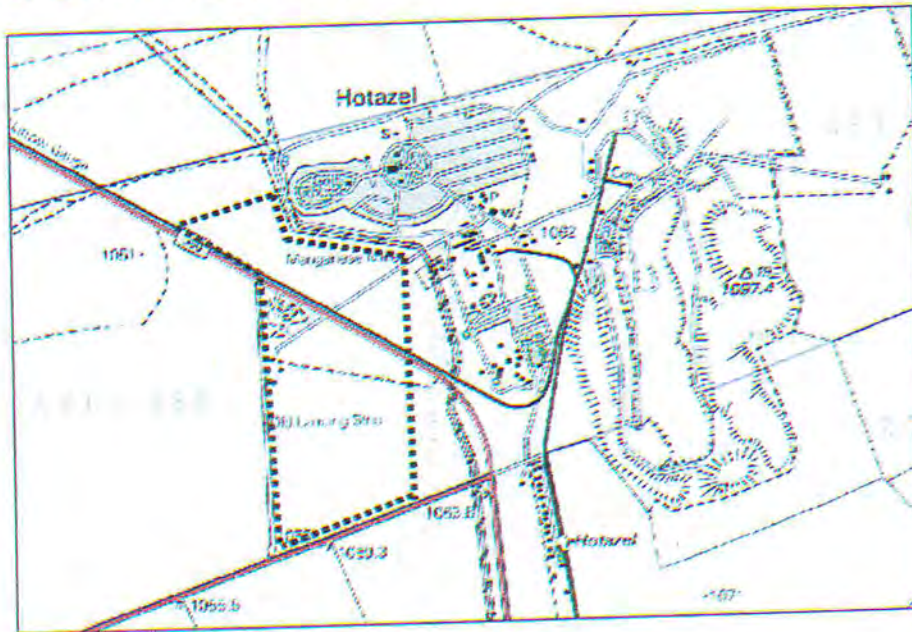


FIGURE 2: Portion of 2722 BB Hotazel (2001) indicating the location of the study area

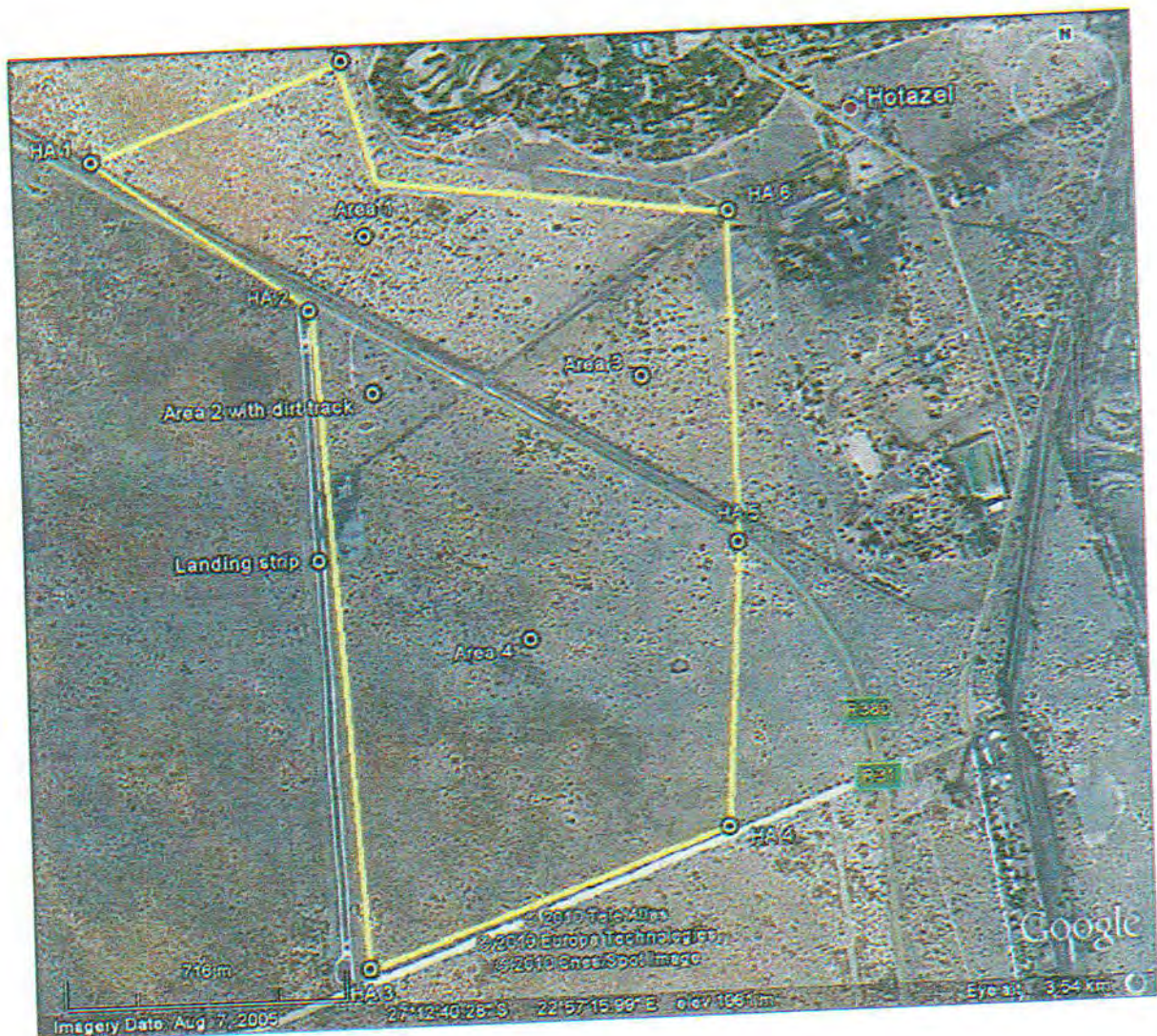


FIGURE 3: Google Earth image (2005) of the study area

The affected area has an irregular shape, determined by the residential boundaries of the western portions of the existing town of Hotazel, the main road (R 380) and railway line between Hotazel and Black Rock, the road to Vanzyisrus (R 31), the western access road to Hotazel and the Hotazel aircraft landing strip with its access road.

2.2 Description of distinguishing regional features

2.2.1 Environmental features

TABLE 3: Environmental features

COMPONENT	DESCRIPTION
Acocks veld type	Kalahari Thornveld and Shrubland
Geological and mining	Manganese mines
Geology	Siliclastic
Hydrology	No rivers and streams
Land cover	Shrubland
Land use	Vacant
Vegetation	Kalahari Plains Thornveld
Landscape sensitivity index	1-3
Slope	0-9%

COMPONENT	DESCRIPTION
Terrain morphology	Plains
Wetlands	None

2.2.2 Heritage features

TABLE 4: Heritage features

S 3(2) NHRA heritage resource	DESCRIPTION
Buildings, structures, places and equipment of cultural significance	Tracks, fences, foundations, dirt track, airstrip
Areas to which oral traditions are attached or which are associated with intangible heritage	None
Historical settlements and landscapes	Hotazel town
Landscapes and natural features of cultural significance	Historic farmland
Geological sites of scientific or cultural importance	None
Archaeological and palaeontological sites	Broader area is known for Early, Middle and late Stone Age artefacts (out of context)
Graves and burial grounds	Not inside study area
Areas of significance related to labour history	None
Movable objects	None

2.2.3 Site description

The affected area has an irregular shape, determined by the residential boundaries of the western portions of the existing town of Hotazel, the main road (R 380) and railway line between Hotazel and Black Rock, the road to Vanzylsrus (R 31), the western access road to Hotazel and the Hotazel aircraft landing strip with its access road. The affected area consists of vacant, densely vegetated land with a few vehicle tracks, the remains of a dirt track (dirt bikes and quad bikes) and a few foundations of structures.

As a cultural landscape this flat and featureless environment can be classified as historic farmland and, to a lesser extent, a historic archaeological landscape.

The study area itself consist of four smaller, separate areas, divided by the railway line, roads and aircraft landing strip, with the following central co-ordinates:

- Area 1 27°12'15.63"S 22°56'56.36"E
- Area 2 27°12'28.50"S 22°56'56.68"E (dirt track and foundations)
- Area 3 27°12'27.99"S 22°57'21.70"E
- Area 4 27°12'49.03"S 22°57'10.69"E

2.2.4 Surrounding environment

AREA	DESCRIPTION
East	Hotazel town
North	Hotazel town
West	Farm and mining land
South	Farm and mining land

2.3 Development description

2.3	Development description	
2.3.1	Nature of proposed development	Residential, commercial (mixed use and lodge)
2.3.2	Predicted impacts on heritage value of site and contents	None
2.3.3	Structures older than 60 years affected by proposed development	No
2.3.4	Rezoning or change of land use	Yes: Farm land to residential and commercial
2.3.5	Construction work	Yes
2.3.6	Total floor area of proposed development	-
2.3.7	Extent of land coverage of development	149 hectares
2.3.8	Earth moving and excavation	Yes
2.3.9	Number of storeys	Single
2.3.10	Maximum height above ground level	-
2.3.11	Monetary value development	Not available
2.3.12	Time frames	Urgent



FIGURE 4: View across a portion of the development area with the roof of the airstrip building in the distance



FIGURE 5: Dwellings on the western periphery of Hotazel town



FIGURE 6: View across the southern portion of the development area

3. HERITAGE IMPACT CONTEXT

3.1 Cultural landscape evidence

The concept of cultural landscapes is of more recent origin and, although the definitions of the National Heritage Resources Act bear reference, is primarily grounded in international doctrinal texts in the form of Charters and Recommendations produced by ICOMOS and UNESCO. The most recent and authoritative text is the World Heritage Cultural Landscapes handbook, published by the World Heritage Centre (2009).

The term "cultural landscape" embraces a diversity of manifestations of the interaction between humankind and its natural environment. Cultural landscapes often reflect specific techniques of sustainable *land-use*, considering the characteristics and limits of the natural environment they are established in, and a specific spiritual relation to nature. Cultural landscapes are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal. They are categorized on the basis both of their value and of their representativity in terms of a clearly defined geo-cultural *region* and also for their capacity to illustrate the essential and distinct cultural elements of such regions. The term "cultural landscape" embraces a diversity of manifestations of the interaction between humankind and its natural environment.

The World Heritage Committee distinguishes between three categories of cultural landscapes:

- Clearly defined landscapes, designed and created intentionally by people, such as parkland and urban areas
- Organically evolved landscapes that has developed over time, including relic landscapes (where a certain activity has ceased to exist) and continuing landscapes (which retain an active social role and where the evolutionary process is still in progress)
- Associative landscapes, which are essentially natural landscapes with significant human associations in the realm of the intangible heritage

All three categories exist in the study area. However, they are too broad in terms of the practical mapping and assessment of heritage elements; hence, the following criteria for classifying the type of cultural landscape have been used:

TABLE 5: Cultural landscape classification

HERITAGE LANDSCAPE CONTEXT	ELEMENTS	EVIDENCE
A. PALAEOLOGICAL 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.	None
B. ARCHAEOLOGICAL LANDSCAPE CONTEXT (SECONDARY LANDSCAPE)	Archaeological remains dating to the following periods: <ul style="list-style-type: none"> • Early Stone Age • Middle Stone Age • Late Stone Age • Early Iron Age • Late Iron Age • Historical 	Potential for Stone Age artefacts
C. HISTORICAL BUILT URBAN LANDSCAPE CONTEXT	<ul style="list-style-type: none"> • Historical townscapes/streetscapes • Historical structures; i.e. older than 60 years • Formal public spaces • Formally declared urban conservation areas • Places associated with social identity/displacement 	None

D. HISTORICAL FARMLAND CONTEXT (PRIMARY LANDSCAPE)	<p>These possess distinctive patterns of settlement and historical features such as:</p> <ul style="list-style-type: none"> • Historical farm werfs • Historical farm workers villages/settlements • Irrigation furrows • Tree alignments and groupings • Historical routes and pathways • Distinctive types of planting • Distinctive architecture of cultivation e.g. planting blocks, trellising, terracing, ornamental planting. 	Former grazing lands
E. HISTORICAL RURAL TOWN CONTEXT	<ul style="list-style-type: none"> • Historical mission settlements • Historical townscapes 	None
F. PRISTINE/NATURAL LANDSCAPE CONTEXT	<ul style="list-style-type: none"> • Historical patterns of access to a natural amenity • Formally proclaimed nature reserves • Evidence of pre-colonial occupation • Scenic resources, e.g. view corridors, viewing sites, visual edges, visual linkages • Historical structures/settlements older than 60 years • Pre-colonial or historical burial sites • Geological sites of cultural significance. 	None
G. RELIC LANDSCAPE CONTEXT	<ul style="list-style-type: none"> • Past farming settlements • Past industrial sites • Places of isolation related to attitudes to medical treatment • Battle sites • Sites of displacement, 	None
H. BURIAL GROUND & GRAVE SITE CONTEXT	<ul style="list-style-type: none"> • Pre-colonial burials (marked or unmarked, known or unknown) • Historical graves (marked or unmarked, known or unknown) • Human remains (older than 100 years) • Associated burial goods (older than 100 years) • Burial architecture (older than 60 years) 	None
I. ASSOCIATED LANDSCAPE CONTEXT	<ul style="list-style-type: none"> • Sites associated with living heritage e.g. initiation sites, harvesting of natural resources for traditional medicinal purposes • Sites associated with displacement & contestation • Sites of political conflict/struggle • Sites associated with an historic event/person • Sites associated with public memory 	None
J. HISTORICAL FARM WERF CONTEXT	<ul style="list-style-type: none"> • Setting of werf and its context • Composition of structures • Historical/architectural value of individual structures • Tree alignments • Views to and from • Axial relationships • System of enclosure, e.g. werf walls • Systems of water reticulation and irrigation, e.g. furrows • Sites associated with slavery and farm labour • Colonial period archaeology 	None
K. HISTORICAL INSTITUTIONAL LANDSCAPE CONTEXT	<ul style="list-style-type: none"> • Historical prisons • Hospital sites • Historical school/reformatory sites • Military bases 	None
L. SCENIC/VISUAL	<ul style="list-style-type: none"> • Scenic routes 	None

K. AMENITY LANDSCAPE CONTEXT	<ul style="list-style-type: none"> • View sheds • View points • Views to and from • Gateway conditions • Distinctive representative landscape conditions • Scenic corridors 	
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3.2 Determining levels of sensitivity and potential impacts

Sensitivity is the ability of a cultural landscape (or heritage resource) to absorb changes or adapt to changes whilst maintaining an acceptable degree of cultural significance.

Within the context of this study, levels of sensitivity can generally be associated with certain classes or categories of cultural landscapes as tabulated below.

TABLE 6: Relationship between cultural landscape classes and levels of sensitivity

Sensitivity level	Implication	Landscape class	Evidence
D	Ability to absorb without adverse effects and very little mitigation	Relic farmland landscape	Of little or no intrinsic, associational or contextual heritage value due to disturbed, degraded conditions or extent of irreversible damage
C	Ability to absorb with some adverse effects and some mitigation	Historical farmland Historical farm werfs Institutional landscapes	Of medium to low intrinsic, associational or contextual heritage value within a national, provincial and local context
B	Ability to absorb with considerable adverse effects and intensive mitigation	Burial grounds and graves Palaeontological and archaeological landscapes Associated landscapes	Of moderate to high intrinsic, associational and contextual value within a local context
A	No or very little ability to absorb	Historical built environments Natural landscapes Amenity/Visual/Scenic landscapes	Of high intrinsic, associational and contextual heritage value within a national, provincial and local context

3.3 Determining potential impacts

TABLE 7: Categories of development types

CATEGORY	DESCRIPTION	EVIDENCE
A: Minimal intensity development	<ul style="list-style-type: none"> • No rezoning involved; within existing use rights • No subdivision involved • Upgrading of existing infrastructure within existing envelopes • Minor internal changes to existing structures • New building footprints limited to less than 1000m² 	No
B: Low-intensity development	<ul style="list-style-type: none"> • Spot rezoning with no change to overall zoning of a site • Linear development less than 100m • Building footprints between 1000m²-2000m² • Minor changes to external envelop of existing structures (less than 25%) • Minor changes in relation to bulk and height of immediately adjacent structures (less than 25%). 	No
C: Moderate intensity development	<ul style="list-style-type: none"> • Rezoning of a site between 5000m²-10 000m² • Linear development between 100m and 300m • Building footprints between 2000m² and 5000m² • Substantial changes to external envelop of existing structures (more than 50%) • Substantial increase in bulk and height in relation to immediately adjacent buildings (more than 50%) 	No

CATEGORY	DESCRIPTION	EVIDENCE
D: High intensity development	<ul style="list-style-type: none"> Rezoning of a site in excess of 10 000m² Linear development in excess of 300m Any development changing the character of a site exceeding 5000m² or involving the subdivision of a site into three or more erven Substantial increase in bulk and height in relation to immediately adjacent buildings (more than 100%) 	Residential and commercial development

3.4 Expected impact significance

TABLE 8: Expected impact significance matrix

HERITAGE CONTEXT	TYPE OF DEVELOPMENT			
	CATEGORY A	CATEGORY B	CATEGORY C	CATEGORY D
A: High heritage value	Moderate heritage impact expected	High heritage impact expected	Very high heritage impact expected	Very high heritage impact expected
B: Medium to high heritage value	Minimal heritage impact expected	Moderate heritage impact expected	High heritage impact expected	Very high heritage impact expected
C: Medium to low heritage value	Little or no heritage impact expected	Minimal heritage impact expected	Moderate heritage impact expected	High heritage impact expected
D: Low heritage value	Little or no heritage impact expected	Little or no heritage impact expected	Minimal heritage value expected	Moderate heritage impact expected

4. HERITAGE IMPACT ASSESSMENT

4.1 Approach

4.1.1 Definitions and assumptions

The following aspects have a direct bearing on the investigation and the resulting report:

- *Cultural (heritage) resources* are all non-physical and physical human-made occurrences, as well as natural occurrences that are associated with human activity. These include all sites, structures and artefacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development.
- The *cultural significance* of sites and artefacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.
- The *value* is related to concepts such as *worth, merit, attraction* or *appeal*, concepts that are associated with the (current) usefulness and condition of a place or an object. Hence, in the development area, there are instances where elements of the place have a high level of significance but a lower level of value.
- It must be kept in mind that significance and value are not mutually exclusive, and that the evaluation of any feature is based on a combination or balance between the two.
- Isolated occurrences: findings of artefacts or other remains located apart from archaeological sites. Although these are noted and samples are collected, it is not used in impact assessment and therefore do not feature in the report.
- Traditional cultural use: resources which are culturally important to people.
- All archaeological remains, artificial features and structures older than 100 years and historic structures older than 60 years are protected by the relevant legislation, in this case the National Heritage Resources Act (NHRA) (Act No. 25 of 1999). No archaeological artefact, assemblage or settlement (site) and no historical building or structure older than 60 years may be altered, moved or destroyed without the necessary authorisation from the South African Heritage Resources Agency (SAHRA) or a provincial heritage resources authority. Full cognisance is taken of this Act in making recommendations in this report.
- The guidelines as provided by the NHRA (Act No. 25 of 1999) in Section 3, with special reference to subsection 3, and the Australian ICOMOS Charter (also known as the Burra Charter) are used when determining the cultural significance or other special value of archaeological or historical sites.
- It should be kept in mind that archaeological deposits usually occur below ground level. Should artefacts or skeletal material be revealed at the site during construction, such activities should be halted, and it would be required that the heritage consultants would be notified in order for an investigation and evaluation of the find(s) to take place (*cf.* NHRA (Act No. 25 of 1999), Section 36 (6)).

4.1.2 Limiting/Restricting factors

The investigation has been influenced by the following factors related to the overall HIA:

- Unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence)
- The archaeological visibility was down to virtually zero in most areas due to dense vegetation cover

4.1.3 Field work

This was done through foot and vehicle investigations of the study area in March 2010. During the site inspection the respective properties were examined in some detail. Certain parts of the landscape were found generally to exhibit low archaeological visibility and were checked at random intervals, while features in the respective landscapes that were more likely to have been foci for past human activity were assessed more systematically.

4.1.4 Desktop study

- Published literature
- Aerial images (contemporary)
- Cadastral diagrams
- Archival records
- Maps (historical and contemporary)
- Title deeds

4.1.5 Verbal information

- None

4.2 General issues of site and context

4.2.1 Context		
	<i>(check box of all relevant categories)</i>	<i>Brief description/explanation</i>
x	Urban environmental context	<ul style="list-style-type: none"> • Roads • Vacant land • Former grazing land • Mining areas • Airstrip • Dwellings
x	Rural environmental context	
	Natural environmental context	
Formal protection (NHRA)		
	Is the property part of a protected area (S. 28)?	No
	Is the property part of a heritage area (S. 31)?	No
Other		
	Is the property near to or visible from any protected heritage sites?	No
	Is the property part of a conservation area or special area in terms of the Zoning Scheme?	No
	Does the site form part of a historical settlement or townscape?	No
x	Does the site form part of a rural cultural landscape?	Yes: Former farm land
	Does the site form part of a natural landscape of cultural significance?	No
	Is the site within or adjacent to a scenic route?	No
	Is the property within or adjacent to any other area which has special environmental or heritage protection?	No
	Does the general context or any adjoining properties have cultural significance?	No

4.2.2 Property features and characteristics		
	<i>(check box if YES)</i>	<i>Brief description</i>
x	Have there been any previous development impacts on the property?	Yes: Roads, tracks, grazing land, fences, foundations, etc.
	Are there any significant landscape features on the property?	No
	Are there any sites or features of geological significance on the property?	No
	Does the property have any rocky outcrops on it?	No
	Does the property have any fresh water sources (springs, streams, rivers) on or alongside it?	No
	Does the property have any sea frontage?	No
	Does the property form part of a coastal dune system?	No
	Are there any marine shell heaps or scatters on the property?	No
	Is the property or part thereof on land reclaimed from the sea?	No

4.2.3 Heritage resources on the property		
	<i>(check box if present on the property)</i>	<i>Name / List / Brief description</i>
Formal protections (NHRA)		
	National heritage site (S. 27)	No
	Provincial heritage site (S. 27)	No
	Provisional protection (s.29)	No
	Place listed in heritage register (S. 30)	No
General protections (NHRA)		
	structures older than 60 years (S. 34)	No
x	archaeological site or material (S. 35)	Possible (chance finds)
x	palaeontological site or material (S. 35)	Possible (chance finds)
	graves or burial grounds (S. 36)	No
	public monuments or memorials (S. 37)	No
Other		
	Any heritage resource identified in a heritage survey (state author and date of survey and survey grading/s)	No
	Any other heritage resources (describe)	No

4.2.4 Property history and associations		
	<i>(check box if YES)</i>	<i>Brief description/explanation</i>
x	Provide a brief history of the property (e.g. when granted, previous owners and uses).	See Appendix 1
	Is the property associated with any important persons or groups?	No
	Is the property associated with any important events, activities or public memory?	No

4.2.4 Property history and associations

Does the property have any direct association with the history of slavery?	No
Is the property associated with or used for living heritage?	No
Are there any oral traditions attached to the property?	Yes: Sunday school camps and picnics

4.3 Summarised identification and significance assessment of heritage resources

See Appendix 3 for significance assessment criteria

TABLE 9: Identification and significance assessment of heritage features

S 3(2) NHRA heritage resource category	ELEMENTS	INDICATORS OF HERITAGE SIGNIFICANCE										CUMULATIVE SIGNIFICANCE RATING (TOTAL 30) 1-9 = Low = 1 10-19 = Medium = 2 20-30 = High = 3
		HISTORICAL	RARE	SCIENTIFIC	TYPICAL	AESTHETIC	TECHNOLOGICAL	PERSON COMMUNITY	LANDMARK	MATERIAL CONDITION	SUSTAINABILITY	
Buildings, structures, places and equipment of cultural significance	Dirt track and foundations	1	0	0	1	0	0	3	0	2	1	8 = Low = 1 (average for all)
Areas to which oral traditions are attached or which are associated with intangible heritage	No	-	-	-	-	-	-	-	-	-	-	-
Historical settlements and landscapes	None	-	-	-	-	-	-	-	-	-	-	-
Landscapes and natural features of cultural significance	None	-	-	-	-	-	-	-	-	-	-	-
Geological sites of scientific or cultural importance	None	-	-	-	-	-	-	-	-	-	-	-
Archaeological and palaeontological sites	Stone Age artefacts and fossils (chance finds)	-	-	-	-	-	-	-	-	-	-	Unknown
Graves and burial grounds	None	-	-	-	-	-	-	-	-	-	-	-
Areas of significance related to labour history	None	-	-	-	-	-	-	-	-	-	-	-
Movable objects	None	-	-	-	-	-	-	-	-	-	-	-

4.4 Impact assessment

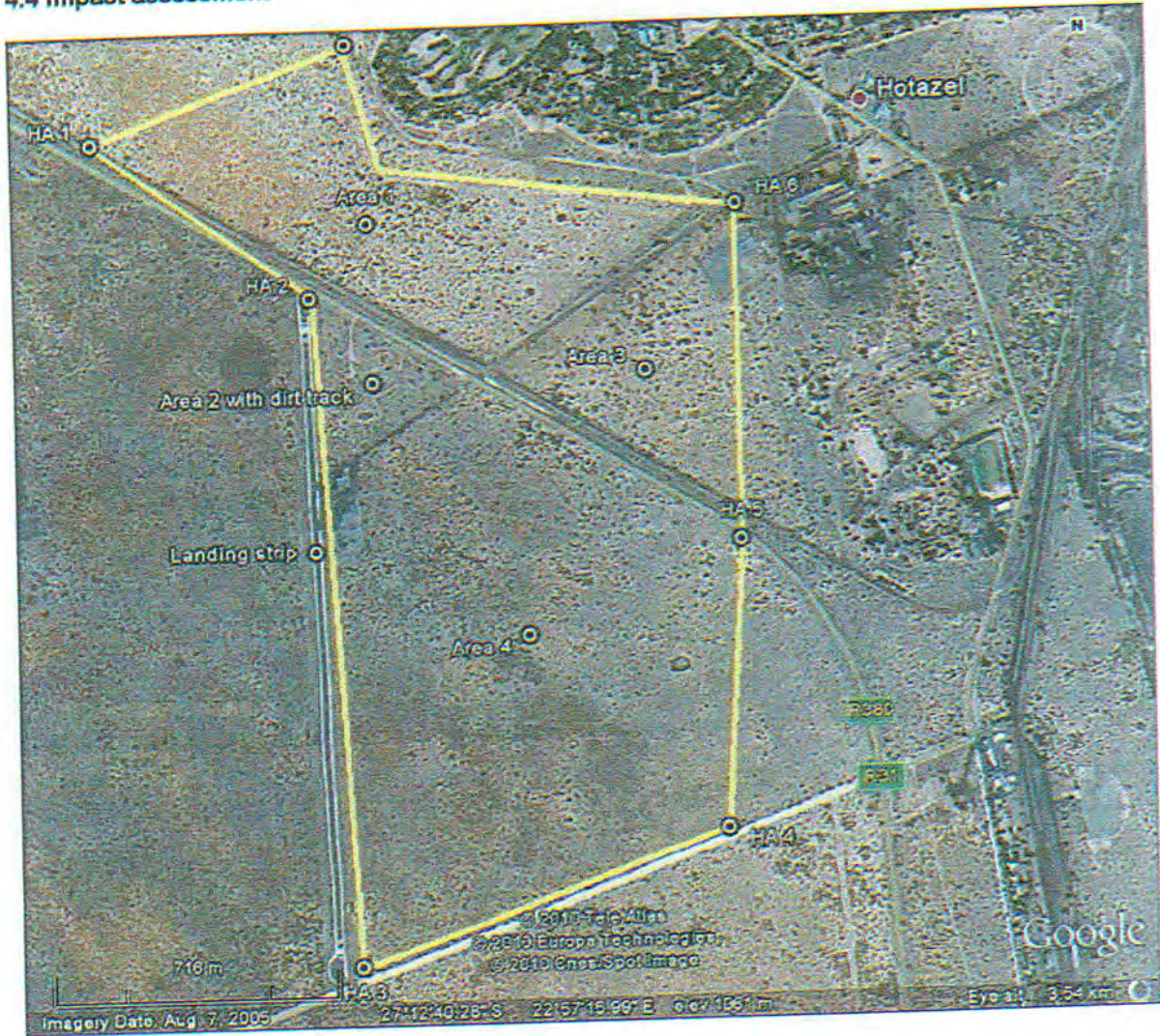


FIGURE 7: Google Earth image (2005) of the study area indicating the position of identified heritage features (Area 2)

4.4.1 Dirt track and foundations

S 3(2) NHRA heritage resource	(a) Identification		(b) Significance	(c) Impact		(d) Recommended impact management
	Site	GPS		Study area	Impact type, certainty and significance	
Buildings, structures, places and equipment of cultural significance	Dirt track and foundations	27°12'28.50"S 22°58'56.68"E	Low local	2	Definite destruction – low negative	None

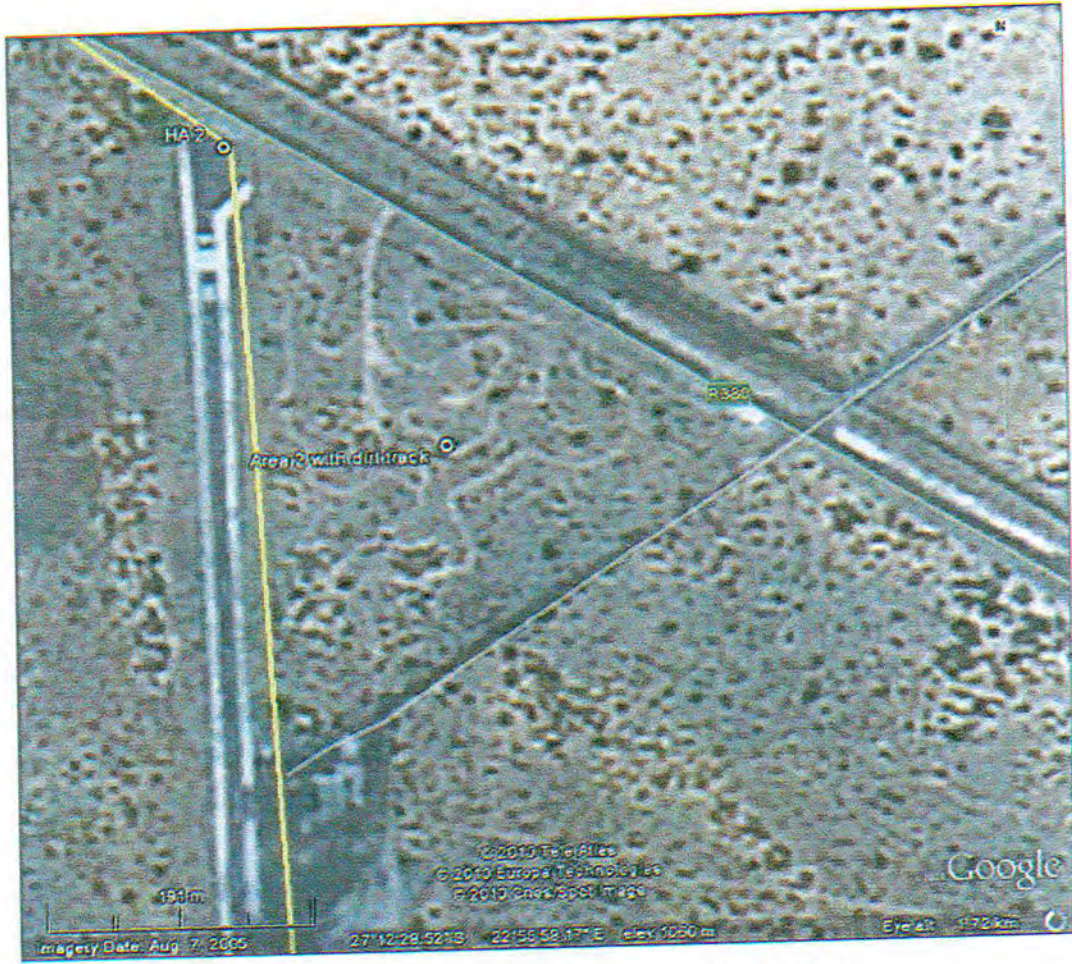


FIGURE 8: Google Earth image (2005) showing the location of the dirt track

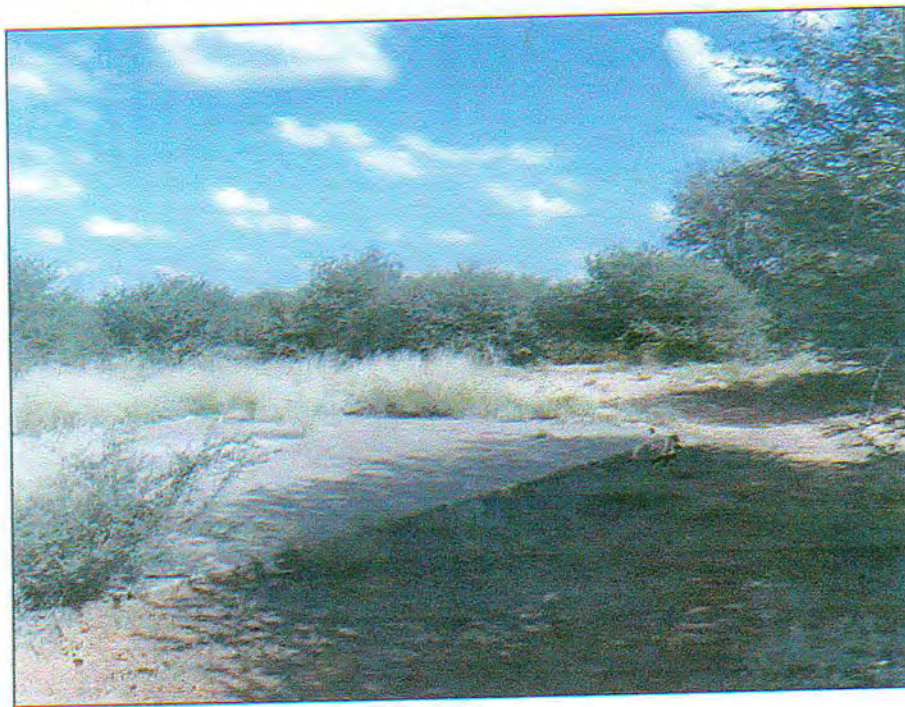


FIGURE 9: Unidentified foundations are found in the dirt track area

4.4.2 Summarised impact assessment

TABLE 10: Identification of heritage features, impacts and impact management measures

S 3(2) NHRA heritage resource	(a) Identification		(b) Significance	(c) Impact		(d) Recommended impact management
	Site	GPS		Study area	Impact type, certainty and significance	
Buildings, structures, places and equipment of cultural significance	Dirt track and foundations	27°12'28.50"S 22°56'56.68"E	Low local	2	Definite destruction – low negative	None
Areas to which oral traditions are attached or which are associated with intangible heritage	None	-	-	-	-	-
Historical settlements and landscapes	None	-	-	-	-	-
Landscapes and natural features of cultural significance	None	-	-	-	-	-
Geological sites of scientific or cultural importance	None	-	-	-	-	None
Archaeological and palaeontological sites	Chance finds	Unknown	Low local?	Both	Unknown	Report and evaluate any graves or archaeological features and artefacts when found
Graves and burial sites	None	-	-	-	-	-
Features associated with labour history	None	-	-	-	-	-
Movable objects	None	-	-	-	-	-

4.5 Social and economic benefits

The development will have no direct benefits related to the conservation of heritage resources (structures) since none of significance were identified and will be affected.

The socio-economic benefits are associated with the provision for additional housing in anticipating of demand resulting from the operation of the Hotazel Mines (Wessels and Mamantwan), the Black Rock Mine and the Ntsimbintle Mining's new Tshipi Mine near Hotazel.

4.6 Consultation with affected communities

This is part of the EIA process.

4.7 Identification of other risk sources

The following project actions will very likely impact negatively on any potential palaeontological and archaeological sites and remains.

The actions are likely to occur during the preparation phases of the proposed project:

- Earthworks and excavations may expose or uncover objects and artefacts and unmarked human burials.

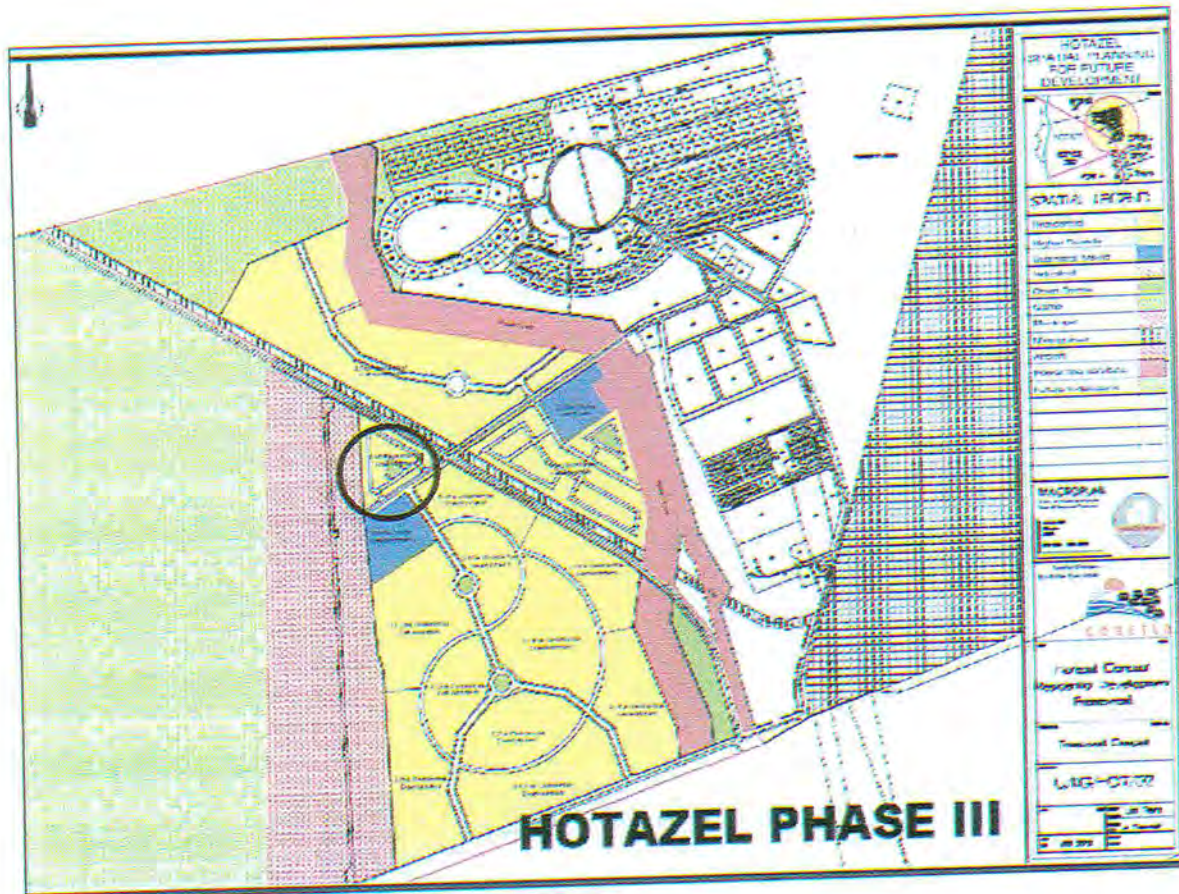


FIGURE 10: Site Development Plan showing the location of the dirt track (circle)

4.8 Key mitigation and enhancement measures before and during construction

- Monitor for chance finds (e.g. burial sites, old waste disposal sites, artefacts, fossils)

4.9 Consideration of alternatives

No alternatives are considered.

4.10 Summarised findings and recommendations

The four areas proposed for residential and commercial development are located in a cultural landscape classified primarily as relic farmland and secondarily as archaeological. This class of landscape is of low heritage sensitivity because it is able to absorb new development with some adverse effects through some mitigation.

The predicted impacts are of not of a direct and physical nature. Visual intrusion as an indirect impact is not an important issue since the proposed development will have a low visual scale and is surrounded by land that has been transformed by mining, housing and infrastructure. Noise, dust, pollution and restrictions of access patterns as indirect impacts are also not issues.

Cultmatrix states that there are no compelling reasons not to authorise the proposed change of land use and that the proposed development can continue provided that the following mitigation measures are adopted as a heritage management tool:

1. Should any hidden human remains (highly unlikely) be disturbed, exposed or uncovered during (plant) site clearing and excavations, these should immediately be reported to an archaeologist. Burial remains should not be disturbed or removed until inspected by an archaeologist.

2. Site clearing and excavation activities must be monitored for the occurrence of any hidden palaeontological material (fossils), archaeological material (Stone Age tools) and similar chance finds and if any are exposed, this should be reported to an archaeologist so that an investigation and evaluation of the finds can be made.

APPENDIX 1: SOCIO-CULTURAL HISTORY OF DEVELOPMENT AREA

Hotazel is located in a part of the Northern Cape Province commonly referred to as the "Green Kalahari". At the time of the appearance of the first hominids, the plains and hills would have consisted of widespread grasslands, scattered Bushveld and broken woodlands. These grasslands would have been dominated by large herds of mammalian grazers and the predators feeding on them. River courses had woodland fringes, which would have been home to various primates, as well as hippopotamus, lechwe and waterbuck.

During 1974 a discovery of animal fossils and Early Stone Age artefacts was made in the Kathu Pan further to the south by Naas Viljoen, a previous manager of the Sishen farm. Many prehistoric bone fossils and artefacts were picked up by people over a wide area without realising the significance of these finds.

The first communities were hunters and gatherers who were able to make tools and weapons from stone, bone and wood. About 2,4 million years BP, early hominids known as *Australopithecus africanus* lived at Taung (a national heritage site), one of South Africa's most important palaeontological sites.

The australopithecines were gradually displaced by another early hominid, *Homo habilis*, and eventually disappeared. *Homo habilis* had evolved into the more advanced *Homo erectus* (also known as *Homo ergaster*) by 1,8 million years BP, which was responsible for the development of large stone cutters and cleavers that collectively constitute the so-called Early Stone Age (ESA).

By 250 000 years BP, the large cleavers and hand axes of the ESA disappeared and were replaced by a larger variety of smaller tools and weapons of diverse shapes and sizes, made by different techniques. This change in technology marks the beginning of the Middle Stone Age (MSA). During the MSA, early humans still settled in the open along or near water sources but also took shelter in caves. The MSA marks the transition from a more archaic *Homo* (*Homo ergaster*) to anatomically modern humans, *Homo sapiens*. With this physical development the first signs of art, decoration and symbolism began to appear.

The Later Stone Age (LSA), which occurred from about 20 000 years ago, is signalled by a series of technological innovations and social transformations within these early hunter-gatherer societies. The hunting apparatus now included two important innovations, the bow and the link-shaft arrow. Link-shaft arrows were constructed with a poisoned bone tip, a link and shaft that fell away on impact, leaving the poison tip imbedded in the animal. Other innovations included bored stones, used as digging-stick weights to aid in uprooting tubers and roots; small stone tools, often less than 25 mm in length, used for cutting meat and scraping hides; polished bone tools such as needles; twine made from plant fibre or leather; tortoiseshell bowls; fishing equipment, including hooks and sinkers; bone tools with decoration; high frequencies of ostrich eggshell beads and an increase in ornaments and artwork.

The LSA is associated with San communities as well as with Khoi groups that arrived from the northern interior about 2000 years BP.

All three Stone Age periods are well represented around Kathu but no evidence was found on the Hotazel development site. This is probably because of the presence of hills east and south of Hotazel. Most Stone Age artefacts and sites seem to date to the Early Stone Age.

Early Iron Age occupation did not take place in the region and seems as if the earliest people to live settled lives here were those of Tswana-speaking origin (Tlhaping and Tlharo) that settled mostly to the north and a bit to the west of Kuruman.

While there is some evidence that the Early Iron Age continued into the 15th century in the lowveld, on the escarpment it had ended by AD1100. The Highveld became active again from the 15th century onwards due to a gradually warmer and wetter climate. From here communities spread to other parts of the interior. This later phase, termed the Late Iron Age (LIA), was accompanied by extensive stonewalled settlements, such as the Tlhaping capital Dithakong, 40 km north of Kuruman.

Sotho-Tswana and Nguni societies, the descendants of the LIA mixed farming communities, found the region already sparsely inhabited by the Late Stone Age (LSA) Khoisan groups, the so-called 'first people'. Most of them were eventually assimilated by LIA communities and only a few managed to survive, such as the Korana and Griqua. This period of contact is sometimes known as the Ceramic Late

Stone Age and is represented by the Blinkklipkop specularite mine near Postmasburg and finds at the Kathu Pan.

From LIA communities tribal societies emerged conveniently grouped according to their languages. The Kathu region became home to Western Sotho communities speaking Setswana, such as the Tlhaping, Rolong, Phiring, Fokeng, Kwena, Kgatla, Hurutshe, Taung and Ngwaketse tribal communities.

Factors such as population expansion, increasing pressure on natural resources, the emergence of power blocs, attempts to control trade and penetration by Griquas, Korana and white communities from the south-west resulted in a period of instability in Southern Africa that began in the late 18th century and effectively ended with the settlement of white farmers in the interior. This period, known as the *difaqane* or *Mfecane*, also affected the Northern Cape Province, although at a relatively late stage compared to the rest of Southern Africa. Here, the period of instability, beginning in the mid-1820s, was triggered by the incursion of displaced refugees associated with the Tlokwa, Fokeng, Hlakwa and Phuting tribal groups.

The *difaqane* coincided with the penetration of the interior of South Africa by white traders, hunters, explorers and missionaries. The first was PJ Truter's and William Somerville's journey of 1801, which reached Dithakong at Kuruman. They were followed by Cowan, Donovan, Burchell and Campbell and resulted in the establishment of a London Mission Society station near Kuruman in 1817 by James Read.

The Great Trek of the Boers from the Cape in 1836 brought large numbers of Voortrekkers up to the borders of large regions known as Bechuanaland and Griqualand West, thereby coming into conflict with many Tswana groups and also the missionaries of the London Mission Society. The conflict between Boer and Tswana communities escalated in the 1860s and 1870s when the Korana and Griqua communities became involved and later also the British government. The conflict mainly centred on land claims by various communities. For decades the western border of the Transvaal Boer republic was not fixed. Only through arbitration (the Keate Arbitration), triggered by the discovery of gold at Tati (1866) and diamonds at Hopetown (1867) was part of the western border finally determined in 1871. Ten years later, the Pretoria Convention fixed the entire western border, thereby finally excluding Bechuanaland and Griqualand West from Boer domination.

Geographically, Hotazel is part of a region once known as British Bechuanaland. Formerly a frontier area beyond colonial interest and control, it was proclaimed a British protectorate in 1885, primarily to secure access to Central Africa by preventing the Boers (through their Stellaland and Goosen republics) linking up with the German-occupied South-West Africa (Namibia). The British established a number of reserves for the Tswana inhabitants. In 1895 Tswana-speakers rose up in resistance to British authority, as represented by the Cape Colonial Government. The British quickly quelled this resistance and in the same year incorporated British Bechuanaland into the Cape Colony.

The region remained sparsely populated until the advent of the 20th century, when cattle farming became popular. Government-owned land was surveyed and divided into farms, which were transferred to farmers. Between 1915 and 1917 Dirk Roos and Hendrik Wessels surveyed the farm. When Dirk Roos surveyed the area near the Gamagara River, he was exhausted by the heat and apparently said "*This place is as hot as hell.*"

In 1922 the economic potential of manganese deposits near Postmasburg was recognised and production commenced in 1930 after the completion of a rail link. Shortly afterwards the Kalahari Manganese Field (KMF) further north was identified and in 1940 the Black Rock Mine was opened. Following further discoveries more to the south, SAMANCOR acquired the farm Hotazel in 1955 where the Hotazel Mine started operations. A railway line between Sishen and Hotazel was constructed in 1959 and small mining village sprung up near the mine. Expansion of the village was promoted by the electrification of the railway line and the opening of the Wessels and Mamantwan mines in the vicinity. The abandoned dirt track on the development site is an informal recreational facility established by the Hotazel community.

APPENDIX 2: INFORMATION SOURCES USED IN THIS REPORT

Databases

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Maps

2722 BB Hotazel (2001)
Maps provided by client

Aerial photos

Google Earth (2005)

Internet

<http://www.routes.co.za/nc/hotazel/index.html>

APPENDIX 3: GLOSSARY OF TERMS

Cultural significance (Burra Charter)

Aesthetic, historic, scientific, social or spiritual importance, meaning or noteworthiness for past, present or future generations

Cultural significance is embodied in the place itself (intrinsic significance), its fabric, setting, use, associations, meanings, records, related places and related objects.

Cultural significance is assessed in terms of the following criteria, some of which are embodied in the NHRA:

- Historic value: Material or intangible evidence resulting from changing social, political and environmental circumstances or conditions
- Rarity: Unique or unusual features also possess rarity value, apart from their age. Section 34 of the NHRA provided general protection for all structures older than 60 years. This does not imply that recently erected structures cannot possess rarity, or for that matter cultural value.
- Scientific value: Indicates research potential (the capacity to yield more knowledge)
- Typical: Indicates that the feature is a good example of a certain class or type of heritage resource
- Aesthetic: Other than artistic or architectural expression, aesthetic value can also be evident in craftsmanship, technique, visual cohesion (harmony), visual evidence of permanence and stability, setting etc.
- Technological: Indicates value in terms of a technological achievement
- Personal/Community: Indicates value in terms of association with a certain person, community, organisation or cultural group
- Landmark: A sense of place or belonging involves the physical and visual relationship between a feature and its environment.
- Condition (material integrity): Indicates substantial evidence of authentic fabric with minor degree of lost or obliterated fabric; also refers to a structure's restoration potential
- Sustainability: The potential for lasting economic viability (use) and the perpetuation of the original use or part thereof.

Heritage resources/features (NHRA)

Any place or object of cultural significance, including:

- (a) places, buildings, structures and equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and palaeontological sites;
- (g) graves and burial grounds, including—
 - (i) ancestral graves;
 - (ii) royal graves and graves of traditional leaders;
 - (iii) graves of victims of conflict;
 - (iv) graves of individuals designated by the Minister by notice in the *Gazette*;
 - (v) historical graves and cemeteries; and
 - (vi) other human remains, which are not covered in terms of the Human Tissue Act, 1983 Act No. 65 of 1983;
- (h) sites of significance relating to the history of slavery in South Africa;
- (i) movable objects, including—

- (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
- (ii) objects to which oral traditions are attached or which are associated with living heritage;
- (iii) ethnographic art and objects;
- (iv) military objects;

(v) objects of decorative or fine art;
(vi) objects of scientific or technological interest; and
(vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

Heritage significance (NHRA)

(a) its importance in the community, or pattern of South Africa's history;
(b) its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
(c) its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
(d) its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
(e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
(f) its importance in demonstrating a high degree of creative or technical achievement at a particular period;
(g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
(h) its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
(i) sites of significance relating to the history of slavery in South Africa.

Historic period

Since the arrival of the white settlers - c. AD 1840 in this part of the country

Impact

A description of the effect of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space

Impact assessment

Issues that cannot be resolved during screening (Level 1) and scoping (Level 2) and thus require further investigation

Intangible heritage

Defined in terms of the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (2003) as:

- Oral traditions and expressions, including language as a vehicle of the intangible cultural heritage;
- Performing arts;
- Social practices, rituals and festive events;
- Knowledge and practices concerning nature and the universe;
- Traditional craftsmanship.

The "intangible cultural heritage" means the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This intangible cultural heritage, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity.

Visual and social impact assessments as part of an HIA are directly associated with intangible cultural heritage.

Iron Age

Early Iron Age (EIA)	AD 200 - AD 1000
Late Iron Age (LIA)	AD 1000 - AD 1830

Issue

A question that asks what the impact of the proposed development will be on some element of the environment

Maintenance

Keeping something in good health or repair

Management actions

Actions that enhance benefits associated with a proposed development or avoid, mitigate, restore, rehabilitate or compensate for the negative impacts

Preservation

Conservation activities that consolidate and maintain the existing form, material and integrity of a cultural resource

Reconstruction

Re-erecting a structure on its original site using original components

Rehabilitation

Re-using an original building or structure for its historic purpose or placing it in a new use that requires minimal change to the building or structure characteristics and its site and environment.

Restoration

Returning the existing fabric of a place to a known earlier state by removing additions or by reassembling existing components

SAHRA - South African Heritage Resources Agency

Stone Age

Early Stone Age (ESA)	2 000 000 - 150 000 Before Present
Middle Stone Age (MSA)	150 000 - 30 000 BP
Late Stone Age (LSA)	30 000 - until c. AD 200

Value

Worth, conservation utility, desirability to conserve etc in terms of physical condition, level of significance (importance), economy (feasibility), possible new uses and associations/comparisons with similar features elsewhere

**Archaeological impact survey report for
THE PROPOSED TOWNSHIP DEVELOPMENT IN HOTAZEL,
NORTHERN CAPE PROVINCE**

**ARCHAEOLOGICAL IMPACT SURVEY REPORT FOR THE PROPOSED
TOWNSHIP DEVELOPMENT IN HOTAZEL, NORTHERN CAPE PROVINCE**

Report No: 2010/JvS/028
Status: Final
Revision No: 0
Date: May 2010

Prepared for:

CULTMATRIX

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Declaration:

I, J.A. van Schalkwyk, declare that I do not have any financial or personal interest in the proposed development, nor its developers or any of their subsidiaries, apart from the provision of heritage assessment and management services.



J A van Schalkwyk (D Litt et Phil)
Heritage Consultant
May 2010

EXECUTIVE SUMMARY

ARCHAEOLOGICAL IMPACT SURVEY REPORT FOR THE PROPOSED TOWNSHIP DEVELOPMENT IN HOTAZEL, NORTHERN CAPE PROVINCE

Samancor Managanese (Pty) Ltd proposes to extend the town of Hotazel. An independent archaeological consultant was appointed by **Cultmatrix** to conduct a survey to locate, identify, evaluate and document sites, objects and structures of cultural importance dating to the Stone Age and Iron Age found within the boundaries of the areas where it is planned to develop the two opencast areas.

This AIA report forms part of the Environmental Impact Assessment (EIA) as required by the EIA Regulations in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and was done in accordance with Section 38 of the National Heritage Resources Act, No. 25 of 1999 and is intended for submission to the South African Heritage Resources Agency (SAHRA).

- As no heritage sites occur in the study area, there would be no impact resulting from the proposed development of the township.

Therefore, from a heritage point of view we recommend that the proposed development can continue. However, we request that if archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.



J A van Schalkwyk
Heritage Consultant
May 2010

TECHNICAL SUMMARY

Property details						
Province	Northern Cape					
Magisterial district	Kuruman					
Topo-cadastral map	2722BB					
Closest town	Hotazel					
Farm name & no.	Hotazel 280					
Portions/Holdings	Portion of the Remainder of Erf 1					
Coordinates	Centre point					
	No	Latitude	Longitude	No	Latitude	Longitude
	S 27.21322	E 22.95626				

Development criteria in terms of Section 38(1) of the NHR Act	Yes/No
Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	No
Construction of bridge or similar structure exceeding 50m in length	No
Development exceeding 5000 sq m	Yes
Development involving three or more existing erven or subdivisions	No
Development involving three or more erven or divisions that have been consolidated within past five years	No
Rezoning of site exceeding 10 000 sq m	No
Any other development category, public open space, squares, parks, recreation grounds	No

Development	
Description	Township development
Project name	Hotazel Extension

Land use	
Previous land use	Farming
Current land use	Vacant

Heritage sites assessment		
Site type	Site significance	Site grading (Section 7 of NHRA)
None		
Impact assessment		
Impact	Mitigation	Permits required
None		

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GLOSSARY OF TERMS AND ABBREVIATIONS

STONE AGE
Early Stone Age 2 000 000 - 150 000 Before Present (BP)
Middle Stone Age 150 000 - 30 000 BP
Late Stone Age 30 000 - until c. AD 200

IRON AGE
Early Iron Age AD 200 - AD 900
Middle Iron Age AD 900 - AD 1300
Late Iron Age AD 1300 - AD 1830

HISTORIC PERIOD
Since the arrival of the white settlers - c. AD 1840 in this part of the country

ASAPA Association of Southern African Professional Archaeologists
EIA Early Iron Age
ESA Early Stone Age
LIA Late Iron Age
LSA Late Stone Age
MSA Middle Stone Age
NHRA National Heritage Resources Act
PHRA Provincial Heritage Resources Agency
SAHRA South African Heritage Resources Agency

ARCHAEOLOGICAL IMPACT SURVEY REPORT FOR THE PROPOSED TOWNSHIP DEVELOPMENT IN HOTAZEL, NORTHERN CAPE PROVINCE

1. INTRODUCTION

Samancor Managanese (Pty) Ltd proposes to extend the town of Hotazel. An independent archaeological consultant was appointed by **Cultmatrix** to conduct a survey to locate, identify, evaluate and document sites, objects and structures of cultural importance dating to the Stone Age and Iron Age found within the boundaries of the areas where it is planned to develop the township areas.

This AIA report forms part of the Environmental Impact Assessment (EIA) as required by the EIA Regulations in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and was done in accordance with Section 38 of the National Heritage Resources Act, No. 25 of 1999 and is intended for submission to the South African Heritage Resources Agency (SAHRA).

2. TERMS OF REFERENCE

The scope of work consisted of conducting a Phase 1 archaeological survey of the site in accordance with the requirements of Section 38(3) of the National Heritage Resources Act (Act 25 of 1999).

This include:

- Conducting a desk-top investigation of the area
- A visit to the proposed development site

The objectives were to

- Identify possible archaeological, cultural and historic sites within the proposed development areas;
- Evaluate the potential impacts of construction, operation and maintenance of the proposed development on archaeological, cultural and historical resources;
- Recommend mitigation measures to ameliorate any negative impacts on areas of archaeological, cultural or historical importance.

3. HERITAGE RESOURCES

3.1 The National Estate

The NHRA (No. 25 of 1999) defines the heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations that must be considered part of the national estate to include:

- places, buildings, structures and equipment of cultural significance;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features of cultural significance;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds, including-
 - ancestral graves;

- royal graves and graves of traditional leaders;
- graves of victims of conflict;
- graves of individuals designated by the Minister by notice in the Gazette;
- historical graves and cemeteries; and
- other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- sites of significance relating to the history of slavery in South Africa;
- movable objects, including-
 - objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
 - objects to which oral traditions are attached or which are associated with living heritage;
 - ethnographic art and objects;
 - military objects;
 - objects of decorative or fine art;
 - objects of scientific or technological interest; and
 - books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

3.2 Cultural significance

In the NHRA, Section 2 (vi), it is stated that "cultural significance" means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance. This is determined in relation to a site or feature's uniqueness, condition of preservation and research potential.

According to Section 3(3) of the NHRA, a place or object is to be considered part of the national estate if it has cultural significance or other special value because of

- its importance in 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; and
- sites of significance relating to the history of slavery in South Africa.

4. STUDY APPROACH AND METHODOLOGY

4.1 Extent of the Study

This survey and impact assessment covers the area as presented in Section 5 and as illustrated in Figure 1.

4.2 Methodology

4.2.1 Preliminary investigation

4.2.1.1 Survey of the literature

A survey of the relevant literature was conducted with the aim of reviewing the previous research done and determining the potential of the area: Breutz (1963), Legasick (1969), SA Manganese Amcor (1977), Beaumont & Vogel (1984), Snyman (1986), Beaumont & Morris (1990), Couzens (2004) and Dreyer (2007) were consulted.

- An overview of the history of the larger region was obtained, indicating a limited range of possible heritage sites that could be expected.

4.2.1.2 Data bases

The *Heritage Atlas Database*, the *Environmental Potential Atlas* and the *National Archives of South Africa* were consulted.

- Information on a number of sites located in the larger region was obtained. These sites are mostly contemporary graves and cemeteries.

4.2.1.3 Other sources

Aerial photographs and topocadastral and other maps were also studied - see the list of references below.

- Little information of actual use was obtained from these sources.

4.2.2 Field survey

The field survey was done according to generally accepted archaeological practices, and was aimed at locating all possible sites, objects and structures. The area that had to be investigated, was identified by members of *Cultmatrix* by means of maps and during a site visit. A number of parallel transects were walked across the site.

4.2.3 Documentation

All sites, objects and structures that are identified are documented according to the general minimum standards accepted by the archaeological profession. Coordinates of individual localities are determined by means of the *Global Positioning System (GPS)*¹ and plotted on a map. This information is added to the description in order to facilitate the identification of each locality.

Map datum used: Hartebeeshoek 94 (WGS84).

4.3 Limitations

During the site visit the vegetation growth was very dense and high, limiting archaeological visibility.

¹ According to the manufacturer a certain deviation may be expected for each reading. Care was, however, taken to obtain as accurate a reading as possible, and then to correlate it with reference to the physical environment before plotting it on the map.

5. DESCRIPTION OF THE AFFECTED ENVIRONMENT

5.1 Site location

The site is located on the western side of the small mining village of Hotazel. It consists of Portion of the Remainder of Erf 1 of the farm Hotazel 280 (Fig. 1 & 2). For more information, please see the Technical Summary presented above.

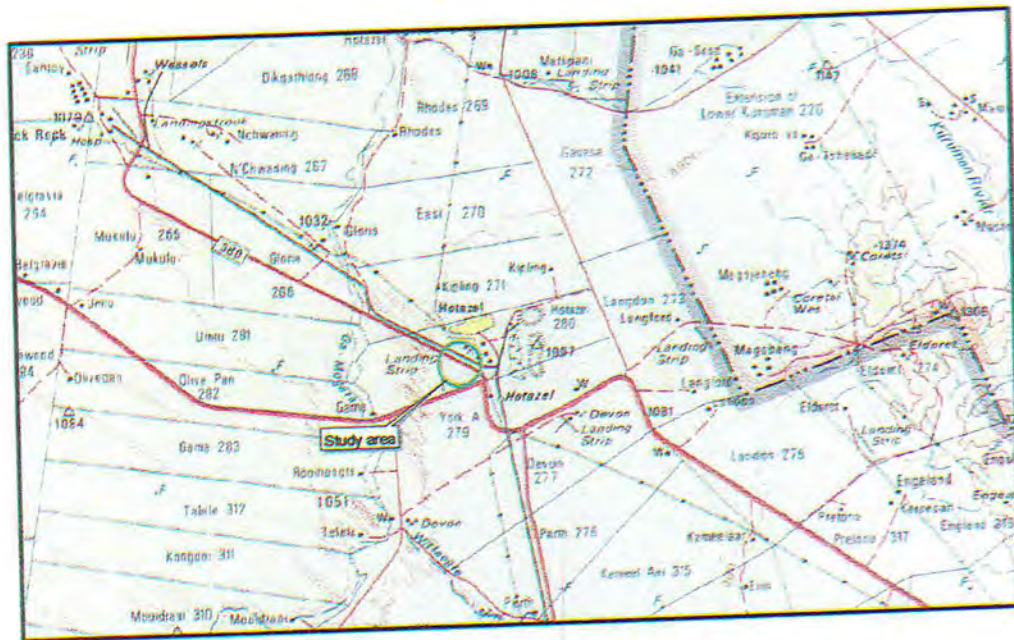


Fig. 1. Location of the study area (green circle) in regional context.
(Map 2722: Chief Surveyor-General)

5.2 Site description

The geology of the area is made up of sand. The original vegetation is classified as Kalahari Plains Thorn Bushveld. The topography of the area is described as plains and no hills, outcrops or streams that usually drew people to settle in its vicinity are found in the study area. The closest water, the Ga Mogara, a non-perennial stream, passes the area approximately 3 km to the west.

5.2 Overview of the region

Most sources indicate an area of low human occupation. This is largely as a result of the lack of open water. It was only with the arrival of drilling rigs and wind mills that population density increased.

Stone Age

Occupation of the region took place during the Stone Age. Most of this, however, seems to date to the Early Stone Age and centres in the areas where there are hills, e.g. to the east and south. For example, in the vicinity of Kathu, Beaumont & Morris (1990) and Dreyer (2007) identified to occurrence of extensive Early Stone Age occupation.

Less obvious in its presence are the Later Stone Age sites, some of which are indicated by Beaumont & Vogel (1984). They equate these sites, some which occur in the larger region, with Cape Coastal pottery associated with amorphous LSA (herders) or Wilton (hunter-gatherers) in the period 100 BC to AD 1900.

Iron Age

Early Iron Age occupation did not take place in the region and seems as if the earliest people to live settled lives here were those of Tswana-speaking origin (Tlhaping and Tlharo) that settled mostly to the north and a bit to the west of Kuruman. However, they continued spreading westward and by the late 18th century some groups occupied the Langeberg region. With the annexation of the Tswana areas by the British in 1885, the area became known as British Betschuana Land. A number of reserves were set up for these people to stay in. In 1895 the Tswana-speakers rose up in resistance to the British authority as represented by the government of the Cape Colony. They were quickly subjected and their land was taken away, divided up into farms and given out to white farmers to settle on (Snyman 1986).

Historic period

Many early explorers, hunters, traders and missionaries travelled through the area on their way to Kuruman on what was to become known as the "missionary road". Anderson, Burchell, Harris, Holub, Lichtenstein and Moffat are but a few of the better-known names to pass through here.

In 1902 Olifantshoek got its first permanent inhabitant, Edward Finnis and in 1903 Michael Colley opened a shop. The slow growth of Olifantshoek can be attributed to the fact that for many years Deben (Dibeng) was the main seat of the church in the region and local people preferred to go there.

Although prospecting for minerals, especially diamonds occurred in the area and some knowledge was available on the iron deposits, it was only during the 1940s that the extent of the iron and manganese deposits were established. This was followed by the establishment of towns such as Sishen (1952) and Kathu in 1972.

5.4 Identified sites

For more information, please see Appendix 3.

5.4.1 Stone Age

- No sites, features or objects of cultural significance dating to the Stone Age were identified in the study area.

5.4.2 Iron Age

- No sites, features or objects of cultural significance dating to the Iron Age were identified in the study area.

5.4.3 Historic period

- No sites, features or objects of cultural significance dating to the historic period were identified in the study area.

6. SITE SIGNIFICANCE AND ASSESSMENT

6.1 Heritage assessment criteria and grading

According to the NHRA, No. 25 of 1999, Section 2(vi), the *significance* of heritage sites and artefacts is determined by its aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential.

A matrix was developed whereby the above criteria, as set out in Sections 3(3) and 7 of the NHRA, No. 25 of 1999, were applied for each identified site (see Appendix 1). This allowed some form of control over the application of similar values for similar sites.

The NHRA stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- **Grade I:** Heritage resources with qualities so exceptional that they are of special national significance;
- **Grade II:** Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- **Grade III:** Other heritage resources worthy of conservation, on a local authority level.

The occurrence of sites with a Grade I significance will demand that the development activities be drastically altered in order to retain these sites in their original state. For Grade II and Grade III sites, the application of mitigation measures would allow the development activities to continue.

6.2 Statement of significance

In terms of Section 7 of the NHRA, all the sites currently known or which are expected to occur in the study area are evaluated to have Grade III significance.

6.3 Impact assessment

Impact analysis of cultural heritage resources under threat of the proposed development, are based on the present understanding of the development.

- As no heritage sites are known to occur in the study area, there would be no impact resulting from the proposed development.

7. RECOMMENDATIONS

The aim of the survey was to locate, identify, evaluate and document sites, objects and structures of cultural significance found within the area in which it is proposed to develop a township.

- As no heritage sites are known to occur in the study area, there would be no impact resulting from the proposed development of the township.

Therefore, from a heritage point of view we recommend that the proposed development can continue. However, we request that if archaeological sites or graves are exposed during construction work, it should immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.

8. REFERENCES

8.1 Data bases

Chief Surveyor General

Environmental Potential Atlas, Department of Environmental Affairs and Tourism.

Heritage Atlas Database, Pretoria.

National Archives of South Africa

8.2 Literature

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8.3 Maps

1: 50 000 Topocadastral maps – 2722BB

APPENDIX 1: CONVENTIONS USED TO ASSESS THE IMPACT OF PROJECTS ON HERITAGE RESOURCES

Significance

According to the NHRA, Section 2(vi) the **significance** of a heritage sites and artefacts is determined by its aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technical value in relation to the uniqueness, condition of preservation and research potential. It must be kept in mind that the various aspects are not mutually exclusive, and that the evaluation of any site is done with reference to any number of these.

Matrix used for assessing the significance of each identified site/feature

1. Historic value					
Is it important in the community, or pattern of history					
Does it have strong or special association with the life or work of a person, group or organisation of importance in history					
Does it have significance relating to the history of slavery					
2. Aesthetic value					
It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group					
3. Scientific value					
Does it have potential to yield information that will contribute to an understanding of natural or cultural heritage					
Is it important in demonstrating a high degree of creative or technical achievement at a particular period					
4. Social value					
Does it have strong or special association with a particular community or cultural group for social, cultural or spiritual reasons					
5. Rarity					
Does it possess uncommon, rare or endangered aspects of natural or cultural heritage					
6. Representivity					
Is it important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects					
Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class					
Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality.					
7. Sphere of Significance			High	Medium	Low
International					
National					
Provincial					
Regional					
Local					
Specific community					
8. Significance rating of feature					
1.	Low				
2.	Medium				
3.	High				

Significance of impact:

- low where the impact will not have an influence on or require to be significantly accommodated in the project design
- medium where the impact could have an influence which will require modification of the project design or alternative mitigation
- high where it would have a "no-go" implication on the project regardless of any mitigation

Certainty of prediction:

- Definite: More than 90% sure of a particular fact. Substantial supportive data to verify assessment
- Probable: More than 70% sure of a particular fact, or of the likelihood of that impact occurring
- Possible: Only more than 40% sure of a particular fact, or of the likelihood of an impact occurring
- Unsure: Less than 40% sure of a particular fact, or the likelihood of an impact occurring

Recommended management action:

For each impact, the recommended practically attainable mitigation actions which would result in a measurable reduction of the impact, must be identified. This is expressed according to the following:

- 1 = no further investigation/action necessary
- 2 = controlled sampling and/or mapping of the site necessary
- 3 = preserve site if possible, otherwise extensive salvage excavation and/or mapping necessary
- 4 = preserve site at all costs
- 5 = relocate/retain graves

Legal requirements:

Identify and list the specific legislation and permit requirements which potentially could be infringed upon by the proposed project, if mitigation is necessary.

APPENDIX 2. RELEVANT LEGISLATION

All archaeological and palaeontological sites, and meteorites are protected by the National Heritage Resources Act (Act no 25 of 1999) as stated in Section 35:

(1) Subject to the provisions of section 8, the protection of archaeological and palaeontological sites and material and meteorites is the responsibility of a provincial heritage resources authority: Provided that the protection of any wreck in the territorial waters and the maritime cultural zone shall be the responsibility of SAHRA.

(2) Subject to the provisions of subsection (8)(a), all archaeological objects, palaeontological material and meteorites are the property of the State. The responsible heritage authority must, on behalf of the State, at its discretion ensure that such objects are lodged with a museum or other public institution that has a collection policy acceptable to the heritage resources authority and may in so doing establish such terms and conditions as it sees fit for the conservation of such objects.

(3) Any person who discovers archaeological or palaeontological objects or material or a meteorite in the course of development or agricultural activity must immediately report the find to the responsible heritage resources authority, or to the nearest local authority offices or museum, which must immediately notify such heritage resources authority.

(4) No person may, without a permit issued by the responsible heritage resources authority-

- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- (c) trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

In terms of cemeteries and graves the following (Section 36):

(1) Where it is not the responsibility of any other authority, SAHRA must conserve and generally care for burial grounds and graves protected in terms of this section, and it may make such arrangements for their conservation as it sees fit.

(2) SAHRA must identify and record the graves of victims of conflict and any other graves which it deems to be of cultural significance and may erect memorials associated with the grave referred to in subsection (1), and must maintain such memorials.

(3) No person may, without a permit issued by SAHRA or a provincial heritage resources authority-

- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

(4) SAHRA or a provincial heritage resources authority may not issue a permit for the destruction or damage of any burial ground or grave referred to in subsection (3)(a) unless it is satisfied that the applicant has made satisfactory arrangements for the exhumation and re-interment of the contents of such graves, at the cost of the applicant and in accordance with any regulations made by the responsible heritage resources authority.

The National Heritage Resources Act (Act no 25 of 1999) stipulates the assessment criteria and grading of archaeological sites. The following categories are distinguished in Section 7 of the Act:

- **Grade I:** Heritage resources with qualities so exceptional that they are of special national significance;
- **Grade II:** Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
- **Grade III:** Other heritage resources worthy of conservation, and which prescribes heritage resources assessment criteria, consistent with the criteria set out in section 3(3), which must be used by a heritage resources authority or a local authority to assess the intrinsic, comparative and contextual significance of a heritage resource and the relative benefits and costs of its protection, so that the appropriate level of grading of the resource and the consequent responsibility for its management may be allocated in terms of section 8.

APPENDIX 3: SURVEY RESULTS

See Appendix 1 for an explanation of the conventions used in assessing the cultural remains.

Map datum used: Hartebeeshoek 94 (WGS84).

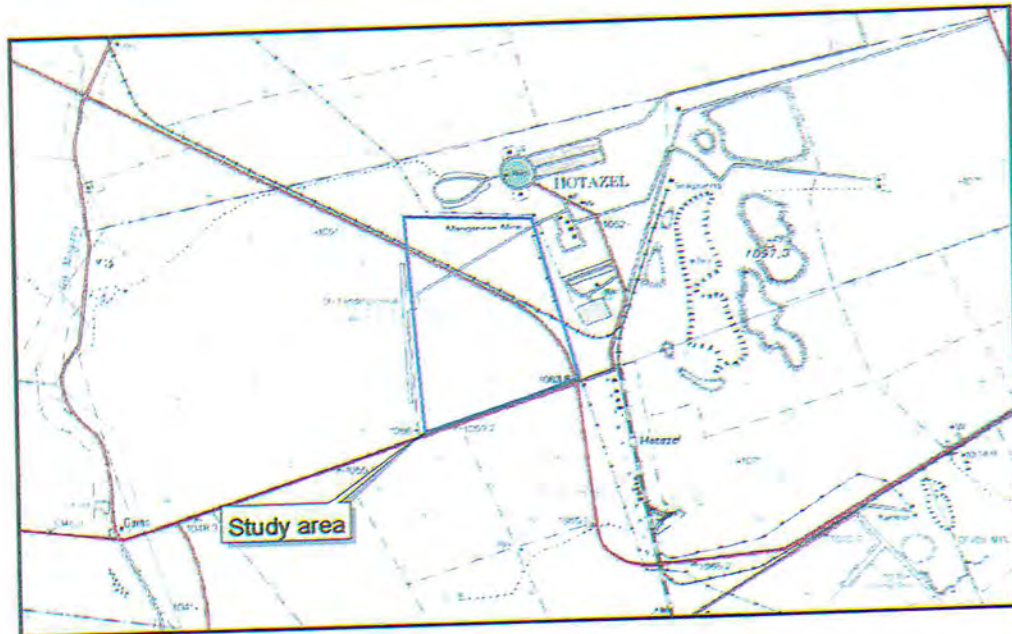


Fig. 2. The study area outlined in blue.
(Map 2722BB: Chief Surveyor-General)

APPENDIX 4: ILLUSTRATIONS

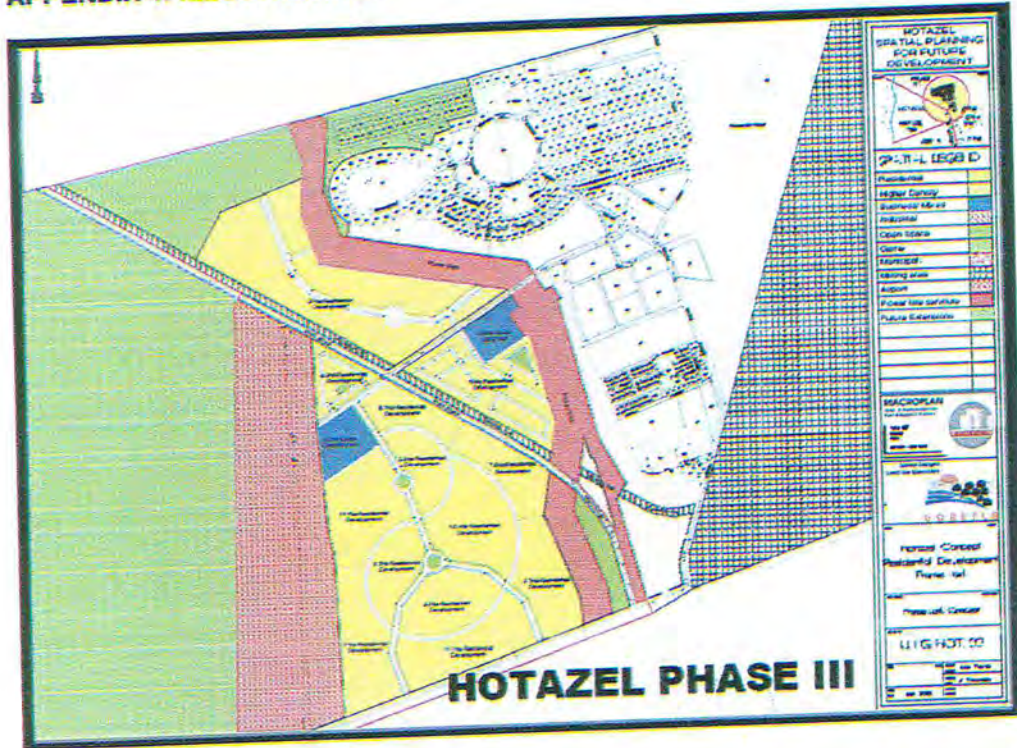


Fig. 3. Layout of the proposed development.



Fig. 4. Aerial photograph of the site.
(Photo: Google Earth)



Fig. 5. The study area looking west.



Fig. 6. The study area looking north.



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15 June 2010

Dr Robert De Jong
Cultmatrix
PO Box 12013
Queenswood 0121
Pretoria

E-Mail cultmat@iafrica.com

Dear Robert,

Hotazel Development – Palaeontological Impact Assessment

I have undertaken a desk top palaeontological impact analysis for the area which will be affected by the proposed development adjacent to Hotazel.

The entire area is underlain by Precambrian rocks which are in turn covered by Quaternary sands which are of aeolian origin. The Precambrian rocks are not known to contain any fossils. There is a slight, but unlikely, possibility of Quaternary fossils being present in the overlying sand deposits. It is unlikely that the proposed development will have an impact on palaeontological heritage, but it is essential that if fossils are uncovered in the process of development activities that a professional palaeontologist be brought in to access the situation.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'Bruce Rubidge'.

Bruce Rubidge PhD, FGSSA, Pr Sci Nat