

**SUMMARY OF THE HERITAGE ASSESSMENTS AT
EXXARO'S HILLENDALE MINE, KWAZULU-NATAL,
1995 - 2010**

FOR EXXARO PTY

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**By Gavin & Louise Anderson
Umlando: Archaeological Tourism and Resource
Management
PO Box 102532, Meerensee, 3901
Phone/fax: 035-7531785 Fax: 0865445631
Cell: 0836585362**



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INTRODUCTION

Umlando cc was contracted by Exxaro (Pty) Ltd to undertake heritage assessments of the existing Hillendale Mine on a regular basis. The Hillendale mine is located just north of eSikhaweni, KwaZulu-Natal (Fig. 1-2)

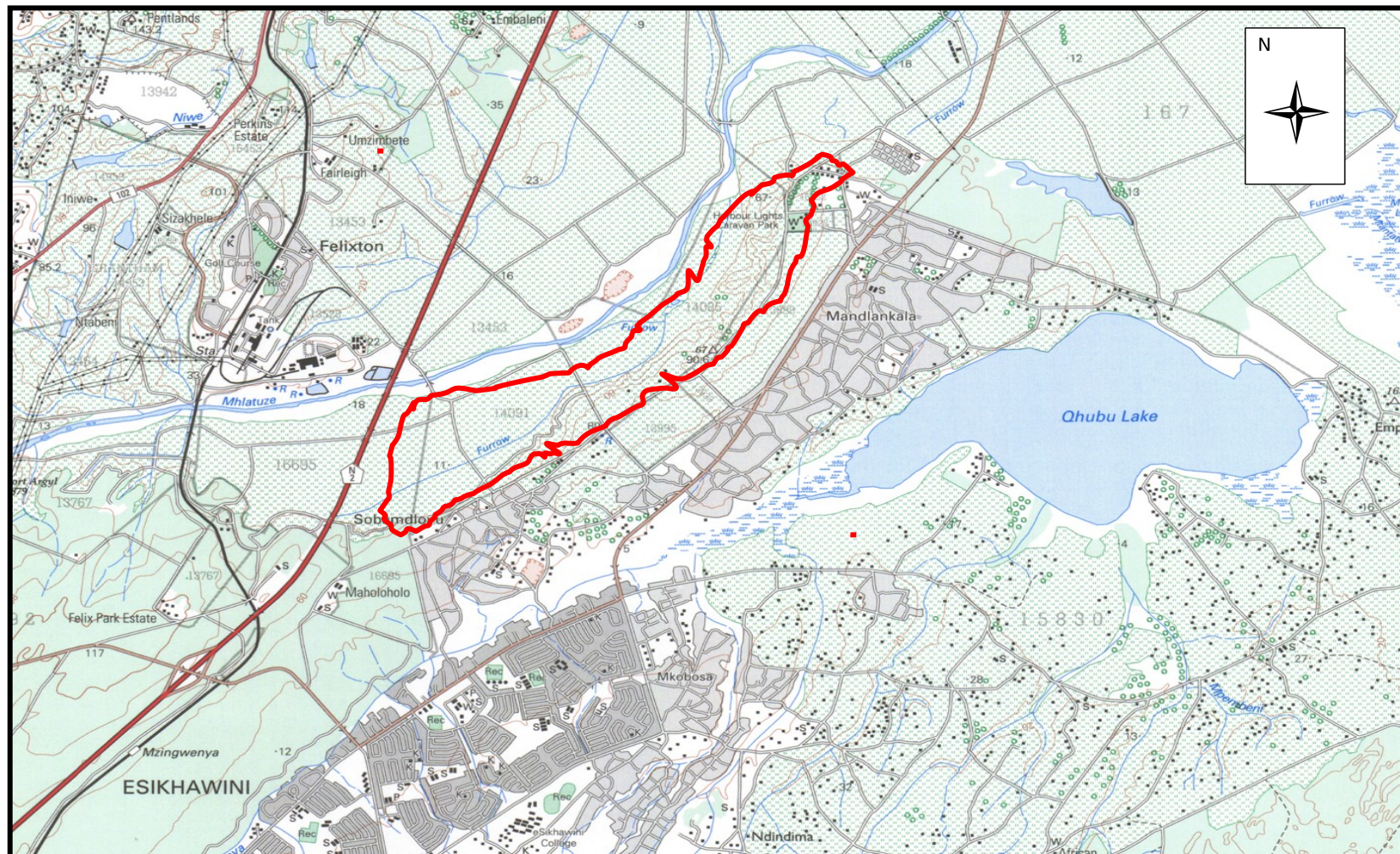
The contract was originally started in 1995 while the Natal Museum Institute employed one of us (GA) for Cultural Resource Management. Umlando took over the contract in 2004. The original survey formed part of the EIA undertaken by the then CSIR. This survey recorded seventeen archaeological sites in the general study area and recommended excavations at several of them.

Surveys were undertaken at irregular intervals from 1996 to 2005. These surveys occurred after an area had been cleared from vegetation. Thereafter surveys were undertaken mostly on a monthly basis depending on the movement of the mine. The last area to be cleared of vegetation occurred in May 2010. This was the last heritage survey for the Hillendale Mine. Umlando is still on standby if any artefacts, features or graves are observed in the future.

The aim of this report is to consolidate the results of all of the surveys and excavations into one document, and present it as the final heritage document for the entire Hillendale mine. This report will only deal with sites affected by the Hillendale mine, and not those related to the various heritage surveys undertaken by Exxaro in the area.

An architectural survey was undertaken by Archaic, and this report has been separately lodged with Amafa KZN (Whelan 2009)

FIG. 1 GENERAL LOCATION OF THE EXXARO HILLENDALE MINE¹



¹ Approximate mining area outlined in red

FIG. 2: AERIAL OVERVIEW OF THE EXXARO HILLENDALE MINE



KWAZULU-NATAL HERITAGE ACT NO. 4 OF 2008

“33. General protection: Structures.—

- a) No structure which is, or which may reasonably be expected to be older than 60 years, may be demolished, altered or added to without the prior written approval of the Council having been obtained on written application to the Council.
 - b) Where the Council does not grant approval, the Council must consider special protection in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.
- 2) The Council may, by notice in the *Gazette*, exempt—
- (a) a defined geographical area; or
 - b) defined categories of sites within a defined geographical area, from the provisions of subsection where the Council is satisfied that heritage resources falling in the defined geographical area or category have been identified and are adequately protected in terms of sections 38, 39, 40, 41 and 43 of Chapter 9.
- 3) A notice referred to in subsection (2) may, by notice in the *Gazette*, be amended or withdrawn by the Council.

34. General protection: Graves of victims of conflict.—No person may damage, alter, exhume, or remove from its original position—

- (a) the grave of a victim of conflict;
- (b) a cemetery made up of such graves; or
- (c) Any part of a cemetery containing such graves, without the prior written approval of the Council having been obtained on written application to the Council.

35. General protection: Traditional burial places.—

- a) No grave—
- b) not otherwise protected by this Act; and
- c) not located in a formal cemetery managed or administered by a local authority, may be damaged, altered, exhumed, removed from

its original position, or otherwise disturbed without the prior written approval of the Council having been obtained on written application to the Council.

(1) The Council may only issue written approval once the Council is satisfied that—

(a) the applicant has made a concerted effort to consult with communities and individuals who by tradition may have an interest in the grave; and

(b) The applicant and the relevant communities or individuals have reached agreement regarding the grave.

36. General protection: Battlefield sites, archaeological sites, rock art sites, palaeontological sites, historic fortifications, meteorite or meteorite impact sites.—

a) No person may destroy, damage, excavate, alter, write or draw upon, or otherwise disturb any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Council having been obtained on written application to the Council.

(1) Upon discovery of archaeological or palaeontological material or a meteorite by any person, all activity or operations in the general vicinity of such material or meteorite must cease forthwith and a person who made the discovery must submit a written report to the Council without delay.

(2) The Council may, after consultation with an owner or controlling authority, by way of written notice served on the owner or controlling authority, prohibit any activity considered by the Council to be inappropriate within 50 metres of a rock art site.

(3) No person may exhume, remove from its original position or otherwise disturb, damage, destroy, own or collect any object

or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site without the prior written approval of the Council having been obtained on written application to the Council.

(4) No person may bring any equipment which assists in the detection of metals and archaeological and palaeontological objects and material, or excavation equipment onto any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, or meteorite impact site, or use similar detection or excavation equipment for the recovery of meteorites, without the prior written approval of the Council having been obtained on written application to the Council.

(5) The ownership of any object or material associated with any battlefield site, archaeological site, rock art site, palaeontological site, historic fortification, meteorite or meteorite impact site, on discovery, vest in the Provincial Government and the Council is regarded as the custodian on behalf of the Provincial Government.” (KZN Heritage Act of 2008)

METHOD

The method for Heritage assessment consists of several steps.

The first step forms part of the desktop assessment. Here we would consult the databases. These databases contain most of the known heritage sites in KwaZulu-Natal, and known memorials and other protected sites, battlefields and cemeteries in southern Africa. We also consult with an historical architect, palaeontologist, and an historian where necessary.

The survey results will define the significance of each recorded site, as well as a management plan.

All sites are grouped according to low, medium and high significance for the purpose of this report. Sites of low significance have no diagnostic artefacts or features. Sites of medium significance have diagnostic artefacts or features and these sites tend to be sampled. Sampling includes the collection of artefacts for future analysis. All diagnostic pottery, such as rims, lips and decorated sherds are sampled, while bone, stone and shell are mostly noted. Sampling usually occurs on most sites. Sites of high significance are excavated and/or extensively sampled. Those sites that are extensively sampled have high research potential, yet poor preservation of features.

Defining significance

Heritage sites vary according to significance and several different criteria relate to each type of site. However, there are several criteria that allow for a general significance rating of archaeological sites.

These criteria are:

1. State of preservation of:

- 1.1. Organic remains:
 - 1.1.1. Faunal
 - 1.1.2. Botanical
- 1.2. Rock art
- 1.3. Walling
- 1.4. Presence of a cultural deposit
- 1.5. Features:
 - 1.5.1. Ash Features
 - 1.5.2. Graves

- 1.5.3. Middens
- 1.5.4. Cattle byres
- 1.5.5. Bedding and ash complexes

2. Spatial arrangements:

- 2.1. Internal housing arrangements
- 2.2. Intra-site settlement patterns
- 2.3. Inter-site settlement patterns

3. Features of the site:

- 3.1. Are there any unusual, unique or rare artefacts or images at the site?
- 3.2. Is it a type site?
- 3.3. Does the site have a very good example of a specific time period, feature, or artefact?

4. Research:

- 4.1. Providing information on current research projects
- 4.2. Salvaging information for potential future research projects

5. Inter- and intra-site variability

- 5.1. Can this particular site yield information regarding intra-site variability, i.e. spatial relationships between various features and artefacts?
- 5.2. Can this particular site yield information about a community's social relationships within itself, or between other communities?

6. Archaeological Experience:

6.1. The personal experience and expertise of the CRM practitioner should not be ignored. Experience can indicate sites that have potentially significant aspects, but need to be tested prior to any conclusions.

7. Educational:

- 7.1. Does the site have the potential to be used as an educational instrument?
- 7.2. Does the site have the potential to become a tourist attraction?
- 7.3. The educational value of a site can only be fully determined after initial test-pit excavations and/or full excavations.

8. Other Heritage Significance:

- 8.1. Palaeontological sites
- 8.2. Historical buildings
- 8.3. Battlefields and general Anglo-Zulu and Anglo-Boer sites
- 8.4. Graves and/or community cemeteries
- 8.5. Living Heritage Sites
- 8.6. Cultural Landscapes, that includes old trees, hills, mountains, rivers, etc related to cultural or historical experiences.

The more a site can fulfill the above criteria, the more significant it becomes. Test-pit excavations are used to test the full potential of an archaeological deposit. This occurs in Phase 2. These test-pit excavations may require further excavations if the site is of significance (Phase 3). Sites may also be mapped and/or have artefacts sampled as a form of mitigation. Sampling normally occurs when the artefacts may be good examples of their type, but are not in a primary archaeological context. Mapping records the spatial relationship between features and artefacts.

DESCRIPTION OF TERMINOLOGY

Archaeological sites are divided into three general periods: Stone Age, Iron Age and Historical. These classifications are used for convenience and do not reflect a social evolutionary trajectory of human development; rather, they refer to the artefacts found on the site.

Stone Age

The Stone Age is divided into three phases: Early Stone Age (ESA), Middle Stone Age (MSA) and Late Stone Age (LSA).

The ESA in southern Africa began approximately two million years ago and ended about 120 000 years ago. These sites are characterised by stone tools

such as hand axes, cleavers and choppers. In KwaZulu-Natal, they are often in secondary contexts, in which case they are only significant from a geological point of view. Hominid skeletal remains are rare, and so far, none has been discovered in KwaZulu-Natal. These sites are found in open areas, and are ubiquitous in KwaZulu-Natal.

The MSA dates from 120 000 to 30 000 years ago. The main archaeological evidence from this period consists of stone tools, although organic remains such as bone are occasionally found. The age of this period, as with the ESA, is often to the detriment of the preservation of organic materials, hence the predominance of stone tools. MSA sites occur in both rock shelters and as open sites, and tend to be found on hills in many areas of KwaZulu-Natal.

The LSA dates from 30 000 years ago to the end of the last century. This period is characterised by an increase in organic artefacts, yet stone tools still dominate the archaeological record. LSA sites tend to be located in rock shelters, although they do occur in the open.

Iron Age

The Iron Age refers to the period of settlement in southern Africa by agriculturists. These people spoke a Bantu language, herded cattle, sheep and goats, and cultivated crops such as sorghum, millet, legumes and various squashes. The Iron Age is divided into two main phases: Early Iron Age (EIA) and Late Iron Age (LIA). The main differences between these two periods are in the pottery styles, settlement patterns and architectural styles. Both phases are restricted to summer rainfall areas in southern Africa.

The EIA dates from 1 700 to 1 000 years ago. Settlements occur below the 1 000m contour lines and in areas with more than 300mm of rainfall per annum. They have been found in major river valleys such as the Tugela River Valley, close to rivers and around coastal lakes. Settlements may be approximately twelve hectares in size, although they are often smaller. The pottery styles tend to show diachronic change; that is, there are stylistic similarities between sub-periods.

The LIA dates from 1 000 to 180 years ago. These sites are different to those of the EIA in their pottery styles and settlement patterns. Settlements are located in savannah and grassland areas and often on the upper slopes of hills. The introduction of maize in the 1700s resulted in a change in the form of several artefacts such as grindstones. There is also an introduction of foreign, or exotic, artefacts such as ceramics and glass beads from the Middle and Far East and Europe, possibly indicating a more extensive trade network than existed during the EIA.

The Historical period dates from approximately AD 1829 to fifty years ago in KwaZulu-Natal. These sites, in general, include those associated with both black and white agriculturists.

FIG. 3: LOCATIONS OF SITES RECORDED IN 1995

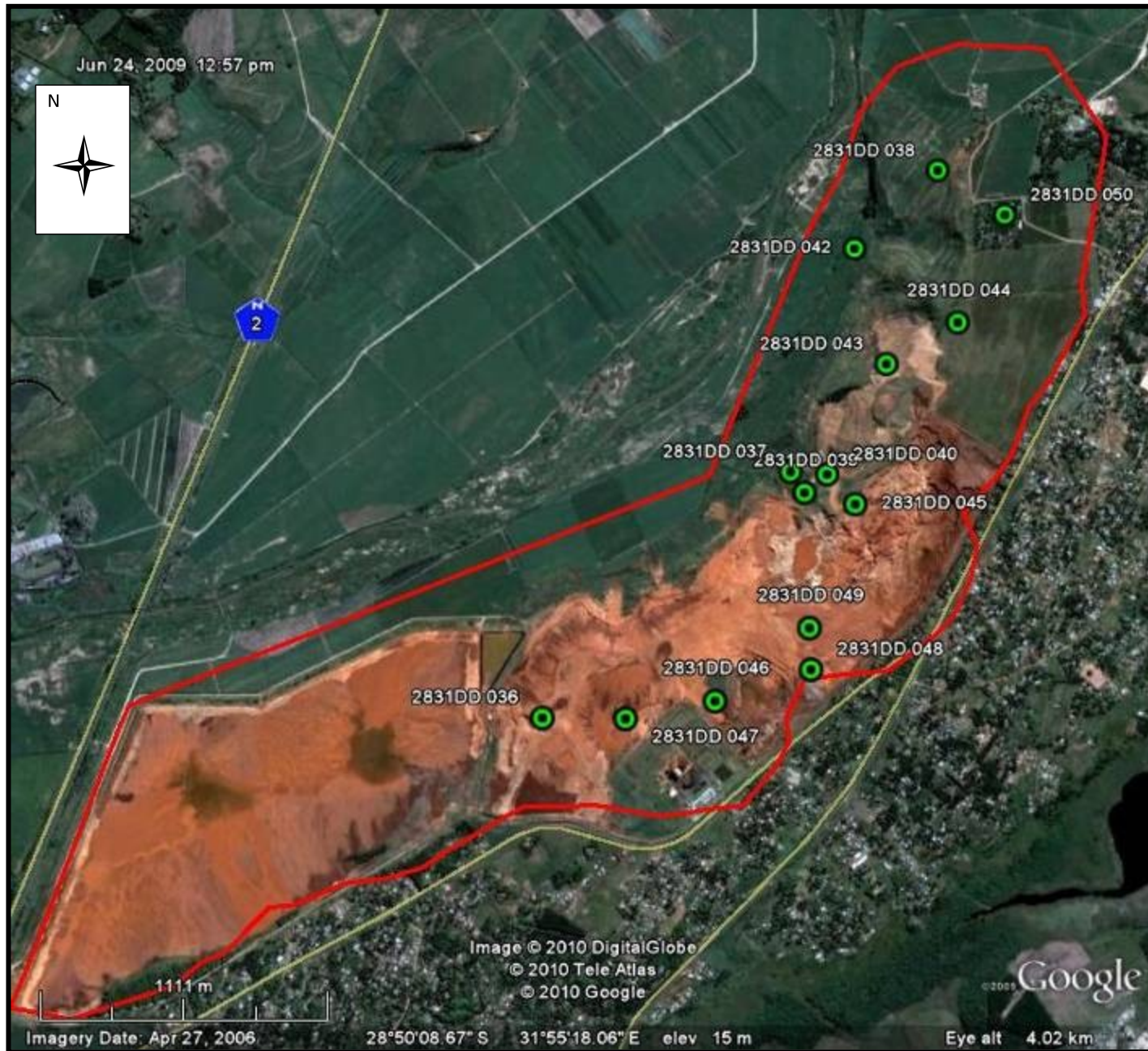


FIG. 4: LOCATIONS OF ALL SITES RECORDED UP TO 2010²



² Green circle with white label = original survey in 1995; Yellow labels = post 2004 survey

RESULTS

Table 1 summarises the results of the surveys and excavations. All sites that have a prefix of 2831DD refer to the sites recorded in 1995, while Umland recorded the rest from 2004 onwards.

2831DD 036

The site was ~30cm below surface and was eroding out of edge of the sugar cane track. There is a small scatter of quartz stone flakes, which may be utilised. No formal tools were seen. The site probably dates to the LSA.

Significance: The site was of low significance

Mitigation: No mitigation was undertaken

2831DD 037

The site was observed in an eroded area near bottom of hill. The artefacts consisted of:

- 3 MSA quartz flakes
- piece of iron ore
- fragments of undecorated pottery
- teacup and plate fragments of white ceramics with blue Japanese-style pictures

The site probably dates to the MSA and HP

Significance: The site was of low significance

Mitigation: No mitigation was undertaken

TABLE 1: LIST OF RECORDED SITES

Site Name	South	East	Group	Sampled/excavated
2831DD 036	28 50 35.9	31 55 08.6	LSA	
2831DD 037	28 50 04.2	31 55 45.5	MSA, HP	
2831DD 038	28 49 23.8	31 56 08.5	MSA, HP?	
2831DD 039	28 50 07.1	31 55 47.4	LSA, HP?	
2831DD 040	28 50 04.6	31 55 50.8	LIA/HP	
2831DD 042	28 49 34	31 55 56	Botanical	Sampled
2831DD 043	28 49 50	31 56 00	HP	
2831DD 044	28 49 44.7	31 56 10.5	LIA/HP	Excavated
2831DD 045	28 50 08.6	31 55 54.6	LSA; LIA/HP	
2831DD 046	28 50 33.7	31 55 33.8	LSA; LIA/HP	Excavated
2831DD 047	28 50 36.0	31 55 20.7	HP?	
2831DD 46	28 50 33.7	31 55 33.8	EIA, HP	
2831DD 048	28 50 29.8	31 55 47.9	HP?	Excavated
2831DD 049	28 50 24.5	31 55 47.7	HP?	
2831DD 050	28 49 30.1	31 56 18.2	HP?	
HIL13a	28 50 29.80	31 55 20.71	HP?	
HIL12	28 50 30.30	31 55 53.04	EIA	Sampled
HIL12a	28 50 32.48	31 55 51.06	EIA	Sampled
HIL05b	28 49 15.60	31 56 4.00	LSA/HP	
HIL05c	28 49 14.00	31 56 11.20	LSA/HP	
HILL08a	28 49 24.60	31 56 4.80	LIA or HP	
HIL20	28 49 48.61	31 56 12.98	EIA	Excavated
TIC238	28 49 47.10	31 56 11.80	HP	
EXX01a/b	28 49 40.19	31 56 11.90	EIA, LIA?	
EXX02	28 49'20.20	31 56 11.40	LIA	
EXX08	28 49 21.60	31 56 16.90	MSA, LIA?	
EXX09	28 49 24.10	31 56 22.00	MSA, LIA?	
EXX09a	28 49 20.20	31 56 20.44	MSA, LIA?	
EXX011	28 49 9.90	31 5615.80	LSA	
TIC020	28 49 54.40	31 56 14.70	LIA	Excavated

2831DD 038

The main site was probably on the top of the hill; however, several artefacts were observed on its slopes. The artefacts included several small quartz MSA flakes and a few adiaagnostic sherds. The site dates to the MSA and probably HP.

Significance: The site was of low significance

Mitigation: No mitigation was undertaken

2831DD 039

The site was observed on the slope halfway up the hill just below an afforested area, and facing the Mhlatuze River. The artefacts most probably originate from up the hill. The artefacts consist of:

- 2 quartz flakes (Indeterminate Stone Age)
- Several pieces of adiaagnostic pottery
- 1 fragment of upper grindstone
- 1 ?smoothed pebble
- One bovine molar.

The site probably dates to the LSA and HP.

Significance: The site was of low significance

Mitigation: No mitigation was undertaken

2831DD 040

The site was located near top of hill, facing the Mhlatuze River. Several sherds were observed in the erosion areas. The artefacts consist of fragments of pottery varying in thickness. There are probably five vessels although no diagnostic pieces were found. The site probably dates to the LIA or HP.

Significance: The site was of low significance

Mitigation: No mitigation was undertaken

2831DD 042

The site consists of a grove of banana trees at the base of a hill near a furrow. Local oral history and living heritage states that this banana trees originate from the time of Shaka. These bananas were sent to Shaka because of the exotic nature of the fruit, and as a form of tribute. This resulted in a Zulu saying “to be as arrogant as a banana carrier’ as the banana carriers were given right of way whilst walking with their tribute. The site probably dates to the HP.

Significance: The site is of high significance

Mitigation: A sample of the trees were removed and placed at the Richards Bay Minerals Interpretive Centre. Once the Exxaro mine is completed, a sample should be returned to this place and replanted.

2831DD 043

The site was on top of a heavily vegetated hill facing the Mhlatuze River. Artefacts are scattered over an area of about 100 m. There are the remains of a built structure that according to the 1983 1:50 000 topographical map is a waterworks. The artefacts consist of the following:

- Many adiagnostic potsherds representing several vessels and one rim sherd.
- Cattle bone including teeth and limbs
- Several rusty pieces of metal
- A fragment of white plate.

The site dates to the HP.

Significance: The site was of low significance

Mitigation: No mitigation was undertaken

2831DD 044

The site is located along the top of the hill and extends over a large area. The artefacts include the following:

- LSA quartz artefacts scattered all over the hill
 - adiaagnostic sherds scattered all over hill, 1 rim had a rounded lip
 - Several slag fragments (observed during subsequent surveys)
 - Tuyere fragments

The site dates to the LIA and was excavated in 2002.

Significance: The site is of medium significance.

Mitigation: Several test-pit excavations were proposed to test the overall significance of the site. The excavations are described below.

2831DD 045

The site was located on the top of a hill and was probably related to 2831DD 044. The site consists of a scatter of sherds and stone artefacts. The stone flakes are on quartz and appear to date to the LSA. The sherds are mostly adiaagnostic, and one rim had external emphasis. The sherds probably date to the LIA.

Significance: The site was of low significance

Mitigation: No mitigation was undertaken

2831DD 046

The site is on a slightly elevated piece of land below the main hill. There does not appear to be any deposit. The artefacts are scattered over ~100m in diameter and a variety of artefacts. The artefacts include the following:

- 2 Early Iron Age sherds with horizontal/ vertical incisions (could be Matola)
- a bowl
- several rim sherds:
 - with a horizontal line below flat lip (EIA)
 - 1 rounded lip with red burnish (LIA)
- A piece of cattle long bone."

Significance: The site was of medium significance

Mitigation: The site was excavated in 1996. The excavation report was not available by the time this report was submitted, but was submitted to the (then) National Monuments Council as part of the permit requirements.

2831DD 047

The site was located on a small hill in the cane field and about 200-300 metres from 2831DD 46. Site consists of a scatter of adiagnostic sherds and a piece of cattle bone. Other scatters are found between the site and the road. The site probably dates to the HP.

Significance: The site was of low significance

Mitigation: No mitigation was undertaken

2831DD 048

The site consists of a scatter of adiagnostic sherds near base of hill. The site dates to the LIA or HP.

Significance: The site was of low significance

Mitigation: No mitigation was undertaken

2831DD 049

Site is on a relatively flat area halfway up the hill. Ploughing has disturbed most of the site as sherds are scattered for some distance. Site is probably historical since many houses are shown in this area on the 1: 50 000 maps. The artefacts include adiaagnostic sherds and a smoothed river pebble."

Significance: The site was of low significance

Mitigation: No mitigation was undertaken

2831DD 050

The site consists of several small-localised scatters of adiaagnostic sherds down hill towards the tarred road - either several houses or a single site scattered by plough. These artefacts consisted of adiaagnostic sherds near top of hill on relatively flat ground.

Significance: The site was of low significance

Mitigation: No mitigation was undertaken

HIL12 and 12a

The site is a general scatter of pottery and stone tools just below 2831DD 048. The site is a scatter of artefact down the slope of the hill. The stone tools (two in total) are Late Stone Age artefacts made on quartzite.

The pottery from the site can be divided into two periods: Early and Late Iron Age. The Early Iron Age pottery occurs less frequently and one complete pot was removed. The pot dates to the Mzonjani Phase and is between 1 700 and 1 500 years old. Similar pots have been recorded and excavated in this area. The pot was lying on its side and may be part of a pit.

The most abundant pottery is thin-walled and undecorated and dates to the LIA.

Significance: The artefacts have low significance.

Mitigation: No further mitigation was required, and the complete vessel has been removed. Other artefacts were sampled.

EXX01a/b

EXX01a/b was monitored and sampled throughout 2007. In 1995, several stone tools and pottery sherds were observed. The stone tools probably date to the Late Stone Age. The sherds date to the Early Iron Age and the Late Iron Age or Historical Period. The artefacts became more numerous towards the top of the hill and we observed fragments of slag.

We surveyed along various road cuttings that went into the sugar cane field and noted two Ntshekane sherds and more pieces of slag. It appears that the main site occurs under the current sugar cane. This is the first Ntshekane period site to be recorded in the Hillendale vicinity. Other Ntshekane sites have been recorded north of Richards Bay, and this site will be useful as a comparative site.

The artefacts consist of the following:

- Various pieces of slag
- A few tuyère fragments
- Quartz and quartzite hammer stones and flakes were observed
- Pottery:
 - Mostly thin-walled and undecorated. These probably date to the Late Iron Age or Historical Period
 - A few Ntshekane sherds, of which one was thin-walled and decorated
- Stone: A few upper grinding stones
- Bone: A few fragments of (assumed) domestic bovid. These are on the surface and can date from last year backwards.

Significance: The artefacts have medium significance.

Mitigation: No further mitigation was required, and the artefacts were sampled.

The main part of EXX01a/b is a smelting site; however, we could not locate the furnace(s), or the concentrations of slag. We did excavate a furnace in 2006, and this was located within 100m of EXX01a/b. Another LIA smelting area was excavated in 2002. We presumed that the site still occurred under the rest of the sugar cane to the northeast; however no substantial finds were recorded.

EXX02:

EXX02 is located on a hill overlooking the Mhlatuze River. It consists of a surface scatter of LIA pottery as well as some pieces of slag.

Significance: The artefacts have low significance.

Mitigation: No further mitigation was required.

HIL05

HIL05 is located on a small hill overlooking the Mhlatuze floodplain. It was originally recorded in 1995 as 2831DD 038, but we extended its location. The site then consisted of several diagnostic sherds and several Middle Stone Age stone flakes. We observed similar material during the course of the year, along with some pieces of slag.

HIL05a was recorded in 2006. HIL05a and EXX02 are essentially the same site, ~100m apart. These two sites yielded Late Iron Age, or Historical Period, pottery. The site extends a further ~200m to the northwest (called HIL05b) and north (called HIL05c). HIL05b consists of thin walled pottery and small fragments of slag, while HIL05c consists of an ephemeral scatter of pottery.

The above sites occur on the same hill and the Iron Age components are probably contemporary. The occurrence of slag suggests that the Iron Age part of the site dates to the early Historical Period, or the Late Iron Age.

EXX09

EXX09 is a scatter of adiagnostic pottery, a few faunal remains, and a small piece of slag. The site probably extends further uphill (east and northeast) and underneath the sugar cane

Significance: The site is of low significance.

Mitigation: No further mitigation is required.

EXCAVATIONS

2831DD 44

Exxaro approached the ICRM to complete archaeological excavations at their Hillendale Mining Plant, in February 2002. This was the last of a series of sites regarded as having archaeological significance, and that would have been affected by mining activities. The excavations at 2831DD 44 (originally named Hill10) were undertaken in June 2002³.

2831DD 44 is located on the northern parts of the hill overlooking the Mhlatuze River (Valley) and Lake Chuba. Esikhaweni is located approximately 5km toward the southeast. The site dates mostly to the early second millennium AD (c AD 900 – 1100), although some artefacts pre-date and post-date this main period of occupation.

³ The original report with tables and figures was not available by the time this report was submitted. The original report has been lodged with the Natal Museum and the national monuments Council (now KZN Heritage in KZN).

METHOD

We resurveyed the site locating areas of artefact concentrations, once the land had been cleared of sugar cane. These areas were demarcated as areas for potential excavations.

A total of 12 squares were excavated to an average depth of 50 cm below the surface. Each square was excavated in 10 cm spits where there was no visible stratigraphy. Alternatively, different lenses were removed as a whole where stratigraphy was visible. The basal sand tended to be a dark reddish-brown clay-like soil suggesting the beginning of the Berea Reds. Above this layer is a brown-red layer varying between 30 cm and 70 cm in depth. This is the archaeological deposit and occurs just below the topsoil that varies between 10 cm – 20 cm in depth.

Excavated squares were also placed over the site to locate some form of spatial patterning of the site. However, parts of the site have been previously damaged by housing developments to the east.

ARTEFACTS AND FEATURES

Various artefacts were recovered suggesting that the site is a metal working area rather than a domestic area.

Pottery

The pottery from the site can be placed into three Phases of the Iron Age: two from the Early Iron Age (Ndongondwane and Ntshokane), and one from the Late Iron Age.

The Late Iron Age pottery is characterised by thin-walled sherds of which some have a “wart”, and/or a reddish-brown burnish.

Most of the Early Iron Age pottery was located near upper excavated squares, and two sherds are in direct association with the furnace. The Ntshekane sherds are the most frequently occurring sherds on the site. This suggests that the majority of the occupation belong to the Ntshekane Phase. The Ndondondwane sherds tend to occur on the upper slopes of the site (the southern end). Alternatively, the site is at the interface between the Ndondondwane and Ntshekane Periods.

Stone

The main types of stone recorded at the site are upper grinding stones and hammer stones. These artefacts are consistent with iron smelting sites.

Bone

Very few faunal remains were recovered. Those that were observed came from the upper horizons and are probably more recent in age.

Marine Shell

Some marine shell was recovered along the northeastern parts of the site. These were initially only observed on the surface, and the areas were excavated to expose shell middens. However, I did not observe any shell middens below the surface.

Metallurgy

The main type of metal working activity on this site was for iron production. There are several concentrations of slag on the slope of the hill, and the main excavations were located in these areas.

The metallurgical-related artefacts included slag, iron, and furnace fragments. No iron artefacts were recovered, however this is to be expected as the soil is too acidic to preserve iron artefacts.

Special Finds

Few special finds were recovered. These include:

- A ceramic pipe
- A possible figurine fragment

Furnaces

Only one furnace area was recorded with two possible furnaces, in the Square 1A – C area. The area appeared approximately 25 cm below the surface in a noticeable ashy-grey soil (named SPGS) and a Brown Sand in a Slag Pit (SPBS). This ashy-grey soil varied between 5 cm and 20 cm in depth, and is above the red clay-like soil. The furnace itself is very fragmented due to sugarcane farming and the acidity of the soil. The furnace is “visible”, however, through a large pit in an oval shape. The pit is ± 45 cm deep, and was excavated into the red clay-like sand.

This pit is filled with SPGS, and a large quantity of pottery, fire-cracked rocks, furnace fragments, slag and iron ore are situated beneath it. Parts of the furnace wall are visible in the south section. These fragments indicate that the profile of the furnace was in an oval shape.

Approximately 50 cm to the east of this furnace is another small slag feature named SPBS. This feature consists of slag, tuyères, some iron ore, hammer stone fragments, and pottery in an ashy-brown soil.

DISCUSSION

The site was excavated due to its potential for iron smelting features. The original report indicated that the site would date to the Late Iron Age. The site

was considered significant as few late Iron Age furnaces have been excavated in this region.

The excavations revealed that at least two occupations occur at the site. The upper occupation dates to the Late Iron Age, and it is consistently in the upper 20 cm of the deposit throughout the site. The second (and older) occupation mostly dates to the Ntshokane Phase of the Early Iron Age (c. AD 850 – AD 1100). The latter occupation is directly associated with the furnaces. No intact features were recorded due to the poor preservation of the furnaces. However, the furnace area appears to conform to the standard practice of two furnaces besides each other.

The excavation was stopped as it was unlikely to have yielded further information, or intact features, regarding iron smelting for this period.

HIL20

HIL20 is located on the south of the road from the Harbour Lights resort. It was exposed during previous road cutting activities and noted by Exxaro staff. The site consists of a single, partially exposed furnace, in the road cutting, under sugarcane and a termite mound, as well as a variety of potsherds in the vicinity. Both Early and Late Iron Age sherds are located in this area and thus the furnace can only be dated to the last 1 700 years. However, the furnace and the potsherds are most likely in association with a nearby, previously recorded, Early Iron Age site⁴.

METHOD

The main furnace was still imbedded in the road cutting, under a termite mound and below the sugarcane. We removed the sugarcane above what was

⁴ More Early Iron Age sherds are located in this area.

surmised to be the extent of the furnace. The termite mound was excavated to the level of the top of the furnace and then the remaining soil was cleared away to reveal the outline of the top of the furnace. A platform was dug into the road cutting below the furnace and the termite mound was removed to the exposed furnace wall.

Samples of the slag were taken, as well as soil samples, clay samples, ash samples and a charcoal sample (for use in C14 dating). Samples were also submitted to the Hillendale laboratory for analysis.

We decided to divide the furnace into four quadrants, as the furnace walls were friable. This would allow for removal of the furnace whilst still keeping the wall as intact as possible. It would also allow the walls to be re-assembled at a later stage. Even with these precautions, the wall still collapsed.

A digital record (photographic and video) was taken of the excavation.

THE FURNACE

The furnace was only partially exposed by the road cutting and a termite mound surrounds it (fig. 5). The rim of the furnace appears to be a circular/oval hole was dug into the ground and lined with clay, and then hardened with use. This is unlike other (Early) Iron Age furnaces in Kwa-Zulu Natal where the wall varies from 5 cm to 15 cm in thickness

The furnace wall consists of fire-hardened clay, with a max. diameter of 80 cm at the top (fig. 6). The furnace wall is approximately 5cm wide at the top and gradually becomes thinner until it is almost non-existent at the base. The base of the furnace consisted of small fragments of slag, a single large piece of bloom, compacted grey ash and some charcoal. The tuyères were located near the top of the furnace.

The furnace as a whole yielded very few large pieces of slag, two pieces of bloom and tuyère fragments. There is a minimum number of two tuyères.

The low frequency and weight of slag and tuyères suggest that this may be a smithying site and not a smelting site – see Table 2.

TABLE 2: LIST OF ARTEFACTS & WEIGHTS FROM HILL20

ARTEFACT	TOTAL
C14 Sample	1 (approx. 20 grams)
Soil Sample	1
Soil Sample from outside furnace wall	1
Ash Sample	1
Tuyères	3.12 kg
Furnace Wall NW Quadrant	3.05kg
Furnace Wall NE Quadrant	4.91kg
Furnace Wall SW Quadrant	5.71kg
Furnace Wall SE Quadrant	2.77kg
Total Furnace	16.44kg
Slag Sample	4.93kg

FIG. 5 INTIAL VIEW OF HIL20 FURNACE



FIG. 6: PROFILE OF THE HIL20 FURNACE





The furnace is a rare example of Early Iron Age metalworking. This type of furnace shape is unrecorded. Samples of slag, soil, ash and clay were removed and a full photographic record of the excavations exists.

No further excavations will occur on the mine, unless there is an unforeseen site or human grave.

CONCLUSION

The management plan for the Exxaro Hillendale was a relatively straightforward plan. The original 1995 survey noted those sites that occurred on the hill, and certain sites were excavated that would be permanently damaged. Thereafter the areas were monitored on a semi-regular basis that was dependant on the pace of the mine. The monitoring occurred from 2001 – 2010.

During the monitoring phase, several new sites were observed, while original sites were resurveyed and resampled, and one site was excavated.

The last survey took place in June 2010 as no further new areas will be opened. Umlando will still undertake emergency excavations if needed at the Hillendale mine. The Heritage Impact Assessment, and its mitigation, for the Exxaro Hillendale Mine can be considered completed.