

**The Archaeological Surveys and Excavations of the
Zulti North Mining Lease**

For Richards Bay Minerals

2018 Annual Report

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Resources Management**

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Abbreviations

HP	Historical Period
IIA	Indeterminate Iron Age
LIA	Late Iron Age
EIA	Early Iron Age
ISA	Indeterminate Stone Age
ESA	Early Stone Age
MSA	Middle Stone Age
LSA	Late Stone Age
HIA	Heritage Impact Assessment
PIA	Palaeontological Impact Assessment

GENERAL AGE. GROUPS. DATE

Period	Pottery Group	Associated language/people	Years ago
ESA	N/A	Foragers/hunter/gatherers	1.5 million - 250 000
MSA	N/A	Hunter gatherers	250 000 – 30 000
LSA	N/A	San Hunter gatherers	30 000 – 2 000
EIA	1	Mzonjani	1 700 – 1 500
EIA	2	Msuluzi	1500 - 1300
EIA...	3	Ndondondwane	1300 – 1100
EIA	4	Ntshekane	1100 - 900
LIA	5	Blackburn/Mpambanyoni	900- 700
LIA	6	Moor Park	700 - 500
LIA	7	Thembi-Tsonga	500 – 250/300
Historical	Groups 8,9	Mthiyane /Sokhulu	200 – present

ESA = Early Stone Age

MSA = Middle Stone Age

LSA = Late Stone Age

EIA = Early Iron Age

LIA = Late Iron Age

INTRODUCTION

Umlando is contracted by Richards Bay Minerals (Pty) Ltd to undertake archaeological surveys and excavations in the Zulti North mining lease. The mining lease is located north of Richards Bay, KwaZulu-Natal and occurs along the eastern seaboard. (Fig.'s 1 - 2).The program consists of bi-monthly surveys, while excavations occur when needed. The archaeological program has been in progress at RBM Zulti North since 1995.

A total of 5 new sites were recorded in 2018, while several sites were continuously monitored and sampled. One site was excavated and others have been noted for future excavation. It appears that MPE and Red Dunes still continue towards archaeologically sensitive areas and MPC remains in an area that has been partially mined by dry mining. MPA and MPD did not progress far in terms of distance in 2018.

There have been at total of 467 archaeological sites recorded in the Zulti North mining lease since 1995. This number excludes large sites that have been subdivided. Most of these sites date to the Late Iron Age and Historical Period, while a few date to the Early Iron Age. Three San hunter-gatherer sites have been recorded and/or excavated. These sites are rare in the dune system as they tend to be ephemeral or assumed to be Iron Age sites.

The excavation results have yielded an increase in general sample size of faunal remains, shellfish species data, such as mean sizes and density. These have relevance to contemporary research. The excavation also continued to yield results that are different to previously excavated sites. The importance in the excavations is that there is a very tight sequence over the last 1700 years in the dune system. That is, the sites will eventually give a near continual coverage of the last 1700 years in the dunes. It is rare to cover a long continual period in a well defined area. The excavation of five human graves from the same site is very significant as it opens research options.

FIG. 1: LOCATION OF THE ZULTI NORTH MINING LEASE

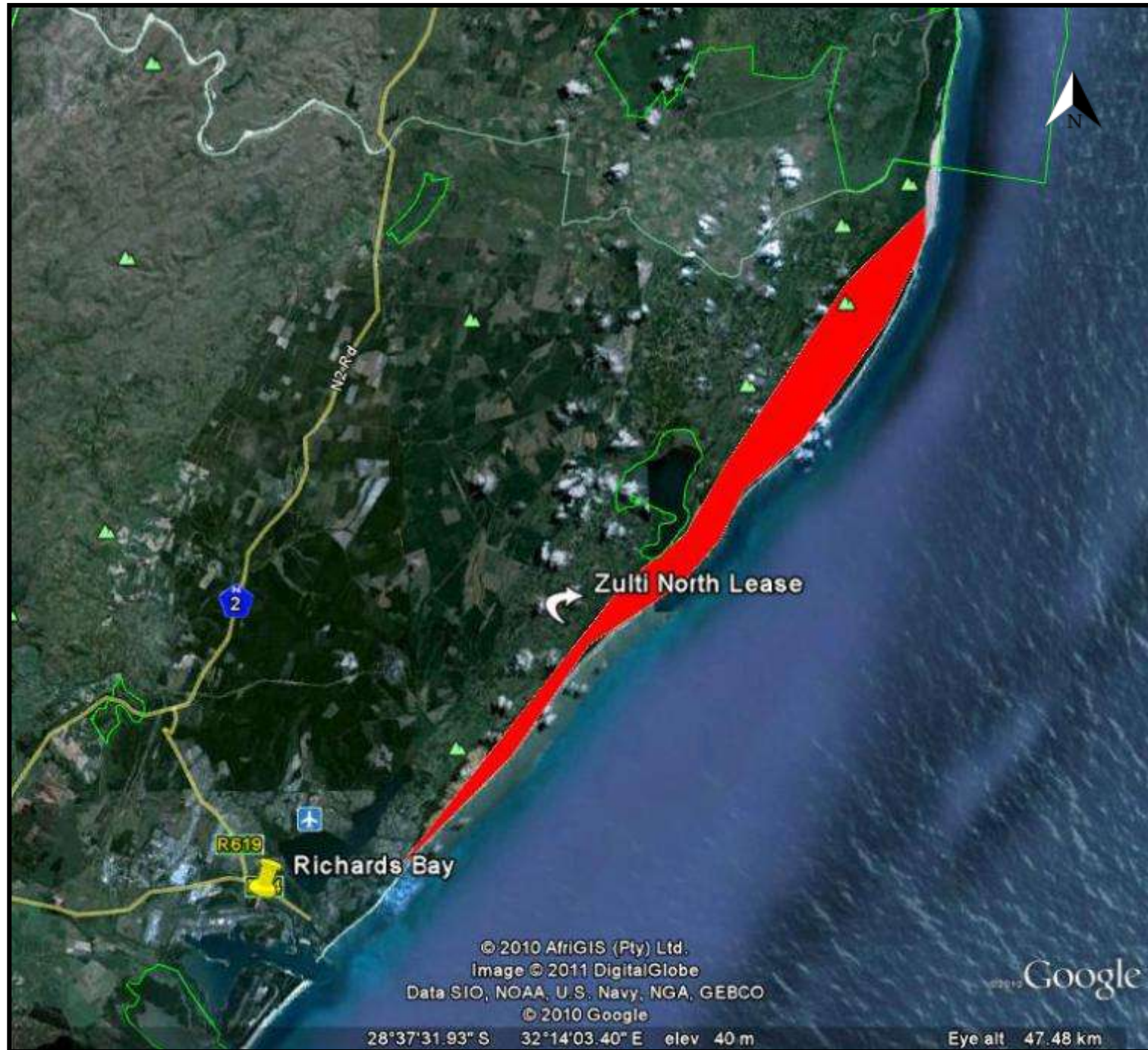


FIG. 2: LOCATION OF RECORDED ARCHAEOLOGICAL SITES IN THE MINING LEASE



METHOD

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, especially pottery. Sites of medium significance have diagnostic artefacts and these are 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 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. We attempt to recover as many artefacts from these sites by means of systematic sampling, as opposed to sampling diagnostic artefacts only.

Defining significance

Archaeological 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?
 - 3.2.1. 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.

The more a site can fulfil the above criteria, the more significant it becomes. Test-pit excavations are used to test the full potential of an archaeological deposit. These test-pit excavations may require further excavations if the site is of significance. 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.

RESULTS

SURVEYS

Often sites are covered by vegetation during a survey and thus their extent is estimated. We continue to monitor the site until it is mined and update the records accordingly. Some sites are not photographed as the dense vegetation does not allow for any representation. All diagnostic pottery, unique finds, well preserved faunal remains, and occasionally shell, is sampled from each site regardless of its significance. The sampling strategy allows for most sites to be represented since dune mining will destroy the entire site. It is also for this reason that sites with intact middens and/or deposit are targeted for excavations, since few of these remain intact after bush clearance.

Most sites are photographed, except those that have been widely dispersed and the general shape of the hill has been changed.

MINING POND A

No new sites recorded. MPA is currently going through previously mined area. Access to the dune face is extremely difficult.

MINING POND C

No new sites recorded. Mining Pond C is mining an area that has been cleared by dry mining. That is, dry mining has removed the upper 20m+ of the dune.

MINING POND D

No new sites recorded. MPD has been mostly at a standstill for the year.

MINING POND E

MPE ha not moved far in 2018 mainly due to a very tall dune, and logistical problems on the east and western sides of the plant.

MPE175

MPE 175 is located on the first high dune cordon from the ocean side. It consists of two shell middens of brown mussel, oyster and whelk, and an extensive scatter of artefacts including Group 5/6 pottery and upper grinding stones.

The site is of medium significance due to the possibility of human remains and was sampled. It will be monitored for as long as it remains possible.

MPE176

MPE 176 is located on the second dune cordon from the ocean side. It consists of a small brown mussel scatter and is of low significance.

No further mitigation is required.

MPE177

MPE 177 is located on the eastern edge of the Red Dunes before the main dune cordon begins. The site was noted by bush clearance who then notified Umlando via the correct channels. The midden is very well preserved and contains the remains of a hippopotamus. The sensitive area was demarcated and permission to clear the

rest of the site was given. We did note that there is a very high chance of finding human remains at this site.

The site is of high significance and was excavated in 2018. See **EXCAVATION**.

Subsequent to demarcating the poles had been removed and a vehicle and bulldozer had driven over part of the site. This happened again during excavations and no-one admitted to disregarding the site. As a result new poles with red and black marking were introduced to indicate archaeological sites. The second occurrence took us two days to reset and clear the site.

MPE178

MPE 178 is located on the Red Dune/ normal dune interface, on the first dune cordon from the ocean and northwest of MPE 177.

The site consists of a small brown mussel midden on the side of the road. It is of low significance and no further mitigation is required. However, we will continue to monitor it during surveys.

RED DUNES

The area was originally referred to as “Red Dunes” on the 1942 1:50 000 topographical map and we have retained the name for historical reasons. It is the dunes inland of the main mining area that have a distinctive red appearance, presumably from a high mineral content. We are discussing these dunes with two RBM geologists as the archaeological material can be used to provide a relative date for these specific dunes. There is one area of the dunes that has a high concentration of stone tools. These tools date from the Early, Middle and Late Stone Ages. The important date is that of the Early Stone Age. This Period is not older than

1.5 million years. Since we are finding artefacts of this age in the dunes it means that the Red Dunes predate 1.5 million years in age.

RD040

RD 040 is located on the interface of the Red Dunes and the first dune cordon from the ocean side.

It consists of a small brown mussel midden in the platform cutting. It is of low significance and no further mitigation is required.

MONITORING

MPD Dry Mining

On Friday, 8 June 2018, we were called out to the MPD Dry mining area where human remains were found in the sieves. We removed the visible remains from the debris pile and then moved the remaining debris pile to a safer area where we monitored it over the next week and recovered most of the remains (fig. 3). Only the cranium, long bones and a few ribs were recovered.

We have since associated the remains with MPD84b.

MPD84b is a historical site which we recorded in November 2009. The skeleton belongs to the local community.

FIG. 3: MPD DRY MINING



RD036 & RD037

These two sites were monitored as they are being cleared for mining. Previous surveys noted possible human remains at RD 036, while RD037 was excavated in 2017. Several late 19th to early 20th century bottles have been found at both sites making them contemporaneous. These bottles (fig. 4) are of a similar age as the bottles found directly above the dunes at MPE 184b. These bottles included.

- Roses lime
- Case gin
- Beer
- Medicinal
- Soda water

On one of the monitoring days we noted a few human remains. These included a radius and ulna, phalanges, and a few carpals. A few vertebrae fragments were located ~2m away (fig. 5). No burial occurred in this area. It appears as if the burial originates uphill near the middens, and was subsequently pushed (and spread) by the bulldozer. Unfortunately, the rest of the remains are probably underneath a large sand pile, with little chance of being recovered. A few more human bones have been collected during later surveys.

The human remains belong to the community.

FIG. 4: GLASS BOTTLES FROM RD036 AND RD037



FIG. 5: HUMAN REMAINS AT RD036



EXCAVATIONS

This is a brief summary of the excavated finds and is not meant to be a full analysis, as that is beyond the scope of work of this project.

All shell middens are excavated in their entirety when undisturbed. However, we select the best example of each lens in a square and bulk sample these. Bulk sampling implies that every artefact and ecofact is sorted and curated for storage. Normal sampling would only keep the important finds (such as pottery, charcoal, bone, adornments), shell measurements are taken, but the shell itself is discarded after sorting and weighing. This is a standard practice for shell midden excavations and is aimed at reducing for storage space at the relevant institutions.

MPE 177

MPE 177 is located on the eastern edge of the Red Dunes before the main dune cordon begins. The site was noted by a bush clearance team who then notified Umlando via the correct channels. The bulldozer had started to expose a shell midden when it was noticed. Work was halted and the site was assessed by Umlando. The midden is very well preserved and contains possible crocodile and/or hippopotamus bones.

The sensitive area was demarcated and permission to clear the rest of the site was given. We did note that there is a very high chance of finding human remains at this site. The site was marked for excavations in 2018/2019.

Initial excavations started in October 2017 for about a week; however, we then had to change plans for emergency excavations at RD037 and skeletons at MPE170f. Excavations continued for two weeks in June 2018 and then again for four weeks throughout September 2018, concluding at the end of September 2018.

EXCAVATIONS & STRATIGRAPHY:

The site was divided into 112 1m x 1m squares in total of which only certain areas were excavated (fig. 6 - 7). The plan was to excavate two intersecting lines across the site that would bisect the settlement. The shell middens occurred at the edge of both transects. The shell middens were excavated stratigraphically, while the rest of the site was excavated in 10cm spits. A total of 46 1m x 1m squares were excavated.

The middens were exposed by removing the overburden of shell from the bulldozer activity. In the case of the first midden we realised that only a small portion of the midden was still *in situ*, the largest part of the midden was pushed over during bush clearance and was removed as Overburden. The second midden appears to be separate from the main midden; also much more dense and rich in artefacts.

FIG. 6: SITE PLAN FOR MPE177

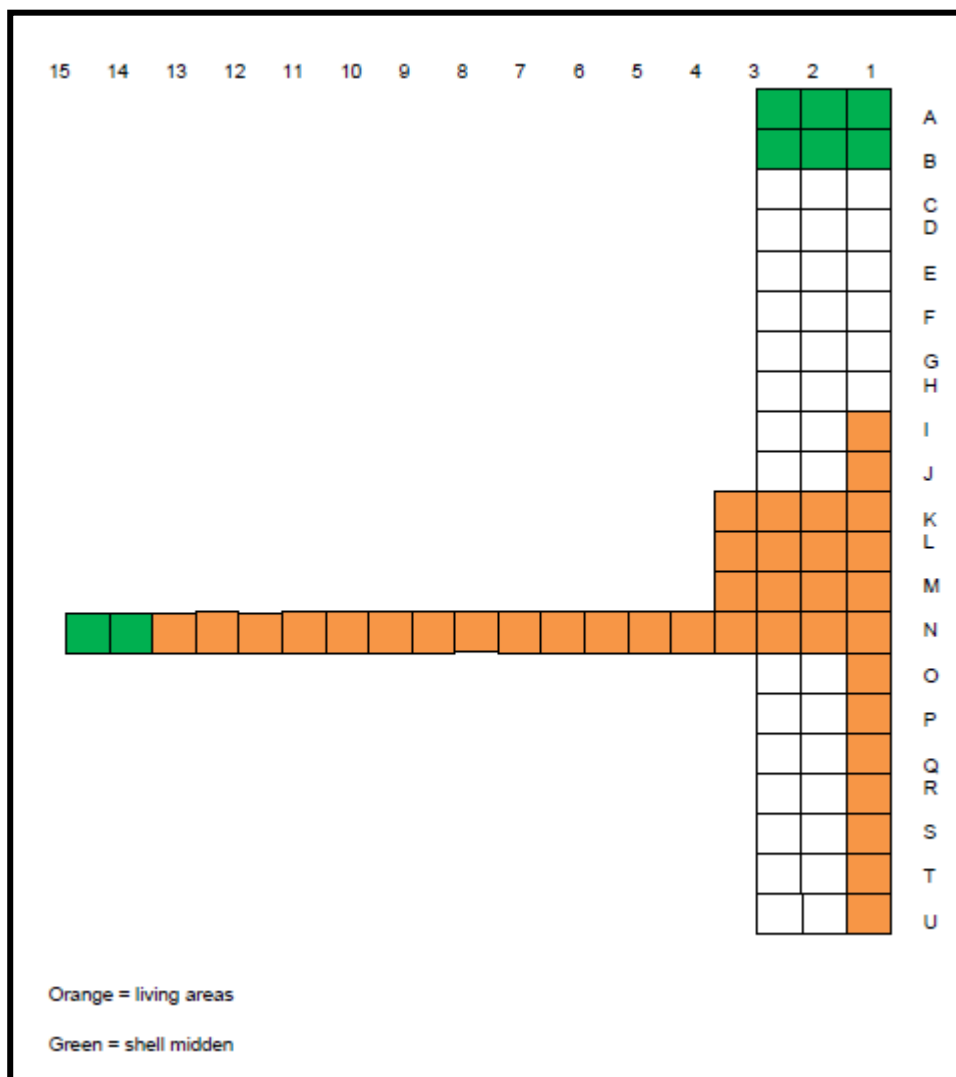


FIG. 7: MPE 177 SITE LAYOUT



Rows A and B were excavated in 1m x 1m squares with 50cm x 50cm quadrants.

During the 2018 excavations four lenses were removed. The soil above the middens had mostly been removed by bush clearance activity. The middens were located in Squares A1-3, B1-3, O14 and O15. The middens were compacted and fragmentary on the edges. This is a partially a result of the bush clearance and the basin shape of the midden: a few animal burrows also occurred in the middens, as well as tree roots.

Lens 1 occurred in Sq A1-3 and also in Sq B3. It is a very thick lens, mainly *P. perna*, in dark and ashy sand. Lens 1 was divided into a Lens 1 A, Lens 1B and Lens 1C. Lens 1A was characterised by fragmented *P. Perna*. It was lying on top of a layer of semi-whole *P. Perna* which was excavated as Lens 1B. Lens 1B was above another layer of fragmented *P. Perna*, excavated as Lens 1C. They are most likely the same general lens, but the stratigraphy was clear and they were separated because of this. We also excavated a partial Lens 2 before coming to the conclusion that Lens 2 is in fact just overburden from bush clearance. Figures 7-8 show these lenses.

FIG. 8: SQ A2 EAST SECTION



The second midden area was located 17m southeast of Lens 1, in Sq O14 and O15. Lens 3 and Lens 4 occurred in both squares, while Lens 4 only occurred in Sq O14. They are very different from Lens 1 and Lens 2 in that there are noticeably more oyster and burnt shell (fig. 9). In general both lenses occur in grey and ashy sand. Lens 3 had a small pit with pottery and bone.

FIG. 9: SMALL PIT IN LENS 3, SQ O15



The site slopes radically towards the west and gets thicker towards the south and east. The slope is natural, but we assume the site being more dense and thick towards the south and east is simply because it is less disturbed on that side. Figure 10 shows this line

FIG. 10: MPE 177 O-LINE



FINDS

In general, *P. perna* dominate the weight of ecofacts and artefacts from the site. The entire midden was almost exclusively *P. perna*. If *P. perna* is excluded, then the high occurrence of faunal remains and daga flooring is more obvious. The occurrence of ferruginised iron ore on the surface also suggested that there could have been metallurgical activity at the site.

The summary of the finds is given in Table 1 and Figures 11 - 12.

TABLE 1: SUMMARY OF EXCAVATED FINDS AT MPE177

Buckets	For shell middens	liters	1560
		m3	1.56
Bone	Bone	g	5035
	Fish	g	25.5
Daga		g	2651
Iron ore		g	82
		n	4
Stone	water worn stone	g	2377.5
	Upper grinding stone	g	2978
			10
	LGS	g	716
		n	6
Nassa.	'Beads'	n	6
Coral		g	254
Charcoal		g	70.05
Glass bead		n	1
Shell	Worked shell	g	11
	Limpets	g	2
	Other shell	g	459
	P. perna left	n	10123
	P. perna Right	n	10699
	P. perna fragments	g	221971.5
Pottery	(grams)	g	6388.5
Total	Weight	g	243029.1

G = grams; n = number

FIG. 11: SUMMARY OF EXCAVATED SITES

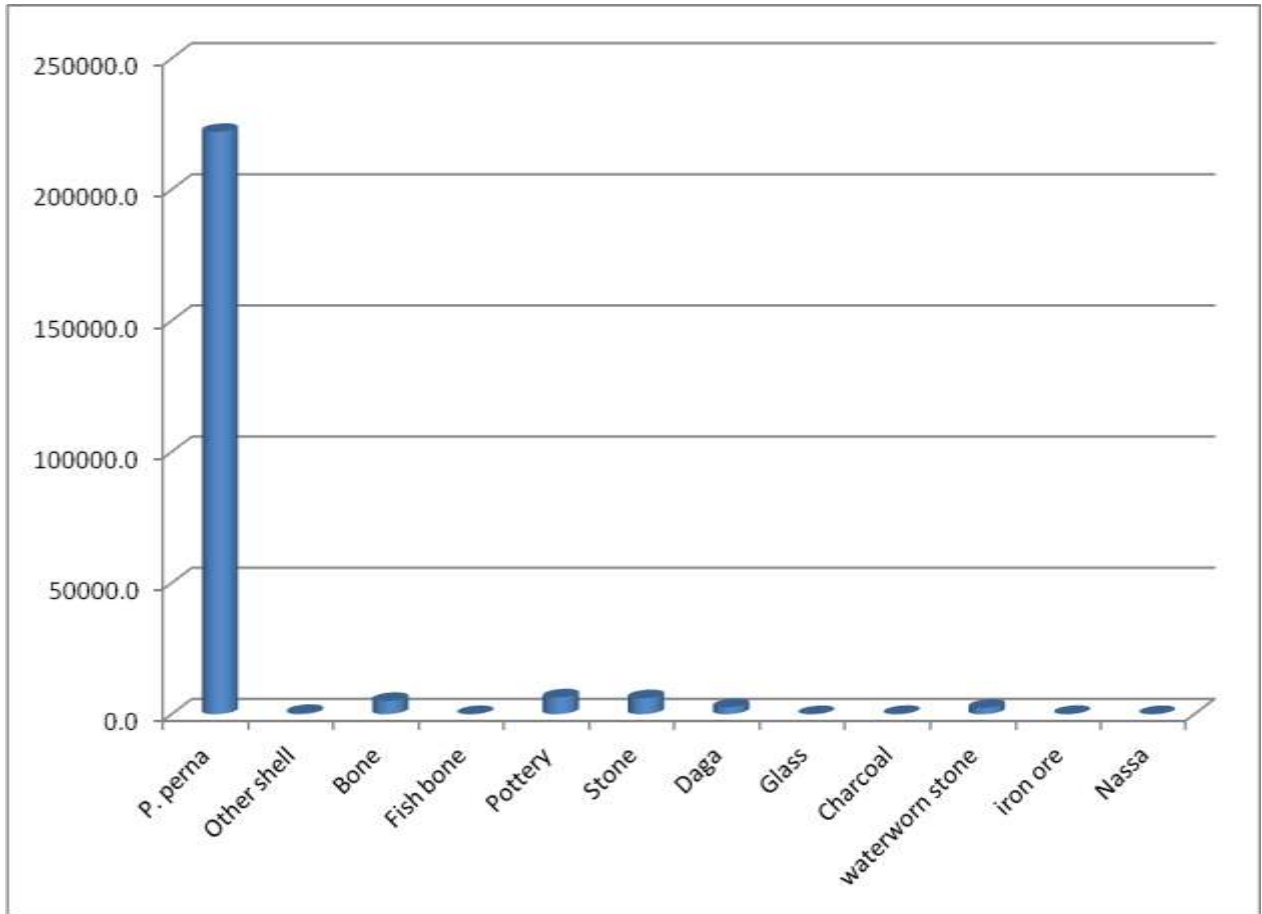
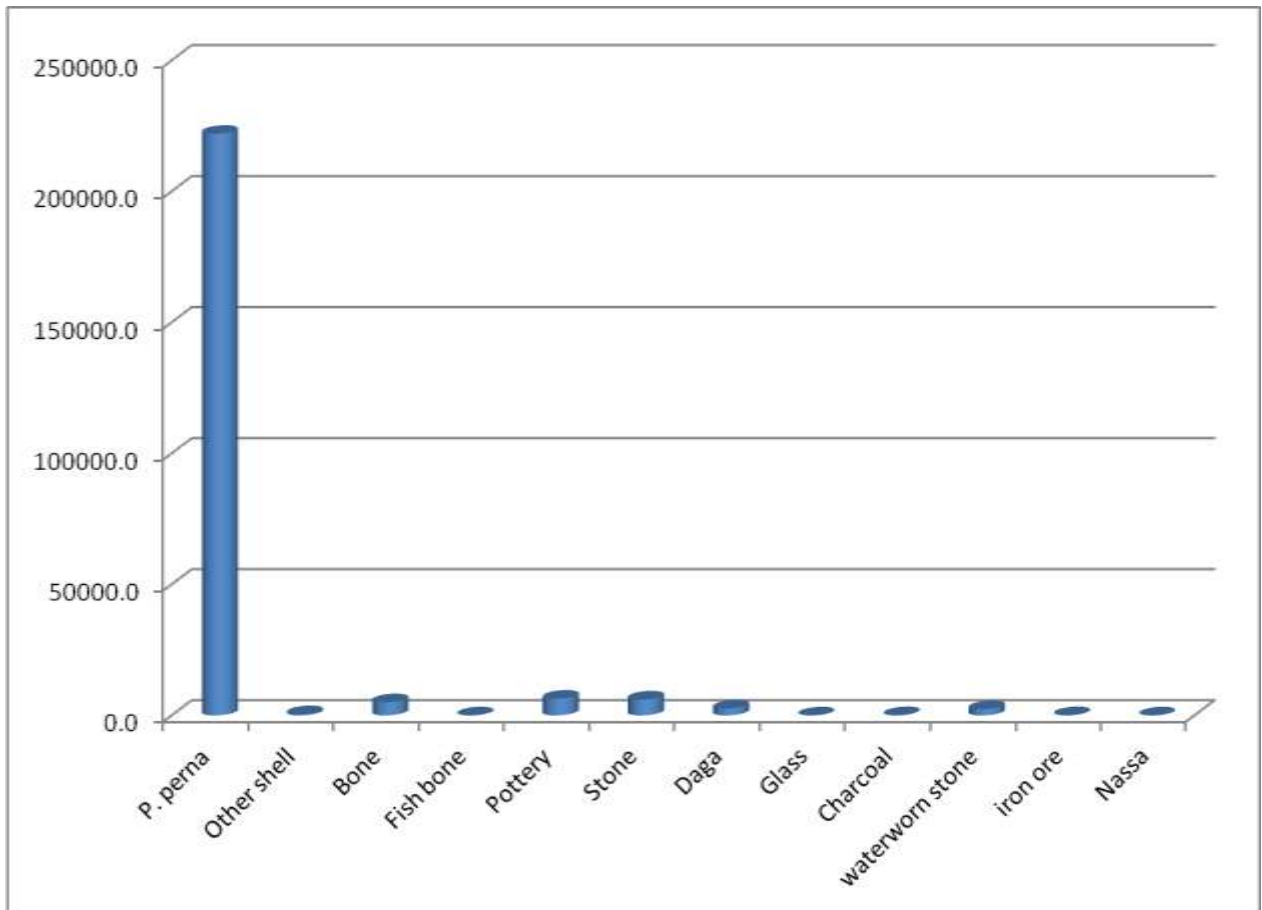


FIG. 12: SUMMARY OF EXCAVATED SITES WITHOUT P. PERNA



Faunal Remains

One of the main reasons for choosing the site for excavations was the variety of well preserved faunal remains on the surface. These included possible crocodile, hippopotamus and bovid bones. Only one other site has had definite crocodile remains and that was the 2 – 4000 year old Shark Tooth midden. The bones from the excavations were mostly domestic cattle bones, however they did include the following in much smaller amounts:

- Bird
- Hippopotamus
- Wild boar, or bushpig
- Small bovids
- Fish

Only 25g of fish bone was excavated. This is very little compared to sites that we have excavated more recently.

Charcoal

The charcoal remains were sparse in these excavations and mainly came from the Squares O14 – O15 area. These fragments should be used with caution as they might be contaminated with recent charcoal. Charcoal is the best material for radio carbon dates. This is one of the reasons why intact middens are important as we can determine if the charcoal sample is *in situ* or intrusive.

Stone

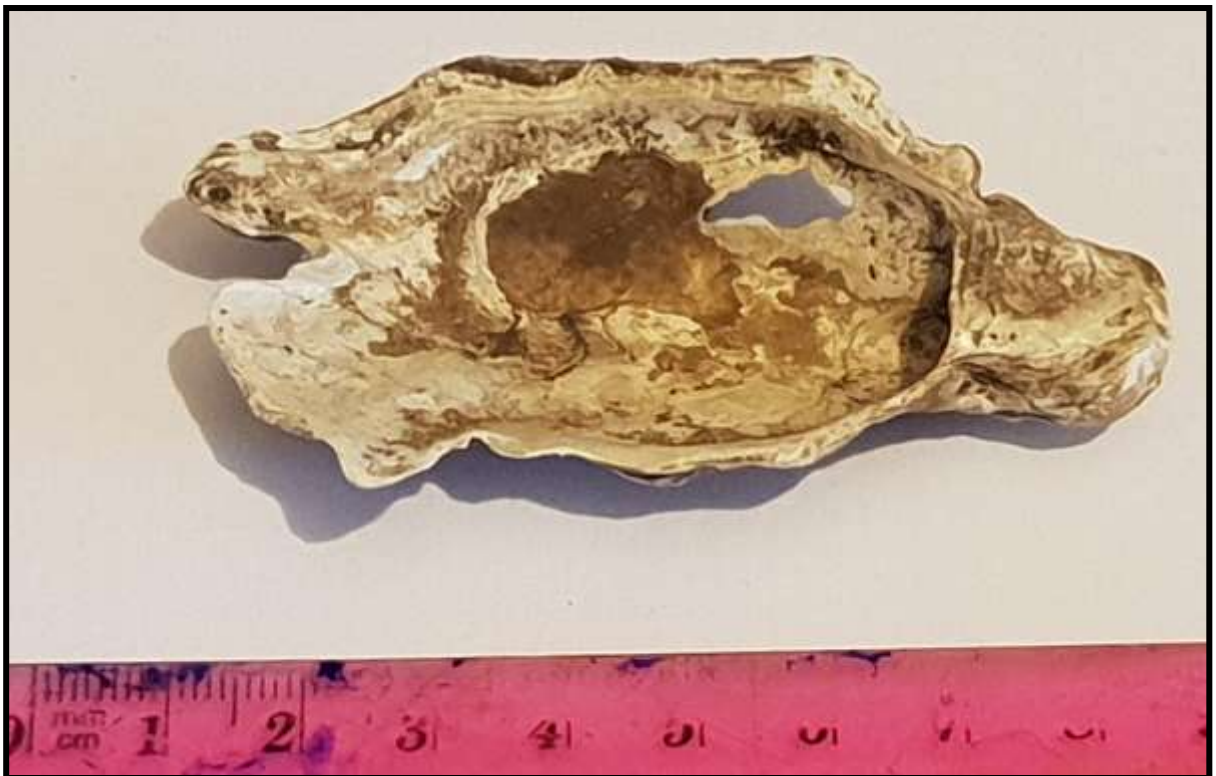
The lower grinding stones are made on white beach sandstone. The fragments did not resemble maize or sorghum grinding stones. All of the upper grinding stones are from quartz pebbles. Some of these have been used as hammer stones. Upper grinding stones of various sizes were noted throughout the site, including one that was used for sorghum.

Small finds

Only six nassa beads came from the middens. These are either part of the shell midden or discarded broken beads. An oyster fragment had been shaped into spoon-like object (fig. 13). The edges had been smoothed to a flat surface.

A single red and blue glass bead came from the N3 – N5 area.

FIG. 13: OYSTER SPOON FROM MPE177



Pottery

The pottery decorations are as follows:

- Rim/Lip:
 - Slightly everted
 - Straight
 - Oval lip impressions
 - Semi-circular lip impressions
 - Thin oblique notching
 - Vertical notching
 - Single groove along the base of the rim
- Decorations
 - Double horizontal row of circular impressions on neck
 - Circular impressions: single horizontal row, single horizontal row with oblique and vertical row, curved single row
 - incisions on outer lip, single row of oblique shell impressed, with single horizontal band on neck
 - Double vertical row of circular impressions
 - single discontinuous row of circular impressions on shoulder
 - Double row of vertical circular impressions on neck
 - rectangular impressions in middle of straight lip
 - Shell-impressed on body with single horizontal line on neck, single horizontal line on neck, rim notching and punctates. Diagonal grooves on body
 - Shell impressed on neck
 - very thin pot

There are several undecorated pots.

The decorated pottery from the site is predominantly related to Thembi-Tsonga pottery, or Group 7. The various shell-impressed motifs are typical to this grouping. There are however, several Group 6 decorated shards within this sample. One shard had a combination for the two decoration styles. This suggests that the site might date to an interim period between group 6 and 7 pottery styles.

Shell

The shell remains are predominantly those of *P. perna*, with some very few oysters. Only two *S. capensis* were found in the middens. The ranges of other shell species normally associated with these middens occur as well. Only two measurable *P. perna* were excavated. These were 95mm and 105mm and appear to be the general size of many of the mussels. Most were however broken due to bulldozer activity.

Daga floor

A very fragile daga floor was located in Squares M3 and M4 area (fig. 14). This is the first semi-intact daga floor found in the dunes so far. Several fragments have been found, but never as a floor. A complete pot and fragments of a warthog/bushpig mandible and teeth were noted on the floor. The stone used for smoothing the daga floor was also found near pot.

FIG. 14: DAGA FLOOR AT MPE177



PITS

Two pits were excavated in squares R1 and R2. Pit 1 was 65cm wide and 25cm deep. It contained pottery, faunal remains, and some charcoal. The pit was marked as a patch of black sand (fig. 15). No artefacts occurred outside of the square. Pit 2 occurred in square R2 and was 68cm wide and 15cm deep (fig. 16). The soil was black in colour, and no artefacts were found. Some daga fragments were found outside of the pit.

FIG. 15: PIT 1 SQUARE R1



FIG. 16: PIT 2 SQUARE R2



In general the excavations did not yield as much as we expected it would. However, the results were still important. Many of the shell middens in this part of the mining lease tend to have a wide variety of edible shellfish, whereas MPE177 was predominantly *P. perna*. The midden in the O squares shows a slight increase in oyster consumption. The uniformity in shellfish selection is in itself interesting.

The faunal remains yielded hippopotamus and possible crocodile tarsals/carpals, bird, small bovid and large bovid remains. Many of the bones were removed *in situ* and can thus be used for radiocarbon dating due to the lack of charcoal. The means for dating is important as the on decorated pottery shard had both Group 6 and Group 7 decorations: Moor Park to Tsonga pottery styles. This could mean that the site occurs at an intermediary stage and this is the first recording of such a pot.

The excavations at MPE 177 have been completed. The area was monitored until it was mined.

CONCLUSION

A total of 5 new archaeological sites were recorded in 2018, and one site was excavated. Many of the sites from 2017 were also monitored during the year and sampled when necessary. The sites dated from the Early Stone Age to the early 20th century and form part of an increased sample size of archaeological sites in the mining lease. Early Iron Age sites appear to have decreased in occurrences, while there is an increase in Late Iron Age and Historical Period sites. This is, however, due to the location of the mining operations that are currently concentrating on taller dunes, which were favoured by the latter settlements. There should be an increase in Early Iron Age sites once MPE extends along the lower areas north of Sokhulu Reservoir.

The current heritage mitigation is still uncovering new finds, and increasing data to the general heritage of the area. The low numbers of recorded sites in 2018 is

mostly due to fewer areas being cleared for mining, not due to a decrease in potential finds.

Shell middens, and their surrounding areas, are always targeted as these yield better preserved artefacts and human remains. The increase in faunal remains assemblages is important for the eventual reconstruction of the animal species over time in this area. Smaller mammal and bird remains would also be informative, as would be the smaller shell species that are palaeo-environmental indicators. The coral fragments, limpets and even the *P. perna* have potential for scientific research if the isotopes are analysed, e.g. in sea temperature changes over time. The *P. perna* size measurements have use through not only indicating human harvesting patterns through time, but also the impact this may have made on the shellfish populations. This in turn would have relevance for more recent impact studies undertaken brown mussel exploitation KwaZulu-Natal and further afield. Some of the research (e.g. Proudfoot et al, 2006) suggests that there is a significant change in species size over time due to human exploitation. The archaeology tends to suggest that the opposite. It is important that the shell middens along the eastern seaboard are systematically sampled and excavated as these have relevance to contemporary research (see research undertaken by the Oceanographic Research Institute (<http://www.seaworld.org.za/research/>) as one example. The sampling and excavations of these middens is also important in that dune mining removes the entire midden during operations, and thus the material is lost forever.

The proposed genetic DNA study with the Universities of Uppsala and Johannesburg is still in the initial stages of development.

REFERENCES

Oceanographic Research Institute 2014. <http://www.seaworld.org.za/research/>

Proudfoot, L., Kaehler, S. McGarry, D. , Uppink, P. Aereboe, M and Morris, K. 2006 Exploitation status of infralittoral abalone (*Haliotis midae*) and alikreukel

(Turbo sarmaticus) in the southern section of the Eastern Cape coast. *South Africa. South African Journal of Science* **102** 162 - 168

APPENDIX A
SITE RECORD FORMS

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

SITE CATEGORY:

Stone Age	ESA:		MSA		LSA		ISA	
Rock Art	Paintings		Engravings		Other			
Iron Age	EIA:		LIA	x	IIA			
Historical	Historical Period:		Recent Past (last 60 yrs):					

Recorder's Site No.: MPE 175

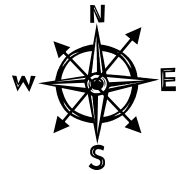
Official Name:

Local Name:

Map Sheet: 2832CA St Lucia

GPS reading: S: 28° 31' 49.1" E: 32° 22' 45.1" Alt: 100m

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION



MPE 175 is located on the first high dune cordon from the ocean side.

SITE DESCRIPTION:

Type of Site: Open. Midden

Merits conservation: Yes. The site is of medium significance due to the possibility of human remains and was sampled. It will be monitored for as long as it remains possible.

Threats: Yes

What threats: RBM Mining

RECORDING:

Digital pictures: Yes Tracings: Drawings:

Recorder/Informant: Name: Gavin and Louise Anderson

Address: PO Box 102532, Meerensee, 3901

Date: 08/02/2018

Owner:

References:

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.

It consists of 2x shellmiddens of brown mussel, oyster and whelk, and an extensive scatter of artefacts incl. Group 5/6 pottery and upper grinding stones.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

SITE CATEGORY:

Stone Age	ESA:		MSA		LSA		ISA	
Rock Art	Paintings		Engravings		Other			
Iron Age	EIA:		LIA		IIA	x		
Historical	Historical Period:	?	Recent Past (last 60 yrs):					

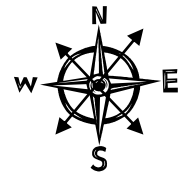
Recorder's Site No.: MPE 176

Official Name:

Local Name:

Map Sheet: 2832CA St Lucia

GPS reading: S: 28' 31 46.2" E: 32' 22 43.3" Alt: 156m



DIRECTIONS TO SITE: SKETCH OR DESCRIPTION

MPE 176 is located on the second dune cordon from the ocean side.

SITE DESCRIPTION:

Type of Site: Open. Midden

Merits conservation: The site is of low significance and no further mitigation is required.

Threats: Yes

What threats: RBM Mining

RECORDING:

Digital pictures: Yes

Tracings:

Drawings:

Recorder/Informant: Name: Gavin and Louise Anderson

Address: PO Box 102532, Meerensee, 3901

Date: 08/02/2018

Owner:

References:

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.

It consists of a small brown mussel scatter and is of low significance

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

SITE CATEGORY:

Stone Age	ESA:		MSA		LSA		ISA	
Rock Art	Paintings		Engravings		Other			
Iron Age	EIA:		LIA	x	IIA			
Historical	Historical Period:		Recent Past (last 60 yrs):					

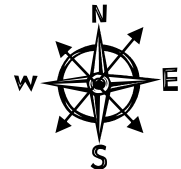
Recorder's Site No.: MPE 177

Official Name:

Local Name:

Map Sheet: 2832CA St Lucia

GPS reading: S: 28' 31 42.4" E: 32' 22 28.4" Alt: 36m



DIRECTIONS TO SITE: SKETCH OR DESCRIPTION

. MPE 177 is located on the eastern edge of the Red Dunes before the main dune cordon begins. The site was noted by bush clearance who then notified Umlando via the correct channels. The bulldozer had started to expose a shell midden when it was noticed. Work was halted and the site was assessed by Umlando. The midden is very well preserved and contains the remains of a hippo.

The sensitive area was demarcated and permission to clear the rest of the site was given. We did note that there is a very high chance of finding human remains at this site.

SITE DESCRIPTION:

Type of Site: Open. Midden

Merits conservation: Yes. The site is of high significance and will be excavated in 2018.

Threats: Yes

What threats: RBM Mining

RECORDING:

Digital pictures: Yes

Tracings:

Drawings:

Recorder/Informant: Name: Gavin and Louise Anderson

Address: PO Box 102532, Meerensee, 3901

Date: 08/02/2018

Owner:

References:

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.

The site consists of a large, well-preserved midden.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

SITE CATEGORY:

Stone Age	ESA:		MSA		LSA		ISA	
Rock Art	Paintings		Engravings		Other			
Iron Age	EIA:		LIA		IIA			
Historical	Historical Period:	x	Recent Past (last 60 yrs):	?				

Recorder's Site No.: MPE 178

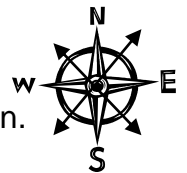
Official Name:

Local Name:

Map Sheet: 2832CA St Lucia

GPS reading: S: 28' 38.3" E: 32' 22 24.5" Alt: 31m

DIRECTIONS TO SITE: SKETCH OR DESCRIPTION



MPE 178 is located on the Red Dune interface and the first dune from the ocean.

SITE DESCRIPTION:

Type of Site: Open. Midden

Merits conservation: No. It is of low significance and no further mitigation is required.

However, we will continue to monitor it during surveys.

Threats: Yes

What threats: RBM Mining

RECORDING:

Digital pictures: Yes Tracings: Drawings:

Recorder/Informant: Name: Gavin and Louise Anderson

Address: PO Box 102532, Meerensee, 3901

Date: 05/06/2018

Owner:

References:

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.

The site consists of a small brown mussel midden on the side of the road.

UMLANDO ARCHAEOLOGICAL SITE RECORD FORM

SITE CATEGORY:

Stone Age	ESA:		MSA		LSA		ISA	
Rock Art	Paintings		Engravings		Other			
Iron Age	EIA:		LIA		IIA			
Historical	Historical Period:	x	Recent Past (last 60 yrs):	x				

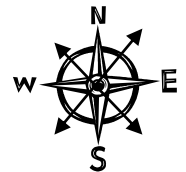
Recorder's Site No.: RD 040

Official Name:

Local Name:

Map Sheet: 2832CA St Lucia

GPS reading: S: 28' 31 33.3" E: 32' 22 26.7" Alt: 60m



DIRECTIONS TO SITE: SKETCH OR DESCRIPTION

RD 040 is located on the interface of the Red Dunes and the first dune cordon from the ocean side.

SITE DESCRIPTION:

Type of Site: Open. Midden

Merits conservation: It is of low significance and no further mitigation is required.

Threats: Yes

What threats: RBM Mining

RECORDING:

Digital pictures: Yes

Tracings:

Drawings:

Recorder/Informant: Name: Gavin and Louise Anderson

Address: PO Box 102532, Meerensee, 3901

Date: 08/02/2018

Owner:

References:

DESCRIPTION OF SITE AND ARTEFACTUAL CONTENT.

It consists of 1x small brown mussel midden in the platform cutting

