PHASE 1 ARCHAEOLOGICAL IMPACT ASSESSMENT REPORT FOR THE PROPOSED BATCHING PLANT ON THE FARM ERF 4886 HELDERGBERG MAGISTERIAL DISTRICT, WESTERN CAPE PROVINCE

DATE: JUNE 2021

Document Information

Item	Description
Proposed development and location	Proposed batching plant on the farm Erf 4886 Heldergberg Magisterial district, Western Cape Province.
Purpose of the study	To carry out an Archaeological Impact Assessment to determine the presence/absence of cultural heritage sites and the impact of the proposed development.
Coordinates	See Figure 1
Municipalities	City of Cape Town, Heldergberg Magisterial District
Predominant land use of surrounding area	Industrial and Residential
Applicant	Afrimat Readymix (Cape) Pty Ltd Siphumelelo Mbali Afrimat Readymix (Cape) Pty Ltd Tyger Valley Office Park No.2, Cnr Willie van Schoor & Old Oak Road, Bellville 7530 Tel: (021) 917 8840Fax: (021) 914 1174 Email: pieter.grove@afrimat.co.za Web: www.afrimat.co.za
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Author	Trust Mlilo (Archaeology and Heritage Specialist)
Date of Report	10/06/ 2021

NATIONAL LEGISLATION AND REGULATIONS GOVERNING THIS REPORT

This is a specialist report' and is compiled in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014.

DECLARATION OF INDEPENDENCE

In terms of Chapter 5 of the National Environmental Management Act of 1998 specialists involved in Impact Assessment processes must declare their independence.

Trust Mlilo and Joshua Kumbani, do hereby declare that we are financially and otherwise independent of the client and their consultants, and that all opinions expressed in this document are substantially our own, notwithstanding the fact that we have received fair remuneration from the client for preparation of this report.

Expertise:

Trust Mlilo, PhD Cand (Wits), MA. (Archaeology), BA Hons, PDGE and BA & (Univ. of Pretoria) ASAPA (Professional member) with more than 15 years of experience in archaeological impact assessment and management. Mlilo is an accredited member of the Association for Southern African Professional Archaeologists (ASAPA), Amafa akwaZulu Natali and Eastern Cape Heritage Resources Agency (ECPHRA). He has conducted more than hundred AIA/HIA Studies, heritage mitigation work and heritage development projects over the past 15 years of service. The completed projects vary from Phase 1 and Phase 2 as well as heritage management work for government, parastatals (Eskom) and several private companies such as BHP Billiton (South32) and Rhino Minerals.

Joshua Kumbani, PhD (Wits University), MA Archaeology (University of Zimbabwe), BA Honours Archaeology (University of Zimbabwe), Certificate in Entreprenuership (University of Zimbabwe), Certificate in Leadership Development (University of Zimbabwe). Professional member of Association for Southern African Professional Archaeologists (ASAPA).

Independence

The views expressed in this document are the objective, independent views of Mr Trust Mlilo and Dr Joshua Kumbani and the survey was carried out under Afrimat Readymix (Cape) (Pty) Ltd. The author has no business, personal, financial or other interest in the proposed development project apart from fair remuneration for the work performed.

Conditions relating to this report

The content of this report is based on the author's best scientific and professional knowledge as well as available information. The author reserves the right to modify the report in any way deemed fit should new, relevant or previously unavailable or undisclosed information become known to the author from on-going research or further work in this field or pertaining to this investigation.

This report must not be altered or added to without the prior written consent of the author and Integrated Specialist Services (Pty) Ltd. This also refers to electronic copies of the report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

Authorship: This AIA Report has been prepared by Mr Trust Mlilo and Mr Joshua Kumbani (Professional Archaeologist). The report is for the review of the Heritage Resources Agency (PHRA).

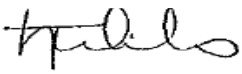
Geographic Co-ordinate Information: Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

Maps: Maps included in this report use data extracted from the NTS Map and Google Earth Pro.

Disclaimer: The Authors are not responsible for omissions and inconsistencies that may result from information not available at the time this report was prepared.

The Archaeological Impact Assessment Study was carried out within the context of tangible and intangible cultural heritage resources as defined by the SAHRA Regulations and Guidelines as to the authorisation of the proposed batching plant being proposed by Afrimat Readymix (Cape) (Pty) Ltd.

Signed by



10/ 06/ 2021

Acknowledgement

The author acknowledges Afrimat Readymix (Cape) (Pty) Ltd for their assistance with project information and responding to technical queries related to the project.

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EXECUTIVE SUMMARY

Afrimat Readymix (Cape) (Pty) Ltd intends to extend the Batching Plant on the Farm Erf 4886 in the Western Cape Province. The project is located in Macassar in an area that is predominantly sand mining, industrial and sewerage works (See Figure 1), This document serves to inform and guide the applicant (Afrimat Readymix (Cape) (Pty) Ltd) and contractors about the possible impacts that the proposed batching plant development may have on heritage resources (if any) located in the study area. In the same light, the document must also inform Heritage Western Cape (HWC) about the presence, absence and significance of heritage resources located in the study area. As required by South African heritage legislation, developments such as this require pre-development assessment by a competent heritage practitioner in order to identify, record and if necessary, salvage the irreplaceable heritage resources that may be impacted upon by the proposed batching plant. In compliance with the NEMA and NHRA, Afrimat Readymix (Cape) (Pty) Ltd tasked Integrated Specialists Services (Pty) Ltd to conduct a Phase 1 Archaeological Impact Assessment (AIA) of the proposed batching plant. Desktop studies, drive-throughs and fieldwalking were conducted in order to identity heritage landmarks within the proposed development site. The study area is not on entirely pristine landscape, having seen significant transformations owing to sand mining, wastewater treatment works and construction activities at the batching plant site. Thus, it is important to note that the project area has been heavily disturbed over the past years (see Plates 8, 9, 10 and 11). As such *in situ* archaeological remains might have been exposed and washed away by excessive erosion in the area. Although the area is known for MSA and LSA occurrences, no archaeological resources were identifiable on the surface. In terms of Section 36 of the NHRA, the study did not identify any grave or burial ground within the proposed development site. However, sub-surface archaeological material and unmarked graves may still exist and when encountered during clearance and construction at the batching site, work must be stopped forth-with, and the finds must be reported to the South African Heritage Resource Agency (SAHRA) or the heritage practitioner (see appended Chance Finds Procedure). This report must also be submitted to the Heritage Western Cape for review.

This report includes an impact study on potential archaeological and cultural heritage resources that may be associated with the proposed development site. This study was conducted as part of the specialist input for the Environmental authorisation process. The project information has been passed to ISS research team by the project EAP. Analysis of the archaeological, cultural heritage, environmental and historic contexts of the study area predicted that archaeological sites, cultural heritage sites, burial grounds or isolated artefacts were likely to be present on the affected landscape. The field survey was conducted to test this proposition and verify this prediction within the proposed development site.

Receiving Environment

The proposed batching plant site is located within a disturbed landscape owing to previous and current land use activities and infrastructure developments such as mining, Industrial and powerline infrastructure.

Restrictions and Assumptions

The investigation has been influenced by the unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence) and the difficulty in establishing intangible heritage values. It should be remembered that archaeological deposits (including graves and traces of mining heritage) usually occur below the ground level. Should artefacts or skeletal material be revealed at the site during construction, such activities should be halted immediately, and a competent heritage practitioner, Heritage Western Cape must be notified in order for an investigation and evaluation of the find(s) to take place (see NHRA (Act No. 25 of 1999), Section 36 (6). Recommendations contained in this document do not exempt the applicant from complying with any national, provincial and municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA. Integrated Specialists Services (Pty) Ltd assumes no responsibility for compliance with conditions that may be required by SAHRA in terms of this report.

Site-Location Model

Archaeologists who do research in the region generally accept a site-location model proposed by Maggs (1980). The model suggests that inland sites will be found in locations which bear the following:

- Limited to below an altitude of 1000 m asl;
- Situated on riverside or streamside locations, on deep alkaline colluvial soils; and
- In areas appropriate for dry farming (with sufficient summer rainfall).

Survey findings

The Phase I Archaeological Impact Assessment for the proposed batching plant did not identify any confirmable archaeological remains. In terms of Section 36 the study did not identify any grave or burial ground within the proposed development site. The proposed development site does not trigger Section 34 of the NHRA because there are no buildings or structures which are older than 60 years at the site.

Impact statement

The proposed batching plant has potential to disturb archaeological remains although limited. It is important to note that all categories of heritage resource, except for movable objects, are generally known to occur in the wider area of the proposed development site. However, this is not addressed in this report in detail.

The report makes the following observations:

- The findings of this report have been informed by desktop data review, field survey and impact assessment reporting which include recommendations to guide heritage authorities in making decisions with regards to the proposed development.
- The proposed development site is very accessible through main road and access roads, and the field survey was effective enough to cover most sections of the project receiving environs. However, dense vegetation cover compromised visibility of surface remains.
- The immediate project area is predominantly industrial, residential, and mining (see Figure 1)

This report concludes that the impacts of the proposed development on the cultural environmental values are not likely to be significant on the entire development site if the EMP includes recommended safeguard and mitigation measures identified in this report.

Recommendations

We recommend that HWC resolve to endorse the findings and recommendations of the AIA report as having met the requirements of Section 38 (1) of the NHRA and that no further studies are required. It is recommended that HWC decide that the proposed development may proceed in terms of Section 38 (4) subject to the following recommendations:

1. It is also advised that Heritage Western Cape is alerted when site work begins.
2. Strict and clear reporting procedures for chance findings must be followed by applicant and contractors throughout the whole period of construction.

The applicant is reminded that should any archaeological material be unearthed accidentally during the course of construction, Heritage Western Cape **must** be alerted immediately, and construction activities be stopped within a

radius of at least 30m of such indicator. The area should then be demarcated by a danger tape. Accordingly, a professional archaeologist should be contacted immediately. In the meantime, it is the responsibility of the Environmental officer and the contractor to protect the site from publicity (i.e., media) until a mutual agreement is reached. It is mandatory to report any incident of human remains encountered to the South African Police Services, SAHRA/Heritage Western Cape staff member and professional archaeologist. Any measure to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law under Section 35(4) and 36(3) of the National Heritage Resources Act, Act 25 of 1999. The applicant should induct field workers about archaeology, and steps that should be taken in the case of accidentally exposing archaeological materials (see appended Chance Find Procedure).

Conclusion

A thorough background study and survey of the proposed development site was conducted, and findings were recorded in line with SAHRA and Heritage Western Cape guidelines. In accordance with the recommendations above, there are no major archaeological reasons why the proposed development should not be allowed to proceed. Thus, it is recommended that the proposed batching plant proceed on condition that the recommendation indicated above are adhered to. Note that this report as well as its recommendations are inadequate without comments from SAHRA.

ABBREVIATIONS

AIA	Archaeological Impact Assessment
ECO	Environmental Control Officer
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EM	Environmental Manager
EMP	Environmental Management Plan
HWC	Heritage Western Cape
LIA	Late Iron Age
NHRA	Nation Heritage Resources Act, Act 25 of 1999
PM	Project Manager
PHRA	Provincial Heritage Agency
SM	Site Manager
SAHRA	South African Heritage Resources Agency

KEY CONCEPTS AND TERMS

Periodization Archaeologists divide the different cultural epochs according to the dominant material finds for the different time periods. This periodization is usually region-specific, such that the same label can have different dates for different areas. This makes it important to clarify and declare the periodization of the area one is studying. These periods are nothing a little more than convenient time brackets because their terminal and commencement are not absolute and there are several instances of overlap. In the present study, relevant archaeological periods are given below;

Early Stone Age (~ 2.6 million to 250 000 years ago)

Middle Stone Age (~ 250 000 to 40-25 000 years ago)

Later Stone Age (~ 40-25 000, to recently, 100 years ago)

Early Iron Age (~ AD 200 to 1000)

Late Iron Age (~ AD1100-1840)

Historic (~ AD 1840 to 1950, but a Historic building is classified as over 60 years old)

Definitions Just like periodization, it is also critical to define key terms employed in this study. Most of these terms derive from South African heritage legislation and its ancillary laws, as well as international regulations and norms of best practice. The following aspects have a direct bearing on the investigation and the resulting report:

Cultural (heritage) resources are all non-physical and physical human-made occurrences, and natural features that are associated with human activity. These can be singular or in groups and include significant sites, structures, features, ecofacts and artefacts of importance associated with the history, architecture, or archaeology of human development.

Cultural significance is determined by means of aesthetic, historic, scientific, social, or spiritual values for past, present, or future generations.

Value is related to concepts such as worth, merit, attraction or appeal, concepts that are associated with the (current) usefulness and condition of a place or an object. Although significance and value are not mutually exclusive, in some cases the place may have a high level of significance but a lower level of value. Often, the evaluation of any feature is based on a combination or balance between the two.

Isolated finds are occurrences of artefacts or other remains that are not in-situ or are located apart from archaeological sites. Although these are noted and recorded, but do not usually constitute the core of an impact assessment, unless if they have intrinsic cultural significance and value.

In-situ refers to material culture and surrounding deposits in their original location and context, for example an archaeological site that has not been disturbed by farming.

Archaeological site/materials are remains or traces of human activity that are in a state of disuse and are in, or on, land and which are older than 100 years, including artefacts, human and hominid remains, and artificial features and structures. According to the National Heritage Resources Act (NHRA) (Act No. 25 of 1999), no archaeological artefact, assemblage, or settlement (site) and no historical building or structure older than 60 years may be altered, moved or destroyed without the necessary authorisation from the South African Heritage Resources Agency (SAHRA) or a provincial heritage resources authority.

Historic material are remains resulting from human activities, which are younger than 100 years, but no longer in use, including artefacts, human remains and artificial features and structures.

Chance finds means archaeological artefacts, features, structures or historical remains accidentally found during development.

A grave is a place of interment (variably referred to as burial) and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place. A grave may occur in isolation or in association with others where upon it is referred to as being situated in a cemetery (contemporary) or burial ground (historic).

A site is a distinct spatial cluster of artefacts, structures, organic and environmental remains, as residues of past human activity.

Archaeological Impact **Assessment (HIA)** refers to the process of identifying, predicting, and assessing the potential positive and negative cultural, social, economic, and biophysical impacts of any proposed project, which requires authorisation of permission by law, and which may significantly affect the cultural and natural archaeological resources. Accordingly, an AIA must include recommendations for appropriate mitigation measures for minimising or circumventing negative impacts, measures enhancing the positive aspects of the proposal and heritage management and monitoring measures.

Impact is the positive or negative effects on human well-being and / or on the environment.

Mitigation is the implementation of practical measures to reduce and circumvent adverse impacts or enhance beneficial impacts of an action.

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

Study area or 'project area' refers to the area where the developer wants to focus its development activities (refer to plan).

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

1 INTRODUCTION

Background

Integrated Specialist Services was requested by Afrimat Readymix (Cape) (Pty) Ltd to carry out a Phase 1 AIA/ HIA of the proposed batch plant in the City of Cape Town, Western Cape Province. This study is submitted in terms of Section 38(1) of the National Heritage Resources Act (Act 25 of 1999). The purpose of this Archaeology Study is to assess presence/absence of heritage resources on the proposed development site. The study was designed to ensure that any significant archaeological or cultural physical property or sites are located and recorded, and site significance is evaluated to assess the nature and extent of expected impacts from the proposed development. The assessment includes recommendations to manage the expected impact of the proposed development. The report includes recommendations to guide heritage authorities in making appropriate decision with regards to the environmental approval process for the proposed batching plant. The report concludes with detailed recommendations on heritage management associated with the proposed ready mix batching plant. Integrated Specialists Services (Pty) Ltd (ISS), an independent consulting firm, conducted an assessment; research and consultations required for the preparation of the archaeological impact report in accordance with its obligations set in the NHRA as well as the environmental management legislations.

In line with SAHRA guidelines, this report, not necessarily in that order, provides:

1) Management summary
2) Methodology
3) Information with reference to the desktop study
4) Map and relevant geodetic images and data
5) GPS co-ordinates
6) Directions to the site
7) Site description and interpretation of the cultural area where the project will take place
8) Management details, description of affected cultural environment, photographic records of the project area
9) Recommendations regarding the significance of the site and recommendations regarding further monitoring of the site.
10) Conclusion

Description of the proposed project and location

Afrimat Readymix (Cape) (Pty) Ltd is proposing to erect a mobile batching plant on Erf 4886, Macassar for commercial use to service the Khayelitsha, Strand and Somerset West area. The proposed site covers an area approximately 9ha. The yard will consist of 2x 100ton silos on foundation, one karoo batching plant, two 6x2 mobile

container, a water scale, admix scale, loader ramp and one loader on site. An existing gravel road approximately 6m wide runs adjacent to the site and will be utilised as an access road to the existing sand mine to the south of the proposed development site. The proposed Ready-mix Batching Plant development will consist of a wash bay, water recycling pit and ponds, prefabricated access control, control rooms / office and staff amenities, a ready-mix loading area, load hood, a mobile batching plant consisting of a hopper, conveyor belt, cement and fly-ash silo and aggregate scale. Jojo tanks for water storage, and ready-mix bilo, aggregate storage bilo's and a dry out area bilo. It is noted that most of the infrastructure is mobile / temporary.

Erf 4886 Macassar is an underdeveloped and previously mined property located directly on the Macassar Road (M9), 830m east of Baden Powell Drive (R310), and directly east of the Zandvliet Wastewater Treatment Works and opposite Sandvlei Smallholdings. The property is currently owned by Propateez 66 (Pty) Ltd, a subsidiary of Afrimat Limited. Erf 4886 Macassar is a total of 9,062 ha (see Figure 2 below) of underdeveloped land which has been previously mined (sand mining). The property is currently zoned as Agricultural land, although no agricultural activities are taking place. Only 3900m2 of vegetation will have to be cleared for the proposed development. Therefore, only a portion of the 9, 062ha will be utilised for this project. An existing gravel access road which runs adjacent to the site and services as an access road to the existing sand mine to the South will be utilised as an access road to the proposed development.

The site is relatively flat, due to having been previously mined. An existing gravel access road which also serves as access to the Afrisam Mine to the south would serve as an access road to the proposed development. Surrounding land-uses include a wastewater treatment works (Zandvliet) to the West, a vacant previously mined area to the East, an existing sand mine (Afrisam) to the South and the Sandvlei Smallholdings to the North of the Macassar Road. Most of the study area is disturbed or degraded, with large expanses being devoid of vegetation because of the previous mining activity on site. See Figure 3 below.

PHOTOGRAPHIC PRESENTATION OF THE PROJECT SITE AND CONTEXT

Plate 1: Photo 1: View of an existing road cutting through the proposed development site (Photograph © by Author 2021).

Plate 2: Photo 2: Showing livestock grazing on the proposed development site (Photograph © by Author 2021).

Plate 3: Photo 3: Showing the boundary with the wastewater treatment plant. (Photograph © by Author 2021).

Plate 4: Photo 4: View of proposed development site (Photograph © by Author 2021).

Plate 5: Photo 6: Showing cleared patches within the development site (Photograph © by Author 2021).

Plate 6: Photo 6: View of proposed development site (Photograph © by Author 2021).

Plate 7: Photo 7: View of the proposed development site (Photograph © by Author 2021)

Plate 8: Photo 8: View of proposed development site with excavations from previous mining activities (Photograph © by Author 2021)

Plate 9: Photo 9: View of proposed development site (Photograph © by Author 2021).

Plate 10: Photo 10: View the proposed development site (Photograph © by Author 2021).

Table 1: Location details of the project site

Location of all proposed sites:	Macassar, Western Cape
Farm / Erf name(s) and number(s) (including Portions thereof) for each proposed site:	Erf 4886
Property size(s) in m² for each proposed site:	90 632.13 m²
Development footprint size(s) in m²:	9ha
Surveyor General (SG) 21-digit code for each proposed site:	C06700150000488600000

Table 2:Coordinates of the proposed project site

	Latitude (S): (deg.; min.; sec)			**Longitude (E):** (deg.; min.; sec.)		
Coordinates of all the proposed activities on the property or properties (sites):	34 °	3 ´	12.99"	18º	43‘	34.74“
	34 °	3 ‘	27.49“	18º	43‘	15.96“
	34 °	3 ‘	24.51“	18º	43‘	12.32“
	34 °	3 ‘	9.89“	18º	43‘	31.92“

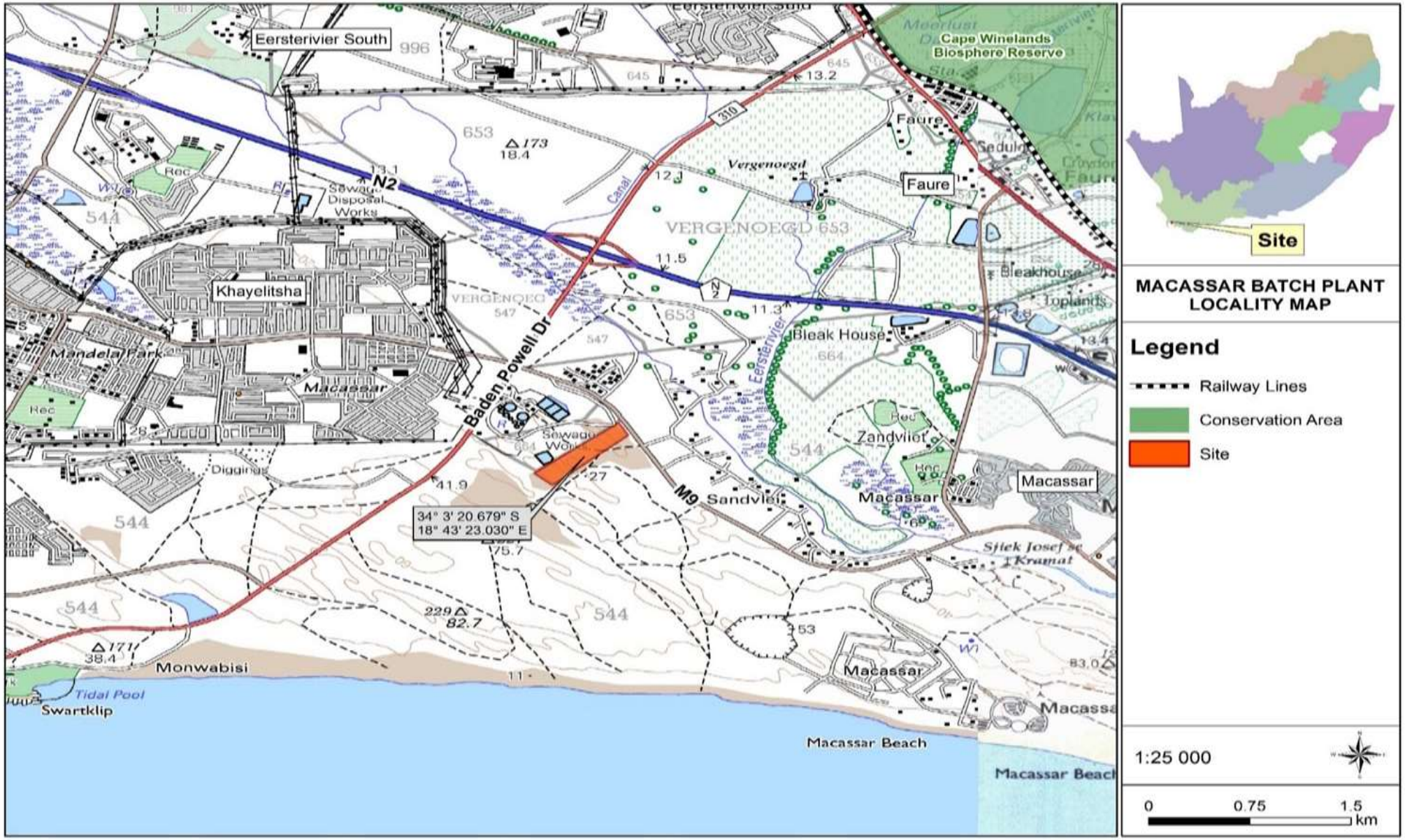

Figure 1: Locality map for proposed development site (Afrimat Readymix (Cape) (Pty) Ltd 2021)

Figure 2: Proposed development Site (Author 2021)

Figure 3: Proposed development Site (Author 2021)

2 LEGAL REQUIREMENTS

Notification of Intent to Develop (NID) dated 13 June 2020 was submitted to Heritage Western Cape (HWC) as the proposed project triggers Section 38 of the National Heritage Resources Act (Act 25 of 1999). Section 38(1)(c)(i) states that any person who intends to undertake a development or other activity which will change the character of a site exceeding 5000m² in extent must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority. The site is larger than 5000m², however, HWC has not yet responded to our NID submission and in the interest of time we opted to submit this archaeological report while waiting for instruction from HWC. In fulfilling statutory requirements, this report is compiled in line with requirements of Section 38(3) of the NHRA Act 25 of 1999 and aims to provide necessary and relevant information to guide HWC decision-making process. This assessment is to be submitted to Heritage Western Cape for approval where the outcomes of HWC Record of Decision are to be included with application to the City of Cape Town in terms of Integrated Zoning Scheme and Municipal Planning By-Laws detailing Heritage Protection Overlay Zone (HPOZ) controls.

The study is also conducted under the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) and 2014 Regulations, an AIA or HIA is required as a specialist sub-section of the EIA. Heritage management and conservation in South Africa is governed by the NHRA and falls under the overall jurisdiction of the SAHRA and its PHRAs. There are different sections of the NHRA that are relevant to this study. As indicated earlier on the the proposed development is a listed activity in terms of Section 38 of the NHRA which stipulates that the following development categories require a HIA to be conducted by an independent heritage management consultant:

- Construction of a road, wall, **powerline**, pipeline, canal or other linear form of development or barrier exceeding 300m in length
- Construction of bridge or similar structure exceeding 50m in length
- Development or other activity that will change the character of a site -
  - Exceeding 5000 sq. m
  - Involving three or more existing erven or subdivisions
  - Involving three or more erven or divisions that have been consolidated within past five years
  - Rezoning of site exceeding 10 000 sq. m
  - The costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority
- Any other development category, public open space, squares, parks, recreation grounds

Thus, any person undertaking any development in the above categories, must at 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. Section 38 (2) (a) of the NHRA also requires the

submission of an archaeological impact assessment report for authorization purposes to the responsible heritage resources agencies (SAHRA/PHRAs).

Related to Section 38 of the NHRA are Sections 34, 35, 36 and 37. Section 34 stipulates that no person may alter, damage, destroy, relocate etc. any building or structure older than 60 years, without a permit issued by SAHRA or a provincial heritage resources authority. Section 35 (4) of the NHRA stipulates that no person may, without a permit issued by SAHRA, destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object. This section may apply to any significant archaeological sites that may be discovered before or during construction. This means that any chance find must be reported to SAHRA or PHRA (the relevant PHRA), who will assist in investigating the extent and significance of the finds and inform about further actions. Such actions may entail the removal of material after documenting the find site or mapping of larger sections before destruction. Section 36 (3) of the NHRA also stipulates that no person may, without a permit issued by the SAHRA, destroy, damage, alter, exhume or 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. This section may apply in case of the discovery of chance burials, which is unlikely. The procedure for reporting chance finds also applies to the likely discovery of burials or graves by the developer or his contractors. Section 37 of the NHRA deals with public monuments and memorials which exist in the proposed project area.

In addition, the new EIA Regulations (4 December 2014) promulgated in terms of NEMA (Act 107 of 1998) determine that any environmental reports will include cultural (heritage) issues. The new regulations in terms of Chapter 5 of the NEMA provide for an assessment of development impacts on the cultural (heritage) and social environment and for Specialist Studies in this regard. The end purpose of such a report is to alert the applicant (Afrimat Readymix) environmental consultant, SAHRA or HWC and interested and affected parties about existing heritage resources that may be affected by the proposed development, and to recommend mitigatory measures aimed at reducing the risks of any adverse impacts on these heritage resources.

A Notification of Intent to Develop (NID) was submitted to Heritage Western Cape (HWC) on the 13th of June 2020 (see appended copy of email). Other than the acknowledgement of receipt of the NID, we have not received any recommendations or instructions from Heritage Western Cape. In the interest of time, we are submitting this Archaeological Impact Assessment and a Palaeontological impact assessment while waiting for instructions from HWC.

Table 3: Evaluation of the proposed development as guided by the criteria in NHRA, MPRDA and NEMA

ACT	Stipulation for developments	Requirement details
NHRA Section 38	Construction of road, wall, power line, pipeline, canal or other linear form of development or barrier exceeding 300m in length	No
	Construction of bridge or similar structure exceeding 50m in length	No
	Development exceeding 5000 sq. m	Yes
	Development involving three or more existing erven or subdivisions	No
	Development involving three or more erven or divisions that have been consolidated within past five years	No
	Rezoning of site exceeding 10 000 sq. m	No
	Any other development category, public open space, squares, parks, recreation grounds	No
NHRA Section 34	Impacts on buildings and structures older than 60 years	No
NHRA Section 35	Impacts on archaeological and paleontological heritage resources	Subject to identification during Phase 1 walk down survey
NHRA Section 36	Impacts on graves	Subject to identification during Phase 1
NHRA Section 37	Impacts on public monuments	No
Chapter 5 (21/04/2006) NEMA	HIA is required as part of an EIA	Yes
Section 39(3)(b) (iii) of the MPRDA	AIA/HIA is required as part of an EIA	No

Other relevant legislations

The Human Tissue Act

Human Tissue Act of 1983 and Ordinance on the Removal of Graves and Dead Bodies of 1925 are relevant to this study. Graves older than 60 years fall under Section 36 of the NHRA. Graves that are younger than 60 years are specifically protected by the Human Tissues Act (Act 65 of 1983) and the Ordinance on the Removal of Graves and Dead Bodies (Ordinance 7 of 1925) as well as any local and regional provisions, laws and by-laws. Such burial

places also fall under the jurisdiction of the National Department of Health and the Provincial Health Departments. Approval for the exhumation and re-burial must be obtained from the relevant Provincial Member of the Executive Committee (MEC) as well as the relevant Local Authorities.

The main municipal guideline for the management of heritage resources is the Integrated Metropolitan Environmental Policy (IMEP): Cultural Heritage Strategy, 2005 which contains a series of policies of principle and management related policies which guide and commit the City in the conservation and enhancement of historic sites and their appropriate use.

The other important municipal regulation is the Zoning Scheme Regulations of 2013. Heritage Protection Overlay Zone (HPOZ): Since 1 March 2013 areas previously protected as Conservation/Special Areas under the old Zoning Schemes are now protected as Heritage Protection Overlays under the new integrated Cape Town Zoning Scheme.

Terms of Reference

The study was conducted to fulfil the requirements of Section 38 of the National Heritage Resources Act (Act 29 of 1999). The author submitted the mandatory NID to Heritage Western Cape on the 13th of June 2020 and only received acknowledgement of receipt (see appended email from HWC). In the absence of response from Heritage Western Cape, this report will address the following issues:

- To identify heritage related policy and planning frameworks affecting the proposed development site
- Archaeological and heritage potential of the proposed development site including any known data on affected areas;
- Provide details on methods of study; potential and recommendations to guide the Heritage Western Cape to make an informed decision in respect of authorisation of the proposed development.
- Identify all objects, sites, occurrences, and structures of an archaeological or historical nature (cultural heritage sites) located in and around the proposed development site;
- Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
- Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;
- Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources;
- Review applicable legislative requirements;

3 METHODOLOGY

Relevant published and unpublished sources were consulted in generating desktop information for this report. This included online databases such as the UNESCO website, Google Earth, Google Scholar and SAHRIS. Previous AIA in the project area were also consulted (Willis 2001, Kaplan 2001, 2003, Winter *et al* 2016). Several published works on the archaeology, history and palaeontology were also consulted. Thus, the proposed development by Afrimat Readymix (Cape) (Pty) Ltd was considered in relation to the broader landscape, which is a key requirement of the ICOMOS Guidelines.

This document falls under the basic assessment phase of the AIA and therefore aims at providing an informed heritage-related opinion about the proposed development. This is usually achieved through a combination of a review of any existing literature and a basic site inspection. As part of the desktop study, published literature and cartographic data, as well as archival data on heritage legislation, the history and archaeology of the area were studied. The study also utilized the Cape Town City's heritage protection overlay zone to understand the heritage sensitivity of the site. The desktop study was followed by field surveys. The field assessment was conducted according to generally accepted AIA practices and aimed at locating all possible heritage objects, sites and features of cultural significance on the proposed development site. Initially a drive-through was undertaken around the proposed development site as a way of acquiring the archaeological impression of the general area. This was then followed by a walk down survey in the study area, with a handheld Global Positioning System (GPS) for recording the location/position of each possible site. Detailed photographic recording was also undertaken where relevant. The findings were then analysed in view of the proposed development in order to suggest further action. The result of this investigation is a report indicating the presence/absence of heritage resources and how to manage them in the context of the proposed development.

The field survey was undertaken in May of 2021 by a team of 3 archaeologists. The proposed development site was surveyed through tracks, footpaths which cut across the proposed development site. The focus of the survey involved a pedestrian survey which was conducted across the proposed site. The pedestrian survey focussed on parts of the project area where it seemed as if disturbances may have occurred in the past, for example bald spots in the grass veld; stands of grass which are taller that the surrounding grass veld; the presence of exotic trees; evidence for building rubble, and ecological indicators such as invader weeds.

The literature survey suggests that prior to the 20th century modern agriculture and associated infrastructure; the general project area would have been a rewarding region to locate archaeological resources. However, the situation today is completely different. The study area now lies on a clearly modified landscape that has previously been cleared of vegetation but is now dominated by sand mining, sewerage works and residential developments.

Assumptions and Limitations

The investigation has been influenced by the unpredictability of buried archaeological remains (absence of evidence does not mean evidence of absence) and the difficulty in establishing intangible heritage values. It should be noted that archaeological deposits (including graves and traces of archaeological heritage) usually occur below the ground level. Should artefacts or skeletal material be revealed at the site during construction, such activities should be halted immediately, and a competent heritage practitioner, Heritage Western Cape must be notified for an investigation and evaluation of the find(s) to take place (see NHRA (Act No. 25 of 1999), Section 36 (6). Recommendations contained in this document do not exempt the applicant from complying with any national, provincial, and municipal legislation or other regulatory requirements, including any protection or management or general provision in terms of the NHRA. The author assumes no responsibility for compliance with conditions that may be required by Heritage Western Cape in terms of this report.

The field survey did not include any form of subsurface inspection beyond the inspection of burrows, road cut sections, and the sections exposed by erosion. Some assumptions were made as part of the study and therefore some limitations, uncertainties and gaps in information would apply. It should, however, be noted that these do not invalidate the findings of this study in any significant way:

- This AIA is based on information that is currently available.
- ii) No public participation process as yet been done due to Covid restrictions.
- The proposed construction activities will be limited to specific right of site as detailed in the development layout (Figure 1).
- The construction team to provide link and access to the proposed site by using the existing access roads and there will be no construction beyond the demarcated site.
- No excavations or sampling were undertaken since a permit from heritage authorities is required to disturb a heritage resource. As such the results herein discussed are based on surficial indicators observed. However, these surface observations concentrated on exposed sections such as road cuts and clear farmland.
- This study did not include any ethnographic and oral historical studies, nor did it investigate the settlement history of the area.

Consultations

Heritage Western Cape requires that comments must be invited from registered heritage conservation bodies and the relevant municipality. This draft archaeological impact assessment as well as supporting documentation will be made available for the Basic Assessment commenting period. Submissions received will be included within final report for submission to the authorities. Only comments on heritage grounds will be considered during the commenting period. Public consultations are being conducted by the project EAP and issues raised by Interested and Affected parties will be presented during project specialist integration meetings. Issues relating to heritage will be forwarded to the author. Given lockdown restrictions in 2020 and 2021, it was not possible to host face-to-face meetings. However, to date, several interested and affected parties must have been contacted telephonically by the project EAP, in addition to written correspondence virtual meetings will be held to reach out to communities. To date, discussions have included identification of heritage resources, significance of heritage resources and presentation of proposals. Further interaction of this nature as well as proof of consultation will be documented for inclusion within the final report to be submitted to HWC.

4 CULTURE HISTORY BACKGROUND OF THE PROJECT AREA

The Western Cape province is characterised by a multi-layered past. This multi-layered past comprises of the archaeological evidence as well as the rich historical period that documents the life of the indigenous people the Khoisan. Archaeologically, the Homo Sapiens are understood to have occupied the Cave sites along the coastal area of the Western Cape Province as well as some open sites. Most common archaeological material include lithic tools, shell middens, ostrich eggshell beads, ochre, bone points among other artefacts. Therefore, these are some of the materials which one is mostly likely to encounter or come across when doing an archaeological impact assessment around the Western Cape Province and hence for the Macassar site the surveyors were on high alert looking for such archaeological material that may signify human occupation in the past around that area. Also, another important sensitive matter includes graves which always occur in some places that may have been occupied in the past. Graves are sacred and are protected by the Heritage legislation of South Africa and sometimes are found wherever where people once lived, and the Western Cape included.

The coastline archaeological material is dominated by the Middle Stone Age material as well as Later Stone Age material. Some of the rich archaeological sites that are found on the Western Cape Coast include for example Pinnacle Point, Blombos Cave and Matjes River site. For instance, Blombos cave has yielded the famous decorated ochre engraving which according to Henshilwood *et a*l (2002), ochre workshop which included two shells, ochre and some stones that were perhaps used to ground the ochre and more recently stone with abstracts drawing. The team of archaeologists led by the principal investigator Prof Chris Henshilwood believes that all these materials are

very important in understand the history of the development of modern human cognition. For instance, the team believes that the drawings or patterns appear on ochre blocks and shell beads which indicate that it was a common practice among the Middle Stone Age people (Henshilwood *et al*. 2003). Therefore, the area has a very rich past of how Homo Sapiens or modern human beings interacted with their environment, what they ate, and some of their socio-cultural practices like personal adornment materials like ostrich eggshell beads and ochre.

In some cases, some open-air sites are also found (Henshilwood 1995). For instance, Henshilwood excavated some of these open sites. The archaeological material commonly found in the Western Cape area include lithic tools, shell middens that have a combination of materials that include fish and other animal remains. More importantly there are some human remains that are also found in some of the cave sites that are dotted around the coastline. For example, the Matjes River has yielded around 130 burials (Louw 1960). However, in relation to Macassar area there are no caves nearby but there are sand dunes which form the barrier between the site earmarked for the excavation of sand and the coastline. No known, archaeological materials have been recorded from these sand dunes and hence can be regarded as not archaeological sensitive.

Besides the rich archaeological material around the Western Cape Province, it is important to highlight that the area was home to indigenous people, the Khoisan. They occupied the area, built temporary structures and also used the rock over hangs as well as caves where possible. They relied on their surrounding environment for food, and they were also herders (Parkington 2003). At a later stage, the whites people started to come into the area. Some of the activities of the indigenous people been documented by the likes of travellers like Peter Thunberg and Sparrman who have documented the lives of the indigenous people around the Western Cape Province and beyond.

Another important historical episode includes the interactions between the white settlers and the indigenous people. For, instance the history of the Dutch East India Company (VOC) in the Western Cape is well documented and known. The Oudepost 1 site near Saldanha Bay in the Western Cape was occupied in the late seventeenth and early eighteenth centuries as an outpost and this site has some evidence that have been recovered which bears testimony of the interactions between whites and the indigenous people (Schrire and Deacon 1989). There artefacts include buttons, and combs which have been identified as colonial artefacts and on the other hand there are some artefacts that include bone points and ostrich eggshell which are regarded to have been used by the indigenous Khoisan (Schrire and Deacon 1989).

The Western Cape also has several rock paintings that are found on granite outcrops around the province. For instance, there are some known rock paintings from the Cederberg area (Parkington 2013). However, there are no granite outcrops on the area that is ear marked for development by Afrimat Readymix (Cape) (Pty) Ltd operations in Macassar, Western Cape.

To zero into the Macassar area, there is the Dadelboom heritage site. The site is named after the dadelboom trees that are protected (cybo.com). As part of community engagement, we called the Dadelboom Heritage Site available on their website to find out more about the heritage site. The name dadelboom is of Dutch origin and this may indicate the Dutch activities in the Macassar area which is a clear testimony of the multilayered histories around the Western Cape area. The responsible people for Dadelboom Heritage Site feel that the heritage site is threatened by developments that are happening around the area. However, it is in the interest of heritage as well as the natural ecosystem that the area and its trees should be protected. This site is significantly far from the area that is earmarked for Afrimat Readymix (Cape) (Pty) Ltd extraction activities and hence it is not threatened. There are also no dadelboom trees around the development area.

The Macassar Dunes Nature reserve is located near the project area (showme.co.za). The Macassar area is known for the development and growth of Islam religion with Shekh Yusuf as the central figure. Yusuf is a struggle icon who fought against European Imperialism. The Macassar area is also known for the clashes between the apartheid government and struggle icons like Steve Biko who are believed to have found refuge in the caves that are in the Macassar Dunes Nature Reserve vicinity (showme.co.za). The name Macassar was coined in honour of Shekh who was banished from Makassar in Indonesia because of his fierce activism against European imperialism. Therefore, the Macassar area has a very strong connections with the activism of Shekh who a strong adherent of Islam was.

Yusuf was banished to the Cape Colony in 1667(David 1980). Many more were exiled to the Cape Colony for their resistance to Dutch imperialism. The exiles were treated as political prisoners and many died due to harsh treatment, however, some were later returned to their native countries.

The Dutch imperialism in the far east especially in Indonesia was met with fierce resistance. Many rulers were captured and deported to the Cape Colony as punishment. Sultan Ageng revolted against Dutch imperialism; he waged a gorilla warfare which saw the Dutch offering 1000 rixdollars for his capture. After fierce resistance Sultan Ageng eventually surrendered while his compatriots, Sheik Yusuf and his son Poebaya continued with war. Yusuf was captured in 1686 and was banished to the Cape of Good hope. He grew in popularity due to his knowledge of Islam religion and resistance to Dutch imperialism. He arrived at the Cape of Good hope on the 2nd of April 1694 where he received a royal welcome from Governor Simon Van der Stel (Davis 1980). Thereafter, Yusuf and 49 others were sent to an isolated farm called Macassar. He stayed at Macassar until his death. Yusuf died in 1699 and was buried at Macassar. His followers were later returned to their native countries. However, 2 of his followers and his daughter Seratina Sara RaJah were sentenced for rebelling against the Dutch East India company. Yasuf intervened in the matter and Rajah was relocated to Vergelesen where she wrote the Quran from memory as a gift

to Governor Van der stel. It is important to note that the proposed development site is far from the historical Macassar.

Intangible Heritage

As defined in terms of the UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (2003) intangible heritage includes oral traditions, knowledge and practices concerning nature, traditional craftsmanship and rituals and festive events, as well as the instruments, objects, artefacts and cultural spaces associated with group(s) of people. Thus, intangible heritage is better defined and understood by the particular group of people that uphold it. In the present study area, little intangible heritage is anticipated on the development footprint because most historical knowledge does not suggest a relationship with the study area per se, even though several other places in the general area such do have intangible heritage.

SAHRIS Database and Impact assessment reports in the proposed project area

Previous archaeological impact studies conducted in the general area since 2001 did not identified any significant archaeological remains within the proposed development site and its surroundings (Willies 2001, Kaplan 2003, 2005, 2006a, b, c, d, 2007a &b, 2008).

5 RESULTS OF THE ARCHAEOLOGICAL ASSESSMENT STUDY

The main cause of impacts to archaeological sites is direct, physical disturbance of the archaeological remains themselves and their contexts. It is important to note that the heritage and scientific potential of an archaeological site is highly dependent on its geological and spatial context. This means that even though, for example a deep excavation may expose buried archaeological sites and artefacts, the artefacts are relatively meaningless once removed from their original position. The severe impacts are likely to occur during clearance, and drilling, indirect impacts may occur during movement of construction equipment. Similarly, the clearing of access roads will impact material that lies buried in the surface sand. Since heritage sites, including archaeological sites, are non-renewable, it is important that they are identified, and their significance assessed prior to construction. It is important to note, that due to the localised nature of archaeological resources, that individual archaeological sites could be missed during the survey, although the probability of this is low within the proposed development site. Further, archaeological sites and unmarked graves may be buried beneath the surface may only be exposed during construction. The purpose of this study is to assess the sensitivity of the area in terms of archaeology and to avoid or reduce the potential impacts of the proposed development by means of mitigation measures (see appended Chance Find Procedure). The study concludes that the impacts will be negligible since the drilling points are spaced and smaller. The following section presents results of the field survey. The following section presents results of the archaeological and heritage survey conducted within the proposed development project site.

Heritage resource	Status/Findings
Buildings, structures, places and equipment of cultural significance	None recorded during the survey
Areas to which oral traditions are attached or which are associated with intangible heritage	None exists on the study area
Historical settlements and townscapes	None recorded on the study site
Landscapes and natural features of cultural significance	None
Archaeological sites	None recorded within the proposed development site
Graves and burial grounds	None recorded within the proposed development site must be protected/
Movable objects	None
Overall comment	Although no burial site was recorded within the proposed development site, there is potential to encounter unmarked graves.

Archaeological and Sites

The proposed development site did not yield any confirmable archaeological sites or material. Based on the field study results and field observations, it is the considered opinion of the author that the receiving environment for the proposed development site is low to medium potential to yield previously unidentified archaeological sites during construction.

Buildings and Structures older than 60 years

The study did not identify any buildings or structures which are older than 60 years old. As such the proposed batching plant does not trigger Section 34 of the NHRA which protects buildings and structures that are older than 60 years.

Burial grounds and graves

Human remains and burials are commonly found close to archaeological sites; they may be found in abandoned and neglected burial sites or occur sporadically anywhere because of prehistoric activity, victims of conflict or crime. It is often difficult to detect the presence of archaeological human remains on the landscape as these burials, in most cases, are not marked at the surface. Archaeological and historical burials are usually identified when they

are exposed through erosion and earth moving activities for infrastructure developments such as powerlines and roads. In some instances, packed stones or stones may indicate the presence of informal pre-colonial burials.

The study did not identify any graves or burial sites within the proposed development site however, the possibility of encountering previously unidentified burial sites is low within the proposed development site, should such sites be identified during construction, they are still protected by applicable legislations, and they should be protected (also see Appendixes for more details). Burial sites older than 60 years are protected by the NHRA and those younger than 60 years are protected by the Human Tissue Act. Exhumation of graves must confirm to the standards set out in the ordinance on excavation (Ordinance no.12 of 1980). In terms of Section 36 of the NHRA, the proposed project may be approved without mitigation.

Significance valuation for Burial Ground, Historic Cemeteries, and Individual Graves

The significance of burial grounds and gravesites is closely tied to their age and historical, cultural, and social context. Nonetheless, every burial should be considered as of high socio-cultural significance protected by practices, a series of legislations, and municipal ordinances.

Public Monuments and Memorials

The survey did not identify any historical monument and public memorials within the proposed development site. There are no monuments or plaques within the proposed development site that are on the National Heritage or provincial List. In terms of Section 37 of the NHRA, the proposed project may be approved without any mitigation or further investigation.

Battle fields

No known battles or skirmishes associated with the South African war and the struggle against colonial rule/apartheid were fought on the proposed development site.

Archaeo-Metallurgy, Prehistoric Mining and Mining Heritage

None were recorded at the proposed development site,

Mitigation

Mitigation is not required for this site. The proposed development may proceed without mitigation from an archaeological perspective. However, construction teams must be inducted on how to identify heritage resources during construction and the reporting procedure in accordance with the appended Chance find procedure.

6 CUMMULATIVE IMPACTS

The assessment of cumulative impacts for the proposed development is considered the total impact associated with the proposed batching plant when combined with other past, present, and reasonably foreseeable future developments projects. This section considers the cumulative impacts that would result from the combination of the proposed development. There are existing infrastructure developments and agriculture activities within the proposed development site. As such increased development in the project area will have cumulative impacts on heritage resource whether known or covered in the ground. For example, during construction phase they will be increase in human activity and movement of heavy construction equipment and vehicles that could change, alter or destroy heritage resources within and outside the proposed development site given that archaeological remains occur on the surface. Cumulative impacts that could result from a combination of the proposed development and other actual or proposed future developments in the broader study area include site clearance and the removal of topsoil could result in damage to or the destruction of heritage resources that have not previously been recorded for example abandoned and unmarked graves.

Heritage resources such as burial grounds and graves and archaeological as well as historical sites are common occurrences within the greater study area. These sites are often not visible and as a result, can be easily affected or lost. As such, construction workers may not see these resources, which results in increased risk of resource damage and/or loss.

No specific paleontological resources were found in the project area during the time of this study; however, this does not preclude the fact that paleontological resources may exist within the greater study area. Sites of archaeological significance were identified, and cumulative effects are applicable. The nature and severity of the possible cumulative effects may differ from site to site depending on the characteristics of the sites and variables.

Cumulative impacts that need attention are related to the impacts of access roads and impacts to surface archaeological remains. Allowing the impact of the proposed construction to go beyond the surveyed area would result in a significant negative cumulative impact on sites outside the surveyed area. A significant cumulative impact that needs attention is related to stamping by especially construction vehicles during construction. Movement of heavy construction equipment must be monitored to ensure they do not drive beyond the approved sites. No significant cumulative impacts, over and above those already considered in the impact assessment, are foreseen at this stage of the assessment process. Cumulative impacts can be significant, if construction vehicles/equipment are not monitored to avoid driving through undetected heritage resources.

7 ASSESSMENT OF SIGNIFICANCE

An impact can be defined as any change in the physical-chemical, biological, cultural and/or socio-economic environmental system that can be attributed to human activities related to the proposed development under study for meeting a project need. The significance of the impacts of the process will be rated by using a matrix derived from Plomp (2004) and adapted to some extent to fit this process. These matrixes use the consequence and the likelihood of the different aspects and associated impacts to determine the significance of the impacts.

The significance of the impacts will be determined through a synthesis of the criteria below:

Table 4: Criteria Used for Rating of Impacts

Nature of the impact (N)		
Positive	+	Impact will be beneficial to the environment (a benefit).
Negative	-	Impact will not be beneficial to the environment (a cost).
Neutral	0	Where a negative impact is offset by a positive impact, or mitigation measures, to have no overall effect.
`Magnitude(M)		
Minor	2	Negligible effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been altered significantly and have little to no conservation importance (negligible sensitivity*).
Low	4	Minimal effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been largely modified, and / or have a low conservation importance (low sensitivity*).
Moderate	6	Notable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have already been moderately modified and have a medium conservation importance (medium sensitivity*).
High	8	Considerable effects on biophysical or social functions / processes. Includes areas / environmental aspects which have been slightly modified and have a high conservation importance (high sensitivity*).
Very high	10	Severe effects on biophysical or social functions / processes. Includes areas / environmental aspects which have not previously been impacted upon and are pristine, thus of very high conservation importance (very high sensitivity*).
Extent (E)		
Site only	1	Effect limited to the site and its immediate surroundings.
Local	2	Effect limited to within 3-5 km of the site.
Regional	3	Activity will have an impact on a regional scale.
National	4	Activity will have an impact on a national scale.
International	5	Activity will have an impact on an international scale.
Duration (D)		
Immediate	1	Effect occurs periodically throughout the life of the activity.
Short term	2	Effect lasts for a period 0 to 5 years.

Medium term	3	Effect continues for a period between 5 and 15 years.
Long term	4	Effect will cease after the operational life of the activity either because of natural process or by human intervention.
Permanent	5	Where mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.
Probability of occurrence (P)		
Improbable	1	Less than 30% chance of occurrence.
Low	2	Between 30 and 50% chance of occurrence.
Medium	3	Between 50 and 70% chance of occurrence.
High	4	Greater than 70% chance of occurrence.
Definite	5	Will occur, or where applicable has occurred, regardless or in spite of any mitigation measures.

Once the impact criteria have been ranked for each impact, the significance of the impacts will be calculated using the following formula:

Significance Points (SP) = (Magnitude + Duration + Extent) x Probability

The significance of the ecological impact is therefore calculated by multiplying the severity rating with the probability rating. The maximum value that can be reached through this impact evaluation process is 100 SP (points). The significance for each impact is rated as High (SP≥60), Medium (SP = 31-60) and Low (SP<30) significance as shown in the below.

Table 5: Criteria for Rating of Classified Impacts

Significance of predicted NEGATIVE impacts		
Low	0-30	Where the impact will have a relatively small effect on the environment and will require minimum or no mitigation and as such have a limited influence on the decision
Medium	31-60	Where the impact can have an influence on the environment and should be mitigated and as such could have an influence on the decision unless it is mitigated.
High	61-100	Where the impact will definitely have an influence on the environment and must be mitigated, where possible. This impact will influence the decision regardless of any possible mitigation.
Significance of predicted POSITIVE impacts		
Low	0-30	Where the impact will have a relatively small positive effect on the environment.
Medium	31-60	Where the positive impact will counteract an existing negative impact and result in an overall neutral effect on the environment.
High	61-100	Where the positive impact will improve the environment relative to baseline conditions.

Table 6: Operational Phase

Impacts and Mitigation measures relating to the proposed project during Operational Phase														
Activity/Aspect	**Impact /**	**Aspect**	**Nature**	**Magnitude**	**Extent**	**Duration**	**Probability**	**Significance before mitigation**	**Mitigation measures**	**Magnitude**	**Extent**	**Duration**	**Probability**	**Significance after mitigation**
Clearing and construction	Destruction of archaeological remains	Cultural heritage	-	4	2	4	2	20	• Use chance find procedure to cater for accidental finds	4	2	2	2	16
	Disturbance of graves	Cultural heritage	-	4	2	4	2	20	• Mitigation not required	6	2	4	3	4
	Disturbance of buildings and structures older than 60 years old	Operational	-	4	1	2	2	14	• None required	4	1	2	2	14
Movement of equipment	Destruction public monuments and plaques	Operational	-	2	1	1	1	4	• Mitigation is not required because there are no public monuments within the mining right application site	2	1	1	4	4

Based on the results of the Impact Assessment Matrix the proposed development site is viable from a heritage perspective.

8 STATEMENT OF SIGNIFICANCE

Aesthetic Value

The aesthetic values of the AIA Study Area and the overall project area are contained in the valley bushveld environment and landscape typical of this part of the Western Cape Province. The visual and physical relationship between AIA study area and the surrounding historical Cultural Landscape demonstrates the connection of place to the local and oral historical stories of the KhoiSan communities who populated this region going back into prehistory.

The proposed development site will be situated within an environment and associated cultural landscape, which, although developed by existing settlements, remains representative of the original historical environment and cultural landscape of this part of Western Cape. The local communities consider the project area a cultural landscape linked to their ancestors and history. However, the proposed readymix batch plant will not alter this aesthetic value in any radical way since the site is small and located within the existing industrial site.

Historic Value

The Indigenous historic values of the Site of Interest and overall study area are contained in the claim of possible historic homesteads being located on the affected area. The history of generations of the KhoiSan clans is tied to this geographical region. Such history goes back to the pre-colonial period, through the colonial era, the colonial wars and subsequent colonial rule up to modern-day Western Cape Province.

Scientific value

Past settlements and associated roads and other auxiliary infrastructure developments and disturbance within the study Area associated with the proposed development site has resulted in limited intact landscape with the potential to retain intact large scale or highly significant open archaeological site deposits.

Social Value

The project sites fall within a larger and an extensive cultural landscape that is integrated with the wider inland. The Macassar area has social value related to the Sheik Yusuf and Islamic religion in South Africa. Literature review suggests that social value of the overall project area is also demonstrated through local history which associates the area with the coming of exiles from The Far East and their treatment by the colonial government in the Cape colony. Pilgrims visit the burial site of Sheik Yusuf at Macassar. The land also provides the canvas upon which daily socio-cultural activities are painted. All these factors put together confirms the social significance of the project area. However, this social significance is unlikely to be negatively impacted by the proposed development especially given the fact that the development is located far from the historical Macassar site.

9 IMPACT STATEMENT

The Phase 1 Archaeological Impact Assessment did not identify any significant impacts to pre-colonial archaeological remains that will need to be mitigated prior to the proposed development activities. The assessment of the proposed project site rated the potential impact to archaeological material as being low for the proposed development site. However, probability of recovering significant archaeological remains during implementation of the project. The proposed project site is not considered to be archaeologically sensitive, vulnerable or threatened. It is highly unlikely given the severely modified nature of the receiving environment, but unmarked human burials may be uncovered or exposed during earthmoving activities (appended Chance find procedure).

10 DRAFT RECOMMENDATIONS

The study did not find any permanent barriers to the proposed readymix batching plant. It is the considered opinion of the author that the proposed development may proceed from a heritage resources management perspective if mitigation measures are implemented. The following recommendations are based on the results of the AIA research, cultural heritage background review, site inspection and assessment of significance.

- The proposed Ready mix batch plant may be approved to proceed as planned under observation that project work does not extend beyond the surveyed site.
- Should chance archaeological materials or human burial remains be exposed during subsurface construction work on any section of the proposed development laydown sites, work should cease on the affected area and the discovery must be reported to the heritage authorities immediately so that an investigation and evaluation of the finds can be made. The overriding objective, where remedial action is warranted, is to minimize disruption in construction scheduling while recovering archaeological and any affected cultural heritage data as stipulated by the NHRA regulations.
- Subject to the recommendations herein made and the implementation of the mitigation measures and adoption of the project EMP, there are no other significant cultural heritage resources barriers to the proposed development. The Heritage authority may approve the proposed development to proceed as planned with special commendations to implement the recommendations here in made.
- If during construction, operational or closure phases of this project, any person employed by the applicant, one of its subsidiaries, contractors and subcontractors, or service provider, finds any artefact of cultural significance, work must cease at the site of the find and this person must report this find to their immediate supervisor, and through their supervisor to the site manager.
- The Site Manager must then make an initial assessment of the extent of the find and confirm the extent of the work stoppage in that area before informing ISS.

- If archaeological materials are unearthed, all construction activities within a radius of at least 30m of such indicator should cease and the area be demarcated by a danger tape. Accordingly, a professional archaeologist should be contacted immediately
- It is the responsibility of the applicant to protect the site from publicity (i.e., media) until a mutual agreement is reached.
- Noteworthy that any measures to cover up the suspected archaeological material or to collect any resources is illegal and punishable by law. In the same manner, no person may exhume or collect such remains, whether of recent origin or not, without the endorsement by Heritage Western Cape
- The applicant is reminded that unavailability of archaeological materials (e.g., stone tools and graves, etc) and fossils does not mean they do not occur, archaeological material might be hidden underground, and as such the client is reminded to take precautions during construction.
- The footprint impact of the proposed construction activities should be kept to minimal to limit the possibility of encountering chance finds within the proposed development site.
- Overall, impacts to heritage resources are not considered to be significant for the project receiving environment. It is thus concluded that the project may be cleared to proceed as planned subject to the Heritage Authority ensuring that detailed heritage monitoring procedures are included in the project EMP for the construction phase, include chance archaeological finds mitigation procedure in the project EMP (See Appendix 1).
- The chance finds process will be implemented, when necessary, especially when archaeological materials and burials are encountered during subsurface construction activities.
- The findings of this report, with approval of the SAHRA, may be classified as accessible to any interested and affected parties within the limits of the laws.

11 CONCLUDING REMARKS

The literature review and field surveys confirmed that the project area is situated within a contemporary cultural landscape dotted with settlements, sand mining establishments and wastewater treatment works. The study did not record any significant heritage resources within the proposed development site. In terms of the archaeology and heritage in respect of the proposed development site, there are no obvious 'Fatal Flaws' or 'No-Go' areas. However, the potential for chance finds, remains and the applicant and contractors are advised to be diligent and observant during construction, should construction activities commence on the site. The procedure for reporting chance finds has clearly been laid out (see Appendix 3). This report concludes that the proposed development may be approved by Heritage Western Cape to proceed as planned subject to recommendations herein made and heritage monitoring plan being incorporated into the EMP (also see Appendices). The mitigation measures are informed by the results of the AIA study and principles of heritage management enshrined in the NHRA, Act 25 of 1999.

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APPENDIX 1: CHANCE FIND PROCEDURE FOR THE PROPOSED BATCHING PLANT ON THE FARM ERF 4886, WESTERN CAPE PROVINCE.

May 2021

ACRONYMS

BGG	Burial Grounds and Graves
CFPs	Chance Find Procedures
ECO	Environmental Control Officer
HWC	Heritage Western Cape
ICOMOS	International Council on Monuments and Sites
NHRA	National Heritage Resources Act (Act No. 25 of 1999)
SAHRA	South African Heritage Resources Authority
SAPS	South African Police Service
UNESCO	United Nations Educational, Scientific and Cultural Organisation

CHANCE FIND PROCEDURE

Introduction

An Archaeological Chance Find Procedure (CFP) is a tool for the protection of previously unidentified cultural heritage resources during construction. The main purpose of a CFP is to raise awareness of all construction, and management on site regarding the potential for accidental discovery of cultural heritage resources and establish a procedure for the protection of these resources. Chance Finds are defined as potential cultural heritage (or paleontological) objects, features, or sites that are identified outside of or after Archaeological Impact studies, normally as a result of construction monitoring. Chance Finds may be made by any member of the project team who may not necessarily be an archaeologist or even visitors. Appropriate application of a CFP on development projects has led to discovery of cultural heritage resources that were not identified during archaeological impact assessments. As such, it is considered to be a valuable instrument when properly implemented. For the CFP to be effective, the site manager must ensure that all personnel on the proposed mining development site understand the CFP and the importance of adhering to it if cultural heritage resources are encountered. In addition, training or induction on cultural heritage resources that might potentially be found on site should be provided. In short, the Chance find procedure details the necessary steps to be taken if any culturally significant artefacts are found during construction.

Definitions

In short, the term 'heritage resource' includes structures, archaeology, meteors, and public monuments as defined in the South African National Heritage Resources Act (Act No. 25 of 1999) (NHRA) Sections 34, 35, and 37. Procedures specific to burial grounds and graves (BGG) as defined under NHRA Section 36 will be discussed separately as this require the implementation of separate criteria for CFPs.

Background

The proposed development site is located on the farm Erf 4886, Western Cape Province. The development site is subject to archaeological survey and assessment at planning stage in accordance with the NHRA. These surveys are based on surface indications alone and it is therefore possible that sites or significant archaeological remains can be missed during surveys because they occur beneath the surface. These are often accidentally exposed during construction or any associated construction work and hence the need for a Chance Find Procedure to deal with accidental finds. In this case an extensive Archaeological Impact Assessment was completed by T. Mlilo (2021) on the proposed development site. The AIA conducted was very comprehensive covering the entire site.

Purpose

The purpose of this Chance Find Procedure is to ensure the protection of previously unrecorded heritage resources along the proposed project site. This Chance Find Procedure intends to provide the applicant and contractors with appropriate response in accordance with the NHRA and international best practice. The aim of this CFP is to avoid or reduce project risks that may occur as a result of accidental finds whilst considering international best practice. In addition, this document seeks to address the probability of archaeological remains finds and features becoming accidentally exposed during digging of foundations and movement of construction equipment. The proposed construction activities have the potential to cause severe impacts on significant tangible and intangible cultural heritage resources buried beneath the surface or concealed by tall grass cover. Integrated Specialist Services and Environmental Consultants developed this Chance Find Procedure to define the process which govern the management of Chance Finds during construction. This ensures that appropriate treatment of chance finds while also minimizing disruption of the construction schedule. It also enables compliance with the NHRA and all relevant regulations. Archaeological Chance Find Procedures are to promote preservation of archaeological remains while minimizing disruption of construction scheduling. It is recommended that due to the low to moderate archaeological potential of the project area, all site personnel and contractors be informed of the Archaeological Chance Find procedure and have access to a copy while on site. This document has been prepared to define the avoidance, minimization and mitigation measures necessary to ensure that negative impacts to known and unknown archaeological remains as a result of project activities and are prevented or where this is not possible, reduced to as low as reasonably practical during construction.

Thus, this Chance Finds Procedure covers the actions to be taken from the discovering of a heritage site or item to its investigation and assessment by a professional archaeologist or other appropriately qualified person to its rescue or salvage.

CHANCE FIND PROCEDURE

General

The following procedure is to be executed in the event that archaeological material is discovered:

- All construction/clearance activities in the vicinity of the accidental find/feature/site must cease immediately to avoid further damage to the find site.
- Briefly note the type of archaeological materials you think you have encountered, and their location, including, if possible, the depth below surface of the find
- Report your discovery to your supervisor or if they are unavailable, report to the project ECO who will provide further instructions.

- If the supervisor is not available, notify the Environmental Control Officer immediately. The Environmental Control Officer will then report the find to the Site Manager who will promptly notify the project archaeologist and Heritage Western Cape.
- Delineate the discovered find/ feature/ site and provide 30m buffer zone from all sides of the find.
- Record the find GPS location, if able.
- All remains are to be stabilised *in situ.*
- Secure the area to prevent any damage or loss of removable objects.
- Photograph the exposed materials, preferably with a scale (a yellow plastic field binder will suffice).
- The project archaeologist will undertake the inspection process in accordance with all project health and safety protocols under direction of the Health and Safety Officer.

- **Finds rescue strategy**: All investigation of archaeological soils will be undertaken by hand, all finds, remains and samples will be kept and submitted to a Museum as required by the heritage legislation. If any artefacts need to be conserved, the relevant permit will be sought from the Heritage Western Cape.
- An on-site office and finds storage area will be provided, allowing storage of any artefacts or other archaeological material recovered during the monitoring process.
- In the case of human remains, in addition to the above, the SAHRA Burial Ground Unit will be contacted and the guidelines for the treatment of human remains will be adhered to. If skeletal remains are identified, an archaeological will be available to examine the remains.
- The project archaeologist will complete a report on the findings as part of the permit application process.
- Once authorisation has been given by Heritage Western Cape, the Applicant will be informed when construction activities can resume.

Management of chance finds

Should the Heritage specialist conclude that the find is a heritage resource protected in terms of the NRHA (1999) Sections 34, 36, 37 and NHRA (1999) Regulations (Regulation 38, 39, 40), ISS will notify Heritage Western Cape on behalf of the applicant. Heritage Western Cape may require that a search and rescue exercise be conducted in terms of NHRA Section 38, this may include rescue excavations, for which ISS will submit a rescue permit application having fulfilled all requirements of the permit application process.

In the event that human remains are accidently exposed, HWC/SAHRA Burial Ground Unit and ISS Heritage Specialist must immediately be notified of the discovery in order to take the required further steps:

a. Heritage Specialist to inspect, evaluate and document the exposed burial or skeletal remains and determine further action in consultation with the SAPS and Traditional authorities:

b. Heritage specialist will investigate the age of the accidental exposure in order to determine whether the find is a burial older than 60 years under the jurisdiction of SAHRA or that the exposed burial is younger than 60 years under the jurisdiction of the Department of Health in terms of the Human Tissue Act.

c. The local SAPS will be notified to inspect the accidental exposure in order to determine where the site is a scene of crime or not.

d. Having inspected and evaluated the accidental exposure of human remains, the project Archaeologist will then track and consult the potential descendants or custodians of the affected burial.

e. The project archaeologist will consult with the traditional authorities, local municipality, and SAPS to seek endorsement for the rescue of the remains. Consultation must be done in terms of NHRA (1999) Regulations 39, 40, 42.

f. Having obtained consent from affected families and stakeholders, the project archaeologist will then compile a Rescue Permit application and submit to Heritage Western Cape/SAHRA Burial Ground and Graves Unit.

g. As soon as the project archaeologist receives the rescue permit from Heritage Western Cape he will in collaboration with the company/contractor arrange for the relocation in terms of logistics and appointing of an experienced undertaker to conduct the relocation process.

h. The rescue process will be done under the supervision of the archaeologist, the site representative and affected family members. Retrieval of the remains shall be undertaken in such a manner as to reveal the stratigraphic and spatial relationship of the human skeletal remains with other archaeological features in the excavation (e.g., grave goods, hearths, burial pits, etc.). A catalogue and bagging system shall be utilised that will allow ready reassembly and relational analysis of all elements in a laboratory. The remains will not be touched with the naked hand; all Contractor personnel working on the excavation must wear clean cotton or non-powdered latex gloves when handling remains in order to minimise contamination of the remains with modern human DNA. The project archaeologist will document the process from exhumation to reburial.

i. Having fulfilled the requirements of the rescue/burial permit, the project archaeologist will compile a mitigation report which details the whole process from discovery to relocation. The report will be submitted to Heritage Western Cape and to the company.

Note that the relocation process will be informed by SAHRA/Heritage Western Cape Regulations and the wishes of the descendants of the affected burial.

APPENDIX 2: NID RESPONSE FROM HERITAGE WESTERN CAPE.