

Appendix D9

Heritage report

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Appendix D9A

**A Phase 1 Heritage Impact Assessment (HIA) Study
for Sasol's proposed new shaft complex on
Strybult 542 and for the North Block on the Eastern
Highveld in the Mpumalanga Province of South Africa**

Compiled by Dr Julius Pistorius

Prepared for:

**CLEAN STREAM ENVIRONMENTAL
AND
SASOL SECUNDA**

**A PHASE I HERITAGE IMPACT ASSESSMENT (HIA) STUDY FOR
SASOL'S PROPOSED NEW SHAFT COMPLEX ON STRYBULT 542
AND FOR THE NORTH BLOCK ON THE EASTERN HIGHVELD IN
THE MPUMALANGA PROVINCE OF SOUTH AFRICA**

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EXECUTIVE SUMMARY

Sasol intends to establish an underground coal mine on the farm Strybult 542 south of Devon on the Eastern Highveld in the Mpumalanga Province of South Africa. This document therefore contains the report on the results of a Phase I Heritage Impact Assessment (HIA) study which was done for Sasol's proposed new Shaft Complex on Strybult 542 as well as for the Sasol North Block covering several farms to the south of Devon on the Eastern Highveld in the Mpumalanga Province of South Africa. This development area is also referred to as the Sasol Project Area.

This Phase I Heritage Impact Assessment (HIA) study for Sasol's proposed new Shaft Complex and North Block (Sasol Project Area) was done according to Section 38 of the National Heritage Resources Act (No 25 of 1999). The aims with the Phase I HIA were:

- To establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (see Box 1) do occur within the perimeters of the Sasol Project Area and, if so, to determine the level of significance of these heritage resources.
- To make recommendations regarding the mitigation or the conservation of any significant heritage resources that may be affected by the proposed new mining development project.

The Phase I HIA study for the proposed Sasol Project Area revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in the project area, namely:

- Farmstead complexes associated with historical houses, outbuildings, enclosures for stock as well as individual historical houses
- Informal graveyards and graves.

Remains from the recent past also occur in the Sasol Project Area but have no historical significance and therefore were not geo-referenced, mapped or discussed.

It is possible that some of these types and ranges of heritage resources may be impacted by Sasol's proposed new Shaft Complex on Strybult 542. The significance of the various types and ranges of heritage resources in the Sasol Project Area therefore

have to be indicated while mitigation measures have to be outlined for those heritage resources which may be affected by the proposed new shaft development project.

The significance of the heritage resources

The significance of the heritage resources in the Sasol Project Area is indicated by means of stipulations derived from the National Heritage Resources Act (No 25 of 1999).

Historical farmstead complexes and individual historical houses

Historical farmstead complexes as well as individual historical houses older than sixty years, or structures which are approaching this age are protected by Section 34 of the National Heritage Resources Act (No 25 of 1999). The significance of historical farmsteads complexes as well as individual historical houses therefore has been indicated as HIGH (Tables 1 & 2).

The significance of each and every historical farmstead complex or historical house, whenever these structures are to be affected by a development project, can further be scrutinised according to criteria such as the following: the cultural-historical background of these structures; their scientific or architectural value; their use in the field of tourism, museums or education as well as their aesthetic appearance; repeatability (scarcity), or their emotional (ideological) value. These criteria would only be applied to each and every individual historical farmstead complex or house which may be affected by a development project.

Graveyards and graves

All graveyards and graves can be considered to be of high significance and are protected by various laws. Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

Mitigation measures for the heritage resources

It is highly likely that only GY22 near Sasol's proposed new Shaft Complex will be impacted by Sasol's proposed new mining development project. No historical farmstead complexes or historical houses will be affected by the mine development project.

The following mitigation measures have to be followed whenever historical farmstead complexes, historical houses or graveyards are to be affected by the mine or other development projects.

Historical farmstead complexes and individual historical houses

Historical farmstead complexes and individual historical houses may not be affected (demolished, renovated, altered) by the mine development project *prior* to their investigation by a historical architect in good standing with the South African Heritage Resources Agency (SAHRA). The historical architect has to acquire a permit from the South African Heritage Resources Authority (SAHRA) *prior* to any of these structures and features been affected or altered as a result of the mine development project.

Graveyards and graves

Graveyards and graves in the Sasol Project Area (and particularly in the new Shaft Complex) can be mitigated by following one of the following strategies, namely:

- Graveyards can be demarcated with brick walls or with fences and can be conserved *in situ* in the new mine premises. Conserving graveyards *in situ* in mining areas create the risk and responsibility that they may be damaged, accidentally, that the mine remains responsible for its future unaffected existence, maintenance and that controlled access must exist for any relatives or friends who wish to visit the deceased.
- Graveyards can also be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human

remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

If any heritage resources of significance is exposed during exploration or other development activities in the North Block, the South African Heritage Resources Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notify in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

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1 INTRODUCTION

Sasol intends to establish an underground coal mine on the farm Strybult 542 south of Devon on the Eastern Highveld in the Mpumalanga Province of South Africa.

This document therefore contains the report on the results of a Phase I Heritage Impact Assessment (HIA) study which was done for Sasol's proposed new Shaft Complex on Strybult 542 as well as for the North Block covering several farms to the south of Devon on the Eastern Highveld in the Mpumalanga Province of South Africa. This development area is also referred to as the Sasol Project Area.

Focused archaeological research has been conducted in the Mpumalanga Province for more than four decades. This research consists of surveys and of excavations of Stone Age and Iron Age sites as well as the recording of rock art and historical sites. The Mpumalanga Province has a rich heritage comprised of remains dating from the pre-historical and from the historical (or colonial) periods of South Africa. Pre-historical and historical remains in the Mpumalanga Province of South Africa therefore form a record of the heritage of most groups living in South Africa today.

Various types and ranges of heritage resources that qualify as part of South Africa's 'national estate' as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) occur in the Mpumalanga Province (see Box 1, next page).

Box 1: Types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999).

The National Heritage Resources Act (Act No 25 of 1999, Section 3) outlines the following types and ranges of heritage resources that qualify as part of the national estate, namely:

- (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 paleontological 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 by 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) moveable objects, including -
 - (i) objects recovered from the soil or waters of South Africa, including archaeological and paleontological 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, photographs, 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).

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

- (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;
- (i) sites of significance relating to the history of slavery in South Africa

2 TERMS OF REFERENCE

Sasol intends to establish an underground coal mine on the farm Strybult 542 south of Devon on the Eastern Highveld in the Mpumalanga Province of South Africa. Activities relating to the development of the underground mine may impact on any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No. 25 of 1999). Consequently, Clean Stream Environmental Company and Sasol commissioned the author to undertake a Phase I HIA study for the proposed Sasol Project Area with the following aims

- To establish whether any of the types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) (see Box 1) do occur within the perimeters of the Sasol Project Area and, if so, to determine the level of significance of these heritage resources.
- To make recommendations regarding the mitigation or the conservation of any significant heritage resources that may be affected by the proposed new mining development project.

3 THE SASOL PROJECT AREA

3.1 Location

Sasol's North and South Blocks cover a considerable piece of land on the Eastern Highveld in the Mpumalanga Province of South Africa. These two irregular pieces of land run across several farms between the R547 in the east and a secondary road running from Devon in the north to Greylingstad and still further to Frankfort in the south. This part of the Mpumalanga Province is known for its long standing production of agricultural crops such as maize wheat, sorghum, dairy, potatoes and other vegetables. Cattle and sheep ranching also make a significant contribution to the local economy. Gold and silica mines also occur in the area.

The focus of this report lays with Sasols' North Block and a proposed new Shaft Complex which will be established on the farm Strybult 542. The North Block is also referred to as the Sasol Project Area in this report. The Sasol Project Area stretches from the farms Hartebeesfontein 522, Boschmansfontein 523, Holgatsfontein 536 and Wolwefontein 34 in the north to the farms Grootvlei 579, Weltevreden 580 and Hartbeeskuil 53 in the south. The farms Raskop 524, Strybult 522, Platkop 543 and Carmona 536 fall between these farms. Towns closest to the Sasol Project Area include Devon, Leandra, Kinross, Evander and Secunda further to the north, Balfour and Greylingstad to the west and Standerton and Frankfort to the south (2628DB Willemsdal 1:50 0000 topographical map; 2628 East Rand 1:250 000).

The Sasol Project Area stretches across an undulating piece of land and is largely covered with agricultural fields. Few trees occur in the project area. Those that do occur are exotics such as Blue Gum lots, poplar-groves on the banks of streams and Oak trees which are usually located near historical farm homesteads. Most of these trees are anthropogenic as they have been introduced in the area by means of early human activities in the past (Figures 1-2).

3.2 Within a cultural landscape

The Sasol Project Area is located in the midst of a cultural landscape that is marked by heritage remains dating from the pre-historical into the historical (colonial) period. Stone Age sites, Iron Age sites and colonial remains therefore do occur in the Eastern Highveld (see Part 8 'Select Bibliography').



Figure 1- Sasol's North Block on the Eastern Highveld of the Mpumalanga Province is an undulating piece of land which is characterised by outstretched grass veldt and agricultural fields. This piece of land is dotted with farmstead complexes which are usually associated with Blue Gum avenues or with smaller plantations of these trees (above).

The archaeological and historical significance of this cultural landscape therefore must be described and explained in more detail before the results of the Phase I HIA study is discussed (see below, Part 5).



Figure 2- Sasol's proposed new Shaft Complex with an underground mine will be located on the farm Strybult 542, more or less in the middle of the North Block. This area is characterised by outstretched grass veldt and agricultural fields. The proposed new shaft will be located some distance from the foot of Platkop, the slight rise in the background (above).

4 METHODOLOGY

This Phase I HIA study was conducted by means of the following:

- Surveying the proposed Sasol Project Area with a vehicle and selected spots on foot.
- Briefly surveying literature relating to the pre-historical and historical context of the Sasol Project Area.
- Consulting maps of the proposed Sasol Project Area.
- Consulting archaeological (heritage) data bases.
- Consulting spokespersons regarding the possible presence of graves and graveyards in the project area.
- Synthesising all information obtained from the data bases, fieldwork, maps and literature survey.

4.1 Fieldwork

The proposed Sasol Project Area was surveyed with a vehicle where accessible roads existed while selected, sensitive spots in the project area were surveyed on foot.

4.2 Databases, literature survey and maps

Databases kept and maintained at institutions such as the Provincial Heritage Resources Agency (PHRA) and the Archaeological Data Recording Centre at the National Flagship Institute (Museum Africa) in Pretoria were consulted to determine whether any heritage resources of significance has been identified during earlier heritage surveys in or near the Sasol Project Area.

The author is not unacquainted with the Sasol Project Area at large as he had done several heritage impact assessment studies near the proposed project area (see Part 8, 'Select Bibliography').

Literature relating to the pre-historical and the historical unfolding of the Eastern Highveld where the Sasol Project Area is located was reviewed (see Part 5, 'Contextualising the Sasol Project Area').

It is important to contextualise the pre-historical and historical background of the Sasol Project Area in order to comprehend the identity and meaning of heritage sites in and near the project area.

In addition, the Sasol Project Area was studied by means of maps on which it appears (2628DB Willemsdal 1: 50 000 and 2628 East Rand 1: 250 000).

4.3 Consulting spokespersons

Spokespersons living in the project area were consulted regarding the possible presence of solitary graves and graveyards. Heritage questionnaires completed by some of the landowners also aided with the identification with some of the heritage resources in the project area. Many graveyards on the Eastern Highveld occur in maize fields where they remains undetected if not pointed out by persons, such as farmers and workers, who are well acquainted with the project area (see Part 9, 'Spokespersons consulted').

4.4 Assumptions and limitations

It is possible that this Phase I HIA study may have missed heritage resources in the Sasol Project Area as heritage sites may occur in thick clumps of vegetation while others may lie below the surface of the earth and may only be exposed once development commences.

If any heritage resources of significance is exposed during exploration or other development activities in the North Block the South African Heritage Resources

Authority (SAHRA) should be notified immediately, all development activities must be stopped and an archaeologist accredited with the Association for Southern African Professional Archaeologist (ASAPA) should be notified in order to determine appropriate mitigation measures for the discovered finds. This may include obtaining the necessary authorisation (permits) from SAHRA to conduct the mitigation measures.

4.5 Some remarks on terminology

Terms that may be used in this report are briefly outlined in Box 2.

Box 2. Terminologies that may be used in this report

The Heritage Impact Assessment (HIA) referred to in the title of this report includes a survey of heritage resources as outlined in the National Heritage Resources Act, 1999 (Act No 25 of 1999) (See Box 1).

Heritage resources (cultural resources) include all human-made phenomena and intangible products that are the result of the human mind. Natural, technological or industrial features may also be part of heritage resources, as places that have made an outstanding contribution to the cultures, traditions and lifestyles of the people or groups of people of South Africa.

The term 'pre-historical' refers to the time before any historical documents were written or any written language developed in a particular area or region of the world. The historical period and historical remains refer, for the Sasol Project Area, to the first appearance or use of 'modern' Western writing brought to the Eastern Highveld by the first Colonists who settled in this area during the 1830's.

The term 'relatively recent past' refers to the 20th century. Remains from this period are not necessarily older than sixty years and therefore may not qualify as archaeological or historical remains. Some of these remains, however, may be close to sixty years of age and may, in the near future, qualify as heritage resources.

It is not always possible, based on observations alone, to distinguish clearly between archaeological remains and historical remains, or between historical remains and remains from the relatively recent past. Although certain criteria may help to make this distinction possible, these criteria are not always present, or, when they are present, they are not always clear enough to interpret with great accuracy. Criteria such as square floor plans (a historical feature) may serve as a guideline. However, circular and square floors may occur together on the same site.

The term 'sensitive remains' is sometimes used to distinguish graves and cemeteries as well as ideologically significant features such as holy mountains, initiation sites or other sacred places. Graves in particular are not necessarily heritage resources if they date from the recent past and do not have head stones that are older than sixty years. The distinction between 'formal' and 'informal' graves in most instances also refers to graveyards that were used by colonists and by indigenous people. This distinction may be important as different cultural groups may uphold different traditions and values with regard to their ancestors. These values have to be recognised and honoured whenever graveyards are exhumed and relocated.

The term 'Stone Age' refers to the prehistoric past, although Late Stone Age peoples lived in South Africa well into the historical period. The Stone Age is divided into an Earlier Stone Age (3 million years to 150 000 thousand years ago) the Middle Stone Age (150 000 years to 40 000 years ago) and the Late Stone Age (40 000 years to 200 years ago).

The term 'Iron Age' refers to the last two millennia and 'Early Iron Age' to the first thousand years AD. 'Late Iron Age' refers to the period between the 16th century and the 19th century and can therefore include the historical period.

Mining heritage sites refer to old, abandoned mining activities, underground or on the surface, which may date from the pre-historical, historical or the relatively recent past.

The term 'study area', or 'Sasol Project Area' refers to the area where the developer wants to focus its development activities (refer to plan).

Phase I studies refer to surveys using various sources of data in order to establish the presence of all possible types of heritage resources in any given area.

Phase II studies include in-depth cultural heritage studies such as archaeological mapping, excavating and sometimes laboratory work. Phase II work may include the documenting of rock art, engraving or historical sites and dwellings; the sampling of archaeological sites or shipwrecks; extended excavations of archaeological sites; the exhumation of bodies and the relocation of graveyards, etc. Phase II work may require the input of specialists and requires the co-operation and approval of SAHRA.

5 CONTEXTUALISING THE SASOL PROJECT AREA

The following brief overview of pre-historical, historical, cultural and economic evidence will help to contextualise the proposed Sasol Project Area.

5.1 Stone Age sites

Stone Age sites are marked by stone artefacts that are found scattered on the surface of the earth or as parts of deposits in caves and rock shelters. The Stone Age is divided into the Early Stone Age (covers the period from 2.5 million years ago to 250 000 years ago), the Middle Stone Age (refers to the period from 250 000 years ago to 22 000 years ago) and the Late Stone Age (the period from 22 000 years ago to 200 years ago).

The Later Stone Age is also associated with rock paintings and engravings which were done by the San, Khoi Khoi and in more recent times by Iron Age farmers.

Heritage surveys up to now have recorded few Stone Age sites, rock paintings and engravings in the Eastern Highveld.

5.2 Iron Age remains

The Iron Age is associated with the first agro-pastoralists who lived in semi-permanent villages and who practised metal working during the last two millennia. The Iron Age is usually divided into the Early Iron Age (covers the 1st millennium AD) and the Later Iron Age (covers the first 880 years of the 2nd millennium AD).

The Eastern Highveld has not been occupied by Early Iron Age communities but was occupied by Late Iron Age communities such as the Sotho, Swazi and

Ndebele who established settlement complexes that are associated with stone walls.

5.3 The historical period

Towns closest to the Sasol Project Area include Secunda, Kinross, Devon and Leandra in the north. Balfour and Greylingstad occur to the west and Frankfort and Standerton to the south of the project area.

Devon is one of a number of small towns on the Eastern Highveld located approximately 40km to the south-east of Springs. The town give the impression of a scarce number of scattered buildings held together by a giant grain silo. The town's name is derived from the hometown of the surveyor, namely Devon in England. Nearby, but inaccessible to everybody but the military, is the underground nerve centre of the country's northern radar defence system.

Kinross, about 20 km east of Leandra, is the railhead for the township of Leandra and four gold mines in the region, namely Winkelhaak, Leslie, Bracken and Kinross who all opened in the 1950's.

The village was proclaimed in the 1915 and named for Kinross in Scotland by the engineers who constructed the railway line between Springs and Breyton. Kinross is near the watershed that separates the rivers flowing towards the Indian Ocean in the east and the rivers flowing towards the Atlantic Ocean in the west.

Evander, south of Kinross, was established in 1955 by the Union Corporation as a residential township for the employees of the Winkelkaak. Leslie and Bracken mines. The name Evander is a composite of Evelyn and Anderson, the names of

the widow of the managing director of the company when prospecting began in the area.

The village of Trichard, 20km to the east of Kinross, was proclaimed a town in 1906 and was founded as the new Dutch Reformed parish. It was named after Carl Trichardt, son of Voortrekker leader Louis Trichardt. Today it is dwarfed by its newly created neighbour, Secunda.

Secunda developed around Sasol 1 and Sasol 2 in the 1970's. Sasol was born during the oil crisis of 1973 when OPEC virtually quadrupled the price of crude oil overnight. Construction started in 1976 and the first oil was delivered on 1 March 1980. Following the overthrow of the Shah of Iran in 1979, South Africa's major source of crude oil at the time, the government announced the construction of a second plant at Secunda to double output. Sasol 3 delivered its first oil from coal in May 1982. The total costs of the two plants came to R 5,8 billion, mostly financed by levies on motorists.

Sasol 2 and 3 use about 35 million tons of coal a year to produce mostly liquid fuels. The coal is produced by four mines collectively known as Secunda Colliers which is the world's largest underground mining complex and by a new open-cast mine at Syferfontein.

The town of Leandra's name is derived from two townships, Leslie and Eendrag, which are incorporated in this mining village.

Several large coal mines which feed the Sasol plants at Secunda and Eskom's giant power stations on the Eastern Highveld are located near the project area. The wider project area is one of the most productive agricultural areas in the country. The principal crops which are produced in the region include maize, wheat, sorghum, dairy, potatoes and other vegetables.

5.4 A coal mining heritage

Coal mining on the Eastern Highveld is now older than one century and has become the most important coal mining region in South Africa. Whilst millions of tons of high-grade coal are annually exported overseas more than 80% of the country's electricity is generated on low-grade coal in Eskom's power stations such as Duvha, Matla and Arnot situated near coalmines on the Eastern Highveld.

The earliest use of coal (charcoal) in South Africa was during the Iron Age (300-1880AD) when metal workers used charcoal, iron and copper ores and fluxes (quartzite stone and bone) to smelt iron and copper in clay furnaces.

Colonists are said to have discovered coal in the French Hoek Valley near Stellenbosch in the Cape Province in 1699. The first reported discovery of coal in the interior of South Africa was in the mid-1830 when coal was mined in Kwa Zulu/Natal.

The first exploitation for coal was probably in Kwa Zulu/Natal as documentary evidence refers to a wagon load of coal brought to Pietermaritzburg to be sold in 1842. In 1860 the coal trade started in Dundee when a certain Pieter Smith charged ten shillings for a load of coal dug by the buyer from a coal outcrop in a stream. In 1864 a coal mine was opened in Molteno. The explorer, Thomas Baines mentioned that farmers worked coal deposits in the neighbourhood of Bethal (Transvaal) in 1868. Until the discovery of diamonds in 1867 and gold on the Witwatersrand in 1886, coal mining only satisfied a very small domestic demand.

With the discovery of gold in the Southern Transvaal and the development of the gold mining industry around Johannesburg came the exploitation of the

Boksburg-Spring coal fields, which is now largely worked out. By 1899, at least four colliers were operating in the Middelburg-Witbank district, also supplying the gold mining industry. At this time coal mining also has started in Vereeniging. The Natal Collieries importance was boosted by the need to find an alternative for imported Welsh anthracite used by the Natal Government Railways.

By 1920 the output of all operating colliers in South Africa attained an annual figure of 9,5million tonnes. Total in-situ reserves were estimated to be 23 billion tonnes in Witbank-Springs, Natal and Vereeniging. The total in situ reserves today are calculated to be 121 billion tonnes. The largest consumers of coal are Sasol, Iscor and Eskom.

5.5 A vernacular stone architectural heritage

A unique stone architectural heritage was established in the Eastern Highveld from the second half of the 19th century well into the early 20th century. During this time period stone was used to build farmsteads and dwellings, both in urban and in rural areas. Although a contemporary stone architecture also existed in the Karoo and in the Eastern Free State Province of South Africa a wider variety of stone types were used in the Eastern Highveld. These included sandstone, ferricrete ('ouklip'), dolerite ('blouklip'), granite, shale and slate.

The origins of a vernacular stone architecture in the Eastern Highveld may be ascribed to various reasons of which the ecological characteristics of the region may be the most important. Whilst this region is generally devoid of any natural trees which could be used as timber in the construction of farmsteads, outbuildings, cattle enclosures and other structures, the scarcity of fire wood also prevented the manufacture of baked clay bricks. Consequently stone served as the most important building material in the Eastern Highveld.

Late Iron Age communities who contributed to the Eastern Highveld's stone walled architecture were the Sotho, Pedi, Ndebele and Swazi. The tradition set by these indigenous groups may have influenced the first settlers from Natal and the Cape Colony to utilize the same resources that their predecessors did. Many farmers from Scottish, Irish, Dutch, German and Scandinavian descent settled and farmed in the Eastern Highveld. These colonials brought the knowledge of stone masonry from Europe which compensated for the lack of fire wood necessary to manufacture baked clay bricks.

6 THE PHASE I HERITAGE IMPACT ASSESSMENT

6.1 Types and ranges of heritage resources

The Phase I HIA study for the proposed Sasol Project Area revealed the following types and ranges of heritage resources in the Sasol Project Area as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999), namely:

- Farmstead complexes associated with historical houses, outbuildings and cattle enclosures as well as individual historical houses.
- Informal graveyards and graves.

These heritage resources were geo-referenced, mapped and discussed (Figure 3; Tables 1-3). (Remains from the recent past also occur in the Sasol Project Area but have no historical significance and therefore were not geo-referenced, mapped or discussed).

The significance of the heritage resources are also indicated (Tables 1-3) while mitigation measures are proposed for those heritage resources which may be affected by the proposed new mining project.

The Phase I HIA study is now briefly discussed and illustrated with photographs.

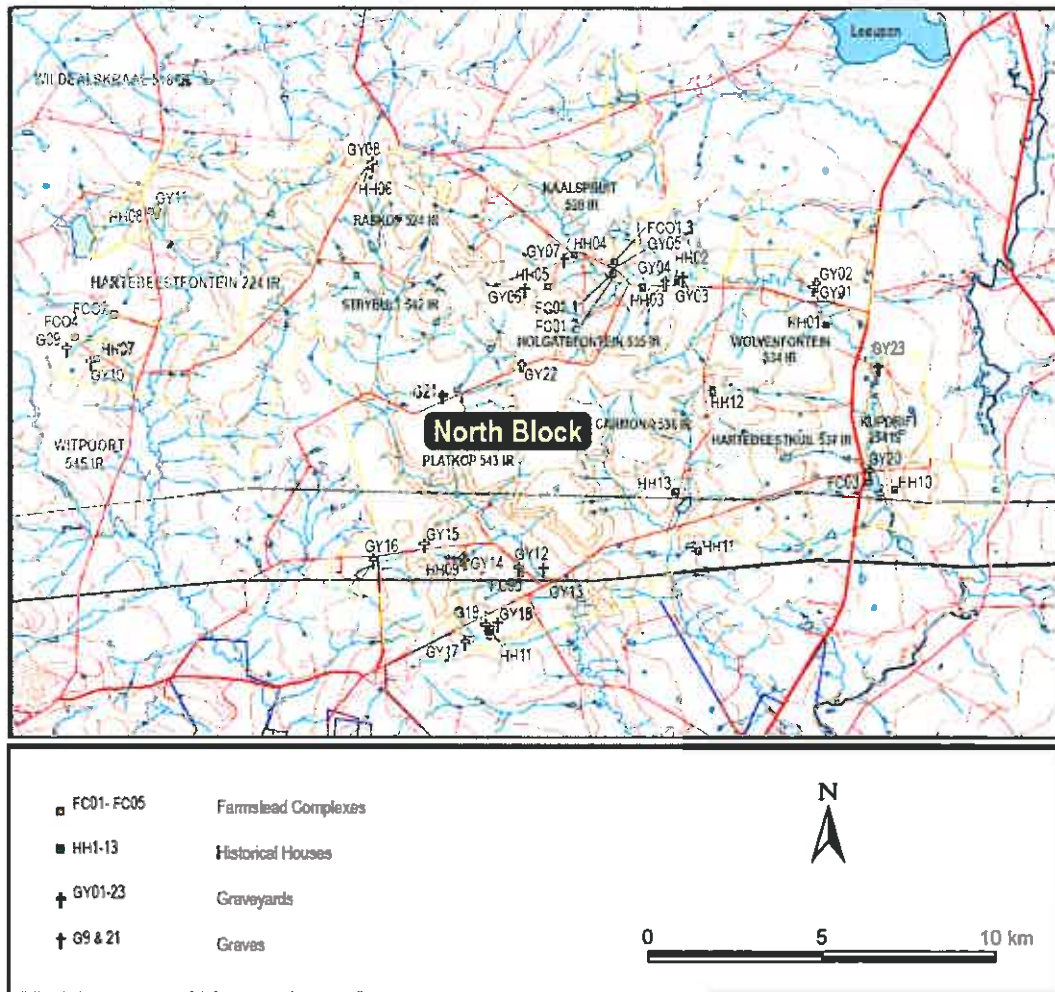


Figure 3- The Sasol Project Area (North Block) covering several farms on the Eastern Highveld in the Mpumalanga Province of South Africa.

Note the presence of farmstead complexes, historical houses, graveyards and graves in the project area. A single graveyard occurs close to the proposed new shaft and mining area (above).

6.2 Farmstead complexes

At least five farmstead complexes with historical significance occur in the project area. These farmstead complexes are associated with farm houses and outbuildings such as second dwellings, rondavels, wagon sheds and in some instances enclosures for domestic stock as well as graveyards. One of the complexes (FC03) consists of a shop and two residences. These complexes therefore comprise of more than one historical structure in a particular spatial relationship with each other. Therefore, in some instances, these complexes may constitute cultural landscapes of small proportions.

Individual historical structures are discussed under a separate heading while graveyards, although they may be part of farmstead complexes, are also discussed under a separate heading - together with other graveyards and individual graves.

6.2.1 Farmstead Complex 01

This farmstead complex (FC01) is composed of a main residence, a wagon shed and a structure which possibly was used to pen domestic stock such as pigs. It is located on Holgatsfontein 535.

The complex consists of the following structures:

- An extended main residence which probably dates from the early 1900's. It was constructed with sandstone. The exterior of the house was painted white in more recent times (FC01.1).
- A wagon shed which was constructed with sandstone and which was also painted white. It is fitted, as the house, with a red-painted pitched corrugated iron roof. A possible second residence was attached to this structure but has largely been demolished (FC01.2).
- A structure which was partly constructed with sandstone as well as with red clay bricks. It was probably used to pen stock (FC01.3)



Figures 4 & 5- Main residence (FC02.1) and wagon shed (FC02.2) in Farmstead Complex 02 on Holgatsfontein 535 (above).



6.1.2 Farmstead complex 02

This farmstead complex on Hartbeestfontein 522 comprises of two structures, namely;

- A main farm house (FC02.1) constructed with sandstone and covered with a red pitched corrugated iron roof.
- A wagon shed (FC02.2) which was also constructed with sandstone and fitted with a red pitched corrugated iron roof.



Figure 6- The main residence (FC02.1) constructed with sandstone which is part of FC02. It is associated with a wagon shed (FC02.2) which reveals the same architecture features and building material (above).

6.2.3 Farmstead complex 03

This farmstead complex includes a shop (FC03.1) with two residences (FC03.2 & FC03.3) and a graveyard (GY20). It is located on Hartbeeskuil 535, next to the R547.

6.2.4 Farmstead complex 04

This farmstead complex on Hartbeestfontein 522 incorporated several structures, some of whom have been disassembled. It is not possible to identify the various structures any longer. However, the following structures can be distinguished:

- A main farm residence (FC04.1) which dates from the early 20th century. This structure was constructed with clay bricks and fitted with a pitched iron corrugated roof. The walls were plastered. Several rooms were added to the main house over time.
- A wagon shed (FC04.2) which was constructed with sandstone.
- A second residence (FC04.3) which was constructed with sandstone.
- A second possible wagon shed (FC04.4) which was built with sandstone
- Possible enclosures (FC04.5) for stock constructed with sandstone.

6.2.5 Farmstead complex 05

This farmstead complex is located along the Grootvlei road which consists of numerous structures, some younger than others. A historical graveyard is also associated with this complex. Access to the complex was not possible. However, the two main features that could be distinguished were the following:

- A main farm residence (FC05.1) with elaborate verandas ('stoeps') on at least two sides of the house. It includes various rooms and is covered with a pitched iron corrugated roof.
- A wagon shed (FC05.2) which was constructed with sandstone and fitted with a pitched corrugated iron roof.



Figures 7 & 8- A farm house in farmstead complex FC04 (above) which also incorporates other residences and outbuildings, some of which are constructed with sandstone (below).





Figure 9- The main residence (FC05.1) in Farmstead Complex 05 is associated with several outbuildings and a graveyard (above).

6.3 Individual historical houses

A considerable number of historical houses occur in the Sasol Project Area. It is quite remarkable that most of the current farmsteads in the project area which are occupied do include at least one historical structure. This structure is most likely to be a residence or a shed.

Most of these residences were listed and geo-referenced in this report. A few are illuminated with photographs and discussed in the report.

6.3.1 Historical House 01

This house is located on Wolfefontein 534 and comprises a four- room dwelling with a veranda ('stoep') which was probably constructed during the 1930's or the 1940's. It is currently occupied by Paulus Dlamini, a farm labourer.

6.3.2 Historical House 02

This house belongs to Mr. Hardus Smith and is located on Holgatsfontein 535 on the northern shoulder of the Boschmansfontein road. The farmstead's name is 'Lettiesdal'. The residence dates from 1940 or perhaps a little earlier and is still in a good condition. It is part of a farmstead complex which includes modern outbuildings.

The historical De Beer family graveyard (GY03) is associated with this complex.

6.3.3 Historical House 03

This house is situated on Holgatsfontein 535 and used to belong to Hardus Smith's parents. It is situated along the southern shoulder of the Boschmansfontein road and is currently occupied. It dates from the 1930's or the 1940's.

6.3.4 Historical House 04

HH04 is situated on Holgatsfontein 535 on the southern shoulder of the Boschmansfontein road. It is an elongated structure with a pitched corrugated iron roof which is painted green.



Figure 10- HH03 on Holgatsfontein 535 (above).

6.3.5 Historical House 05

HH05 on Holgatsfontein 535 is currently occupied by Mr. Boland Kotze and his family. The farm house is part of a complex which includes older as well as younger outbuildings. The main farm house probably dates from the 1940's.

6.3.6 Historical House 06

This residence on Boschmansfontein 523, at the turn-off to Wildealskraal, was constructed with dolerite stone walls. The corner posts of these walls were built with sandstone. Consequently, the dark-coloured dolerite walls contrast with the light-coloured corner posts. The residence is currently falling into ruins.

6.3.7 Historical House 07

This renovated residence on Hartbeestfontein 522 is older than sixty years and therefore qualifies as a historical structure. However, it has been restored, extended and fitted with new Cape-styled gables.



Figure 11- HH07 has been renovated and fitted with new Cape-styled gables (above).

6.3.8 Historical House 08

This face-brick residence with pitched iron corrugated roof on Hartbeestfontein 522 probably dates from the 1950's. It is associated with a historical graveyard. Both these structures are located in a Blue Gum plantation and may be associated with other outbuildings which, however, have been altered significantly in the past..

6.3.9 Historical House 09

HH09 is located along the Grootvlei road and is associated with a wagon shed which was constructed with sandstone. A graveyard which could not be located is also associated with this residence.

6.3.10 Historical House 10

HH10 on Hartebeeskuil 562 comprises a renovated sandstone residence which is associated with a wagon shed which was constructed with the same material.

6.3.11 Historical House 11

This residence on Weltevreden 565 probably dates from the 1940's. It is associated with a dairy with historical significance.



Figure 12- A dairy with historical significance on Weltevreden 565 (above).

6.3.12 Historical House 12

HH12 on Carmona 536 along the Hartebeeskuil road consists of a residence which was constructed with dolerite walls and sandstone corner posts. It is associated with a wagon shed which was built with dolerite stone. The latter structure is covered with a pitched iron corrugated roof.



Figure 13 - HH12 was constructed with dolerite and sandstone corner posts and door and window frames (above). This structure is associated with a wagon shed which was constructed with dolerite stone.

6.3.13 Historical House 13

This dilapidated farm residence along the Hartebeeskuil road on Carmona 536 is associated with a wagon shed which both were constructed with sandstone.

6.4 Graveyards and graves

The following graveyards and graves were observed near the Sasol Project Area:

6.4.1 Graveyard 01

This informal graveyard is located in a Blue Gum lot on Wolvenfontein 534 and holds the remains of four graves which are covered with heaps of stone and seven graves which are covered with piles of stone.

6.4.2 Graveyard 02

This informal graveyard is located along the edge of a Blue Gum lot on Wolvenfontein 534 and holds the remains of approximately twenty individuals. Most of the graves are covered with stones or are edged with upright stones.

One grave is fitted with a granite headstone with the following inscription:

- 'Masiteng Maria B 08081944 D 03101991'

6.4.3 Graveyard 03

This historical graveyard on Holgatsfontein 535 belongs to the De Beer family. It contains three graves of which one is fitted with a granite headstone with the following inscription:

- 'Ter nagedagtenis aan ons dierbare seun en geliefde broer Lukas A.M. de Beer Geb 29-5-1918 Oorl 16-3-1940 Rus in vrede'

The three remaining graves are edged with cement strips and covered with cement slabs



Figure 14- GY02 on the edge of a Blue Gum lot holds at least twenty graves, the majority of which are covered with piles of stone (above).

6.4.4 Graveyard 04

This is an informal graveyard on Holgatsfontein 535 next to the dirt road and holds the remains of three individuals. The graves are edged with cement strips.

6.4.5 Graveyard 05

This historical graveyard is located on the northern shoulder of Holgatsfontein dirt road. It is located next to a maize field under two pine trees. It holds two graves which are fitted with cement slabs and tomb stones. Inscriptions on the two tombstones read as follow:

- 'Anna Magdalena Brits Geb 24/11/? Oorl 1/12/38'
- 'Hier rus Stehanus Petrus Olivier Geb 16 Sept 1884 Ovl 31 Okt 1931'

6.4.6 Graveyard 06

This large informal cemetery on Holgatfontein 535 is located along the foot of a low randje. It holds the remains of approximately forty three individuals. Most of the graves are covered with piles of stone. At least twelve are fitted with cement head stones which bear the following inscriptions:

- 'William Mshibe Death 16091975'
- 'Meschack Kini Ngubeni Born 1926'
- 'Maria Thombolozzi Mshibe Death 24061972 RIP'
- 'Betty Zabi Mshibe Born 1929'



Figure 15- GY06 is located along the lower foot slope of a randje on Holgatfontein 535 (above).

6.4.7 Graveyard 07

This neglected graveyard holds the remains of five colonial graves. Inscriptions on three of the granite headstones bear the following inscriptions:

- 'Seuntjie?'
- 'Hier rus ons dierbare vader en moeder.....'
- 'In tere herinnering aan Dollie Oosthuizen Geb 1.9.1905.....
3.3.1943 Geliefde eggenote van Willie en moeder van Maury Ps 100 V4'

6.4.8 Graveyard 08

This historical graveyard on Boschmansfontein 523 is located near the Wildealskraal turn-off. The graveyard was used into the more recent past and holds the remains of the Ras, Nel and Viljoen families.

All the graves are decorated and fitted with granite headstones with inscriptions. At least one of the historical headstones was manufactured from marble and a second one from sandstone. GY08 holds twenty-one graves.

Inscriptions on some of the headstones read as follow:

- 'In tere herinnering aan ons vader en grootvader Joachim Johanne Viljoen Geb 19-3-1894 Oorl 27-7-1976 Ps 25:2'
- 'Anna Ras Geb 12-7-1927 Oorl 11-5-1934'
- 'Hier rus Joachim J Viljoen Geb 23 April 1914 Ovl 23 Des 1914 Ps 146-3 Salig hy wat in die lewe'
- Pieter Arnoldus Ras 20-06-1943 02-03-1993 2 Kor 12:140'
- 'Hier rus my geliefde eggenoot en troue vader Abraham Ras Geb 17-4-1893 Oorl 30-11-1935 1 Sam 20 Vers 3'



Figure 16- Historical GY08 near the Wildeals turn-off contains the remains of the Ras, Nel and Viljoen families (above).

6.4.9 Grave 09

This single grave on Hartbeestfontein 522 is located near a Blue Gum lot. The grave is fitted with a cement slab with the following inscription:

- 'Fanzana Elliot Mkonza Born 21-5-1949'

6.4.10 Graveyard 10

This informal graveyard on Hartbeestfontein 522 is located near the current farmstead and holds the remains of approximately 20-25 individuals.

6.4.11 Graveyard 11

GY11 on Hartbeesfontein 522 holds the remains of the Tromp family. It contains approximately twenty three graves. At least eight of the graves are fitted with cement slabs and tombstones. The remaining graves are edged with stones and fitted with stones that serve as head stones.

Inscriptions on some of the granite headstones read as follow:

- 'Hier rus my eggenoot en ons vader Sebastiaan Jacobus Johannes Tromp Geb 2 Maart 1858 Oorl 2 Mei 1940 Gez 38'
- 'Hier rus Anna Cecilia Tromp Geb van Wyk Geb 23 Maart 1863 Oorl 2 Aug 1938 Na 'n gelukkige huwelik van 58 jaar Gez 21 Diepe wysheid zyn U ons pad ... ?'
- 'Hier rust Johanna Petronella Wolmarans CB Tromp Geb 14-9-1882 Oorl 1929'

6.4.12 Graveyard 12

GY12 is a historical graveyard on Weltevreden 535 which is associated with a farmstead complex consisting of a main residence and several outbuildings. The graveyard holds at least thirteen graves.

Inscriptions on some of the headstones read as follow:

1. 'Liefing en moeder haar son het nou terwyl dit nog dag was ondergegaan Liewe moeder rus u in alles stille graf ... Stille rustplaas van ...'
2. 'Hier rus Elsie CM Swarts Geb van Wyk op 23-3-1853 Ovl 11-13-1939'
3. Hier rus ons dierbare Christina Johanna Priest Geb Jacobs op 16-1-1908 Ovl 1933'
4. Hier rus my geliefde eggenoot en ons vader Ochert Rudolph Jacobs Geb 20-8-1906 Oorl 19-12-1949 Goddank vir jou liewe pappa'



Figure 17- Historical GY12 on Weltevreden 535 holds the remains of at least 13 individuals (above).

6.4.13 Graveyard 13

This graveyard contains two isolated graves on Weltevreden 535 which are located in the veldt.

6.4.14 Graveyard 14

This graveyard is located near a historical house and wagon shed on Weltevreden 535 but could not be located due to a dense grass cover.

6.4.15 Graveyard 15

This informal graveyard is located on the northern shoulder of the Grootvlei road. It contains approximately xx graves

6.4.16 Graveyard 16

GY16 is located on Weltevreden 535 next to a school premises.



Figure 18- GY15 on the northern shoulder of the Grootvlei road holds the remains of at least twenty former farm labourers (above).

6.4.17 Graveyard 17

GY17 is located near informal dwellings on Weltevreden 535. It holds the remains of approximately 20 individuals. Most of these graves are covered with heaps of stone. One grave is fitted with a cement headstone with the following inscription:

- 'William Mphuti 1932-4'

6.4.18 Graveyard 18

This informal graveyard on Weltevreden 535 is located in the open veldt and contains the remains of approximately ten individuals. All the graves are covered with piles of stone.

6.4.19 Grave 19

This single grave on Weltevreden 535 is covered with a pile of stones. It is said to be the grave of one of the former farm owners. This statement, however, is doubted.

6.4.20 Graveyard 20

This historical graveyard on Weltevreden 535 is located near two shops and a residence

6.4.21 Grave 21

Grave 21 comprises a single grave on the northern shoulder of the Platkop road. The grave bears no inscriptions and is fitted with a cross made from cement and edged with cement strips.



Figure 19- GY22 holds the remains of at least five individuals close to Sasol's proposed new shaft complex on Strybult 542 (above).

6.4.22 Graveyard 22

GY22 contains the remains of five individuals on the farm Strybult 542 close to Sasol's proposed new shaft complex.

Two of the graves are fitted with cement headstones and covered with cement slabs. The remaining three are covered with piles of stone. Inscriptions on the cement headstones read as follow:

- 'Shali khula Kadebe Ewashona 21-1-1970'
- 'Lizzie Khadebe Washona 18-11-1973'

6.4.23 Graveyard 23

This informal graveyard occurs on the eastern fringes of the Sasol Project Area on the farm Klipdrift 234.

6.5 Remains from the recent past

Remains from the more recent past occur throughout the Sasol Project Area. Most of these remains were occupied by farm labours but were abandoned some time ago. These remains hold little historical significance as they are not older than sixty years and therefore were not geo-referenced or mapped.

Farmstead complexes	Coordinates/farm	Significance
<u>Farmstead Complex 01 (FC01)</u> FC01.1 Main residence FC01.2 Wagon shed with possible second residence FC01.3 Enclosures for domestic stock	Holgatsfontein 535 26° 37.786' 28° 55.336' 26° 37.802' 28° 55.321' 26° 37.617' 28° 55.346'	HIGH
<u>Farmstead Complex 02 (FC02)</u> FC02.1 Sandstone house FC02.2 Wagon shed constructed with sandstone	Hartbeestfontein 522	HIGH
<u>Farmstead Complex 03</u> FC03.1 Shop FC03.2 Residence FC03.3 Residence	Hartebeestkuil 562 26° 40.876' 28° 59.291'	HIGH
<u>Farmstead Complex 04</u> FC04.1 Extended main residence FC04.2 Wagon shed (sandstone) FC04.3 A second sandstone residence FC04.4 Second possible wagon shed (sandstone) FC04.5 Cattle enclosure (sandstone)	 26° 38.776' 28° 47.046' 26° 38.780' 28° 47.025' 26° 38.807' 28° 47.009'	HIGH
FC05.1 Extended main residence with verandas on at least two sides FC05.2 Wagon shed and a mix of other historical and younger structures	Weltevreden 580	HIGH

Table 1- Coordinates for historical farmstead complexes in the Sasol Project Area (above).

Historical Houses	Coordinates/farms	Significance
<u>Along the Wolvenfontein road</u>		
HH01. Square four-room dwelling. Date from the 1930's or the 1940's	Wolvefontein 534	HIGH
<u>Along the Holgatsfontein road</u>		
HH02. Date from the 1930s or 1940's	Holgatsfontein 535	HIGH
HH03. Date from the 1930's or 1940's	Holgatsfontein 535 26° 38.004' 28° 55.783'	HIGH
HH04. Elongated residence	Holgatsfontein 535 26° 37.509' 28° 54.724'	HIGH
HH05. Mix of older and younger structures. Date from the 1940's	Holgatsfontein 535 26° 38.003' 28° 54.322'	HIGH
<u>Along the Boschmansfontein road</u>		
HH06. House constructed with diabase walls and with sandstone corner posts. At the turn-off to Wildealskraal.	Boschmansfontein 523 26° 36.138' 28° 51.555'	HIGH
<u>Along the Devon road</u>		
HH07. Renovated house. Date from the 1950's. New Cape styled gables	Hartbeesfontein 522 26 39 116 28 47 321	
HH08. Face brick walls with pitched corrugated iron roof. Date from the 1950's	Hartebeestfontein 522	
<u>Along the Grootvlei road</u>		
HH09. Along the Grootvlei road is associated with a sandstone wagon shed and possible graveyard.	Weltevreden 565 26° 42.277' 28° 52.984' 26° 42.276' 28° 52.990'	
<u>Along the Hartebeestkuil road</u>		
HH10. Sandstone residence which has been renovated. Associated with a wagon shed	Hartebeestkuil 562 26° 41.146' 28° 59.707' 26° 41.728' 28° 56.281'	

HH11. Residence on Weltevreden 565 which date from the 1940's. Associated with diary	Weltevreden 565 26° 43.371' 28° 53.404' 26° 43.312' 28° 53.427'	
<u>Along the Greylingstad road</u>		
HH12. Residence constructed with diabase walls and sandstone corner posts. Associated with wagon shed constructed with similar building material.	Carmona 526 26° 39.630' 28° 56.866' 26° 39.590' 28° 56.866'	
HH13. Sandstone residence associated with wagon shed.	Hartebeestkuil 562 26° 41.173' 28° 56.287' 26° 41.188' 28° 56.278'	

Table 2- Coordinates for historical houses in the Sasol Project Area (above).

GRAVEYARDS AND GRAVES	COORDINATES	SIGNIFICANCE
<u>Along the Wolvenfontein road</u>		
GY01. Informal graveyard in Blue Gum lot	26° 38.014' 28° 58.448'	HIGH
GY02. Informal graveyard on edge of Blue Gum lot	26° 37.937' 28° 58.491'	HIGH
GY03. De Beer family graveyard near Hardus Smith's residence	26° 37.868' 28° 56.411'	HIGH
GY04. Three informal graves next to the road near H. Smith's residence	26° 31.701' 28° 57.450'	HIGH
<u>Along the Holgatsfontein road</u>		
GY05. This historical graveyard on Holgatsfontein 535 holds two graves dating from the 1930's. It is located on the northern shoulder of the road	26° 37.687' 28° 55.308'	HIGH
GY06. This informal graveyard on Holgatsfontein 535 is located against the slope of a kopje. It holds approximately 43 graves	26° 38.047' 28° 53.960'	HIGH
GY07. This graveyard on Holgatsfontein 535 contains five colonial graves	26° 37.558' 28° 54.573'	HIGH
<u>Along the Boschmansfontein road</u>		
GY08. This graveyard on Boschmansfontein 523 holds the remains of the Ras, Nel and Viljoen families. It is located at the Wildealskraal turn-off	26° 36.103' 28° 51.595'	HIGH
<u>Along the Devon road</u>		
G09. This single grave on Hartbeestfontein 522 is located near a Blue Gum lot.	26° 38.965' 28° 46.860'	HIGH

GY10. Informal graveyard on Hartbeestfontein 522 near farm homestead. Holds approximately 20-25 individuals	26° 39.194' 28° 47.231'	HIGH
GY11. Historical graveyard associated with the Tromp family on Hartbeestfontein 522	26° 36.830' 29° 48.217'	HIGH
<u>Along the Grootvlei road</u>		
GY12. Historical graveyard on Weltevreden 535 associated with farmstead complex	26° 42.332' 28° 53.857'	HIGH
GY13. Two isolated graves in veldt on Weltevreden 535		HIGH
GY14. Graveyard near ruins and historical house on Weltevreden 535. Not visible any longer	26° 42.255' 28° 53.037'	HIGH
GY15. Informal graveyard on Weltevreden 535 on turn of the road	26° 42.016' 28° 52.400'	HIGH
GY16. Informal graveyard on Weltevreden 535 next to school premises.	26° 42.250' 28° 51.603'	HIGH
<u>Along the Hartebeeskuil road</u>		
GY17. This informal graveyard near informal dwellings on Weltevreden 535 holds approximately 20 graves	26° 43.526' 28° 53.044'	HIGH
GY18. This informal graveyard in open veldt on Weltevreden 535 holds approximately 10 graves	26° 43.209' 28° 53.535'	HIGH
G19. Single grave on Weltevreden 535 in open veldt belonging to former farm owner	26° 43.257' 28° 53.362'	HIGH
GY20. Historical graveyard with seven graves near shopping complex	26° 40.861' 28° 59.272'	HIGH
<u>Along the Platkop road</u>		
G21. Single grave on Strybult 542 on the shoulder of the road	26° 39.743' 28° 52.713'	HIGH

GY22. Five graves on Strybult 542 near new proposed shaft complex	26° 39.219' 28° 53.923'	HIGH
GY23. Informal graveyard on Klipdrift 234.	26° 392604' 28° 594458'	HIGH

Table 3- Coordinates for graveyards and graves near the Sasol Project Area (above).

7 THE SIGNIFICANCE, POSSIBLE IMPACT ON AND MITIGATION OF THE HERITAGE RESOURCES

7.1 Types and ranges of heritage resources

The Phase I HIA study for the proposed Sasol Project Area revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in the project area, namely:

- Farmstead complexes associated with historical houses, outbuildings, enclosures for stock as well as individual historical houses
- Informal graveyards and graves.

Remains from the recent past also occur in the Sasol Project Area but have no historical significance and therefore were not geo-referenced, mapped or discussed.

7.2 The significance of the heritage resources

It is possible that some of these types and ranges of heritage resources may be impacted by Sasol's proposed new Shaft Complex on Strybult 542. The significance of the various types and ranges of heritage resources in the Sasol Project Area therefore have to be indicated while mitigation measures have to be outlined for those heritage resources which may be affected by the proposed new shaft development project.

The significance of the heritage resources in the Sasol Project Area is indicated by means of stipulations derived from the National Heritage Resources Act (No 25 of 1999).

7.2.1 Historical farmstead complexes and individual historical houses

Historical farmstead complexes as well as individual historical houses older than sixty years old, or structures which are approaching this age are protected by Section 34 of the National Heritage Resources Act (No 25 of 1999). The significance of historical farmsteads complexes as well as individual historical houses therefore has been indicated as HIGH (Tables 1 & 2).

The significance of each and every historical farmstead complex or historical house, whenever these structures are to be affected by a development project, can further be scrutinised according to criteria such as the following: the cultural-historical background of these structures; their scientific or architectural value; their use in the field of tourism, museums or education as well as their aesthetic appearance; repeatability (scarcity), or their emotional (ideological) value. These criteria would only be applied to each and every individual historical farmstead complex or house which may be affected by a development project.

7.2.2 Graveyards and graves

All graveyards and graves can be considered to be of high significance and are protected by various laws. Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

7.3 Mitigating the heritage resources

It is highly likely that only GY22 near Sasol's proposed new Shaft Complex will be impacted by Sasol's proposed new mining development project. No historical

farmstead complexes or historical houses will be affected by the mine development project.

The following mitigation measures have to be followed whenever historical farmstead complexes, historical houses or graveyards are to be affected by the mine or other development projects.

7.3.1 Historical farmstead complexes and individual historical houses

Historical farmstead complexes, cultural landscapes and individual historical houses may not be affected (demolished, renovated, altered) by the mine development project *prior* to their investigation by a historical architect in good standing with the South African Heritage Resources Agency (SAHRA). The historical architect has to acquire a permit from the South African Heritage Resources Authority (SAHRA) *prior* to any of these structures and features been affected or altered as a result of the mine development project.

7.3.2 Graveyards and graves

Graveyards and graves in the Sasol Project Area (and particularly in the new shaft complex) can be mitigated by following one of the following strategies, namely:

- Graveyards can be demarcated with brick walls or with fences and can be conserved *in situ* in the new mine premises. Conserving graveyards *in situ* in mining areas create the risk and responsibility that they may be damaged, accidentally, that the mine remains responsible for its future unaffected existence, maintenance and that controlled access must exist for any relatives or friends who wish to visit the deceased.
- Graveyards can also be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted

with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

8 CONCLUSION AND RECOMMENDATIONS

The Phase I HIA study for the proposed Sasol Project Area revealed the following types and ranges of heritage resources as outlined in Section 3 of the National Heritage Resources Act (No 25 of 1999) in the project area, namely:

- Farmstead complexes associated with historical houses, outbuildings, enclosures for stock and Individual historical houses
- Informal graveyards and graves.

These heritage resources were geo-referenced, mapped and discussed (Figure 3; Tables 1-3). (Remains from the recent past also occur in the Sasol Project Area but have no historical significance and therefore were not geo-referenced, mapped or discussed).

The significance of the heritage resources are also indicated (Tables 1-3) while mitigation measures are proposed for those heritage resources which may be affected by the proposed new mining project.

The significance of the heritage resources

It is possible that some of these types and ranges of heritage resources may be impacted by Sasol's proposed new Shaft Complex on Strybult 542. The significance of the various types and ranges of heritage resources in the Sasol Project Area therefore have to be indicated while mitigation measures have to be outlined for those heritage resources which may be affected by the proposed new development project.

The significance of the heritage resources in the Sasol Project Area is indicated by means of stipulations derived from the National Heritage Resources Act (No 25 of 1999).

Historical farmstead complexes and individual historical houses

Historical farmstead complexes as well as individual historical houses older than sixty years old, or structures which are approaching this age are protected by Section 34 of the National Heritage Resources Act (No 25 of 1999). The significance of historical farmsteads complexes as well as individual historical houses therefore has been indicated as HIGH (Tables 1 &2).

The significance of each and every historical farmstead complex or historical house, whenever these structures are to be affected by a development project, can further be scrutinised according to criteria such as the following: the cultural-historical background of these structures; their scientific or architectural value; their use in the field of tourism, museums or education as well as their aesthetic appearance; repeatability (scarcity), or their emotional (ideological) value. These criteria would only be applied to each and every individual historical farmstead complex and house which may be affected by a development project.

Graveyards and graves

All graveyards and graves can be considered to be of high significance and are protected by various laws. Legislation with regard to graves includes Section 36 of the National Heritage Resources Act (No 25 of 1999) whenever graves are older than sixty years. The act also distinguishes various categories of graves and burial grounds. Other legislation with regard to graves includes those which apply when graves are exhumed and relocated, namely the Ordinance on Exhumations (No 12 of 1980) and the Human Tissues Act (No 65 of 1983 as amended).

Mitigating the heritage resources

It is highly likely that only GY22 near Sasol's proposed new Shaft Complex will be impacted by Sasol's proposed new mining development project. No historical farmstead complexes or historical houses will be affected by the mine development project.

The following mitigation measures have to be followed whenever historical farmstead complexes, historical houses or graveyards are to be affected by the mine or other development projects.

Historical farmstead complexes and individual historical houses

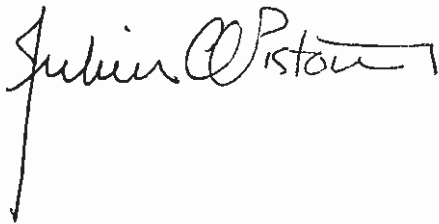
Historical farmstead complexes and individual historical houses may not be affected (demolished, renovated, altered) by the mine development project *prior* to their investigation by a historical architect in good standing with the South African Heritage Resources Agency (SAHRA). The historical architect has to acquire a permit from the South African Heritage Resources Authority (SAHRA) *prior* to any of these structures and features been affected or altered as a result of the mine development project.

Graveyards and graves

Graveyards and graves in the Sasol Project Area (and particularly in the new Shaft Complex) can be mitigated by following one of the following strategies, namely:

- Graveyards can be demarcated with brick walls or with fences and can be conserved *in situ* in the new mine premises. Conserving graveyards *in situ* in mining areas create the risk and responsibility that they may be damaged, accidentally, that the mine remains responsible for its future unaffected existence, maintenance and that controlled access must exist for any relatives or friends who wish to visit the deceased.
- Graveyards can also be exhumed and relocated. The exhumation of human remains and the relocation of graveyards are regulated by various laws, regulations and administrative procedures. This task is undertaken by forensic archaeologists or by reputed undertakers who are acquainted with all the administrative procedures and relevant legislation that have to be adhered to whenever human remains are exhumed and relocated. This process also includes social consultation with a 60 days statutory notice period for graves older than sixty years. Permission for the exhumation and relocation of human remains have to be obtained from the

descendants of the deceased (if known), the National Department of Health, the Provincial Department of Health, the Premier of the Province and the local police.

A handwritten signature in black ink, reading "Julius CC Pistorius". The signature is written in a cursive style with a long vertical line extending downwards from the first letter 'J'.

DR JULIUS CC PISTORIUS

Archaeologist &

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