

Prepared for:

SAMANCOR

GOLDER ASSOCIATES

**A PHASE I HERITAGE IMPACT ASSESSMENT (HIA) STUDY
FOR THE LANNEX NORTH OPEN CAST MINE ON THE FARM
GROOTBOOM 336KT IN THE MPUMALANGA PROVINCE
OF SOUTH AFRICA**

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EXECUTIVE SUMMARY

A Phase I Heritage Impact Assessment (HIA) study, as required in terms of Section 38 of the National Heritage Resources Act, Act 25 of 1999, was done as part of an EMP for the Lannex North Open Cast Mine on the farm Grootboom 336KT in the Mpumalanga Province of South Africa.

The Phase I HIA study for the proposed new Lannex North Open Cast Mine revealed the following types and ranges of heritages resources in and near the proposed new mining area, namely:

- The remains of two villages dating from the recent past but with possible historical connections (Site RP01, Site RP01).
- An informal graveyard which can be associated with one of the villages dating from the recent past (GY01).
- Scattered stone tools dating from the Stone Age in a donga crossing the mining area.

These remains were geo-referenced and mapped. Their levels of significance as well as the magnitude of the impact on the heritage resources have been determined (Figure 1; Table 1).

The villages dating from the recent past with possible historical connections may exceed sixty years in age and therefore may qualify as historical villages. However, these sites do not have any outstanding significance when considering criteria such as the following:

- These villages represent two of hundreds (perhaps thousands) of similar villages which came into being during the last decades as a result of amongst other expanding mining activities which commenced in the 1930's and 1940's in the Steelpoort.
- A similar village subjected to a Phase II investigation at Modikwa Platinum in 2005 proved not to have any outstanding features, archaeological material or any other evidence motivating further investigation. It is thus highly likely that these villages do not have any research value, aesthetic appeal or any other value (such as tourism or cultural historical) any longer.

All graves and graveyard are considered to be of high significance. These structures may not be affected by any development project. Legislation requires mitigation measures whenever graves are to be affected by development activities and includes the National Heritage Resources Act, 1999 (Act No 25 of 1999), the Ordinance on Exhumations, 1980 (Ordinance No 12 of 1980) and the Human Tissues Act, 1983 (Act No 65 of 1983 as amended).

GY01 is located in the proposed new Lannex North Open Cast Mine and will be destroyed by the new development. It is therefore recommended that the graveyard be exhumed and that the deceased be relocated. This task can be done either by forensic archaeologists or by a reputed undertaker. Contact details for forensic archaeologists can be obtained from the author of this report.

The stone tools are protected by the National Heritage Resources Act (No 25 of 1999) (see Box 1). These artefacts will be destroyed or will disappear with the development of the proposed new Lannex North Open Cast Mine. These artefacts also have value as they can be conserved in a museum or used in a museum display. The scattered stone tools have to be collected from the surface before they are destroyed by the new development. However, these stone tools can not be collected before a permit allowing for their collection has been obtained from the Mpumalanga Provincial Heritage Resources Authority (Mpumalanga PHRA). This permit must be acquired by an archaeologist accredited with ASAPA.

The stone tools can either be preserved in Samancor's private museum or they can be donated to a museum closest to the Steelpoort area such as the Lydenburg Museum for safe keeping. A short report outlining the collection of the artefacts must be made available the Mpumalanga Provincial Heritage Resources Authority (Mpumalanga PHRA) for safekeeping in its heritage data bank.

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1 INTRODUCTION

Samancor intends to open the Lannex North Open Cast Mine on the farm Grootboom 336KT approximately 20km to the south of Steelpoort in the Mpumalanga Province of South Africa. The development project will include the establishment of an open cast mine, a mobile office, haul roads, rock waste dumps and other structures and features in a designated mining area. This development will be concentrated along the western slope of a mountain on the farm Grootboom 366KT. This document therefore contains the report of a Phase I HIA study that was done for the proposed new Lannex Open Cast Mine on Grootboom 366KT in the Mpumalanga Province of South Africa.

The Mpumalanga Province of South Africa has a rich heritage comprised of remains dating from the pre-historic and from the historical (or colonial) periods of South Africa. Pre-historic and historical remains in the Mpumalanga Province present 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' (outlined in Section 3 of the National Heritage Resources Act, Act No 25 of 1999) occur in this region (see Box 1).

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 25 of 1999, Section 3) outlines the following types and ranges of heritage resources that qualify as part of the national estate:

- (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 (Act 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 palaeontological objects, 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 (Act 43 of 1996).

The National Heritage Resources Act (Act 25 of 1999, Sec 3) also distinguishes nine criteria for a place and/or object 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; and/or
- (i) its significance relating to the history of slavery in South Africa.

2 AIMS OF THIS REPORT

Samancor intends to establish the Lannex North Open Cast Mine on the farm Gpootboom 366KT in the Mpumalanga Province of South Africa. Given the possibility that heritage resources may occur in or near the proposed new open cast mine, Golder Associates appointed the author to conduct a Phase I Heritage Impact Assessment (HIA) study of the proposed new Lannex North Open Cast mining area. The aims of this HIA study 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) (Box 1) do occur in the Lannex North Open Cast mining area and, if so, to determine the nature, the extent and the significance of these remains;
- to determine whether such remains will be affected by the proposed new mining development; and
- to evaluate what appropriate actions could be taken to reduce the impact of the proposed new mining development on such remains.

3 METHODOLOGY

3.1 The approach to this study

This HIA study was conducted by

- surveying on foot the proposed new mining area, as well as surveying, where appropriate, areas adjoining the mining areas (in other words, peripheral areas which will not be affected by the extended mining activities);
- briefly surveying literature relating to the pre-historical and historical context of the Steelpoort region;
- interviewing spokespersons to establish the presence or existence of certain heritage resources such as graveyards or abandoned settlements and to collect indigenous names for landmarks such as hills (usually with archaeological sites) in the area;
- consulting maps of the proposed new mining areas;
- consulting archaeological (heritage) data bases such as the one kept at the Mpumalanga Provincial Heritage Resources Agency (Mpumalanga PHRA); and
- integrating all the information obtained from the literature survey, maps and spokespersons with the evidence derived from the fieldwork.

3.2 Mapping the heritage resources

All the heritage resources found in the mining areas and some in the peripheral areas were geo-referenced using a GPS instrument and they were thereafter mapped in Arch View.

3.3 Determining the levels of significance of heritage resources

The levels of significance of the various types and ranges of heritage resources in and near the proposed Lannex North Open Cast Mine were determined by means of selecting different criteria with which the significance of these heritage resources was determined.

3.4 Assumptions and limitations

It must be pointed out that heritage resources can be found in the most unexpected places. It must also be borne in mind that surveys may not detect all the heritage resources in a given project area. While some remains may simply be missed during surveys (observations), others may occur below the surface of the earth and may only be exposed once development (such as mining) commences.

3.5 Some remarks on terminology

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

Box 2- Terminology relevant to 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 , Act 25 of 1999 (see Box 1).

Heritage 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-historic' 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 project area, to the first appearance or use of 'modern' Western writing brought to the Steelpoort region by the first colonists who settled in this area after c. 1840.

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 may, however, be almost sixty years old and these may qualify as heritage resources in the near future.

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 headstones 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-historic, historical or the relatively recent past.

The term 'mining area' ('critical area') refers to the area where the developer wants to focus development activities.

The term 'peripheral area' refers to the area that will not be affected by the proposed new development activities.

The 'project area' refers to both the mining and peripheral areas.

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 cooperation and approval of SAHRA.

4 THE PROJECT AREA

The proposed new Lannex North Open Cast Mine will be located on the farm Grootboom 366KT which is situated approximately twenty kilometres to the south of Steelpoort. The proposed new mine will run from the north to the south in an elongated area, initially along the Steelpoort Valley's floor and then higher up along the western foot slope of a mountain range on the eastern border of the project area. The proposed new Lannex North Open Cast Mine is located to the east of the Leolo Mountain range which is the heartland of the pre-historical and the historical Pedi chiefdom and is associated with a wide range of heritage resources (Steelpoort 2430CA and Moroke 2430AC 1: 50 000 topographic maps) (Figure 1).

The Steelpoort Valley's name is derived from the Steelpoort (Tubatse) River, one of the main geographical features in this valley. The Steelpoort River is a southern tributary of the Olifants River. It flows from an altitude higher than 1 800m on the Highveld near Wonderfontein in the Belfast district northwards and then north-eastwards to join the Olifants River before the latter cuts through the Drakensberg to enter the Lowveld. Other prominent beacons in the wider study area include the Chromite Hills to the north-east of the study area and the imposing Leolo Mountain range in the study area.

Formal and informal villages are scattered throughout the Steelpoort Valley. These communities, some of which are still practising mixed subsistence farming, have occupied the Steelpoort Valley without interruption for decades and perhaps even for centuries. This is definitely the case in the village of Tšate, situated to the west of the Leolo Mountain range outside the project area, which already existed in the late 18th century.

5 THE PHASE I HERITAGE IMPACT ASSESSMENT STUDY

5.1 Types and ranges of heritage resources in the project area

The Phase I HIA for the proposed new Lannex North Open Cast Mine revealed the following types and ranges of heritage resources, as outlined in Section 3 of the National Heritage Resources Act (Act No 25 of 1999):

- The remains of two villages dating from the recent past but with possible historical connections (Site RP01, Site RP02).
- An informal graveyard which can be associated with one of the villages (GY01).
- Scattered stone tools dating from the Stone Age in a donga crossing the mining area.

These heritage resources were geo-referenced and mapped. Their levels of significance as well as the magnitude of the impact of the development on the heritage resources have been determined (Figure 1, Table 1).

The heritage resources are now briefly discussed and illustrated with photographs.

HERITAGE RESOURCES	CO-ORDINATES	LEVEL OF SIGNIFICANCE	MAGNITUDE OF IMPACT
Village from the recent past (Site RRP01)	24° 45.931' 30° 10.411'	LOW	HIGH
Village from the recent past (Site RRP02)	24° 45.795' 30° 10.386'	LOW	HIGH
Informal graveyard (GY01)	24° 45.931' 30° 10.411'	HIGH	HIGH
Scattered stone tools	24° 45.687' 30° 10.358'	MEDIUM-HIGH	HIGH

Table 4- Co-ordinates for heritage resources in and near the proposed new Lannex North Open Cast Mine, their levels of significance and the magnitude of the impact on these heritage remains (above).

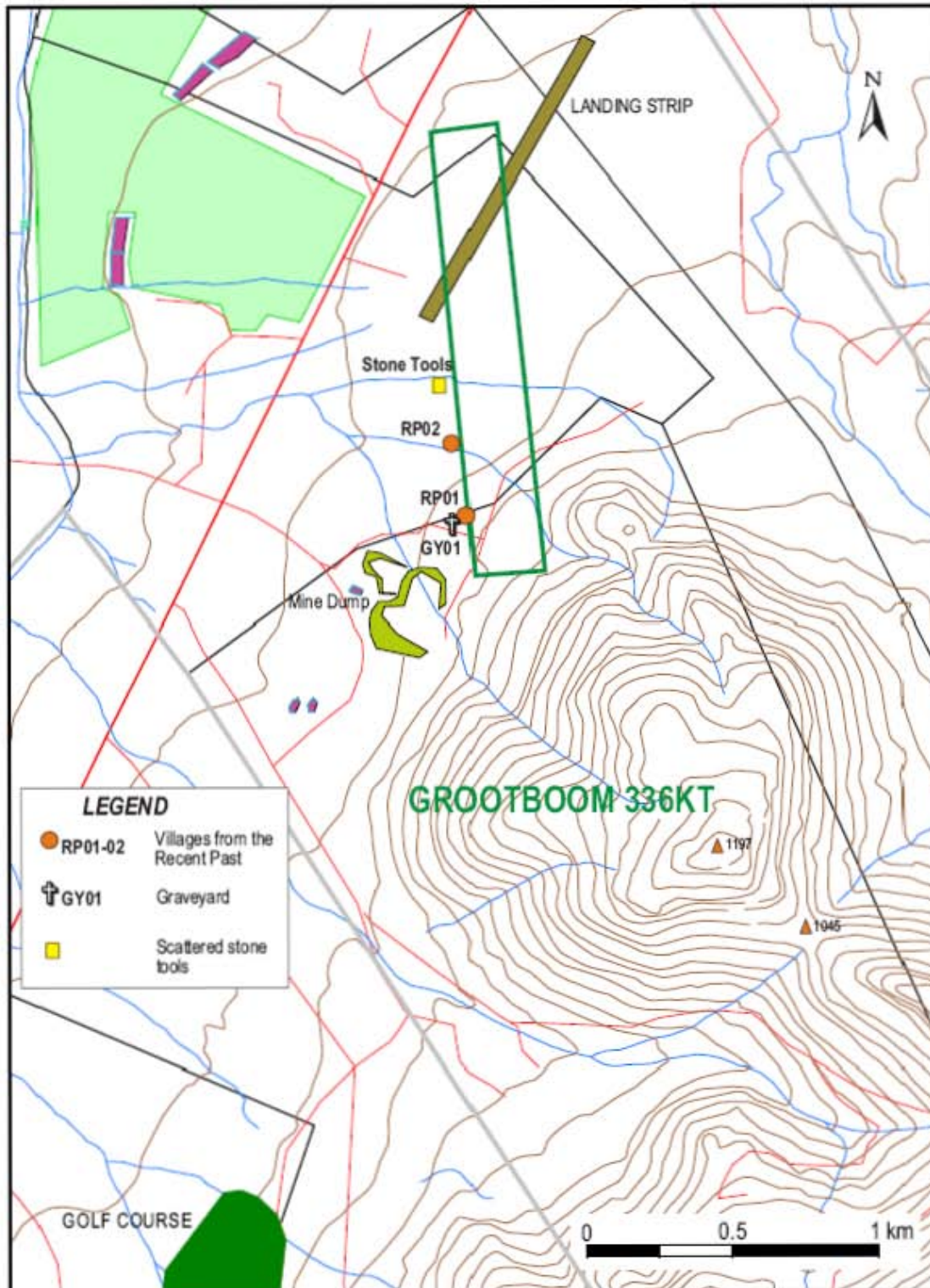


Figure 1- The proposed new Lannex North Open Cast Mine on the farm Grootboom 336KT in the Steelpoort Valley in the Mpumalanga Province of South Africa.

The most important heritage resources discovered in and near the proposed new Lannex North Open Cast Mine are two villages dating from the recent past, an formal graveyard (GY01) and scattered stone tools dating from the Stone Age in a donga crossing the mining area.

5.1.1 Villages from the recent past

Two villages dating from the recent past but with possible historical connections occur in the higher southern part of the proposed new Lannex North Open Cast Mining area.

One of these sites is associated with a circular area that has been cleared in the vegetation along the western slope of the mountain on the eastern perimeter of the project area (Site RP01). This site, although not clearly visible due to a dense stand of grass after the above average good summer rains, is marked with what seems like randomly occurring low stone lines. Modern waste material such as tin plate and glass with older potsherds occur within the perimeters of the site.

This site is associated with GY01.

The second site is marked by a dense clump of vegetation further to the north and away from the western slope of the mountain. Site RP02 is also associated with a few stone lines and with potsherds. The dense clump of vegetation prevented an unhindered survey of the site.

It is possible that both sites may have historical connections as they may approach sixty years in age or slightly may exceed this age.



Figure 2- The open space which marks Site RP01 along the higher western slope of a mountain within the boundaries of the new proposed Lannex North Open Cast Mine (above).



Figure 3- An informal graveyard (GY01) on the edge of the village dating from the recent past (above).

5.1.2 The informal graveyard

An informal graveyard (GY01) containing at least seven visible graves is located on the southern perimeter of Site RP01. All the graves are covered with piles of stone. No inscriptions occur on any of the graves.



Figure 4- Some of the scattered stone tools which occur in the donga which cross the mining area (above).

5.1.3 Scattered stone tools in a donga

A number of stone tools dating from the Stone Age occur in a donga that runs from the high mountainous areas in the east towards the Steelpoort Valley's floor in the west. These tools occur at random in the donga and primarily include Middle Stone Age artefacts which may be as old as 20 000 years to 150 000 years. The stone tools mainly consist of blades that were manufactured from hornfels. A clearly recognised prepared platform percussion technique is

noticeable on all the artefacts, except on a Late Acheulian type of hand axe which was also manufactured from hornfels.

5.2 The significance of the heritage resources

The levels of significance of the heritage resources are now determined by means of various criteria.

5.2.1 The villages from the recent past

The villages dating from the recent past with possible historical connections may exceed sixty years in age and therefore may qualify as historical villages. However, these sites do not have any outstanding significance when considering criteria such as the following:

- These villages represent two of hundreds (perhaps thousands) of similar villages which came into being during the last decades as a result of amongst other expanding mining activities which commenced in the 1930's and 1940's in the Steelpoort.
- A similar village subjected to a Phase II investigation at Modikwa Platinum in 2005 proved not to have any outstanding features, archaeological material or any other evidence motivating further investigation. It is thus highly likely that these villages also do not have any research value, aesthetic appeal or any other value (such as tourism or cultural historical) any longer.

5.2.2 The informal graveyard

All graves and graveyard are considered to be of high significance. These structures may not be affected by any development project. Legislation requires mitigation measures whenever graves are to be affected by development activities and includes the National Heritage Resources Act, 1999 (Act No 25 of 1999), the

Ordinance on Exhumations, 1980 (Ordinance No 12 of 1980) and the Human Tissues Act, 1983 (Act No 65 of 1983 as amended).

5.2.3 The scattered stone tools

These artefacts also have value as they can be conserved in a museum or used in a museum display.

5.3 The impact of the development on the heritage resources

The impact of the proposed new Lannex North Open Cast Mine on the heritage resources have to be determined.

5.3.1 Villages from the recent past

Both the villages from the recent past are located in the proposed new Lannex North Open Cast Mining area and will be destroyed by the proposed new development.

5.3.2 The informal graveyard

The informal graveyard is located in the proposed new Lannex North Open Cast mining area and will be destroyed by the new mine.

5.3.3 The scattered stone tools

The scattered stone tools in the donga are located in the Lannex North Open Cast mining area and will be destroyed by the new development

5.4 Mitigating the impact on the heritage resources

The following mitigating measures are recommended before the development of the Lannex North Open Cast Mine commences.

5.4.1 Villages from the recent past

Sites RP01 and RP02 have no significance and can be destroyed by the new development.

5.4.2 The informal graveyard

Informal GY01 has to be exhumed and relocated. This process is regulated by various laws and regulations. It can be conducted either by forensic archaeologists or by a reputed undertaker. Contact details for forensic archaeologists can be obtained from the author of this report.

5.4.3 The scattered stone tools

The scattered stone tools have to be collected from the surface before they are destroyed or before they disappear in the proposed new Lannex North Open Cast Mine. However, these stone tools can not be collected before a permit allowing for their collection has been obtained from the Mpumalanga Provincial Heritage Resources Authority (Mpumalanga PHRA). This permit must be acquired by an archaeologist accredited with ASAPA.

The stone tools can either be preserved in Samancor's own private museum or they can be donated to a museum closest to the Steelpoort area such as the Lydenburg Museum for safe keeping. A short report outlining the collection of the artefacts must be made available to the Mpumalanga Provincial Heritage

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6 CONCLUSION AND RECOMMENDATION

The Phase I HIA study for the proposed new Lannex North Open Cast Mine revealed the following types and ranges of heritages resources in and near the proposed new mine, namely:

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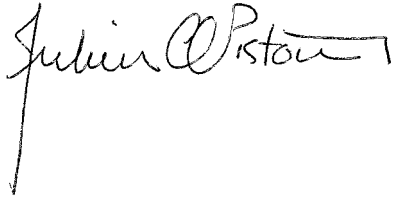
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A handwritten signature in black ink, reading "Julius CC Pistorius". The signature is written in a cursive style with a long vertical line extending downwards from the end of the name.

**DR JULIUS CC PISTORIUS
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