



SCOPING AND ENVIRONMENTAL IMPACT ASSESSMENT

Scoping and Environmental Impact Assessment
for the proposed Manganese Export Facility and
Associated Infrastructure in the Coega Industrial
Development Zone, Port of Ngqura and Tankatara area

FINAL EIA REPORT

CHAPTER 14A:

ARCHAEOLOGICAL IMPACT ASSESSMENT

EXECUTIVE SUMMARY

Note: This report follows the minimum standard guidelines required by the South African Heritage Resources Agency for compiling Phase 1 Archaeological Impact Assessment reports. This report is part of an Environmental Impact Assessment.

Purpose of the study

To conduct a survey of possible archaeological sites on the areas of farm Tankatara and Zone 11 of the Coega IDZ, affected by the proposed construction of a compilation yard; and to review the archaeology status of Zone 13 which will be affected by a portion of the compilation yard and the doubling of the railway line, Zone 9 where the stockyard is proposed to be located and Zone 8 through which the proposed conveyor will run, in the Coega Industrial Development Zone near Port Elizabeth, Nelson Mandela Bay Municipality, Eastern Cape Province. The survey was conducted to establish the range and importance of possible exposed and *in situ* archaeological sites/materials, the potential impact of the development and to make recommendations to minimize possible damage.

The location of the development

The proposed development is situated in and adjacent to the Coega Industrial Development Zone (Coega IDZ) approximately 15 km north-east of Port Elizabeth, Nelson Mandela Bay Municipality, Eastern Cape Province.

Type and extent of the development

Transnet Capital Projects (Pty) Ltd (TCP) is proposing to develop a Manganese Ore Export Facility which will include a manganese ore stockyard and handling facility in Zones 8 and 9 of the IDZ as well as a compilation yard in Zones 11 and 13 and the adjacent Tankatara property. In addition, Transnet intends to double the railway line between the proposed Coega compilation yard and the existing marshalling yard within the IDZ (Zone 13). The total footprint of the proposed development is approximately 350 hectares.

The investigation

Apart from occasional Middle Stone Age stone tools, no other archaeological sites/materials were observed. Most of the property is covered by dense grass and patches of impenetrable thicket vegetation which made it difficult to find sites/materials.

Cultural sensitivity

The proposed areas for development appear to be of low archaeological sensitivity, but archaeological sites/materials may be exposed when the vegetation and top soil are removed (for example human remains).

Recommendations

1. The construction and operation of a manganese ore stockyard and associated infrastructure in Zone 9.
 - 1.1. If any concentrations of archaeological material are uncovered during development it should be reported to the archaeologist at the Albany Museum or to the Eastern Cape Provincial Heritage Resources Authority (for the entire development).
 - 1.2. Construction managers/foremen should be informed, before construction starts, on the possible types of heritage sites which may be encountered during construction. It is suggested that a suitably qualified person is trained as a site monitor to report to the foreman when archaeological sites are found (for the entire development).
2. The conveyor system linking the stockyard to the harbour in Zone 8, and possibly Zone 5.
 - 2.1. An archaeologist must be present during the vegetation clearing.
 - 2.2. A suitably qualified person should be trained by an archaeologist as a site monitor to check/supervise on 1.1 above.
3. The compilation yard in Zone 11.
 - 3.1. The proposed activities are likely to affect the areas around the dry pans/wetlands. Based on SAHRA's Review Comments¹ on the original AIA for the Coega IDZ (Binneman, 2010a), it is recommended that the developer initiates a Phase 2 AIA at any stage before the start of construction activities. The recommendation is therefore applicable to archaeological material already described in previous reports, or material observed during the Phase 2, as well as any finds during construction activities not covered by Phase 2 mitigation. These areas should be recorded before destruction and a report must be submitted to SAHRA for review (with further recommendations). Following that process and if relevant, the developer may apply for a destruction permit.
4. The compilation yard and doubling of the railway line in Zone 13.
 - 4.1. An archaeologist needs to be on site during the clearing of the vegetation.
 - 4.2. For the clearing of the vegetation small machineries or the least invasive methods must be used.
 - 4.3. If sensitive sites/materials are exposed, then a Phase 2 investigation must be conducted and a report must be submitted to SAHRA for review (with further recommendations).
5. The compilation yard in the affected area of farm Tankatara.
 - 5.1. A suitably qualified person should be trained as a site monitor to check/supervise on 1.1 above.

¹ Extract from SAHRA's Review Comments (SAHRA, 2011, page 8):

Scatters of stone tools have been identified all over the zone, but no working site was visible. Higher concentration of stone tools was recorded in areas around dry pans and wetlands. These areas should be recorded before destruction, after this a report must be sent to SAHRA and the developer may apply for a destruction permit for the sites.



GLOSSARY

Archaeology: Broadly speaking, all remains resulting from human activity older than 100 years and include artefacts, human and hominid remains, features and structures.

Early Stone Age (ESA): The archaeology of the Stone Age between 1,5 million and 250 000 years ago.

ECPHRA Eastern Cape Provincial Heritage Resources Authority

Fossilised bone: Mineralised bones of animals.

Historical features: Foundations of buildings or other construction features and items from domestic and military activities older than 60.

Holocene: The most recent geological time period which started 10 000 years ago.

Late Stone Age: The archaeology of the last 20 000 years associated with fully modern people.

Middle Stone Age (MSA): The archaeology of the Stone Age between 20/30 000-250 000 years ago associated with early modern humans.

SAHRA: South African Heritage Resources Agency – the compliance authority which protects national heritage

Shell middens: Accumulations of marine shell deposited by human agents rather than the result of marine activity. The shells are concentrated in a specific locality above the high-water mark and frequently contain stone tools, pottery, bone and occasionally also human remains.



CHAPTER 14A: ARCHAEOLOGY HERITAGE

DECLARATION OF INDEPENDENCE FOR THE ARCHAEOLOGICAL IMPACT ASSESSMENT

I, Johannes N. F. Binneman, declare that I am an independent consultant and have no business, financial, personal or other interest in the proposed Manganese Ore Terminal, Port of Ngqura, application or appeal in respect of which I was appointed, other than fair remuneration for work performed in connection with the activity, application or appeal. There are no circumstances that compromise the objectivity of my performing such work.

J.N.F. Binneman

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CHAPTER 14A: ARCHAEOLOGY HERITAGE

This chapter presents the Archaeology Specialist Study undertaken Dr Johann Binneman from *Eastern Cape Heritage Consultant*, under appointment to CSIR, as part of the Environmental Impact Assessment for the proposed Manganese Ore Export Facility and associated infrastructure in the Coega Industrial Development Zone, Port of Ngqura and Tankatara area.

14A.1 INTRODUCTION AND METHODOLOGY

14A.1.1 Scope and Objectives

The proposed development in the Coega IDZ includes: the construction and operation of a manganese ore stockyard and associated infrastructure in Zone 9, a conveyor system linking the stockyard to the harbour in Zone 8 (potentially also Zone 5), a compilation yard in Zones 11 and 13 in the Coega IDZ and the adjacent Tankatara property and the doubling of the railway line between the proposed compilation yard and the existing marshalling yard within Zone 13. The size of the stockyard will be approximately 40 ha and the total footprint of the proposed development will be approximately 350 ha (Map 1).

14A.1.2 Purpose of the study

The purpose of this study is to conduct a survey of possible archaeological sites on the farm Tankatara and Zones 11 and 13 for the proposed construction of a compilation yard and to review the archaeology status of the proposed Transnet stockyard in Zone 9, conveyor through Zone 8 (and potentially Zone 5 in the event of the alternative conveyor route), Coega Industrial Development Zone near Port Elizabeth, Nelson Mandela Bay Municipality, Eastern Cape Province. The survey was conducted to establish;

- Identification of sites of concern?
- the range and importance of possible exposed and *in situ* archaeological sites, features and materials,
- the potential impact of the development on these resources and,
- to make recommendations to minimize possible damage to these resources.

14A.2 BRIEF ARCHAEOLOGICAL BACKGROUND

14A.2.1 Literature review

Early Stone Age stone tools (approximately 250 000 - million years old) are found throughout the Coega IDZ area. Large hand axes were reported from Coega Kop and were also collected from the banks and gravels of the Coega River and between the N2 national road and the salt works (Albany Museum collections). One of South Africa's most important Earlier Stone Age finds and excavations was conducted a few kilometres west of the surveyed area, at Amanzi Springs (Deacon 1970). In a

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series of spring deposits a large number of stone tools were found *in situ* to a depth of 3-4 metres. Wood and seed material preserved in the spring deposits, possibly dating to between 250 000 to 800 000 years old.

Middle Stone Age (125 000 - 30 000 years ago) and Later Stone Age (30 000 years ago to historical times) stone tools are also found in the gravels and along the banks of the Coega River. These stone artefacts are also in secondary context and not associated with any other archaeological material. Occurrences of fossil bone remains and Middle Stone Age stone tools were also reported south of Coega Kop (Gess 1969). During excavations the remains were found in the surface limestone, but the bulk of the bone remains were found some 1-1,5 metres below the surface. The excavations exposed a large number and variety of bones, teeth and horn cores. The bone remains included warthog, leopard, hyena, rhinoceros and ten different antelope species. A radiocarbon date of greater than 37 000 years was obtained for the site.

The majority of archaeological sites found in the wider region date from the past 10 000 years (called the Later Stone Age) and are associated with the campsites of San hunter-gatherers and Khoi pastoralists. Some 2 000 years ago Khoi pastoralists occupied the region and lived mainly in small settlements. They were the first food producers in South Africa and introduced domesticated animals (sheep, goat and cattle) and ceramic vessels to southern Africa. These sites are poorly preserved and difficult to find because they are in the open veld and often covered by vegetation and soil. Sometimes these sites are only represented by a few stone tools and fragments of bone.

A large part of the proposed development is situated within 5 km of the coast and falls within the maximum distance shell middens are expected to be found from the beach (Binneman 2001, 2005). Many middens, ceramic pot sherds (from Later Stone Age Khoi pastoralist origin - last 2 000 years) and other archaeological material, mainly of the Holocene Later Stone Age (last 8 000 years) are located in the shifting sand dunes along the coast (Rudner (1968). Human remains have also been found in the dunes along the coast.

14A.3 DESCRIPTION OF THE PROPERTY

14A.3.1 Location

The development is located within the 1:50 000 topographic reference maps 3325 DC & DD 3425 BA Port Elizabeth and 3325 DA Addo. The proposed construction and operation of a manganese ore stockyard and associated infrastructure in Zone 9, a conveyor system linking the stockyard to the harbour in Zone 8 (and potentially also Zone 5) and a compilation yard in Zones 11 and 13 in the Coega IDZ and the adjacent Tankatara farm, is situated in the Coega Industrial Development Zone approximately 15 km north-east of Port Elizabeth, Nelson Mandela Bay Municipality, Eastern Cape Province (refer to Chapter 2, Figure 2.2).

14A.4 ARCHAEOLOGICAL REVIEW OF THE AFFECTED ENVIRONMENT

14A.4.1 *Proposed conveyor system (zone 8 and potentially zone 5) and the manganese ore stockyard (zone 9).*

Archaeological investigations of large parts of Zone 8 have been conducted by the specialist and his colleagues between 1994 and 2007 (Binneman 2007, 2012; Binneman & Webley 1996, 1997; Kaplan 2007). This included a Phase 2 investigation of the coastal area east of the Coega River Mouth (Binneman 1999). Recently large areas, which included the western embankment of the Coega River, were investigated for the proposed Bulk Liquid Storage and Handling Facility in Zone 8 (Binneman 2012).

In 2010, a comprehensive Phase 1 Archaeological Impact Assessment (part of a full Heritage Impact Assessment) was conducted of the Coega IDZ (excluding Zone 8) (Binneman 2010a). Zones 5 and 9 were included in this investigation as well as a smaller footprint within Zone 5 (Binneman 2010b). These experiences and knowledge gained in the Coega IDZ and from investigations in the wider surrounding area provided the information base to make assumption and predictions on the significance of possible pre-colonial archaeological sites/material in the above mentioned zones.

During March 2011 the South African Heritage Resources Agency publicised their Review Comments on the Phase 1 Archaeological, Palaeontological and Historical (burials) Impact Assessments which included recommendations for each of the 14 Zones (excluding Zone 8) (South African Heritage Resources Agency, Amended Review Comments on the Archaeological, Paleontological and Historical (burials) Impact Assessments, March 2011) (Appendix 14A.c).

Conveyor system through Zone 8 and potentially Zone 5 for alternative route

The conveyor system will link the manganese ore stockyard to the harbour and the ship loaders. It will be constructed along the western side of the Coega River/Estuary (Figure 14A.1). Both the proposed conveyor routes (preferred and alternative route) will run over areas which may have Earlier and Middle Stone Age stone tools. The preferred conveyor route (the light pink line inside the light blue area) runs in an almost straight line from Zone 9 to the harbour. It follows the edge of the salt works for approximately 800 metres before it runs overland on the high ground of the western embankment of the Coega River. The alternative conveyor route (dark pink/red line) runs from Zone 9 in a south-westerly direction onto Zone 5 (north-east of the N2 National Road) for a few hundred metres. It then makes a 90 degree turn and follows the high ground towards the edge of the salt works, crossing the N2 and the preferred conveyor route in the process. From here the route follows the edge of the salt works to the harbour.

Discussion

The entire Coega River Mouth/Estuary has been severely disturbed in the past by the infrastructure for the production of salt and recently by the Port of Ngqura development. The construction of the railway line to the harbour, roads, fences and storm water drainage systems adjacent to the river have also transformed the western embankment of the Coega River completely (Figures 14A.2-14A.5). Therefore there is no threat to archaeological sites/materials by the construction of the conveyor system between the stockyard in Zone 9 and the harbour within this servitude (from the edge of the salt works to the foot of the western embankment (Figure 14A.3).



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However, if the conveyor system follow the high ground along the western side (as is proposed), then it should be taken into account that there may be Earlier and Middle Stone Age stone tools (dating between 1,5 million and 30 000 years old) embedded in the calcrete embankment. Occasional Early Stone Age hand axes and Middle Stone Age stone tools were observed in the exposed river gravel overlying the calcrete deposits close to the location where the preferred and alternative conveyor routes cross (Binneman, 2012) (Figures 14A.1 and 14A.5-14A.7). These stone tools were in secondary context and not associated with any other archaeological remains and therefore of low cultural significance. However, similar stone tools were found in association with well-preserved fossilised bone remains in calcrete deposits in the nearby Markman Industrial Area (Gess, 1969).

Although it would appear that it is unlikely that any sensitive archaeological remains will be exposed during the development, there is always a possibility that human remains and/or other archaeological remains such as shell middens may be covered by soil and vegetation. The proposed project is within 5 km from the coast and falls within the maximum distance coastal archaeological remains are expected to be found from the coast. Both the conveyor routes run through patches of dense thicket vegetation which may cover significant archaeological remains.

From previous investigations and experience of the Coega River area, it would appear that there are no differences between the preferred conveyor route and the alternative conveyor route as far as the pre-colonial archaeology is concerned. Both routes run through patches of dense thicket vegetation which may cover important archaeological remains. SAHRA's Review Comments on Zone 5 recommended that an archaeologist must be present on site when the vegetation is cleared (Appendix 14A.c). However, if the conveyor route follows the already disturbed/developed servitude from Zone 9 along the edge of the salt works, then no action is required because no archaeological remains will be threatened.



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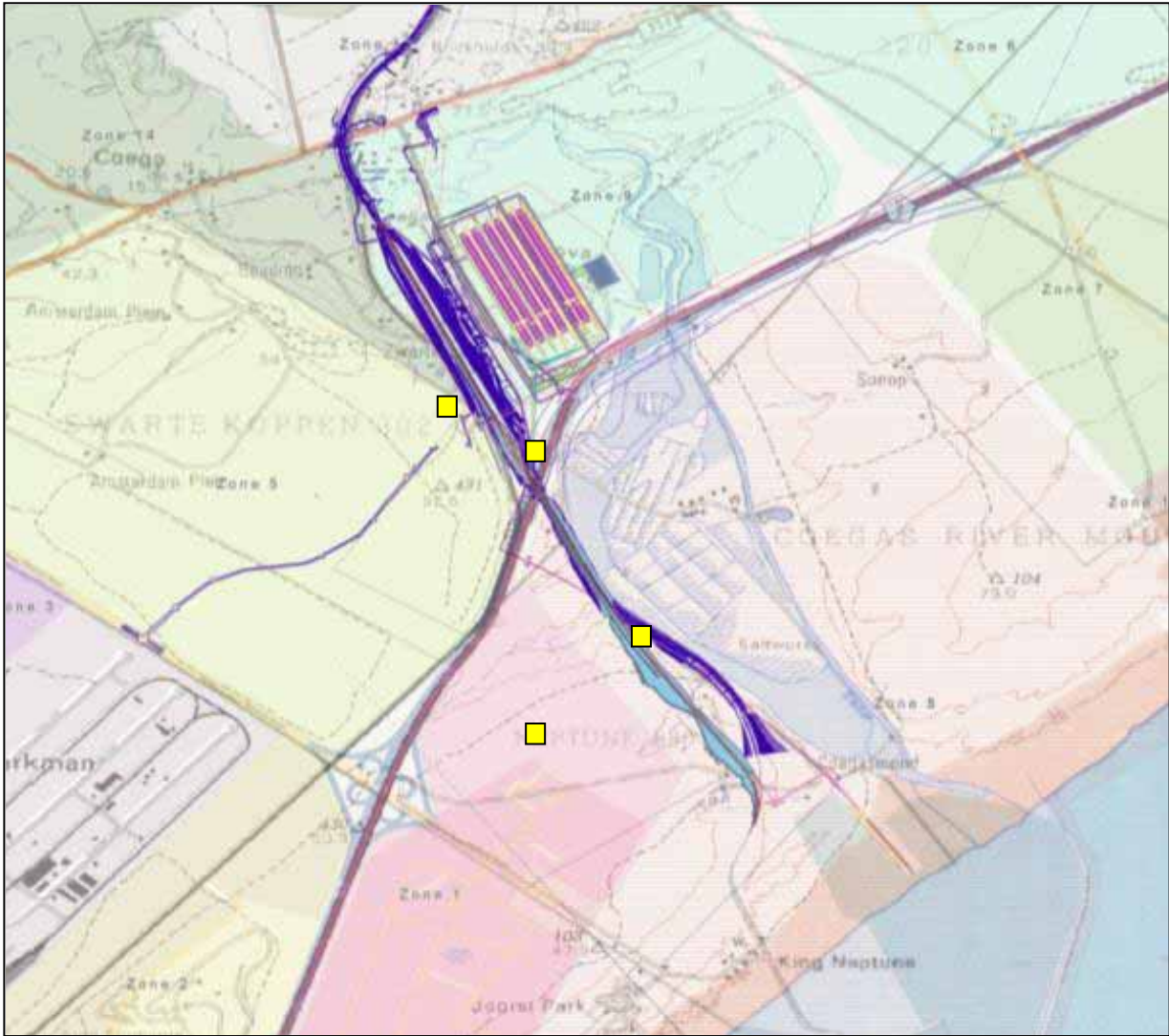


Figure 14A.1: 1:50 000 Map of the location and layout of the proposed conveyor system through Zone 8 (and potentially Zone 5) and the manganese ore stockyard in Zone 9. The preferred conveyor route is marked by the light pink line inside the light blue area and the alternative conveyor route by the dark pink/red line. The yellow squares mark locations of Earlier and Middle Stone Age stone tools.

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Figures 14A.1-14A.6: Views of the extensive transformation of the western side of the Coega River by the construction of the railway line and the harbour (top row, bottom left) and the exposed calcrete deposit along the western embankment with Earlier and Middle Stone Age stone tools (bottom right) within Zone 8 of the IDZ.

The manganese ore stockyard in Zone 9

The manganese ore stockyard and associated infrastructure will be constructed in Zone 9 next to the recently constructed marshalling yard which is situated north of the N2 national road (Figure 14A.1).

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The Coega River Valley comprises most of the zone. This vlei/wetland area along the river has been disturbed in the past by small scale farming activities, brick making and salt producing. Large areas are waterlogged and recently large scale dumping of building and other rubble took place in the area. The construction of the Coega rail marshalling yard, roads, bridges and power lines transformed the landscape permanently. Against this background it is highly unlikely that any significant archaeological sites/materials will be exposed during the development (Figures 14A.8 to 14A.11). SAHRA's Review Comments do not include any specific recommendations (Appendix 14A.c).



Figures 14A.8-14A.9: Views of the Coega River Valley and Zone 9.



Figures 14A.10-14A.11: Views of the large piles of dump rubble material and the railway marshalling yard in Zone 9.

14A.4.2 Proposed compilation yard and doubling of the railway line in zones 11 and 13.

As reported earlier, the entire Coega IDZ, excluding Zone 8 was investigated during 2010. Zones 11 and 13 were part of this extensive reconnaissance Archaeological Impact Assessment (Binneman, 2010a). Smaller footprints within Zone 13 were also investigated in greater detail (Binneman 2006 & 2011). Therefore the current survey only focussed on the affected area of Tankatara farm. The footprint for the compilation yard in Zone 13 comprises only a very small area situated on a drainage

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line and has been disturbed by farming activities. The immediate area is covered with dense vegetation and although it is unlikely that any significant archaeological sites/materials will be exposed during the development, SAHRA recommended that an archaeologist needs to be present during the clearing of the vegetation (Appendix 14A.c).

During the 2010 investigation of Zone 11, Earlier and Middle Stone Age and occasional Later Stone Age stone tools were observed mainly in the southern part of the Zone in areas where the pebble/cobble gravels were exposed (Binneman, 2010a). The stone tools which comprised quartzite flakes, chunks, flaked pebble/cobble and cores were randomly distributed across the landscape and were in secondary context. There were no 'concentrations' of tools observed which suggested any spatial patterning or activity areas, although these may be present or covered by soil and vegetation. No other significant other archaeological sites/materials were observed, and it is unlikely that any will be exposed during the development of the zone.

However, increases in stone tools were observed in the track near an old dry pan area (GPS reading 33.43.152S; 25.41.458E). There are several of these 'pan areas' visible on an aerial image of the zone and spatial patterns of stone tools may be present at, or near these features. Although this may not have been a pan/wetland thousands of years ago, it would appear to have been a preferred area for occupation (Binneman, 2010a). Although, these stone tools were also in secondary context and of low cultural significance, SAHRA recommended that these 'pan areas' must be recorded before destruction. A report must be submitted to them and the developer may apply for a destruction permit (Appendix 14A.c).

From an archaeological perspective, there are no differences between the preferred compilation yard layout and the alternative layout (refer to Chapter 2, Figure 2.5) in Zones 11 and 13.

14A.4.3 Archaeological investigation of the compilation yard in the affected area of Tankatara farm

Methodology and results

The survey on the affected area of Tankatara farm was conducted on foot and spot checks from a vehicle. GPS readings were taken with a Garmin and all important features were digitally recorded. This large property has been disturbed in the past by the construction of the railway line, powerline, small scale farming activities (clearing of bush, tracks and fencing) and mining of calcrete. The area earmarked for the compilation yard is relatively flat with a gentle easterly slope towards the Sunday's River valley. Most of the property is underlain by calcrete and covered by a thin layer of top soil, short dense grass, low bushes, patches of impenetrable thicket and alien vegetation (Figures 14A.12-14A.16).

The dense vegetation made it difficult to find archaeological sites/material. Nevertheless, occasional quartzite Middle Stone Age stone tools (dating older than 30 000 years) were observed at a calcrete borrow pit and in the surrounding gravels near the proposed railway line (Figures 14AA.17-14A.20) (GPS reading at 33.41.22,19S; 25.42.41,27E). The stone tools were similar to others Middle Stone Age stone tools observed in the Coega area. They displayed typical faceted striking platforms and composed mainly small 'informal' flakes and chunks with few cores, points and blades. Although many flakes displayed utilization damage, few were 'formally' retouched. No spatial patterning or activity areas such as 'manufacturing' sites were located, although such sites may exist but were not visible. All stone tools were in secondary context and not associated with any other remains. Although sites/material may be covered by soil and vegetation, it is unlikely that any other significant archaeological sites/material would be located during development.

However, an archaeologist should regularly inspect the area during the clearing of vegetation and the construction phases. There were no graves or buildings older than 60 years observed during the Tankatara farm investigation (also pers. comm. Landowner).

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Figures 14A.12-14A.19: Views of the exposed calcrete and dense vegetation which cover the proposed compilation yard area in Zone 11 and Tankatara farm (top three rows) and the Middle Stone Age stone tools found at the borrow pit (bottom row).

14A.5 ASSESSMENT OF THE IMPACTS

14A.5.1 *Pre-colonial archaeology*

14A.5.1.1 Nature of the impacts

From the investigation, it would appear that the proposed sites for the construction and operation of a manganese ore stockyard and associated infrastructure in Zone 9, the conveyor system linking the stockyard to the harbour in Zone 8 and the compilation yard in Zones 11 and 13 in the Coega IDZ and the adjacent Tankatara property, are of low archaeological sensitivity. Apart from occasional Middle Stone Age stone artefacts, no other significant sites/materials were observed. The occasional stone tools observed throughout the area are in secondary context and of low cultural significance, but *in situ* material may be covered by soil and vegetation (for example, shell middens and human remains). The main direct impact on archaeological sites/remains (if any) will be the physical disturbance of the material and its context. The above developments may also expose, disturb and displace archaeological sites/material.

14A.5.1.2 Extent of the impacts

The proposed developments may impact on remains which are buried, but these impacts will be limited and restricted to the local area. The manganese ore stockyard and the conveyor system will be constructed mainly in areas already disturbed and may have little or no negative impact on possible archaeological sites/materials. If any material is disturbed it will be relatively small, but permanent. The construction of the compilation yard in Zones 11 and 13 and the adjacent Tankatara property will disturb a large area and may expose sites/materials on a larger scale. If sites are exposed, further disturbances/damage can be limited by mitigation.

14A.5.1.3 Reversibility and irreplaceability

The impact on possible archaeological sites/materials is permanent, non-reversible and non-replaceable.

14A.5.1.4 Degree of confidence

Long-term experience and knowledge gained from investigations in the immediate and wider surrounding area provided the information base to make assumptions and predictions of a high degree of confidence on the significance of possible pre-colonial archaeological sites/material.

14A.5.1.5 Mitigation

Although no mitigation is proposed by the author for the properties before construction starts because the archaeological remains are of low significance (excluding possible human remains and shell middens), SAHRA made specific recommendations for Zone 11 regarding site recordings before construction starts (Appendix 14A.c). If concentrations of archaeological materials are exposed then all work must stop for an archaeologist to investigate (see below).

If any human remains (or any other concentrations of archaeological heritage material) are exposed during construction, all work must cease and it must be reported immediately to the archaeologist at

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the Albany Museum (Tel: 046 6222312) or to the Eastern Cape Provincial Heritage Resources Authority (Tel: 043 6422811), so that a systematic and professional investigation can be undertaken. Sufficient time should be allowed to investigate and to remove/collect such material. Recommendations will follow from the investigation. Permits must be granted to a professional archaeologist to remove any material by the Eastern Cape Provincial Heritage Resources Authority.

14A.5.1.6 Cumulative impacts

The cumulative impacts will only increase if further developments are planned for surrounding areas, such as the CDC access road and other developments in adjacent Zones.

14A.5.1.7 Residual impacts

The damage caused by construction will be permanent and can never be fully rehabilitated.

14A.5.2 Pre-colonial archaeological cultural landscape

14A.5.2.1 Nature of the impact

The visual archaeological significance of the immediate area is low and comprised of occasional Earlier and Middle Stone Age stone tools in secondary context. Information from shell middens along the eastern side of the Coega River Mouth has been collected and the remainder of the features have subsequently been destroyed. The development takes place inside an industrial zone which has already transformed the local 'sense of place' in terms of the cultural landscape. Therefore, the visual impact of the development on the cultural landscape will be low as well.

14A.5.2.2 Extent of impact

The visual impact of the development will be restricted to the immediate area of the development and will have little negative effect on the immediate cultural landscape and 'significance/sense of place'. Notwithstanding, the 'presence' of the development will be long term to permanent, but negative impacts can be mitigated.

14A.5.2.3 Reversibility and irreplaceability

The possible visual archaeological impact is permanent, non-reversible and non-replaceable.

14A.5.2.4 Cumulative impacts

The cumulative impacts will only increase on the wider cultural landscape if further developments are planned for adjoining areas, such as the CDC access road and other developments in adjacent Zones

14A.5.2.5 Residual impacts

The damage caused by construction will be permanent and will never be fully rehabilitated.



Table 14A.1: Assessment of the proposed compilation yard in Zone 11 and the adjacent Tankatara property on archaeological remains.

Nature of the impact	Status	Extent	Duration	Intensity/ Magnitude	Probability	Significance (without mitigation)	Mitigation	Significance (with mitigation)	Confidence level
The potential impact of the development on above and below ground archaeology	Negative	Local	Permanent	Low	Probable	Low	Follow general archaeological guidelines for developers – Appendix 14A.b	Low	High
Occurrence of significant archaeological sites/material, i.e. human remains	Negative	Local	Permanent	Low	Probable	High	Follow general archaeological guidelines for developers – Appendix 14A.b Permit must be obtained from ECPHA & remains to be removed by a specialist archaeologist.	Low	High
The potential impact of the development on the cultural landscape and 'sense of place'.	Negative	Local	Permanent	Low	Improbable	Low	No mitigation is proposed because the archaeological remains are of low significance	Low	High

14A.6 DISCUSSION AND MITIGATION

Previous and recent investigations of the proposed sites earmarked for development as discussed above, appeared to be of low archaeological significance. Apart from occasional Middle Stone Age stone artefacts, no other important sites/materials were observed. These stone tools were observed throughout the Coega IDZ, are in secondary context, not associated with any other archaeological remains and therefore of low cultural significance. However, a large part of the area investigated is within 5 km from the coast and falls within the maximum distance coastal archaeological remains are expected to be found from the beach. Such remains were not observed during the investigations, but it is always possible that these sites and other archaeological remains such as human remains and fossilised bone remains may be buried and covered by vegetation and will only be exposed during the development.

There are no differences between the preferred conveyor route and the alternative conveyor route, as far as the pre-colonial archaeology is concerned, but important archaeological remains may be covered by vegetation. However, if the conveyor route follows the already disturbed/developed servitude from Zone 9 along the edge of the salt works, no archaeological remains will be threatened. From an archaeological perspective there are no differences between the preferred compilation yard layout and the alternative layout in Zones 11 and 13.

Although it would appear unlikely that any sensitive archaeological remains will be exposed during the developments, SAHRA made several recommendations in their Review Comments of the 2010 Phase 1 Archaeological Impact Assessment for the Coega IDZ. These are included in the recommendations for the different Zones below (for details see Appendix 14A.c).

1. SAHRA did not recommend any specific conditions **for the construction and operation of a manganese ore stockyard and associated infrastructure in Zone 9**. However, it is recommended that;

1.1. If any concentrations of archaeological material are uncovered during development, such as human remains, and/or accumulations of fossil bone, concentrations of marine shell and stone tools, it should be reported to the to the archaeologist at the Albany Museum (046 6222312) or to the Eastern Cape Provincial Heritage Resources Authority (043 6422811) immediately. All work must stop to allow an archaeologist to conduct a systematic and professional investigation. Sufficient time must be allowed to excavate/collect such material should it be necessary (for the entire development) (See appendix A.b for a list of possible archaeological sites that may be found in the area).

1.2. Construction managers/foremen should be informed, before construction starts, on the possible types of heritage sites which may be encountered during construction. It is suggested that a suitably qualified person is trained as a site monitor to report to the foreman when archaeological sites are found (for the entire development).

2. **For the conveyor system linking the stockyard to the harbour in Zone 8 and possibly Zone 5**, SAHRA recommended (Zone 5 only) that;

2.1. An archaeologist must be present during the vegetation clearing.

2.2. A suitably qualified person should be trained by an archaeologist as a site monitor to check/supervise on 1.1 above.

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3. For the compilation yard in Zones 11, SAHRA recommended that;

3.1. The proposed activities are likely to affect the areas around the dry pans/wetlands. Based on SAHRA's Review Comments² on the original AIA for the Coega IDZ (Binneman, 2010a), it is recommended that the developer initiates a Phase 2 AIA at any stage before the start of construction activities. The recommendation is therefore applicable to archaeological material already described in previous reports, or material observed during the Phase 2, as well as any finds during construction activities not covered by Phase 2 mitigation. These areas should be recorded before destruction and a report must be submitted to SAHRA for review (with further recommendations). Following that process and if relevant, the developer may apply for a destruction permit.

4. For the compilation yard and the doubling of the railway in Zones 13, SAHRA recommended that;

4.1. An archaeologist needs to be on site during the clearing of the vegetation.

4.2. For the clearing of the vegetation small machineries or the least invasive methods must be used.

4.3. If sensitive sites/materials are exposed then a Phase 2 investigation must be conducted and a report must be submitted to SAHRA for review (with further recommendations).

5. For the compilation yard in the affected area of farm Tankatara, it is recommended that;

5.1. A suitably qualified person should be trained as a site monitor to check/supervise on 1.1 above.

² Extract from SAHRA's Review Comments (SAHRA, 2011, page 8):

Scatters of stone tools have been identified all over the zone, but no working site was visible. Higher concentration of stone tools was recorded in areas around dry pans and wetlands. These areas should be recorded before destruction, after this a report must be sent to SAHRA and the developer may apply for a destruction permit for the sites.

14A.7 REFERENCES

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- Webley, L. 2007b. Phase 1 Heritage Impact Assessment for Straits Chemicals proposed chlor-alkali and salt plant Coega Eastern Cape Province. Report prepared for SRK Consulting.

14A.8 GENERAL REMARKS AND CONDITION

Note: This report is a phase 1 archaeological heritage impact assessment/investigation only and does not include or exempt other required heritage impact assessments (see below).

The National Heritage Resources Act (Act No. 25 of 1999, section 35) (see Appendix 14A.a) requires a full Heritage Impact Assessment (HIA) to ensure that all heritage resources, that is, all places or objects of aesthetics, architectural, historic, scientific, social, spiritual linguistic or technological value or significance are protected. Thus any assessment should make provision for the protection of all these heritage components, including archaeology, shipwrecks, battlefields, graves, structures older than 60 years, living heritage, historical settlements, landscapes, geological and palaeontological sites and objects.

It must be emphasised that the conclusions and recommendations expressed in this archaeological heritage sensitivity investigation are based on the visibility of archaeological sites/features and may not therefore, reflect the true state of affairs. Many sites/features may be covered by soil and vegetation and will only be located once this has been removed. In the event of such finds being uncovered, (such as during any phase of construction work), archaeologists must be informed immediately so that they can investigate the importance of the sites and excavate or collect material before it is destroyed. The onus is on the developer to ensure that this agreement is honoured in accordance with the National Heritage Act No. 25 of 1999.

It must also be clear that Archaeological Specialist Reports (AIA's) will be assessed by the relevant heritage resources authority. The final decision rests with the heritage resources authority, which should grant a permit or a formal letter of permission for the destruction of any cultural sites.



14A.9 APPENDICES

Appendix 14A.a: Brief Legislative Requirements

Appendix 14A.b: Identification of Archaeological Features and Material from Coastal Areas:
Guidelines and Procedures for Developers

Appendix 14A.c: South African Heritage Resources Agency, amended Review Comments on
the Archaeological, Paleontological and Historical (burials) Impact Assessments, March 2011).

Appendix 14A.a: Brief Legislative Requirements

Parts of sections 35(4), 36(3) and 38(1) (8) of the National Heritage Resources Act 25 of 1999 apply:

Archaeology, palaeontology and meteorites

- 35 (4) No person may, without a permit issued by the responsible heritage resources authority—
- (a) destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
 - (b) destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
 - (d) bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment which assist in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

Burial grounds and graves

36. (3) (a) No person may, without a permit issued by SAHRA or a provincial heritage resources authority—
- (a) destroy, damage, alter, exhume or remove from its original position or otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
 - (b) destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
 - (c) bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation equipment, or any equipment which assists in the detection or recovery of metals.

Heritage resources management

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorized as –
- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
 - (b) the construction of a bridge or similar structure exceeding 50m in length;
 - (c) any development or other activity which will change the character of the site –
 - (i) exceeding 5000m² in extent, or
 - (ii) involving three or more erven or subdivisions thereof; or
 - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
 - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA, or a provincial resources authority;
 - (d) the re-zoning of a site exceeding 10 000m² in extent; or
 - (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must as the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

Appendix 14A.b: Identification of Archaeological Features and Material from Coastal Areas: Guidelines and Procedures for Developers

Shell middens

Shell middens can be defined as an accumulation of marine shell deposited by human agents rather than the result of marine activity. The shells are concentrated in a specific locality above the high-water mark and frequently contain stone tools, pottery, bone and occasionally also human remains. Shell middens may be of various sizes and depths, but an accumulation which exceeds 1 m² in extent, should be reported to an archaeologist.

Human Skeletal material

Human remains, whether the complete remains of an individual buried during the past, or scattered human remains resulting from disturbance of the grave, should be reported. In general the remains are buried in a flexed position on their sides, but are also found buried in a sitting position with a flat stone capping and developers are requested to be on the alert for this.

Fossil bone

Fossil bones or any other concentrations of bones, whether fossilized or not, should be reported.

Stone artefacts

These are difficult for the layman to identify. However, large accumulations of flaked stones which do not appear to have been distributed naturally should be reported. If the stone tools are associated with bone remains, development should be halted immediately and archaeologists notified.

Stone features and platforms

These occur in different forms and sizes, but easily identifiable. The most common are an accumulation of roughly circular fire cracked stones tightly spaced and filled in with charcoal and marine shell. They are usually 1-2 metres in diameter and may represent cooking platforms for shell fish. Others may resemble circular single row cobble stone markers. These occur in different sizes and may be the remains of wind breaks or cooking shelters.

Historical artefacts or features

These are easy to identify and include foundations of buildings or other construction features and items from domestic and military activities.



Appendix 14A.c: South African Heritage Resources Agency, amended Review Comments on the Archaeological, Paleontological and Historical (burials) Impact Assessments, March 2011).

ZONE 11

The area is quite undisturbed, mostly covered by thick vegetation.

Scatters of stone tools have been identified all over the zone, but no working site was visible. Higher concentration of stone tools was recorded in areas around dry pans and wetlands. These areas should be recorded before destruction, after this a report must be sent to SAHRA and the developer may apply for a destruction permit for the sites.

Previous excavation and road cuts have exposed the lime-rich Alexandria formation which is generally highly fossiliferous with abundant and diverse invertebrate faunas, and the Bluewater Bay formation, its surface weathering products, generally unfossiliferous. Any excavations in the Salnova formation must be examined and sampled by a professional palaeontologist WHILE fresh bedrock is still exposed. The presence of a palaeontologist is required on site soon after exposure.

There are no reports of burial grounds and graves in this zone.



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ZONE 13

In this zone, as in many others, very thick vegetation put at risk the recognition of the extension of the few identified stone tools scatters. In other areas the vegetation is mostly composed of low grass, dense patches of bushes and small trees. A peaking power plant and other development have already occurred in the area.

An archaeologist needs to be present on site during vegetation clearing of selected (by an archaeologist) strips. Small machineries or the least invasive methodology is required for these strips. If vegetation clearing results in the discovery of sensitive material, then monitoring during excavation, or a Phase 2 mitigation according to the situation, will also be required. After vegetation clearing a report must be sent to SAHRA for review and guidance on the way forward.

At Tossies Quarry South, evidence of an excellent exposure of contact between the Alexandria and the Sundays River Formations is recorded. This must be preserved to ensure that the contact is kept for future research.

A richly fossiliferous area is recorded in the erosion gully North of the Tossies Quarry North. This must be protected from disturbance and development, therefore a palaeontologist or an ECO trained by a palaeontologist, must monitor the excavations.

Any excavations in the Salnova formation must be examined and sampled by a professional palaeontologist WHILE fresh bedrock is still exposed. The presence of a palaeontologist is required on site soon after exposure.

A cemetery close to the railway was also identified. More information regarding it is required in the Heritage Resources Management Plan. This must include: how many graves there are, how old these graves are and what their preservation is.