Site Sensitivity Verification (SSV) and Phase 1 Archaeological and Cultural Heritage Impact Assessment (AIA) –

PROPOSED ±10HA DRIP IRRIGATION AND COLLECTIVE ±500HA SPEKBOOM REHABILITATION PROJECT, PORTION 3 OF FARM POKJESFONTEIN 120 (ANNEX GLEN ROY 120), NEAR STEYTLERVILLE, SARAH BAARTMAN DISTRICT MUNICIPALITY, EASTERN CAPE

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DATE –
10 JUNE 2023

SPECIALIST DECLARATION OF INTEREST

I, Karen van Ryneveld, ArchaeoMaps, declare that:

- I act as independent specialist in this application.
- I do not have any financial or personal interest in the application, its proponent, or subsidiaries, aside from fair remuneration for specialist services rendered.
- I am suitably qualified, accredited, and experienced to act as independent specialist in this application.
- That work is conducted in an objective manner, and that any circumstances that may have compromised objectivity are transparently reported on.
- That all material information collected for purposes of this application, that may reasonably influence the decision of the consenting authority, are transparently disclosed in the report.
- That the work submitted is in accordance with relevant heritage legislation, regulations, and policy guidelines, and with cognisance to relevant environmental legislation, regulations, and policies, including the principle of Integrated Environmental Management (IEM).

SIGNATURE – 10 JUNE 2023

KAREN VAN RYNEVELD – ARCHAEOMAPS			
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CONTACT:	T/M: 084 871 1064 E: k.archaeomaps@gmail.com A: Postnet Suite 239, Private Bag X3, Beacon Bay, 5205	**REGISTRATION No:**	2005/180719/23
PROFESSIONAL MEMBERSHIP & ACCREDITATION	ASAPA [Association of Southern African Professional Archaeologists] Member No. 163 ASAPA CRM [Cultural Resources Management] Accreditation: ❖ Principal Investigator: 2010 – Stone Age CRM ❖ Field Director: 2005 – (Stone Age), Iron Age and Colonial Period CRM		
QUALIFICATION	MSc – Archaeology, WITS University, 2003		

EXECUTIVE SUMMARY

PROJECT NAME AND LOCALITY

Proposed ±10ha Drip Irrigation and Collective ±500ha Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120 (Annex Glen Roy 120), near Steytlerville, Sarah Baartman District Municipality (SBDM), Eastern Cape.

- General site co-ordinate: S33º15'56.2"; E24º06'00.9".
- 1:50,000 Map Ref – 3324AA and 3324AC.

PROJECT DESCRIPTION

KBH Carbon (Pty) Ltd intends to establish ±10ha of crops under drip irrigation on old croplands. In addition, ±500ha of degraded veld will be rehabilitated with Spekboom to a minimum level of pre-overgrazed historic Albany Thicket veld conditions, sustained only by natural rainfall. Business requirements might slightly exceed minimum historic veld conditions, with the intention to tap into the carbon credit industry.

No alternative study site is considered for development purposes; alternatives to the proposed development is vested in site layout alternatives.

The proposed development is not subject to any subdivision, consolidation, or rezoning applications.

THE SSV AND AIA

Summarised Findings –

Desktop / Pre-feasibility Assessment: Database information on the greater study site terrain is notably limited, with no CRM database records for the approximate 10+km radius from the site. The Baviaanskloof Mega Reserve—declared a Cape Floristic Region World Heritage Site (WHS) in 2004—is situated some 50km south of the study site; Later Stone Age (LSA) research conducted by Binneman (1993, 1997, 1998, 1999, 2000) in the Baviaanskloof, best describes the archaeological and cultural heritage record of the greater terrain. The study site falls outside the Iron Age expansion reach, but episodic incidents, mainly related to the Mfengu and the Cattle Killing movement had a significant southward reach. Steytlerville—situated some 21km south-east of the study site—was founded in 1876 and named after Abraham Isaac Steytler, a Minister of the Dutch Reformed Church. The town became a municipality in 1891. Many farms in the region pre-date establishment of the town, but more were registered from the 1870s onward, including the subdivision of previously established farms. Portion 3 of Farm Pokjesfontein 120 was first surveyed in 1905 and officially registered in 1906, but the date of establishment of the original Farm Pokjesfontein 120 is unknown.

No declared National Heritage Sites (NHS) are recorded on SAHRIS and situated within an approximate 10–50km radius from the study site. Two Provincial Heritage Sites (PHS) are cited in Steytlerville, both being Built Environment (BE) sites, and are the nearest declared PHSs to the study site.

Field assessment: Nineteen (19) archaeological and cultural heritage sites / resources (Sites PKJ-01–PKJ-19), as defined and protected by the National Heritage Resources Act, Act No. 25 of 1999 (NHRA 1999), were identified during the field assessment, comprising Stone Age and Colonial Period sites / resources; no Iron Age sites / resources are present at the study site. Recommendations include per site recommendations for the construction and implementation (or use) phases of the development, described according to the relevant EC PHRA Archaeology, Palaeontology, and Meteorites (APM) and Burial Grounds and Graves (BGG) permitting processes, as and where applicable; no BE permits apply to the current development proposal (see Table 1).

Of outstanding significance is the Pokjesfontein LSA–Khoe Type Site settlement (see Conservation Areas 1 [Site PKJ-07], 2 [Site PKJ-11], and 3 [Site PKJ-17]): the Type Site constitutes an as yet undescribed and unrecorded settlement pattern in the South African archaeological record relating to Khoe permanent village settlement, dated to at least Colonial Period times (1500s / 1652, and thereafter). Type Site settlement features include double adjoining approximate 2x2m square stone structures, the one structure being a stone walled structure, inferred with a wooden / branch or thatched roof, and the adjoining structure being a stone-based skerm-like structure. Important livestock kraals were stone build, with larger outer stones and a smaller stone rubble

infill, with the kraal walls being approximately 1m in width. The technique used in kraal construction was, thus, very similar to that used by Iron Age farmer peoples—but the Khoe kraals are rectangular in shape, not circular like the regular Iron Age kraals; building technique also differentiates the Khoe from the Western Colonial Period stone stacked rectangular shaped kraals.

Conclusion: The Screening Report (2023) indicates the archaeology and cultural heritage theme for the *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* study site as of "Low Sensitivity". This heritage assignation should be changed to "High Sensitivity".

Despite the "High Sensitivity" of the study site, the development proposal poses no *Fatal Flaws* with regard to formally protected archaeological and cultural heritage resources. Based on the development's contribution to heritage conservation, a *No Development* option cannot be supported.

RECOMMENDATIONS

The *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* development is highly recommended: altogether some 13ha will be set aside for the permanent conservation of the Pokjesfontein LSA–Khoe Type Site settlement (Conservation Areas 1, 2, and 3)—an unrivalled contribution to later LSA–Khoe history, not only in the Eastern Cape, but in South Africa as a whole. The Khoe Type Site settlement is of research significance, and with the potential to be developed for educational and tourism purposes.

It is recommended that the development proceeds as applied for, provided the developer complies with the tabled and described per site archaeological and cultural heritage compliance recommendations.

The EC PHRA Heritage Impact Assessment (HIA) Comment will state legal requirements for development to proceed, or reasons why, from a heritage perspective, development may not be further considered.

ARCHAEOLOGICAL AND CULTURAL HERITAGE RESOURCES SUMMARY –
PROPOSED ±10HA DRIP IRRIGATION AND COLLECTIVE ±500HA SPEKBOOM REHABILITATION PROJECT, PORTION 3 OF FARM POKJESFONTEIN 120 (ANNEX GLEN ROY 120), NEAR STEYTLERVILLE, SARAH BAARTMAN DISTRICT MUNICIPALITY, EASTERN CAPE

POKJESFONTEIN 3/120 – S33°15'56.2"; E24°06'00.9"

MAP CODE	SITE	COORDINATE	SITE SIGNIFICANCE	RECOMMENDATIONS
PKJ-01	Colonial Period – Pokjesfontein 3/120 entrance gate	S33°16'22.2"; E24°06'56.2"	SAHRA Medium Significance – Generally Protected IV-B Field Rating	**In situ conservation:** In situ conservation for purposes of use during the construction and implementation phase of the development.
PKJ-02	Colonial Period – shooting target	S33°16'06.8"; E24°06'58.2"	SAHRA Low Significance – Generally Protected IV-C Field Rating	**Site conservation OR destruction:** o Site conservation (permanent fence with 1.5–2m conservation buffer, access gate, signage, and access path); OR o Destruction without the developer having to apply for an EC PHRA site destruction permit.
PKJ-03	Colonial Period – old agricultural field	S33°16'11.6"; E24°06'45.2"	SAHRA Low Significance – Generally Protected IV-C Field Rating	**Site destruction:** Destruction without the developer having to apply for an EC PHRA site destruction permit.
PKJ-04	Colonial Period – Pokjesfontein 3/120 farmstead	S33°16'15.5"; E24°06'45.5"	SAHRA Medium Significance – Generally Protected IV-B Field Rating	**In situ conservation:** In situ conservation for purposes of use during the construction and implementation or use phase of the development.
PKJ-05	Later Stone Age (LSA) – broken bored stone amulet	S33°15'56.7"; E24°06'43.6"	SAHRA High / Medium Significance – Generally Protected IV-A Field Rating	**Artefact / object on site conservation:** The object will be conserved on site (Pokjesfontein 3/120) by the developer.
PKJ-06	Later Stone Age (LSA) – grave	S33°15'28.1"; E24°05'53.5"	SAHRA High / Medium Significance – Generally Protected IV-A Field Rating	**Site conservation OR grave mitigation (relocation):** o Temporary site conservation (fence and signage) during the construction phase until development commences in the vicinity of the site. o Permanent heritage management options: ➢ Site conservation (permanent fence with a 1.5–2m conservation buffer, access gate, signage, and access path); OR ➢ Grave relocation under an EC PHRA BGG permit.
PKJ-07	**Conservation Area 1** Later Stone Age (LSA) – Khoe Type Site village (±7.5ha site)	S33°15'25.2"; E24°07'06.1"	SAHRA High Local Grade III-A Significance	**Phase 2a archaeological programme and permanent site conservation:** o Temporary site conservation (visually marked pole posts only, without fencing in between to demarcate the village site, and signage) during the construction phase until development commences in the vicinity of the site [see Map 10]. o Phase 2a archaeological programme and permanent conservation: ➢ Phase 2a archaeological programme (systematic survey, sketch plan and literature and site interpretation) and recommendations for permanent conservation within the development framework.
PKJ-07.1	Later Stone Age (LSA) – Kraal	S33°15'24.8"; E24°06'59.6"		
PKJ-08	Later Stone Age (LSA) – grave	S33°15'29.9"; E24°06'44.4"	SAHRA High / Medium Significance – Generally Protected IV-A Field Rating	**Site conservation OR grave mitigation (relocation):** o Temporary site conservation (fence and signage) during the construction phase until development commences in the vicinity of the site. o Permanent heritage management options: ➢ Site conservation (permanent fence with a 1.5–2m conservation buffer, access gate, and signage); OR ➢ Grave relocation under an EC PHRA BGG permit.
PKJ-09	Later Stone Age (LSA) – monolith and hunting trap	S33°16'12.0"; E24°06'19.5"	N/A	**In situ conservation:** In situ conservation: not situated within the area proposed for development.

PKJ-10	Later Stone Age (LSA) – two kraals (see Conservation Areas 2 and 3)	S33°16'14.0"; E24°06'08.2"	SAHRA High Local Grade III-A Significance	**Permanent site conservation:** o Temporary site conservation measures are not necessary. o Permanent site conservation: ➢ Site conservation (permanent fences with 1.5–2m conservation buffers, access gates, signage, and access paths).
PKJ-11	**Conservation Area 2** Colonial Period – farmstead; and Later Stone Age (LSA) – Khoe Type Site village (±2ha site)	S33°16'28.6"; E24°06'27.8"	SAHRA High Local Grade III-A Significance	**Phase 2a archaeological programme and permanent site conservation:** o Temporary site conservation (visually marked pole posts only along the eastern and south-western boundary of the site, without fencing in between to demarcate the village site, and signage) during the construction phase of the general development, until the irrigation development commences [see Map 11]. o Permanent conservation along the western and north-eastern boundary of the site are in place (game camp fence). o Phase 2a archaeological programme and permanent conservation: ➢ Phase 2a archaeological programme (systematic survey, sketch plan and literature and site interpretation) and recommendations for permanent conservation within the development framework. ➢ Realignment of the access road for purposes of the irrigation development construction and operation. Continued use of the existing service road, traversing the site, for service purposes.
PKJ-12	Colonial Period – two graves	S33°16'36.2"; E24°06'33.5"	SAHRA High / Medium Significance – Generally Protected IV-A Field Rating	**Site conservation OR grave mitigation (relocation):** o Temporary site conservation (fence and signage) during the construction phase until the irrigation development starts. o Permanent heritage management options (before the irrigation development starts): ➢ Site conservation (permanent fence with a 1.5–2m conservation buffer, access gate, signage, and access path); OR ➢ Grave relocation under an EC PHRA BGG permit.
PKJ-13	Later Stone Age (LSA) – large circular stone feature	S33°16'37.1"; E24°06'32.1"	SAHRA Medium Significance – Generally Protected IV-B Field Rating	**Site conservation OR mitigation:** o Temporary site conservation measures are in place until the irrigation development starts. o Permanent heritage management options: ➢ Site conservation (permanent fence with 3–5m conservation buffer, access gate, signage, and access path); OR ➢ Mitigation (sketch plan, test excavations, and site interpretation) under an EC PHRA APM permit.
PKJ-14	Colonial Period – structure mound	S33°16'36.8"; E24°06'28.7"	SAHRA Medium Significance – Generally Protected IV-B Field Rating	**Site conservation OR mitigation:** o Temporary site conservation measures are in place until the irrigation development starts. o Permanent heritage management options: ➢ Site conservation (permanent fence with 2–3m conservation buffer, access gate, signage, and access path); OR ➢ Mitigation (sketch plan, test excavations, and site interpretation) under an EC PHRA APM permit.
PKJ-15	Later Stone Age (LSA) – structure remains and grave	S33°16'37.3"; E24°06'27.1"	SAHRA High / Medium Significance – Generally Protected IV-A Field Rating	**Site conservation OR mitigation, including grave relocation:** o Temporary site conservation (fence and signage) during the construction phase until the irrigation development starts. o Permanent heritage management options (before the irrigation development starts): ➢ Site conservation (permanent fence with a 1.5–2m conservation buffer, access gate, signage, and access path); OR ➢ Site mitigation (sketch plan, test excavations, and interpretation, as well as grave relocation) under an EC PHRA APM and BGG permit.

PKJ-16	Later Stone Age (LSA) – structure remains	S33º16'36.6"; E24º06'25.8"	SAHRA Medium Significance – Generally Protected IV-B Field Rating	**Site conservation OR mitigation:** o Temporary site conservation measures are in place. o Permanent heritage management options: ➢ Site conservation (permanent fence with 2m conservation buffer, access gate, signage, and access path); OR ➢ Mitigation (sketch plan, test excavations, and site interpretation) under an EC PHRA APM permit.
PKJ-17	**Conservation Area 3** Colonial Period – farmstead; and Later Stone Age (LSA) – Khoe Type Site village (±3.5ha site)	S33º16'38.7"; E24º06'26.6"	SAHRA High Local Grade III-A Significance	**Phase 2a archaeological programme and permanent site conservation:** o Temporary site conservation (visually marked pole posts only along the eastern, south-western, and western boundary of the site, without fencing in between to demarcate the village site, and signage) during the construction phase of the general development, until the spekboom development encroaches on the site locale or the irrigation development commences [see Map 11]. o Permanent conservation along the north-eastern boundary of the site is in place (game camp fence). o Phase 2a archaeological programme and permanent conservation: ➢ Phase 2a archaeological programme (systematic survey, sketch plan and literature and site interpretation) and recommendations for permanent conservation within the development framework.
PKJ-18	Later Stone Age (LSA) – ephemeral site remains and possible grave	S33º16'00.8"; E24º05'49.5"	SAHRA High / Medium Significance – Generally Protected IV-A Field Rating	**Site conservation OR mitigation, including grave relocation:** o Temporary site conservation (fence and signage) during the construction phase until development commences in the vicinity of the site. o Permanent heritage management options: ➢ Site conservation (permanent fence with a 2–3m conservation buffer, access gate, signage, and access path); OR ➢ Site mitigation (sketch plan, test excavations, and interpretation, as well as grave relocation) under an EC PHRA APM and BGG permit.
PKJ-19	Later Stone Age (LSA) – ephemeral site remains and possible grave	S33º16'34.7"; E24º05'29.2"	SAHRA High / Medium Significance – Generally Protected IV-A Field Rating	**Site conservation OR mitigation, including grave relocation:** o Temporary site conservation (fence and signage) during the construction phase until development commences in the vicinity of the site. o Permanent heritage management options: ➢ Site conservation (permanent fence with a 2–3m conservation buffer, access gate, signage, and access path); OR ➢ Site mitigation (sketch plan, test excavations, and interpretation, as well as grave relocation) under an EC PHRA APM and BGG permit.

Table 1: Field assessment findings: archaeological and cultural heritage resources summary

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APPENDICES

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1 – PROJECT DESCRIPTION, METHODOLOGY, AND TERMS OF REFERENCE (ToR)

Project Description: AGES Omega (Pty) Ltd is appointed as independent Environmental Assessment Practitioner (EAP) by the project proponent, KBH Carbon (Pty) Ltd, to compile and submit the Scoping and Environmental Impact Assessment Reports (S&EIAR) and the Environmental Management Programme (EMPr) for the *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* to the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT). The S&EIAR and EMPr are to be conducted in accordance with requirements of the National Environmental Management Act, Act No. 107 of 1998 (NEMA 1998) and the NEMA Regulations 2014 with the objective of obtaining Environmental Authorisation (EA) from DEDEAT for the development application (AGES 2023).

The 1,179ha property—Portion 3 of Farm Pokjesfontein 120—is situated at general co-ordinate S33º15'56.2"; E24º06'00.9" [1:50,000 Map Ref – 3324AA and 3324AC]. The farm is cited some 21km northwest of Steytlerville, Dr Beyers Naude Local Municipality, SBDM, in the Grootriviers mountains more or less 2–3km south of the Groot River and is surrounded by farmland (AGES 2023).

The developer intends to establish ±10ha of crops under drip irrigation on old croplands. In addition, degraded designated areas of veld comprising a collective ±500ha area will be regenerated through the Spekboom (*Portulacaria afra*) rehabilitation project. Overgrazing has resulted in severely degraded veld conditions of the recently acquired property, necessitating rehabilitation. In the valleys and lower lying regions, the veld will be slightly ripped to plant Spekboom that will be watered during planting and thereafter left to establish on its own; Spekboom cuttings in higher lying areas will be planted by hand, watered, and left to self-establish. Erosion control during the rehabilitation project is crucial to its success. Should the rehabilitation project be successfully implemented—at minimum to the level of pre-overgrazed historic Albany Thicket veld conditions sustained only by natural rainfall (although business requirements might slightly exceed minimum historic veld conditions)—then the project will be used to tap into the carbon credit industry (AGES 2023).

No alternative study site is considered for development purposes; alternatives to the proposed development is vested in site layout alternatives.

The proposed development is not subject to any subdivision, consolidation, or rezoning applications.

Methodology: ArchaeoMaps was appointed by AGES Omega to compile the SSV and AIA for the *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* development, in accordance with requirements of the NHRA 1999 and the South African Heritage Resources Agency's (SAHRA) Minimum Standard guidelines for HIA reports (SAHRA 2007).

The combined SSV and AIA report addresses archaeological and cultural heritage compliance requirements for purposes of development:

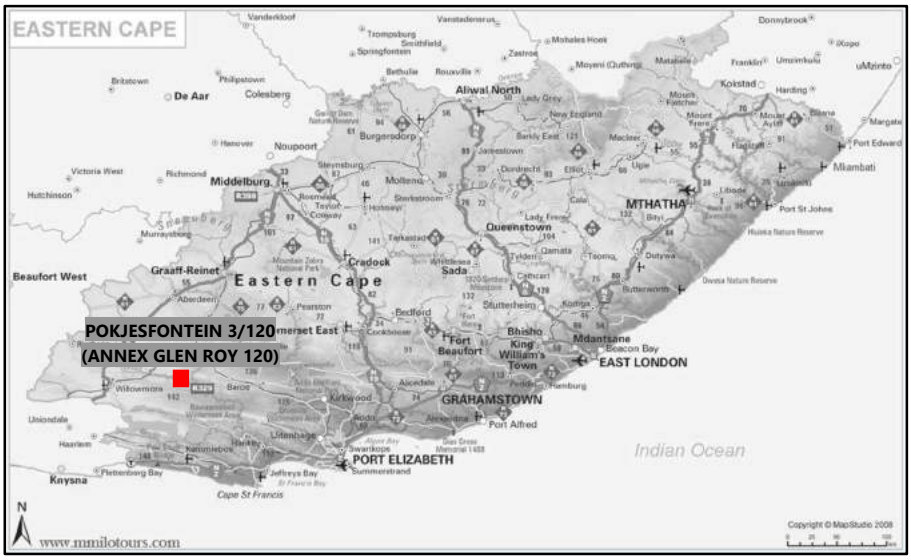
- The SSV focusses on the Screening Report's (2023) "Low Sensitivity" archaeological and cultural heritage theme rating for the study site; results of the AIA may confirm or dispute the preliminary screening site sensitivity rating.
- The AIA is vested in a joint desktop / pre-feasibility–field assessment process. The desktop / pre-feasibility study focuses on the collection of applicable heritage database information pertaining to the study site and its immediate surrounds. The purpose of the field assessment is to locate, identify, and assess the significance of formally protected archaeological and cultural heritage sites / resources, as per the NHRA 1999 Sections 2, 34, 35, 36 and 37, and inclusive of archaeological deposits / sites (Stone Age, Iron Age, and Colonial Period); rock art- and shipwreck sites; built structures older than 60 years; sites of military history older than 75 years; certain categories of burial grounds and graves; graves of victims of conflict; public monuments and memorials; basic living heritage; and cultural landscapes and viewscapes—and the

general sensitivity of these heritage components to change. Identified heritage sites / resources are ascribed a SAHRA significance rating associated with suitable conservation, monitoring, mitigation, and / or management recommendations (SAHRA 2007) to guide the development planning process in accordance with IEM principles and to ensure compliant development throughout the: 1) construction and 2) implementation (or use) phases of development.

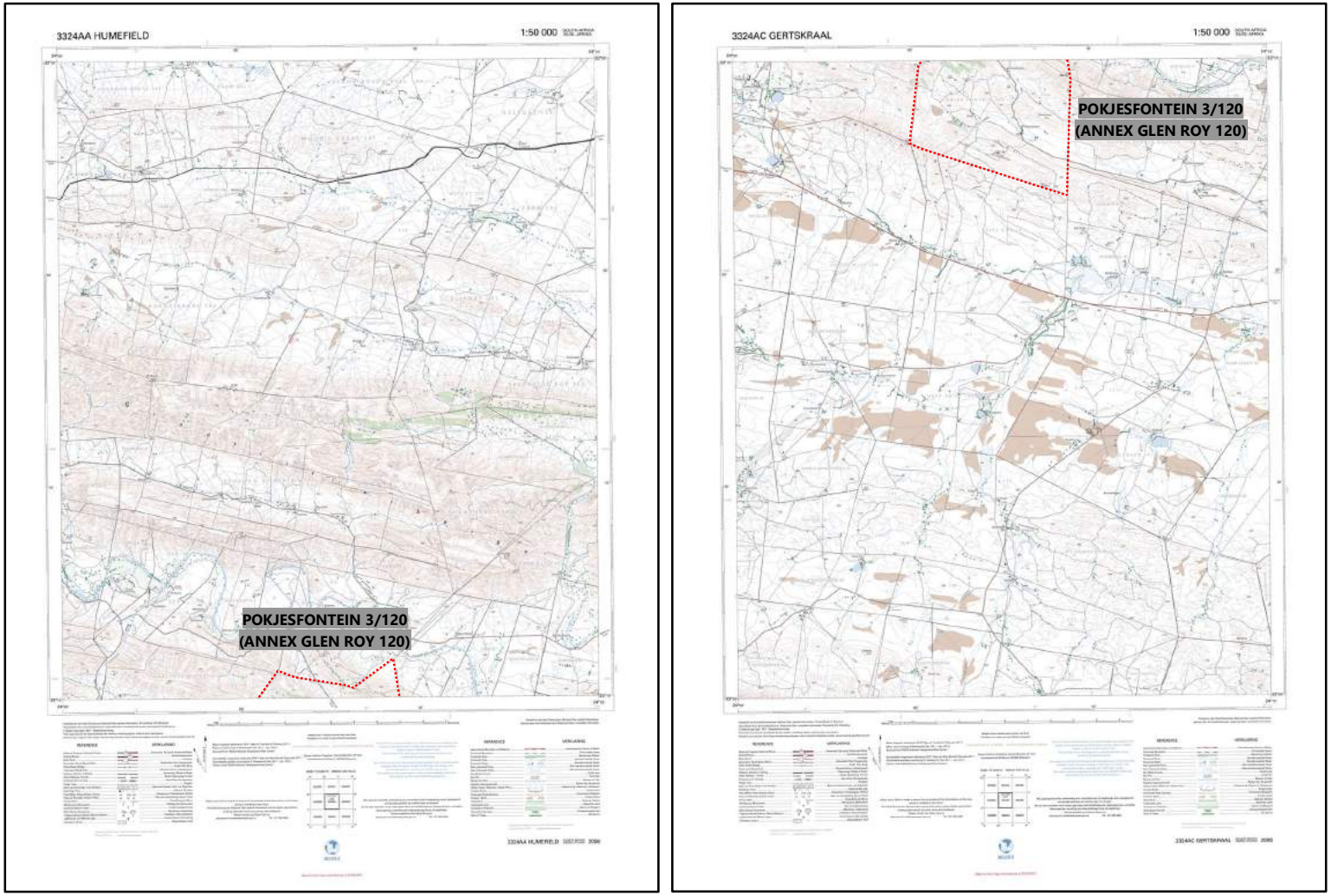
The combined SSV and AIA is to be submitted to the EC PHRA, the Eastern Cape heritage consenting authority for developments, in (partial) fulfilment for purposes of a NHRA 1999 Section 38(8) HIA Comment.

ToR: The ToR for the combined SSV and AIA is summarised as:

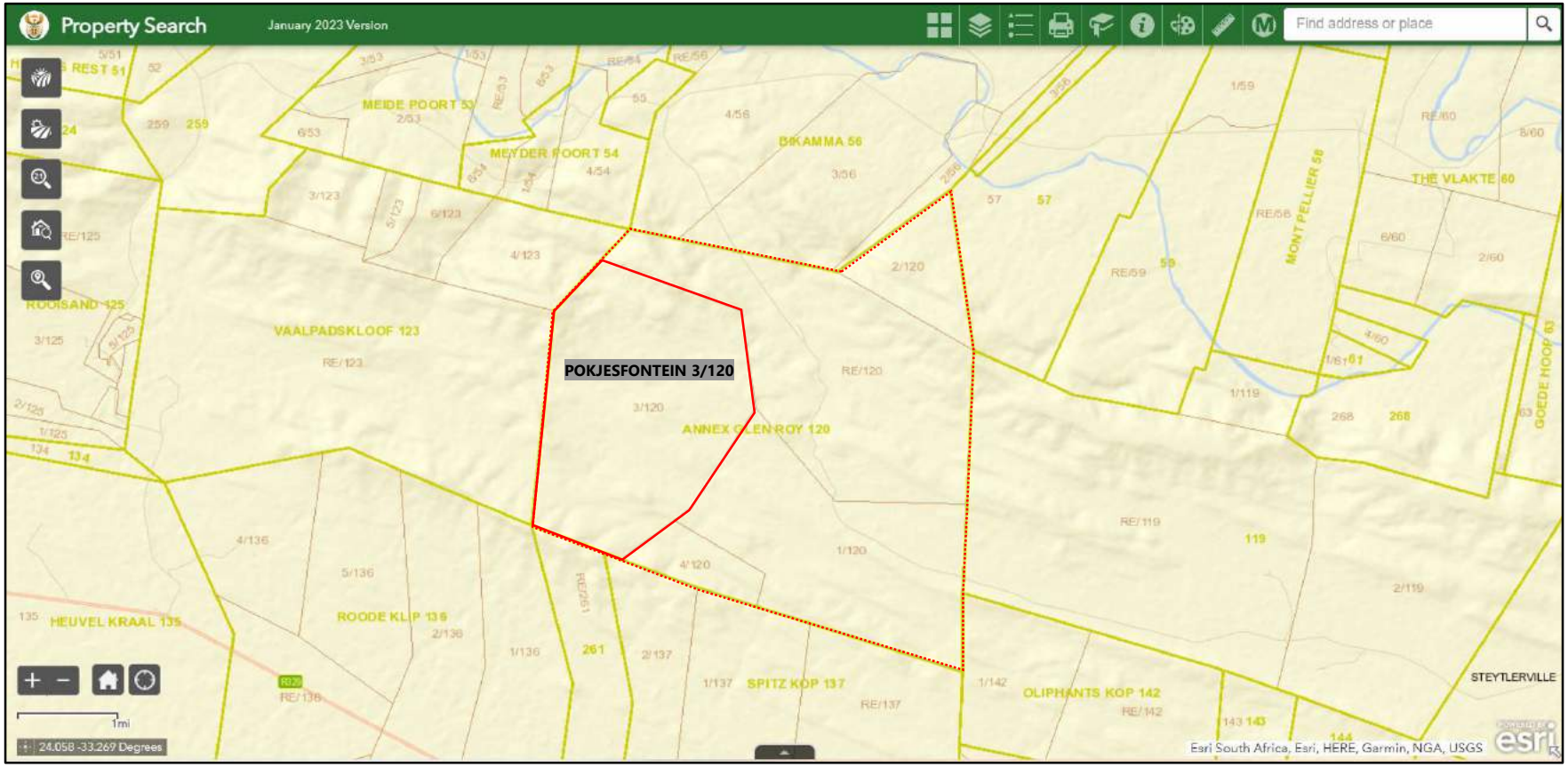
1. Submit a SSV statement on the preliminary Screening Report's (2023) "Low Sensitivity" archaeological and cultural heritage theme rating for the study site.
2. Describe the existing area—including the area that will be directly affected by the *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* development and its surrounds—in terms of its archaeological and cultural heritage characteristics as formally protected by the NHRA 1999, and the general sensitivity of these heritage components to change.
3. Describe the likely scope, scale, and significance of impacts (positive and negative) on the archaeological and cultural heritage sites / resources of the study site associated with the 1) construction and 2) implementation (or use) phases of the development.
4. Make recommendations on the scope of any conservation, monitoring, mitigation, and / or management measures that may be applied during the 1) construction and 2) implementation (or use) phases of the development to avoid / reduce the significance of negative impacts and manage other impacts. Recommendations may include design suggestions, operational controls, and EC PHRA approved Phase 2a, Phase 2 permitted, and / or Phase 3 heritage site / resource development recommendations.
5. Broadly comment on the cumulative impact (positive or negative) on archaeological or cultural heritage resources associated with the 1) construction and 2) implementation (or use) phases of the development.
6. Confirm if there are any outright *Fatal Flaws* to the development proposal at its current location from an archaeological and cultural heritage perspective.
7. Broadly describe the implication of a *No Development* option.



Map 1: General locality of the *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* development [1]



Map 2: General locality of the *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* development [:50,000 Map Ref – 3324AA and 3324AC]



Map 3: General locality of the *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* development (https://csggis.drdlr.gov.za/psv/)

Map 4: General locality of the *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* development [2]

Map 5: General locality of the *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* development [3]

2.1. METHODOLOGY

The AIA desktop / pre-feasibility assessment is based on the Appendix A schematic outline of South Africa's pre-colonial and colonial past, associated with introductory archaeological and cultural heritage general- and scientific literature available and relevant to the general area, including the area that will be directly affected by the *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* development. Databases consulted include the SAHRA 2009 Mapping Project Database (SAHRA 2009 MPD), the South African Heritage Resources Information System (SAHRIS), and the SAHRA National- and Provincial Heritage Site (SAHRA–NHS; SAHRA–PHS) databases, Eastern Cape.

2.2. SAHRA 2009 MPD AND SAHRIS

No HIAs are recorded in the SAHRA 2009 MPD and SAHRIS databases conducted within an approximate 10+km radius from the *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* study site; and only two SAHRIS cases are recorded within an approximate 50–70km radius thereof. Neither of the SAHRIS cases are associated with HIA studies. SAHRIS CaseID 2579 is a mining application, recorded as "Pending and Under Assessment" and SAHRIS CaseID 8414 is a wetlands rehabilitation project, recorded as "Submitted".

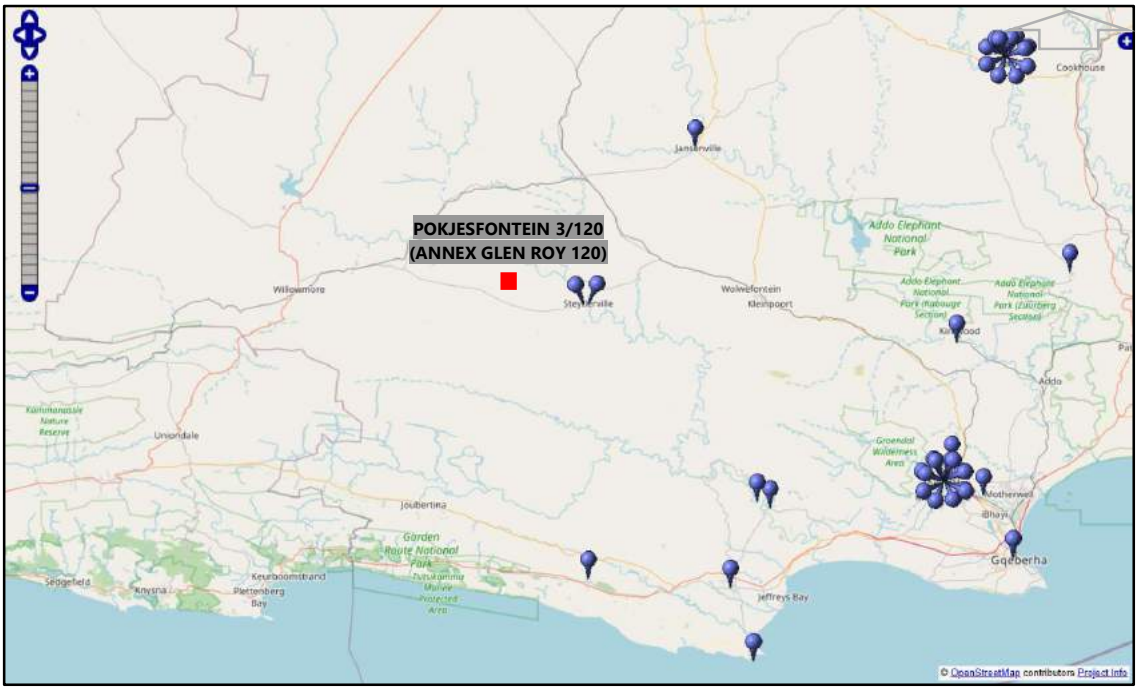
2.3. THE SAHRA–NHS AND SAHRA–PHS DATABASES, EASTERN CAPE

In 2004 the Baviaanskloof Mega Reserve (general coordinate – S33°30'00"; E24°08'00")—situated some 50km south of the *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* study site—was incorporated into the Cape Floristic Region World Heritage Site (WHS). The reserve comprises an approximate 500,000ha cluster of formally protected areas including, among other, the Groendal Nature Reserve, the Formosa Nature Reserve, and the 1920 established 184,385ha Baviaanskloof Nature Reserve, the third largest protected area in South Africa. WHS status is based on the region's outstanding natural beauty with specific reference to its spectacular landforms, diverse array of plants, and wide variety of animals. The reserve is managed by the Eastern Cape Parks Board (https://en.wikipedia.org/wiki/Baviaanskloof_Mega_Reserve).

No declared NHSs, Eastern Cape, are recorded in the SAHRA–NHS database and situated within a 10–50km radius from the study site (https://sahris.sahra.org.za/NHSmap).

No geo-referenced declared PHSs are recorded in the SAHRA–PHS database, Eastern Cape, and situated within a 10km radius from the study site. The nearest PHSs are situated some 21km from the study site in Steytlerville and will not be impacted by the development (https://en.wikipedia.org/wiki/List_of_heritage_sites_in_Eastern_Cape):

- SAHRA Identifier 9/2/087/003 – Dutch Reformed Church, Sarel Cilliers Street, Steytlerville – PHS – S33°19'52"; E24°20'39".
- SAHRA Identifier 9/2/087/0004 – Cottage, 22 Victoria Road, Steytlerville – Register – S33°19'58"; E24°19'58".



Map 6: Spatial distribution of geo-referenced PHSs in the SAHRA–PHS, Eastern Cape, database in relation to the study site (https://en.wikipedia.org/wiki/List_of_heritage_sites_in_Eastern_Cape)

2.4. GENERAL ARCHAEOLOGICAL AND CULTURAL HERITAGE SENSITIVITY OF THE STUDY SITE

Because of the absent database and limited Baviaanskloof research information for the *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* study site and its surrounds, this discussion follows a general approach outlined according to the three basic archaeological and cultural heritage periods of South Africa's past, namely the Stone Age, the Iron Age, and the Colonial Period.

2.4.1. The Stone Age

The Stone Age is divided into three basic periods, namely the Earlier Stone Age (ESA), the Middle Stone Age (MSA), and the LSA. The ESA is generally dated to between two million and 500 thousand years ago, and typified by the Acheulean industrial complex, a core-based lithic industry with handaxes and cleavers as signatory artefact types. The period 500 / 250–40 thousand years ago comprises the MSA; with the earlier part—the period 500–250 thousand years ago—deemed a transitional period between the ESA and the MSA, and the latter part—the period 250–40 thousand years ago—recognised as the MSA proper. The lithic toolkit of the ESA–MSA transition spells of a hybrid technology: large blades appear alongside small handaxes and large disc-shaped artefacts and, in cases, *Levallois*-like points. During the MSA proper the lithic toolkit adopted its defined flake and blade-based typology. After 40 thousand years ago significant changes in the lithic toolkit are discernible and the typical MSA flake and blade-based technology is systematically replaced by an even smaller primarily flake-based lithic industry, subdivided into the basic macro- and microlithic industries of the LSA (Lombard 2022).

ESA, MSA, and LSA sites / resources may well be present at the study site, but it is the LSA that is, reasonably, inferred the most sensitive and, at present, the best known from the greater terrain. Based on LSA research conducted primarily in the greater Baviaanskloof Mega Reserve, situated some 50km to the south of the study site, Binneman (2008) provides a fairly detailed LSA summary that best captures the LSA significance of the region for purposes of this report:

"Some 25,000 years ago the MSA gave way to the Later Stone Age (LSA)[1] a time period marked by large scale technological changes. The period between 20,000 and 14,000 years ago experienced extremely cold climatic conditions (Last Glacial maximum – the last Ice Age). The cold temperatures created favourable conditions for grassland expansion, which in turn gave rise to large herds of grazing animals. The mammal remains from archaeological sites indicate that there were several large grazing animal species living on the grassland, for example giant buffalo, giant hartebeest and the Cape horse. After 14,000 years ago the climate started to warm up again and caused the previously exposed grassland to disappear, causing the extinction of many grassland species including the giant buffalo, hartebeest and the Cape horse.

Between 10,000 and 8,000 years ago the terrestrial environment became more closed (bushier) giving rise to small browsing territorial animals that lived in small groups or pairs. Recently the remains of an extinct goat-like bovid dating from this time period, was identified from several archaeological sites in the area. This was the last of the remaining Last Glacial grazing animals to disappear from the archaeological deposits in the Baviaanskloof / Kouga region.

In comparison with previous time periods, the LSA is characterised by several 'new' technological innovations while other cultural artefacts became more common, such as rock art. New microlithic stone tool types (some fixed to handles with mastic) emerged along with bows and arrows, containers (such as tortoise shell bowls and ostrich eggshell flasks which were sometimes decorated), decorative items, bone tools and much more. For the first time people were buried in caves and rock shelters and often these burials are associated with grave goods and marked by painted stones.

Excellent preservation of organic material in some caves and shelters yielded remarkable botanical artefacts, such as digging sticks (4,500 years old), fire sticks (5,800 years old), decorated wooden sticks (9,200 years old) and almost complete mummified human remains dating to some 2,000 years ago. Other interesting features are 'storage pits' (hollows lined with plant material) which were used to store seeds for later use, and 'postholes' (often with posts still in situ). It would appear that shelters were divided, presumably into small family living areas (Binneman 1993, 1997, 1998, 1999, 2000[2]).

For most of the past 20,000 years San hunter-gatherers[3] lived in the cave rock shelters of the region and many still display paintings along the walls. In general the paintings are not well-preserved and appear to be of a similar 'style' throughout the region with the dominant colours being red and maroon, and red with black, yellow and white being present to a lesser degree. The paintings do not, for example, represent only a hunting scene or some or other daily activity, but each painting had a particular symbolic meaning for the painters.

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[1] Lombard's (2022) classification of a 40,000 years ago commencement date of the LSA is generally accepted. Binneman's (2008) classification of a 25,000 years ago commencement date of the LSA pertains to a distinct change in the LSA lithic record around the mid LSA, with deposits dating from 25–20,000 years ago and thereafter very similar to San / "Bushman" artefacts and the ethnographic recorded use thereof in their lifeway.

[2] Binneman, J.N.F. & Hall, S.L. 1993. The context of four painted stones from the Eastern Cape. Southern African Field Archaeology 2: 89–95.
Binneman, J.N.F. 1997. Results from a test excavation at The Havens Cave, Cambria, south-eastern Cape, Southern African Field Archaeology 6: 93–105.
Binneman, J.N.F. 1998. Results from a test excavation at Kleinpoort Shelter in the Baviaanskloof, Eastern Cape Province. Southern African Field Archaeology 7: 90–97.
Binneman, J.N.F. 1999. Results from a test excavation at Groot Kommandokloof Shelter in the Baviaanskloof / Kouga region, Eastern Cape Province. Southern African Field Archaeology 8: 100–107.
Binneman, J.N.F. 2000. Results from two test excavations in the Baviaanskloof Mountains, Eastern Cape Province. Southern African Field Archaeology 9: 81–92.

[3] LSA hunter-gatherers – San or "*Bushmen*".

The first real change in the socio-economic landscape came some 2,000 years ago when Khoi[4] pastoralists settled in the region. They were the first food producers in this area and introduced domesticated animals (sheep, goats and cattle) and ceramic vessels to the region. Not long after their arrival, the first Europeans rounded the Cape and greatly altered the prehistoric socio-economic landscape."

2.4.2. The Iron Age

The Iron Age is, likewise, subdivided into three periods, namely the Earlier Iron Age (EIA), the Middle Iron Age (MIA), and the Later Iron Age (LIA). The southern African Iron Age classification is directly tied the southward migration / expansion of proto-Bantu- and Bantu-speaking peoples from the Niger–Congo–Cameroon area. These migrations started some 5,000+ years ago, along three basic migratory routes to the south described as an Eastern, Central, and Western stream / route (Bostoen 2018; Mitchell 2002).

Soon after the beginning of the Christian era (200–800AD) the archaeological record in South Africa evidences the first cultural remains signalling the arrival of these immigrants—or the first "wave" of Iron Age migration—the period referred to as the EIA. The EIA farmers, few in number, settled geo-spatially in a north-east orientation across the land amidst the then resident LSA hunter-gatherer and pastoralist occupants: in the north they settled as far south as the rough Johannesburg area (200AD), from where they expanded eastward toward the coast and henceforth southward, to roughly as far south as present-day East London (800AD) (Ngcongco & Vansina 2000). Despite general cultural material similarities between the EIA farmers and the Bantu-speaking peoples of today, a notable cultural hiatus exists. The EIA is, resultantly, interpreted as representing the arrival of the first proto-Bantu- or perhaps already Bantu-speaking migrants but is, aside from general similarities, not directly associated with contemporary southern African Iron Age / Bantu tribes.

Between roughly 900/1000–1600AD—or the MIA—a second "wave" of Iron Age farmers entered the southern African region. The more numerous MIA immigrants settled according to the same north-east orientation as their EIA forebears, albeit not quite to the same extent. A mosaic-like system of rule unfolded where the peoples with more complex social systems—the LSA pastoralists and the Iron Age farmers—ruled side by side. From 1600AD onwards—or the LIA—migratory pressure from further north resulted in yet another "wave" of Iron Age farmers entering the southern African region, but with more limited immigration into South Africa despite resulting in fairly significant LIA migration within the country's borders (Ngcongco & Vansina 2000).

It follows from the above that specifically toward the east of the country EIA and MIA farmer settlement was, geo-spatially, far advanced in comparison with their central and western counterparts. The MIA farmers who thus entered the region and settled toward the east of the land comprised predominantly Nguni peoples; while their LIA history is more directly tied to their rise to economic and political power in the region.

But even in the east of the country, LIA settlement did not extent as far south as the study site. The Xhosa, the southernmost Nguni Bantu group's southern border fluctuated between the Buffalo and the Great Fish River between the years 1750 and 1780. Infrequent Xhosa settlement thus far south as the study site is mainly ascribed to two later LIA cultural episodes of Colonial Period times, related to the Mfengu and the *Cattle Killing* movement respectively:

- The Mfengu: in 1818 Hintsa[5], chief / king of the Gcaleka (Xhosa), upon his return from the Battle of Amalinde (Ngqika vs Ndlambe), was informed that strangers seeking refuge from the *difaqane* (circa. 1815–1835)—or Shaka's[6] War—had entered Gcalekaland. The strangers, scatters of tribes lead by the Zizi, Hlubi, Bhele, and Ntlangwini, were afforded refuge and named the amaMfengu—meaning *the wanderers*.

[4] LSA herders / pastoralists – Khoekhoen / Khoikhoi (abbreviated as: Khoe / Khoi) or "*Hottentots*".
[5] Hintsa kaKhawuta, (circa. 1780–1835).
[6] Shaka kaSenzangakhona (circa. 1787–1828).

Initial gracious relations between the Xhosa and Mfengu, however, turned hostile, and in 1835 many a Mfengu crossed the Great Kei River under missionary and Cape government protection for resettlement in the Peddie area. AmaMfengu thus resettled sided with the British in their ongoing campaigns—or Frontier Wars[7]—against the Xhosa. As renumeration for military services rendered, various portions of land were afforded the allied amaMfengu by the Cape government, a customary British practice at the time. Hence, from Peddie (Ciskei) sections of the amaMfengu subsequently also resettled, among other, at Grahamstown, Port Elizabeth, and the Tsitsikamma. In 1865, with the establishment of the Transkeian territories, many Mfengu were again resettled—in cases forcibly so—back to the general area initially afforded them by Hintsa (Bikitsha 2019; https://en.wikipedia.org/wiki/Fengu_people).

It is, thus, the amaMfengu who were, in 1835, resettled in the Peddie area as part of the Peddie / Ngqushwa movement and their subsequent spread through the then eastern Cape Colony that signals the first definitive LIA Xhosa / Mfengu thus far south in the Eastern Cape province.

- The *Cattle Killing* movement: the stage for the Cattle Killing movement of 1856–1857 was principally set by the preceding Eighth Frontier / Xhosa War (1850–1853). After British attempts to disposition Sandile[8], Chief of the Rharhabe Ngqika (Xhosa), hostilities erupted and in 1850 the Governor, Sir George Grey[9], met the Xhosa on the slopes of the Amathole Mountains to broker peace; but the very next day sent an armed force to display British military strength—and the Xhosa, supported by the "*Kaffir Police*" [Black police] and the Kat River Valley Khoe, attacked. The war continued until 1853, with victory to the British and the declaration of the Amathole district as Crown Reserve. The Ngqika were at long last subjugated to British rule—Sarhili[10] of the Gcaleka (the son of Hintsa) being the last remaining independent Xhosa chief beyond the ever-advancing colonial frontier (https://www.sahistory.org.za/article/cattle-killing-movement; Peires 2003).

  At this inopportune time, lungsickness—a cattle disease—struck. Initially brought to the Cape's shores by a Dutch ship in 1853, it spread to Uitenhage by 1854; to Fort Beaufort and King Williams Town by 1855, from where it made its way to the territories of the Chiefs Mhala, Phatho, and Maqoma; and onto Butterworth by 1856, from where it bore down on Sarhili's lands. The last to be affected was the Ngqika. Moreover, a coeval maize disease destroyed but all of the agricultural fields (https://www.sahistory.org.za/article/cattle-killing-movement; Peires 2003).

  Faced with military defeat, hardship, and hunger the Xhosa turned to spirituality and religion for deliverance. In British Kaffraria (between the Great Kei and Keiskamma Rivers)—the former Rharhabe lands—many a prophet and prophetess divined assistance and explanations. They told of a black nation (the Russians) from beyond the seas that had killed Smith's predecessor, Sir George Cathcart[11], principal inaugurator of the British campaigns against the Xhosa, and who, together with the spirits of their great deceased Chiefs would come to the aid of the Xhosa—on the part of the Xhosa they were, among other,

[7] First Frontier / Xhosa War: 1779–1781.
Second Frontier / Xhosa War: 1789–1793.
Third Frontier / Xhosa War: 1799–1803.
Fourth Frontier / Xhosa War: 1811–1812.
Fifth Frontier / Xhosa War: 1818–1819.
Sixth Frontier / Xhosa War: 1834–1836.
Seventh Frontier / Xhosa War: 1846–1847.
Eighth Frontier / Xhosa War: 1850–1853.
Cattle-killing Movement / Xhosa "suicide": 1856–1858.
Ninth Frontier / Xhosa War: 1877–1879.
[8] Mgolombane Sandile (1820–1878).
[9] George Grey (1812–1898).
[10] Sarhili kaHintsa (circa. 1810–1892).
[11] George Cathcart (1794–1854).

to stop cultivation and kill all their cattle. The prophesies, however, largely died down by 1856 when the Russians at the end of the Crimean War (1853–1856) made peace with the British. But between 1856–1857, spearheaded by the prophesies of Nongqawuse[12], advocating for the mass killing of Xhosa cattle and the destruction of their agricultural fields, some 40,000 Xhosa died by starvation, while about an equal number of them was relocated westward and employed on government projects further afield in the Cape Colony. Many, however, fled and took up informal positions on farms further south and west in the colony (https://www.sahistory.org.za/article/cattle-killing-movement; Peires 2003).

2.4.3. The Colonial Period

A brief history of Steytlerville introduces not only the Karoo town's Colonial Period history, but also that of its surrounds (https://www.karoo-southafrica.com/camdeboo/steytlerville/history-of-steytlerville/):

> *"In common with many of the far flung towns and villages of the Karoo, Steytlerville had its origins as a parish for the Dutch Reformed Church. In the arid valley between the Groot Winterhoek Mountains and the Baviaanskloof Mountains to the south and the Grootrivierberge to the north, the farm Doorspoort was a welcome oasis for the Trekboers or nomadic farmers who were the first settlers in the district. The farm was purchased by the Dutch Reformed Church in Uitenhage in 1875 to serve the spiritual needs of the local farmers and the town was subsequently established in 1876.*
>
> *Steytlerville was named in honour of the reverend Abraham Isaac Steytler, a Minister of the Dutch Reformed Church and later Moderator of the Cape Synod between 1909 and 19015. Steytlerville became a municipality in 1891.*
>
> *The original church was built in 1876 with some 300 members, however this first church was replaced with the large neo-Gothic style church in Sarel Cilliers Street on the site of the original town square. The new church was designed by the architect F.W. Hesse and built by building contractors from Cape Town, H.H. Moon & Ledbury.*
>
> *During the Anglo Boer War the town was garrisoned by British Troops as a protection against raiding Boer Commandos.*
>
> *In 1911 work was begun on a steel bridge to span the Groot River in the direction of Uitenhage. The bridge was officially opened in 1913 and named the Lady de Waal Bridge honouring the wife of the Administrator of the Cape province at the time, Sir Frederick de Waal. The bridge was washed away in the flooding of the Groot River in 1916 and 1921. On both occasions it was rebuilt and remains today unused, due to its replacement by a concrete bridge spanning the tempestuous Groot River in 1974.*
>
> *The introduction of merino sheep into the district in 1915 was an important factor in the growth and development of the district for many decades and together with the Angora goat farmed in the district since 1870 have been central in the economic well-being of the community.*
>
> *In more recent times and largely at the instigation of the former Minister of Agriculture and Water Affairs, Sarel Hayward whose roots were in Steytlerville, many farmers introduced indigenous wildlife to their farms given the precarious grazing conditions resulting from persistent drought in the district."*

Marais and Du Toit (2014) sketch the contemporary socio-cultural environment of Steytlerville:

> *"Back in the 1980s, the Noorsveld town of Steytlerville on the edge of the Baviaans Wilderness was the epicentre of a national rural repopulation drive.*

[12] Nongqawuse (circa. 1841–1898).

George Craven, the son of rugby legend Dr Danie Craven, started a 'Restore Our Endangered Platteland' campaign, trying to interest city folk to move back into the small towns of the Karoo.

He was a little before his time. It was only in the mid-1990s that the flow back to the rural towns of the Karoo began. The internet made it possible to run your business away from the city, and 'semigrants' began to arrive and fix up old Victorian dwellings.

In Steytlerville's case, a couple of Capetonians pitched up, bought the old hotel on the outskirts of town and established a theatrical venue that brings audiences in most weekends with outrageous cabaret shows. Think of that. Cabaret in the Karoo.

Downtown Steytlerville is quiet, and the perfect spot to practice your stoep-sitting. There's a definite art to sipping that glass of wine, leaning back deep into the shade and casting an eye over the almost non-existent main road traffic – and just letting your worries float away.

Watch out, however, for the Steytlerville Shape Shifter. They say he might first appear to you as a man in a business suit. Then he becomes a farmyard pig, and then flies off in bat form. Have another glass of wine and ponder on that.

Out at Noorspoort Guest Farm, the Craven spread, guests can also down a cold one at a rather fun pub called 'Doc se Hoc' (Doc's Corral), named after South Africa's famous rugby hero Dr Danie Craven."

Many farms in the Steytlerville region pre-date the 1876 founding of the town, but more were registered from the 1870s onward, including the subdivision of previously established farms. Portion 3 of Farm Pokjesfontein 120 was first surveyed in 1905 and officially registered in 1906, but the date of establishment of the original Farm Pokjesfontein 120 is unknown.

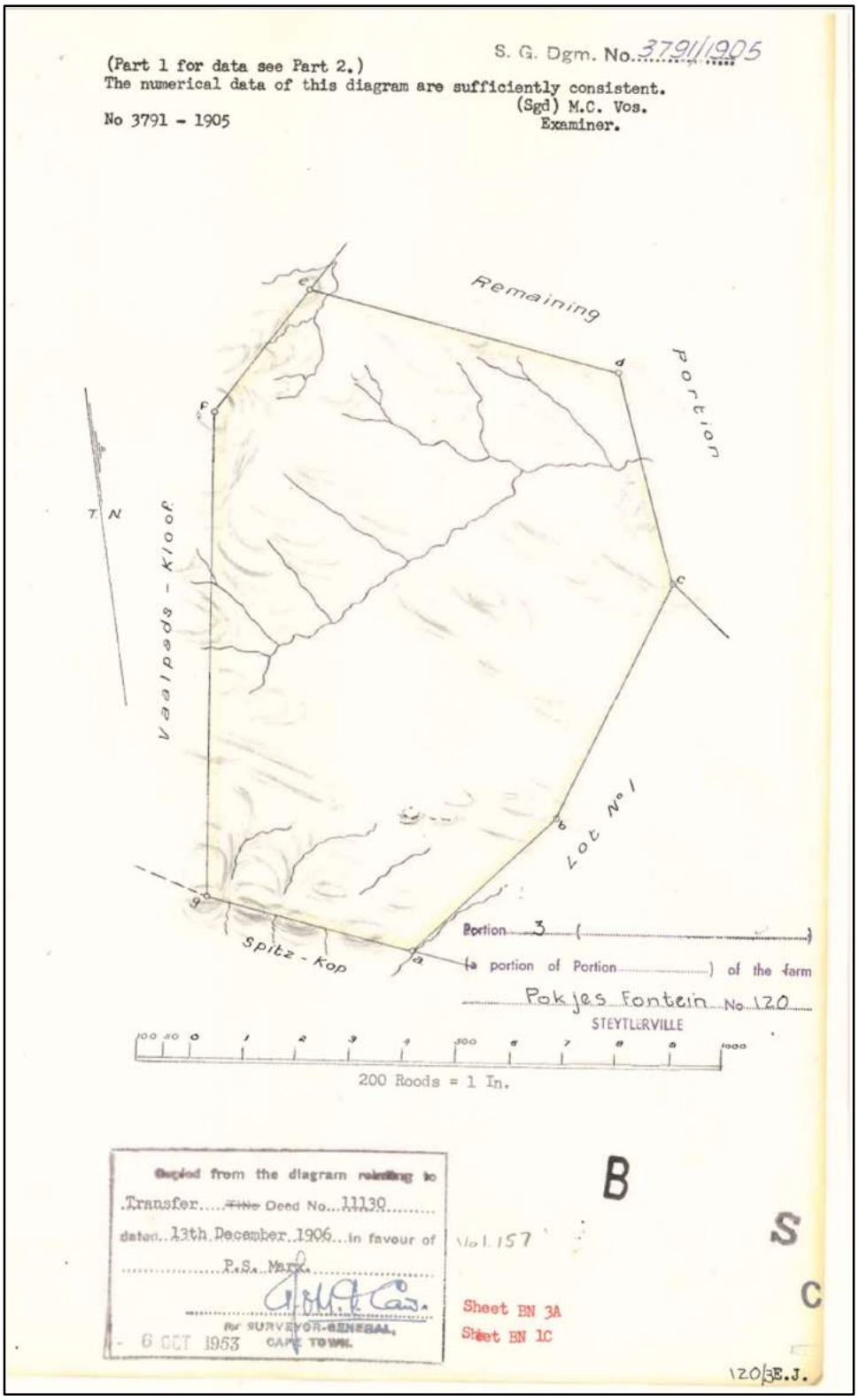


Figure 1: Portion 3 of Farm Pokjesfontein 120 [SG Diagram – 3791/1905] (Courtesy: Chief Surveyor General, Eastern Cape)

3.1. METHODOLOGY

The field assessment for the *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* development was done over a six-day period (16–21 May 2023), including time spent with the developer to visit Conservation Areas 1, 2, and 3. Geographic Positioning System (GPS) co-ordinate and photographic recording were done with a Garmin Montana 750i (Datum: WGS84). A combination of Garmap (Base Camp) and Google Earth software was used in the display of spatial information. Archaeological and cultural heritage site significance ratings and mitigation recommendations are based on the combined NHRA 1999 Section 7(1) and SAHRA (2007) system, summarised as:

SAHRA HERITAGE SITE SIGNIFICANCE RATING SYSTEM			
SITE SIGNIFICANCE	**FIELD RATING**	**GRADE**	**RECOMMENDED MITIGATION**
High Significance	National Significance	Grade I	Heritage site conservation / Heritage site development
High Significance	Provincial Significance	Grade II	Heritage site conservation / Heritage site development
High Significance	Local Significance	Grade III-A	Heritage site conservation or extensive mitigation prior to development / destruction
High Significance	Local Significance	Grade III-B	Heritage site conservation or extensive mitigation prior to development / destruction
High / Medium Significance	Generally Protected A	Grade IV-A	Heritage site conservation or mitigation prior to development / destruction
Medium Significance	Generally Protected B	Grade IV-B	Heritage site conservation or mitigation / test excavation / systematic sampling / monitoring prior to or during development / destruction
Low Significance	Generally Protected C	Grade IV-C	On-site sampling, monitoring or no heritage mitigation required prior to or during development / destruction

Table 2: SAHRA heritage site significance assessment rating system and associated mitigation recommendations

3.2. SUMMARY OF FINDINGS

Nineteen (19) archaeological and cultural heritage sites / resources (Sites PKJ-01–PKJ-19), as defined and protected by the NHRA 1999, were identified during the field assessment of the *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* study site, comprising Stone Age and Colonial Period sites / resources; no Iron Age sites / resources are present at the study site.

Of outstanding significance is the Pokjesfontein LSA–Khoe Type Site settlement (see Conservation Areas 1 [Site PKJ-07], 2 [Site PKJ-11], and 3 [Site PKJ-17]): the Type Site constitutes an as yet undescribed and unrecorded settlement pattern in the South African archaeological record relating to Khoe permanent village settlement, dated to at least Colonial Period times, based on the presence of surface trade goods (ceramic, bottle glass, metal, etc.)—either to the 1500s with reference to the Portuguese in south-eastern Africa, or to 1652 and thereafter with reference to the presence of the Dutch at the Cape of Good Hope. Type Site settlement features include double adjoining approximate 2x2m square stone structures, the one structure being a stone walled structure, inferred with a wooden / branch or thatched roof, and the adjoining structure being a stone-based skerm-like structure. Important livestock kraals were stone build, with larger outer stones and a smaller stone rubble infill, with the kraal walls being approximately 1m in width and, thus, very similar to the technique used by Iron Age farmer peoples—but the Khoe kraals are rectangular in shape, not circular like the regular Iron Age kraals; building technique also differentiates the Khoe from the Western Colonial Period stone stacked rectangular shaped kraals. Circular and double-circular (ring-like) feature outlines, of varying sizes, but mainly approximately 1.5–2m in diameter, are inferred to have had lattice and woven reed—or *"matjieshut"*—coverings and, most likely, served as sleeping quarters / huts. Larger circular features, of similar style, are inferred to have served public functions, such as community meeting places, utility rooms, etc. The Khoe Type Site settlement at Pokjesfontein seems to have been abandoned by at least the early 1800s when the Western Colonial Period settlers are inferred to have first settled at the site.

Altogether some 13ha will be set aside for the permanent conservation of the Pokjesfontein LSA–Khoe Type Site settlement—an unrivalled contribution to later LSA–Khoe history, not only in the Eastern Cape, but in South Africa as a whole. The Khoe Type Site settlement is ascribed a SAHRA *High Local Grade III-A Significance*: the sites are of research significance with the potential to be developed for educational and tourism purposes.

The neo-Imperialist heritage ideology, the dominant ideology of the democratic era, is underscored by two principal theories regarding the Khoe: the first hypothesis argues the Khoe as a people with their origin in the greater Cape peninsula region, and the second hypothesis argues a Khoe "homeland" in the greater Botswana / Zimbabwe region, from where they migrated into the interior, starting about 2,000 years ago. Both hypotheses hold that by the rough seventeenth or eighteenth centuries these people developed *a sense of community* or *tribal identity* (Deacon & Deacon 1999; Sadr 2013). The Pokjesfontein LSA–Khoe Type Site contradicts both hypotheses with regard the later history of the Khoe, but is underscored by, among other, early Dutch records of, 1652–1662 (Leibrandt 1897a, 1897b, 1900) of Khoe reports that some northern and eastern tribes resided in *castles* built of wood and stone, underscored by a north–east oriented four tiered socio-political Khoe hierarchy headed by the Chobona—chief of the Chobona(s) / Choboqua(s) tribe—and also the chief / king, or monarch, of all the Khoe.

Because of feverish neo-Imperialist heritage opinion, including Khoe history, from the side of both academia and the cultural and rights activist sectors—and that has in cases, unfortunately, resulted in belligerence, threats, and violence—it is not recommended that Phase 3 site development, albeit provided for in the NHRA 1999, be entered into within the proposed development framework. It is, however, recommended that a limited Phase 2a heritage programme be initiated, comprising of detailed sketch plans of Conservation Areas 1, 2, and 3, associated with a literature study and site interpretation only.

* * *

Archaeological and cultural heritage site / resource descriptions (Sites PKJ-01–PKJ-19) include per site recommendations for the construction and implementation (or use) phases of the development, in accordance with the EC PHRA APM and BGG permitting process, as and where applicable, as well as recommended temporary and permanent conservation measures as they would apply during the construction and implementation (or use) phases of the development: temporary conservation fencing during the construction phase of development should comprise of pole and wire / danger tape / construction netting—the purpose being to ensure that the sites are easily visible to avoid accidental impact; temporary signage should be easily visible and durable to the degree that the sign boards would outlast the construction phase, and should at minimum indicate each site as a *"Heritage Site – No Entry"* zone. Permanent conservation fencing during the implementation (or use) phase of the development should comprise of pole and wire fencing, to stylistically match the exiting fences on site; permanent signage should preferably be of metal, aluminium, or fibre glass, at minimum some 30x15cm in size, and indicate each permanently conserved site as a "*Heritage Site*". Conservation buffers proposed are smaller than is generally associated with CRM recommendations in a development context: the surrounds of identified sites, including grave sites, were scoured for related site features—firstly, excessive conservation buffers are not necessary to accommodate possible features associated with sites, and secondly, focussed conservation will enhance the cultural landscape setting of permanently conserved sites, with specific reference to their rehabilitated natural environment.

The study site is vast, and with a notably rich archaeological and cultural heritage record. It is also typified by high levels of past natural weathering and disturbance, including significant past episodic flooding that, reasonably, effected disturbed and washed away surface site features, not excluding the demarcations of graves. Should any sites, features, or graves be identified during the course of the construction phase, operation in the immediate vicinity of the find should be ceased, and the process as described in the Appendix B *Heritage Protocol for Incidental Finds during the Construction Phase of Development* be followed.

* * *

- The Stone Age lithic record

The Stone Age lithic record of the study site spans the ESA–MSA–LSA range: an ESA Acheulean as well as a Fauresmith-like cleaver were found on site, despite the study site's lithics being most prominently representative of the MSA and LSA periods—and including both macrolithic and microlithic LSA samples. Varying densities of mixed ESA, MSA, and LSA lithics were found widely scattered across the site, lens-like in some cases pertaining to period type artefacts, but with lithics in other cases quite mixed. Very few formal tools are, however, present—with the lithic record primarily representative of knapping debris or waste products, the likes of cores, waste flakes, chunks, and chips, but not excluding a few flakes and broken blades / bladelets. Although even good context research sites are known to yield low percentages of formal tools, on average comprising about 2% of the lithic assemblage and, thus, with debris in itself of research value, with specific reference to the reconstruction of knapping or lithic reduction sequences, the poor mixed ex situ context of the study site's lithic debris, disqualifies it for conservation or research purposes.

The study site is deemed to have attracted earlier hominins / humans, mainly because of the variety of raw material resources available on site. The site is typified by many a stone outcrops and geological ridge: a range of quartz, quartzite, dolerite, and hornfels (lydianite) were readily available for artefact manufacture.

Significant stream and erosion sections, in cases exceeding 2+m in height, are present on site, and including stratified anthropogenic membered sections. But such sub-surface anthropogenic members should be considered in relation to noticeable evidence for many past flooding events: there is no evidence that sub-surface anthropogenic members represent in situ deposits. Excavation and research of these sub-surface anthropogenic deposits would tell less about the lithics and more about past flooding events.

Because of the poor lithic research context at the study site, and despite the impressive ESA–MSA–LSA typological range of artefacts represented, it is recommended that development proceeds without any further conservation or mitigation pertaining to the general Stone Age lithic site record: development will impact on significant Stone Age deposits, in both surface and sub-surface contexts, but the lithic assemblage of Pokjesfontein 3/120 is of no conservation or research value—for reasons stated, development impact on the general Stone Age lithic record is not subject to an EC PHRA site destruction permit.

- The Colonial Period Site PKJ-04 Pokjesfontein 3/120 farmstead and surrounds

The Colonial Period Site PKJ-04 Pokjesfontein 3/120 farmstead and surrounds, being the farmstead in current use, comprises four recorded sites (Sites PKJ-01–PKJ-04). The farmstead (Site PKJ-04) and entrance gate (Site PKJ-01) are both still in use, and in situ conservation and use thereof during the construction and implementation (or use) phases of the development is implicit in the development proposal. The Site PKJ-02 shooting target is of low heritage significance, and may, or may not be conserved within the development context—without in the case of site destruction, the developer having to apply for an EC PHRA site destruction permit. The Site PKJ-03 old agricultural field, situated just north of the farmstead, is likewise, of a low heritage significance. Development will directly impact on the site, and it is recommended that development proceeds across the site locale without the developer having to apply for an EC PHRA site destruction permit.

Old farming infrastructure, mainly comprising built dams with reference to NHRA 1999 protected structures older than 60 / 100 years, are located across the study site; these sites were not individually recorded for purposes of this report, but they are still in use and in situ conservation and use thereof during the construction and implementation (or use) phases of the development are requisite for general farms management.

- Conservation Area 1 or Site PKJ-07

Site PKJ-07 comprises the main LSA–Khoe Type Site village. The total of the village—measuring some 7.5ha in size—will be set aside for permanent conservation within the development framework. The site is of a SAHRA *High Local Grade III-A Significance;* the site is of research significance, and with the potential to be developed for educational and tourism purposes. It is recommended that the developer initiates a Phase 2a archaeological programme comprising of a systematic survey of the site, a site sketch plan, and a basic literature and site interpretation before development commences in the vicinity of the site.

- The Irrigation Development Area, or Conservation Areas 2 (Site PKJ-11) and 3 (Site PKJ-17), the sites in between, and related sites

Conservation Areas 2 and 3—or Sites PKJ-11 and PKJ-17—are Colonial Period farmstead cum LSA–Khoe Type Site settlement sites, measuring some 2ha and 3.5ha respectively. An interesting cultural overlay is evident at the sites: Colonial Period resources, inferred to date mainly to the British Colonial Period, or from the rough 1800s onwards, are strategically placed between LSA–Khoe Type Site structure remains and features. This cultural overlay tells of a non-conflict scenario. As a norm, in the case of conflict, evidence of destruction or wilful imposition of the victor on his foe's edifices are present on site, and that is not the case at Conservation Areas 2 and 3, where it seems the Colonial Period settlers settled with due cognisance and respect for the remains of the "other", the Khoe of the Khoe Type Site settlement, most evident at Conservation Area 3, where the Khoe kraals are conserved between the Colonial Period structure remains and its kraal. The cultural overlay, furthermore, signals that the Khoe occupation at the site had ceased—for an as yet unknown reason—by the early 1800s, despite trade good evidence of their late, 1500s / 1652 or thereafter, occupation at the site. The LSA–Khoe Type Site settlement at Conservation Areas 2 and 3 is inferred coeval with that of Conservation Area 1; a clan of the Conservation Area 1 Khoe tribe, or a section of the Khoe tribe / clan that settled at Conservation Area 1, settled at Conservation Areas 2 and 3—but the Khoe tribe / clan of the Pokjesfontein Khoe–Type Site settlement remains unidentified.

Conservation areas 2 and 3 will be permanently conserved within the development framework. The sites are, likewise, of a SAHRA *High Local Grade III-A Significance;* they are of research significance, and with the potential to be developed for educational and tourism purposes. It is recommended that the developer initiates Phase 2a archaeological programmes comprising of systematic surveys of the sites, site sketch plans, and basic literature and site interpretations before the irrigation development starts.

Five sites (Sites PKJ-12–PKJ-16) are situated between Conservation Areas 2 and 3, in the area proposed for the irrigation development, including Colonial Period and LSA–Khoe Type Site sites / features. The sites are situated in the restricted game camp: varying temporary conservation measures apply to sites with and without graves. In all five cases the developer may opt for conservation or site mitigation as final heritage management option—and including grave relocation at Sites PKJ-12 and PKJ-15. With reference to conservation as final heritage management option, it is not recommended that these sites be included in Conservation Area 3; individual site conservation is preferable. The sites are situated in the flood plain, farming development around them would stabilise the environment, indirectly positively contributing to each site's conservation. In the event of the developer opting for site mitigation with specific reference to grave relocation, it is recommended that graves be relocated to either Conservation Areas 2 or 3: the graves are explicitly related to their cultural surrounds, and reburial at a municipal cemetery will have an unnecessary negative ex situ impact on these individuals' final resting place.

The Site PKJ-10 Khoe kraals are directly related to the LSA–Khoe Type Site settlement at Conservation Areas 2 and 3 and will be conserved within the project.

The general irrigation development site is, furthermore, typified by numerous old single file stone stacked field demarcations. In addition, stone was used in past road construction and maintenance, as well as in field levelling and erosion control, with retainer-like wall remains visible across the study site, and including at the earth dam's wall and the weir. These cultural remains are of such low archaeological and cultural heritage significance that they

can be destroyed within the development framework, and without warranting further archaeological and cultural reporting or documentation.

And then, last but not least, the irrigation development will impact on the general Stone Age lithic record as described for the general study site.

- Ephemeral LSA sites with graves

Two ephemeral LSA sites (Sites PKJ-18 and PKJ-19) are interpreted as possible sites *in flight*, or residings with only an original brief stay in mind (seasonal camps). Both sites are associated with possible graves. Should these sites be permanently conserved within the development framework, then their conservation would add a cultural layer to heritage conservation that cannot be attested to by the LSA–Khoe Type Site Conservation Areas 1, 2, and 3. Should the developer, however, opt for site mitigation and grave relocation at these sites, then it is recommended that reburial, likewise, be firstly considered on site, at Conservation Areas 1, 2, or 3 to avoid unnecessary negative ex situ impact on these individuals' final resting place associated with reburial at a municipal cemetery: individuals are unequivocally associated with the cultural landscape and heritage of the property, rather than with a modern municipal context and related burial practices and customs.

- LSA graves

Two LSA grave sites (Site PKJ-06 and PKJ-08) are situated on the property, both being singular grave sites without associated cultural features—although, in both cases, past natural impact may have completely destroyed such remains. The association between the graves and water are noticeable, in the case of Site PKJ-06 the grave is situated adjacent to a natural waterhole; and in the case of Site PKJ-08 near a stream. Permanent conservation of the graves within the development framework will retain this delicate aspect of past landscape use directly related to original burial practice and custom. But the developer may opt for grave relocation of the sites to facilitate development: in the case of grave relocation, it is recommended that reburial be firstly considered on site, at Conservation Areas 1, 2, or 3 to avoid unnecessary negative ex situ impact on these individuals' final resting place associated with reburial at a municipal cemetery. The individuals are directly tied to the cultural landscape and heritage of the property, and not—in terms of burial practice and custom—with a modern municipal context.

- Monolith and hunting trap

The Site PKJ-09 monolith and hunting trap is not situated in the study site; the site was recorded to further describe the cultural landscape of the property. The site will be conserved within the development framework.

- Artefacts / objects

Site PKJ-05 designates the position where a broken bored stone amulet was found. Bored stones form a subcategory of the unique later LSA cultural record in southern Africa, most readily associated with digging stick weights, but including *stone rings,* and with one interpretation of these rings being that they were bracelets or arm bands. The amulet falls within the latter category, but unique thereto is its small size and, hence, its classification as a bead-like amulet for personal or artefact (such as a carry bag) decoration. The amulet will be conserved on site (Pokjesfontein 3/120) by the developer.

3.3. ARCHAEOLOGICAL AND CULTURAL HERITAGE SITES / RESOURCES DESCRIPTIONS

3.3.1. Site PKJ-01: Colonial Period – Pokjesfontein 3/120 Entrance Gate – S33º16'22.2"; E24º06'56.2"

The stone-built Site PKJ-01 Pokjesfontein 3/120 entrance gate is reasonably inferred to date to the rough 1905 / 1906 registration of the property, perhaps somewhat later, or sooner, and with evidence that the farm may have been settled some 100 years prior to the said property registration. The site is, thus, inferred older than 100 years of age and is formally protected by the NHRA 1999. The site is well conserved and still in use, and in situ use thereof will continue throughout the construction and implementation (or use) phases of development.

Site significance and recommendations: The Site PKJ-01 Pokjesfontein 3/120 entrance gate is ascribed a SAHRA *Medium Significance* and a *Generally Protected IV-B Field Rating*. The site is well conserved and still in use, and in situ use thereof will continue throughout the construction and implementation (or use) phases of development, without additional heritage conservation requirements pertaining to the use thereof on the part of the developer.

3.3.2. Site PKJ-02: Colonial Period – Shooting Target – S33º16'06.8"; E24º06'58.2"

The Site PKJ-02 shooting target comprises a steel framed construction with an old frying pan as target, complete with a number of bullet holes therein; but no cartridge cases were found within reasonable distance from the site. The site is dated to roughly 1905 / 1906, when the main farmstead is inferred to have moved to its current locale (see Site 3.2.4.) The site is, thus, reasoned to be more than 100 years old, and is by implication protected under the NHRA 1999. Albeit an interesting Colonial Period feature, the site is of low archaeological and cultural heritage significance with reference to its conservation and research value. The developer may consider either conservation or destruction of the site within the development framework:

- Permanent site conservation: it is recommended that site conservation follows basic NHRA 1999 standards, including that a 1.5–2m conservation buffer be kept between the site perimeter and the conservation fence. The site should be permanently fenced with an access gate, and sign posted. Maintenance of an access path to the site should form part of the site's permanent conservation for the tenure of the implementation phase of the project. Because of the low heritage significance of the site, recommended conservation may be done at a suitable time to the developer, either during the construction or implementation (or use) phase of the project.
- Site destruction: because of the low heritage significance of the site, it is recommended that, should the developer prefer to demolish the site for purposes of development, destruction thereof proceeds without the developer having to apply for an EC PHRA site destruction permit.

Site significance and recommendations: The Site PKJ-02 shooting target is ascribed a SAHRA *Low Significance* and a *Generally Protected IV-C Field Rating*. The site may be conserved or destroyed—without the developer having to apply for an EC PHRA site destruction permit—at the developer's discretion.

3.3.3. Site PKJ-03: Colonial Period – Old Agricultural Field – S33º16'11.6"; E24º06'45.2"

Site PKJ-03 comprises just over an 1ha old agricultural field, situated just north of the Site PKJ-04 Colonial Period Pokjesfontein 3/120 farmstead, and is directly related to the farmstead, implying that the field most likely also dates to the rough past 100 years. The site is typified by a change in vegetation association with increased levels of erosion—typical tell-tale signs of past soil disturbance. Single file field stone outlines, in places discernible up to 10–20+m is still visible. The site—after abandonment of agricultural activities—was used as an informal waste site: building rubble, including some old bricks, that may also have been used for stabilisation purposes, as well as ceramic, bottle glass, and metal artefacts are strewn about the area.

The site, being most likely older than 100 years, constitutes a heritage site, formally protected by the NHRA 1999 as an archaeological site. But the site is of extremely low heritage significance, with no research potential.

Development will directly impact on the site; because of the low site significance it is recommended that development at the site locale proceeds without the developer having to apply for an EC PHRA site destruction permit.

Site significance and recommendations: The Site PKJ-03 old agricultural field is ascribed a SAHRA *Low Significance* and a *Generally Protected IV-C Field Rating*. The site will be directly impacted by development. It is recommended that development proceeds across the site locale without the developer having to apply for an EC PHRA site destruction permit.

3.3.4. Site PKJ-04: Colonial Period – Pokjesfontein 3/120 Farmstead – S33°16'15.5"; E24°06'45.5"

The Site PKJ-04 Pokjesfontein 3/120 farmstead, being the farmstead in current use, comprises a number of buildings / structures—cited across an approximate 400x100m area—with some of them protected under the NHRA 1999, while others are not. The site is dated roughly to the 1905 / 1906 registration of the property, but with development of the farmstead over the years visibly evident; NHRA 1999 formally protected site aspects varyingly predate 60 and 100 years of age respectively. The site is well conserved and still in use, and in situ use thereof will continue throughout the construction and implementation (or use) phases of the project.

NHRA 1999 protected Site PKJ-04 Pokjesfontein 3/120 farmstead aspects include:

- The main farmhouse – S33°16'15.5"; E24° 06'45.5" (site co-ordinate)
- Two sheds – S33°16'16.2"; E24°06'44.0"
- Two workers cottages – S33°16'20.7"; E24°06'47.8"
- A partial old stone wall – S33°16'13.9"; E24°06'42.0"

The current development proposal will not affect any of the protected buildings / structures at Site PKJ-04. Future development, however, may: the EC PHRA BE permitting process, as it pertains to the destruction or alteration of NHRA 1999 protected buildings / structures older than 60 / 100 years of age, was brought to the attention of the developer, with reference to the above listed site aspects.

In addition, Colonial Period infrastructure are present across the study site, most notably typified by a number of built dams—as opposed to earth dams, access roads, etc. that are not generally protected by the NHRA 1999—and relate varyingly to Colonial Period occupation at Conservation Areas 2 and 3 (from the rough 1800s onwards) and the Site PKJ-04 Pokjesfontein 3/120 farmstead (from the rough 1900s onwards): these Colonial Period built dams, thus, comprise structures older than 60 / 100 years of age and they are protected by the NHRA 1999. No attempt was made to document the old built dams—readily associated with water troughs and informal livestock camps—in relation to the current development proposal, although some of them are situated within the study site. All the built dams are in use, and their continued in situ maintenance and use are implicit in general farms management: none of them with be destroyed or altered under the current development proposal. Should future development, however, require destruction / alteration to the built dams, then the EC PHRA BE permitting process—as described for the Site PKJ-04 Pokjesfontein 3/120 farmstead protected aspects—should be followed.

Site significance and recommendations: The Site PKJ-04 Pokjesfontein 3/120 farmstead (and built dams) is ascribed a general SAHRA *Medium Significance* and a *Generally Protected IV-B Field Rating*. None of the NHRA 1999 protected site aspects will be affected by the current development proposal. The site is well conserved and still in use, and in situ use thereof will continue throughout the construction and implementation (or use) phases of development, without additional heritage conservation requirements pertaining to the use thereof on the part of the developer.

3.3.5. Site PKJ-05: Later Stone Age (LSA) – Broken Bored Stone Amulet – S33°15'56.7"; E24°06'43.6"

The PKJ-05 site record does not comprise a heritage site, but only an artefact / object. The locality was recorded because of the scarcity of the find, even though the broken bored stone amulet was evidently discarded and found lying in the field simply with a few unrelated lithic artefacts scattered about.

Bored stones are a unique component part of the later LSA southern African record, typified by a circular or oval shaped stone with a hole bored through its middle and, based on the weight of the stone, inferred used mainly as digging stick weights; with this use of bored stones thus also recorded in LSA ethnographic records (Goodwin 1947; Stow 1905; Theal 1910). Far scarcer that the typical digging stick weight bored stones, are flatter more refined shaped bored stones with a fairly large ratio bore hole circumference–outer stone ring. With, among other, traces of ochre identified on and in the bore holes of such sampled artefacts, Lombard (2002) is of the opinion that these *stone rigs* may have served a duel shamanistic or ritual use. For the purpose of this discussion it is, however, necessary to return to Goodwin's (1943) interpretation of them as bracelets or arm bands. The PKJ-05 broken bored stone amulet is closest associated with the concept of bored stone technology in the manufacture of decorative and prestige articles.

The PKJ-05 bored stone amulet comprises an original approximate 3.5cm in diameter circular shaped disc, of roughly 1cm in thickness nearest the bore hole, with its sides tapering and converging at the outer side of the ring, and with the bore hole measuring just under 1cm in diameter. The disc seems to have been purposely smoothed. The outer side of the ring shows some wear: these may be use-wear patterns consequent to intentional use, or they may be incidental to wear, as is at present inferred. The artefact seems to have broken during use or wear and, hence, the piece thereof was discarded and found in the field. It is at present reasoned that the artefact was a bead-like amulet used for personal or artefact (such as a carry bag, etc.) decoration. The exceptional scarcity of bored stone bead-like artefacts affords the broken bored stone amulet a high significance as a heritage object. The artefact is inferred to be directly related to the LSA–Khoe Type Site occupation at Conservation Areas 1, 2, and 3.

Site significance and recommendations: The PKJ-05 broken bored stone amulet constitutes a heritage artefact / object of SAHRA *High / Medium Significance* and a *Generally Protected IV-A Field Rating*. The object will be conserved on site (Pokjesfontein 3/120) by the developer.

3.3.6. Site PKJ-06: Later Stone Age (LSA) – Grave – S33°15'28.1"; E24°05'53.5"

The fairly well conserved Site PKJ-06 LSA stone cairn grave is situated adjacent to a dam, being a natural waterhole, but with a low rising earth wall subsequently added to the opposite side of the dam from the grave. The general area about the dam abounds in surface stone—the stone used to construct the cairn. The area was surveyed for additional graves and LSA site features, but none were identified; although, the possibility exists that such surface features were completely destroyed by natural impact.

The grave predates 100 years of age and is formally protected by the NHRA 1999 as both an archaeological and a grave site. Temporary conservation measures should be in place before the construction phase of development starts. The developer may consider conservation or grave mitigation (relocation) as final heritage management option for development:

- Temporary conservation during the construction phase: a temporary conservation fence with a 1.5–2m conservation buffer between the site perimeter and the fence, as well as temporary heritage signage should be in place before the start of the construction phase of the development. Final heritage management measures should be in place before development commences in the vicinity of the site.
- Permanent conservation: before development proceeds in the vicinity of the site the temporary conservation fence should be upgraded / replaced with a permanent conservation fence (in keeping with the recommended conservation buffer) with an access gate, permanent heritage signage, and an access

path. Recommended conservation measures should be managed and maintained throughout the tenure of the implementation (or use) phase of the project.

- Site mitigation: grave relocation should be done by a professional archaeologist under an EC PHRA BGG permit and according to the standards prescribed for grave relocation.

Site significance and recommendations: The Site PKJ-06 LSA grave is ascribed a SAHRA *High / Medium Significance* and a *Generally Protected IV-A Field Rating*. Temporary site conservation measures should be in place before commencement of the construction phase of the development. The developer may consider either conservation or grave mitigation (relocation) of the site as final heritage management option. Final heritage management measures should be in place before development proceeds in the general vicinity of the site.

3.3.7. Site PKJ-07 – Conservation Area 1: Later Stone Age (LSA) – Khoe Type Site Village – S33°15'25.2"; E24°07'06.1"

Site PKJ-07 comprises an approximate 620x150m, or a roughly 7.5ha, in size LSA–Khoe Type Site village, designated Conservation Area 1. The village is divided into a southern and northern (including the middle) section: the southern section seems to have focussed on livestock management, while the northern section was prioritised for village life. In addition, Site PKJ-07.1, situated to the south-west of the site, demarcates a single small kraal directly associated with the village, while Site PKJ-07.2, to the east of the village, is interpreted as an early scout camp.

The site is typified by a large rectangular stone build livestock kraal (site co-ordinate: S33°15'25.2"; E24°07'06.1"), measuring some 25x20m in size, with its weathered walls largely still standing well over 1m in height. The north-western corner of the kraal was, interestingly, build around a natural rock outcrop. A larger outer stone with a smaller inner stone rubble infill technique was used in the kraal's construction, with the kraal wall being approximately 1m in width. To the north-west of the kraal is the remains of a smaller kraal, measuring roughly 10x10m in size; and to the south-west and south-east thereof are two structures each measuring some 7x3m in size, inferred to have been used for livestock management, such as calf, lamb, and kid management, milking, or even to keep sick animals. Site PKJ-07.1 (S33°15'24.8"; E24°06'59.6") comprises a small stone build kraal, likewise, build adjoining an outcrop, and situated approximately 160m from the main kraal—it is the only village associated structure cited west of the stream that forms the western boundary of the village.

Stone was evidently not the only material used in kraal and related infrastructure construction: earth mound remains is inferred to represent former wood / branch build structures, most likely pre-constructed in palisade-like manner, and then erected, based on the "cornered" outlines of the mounds. An approximate 60m in length earth mound is reasoned to demarcate the southernmost area of daily village pastoralist milk processing activities, while mound remains suggest the presence of two palisade-built kraals to the north thereof, measuring some 15m and 35m in diameter respectively. Systematic survey of the area is necessary to further define it: more palisade-built structure remains may well be present, but they are difficult to identify and water erosion may well have washed parts of mound remains away. Water erosion across the southern part of the village certainly took its toll on the site, not only on livestock palisade structures, but also on other structure remains.

The remains of two double adjoining approximate 2x2m square stone structures are present in the southern section of the village. Each structure comprises of one 2x2m stone build square structure, with an adjoining 2x2m stone foundation, most likely with an original skerm-like covering. Stone evidence suggests paved stone structure floors, while sections of walls simply fell over; fair reconstruction of the original structures is, thus, possible. Ceramic, bottle glass, and metal artefacts suggest trade with the West, either with the Portuguese at south-eastern Africa, or the Dutch at the Cape of Good Hope, and provides a preliminary late occupation date of the site as post 1500 / 1652. The stone foundation outlines of at least two circular or half-circular structures was identified in association with the stone build structures (and palisade kraals)—these structures are inferred to have had lattice and woven reed—or *"matjieshut"*—coverings. But the rich stone surrounds and water impact on the area made identification of features difficult—the identification of many more features are, however, expected upon systematic village survey.

The southern boundary of the middle section of the village is typified by the Site PKJ-07.2 scout camp and the stone foundation remains of a large circular structure. Field assessment time spent on the middle section of the village was focussed on identification of the site boundary, but the area abounds in stone foundation remains including that of circular and rectangular structures, albeit in lower densities than identified in the southern part of the northern section of the village. No double adjoining stone structure remains were found in the middle section of the village, but the likelihood of the identification of such remains during systematic survey cannot be ruled out.

Site PKJ-07.2 (S33°15'18.7"; E27°07'05.8") comprises an approximate 30x30m area, with remains fairly distinct from the remainder of the middle section of the village and is, preliminary, interpreted as a possible early scout camp. The square / rectangular stone remains of two kraals, a large circular structure and at least five associated smaller structures are clustered together in a neat block formation. It seems as if the original stone build kraals may have been intentionally destroyed, most likely with the stone repurposed in the building of the permanent village; but all structures, excluding the kraal remains, seems to have been stone foundation outlined structures only, and would have had lattice and woven reed—or *"matjieshut"*—coverings. The Site PKJ-07.2 remains are of possible noticeable significance: if in fact an early scout camp, then the site describes a settlement layout pattern of a Khoe tribe / clan traceable in the archaeological record to reconstruct their migration to the area.

The stone foundation remains of a large, roughly 7–8m in diameter, circular structure further demarcates the southern boundary of the middle section of the village.

The southern boundary of the northern section of the village is typified by an earth dam build around the south-eastern extremity of the ridge that demarcates the north-eastern boundary of this part of the village. Field assessment in the southern part of the northern section of the village aimed to give a rough indication of the wealth of village remains—including double adjoining and stone foundation outlined structures—in this area in comparison to the remainder of the village, while assessment of the northern part of the northern section of the village focussed on the identification of the site boundary.

An earth dam (S33°15'14.4"; E24°06'56.1"), build around the foot of the north-eastern ridge, measures some 15x10m in size, with earth walls standing to approximately 1.5–2m high, complete with a small channel or path leading to the dam. The dam was constructed incorporating the south-eastern extremity of the ridge that demarcates the north-eastern boundary of the northern section of the village, and channelling water into the dam during rainy events. The dam highlights another level of engineering skill and practice not generally acknowledged in Khoe studies.

The remains of six double adjoining approximate 2x2m square stone structures are present in the southern portion of the northern section of the village that was earmarked for more intensive survey and gives an indication of the wealth of structures present in the northern section of the village. Numerous stone foundation outlined features, varying in size, and most commonly approximating 1.5–2m in diameter, but including a number of significantly larger structures are present in the northern section of the village.

No graves were identified at the village, but graves are reasoned to be identified during systematic survey of the site.

The Site PKJ-07 LSA–Khoe Type Site village—or Conservation Area 1—is older than 100 years of age and constitutes a NHRA 1999 formally protected archaeological site. The total of the site, approximately 7.5ha, will be permanently conserved within the development framework—no unauthorised development will take place at the site locale. Temporary conservation measures should be in place before the construction phase of development starts and permanent conservation measures associated with Phase 2a recommendations should be in place before development proceeds in the general vicinity of the site:

- Temporary conservation during the construction phase: temporary site conservation demarcation should comprise of visually clearly marked pole posts only (without a fence, to allow free animal movement), spaced at reasonable distance and within sight from one another according to the Map 10 site boundary specification. Where the site is bounded by natural boundary lines, such as the stream to its west and the

ridge along the north-eastern boundary of the northern section of the village, natural boundary lines should serve as site demarcations, and no pole posts are necessary. Temporary signage should be erected at a notable access point / points to the site, for example near the stone kraals. Temporary conservation measures should be in place before the construction phase of development commences. Final heritage management measures including the Phase 2a archaeological programme requirements should be in place before development commences in the vicinity of the site.

- Permanent conservation and Phase 2a archaeological programme: the developer should initiate a Phase 2a archaeological programme comprising of a systematic survey and sketch plan of Site PKJ-07 and a basic literature and site interpretation before development commences in the vicinity of the site. Phase 2a archaeological recommendations should define the permanent site boundary and may include additional development requirements, such as the planting of spekboom along the north-eastern boundary of the site as well as on site, for example in the southern section of the village, to assist in curbing water erosion on site features. Upon EC PHRA approval of the Phase 2a report development may commence in the vicinity of the site.
- Site PKJ-07.1: standard temporary conservation measures, including a temporary fence with an approximate 1.5–2m conservation buffer and temporary signage should be in place before commencement of the construction phase of development, and be replaced with a permanent fence and signage before development starts in the general vicinity of the site, and be maintained together with an access path to the site during the implementation (or use) phase of the development, as part of the Site PKJ-07 LSA–Khoe Type Site village.

Site significance and recommendations: The Site PKJ-07 LSA–Khoe Type Site village—or Conservation Area 1—is ascribed a SAHRA *High Local Grade III-A Significance*. Temporary conservation measures and signage should be in place before the construction phase of development commences. Permanent site conservation should be guided the Phase 2a archaeological programme, that should be completed before development proceeds in the vicinity of the site.

3.3.8. Site PKJ-08: Later Stone Age (LSA) – Grave – S33°15'29.9"; E24°06'44.4"

The Site PKJ-08 LSA stone cairn grave is situated adjacent to an access road running roughly alongside a stream. Natural weathering has taken its toll on the site, and some cairn stones are scattered about the grave, but their association with the grave is undoubted. Cairn stones used were taken from the immediate stone rich surrounds. Survey of the grave's surrounds yielded no related site features. However, the possibility that such features were present cannot be ruled out, but identification thereof in light of natural surface impact is lost.

The grave is reasonably inferred to be well older than 100 years of age and is formally protected by the NHRA 1999 as both an archaeological and a grave site. Temporary conservation measures should be instated prior to commencement of the construction phase of development. The developer may consider either conservation or grave mitigation (relocation) as final heritage management option for development:

- Temporary conservation during the construction phase: a temporary conservation fence with a 1.5–2m conservation buffer between the site perimeter and the fence, as well as temporary heritage signage should be in place before the start of the construction phase of the development. Final heritage management measures should be instated prior to commencement of development in the vicinity of the site.
- Permanent conservation: before development proceeds in the vicinity of the site the temporary conservation fence should be upgraded / replaced with a permanent conservation fence (in keeping with the recommended conservation buffer) with an access gate, permanent heritage signage, and an access path if necessary. Recommended conservation measures should be managed and maintained throughout the tenure of the implementation (or use) phase of the project.

- Site mitigation: grave relocation should be done by a professional archaeologist under an EC PHRA BGG permit and according to the standards prescribed for grave relocation.

Site significance and recommendations: The Site PKJ-08 LSA grave is ascribed a SAHRA *High / Medium Significance* and a *Generally Protected IV-A Field Rating*. Temporary site conservation measures should be instated before commencement of the construction phase of the development. The developer may consider either conservation or grave mitigation (relocation) as final heritage management option. Final heritage management measures must in be in place before development proceeds in the general vicinity of the site.

3.3.9. Site PKJ-09: Later Stone Age (LSA) – Monolith and Hunting Trap – S33º16'12.0"; E24º06'19.5"

Site PKJ-09 is not situated in the area proposed for development—the site will not be impacted on by development and will be conserved in situ. The site is reported on merely to further describe the general cultural landscape of the property.

The site comprises of two components, a stone monolith, that measures some 45cm in height, situated east of the access road and a large hole—the remains of a hunting trap—that measure roughly 2m in diameter, on the western side of the road. Stone monoliths were used to mark territories in the past, and the stone monolith is, reasonably, inferred to have mark the territory of the section of the Khoe tribe / clan that occupied the Conservation Area 2 and 3 sites, as opposed to those who resided at the Conservation Area 1 village. LSA hunting traps are widely reported on in early ethnographic records (Stow 1905; Theal 1910); however, more often thus in relation to the San than the Khoe. San hunting traps are regularly described as approximately 3x3m in size and some 1.5–2m deep, with poisoned wooden spokes at the bottom and covered with a branch and foliage camouflage. The hole opposite the monolith is slightly small for a typical San hunting trap, but the Khoe, being pastoralists—with milk as their staple, not meat from their livestock—hunted game to supplement their diet. They are, however, known to have generally hunted smaller game than the San, who relied on a hunter-gatherer subsistence strategy for their survival. The just undersized hunting trap remains is, thus, inferred to be directly associated with the Khoe occupation at the property—a fairly rarely reported on type site and activity associated with the Khoe.

Site significance and recommendations: The Site PKJ-09 monolith and hunting trap is not situated in the area proposed for development and will be conserved in situ. A SAHRA site significance rating and recommendations for development purposes do not apply.

3.3.10. Site PKJ-10: Later Stone Age (LSA) – Two Kraals – S33º16'14.0"; E24º06'08.2"

Remains of two LSA livestock kraals—labelled Site PKJ-10—are cited outside the development area, but on the border thereof and are, therefore, included in this section, with the purpose to ensure that no accidental development impact occurs at the site.

Amorphous shaped stone kraal foundations are situated on both sides of the access road: one kraal to the eastern side, and the other to the western side of the access road. Only the stone foundations of the kraals are visible—it is likely that these were not stone built kraals, but that the stone foundations mainly supported wooden / branch kraal walling, although select sections may have been stone built. Both kraals measure some 25–30x10m in size each. The kraals are directly associated with the Conservation Areas 2 and 3 Khoe Type Site occupation, situated some 1.5km distant.

The kraal remains are more than 100 years old and the site forms part of the Conservation Areas 2 and 3 Khoe Type Site occupation; the site is, thus, formally protected by the NHRA 1999 as an archaeological site. Because the kraals are situated outside the development area, the likelihood of accidental impact on them during the general construction phase of development is negligible: temporary conservation measures during the construction phase

are not necessary. But permanent conservation measures should be instated before development proceeds in the general vicinity of the site:

- Permanent site conservation: it is recommended that the kraals be permanently conserved with an approximate 1.5–2m conservation buffer between the kraal permitters and the conservation fences, including access gates, permanent signage and, if necessary, access paths. Recommended conservation measures should be managed and maintained throughout the tenure of the implementation (or use) phase of the project.

Site significance and recommendations: The two Site PKJ-10 kraals form part of the Conservation Areas 2 and 3 Khoe Type Site occupation and are ascribed a SAHRA *High Local Grade III-A Significance*. Temporary conservation measures during the construction phase of development are not necessary, but permanent conservation measures should be in place before development commences in the general vicinity of the site.

3.3.11. Site PKJ-11 – Conservation Area 2: Colonial Period – Farmstead; and Later Stone Age (LSA) – Khoe Type Site Village – S33°16′28.6″; E24°06′27.8″

The Site PKJ-11 area—or Conservation Area 2—measures some 270x70m, or roughly 2ha, in size. The site is typified by an overlay of Colonial Period and LSA–Khoe Type Site remains; Colonial Period remains, however, dominates—the area was principally used for Colonial Period occupation, with additional remains southward of the floodplain, while the principal LSA–Khoe occupation was southward of the floodplain, with additional use remains northward thereof.

The Colonial Period occupation of Site PKJ-11 is typified by three Colonial Period homestead remains, namely structures 1 (S33°16′30.6″; E24°0628.5″), 2 (S33°16′30.8″; E24°06′30.3″), and 3 (S33°16′32.2″; E24°06′35.0″). Structures 1 and 2 comprise stone foundation (and sub-structure) and brick ruins, while structure 3 is a cement / shingle and brick structure ruin. The sequential modernisation visible at the three ruins is indicative of the post-1800 British annexation of the Cape with the then emphasis on modernisation and industrialisation, mentioned here with specific reference to the use of factory produced bricks in the structures. Although cultural assignation of smaller independent walls remains are difficult to distinguish between the Colonial Period and LSA–Khoe settlers, it is inferred that some loose mainly single file stone walling is directly associated with the homestead remains and may have served as yard boundaries and the more.

LSA–Khoe use of the area is marked by an extended "izivivane" structure (S33°16′28.6″; E24°06′27.8″). The name, "izivivane", is of Nguni origin and designates cone or pyramid shaped stone structures associated with the practice of well whishing before a journey; "izivivane" are not grave sites. The Khoe, being a pastoralist people, likewise, regularly journeyed, and smaller Khoe and Bantu "izivivane" are in many cases not distinguishable from one another. The larger more elaborate amorphic shaped Khoe "izivivane" is, thus, inferred in consequence of frequent departure from the village. More elaborate Khoe "izivivane" are known, but the site feature remains unique with reference to the confirmation of the practice in direct relation to the point of departure from a permanent village.

The area was also used as a burial ground by the Khoe and at least four graves, including a double grave is present. Systematic survey of the area may well yield more graves, but the jumble of stone in the area made identification between naturally clustered and anthropogenic stone clusters difficult.

A small approximate 2x2m in size stone kraal complements Khoe daily activity remains in the area associated with some stone walling.

The Site PKJ-11 Colonial Period farmstead and LSA–Khoe Type Site remains—or Conservation Area 2—predates 100 years of age and is formally protected by the NHRA 1999 as an archaeological and a grave site. The total of the site, approximately 2ha in size, will be permanently conserved within the development framework and no unauthorised development will take place at the site locale. The site is situated within a restricted game camp: current game camp fencing suffices for temporary and permanent conservation during the construction and

implementation (or use) phases of the general spekboom and irrigation development along the western and north-eastern boundaries of the site. In addition, a service road runs through the site. The road is reasoned to have been in use—along its current alignment, or at least very close thereto—since at least the earliest time of Colonial Period occupation at the site, sometime around the early 1800s, and it does not impact on sensitive site aspects, with specific reference to identified LSA graves. Use of the service road along its current alignment for service purposes, including maintenance to the earth dam and weir as well as general water infrastructure, is requisite for general farms management. But it is recommended that a new road be constructed north of and along the north-eastern boundary of the game fence for purposes of establishment and operation of the irrigation development, with specific reference to the use of heavier farming equipment associated with modern farming and the presence of graves at Site PKJ-11. Additional temporary conservation measures should be in place before the construction phase of the irrigation development starts; and permanent conservation measures associated with Phase 2a recommendations should be in place before development proceeds in the general vicinity of the site:

- Temporary conservation during the construction phase: temporary and permanent conservation fencing along the western and north-eastern boundary of the site are in place (game camp fencing). Additional temporary conservation along the eastern and south-western boundary of the site should be instated, comprising of visually clearly marked pole posts only (without a fence, to allow free animal movement), spaced at reasonable distance and within sight from one another, according to the Map 11 site boundary specification. Temporary signage should be erected at a notable access point / points to the site, for example at the current game camp gate. Temporary conservation measures should be in place before the construction phase of development commences. Final heritage management measures including the Phase 2a archaeological programme requirements should be in place before the irrigation development commences.
- Permanent conservation and Phase 2a archaeological programme: the developer should initiate a Phase 2a archaeological programme comprising of a systematic survey and sketch plan of Site PKJ-011 and a basic literature and site interpretation before the irrigation development commences. Phase 2a archaeological recommendations should define the permanent site boundary, with specific reference to the eastern boundary of the site, where less time was spent in identification of the site boundary and associated archaeological remains and may, thus, result in a slight amendment, or decrease, in size of Conservation Area 2, than proposed in this report. The recommended irrigation development access road and gate should be situated eastward of the final Conservation Area 2 boundary. Phase 2a recommendations may include the planting of a sufficient boundary of spekboom along the north-eastern boundary of the site, to assist in general landscape stabilisation and by implication site feature conservation. Upon EC PHRA approval of the Phase 2a report the irrigation development may commence.

Site significance and recommendations: The Site PKJ-11 Colonial Period farmstead and LSA–Khoe Type Site village—or Conservation Area 2—is ascribed a SAHRA *High Local Grade III-A Significance*. Temporary conservation measures and signage should be in place before the construction phase of the general development starts. Permanent site conservation should be guided by the Phase 2a archaeological programme, that should be completed before the irrigation development commences.

3.3.12. Site PKJ-12: Colonial Period – Two Graves – S33º16′36.2″; E24º06′33.5″

Site PKJ-12 demarcates the locality of two Colonial Period graves, situated in direct proximity to one another, and collectively comprising a site area of some 8x8m in size. At one grave the rectangular single file stone outline of the grave is still fairly discernible, but a random stone collection alone indicates the position of a possible second grave. The graves are directly associated with the Colonial Period record of the property, and specifically with the Conservation Areas 2 and 3 remains.

The Site PKJ-12 graves are older than 60 years of age, and they reasonably predate 100 years of age—the graves are, thus, formally protected by the NHRA 1999 as both an archaeological and a grave site. The site is situated

within the restricted game camp, but because of the sensitivity of the graves it is recommended that additional temporary conservation measures be instated before general development commences. The developer may consider either permanent conservation or grave mitigation (relocation) as final heritage management option for development:

- Temporary conservation during the construction phase: a temporary conservation fence with a 1.5–2m conservation buffer between the site perimeter and the fence, as well as temporary heritage signage should be in place before the start of the construction phase of the development. Final heritage management measures should be instated prior to commencement of the irrigation development.
- Permanent conservation: before commencement of the irrigation development, the temporary conservation fence should be upgraded / replaced with a permanent conservation fence (in keeping with the recommended conservation buffer) with an access gate, permanent heritage signage, and an access path. Recommended conservation measures should be managed and maintained throughout the tenure of the implementation (or use) phase of the irrigation development.
- Site mitigation: grave relocation should be done by a professional archaeologist under an EC PHRA BGG permit and according to the standards prescribed for grave relocation.

Site significance and recommendations: The two Colonial Period Site PKJ-12 graves are ascribed a SAHRA *High / Medium Significance* and a *Generally Protected IV-A Field Rating*. Temporary conservation measures should be in place before the general development commences. Final heritage management measures should be in be in place before the irrigation development starts.

3.3.13. Site PKJ-13: Later Stone Age (LSA) – Large Circular Stone Feature – S33º16'37.1"; E24º06'32.1"

The Site PKJ-13 LSA circular stone feature measures some 8m in diameter and is typified by a single file stone outline of neatly positioned stones, inferred to have been the foundation of a large lattice and woven reed—or *"matjieshut"*—covering. The site, most likely, served as an important meeting place for the community. Although deposit depth may not be significant at the site, research level information on lifeway and site use at the feature heightens the archaeological and cultural heritage significance of the site.

Site PKJ-13—being older than 100 years of age—is formally protected under the NHRA 1999 as an archaeological site. Temporary conservation measures are in place (game camp fence). The developer may consider either permanent conservation or site mitigation as final heritage management option for development:

- Temporary conservation during the construction phase: temporary heritage conservation measures are in place for purposes of the general construction phase of the development, but final heritage management measures should be instated before the irrigation development commences.
- Permanent conservation: a permanent conservation fence with an approximate 3–5m conservation buffer between the site perimeter and the fence, an access gate, permanent heritage signage, and an access path should be in place before the irrigation development starts. Recommended conservation measures should be managed and maintained throughout the tenure of the implementation (or use) phase of the irrigation project.
- Site mitigation: site mitigation should be done by a professional archaeologist under an EC PHRA APM permit and include a sketch plan, test excavations, and site interpretation. Upon the issuing of an EC PHRA site destruction permit, development may legally proceed across the site locale.

Site significance and recommendations: The Site PKJ-13 LSA circular stone feature is ascribed a SAHRA *Medium Significance* and a *Generally Protected IV-B Field Rating*. Temporary site conservation measures for purposes of the general construction phase of the development are in place. The developer may consider either permanent conservation or site mitigation as final heritage management option. Final heritage management measures must in be in place before the irrigation development commences.

3.3.14. Site PKJ-14: Colonial Period – Structure Mound – S33°16′36.8″; E24°06′28.7″

Site PKJ-14 is for the time being described as a Colonial Period site, but this period classification may proof differently upon investigation. The site comprises a building / structure mound of some 12–15m in diameter, representing a circular structure, most likely originally around 8m in diameter. The structure seems to have been built of mudbrick or a mud component and, most likely, wood / branch; black stains on the mound is inferred to be burn marks and may be the reason for the collapse and abandonment of the site.

The site is older than 100 years of age and is formally protected by the NHRA 1999 as an archaeological site. Temporary conservation measures are in place (game camp fence). The developer may consider either conservation or mitigation of the site as final heritage management option for development:

- Temporary conservation during the construction phase: temporary heritage conservation measures are in place for purposes of the general construction phase of the development, but final heritage management measures should be instated before the irrigation development starts.
- Permanent conservation: a permanent conservation fence with an approximate 2–3m conservation buffer between the site perimeter and the fence with an access gate, permanent heritage signage, and an access path should be in place before the irrigation development commences. Recommended conservation measures should be managed and maintained throughout the tenure of the implementation (or use) phase of the irrigation project.
- Site mitigation: site mitigation should be done by a professional archaeologist under an EC PHRA APM permit and include a sketch plan, test excavations, and site interpretation. Upon the issuing of an EC PHRA site destruction permit, development may legally proceed across the site locale.

Site significance and recommendations: The Site PKJ-14 Colonial Period structure mound is ascribed a SAHRA *Medium Significance* and a *Generally Protected IV-B Field Rating*. Temporary site conservation measures for purposes of the general construction phase of the development are in place. The developer may consider either permanent conservation or site mitigation as final heritage management option. Final heritage management measures must in be in place before the irrigation development proceeds in the vicinity of the site.

3.3.15. Site PKJ-15: Later Stone Age (LSA) – Structure Remains and Grave – S33°16′37.3″; E24°06′27.1″

Site PKJ-15 measures around 8x5m in size and comprise the scattered remains of two rectangular structures, each measuring just over 1x1m, and an associated stone cairn grave.

The site is older than 100 years of age and is formally protected by the NHRA 1999 as both an archaeological and a grave site. The site is situated within the restricted game camp, but because of the sensitivity of the grave it is recommended that additional temporary conservation measures be instated before general development commences. The developer may consider either permanent conservation or grave mitigation (relocation) as final heritage management option for development:

- Temporary conservation during the construction phase: a temporary conservation fence with a 1.5–2m conservation buffer between the site perimeter and the fence, as well as temporary heritage signage should be in place before the start of the construction phase of the development. Final heritage management measures should be instated before the start of the irrigation development.
- Permanent conservation: before commencement of the irrigation development, the temporary conservation fence should be upgraded / replaced with a permanent conservation fence (in keeping with the recommended conservation buffer) with an access gate, permanent heritage signage, and an access path. Recommended conservation measures should be managed and maintained throughout the tenure of the implementation (or use) phase of the irrigation project.
- Site mitigation and grave relocation: site mitigation and grave relocation should be done by a professional archaeologist under an EC PHRA APM and BGG permit and include a sketch plan, test excavations, site

interpretation, and grave relocation. Upon the issuing of an EC PHRA site destruction permit, development may legally proceed across the site locale.

Site significance and recommendations: The Site PKJ-15 LSA structure remains and grave are ascribed a SAHRA *High / Medium Significance* and a *Generally Protected IV-A Field Rating*. Temporary conservation measures should be in place before the general development commences. The developer may consider either permanent conservation or site mitigation and grave relocation as final heritage management option. Final heritage management measures must in be in place before the irrigation development starts.

3.3.16. Site PKJ-16: Later Stone Age (LSA) – Structure Remains – S33º16'36.6"; E24º06'25.8"

Site PKJ-16 measures some 8x5m in size and represents the stone remains of two circular structures situated adjacent to one another, each feature measuring approximately 1.5–2m in size. The structures may originally have been covered with a lattice and woven reed—or *"matjieshut"*—covering, but more elaborate stone use in their construction cannot be ruled out, based on the ample scattered stone lying about the site. However, the site is situated in the floodplain, an area where past rain and flood events evidently took a higher toll on archaeological remains than elsewhere on the property, as for example at Conservation Areas 2 and 3.

The site is older than 100 years of age and is formally protected by the NHRA 1999 as an archaeological site. Temporary conservation measures are in place (game camp fence). The developer may consider either conservation or site mitigation as final heritage management option for development:

- Temporary conservation during the construction phase: temporary heritage conservation measures are in place for purposes of the general construction phase of the development, but final heritage management measures should be instated prior to commencement of the irrigation development.
- Permanent conservation: a permanent conservation fence with a 2m conservation buffer between the site perimeter and the fence with an access gate, permanent heritage signage, and an access path should be in place before the irrigation development starts. Recommended conservation measures should be managed and maintained throughout the tenure of the implementation (or use) phase of the irrigation project.
- Site mitigation: site mitigation should be done by a professional archaeologist under an EC PHRA APM permit and include a sketch plan, test excavations, and site interpretation. Upon the issuing of an EC PHRA site destruction permit, development may legally proceed across the site locale.

Site significance and recommendations: The Site PKJ-16 LSA structure remains are ascribed a SAHRA *Medium Significance* and a *Generally Protected IV-B Field Rating*. Temporary site conservation measures for purposes of the general construction phase of the development are in place. The developer may consider either permanent conservation or site mitigation as final heritage management option. Final heritage management measures must in be in place before the irrigation development commences.

3.3.17. Site PKJ-17 – Conservation Area 3: Colonial Period – Farmstead; and Later Stone Age (LSA) – Khoe Type Site Village – S33º16'38.7"; E24º06'26.6"

The Site PKJ-17 area—or Conservation Area 3—measures roughly 470x80m, or some 3.5ha, in size. Similar to Conservation Area 2, the site is typified by an overlay of Colonial Period and LSA–Khoe Type Site remains, directly related to the Conservation Area 2 settlement features. But at Conservation Area 3, LSA–Khoe Type Site remains dominate the record, rather than Colonial Period sites / resources.

Colonial Period occupation is evidenced by the remains of a large rectangular stone-built kraal (S33°16'38.5"; E24°06'23.9"), measuring some 20x10m in size. One wall of the stone stacked kraal is notably well conserved and serves as testimony to the different techniques employed by the Colonial Period settlers and the Khoe in kraal

construction. The Colonial Period record is complemented by the remains of an old homestead (S33°16'39.2"; E24°06'29.9"). The structure had stone foundations but was brick build.

LSA–Khoe Type Site remains at Conservation Area 3 designates the southern bank of the river as the primary area of Khoe habitation, or as the Khoe village. Khoe remains are typified by two large kraals, one of which measures at least 20x10m in size with notably well conserved walls (site co-ordinate: S33°16'38.7"; E24°06'26.6"). The second kraal (or kraal camps) slightly exceed the well conserved kraal remains in size, but it is in a notably more ruinous state. The Khoe kraals were, contrary to the Colonial Period stone stacked kraal, build with larger outer stones and a smaller stone rubble infill, and with a wall width of approximately 1m.

The remains of six double adjoining stone structures defines the village, but more remains may be identified upon systematic survey of the site area. SS-1 is the best conserved of the double adjoining stone structures, with significant parts of the 2x2m walled stone section of the structure still standing. In the immediate vicinity of SS-1, the stone remains of two circular structures suggest that not all ancillary structures were necessarily lattice and woven reed—or *"matjieshut"*—covered: the sheer number of stone at these feature remains suggest circular stone-built structures. One grave was identified near SS-1, and more may be identified upon systematic survey. Ceramic, bottle glass, and metal was present at the site, including a small metal plate with the printed date "1939". The dated metal plate is, however, reasoned to be a later addition to the site, most likely an artefact simple dropped during an earlier investigation of the site.

At SS2, ceramic, bottle glass, and metal artefacts were again found scattered about the surface of the structure. Surface artefacts also included a broken bored stone, a digging stick weight in the making, but the object seems to have broken while the stone was being bored. The SS-2–SS-6 cluster of double adjoining stone structure area is typified by numerous more ephemeral remains, mainly small circular stone foundation remains of inferred lattice and woven reed—or *"matjieshut"*—covered structures, but including some small square approximately 1x1m remains. And at least two more graves were identified in the area, with more expected upon systematic survey.

The Site PKJ-17 Colonial Period farmstead and LSA–Khoe Type Site remains—or Conservation Area 3—is older than 100 years of age—the site is formally protected by the NHRA 1999 as an archaeological and a grave site. The total of the site, some 3.5ha in size, will be permanently conserved within the development framework. The game camp fence forms the north-eastern boundary of the site, and with this fencing suitable for temporary and permanent conservation purposes during the construction and implementation (or use) phases of the development. Additional temporary conservation measures should be in place before the construction phase of the general development starts. Permanent conservation measures associated with Phase 2a recommendations should be in place before development proceeds in the general vicinity of the site, be it the general spekboom or the irrigation development:

- Temporary conservation during the construction phase: temporary and permanent conservation fencing along the north-eastern boundary of the site is in place (game camp fencing). Additional temporary conservation along the eastern, south-western, and western site boundaries should be instated, comprising of visually clearly marked pole posts only (without a fence, to allow free animal movement), spaced at reasonable distance and within sight from one another, according to the Map 11 site boundary specification. Temporary signage should be erected at a notable access point / points to the site, for example at the existing game camp fence. Temporary conservation measures should be in place before the construction phase of development commences. Final heritage management measures including the Phase 2a archaeological programme requirements should be in place before the spekboom development commences in the general vicinity of the site, or before the irrigation development starts, whichever will commence first in the vicinity of the site.
- Permanent conservation and Phase 2a archaeological programme: the developer should initiate a Phase 2a archaeological programme comprising of a systematic survey and sketch plan of Site PKJ-017 and a basic literature and site interpretation before the spekboom development encroaches on the site locale or before the irrigation development commences. Phase 2a archaeological recommendations should define the permanent site boundary, with specific reference to the eastern boundary of the site, where

less time was spent in identification of the site boundary and associated archaeological remains and may, thus, result in a slight amendment, or decrease, in size of Conservation Area 3 than proposed in this report. Phase 2a recommendations may include the planting of a sufficient boundary of spekboom along the south-western boundary of the site, to assist in general landscape stabilisation and by implication site feature conservation. Upon EC PHRA approval of the Phase 2a report the irrigation development may commence.

Site significance and recommendations: The Site PKJ-17 Colonial Period farmstead and LSA–Khoe Type Site village—or Conservation Area 3—is ascribed a SAHRA *High Local Grade III-A Significance*. Temporary conservation measures and signage should be in place before the construction phase of the general development starts. Permanent site conservation should be guided by the Phase 2a archaeological programme, that should be completed before the spekboom development encroaches on the site locale or before the irrigation development commences.

3.3.18. Site PKJ-18: Later Stone Age (LSA) – Ephemeral Site Remains and Possible Grave – S33°16′00.8"; E24°05′49.5"

The PKJ-18 LSA site comprises no more than an approximate 8x8m area. Surface stone demarcations are indicative of a former ephemeral structure, typified by a square / rectangular underlying pattern, and with the structure most possibly originally branch covered. To the side of the structure remains, a formation of surface stone may represent an associated grave. The ephemeral nature of the site gives the impression of a site *in flight*, or an originally planned brief stay at the most (seasonal camp). The underlying settlement pattern suggests that the site may be either of San or of Khoe origin—but if Khoe, of a Khoe tribe different from the Khoe (culturally / temporally) associated with the LSA–Khoe Type Site settlements of Conservation Areas 1, 2, and 3.

The site is older than 100 years of age and is formally protected by the NHRA 1999 as an archaeological and a grave site. While the ephemeral settlement remains are of low archaeological and cultural heritage significance with reference to its research value, the possible presence of a grave makes the site highly significant in a development context. Temporary conservation measures should be instated prior to commencement of the construction phase of development. The developer may consider either conservation or site mitigation, including grave relocation, as final heritage management option for development:

- Temporary conservation during the construction phase: a temporary conservation fence with a 2–3m conservation buffer between the site perimeter and the fence, as well as temporary heritage signage should be in place before the start of the construction phase of the development. Final heritage management measures should be instated prior to commencement of development in the vicinity of the site.
- Permanent conservation: before development proceeds in the vicinity of the site the temporary conservation fence should be upgraded / replaced with a permanent conservation fence (in keeping with the recommended conservation buffer) with an access gate, permanent heritage signage, and an access path. Recommended conservation measures should be managed and maintained throughout the tenure of the implementation (or use) phase of the project.
- Site mitigation and grave relocation: site mitigation and grave relocation should be done by a professional archaeologist under an EC PHRA APM and BGG permit and include a sketch plan, test excavations, and site interpretation, as well as grave relocation. Upon the issuing of an EC PHRA site destruction permit, development may legally proceed across the site locale.

Site significance and recommendations: The PKJ-18 LSA ephemeral site remains and possible grave is ascribed a SAHRA *High / Medium Significance* and a *Generally Protected IV-A Field Rating*. Temporary site conservation measures should be in place before commencement of the construction phase of the development. The developer may consider either conservation or site mitigation, including grave relocation, as final heritage management

option. Final heritage management measures should be in place before development proceeds in the vicinity of the site.

3.3.19. Site PKJ-19: Later Stone Age (LSA) – Ephemeral Site Remains and Possible Grave – S33°16′34.7″; E24°05′29.2″

The LSA Site PKJ-19 comprises a rough 7x7m area. The site is typified by ephemeral circular stone structure remains of a single structure, measuring roughly 1.5–2m in diameter. The structure was most possibly originally covered with a lattice and woven reed—or *"matjieshut"*—covering. To the side of the structure, a stone cairn grave, but with readily disturbed cairn stones seems to be present. The general area was surveyed with the purpose of identifying associated features, but none were found. However, significant natural weathering may have taken its toll on such features, with many loose stones scattered about the general site terrain, but also being typical of the site's natural surrounds. The site, situated uniquely on a low rise, with a view over the vast plain toward the north and north-east thereof, is notably ephemeral in nature, and interpreted as a typical site *in flight*, or planned short temporary stay at most (seasonal camp). The site is of a confirmed LSA–Khoe cultural association, but it is not necessarily directly associated with the Type Site (culturally / temporally) settlers of Conservation Areas 1, 2, and 3.

The site is older than 100 years of age and is formally protected by the NHRA 1999 as an archaeological and a grave site. Ephemeral site remains are of a low archaeological and cultural significance with reference to its research value, but the likelihood of a grave at the site makes it highly significant in a development context. Temporary conservation measures should be instated prior to commencement of the construction phase of development. The developer may consider either conservation or site mitigation, including grave relocation, as final heritage management option for development:

- Temporary conservation during the construction phase: a temporary conservation fence with a 2–3m conservation buffer between the site perimeter and the fence, as well as temporary heritage signage should be in place before the start of the construction phase of the development. Final heritage management measures should be in place before commencement of development in the vicinity of the site.
- Permanent conservation: before development proceeds in the vicinity of the site the temporary conservation fence should be upgraded / replaced with a permanent conservation fence (in keeping with the recommended conservation buffer) with an access gate, permanent heritage signage, and an access path. Recommended conservation measures should be managed and maintained throughout the tenure of the implementation (or use) phase of the project.
- Site mitigation and grave relocation: site mitigation and grave relocation should be done by a professional archaeologist under an EC PHRA APM and BGG permit and include a sketch plan, test excavations, and site interpretation, as well as grave relocation. Upon the issuing of an EC PHRA site destruction permit, development may legally proceed across the site locale.

Site significance and recommendations: The PKJ-19 LSA ephemeral site remains and possible grave is ascribed a SAHRA *High / Medium Significance* and a *Generally Protected IV-A Field Rating*. Temporary site conservation measures should be in place before commencement of the construction phase of the development. The developer may consider either conservation or site mitigation, including grave relocation, as final heritage management option. Final heritage management measures should be in place before development proceeds in the vicinity of the site.

ARCHAEOLOGICAL AND CULTURAL HERITAGE RESOURCES SUMMARY –
PROPOSED ±10HA DRIP IRRIGATION AND COLLECTIVE ±500HA SPEKBOOM REHABILITATION PROJECT, PORTION 3 OF FARM POKJESFONTEIN 120 (ANNEX GLEN ROY 120), NEAR STEYTLERVILLE, SARAH BAARTMAN DISTRICT MUNICIPALITY, EASTERN CAPE

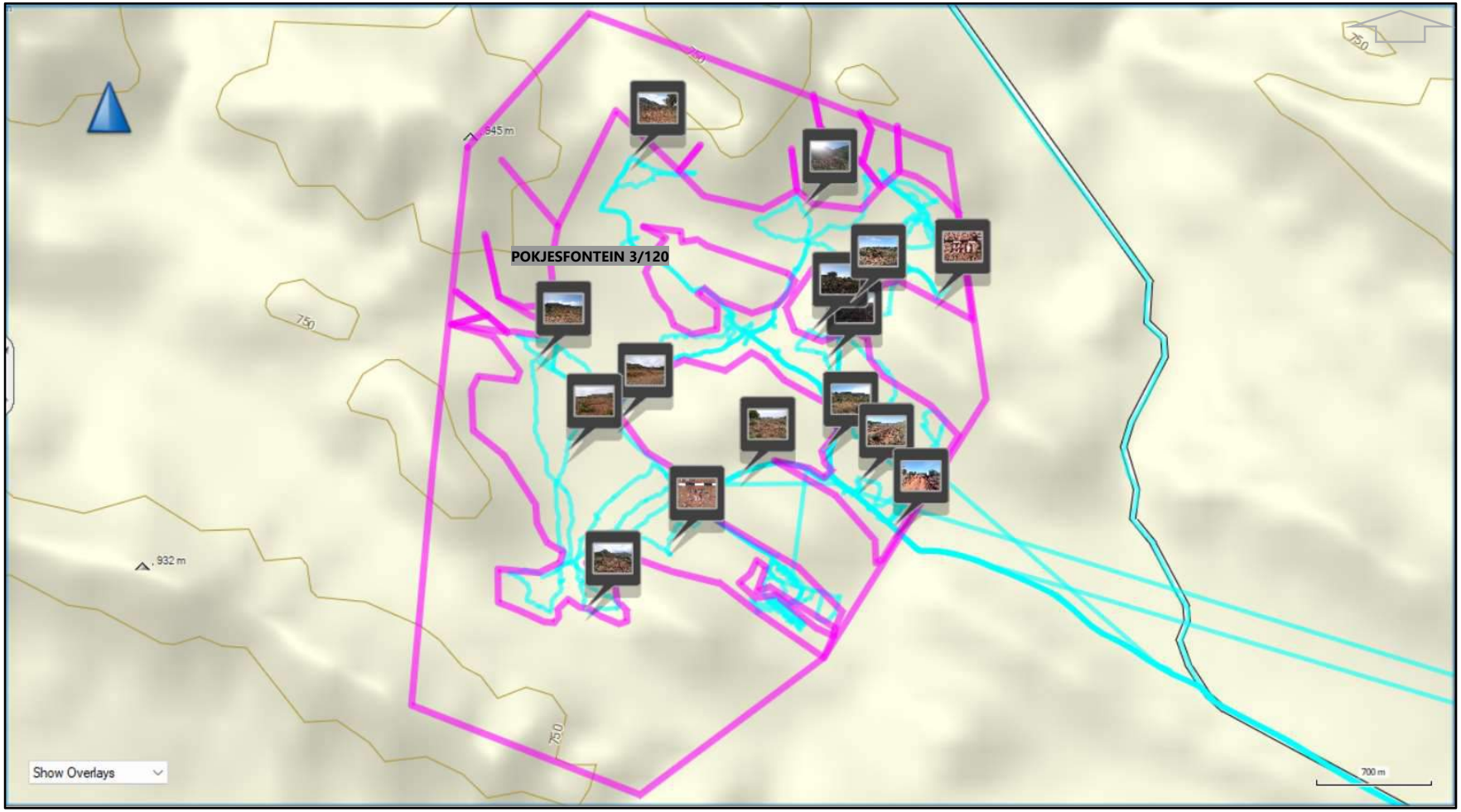
POKJESFONTEIN 3/120 – S33°15'56.2"; E24°06'00.9"

MAP CODE	SITE	COORDINATE	SITE SIGNIFICANCE	RECOMMENDATIONS
PKJ-01	Colonial Period – Pokjesfontein 3/120 entrance gate	S33°16'22.2"; E24°06'56.2"	SAHRA Medium Significance – Generally Protected IV-B Field Rating	**In situ conservation:** In situ conservation for purposes of use during the construction and implementation phase of the development.
PKJ-02	Colonial Period – shooting target	S33°16'06.8"; E24°06'58.2"	SAHRA Low Significance – Generally Protected IV-C Field Rating	**Site conservation OR destruction:** o Site conservation (permanent fence with 1.5–2m conservation buffer, access gate, signage, and access path); OR o Destruction without the developer having to apply for an EC PHRA site destruction permit.
PKJ-03	Colonial Period – old agricultural field	S33°16'11.6"; E24°06'45.2"	SAHRA Low Significance – Generally Protected IV-C Field Rating	**Site destruction:** Destruction without the developer having to apply for an EC PHRA site destruction permit.
PKJ-04	Colonial Period – Pokjesfontein 3/120 farmstead	S33°16'15.5"; E24°06'45.5"	SAHRA Medium Significance – Generally Protected IV-B Field Rating	**In situ conservation:** In situ conservation for purposes of use during the construction and implementation or use phase of the development.
PKJ-05	Later Stone Age (LSA) – broken bored stone amulet	S33°15'56.7"; E24°06'43.6"	SAHRA High / Medium Significance – Generally Protected IV-A Field Rating	**Artefact / object on site conservation:** The object will be conserved on site (Pokjesfontein 3/120) by the developer.
PKJ-06	Later Stone Age (LSA) – grave	S33°15'28.1"; E24°05'53.5"	SAHRA High / Medium Significance – Generally Protected IV-A Field Rating	**Site conservation OR grave mitigation (relocation):** o Temporary site conservation (fence and signage) during the construction phase until development commences in the vicinity of the site. o Permanent heritage management options: ➢ Site conservation (permanent fence with a 1.5–2m conservation buffer, access gate, signage, and access path); OR ➢ Grave relocation under an EC PHRA BGG permit.
PKJ-07	**Conservation Area 1** Later Stone Age (LSA) – Khoe Type Site village (±7.5ha site)	S33°15'25.2"; E24°07'06.1"	SAHRA High Local Grade III-A Significance	**Phase 2a archaeological programme and permanent site conservation:** o Temporary site conservation (visually marked pole posts only, without fencing in between to demarcate the village site, and signage) during the construction phase until development commences in the vicinity of the site [see Map 10]. o Phase 2a archaeological programme and permanent conservation: ➢ Phase 2a archaeological programme (systematic survey, sketch plan and literature and site interpretation) and recommendations for permanent conservation within the development framework.
PKJ-07.1	Later Stone Age (LSA) – kraal	S33°15'24.8"; E24°06'59.6"		
PKJ-08	Later Stone Age (LSA) – grave	S33°15'29.9"; E24°06'44.4"	SAHRA High / Medium Significance – Generally Protected IV-A Field Rating	**Site conservation OR grave mitigation (relocation):** o Temporary site conservation (fence and signage) during the construction phase until development commences in the vicinity of the site. o Permanent heritage management options: ➢ Site conservation (permanent fence with a 1.5–2m conservation buffer, access gate, and signage); OR ➢ Grave relocation under an EC PHRA BGG permit.
PKJ-09	Later Stone Age (LSA) – monolith and hunting trap	S33°16'12.0"; E24°06'19.5"	N/A	**In situ conservation:** In situ conservation: not situated within the area proposed for development.

PKJ-10	Later Stone Age (LSA) – two kraals (see Conservation Areas 2 and 3)	S33°16'14.0"; E24°06'08.2"	SAHRA High Local Grade III-A Significance	**Permanent site conservation:** o Temporary site conservation measures are not necessary. o Permanent site conservation: ➢ Site conservation (permanent fences with 1.5–2m conservation buffers, access gates, signage, and access paths).
PKJ-11	**Conservation Area 2** Colonial Period – farmstead; and Later Stone Age (LSA) – Khoe Type Site village (±2ha site)	S33°16'28.6"; E24°06'27.8"	SAHRA High Local Grade III-A Significance	**Phase 2a archaeological programme and permanent site conservation:** o Temporary site conservation (visually marked pole posts only along the eastern and south-western boundary of the site, without fencing in between to demarcate the village site, and signage) during the construction phase of the general development, until the irrigation development commences [see Map 11]. o Permanent conservation along the western and north-eastern boundary of the site are in place (game camp fence). o Phase 2a archaeological programme and permanent conservation: ➢ Phase 2a archaeological programme (systematic survey, sketch plan and literature and site interpretation) and recommendations for permanent conservation within the development framework. ➢ Realignment of the access road for purposes of the irrigation development construction and operation. Continued use of the existing service road, traversing the site, for service purposes.
PKJ-12	Colonial Period – two graves	S33°16'36.2"; E24°06'33.5"	SAHRA High / Medium Significance – Generally Protected IV-A Field Rating	**Site conservation OR grave mitigation (relocation):** o Temporary site conservation (fence and signage) during the construction phase until the irrigation development starts. o Permanent heritage management options (before the irrigation development starts): ➢ Site conservation (permanent fence with a 1.5–2m conservation buffer, access gate, signage, and access path); OR ➢ Grave relocation under an EC PHRA BGG permit.
PKJ-13	Later Stone Age (LSA) – large circular stone feature	S33°16'37.1"; E24°06'32.1"	SAHRA Medium Significance – Generally Protected IV-B Field Rating	**Site conservation OR mitigation:** o Temporary site conservation measures are in place until the irrigation development starts. o Permanent heritage management options: ➢ Site conservation (permanent fence with 3–5m conservation buffer, access gate, signage, and access path); OR ➢ Mitigation (sketch plan, test excavations, and site interpretation) under an EC PHRA APM permit.
PKJ-14	Colonial Period – structure mound	S33°16'36.8"; E24°06'28.7"	SAHRA Medium Significance – Generally Protected IV-B Field Rating	**Site conservation OR mitigation:** o Temporary site conservation measures are in place until the irrigation development starts. o Permanent heritage management options: ➢ Site conservation (permanent fence with 2–3m conservation buffer, access gate, signage, and access path); OR ➢ Mitigation (sketch plan, test excavations, and site interpretation) under an EC PHRA APM permit.
PKJ-15	Later Stone Age (LSA) – structure remains and grave	S33°16'37.3"; E24°06'27.1"	SAHRA High / Medium Significance – Generally Protected IV-A Field Rating	**Site conservation OR mitigation, including grave relocation:** o Temporary site conservation (fence and signage) during the construction phase until the irrigation development starts. o Permanent heritage management options (before the irrigation development starts): ➢ Site conservation (permanent fence with a 1.5–2m conservation buffer, access gate, signage, and access path); OR ➢ Site mitigation (sketch plan, test excavations, and interpretation, as well as grave relocation) under an EC PHRA APM and BGG permit.

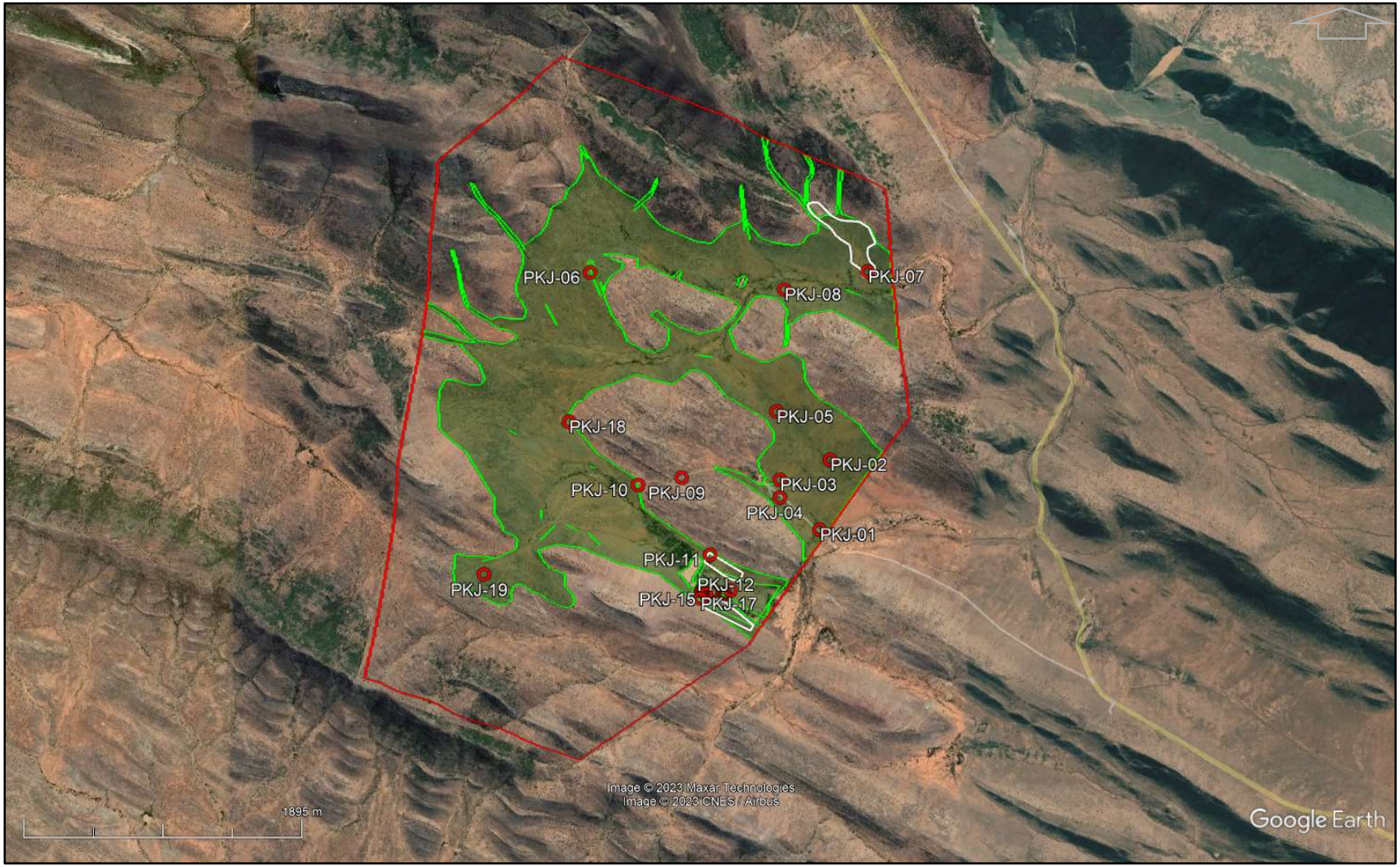
PKJ-16	Later Stone Age (LSA) – structure remains	S33°16'36.6"; E24°06'25.8"	SAHRA Medium Significance – Generally Protected IV-B Field Rating	**Site conservation OR mitigation:** o Temporary site conservation measures are in place. o Permanent heritage management options: ➢ Site conservation (permanent fence with 2m conservation buffer, access gate, signage, and access path); OR ➢ Mitigation (sketch plan, test excavations, and site interpretation) under an EC PHRA APM permit.
PKJ-17	**Conservation Area 3** Colonial Period – farmstead; and Later Stone Age (LSA) – Khoe Type Site village (±3.5ha site)	S33°16'38.7"; E24°06'26.6"	SAHRA High Local Grade III-A Significance	**Phase 2a archaeological programme and permanent site conservation:** o Temporary site conservation (visually marked pole posts only along the eastern, south-western, and western boundary of the site, without fencing in between to demarcate the village site, and signage) during the construction phase of the general development, until the spekboom development encroaches on the site locale or the irrigation development commences [see Map 11]. o Permanent conservation along the north-eastern boundary of the site is in place (game camp fence). o Phase 2a archaeological programme and permanent conservation: ➢ Phase 2a archaeological programme (systematic survey, sketch plan and literature and site interpretation) and recommendations for permanent conservation within the development framework.
PKJ-18	Later Stone Age (LSA) – ephemeral site remains and possible grave	S33°16'00.8"; E24°05'49.5"	SAHRA High / Medium Significance – Generally Protected IV-A Field Rating	**Site conservation OR mitigation, including grave relocation:** o Temporary site conservation (fence and signage) during the construction phase until development commences in the vicinity of the site. o Permanent heritage management options: ➢ Site conservation (permanent fence with a 2–3m conservation buffer, access gate, signage, and access path); OR ➢ Site mitigation (sketch plan, test excavations, and interpretation, as well as grave relocation) under an EC PHRA APM and BGG permit.
PKJ-19	Later Stone Age (LSA) – ephemeral site remains and possible grave	S33°16'34.7"; E24°05'29.2"	SAHRA High / Medium Significance – Generally Protected IV-A Field Rating	**Site conservation OR mitigation, including grave relocation:** o Temporary site conservation (fence and signage) during the construction phase until development commences in the vicinity of the site. o Permanent heritage management options: ➢ Site conservation (permanent fence with a 2–3m conservation buffer, access gate, signage, and access path); OR ➢ Site mitigation (sketch plan, test excavations, and interpretation, as well as grave relocation) under an EC PHRA APM and BGG permit.

Table 3: Field assessment findings: archaeological and cultural heritage resources summary

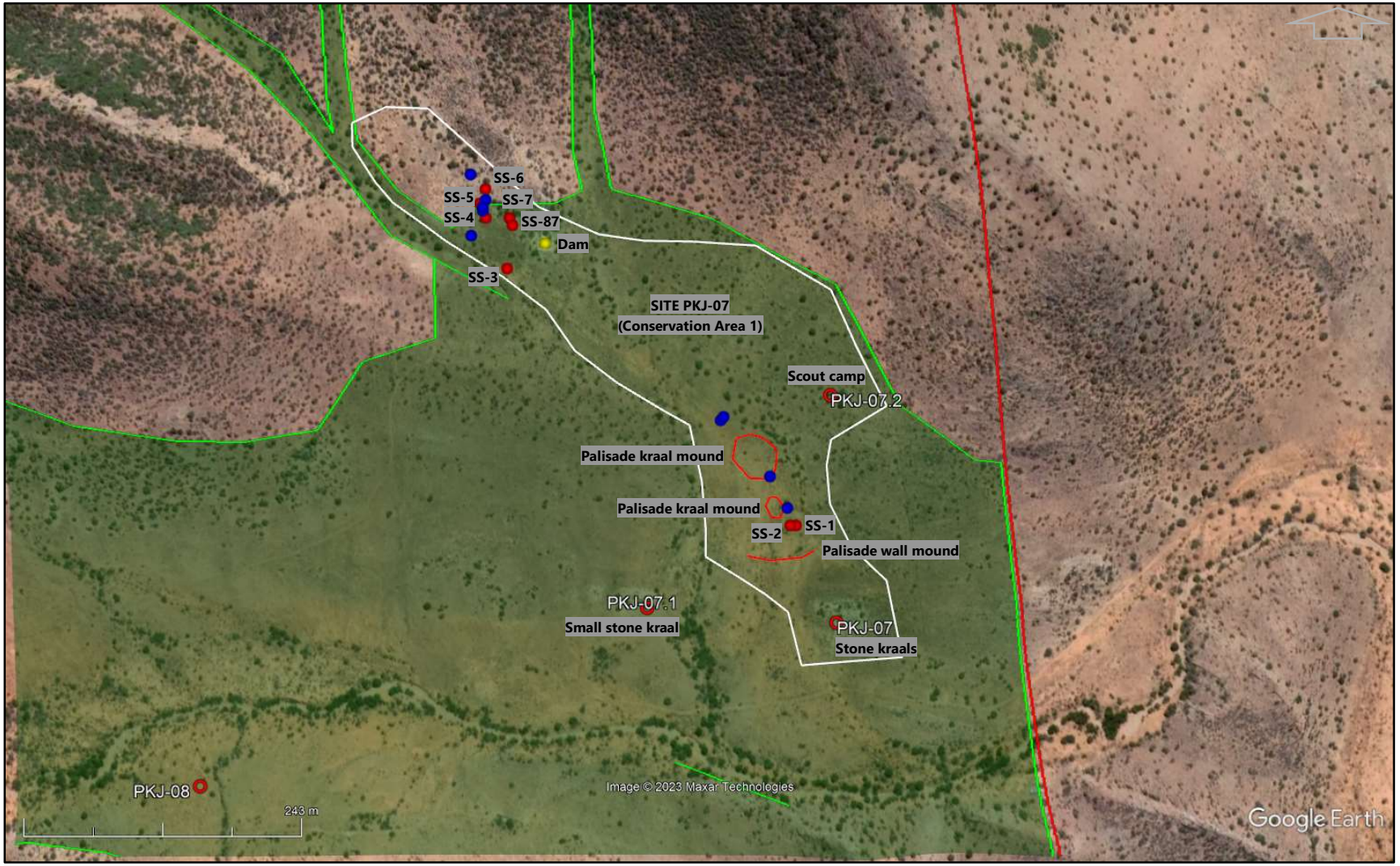


Map 7: *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120*—fieldwork and access track map

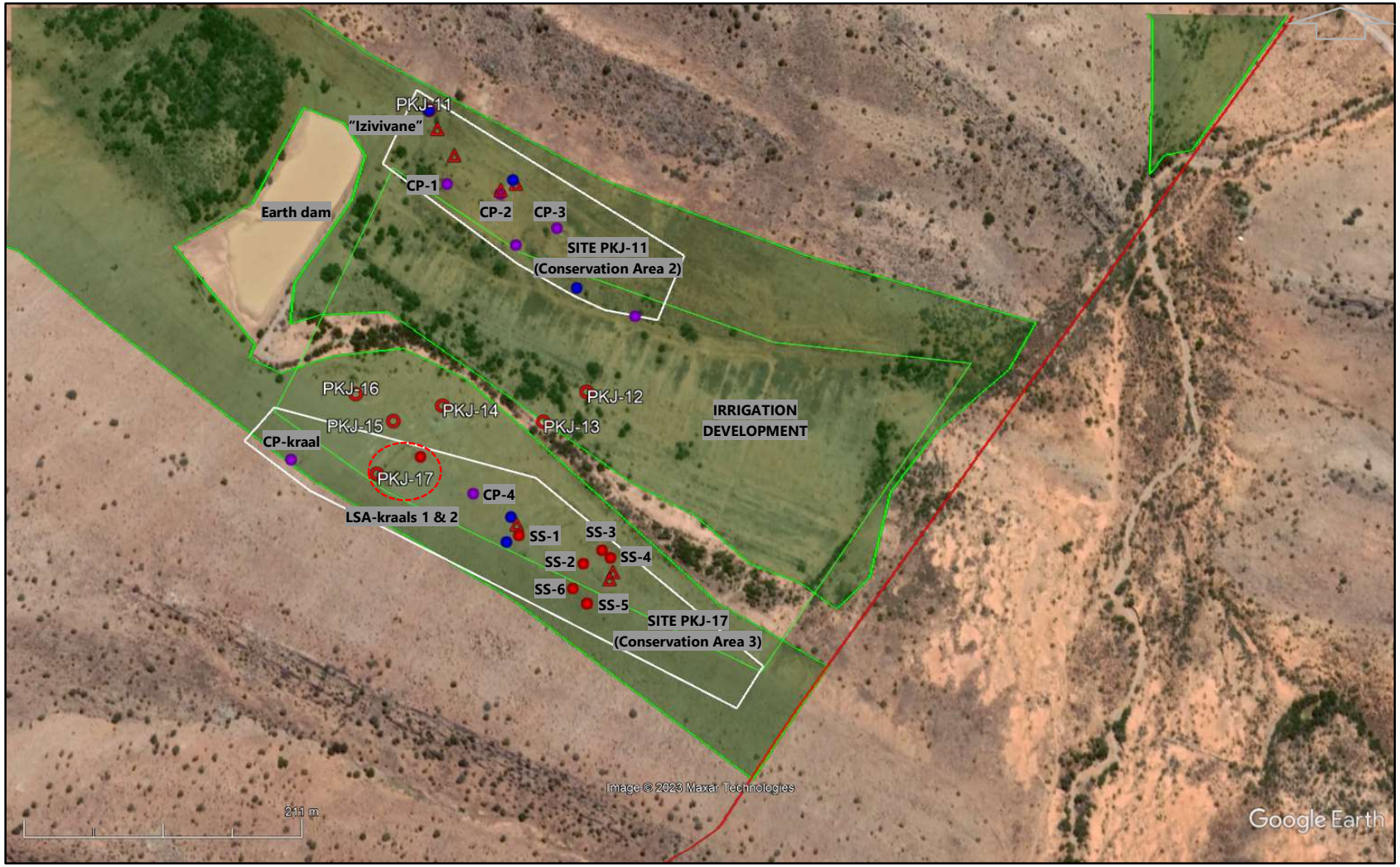
Map 8: *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120*—general view of the study site map



Map 9: *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120*—archaeological and cultural heritage sites / resources map



Map 10: Site PKJ-07 LSA–Khoe Type Site village (Conservation Area 1) [white line – site boundary (conservation boundary for construction phase of development); red circles – LSA double stone structures (SS-1–SS-8); blue circles – LSA stone foundation outlined features; yellow circle – LSA earth dam; red lines – LSA palisade fence mounds]



Map 11: Sites PKJ-11 to Site PKJ-17 Colonial Period farmstead and LSA–Khoe Type Site village (Conservation Areas 2 and 3) [white lines – site boundaries (conservation boundary for construction phase of development); purple circles – Colonial Period structures (CP-1–CP4) and remains; red circles – double stone structures (SS-1–SS-6) and LSA kraal 2; red triangles – LSA graves; blue circles – LSA stone foundation outlined features]

Plate 1: G-001: general view of the study site (irrigation area) with low-keyed former agricultural stone outlined field markers

Plate 2: G-002: general view of the study site (irrigation area)

Plate 3: G-003: general view of the study site [1]

Plate 4: G-004: general view of the study site [2]

Plate 5: G-005: general view of the study site, with streambed / erosion sections in excess of 2.5m high [1]

Plate 6: G-006: general view of the study site [3]

Plate 7: G-007: general view of the study site [4]

Plate 8: G-008: general view of the study site, with streambed / erosion sections of some 1.5+m high [1]

Plate 9: G-009: general view of the study site [5]

Plate 11: G-011: general view of the study site [7]

Plate 10: G-010: general view of the study site [6]

Plate 12: G-012: general view of the study site, with streambed / erosion sections in excess of 2.5m high [2]

Plate 13: G-013: general view of the study site [8]

Plate 15: G-015: General view of the study site [9]

Plate 14: G-014: general view of the study site, with streambed / erosion sections in excess of 2.5m high [3]

Plate 16: G-016: general view of the study site, with streambed / erosion sections of some 1.5+m high [2]

Plate 17: G-017: general view of the study site, with streambed / erosion sections of less than 1m high [1]

Plate 18: G-018: general view of the study site [10]

Plate 19: G-019: general view of the study site, with streambed / erosion sections of less than 1m high [2]

Plate 20: G-020: general view of the study site [11]

Plate 21: G-021: general view of the study site [12]

Plate 22: G-022: general view of the study site [13]

Plate 23: G-023: general view of the study site, with the Pokjesfontein farmstead in the distant background

Plate 24: G-024: general view of the study site [14]

Plate 25: A lithic ESA Acheulean cleaver [scale bar: black / white – 10cm]

Plate 26: A Fauresmith-like cleaver

Plate 27: A collection of cores

Plate 28: Cores, chunks, and chips

Plate 29: A collection of MSA and LSA flakes and debris [1]

Plate 30: A collection of MSA and LSA flakes and debris [2]

Plate 31: A collection of MSA and LSA flakes and debris [3]

Plate 32: A core, broken blade / bladelet, and quartz microliths

Plate 33: An anthropogenic sterile section

Plate 34: An approximate 3.5m high stratified section with lithic artefacts present in the stone rich members

Plate 35: PKJ-01: general view of the Pokjesfontein 3/120 entrance gate

Plate 36: PKJ-02: view of the shooting target

Plate 37: PKJ-03: stone field demarcations

Plate 39: PKJ-04: view of the main farmhouse of the Pokjesfontein 3/120 farmstead

Plate 38: Colonial Period waste at Site PJK-03 include not only discarded bricks and building rubble, but also ceramic and metal artefacts

Plate 40: View of the two workers' cottages at Site PKJ-04

Plate 41: An old retained stone wall in front of a shed at Site PKJ-04

Plate 42: Colonial Period dams and faming infrastructure [1] (see Site PKJ-04)

Plate 43: Colonial Period dams and farming infrastructure [2] (see Site PKJ-04)

Plate 44: Colonial Period dams and farming infrastructure [3] (see Site PKJ-04)

Plate 45: PKJ-05: broken bored stone amulet

Plate 46: PKJ-06: general view of the grave site

Plate 47: Close-up of the PKJ-06 grave site

Plate 48: PKJ-07: view of the main kraal [1]

Plate 49: View of the main kraal [2]

Plate 50: Close up of the main kraal (1m wall width)

Plate 51: View of the small kraal situated to the south-east of the main kraal

Plate 52: View of the Site PKJ-07.1 kraal situated west of the village, on the opposite side of the stream

Plate 53: Stone structure 1 in the southern section of the village [1]

Plate 54: Stone structure 1 in the southern section of the village [2]

Plate 55: Stone structure 2 in the southern section of the village

Plate 56: Ceramic and bottle glass from the stone structures 1 and 2 area

Plate 57: Metal from the stone structures 1 and 2 area

Plate 59: Stone foundation remains in the southern section of the village [2]

Plate 58: Stone foundation remains in the southern section of the village [1]

Plate 60: Remains at the Site PKJ-07.2 scout village [1]

Plate 61: Remains at the Site PKJ-07.2 scout village [2]

Plate 62: Remains at the Site PKJ-07.2 scout village [2]

Plate 63: The large circular foundation remains at the Site PKJ-07.2 scout village

Plate 64: Circular stone foundation remains of a large structure along the southern boundary of the middle section of the village

Plate 65: View of the earth dam in the northern section of the village [1]

Plate 66: View of the earth dam in the northern section of the village [1]

Plate 67: Stone structure 3 in the northern section of the village [1]

Plate 68: Stone structure 3 in the northern section of the village [2]

Plate 69: Stone structure 4 in the northern section of the village

Plate 71: Stone structure 6 in the northern section of the village [1]

Plate 70: Stone structure 5 in the northern section of the village

Plate 72: Stone structure 6 in the northern section of the village [2]

Plate 73: Stone structure 7 in the northern section of the village

Plate 74: Stone structure 8 in the northern section of the village [1]

Plate 75: Stone structure 8 in the northern section of the village [2]

Plate 76: Circular stone foundation remains of an approximate 1.5–2m in diameter structure

Plate 77: Circular stone foundation remains (1.5–2m in diameter) with a bush growing inside the structure

Plate 78: Double alignment stone foundations of a large circular structure

Plate 79: A marker stone from the northern section of the village

Plate 80: A metal nail from the northern section of the village

Plate 81: PKJ-08: view of the grave site (with displaced cairn stones)

Plate 82: PKJ-09: view of the monolith

Plate 83: View of the trap remains at Site PKJ-09

Plate 84: PKJ-10: kraal remains to the east of the access road

Plate 85: Kraal remains of Site PKJ-10 situated to the west of the access road

Plate 86: PKJ-11: Colonial Period 1 structure remains [1]

Plate 87: Colonial Period 1 structure remains [2]

Plate 88: Colonial Period 2 structure remains [1]

Plate 89: Colonial Period 2 structure remains [2]

Plate 90: Bottle glass and ceramic from the Colonial Period 2 structure remains area

Plate 91: Single file stone wall remains associated with the Colonial Period 2 structure

Plate 92: Colonial Period 3 structure remains [1]

Plate 93: Colonial Period 3 structure remains [2]

Plate 95: The LSA–Khoe "izivivane" structure

Plate 94: Colonial Period walling

Plate 96: LSA–Khoe grave 1 [1]

Plate 97: LSA–Khoe grave 1 [2]

Plate 99: LSA–Khoe grave 3

Plate 98: LSA–Khoe grave 2

Plate 100: LSA–Khoe grave 4

Plate 101: LSA–Khoe wall remains

Plate 102: LSA–Khoe kraal [1]

Plate 103: LSA–Khoe kraal [2]

Plate 104: LSA–Khoe kraal wall remains [1]

Plate 105: LSA–Khoe kraal wall remains [2]

Plate 107: View of a possible second grave at Site PKJ-12 (with displaced stone markers)

Plate 106: PKJ-12: view of the rectangular demarcated grave (with displaced stone markers)

Plate 108: PKJ-13: general view of the circular stone feature

Plate 109: View of the Site PKJ-13 circular stone feature

Plate 110: PKJ-14: view of the structure mound

Plate 111: PKJ-15: view of the remains of two rectangular structures

Plate 112: Close up of one of the Site PKJ-15 structure remains

Plate 113: View of the Site PKJ-15 grave

Plate 114: PKJ-16: view of the first circular stone feature

Plate 115: View of the second circular stone feature at site PKJ-16

Plate 116: PKJ-17: Colonial Period kraal remains [1]

Plate 117: Colonial period kraal remains [2]

Plate 119: Colonial Period structure remains [1]

Plate 118: Close-up of the Colonial Period stone stacked kraal wall

Plate 120: Colonial Period structure remains [2]

Plate 121: LSA–Khoe kraal 1 remains [1] (Site PKJ-17 site co-ordinate)

Plate 122: View of the LSA–Khoe kraal 1 remains

Plate 123: Close-up of the LSA–Khoe kraal 1 wall

Plate 124: View from the LSA–Khoe kraal 1 structure over LSA–Khoe kraal 2

Plate 125: LSA–Khoe kraal 2 wall remains [1]

Plate 126: LSA–Khoe kraal 2 wall remains [2]

Plate 127: View of the stone structure 1 remains [1]

Plate 128: View of the stone structure 1 remains [2]

Plate 129: View of the stone sttructure 1 remains [3]

Plate 130: View of the stone structure 1 remains [4]

Plate 131: Ceramic, bottle glass and metal remains (plate dated 1939) from stone sttructure 1

Plate 132: Remains of a stone feature with stone structure 1 in the background

Plate 133: Close-up of the remains of the stone feature

Plate 134: A grave near stone structure 1

Plate 135: Remains of stone structure 2 [1]

Plate 136: Remains of stone structure 2 [2]

Plate 137: Remains of stone structure 2 with a view over stone structure 3

Plate 138: Ceramic, bottle glass, and metal remains from stone structure 2, and including a broken bored stone (digging stick weight)

Plate 139: Grave remains from near stone structure 2

Plate 140: View of the stone structure 3 remains

Plate 141: View of the stone structure 4 remains

Plate 142: A grave near stone structure 4

Plate 143: Structure remains near stone structure 4

Plate 144: View of the stone structure 5 remains

Plate 145: A grave near stone structure 5

Plate 146: View of the stone structure 6 remains

Plate 147: PKJ-18: view of the ephemeral site *in flight* remains

Plate 148: Possible Site PKJ-18 grave remains

Plate 149: PKJ-19: Ephemeral circular structure remains

Plate 150: Possible Site PKJ-19 grave remains

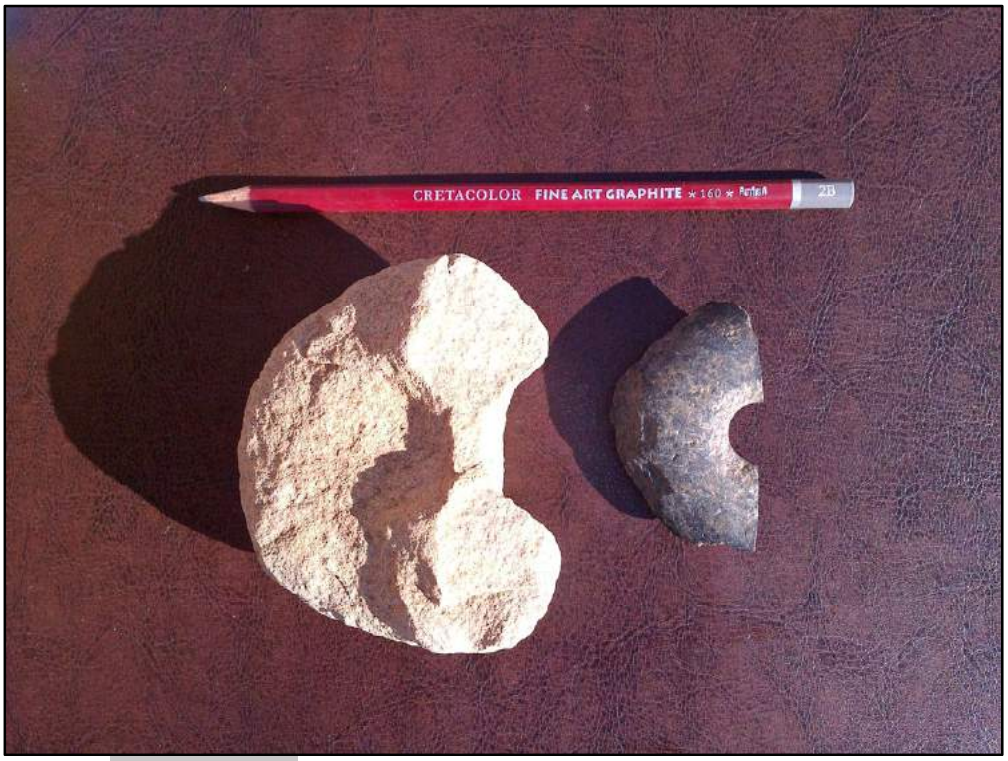


Plate 151: Broken bored stones: digging stick weight, from Site PKJ-17, SS2; and [2] amulet from Site PKJ-05 [1]

Plate 152: Broken bored stones: digging stick weight, from Site PKJ-17, SS2; and [2] amulet from Site PKJ-05 [2]

SSV and AIA identified archaeological and cultural heritage resources are ascribed an Environmental Impact Assessment (EIA) rating, in accordance with the NEMA 1998 Regulations 2014 as per Government Notice (GN) R982/2014 and R1816/2022, based on the outline presented below, to provide a significance rating of development impact on resources, both during the 1) construction and 2) implementation or use phases of development.

ENVIRONMENTAL IMPACT ASSESSMENT CRITERIA AND RATING SCALES	
CRITERIA	**RATING**
Overall Nature	1) **Negative** (negative impact on affected biophysical or human environment); or 2) **Positive** (benefit to the affected biophysical or human environment).
Type	1) **Direct** (caused by the action and occur at the same time and place); 2) **Indirect or secondary** (caused by the action and are later in time or father removed in distance but reasonably foreseeable); or 3) **Cumulative** (impact which results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions; can result from individually minor, but collectively significant actions taking place over a period of time).
Spatial Extent	1) **Site** (immediate area of activity, incorporating a 5m zone from the edge of the affected area); 2) **Local** (area up to and/or within 10km from the 'site' as defined above); 3) **Regional** (entire community, basin or landscape); or 4) **National** (South Africa).
Duration	1) **Short-term** (impact would last for the duration of activities; quickly reversible); 2) **Medium-term** (impact would affect project activity; reversible over time); 3) **Long-term** (impact would continue beyond project activity); or 4) **Permanent** (impact would continue beyond decommissioning).
Severity	1) **Low**; 2) **Medium;** or 3) **High**; being +) **Positive**; or -) **Negative** (based on separately described categories examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functionality or slightly alters the environment itself).
Reversibility	1) **Completely reversible** (completely reversible impact with implementation of correct mitigation measures); 2) **Partly reversible** (partly reversible impact with implementation of correct mitigation measures); or 3) **Irreversible** (impact cannot be reversed, regardless of mitigation or rehabilitation measures).
Replaceability	1) **Resource will not be lost** (resource will not be lost provided mitigation measures are implemented); 2) **Resource will be partly lost** (partial loss or destruction of the resource will occur even though management and mitigation measures are implemented); or 3) **Resource cannot be replaced** (resource is irreplaceable no matter which management or mitigation measures are implemented).
Probability	1) **Unlikely** (<40% probability); 2) **Possible** (40% probability); 3) **Probable** (>70% probability); or 4) **Definite** (>90% probability).
Mitigation potential	1) **High or completely mitigatable** (relatively easy and cost effective to manage. Specialist expertise and equipment generally not required. Nature of impact easily understood and may be mitigated through implementation of a management plan or "good housekeeping", including regular monitoring and reporting regimes. Significance of the impact after mitigation is likely to be low or negligible); 2) **Moderate or partially mitigatable** (management requires higher level of expertise and resources to maintain impacts with acceptable levels. Mitigation can be tied up in the design of the project. Significance of the impacts after mitigation is likely to be low to moderate. It may not be possible to mitigate the impact entirely, with residual impacts resulting); or 3) **Low or un-mitigatable** (will not be possible to mitigate the impact entirely, regardless of expertise and resources. Potential to manage the impacts may be beyond the scope of the project. Management of the impact is not likely to result in a measurable change in the level of significance).
Impact significance	1) **Negligible**; 2) **Low** (largely of HIGH mitigation potential, after consideration of other criteria); 3) **Moderate** (largely of MODERATE or partial mitigation potential, after consideration of other criteria); or 4) **Substantial** (largely of LOW mitigation potential, after consideration of other criteria).

Table 4: EIA criteria and rating scales

ENVIRONMENTAL IMPACT ASSESSMENT RATING – PROPOSED ±10HA DRIP IRRIGATION AND COLLECTIVE ±500HA SPEKBOOM REHABILITATION PROJECT, PORTION 3 OF FARM POKJESFONTEIN 120 (ANNEX GLEN ROY 120), NEAR STEYTLERVILLE, SARAH BAARTMAN DISTRICT MUNICIPALITY, EASTERN CAPE												
Potential Impacts	**Overall nature**	**Type**	**Spatial extent**	**Duration**	**Severity**	**Reversibility**	**Replaceability**	**Probability**	**MITIGATION POTENTIAL**	**IMPACT SIGNIFICANCE**		**MITIGATION MEASURES**
										Without mitigation	**With mitigation**	
SITE: Conservation Area 1 (Site PKJ-07), Conservation Area 2 (Site PKJ-11), Conservation Area 3 (Site PKJ-17), and Site PKJ-10												
Construction phase	Negative	Direct	Regional	Short-term	Low (-)	Irreversible	Resource cannot be replaced	Definite	High or completely mitigatable	High (-)	High (+)	**Permanent conservation** SAHRA High Local Grade III-A Significance
Operational phase	Positive	Cumulative	Regional	Permanent	High (+)	Irreversible	Resource cannot be replaced	Definite	High or completely mitigatable	High (-)	High (+)	
SITE: Sites PKJ-01, PKJ-04, PKJ-05, and PKJ-09												
Construction phase	Positive	Direct	Site	Long-term	High (+)	Partly reversible	Resource will not be lost	Definite	Moderate or partially mitigatable	Medium (-)	N/A	**In situ Conservation (on site and for use purposes)**
Operational phase	Positive	Direct	Local	N/A	High (+)	Partly reversible	Resource will not be lost	Definite	Moderate or partially mitigatable	Medium (-)	High (+)	
SITE: Sites PKJ-06, PKJ-08, PKJ-12, PKJ-13, PKJ-14, PKJ-15, PKJ-16, PKJ-18, and PKJ-19												
Construction phase	Negative	Direct	Site	Short-term to Permanent	Low (-)	Partly reversible	Resource will not be lost / Resource will be partly lost	Definite	High or completely mitigatable	High (-)	High (+)	**Conservation or site mitigation (including grave relocation)**
Operational phase	Positive	Direct	Local	Permanent	High (+)	Partly reversible	Resource will not be lost / Resource will be partly lost	Definite	High or completely mitigatable	High (-)	High (+)	
SITE: Sites PKJ-02, and PKJ-03												
Construction phase	Negative / Positive	Direct	Site	Short-term to Permanent	Low (-)	N/A	Resource will not be lost / Resource will be partly lost	Definite	Moderate or partially mitigatable	N/A	N/A	**Site destruction without the developer having to apply for an EC PHRA permit / conservation at the developer's discretion**
Operational phase	Negative / Positive	Direct	Site	Permanent	Moderate (+)	N/A	Resource will not be lost / Resource will be partly lost	Definite	Moderate or partially mitigatable	N/A	N/A	

Table 5: EIA rating: *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120*

5 – CONCLUSION AND RECOMMENDATIONS

The *Drip Irrigation and Spekboom Rehabilitation Project, Portion 3 of Farm Pokjesfontein 120* development is highly recommended: altogether some 13ha will be set aside for the permanent conservation of the Pokjesfontein LSA–Khoe Type Site settlement (Conservation Areas 1, 2, and 3)—an unrivalled contribution to later LSA–Khoe history, not only in the Eastern Cape, but in South Africa as a whole. The Khoe Type Site settlement is of research significance, and with the potential to be developed for educational and tourism purposes.

The Screening Report (2023) indicates the archaeology and cultural heritage theme for the development as of "Low Sensitivity". This heritage assignation should be changed to "High Sensitivity". Despite the "High Sensitivity" of the study site, the development proposal poses no *Fatal Flaws* with regard to formally protected archaeological and cultural heritage resources. Based on the development's contribution to heritage conservation, a *No Development* option cannot be supported.

Nineteen (19) archaeological and cultural heritage sites / resources (Sites PKJ-01–PKJ-19), as defined and protected by the National Heritage Resources Act, Act No. 25 of 1999 (NHRA 1999), were identified during the field assessment, comprising Stone Age and Colonial Period sites / resources; no Iron Age sites / resources are present at the study site. Recommendations include per site recommendations for the construction and implementation (or use) phases of the development, described according to the relevant EC PHRA APM and BGG permitting processes, as and where applicable; no BE permits apply to the current development proposal.

Of outstanding significance is the Pokjesfontein LSA–Khoe Type Site settlement: the Type Site constitutes an as yet undescribed and unrecorded settlement pattern in the South African archaeological record relating to Khoe permanent village settlement, dated to at least Colonial Period times (1500s / 1652, and thereafter). Type Site settlement features include double adjoining approximate 2x2m square stone structures, the one structure being a stone walled structure, inferred with a wooden / branch or thatched roof, and the adjoining structure being a stone-based skerm-like structure. Important livestock kraals were stone build, with larger outer stones and a smaller stone rubble infill, with the kraal walls being approximately 1m in width. The technique used in kraal construction was, thus, very similar to that used by Iron Age farmer peoples—but the Khoe kraals are rectangular in shape, not circular like the regular Iron Age kraals; building technique also differentiates the Khoe from the Western Colonial Period stone stacked rectangular shaped kraals.

It is recommended that the development proceeds as applied for, provided the developer complies with the tabled and described per site archaeological and cultural heritage compliance recommendations.

The EC PHRA HIA Comment will state legal requirements for development to proceed, or reasons why, from a heritage perspective, development may not be further considered.

NOTE: Should any registered Interested and Affected Party (I&AP) wish to be consulted in terms of Section 38(3)(e) of the NHRA 1999 (socio-cultural consultation) it is recommended that the developer ensures that the consultation be prioritised within the timeframe of the EIA process.

LIST OF ACRONYMS AND ABBREVIATIONS	
AD	Anno Domini (the year 0)
AIA	Archaeological and Cultural Heritage Impact Assessment
APM Unit	Archaeology, Palaeontology and Meteorites Unit
ASAPA	Association of Southern African Professional Archaeologists
BC	Before the Birth of Christ (the year 0)
BE Unit	Built Environment Unit
BGG Unit	Burial Grounds and Graves Unit
cm	Centimetre
CRM	Cultural Resources Management
CSG	Chief Surveyor General
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EC PHRA	Eastern Cape Provincial Heritage Resources Agency
EIA	Environmental Impact Assessment
EIA	Earlier Iron Age
EMPr	Environmental Management Programme
ESA	Earlier Stone Age
GN	Government Notice
GPS	Geographic Positioning System
ha	Hectare
HIA	Heritage Impact Assessment
I&AP	Interested and Affected Party
IEM	Integrated Environmental Management
km	Kilometre
kya	Thousands of years ago
LIA	Later Iron Age
LSA	Later Stone Age
m	Metre
m^2	Square metre
MIA	Middle Iron Age
MPD	Mapping Project Database
MSA	Middle Stone Age
Mya	Millions of years ago
NEMA 1998	National Environmental Management Act, Act No. 107 of 1998
NHRA 1999	National Heritage Resources Act, Act No. 25 of 1999
NHS	National Heritage Site
PHS	Provincial Heritage Site
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
SBDM	Sarah Baartman District Municipality
SSV	Site Sensitivity Verification
S&EIR	Scoping and Environmental Impact Assessment Report
ToR	Terms of Reference
WHS	World Heritage Site

Table 6: List of acronyms and abbreviations

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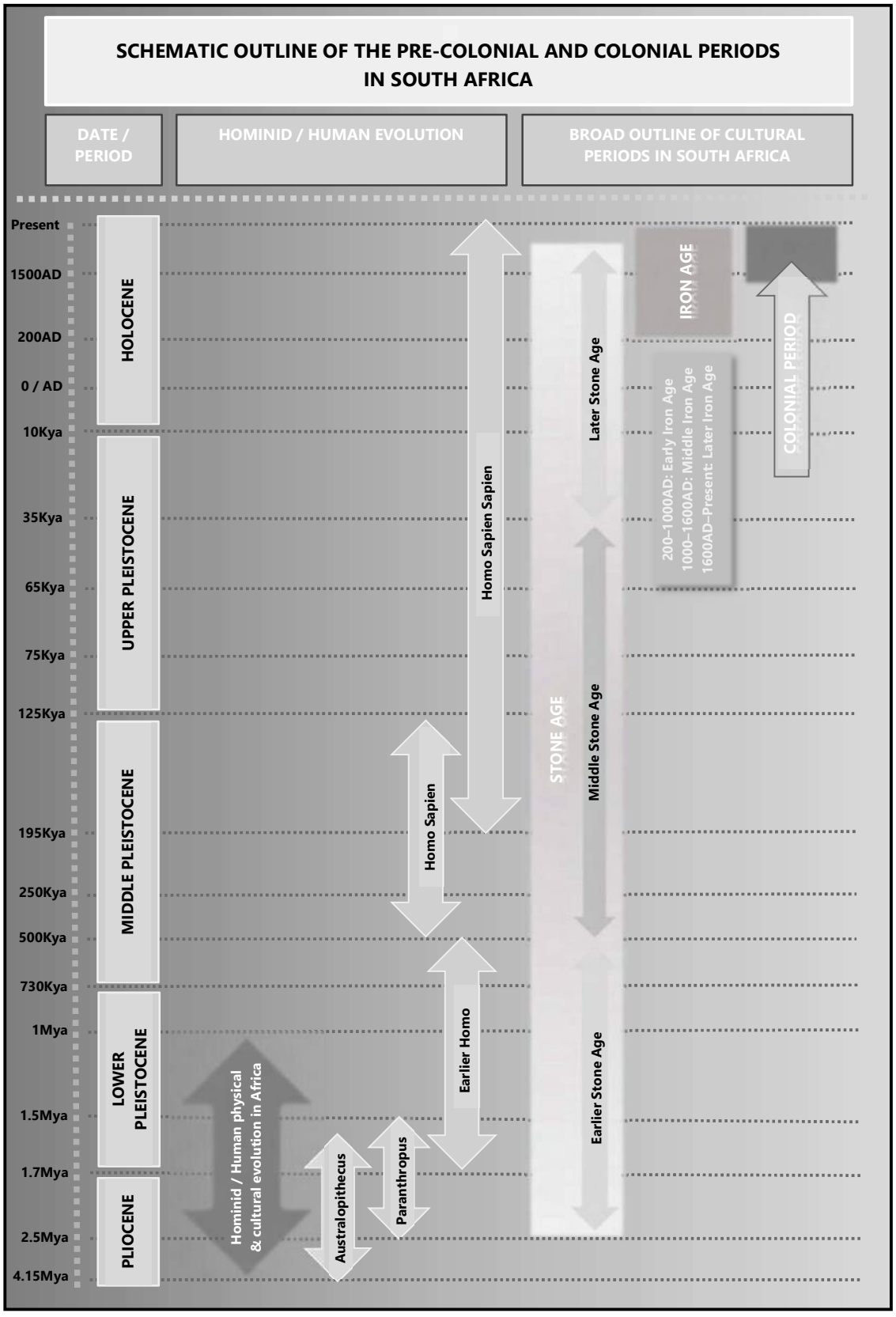
Appendix A:
SCHEMATIC OUTLINE OF THE PRE-COLONIAL AND COLONIAL PERIODS IN SOUTH AFRICA



Appendix B:
HERITAGE PROTOCOL FOR INCIDENTAL FINDS DURING THE CONSTRUCTION PHASE OF DEVELOPMENT

Site Sensitivity Verification (SSV) and Phase 1 Archaeological and Cultural Heritage Impact Assessment (AIA) –
PROPOSED ±10HA DRIP IRRIGATION AND COLLECTIVE ±500HA SPEKBOOM REHABILITATION PROJECT, PORTION 3 OF FARM POKJESFONTEIN 120 (ANNEX GLEN ROY 120), NEAR STEYTLERVILLE, SARAH BAARTMAN DISTRICT MUNICIPALITY, EASTERN CAPE

Should any archaeological or cultural heritage resources, including cemeteries / grave sites (human remains), as defined and protected by the NHRA 1999[13], be identified during the construction phase of development, including as a norm during vegetation clearing, surface scraping / levelling, trenching and excavation, the process described below should be followed:

❖ ON-SITE REPORTING PROCESS

1. The identifier should immediately notify his / her supervisor of the find.
2. The identifier's supervisor should immediately (and within 24 hours after reporting by the identifier) report the incident to the on-site SHE / SHEQ[14] officer.
3. The on-site SHE / SHEQ officer should immediately (and within 24 hours after reporting by the relevant supervisor) report the incident to the appointed ECO / ELO[15]. [Should the find relate to human remains the SHE / SHEQ officer should immediately notify the nearest SAPS[16] station informing them of the find].
4. The ECO / ELO should ensure that the find is within 72 hours after the SHE / SHEQ officer's report reported on SAHRIS[17] / EC PHRA[18] / project heritage specialist, and arrangements should be made for a heritage site inspection by a suitably qualified and accredited heritage specialist. [Should the find relate to human remains the ECO / ELO should ensure that the heritage site inspection coincides with a SAPS site inspection, to verify if the find is of forensic, authentic (informal / older than 60 years), or archaeological (older than 100 years) origin].
5. The appointed heritage specialist should compile a heritage site inspection report based on site-specific conditions / findings. The site inspection report should make recommendations for the destruction, conservation or mitigation, as may apply, of the find, and prescribe a recommended way forward for development. The heritage site inspection report should be submitted to the ECO / ELO, who should ensure submission thereof on SAHRIS / to the EC PHRA[19], or arrange with the heritage specialist to ensure submission of the report on SAHRIS / to the EC PHRA.

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[13] NHRA 1999 – National Heritage Resources Act, Act No. 25 of 1999.
Simplified Guide to the Identification of Archaeological Sites:

- **Stone Age** – Knapped stone produces stone (lithic) assemblages, including core and flake artefacts, and associated debris, that appear unnatural and may be found infrequently scattered, in concentrated clusters, or as layers or lenses, on the ground surface or within a distinct member / layer of the geological stratigraphy. Earlier Stone Age (ESA) shapes may represent 'pear' or oval shaped stones, often in the region of 10cm or larger. Middle Stone Age (MSA) types include blade- and flake-like artefacts, often associated with randomly shaped lithics or flakes that display use- or edge-wear around the rim of the artefact and can vary greatly in size. Later Stone Age (LSA) lithics appear similar to MSA types, but are generally smaller (≤3cm in size), often informally shaped, and may be found in association with bone, pieces of charcoal and ceramic sherds.
  - **Rock Art** – Includes both painted and engraved images.
  - **Shell Middens** – Include compact shell lenses that may be quite extensive in size or small ephemeral scatters of shell food remains, often associated with LSA artefact remains, but may also be of MSA and Iron Age cultural association.
- **Iron Age** – Iron Age sites are typified by stone features, i.e. the remains of former livestock enclosures or household remains that may be found in an exposed or buried context. Characteristic artefacts include ceramic remains, beads and trade goods, and metal artefacts (including jewellery). Iron Age remains are, based on signatory characteristics of the site or artefact assemblage, classed as Earlier Iron Age (EIA), Middle Iron Age (MIA) or Later Iron Age (LIA). Remains of the "Liberation Struggle" – events, histories and landmarks associated therewith are often, based on cultural assignation, classed as part of the LIA heritage of South Africa.
- **Colonial Period** – Many built-environment remains, either urban or rural, are of Western cultural assignation, with typical artefacts representing early Western culture, including typical household remains, trade and manufactured goods, such as old bottle, porcelain and metal artefacts that may be found in an exposed or buried context. War memorial remains, including the vast array of associated graves and the history of the Industrial Revolution form part of South Africa's Colonial Period heritage.
- **Cemetery / grave sites (human remains)** – Marked cemetery / grave sites are routinely associated with the LIA and the Colonial Period. Unmarked grave sites associated with the Stone Age, Iron Age and Colonial Period may be uncovered during the course of development.

[14] SHE / SHEQ – Safety, Health and Environment / Safety, Health, Environment and Quality.
[15] ECO / ELO – Environmental Control Officer / Environmental Liaison Officer.
[16] SAPS – South African Police Service.
[17] SAHRIS – South African Heritage Resources Information System (https://sahris.sahra.org.za/).
[18] EC PHRA – Eastern Cape Provincial Heritage Resources Authority (T/M: 043 492 1942 / 081 434 3544; E: info@ecphra.org.za).
[19] In the event of a National Heritage Site (NHS) situated in the Eastern Cape the report should be made directly to the South African Heritage Resources Agency (SAHRA) with a copy forwarded for the attention of EC PHRA, and the SAHRA process, very similar to the EC PHRA process described in this Protocol, should be followed.

6. The EC PHRA will state legal requirements for development to proceed in the EC PHRA Comment on the heritage site inspection report.
7. The developer should proceed with implementation of EC PHRA Comment requirements. EC PHRA Comment requirements may stipulate permit specifications for development to proceed:
    - Should EC PHRA permit specifications stipulate further Phase 2 archaeological investigation [including cemetery / grave site (human remains) exhumation and relocation) a suitably accredited heritage specialist should be appointed to conduct the work according to the applicable EC PHRA process. The heritage specialist should apply for the permit. Upon issue of the EC PHRA permit the Phase 2 heritage mitigation programme may commence.
    - Upon completion of the Phase 2 heritage mitigation programme the heritage specialist will submit a Phase 2 mitigation report to the ECO / ELO, who should in turn ensure submission thereof on SAHRIS / to the EC PHRA, or arrange with the heritage specialist to do the relevant report submission. Report recommendations may include that the remainder of a heritage site be destroyed under an EC PHRA permit, or be conserved under recommended alterations to development design and layout.
    - Should the find relate to human remains of forensic origin the matter will be directly addressed by the SAPS: an EC PHRA permit will not be applicable.
    - Should EC PHRA permit specifications stipulate destruction of the find under an EC PHRA permit the developer should immediately proceed with the permit application. Upon the issue of the EC PHRA permit the developer may legally proceed with destruction of the heritage resource.

NOTE: EC PHRA permit requirements relating to the mitigation of human remains is subject to a prescribed process, including public consultation, health and heritage permissions, mitigation and re-internment / deposition of remains.

❖ DUTIES OF THE SUPERVISOR

1. The supervisor should immediately upon reporting by the identifier ensure that all work in the vicinity of the find is ceased.
2. The supervisor should ensure that the location of the find is immediately secured (and within 12 hours of reporting by the identifier), b y means of a temporary conservation fence (construction netting or similar measures) allowing for a 5–10m heritage conservation buffer zone around the find. The temporary conserved area should be sign-posted as a "*No Entry – Heritage Site*" zone.
3. Where development has impacted on the resource, no attempt should be made to remove artefacts / objects / remains further from their context, and artefacts / objects / remains that have been removed should be collected and placed within the conservation area or kept for safekeeping with the SHE / SHEQ officer. It is imperative that where development has impacted on heritage resources the context of the find be preserved as good as possible for interpretive and sampling / testing purposes.

The supervisor should record the name, company and capacity of the identifier and compile a brief report describing the events surrounding the find. The report should be submitted to the SHE / SHEQ officer at the time of the incident report.

❖ DUTIES OF THE SHE / SHEQ OFFICER

1. The SHE / SHEQ officer should ensure that the location of the find is recorded with a GPS. A photographic record of the find (including implementation of temporary conservation measures) should be compiled. Where relevant a scale bar or object that can indicate scale should be inserted in photographs for interpretive purposes.
2. The SHE / SHEQ officer should ensure that the supervisors report, GPS co-ordinate(s) and photographic record of the find be submitted to the ECO / ELO. [Should the find relate to human remains the SHE / SHEQ officer should ensure that the mentioned reporting be made available to the SAPS at the time of the incident report].
3. Any retrieved artefacts / objects / remains should, in consultation with the ECO / ELO, be deposited in a safe place (preferably on-site) for safekeeping.

❖ DUTIES OF THE ECO / ELO OFFICER

1. The ECO / ELO should ensure that the incident is reported on SAHRIS. (The ECO / ELO officer should ensure that he / she is registered on the relevant SAHRIS case / request the heritage specialist to ensure reporting on SAHRIS on his / her behalf].
2. The ECO / ELO should ensure that the incident report is forwarded to the heritage specialist for interpretive purposes at his / her soonest opportunity and prior to the heritage site inspection.
3. The ECO / ELO should facilitate appointment of the heritage specialist by the developer / construction consultant for the heritage site inspection.
4. The ECO / ELO should facilitate access by the heritage specialist to any retrieved artefacts / objects / remains that have been kept in safekeeping.
5. The ECO / ELO should facilitate coordination of the heritage site inspection and the SAPS site inspection in the event of a human remains incident report.
6. The ECO / ELO should facilitate heritage reporting to, and heritage compliance requirements by SAHRA / the relevant PHRA, between the developer / construction consultant, the heritage specialist, the SHE / SHEQ officer (where relevant) and the SAPS (where relevant).

❖ DUTIES OF THE DEVELOPER / PRINCIPAL ENGINEERING OR CONSTRUCTION CONSULTANT

The developer / principal engineering or construction consultant should ensure that an adequate heritage contingency budget is accommodated within the project budget to facilitate and streamline the heritage compliance process in the event of incidental heritage resources being uncovered during the course of development, including as a norm during vegetation clearing, surface

scraping / levelling, trenching and excavation phases, when resources not visible at the time of the surface assessment may well be exposed.

NOTE: Officer designations used in the *Heritage Protocol For Incidental Finds During The Construction Phase Of Development* may well vary from that used on-site, in which case it is the responsibility of the developer / principal engineering or construction consultant to ensure that described duties be assigned to designated staff.

Appendix C:
THE EC PHRA NHRA 1999 SECTION 38 PROCESS, THE SAHRA PHASE 1–3 HIA PROCESS, AND THE SAHRA HERITAGE SITE SIGNIFICANCE RATING AND MITIGATION SYSTEM

1) THE EC PHRA[20] NHRA 1999[21] SECTION 38 PROCESS

NHRA 1999 SECTION 38 – HERITAGE RESOURCES MANAGEMENT

38 (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised 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 shall change the character of a site –
(i) Exceeding 5,000m^2 in extent; or
(ii) Involving three or more existing erven or subdivisions thereof; or
(iii) Involving three or more erven or subdivisions 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 heritage resources authority;
(d) The re-zoning of a site exceeding 10,000m^2 in extent; or
(e) Any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority,

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.

(2) The responsible heritage resources authority must, within 14 days of receipt of a notification in terms of subsection (1) –

(a) If there is reason to believe that heritage resources will be affected by such development, notify the person who intends to undertake the development to submit an impact report. Such report must be compiled at the cost of the person proposing the development, by a person or persons approved by the responsible heritage resources authority with relevant qualifications and experience and professional standing in heritage resources management; or
(b) Notify the person concerned that this section does not apply.

(3) The responsible heritage resources authority must specify the information to be provided in a report required in terms of subsection (2)(a): Provided that the following must be included:

(a) The identification and mapping of all heritage resources in the area affected;
(b) An assessment of the significance of such resources in terms of the heritage assessment criteria set out in section 6(2) or prescribed under section 7;
(c) An assessment of the impact of the development on such heritage resources;
(d) An evaluation of the impact of the development on heritage resources relative to the sustainable social and economic benefits to be derived from the development;
(e) The results of consultation with communities affected by the proposed development and other interested parties regarding the impact of the development on heritage resources;
(f) If heritage resources will be adversely affected by the proposed development, the consideration of alternatives; and
(g) Plans for mitigation of any adverse effects during and after the completion of the proposed development.

(4) The report must be considered timeously by the responsible heritage resources authority which must, after consultation with the person proposing the development, decide –

(a) Whether or not the development may proceed;
(b) Any limitations or conditions to be applied to the development;
(c) What general protections in terms of this Act apply, and what formal protections may be applied, to such heritage resources;
(d) Whether compensatory action is required in respect of any heritage damaged or destroyed as a result of the development; and
(e) Whether the appointment of specialists is required as a condition of approval of the proposal.

[20] EC PHRA – Eastern Cape Provincial Heritage Resources Authority.
[21] NHRA 1999 – National Heritage Resources Act, Act No. 25 of 1999.

(5) A provincial heritage resources authority shall not make any decision under subsection (4) with respect to any development which impacts on a heritage resource protected at national level unless it has consulted SAHRA.

(6) The applicant may appeal against the decision of the provincial heritage resources authority to the MEC, who –
(a) Must consider the views of both parties; and
(b) May at his or her discretion –
(i) Appoint a committee to undertake an independent review of the impact assessment report and the decision of the responsible heritage authority; and
(ii) Consult SAHRA; and
(c) Must uphold, amend or overturn such decision.

(7) The provisions of this section do not apply to a development described in subsection (1) affecting any heritage resource formally protected by SAHRA unless the authority concerned decides otherwise.

(8) The provisions of this section do not apply to a development as described in subsection (1) if an evaluation of the impact of such development on heritage resources is required in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989), or the integrated environmental management guidelines issued by the Department of Environmental Affairs and Tourism, or the Minerals Act, 1991 (Act No. 50 of 1991), or any other legislation: provided that the consenting authority must ensure that the evaluation fulfils the requirements of the relevant heritage resources authority in terms of subsection (3), and any comments and recommendations of the relevant heritage resources authority with regard to such development have been taken into account prior to the granting of the consent.

(9) The provincial heritage resources authority, with the approval of the MEC, may, by notice in the *Provincial Gazette*, exempt from the requirements of this section any place specified in the notice.

(10) Any person who has complied with the decision of a provincial heritage resources authority in subsection (4) or of the MEC in terms of subsection (6) or other requirements referred to in subsection (8), must be exempted from compliance with all other protections in terms of this Part, but any existing heritage agreements made in terms of section 42 must continue to apply.

2) THE SAHRA[22] PHASE 1–3 HIA[23] PROCESS

3. STAGES OF ASSESSMENT[24]

3.1. Phase 1 Impact Assessments

Phase 1 Archaeological Assessments generally involve a field survey of the proposed development and will include:
(e) Details of the property to be developed and the type of assessment [s.38 (1 or 8)];
(f) Location of the sites that are found;
(g) Short description of the characteristics of each site;
(h) Short assessment of the importance of each site, indicating which should be conserved and which mitigated;
(i) Assessment of the potential impact of the development on the site/s;
(j) In some cases, a shovel test, to establish the extent of a site, or collection of material might be required to identify the associations of the site. (A pre-arranged permit is required); and
(k) Recommendations for conservation or mitigation.

The report is intended to inform the client about the legislative protection of heritage resources and their significance and make appropriate recommendations. It is essential that it also provides the heritage authority with sufficient information about the sites to enable it to assess with confidence:
(a) Whether or not it has objections to a development;
(b) What the conditions are upon which such development might proceed;
(c) Which sites require permits for destruction;
(d) Which sites require permits for mitigation and what this should comprise;
(e) Whether sites must be conserved and what alternatives can be proposed that may re-locate the development in such a way as to conserve other sites, for example, by incorporating them in a wilderness area, or under a parking space; and what measures should/can be put in place to protect the sites that should be conserved.

[22] SAHRA – South African Heritage Resources Agency.
[23] HIA – Heritage Impact Assessment.
[24] South African Heritage Resources Agency (SAHRA). 2007. Minimum Standards for the Archaeological and Palaeontological Components of Impact Assessment Reports.

[…]. When a Phase 1 is part of an EIA[25], wider issues such as public consultation and assessment of the spatial and visual impacts of the development may be undertaken as part of the general study and may not be required from the archaeologist. If however the Phase 1 forms a major component of an HIA it will be necessary to ensure that the study addresses such issues and complies with section 38 of the National Heritage Resources Act.

Phase 1 Specialist Reports (AIAs) will be assessed by the relevant heritage resources authority. If the decision is that sites are of low significance, they may, after recording, be destroyed to make way for development. The final decision about this should be taken by the heritage resources authority, which should give formal permission for the destruction.

In the case of AIAs that are part of EIAs or EMPs[26], the heritage resources authority will issue comment or a record of decision (ROD) that may be forwarded to the consultant or developer, relevant government department or heritage practitioner and where feasible to all three.

When a property is either very disturbed (e.g. has been quarried or mined) or is very small and the archaeologist can see that it is highly unlikely that any archaeological remains will be found, a "*Letter of Recommendation for Exemption*" from a full Phase 1 report may be supplied. This must be accompanied by a map and photograph indicating landscape features. (Remember: *Absence of evidence is not necessarily evidence of absence* and use this option with caution).

3.2. Phase 2 Archaeological Mitigation

If sites that cannot or need not be saved from development carry information of significance about the past, the archaeologist will recommend a Phase 2 Archaeological Mitigation. The purpose is to obtain a general idea of the age, significance and broader cultural meaning of the site that is to be lost and to store a sample that can be consulted at later date for research, education and promotion of our cultural heritage at large. Artefacts may be collected from the surface, or there might be excavation of representative samples of the artefactual and faunal and possibly botanical material to allow characterization of the site and dating. It may be necessary to record or even rescue rock art. The heritage resources authority will require a permit for any disturbance of the site.

Should further material be discovered during the course of development this must be reported to the archaeologist or to the heritage resources authority and the developer may need to give the archaeologist sufficient time to assess and document the finds and if necessary rescue a sample.

In situations where the area is considered archaeologically sensitive (e.g. coastal settings) the archaeologist must monitor all earth-moving activities.

Provincial Heritage Authorities may have further special requirements.

Permission for the development to proceed can be given only once the heritage resources authority has received and approved a Phase 2 report and is satisfied that measures are in place to ensure that the archaeological sites will not be damaged by the impact of the development and/or that they have been adequately recorded and sampled. Careful planning can minimize the impact of archaeological surveys on development projects by selecting options that cause the least amount of inconvenience and delay.

This process allows the rescue of information relating to our past heritage for present and future generations. It balances the requirements of developers and the conservation and protection of our cultural heritage as is required of SAHRA and the heritage resources authorities.

3.3. Phase 3

On occasion, a Phase 2 mitigation process may be followed by a Phase 3 programme involving the modification or conservation of the site (or parts of it) or the incorporation of the site into the development itself as a site museum or display. When sites are of public interest the development of interpretative material is recommended and adds value to the development. A Heritage Site Management Plan is usually required for sites that are to be retained to ensure that arrangements are made for the long term maintenance and management of the site(s) so that their heritage value and significance may be preserved. Where possible these should be legally tied into Homeowners Associations or some other body that can maintain the sites.

3) THE SAHRA HERITAGE SITE SIGNIFICANCE RATING AND MITIGATION SYSTEM

NHRA 1999 SECTION 7 – HERITAGE ASSESSMENT CRITERIA AND GRADING

[25] EIA – Environmental Impact Assessment.
[26] EMP – Environmental Management Plan / Programme.

7 (1) SAHRA, in consultation with the Minister and the MEC of every province, must by regulation establish a system of grading of places and objects which form part of the national estate, and which distinguishes between at least three categories –

(a) Grade I: Heritage resources with qualities so exceptional that they are of special national significance;
(b) Grade II: Heritage resources which, although forming part of the national estate, can be considered to have special qualities which make them significant within the context of a province or a region; and
(c) Grade III: Other heritage resources worthy of conservation,

And which prescribes heritage resources assessment criteria, consistent with the criteria set out in section 3(3), which must be used by a heritage resources authority or a local authority to assess the intrinsic, comparative and contextual significance of a heritage resource and the relative benefits and costs of its protection, so that the appropriate level of grading of the resource and the consequent responsibility for its management may be allocated in terms of section 8.

(2) A heritage resources authority may prescribe detailed heritage assessment criteria, consistent with the criteria set out in section 3(3), for the assessment of Grade II and Grade III heritage resources in a province.

NHRA 1999 SECTION 3 – NATIONAL ESTATE

3 (3) Without limiting the generality of subsection (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of –

(a) Its importance in the community, or pattern of South Africa's history;
(b) Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;
(c) Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
(d) Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural places or objects;
(e) Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
(f) Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
(g) Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
(h) Its strong or special association with the life or work of a person, group or organisation of importance in the history of South Africa; and
(i) Sites of significance relating to the history of slavery in South Africa.

J. FIELD RATING[27]

Recommended grading or field significance of the site:

While grading is actually the responsibility of the heritage resources authorities, all reports should include *Field Ratings* for the site(s) discussed (proposals for grading), to comply with section 38 of the national legislation, for example:

(a) National: This site is considered to be of Field Rating/Grade I significance and should be nominated as such (mention should be made of any relevant international ranking);
(b) Provincial: This site is considered to be of Field Rating/Grade II significance and should be nominated as such;
(c) Local: this site is of Field Rating/Grade IIIA significance. The site should be retained as a heritage register site (High significance) and so mitigation as part of the development process is not advised;
(d) Local: this site is of Field Rating/Grade IIIB significance. It could be mitigated and (part) retained as a heritage register site (High significance);
(e) "General" Protection A (Field Rating IV A): this site should be mitigated before destruction (usually High/Medium significance);
(f) "General" Protection B (Field Rating IV B): this site should be recorded before destruction (usually Medium significance);
(g) "General" Protection C (Field Rating IV C): this site has been sufficiently recorded (in the Phase 1). It requires no further recording before destruction (usually Low significance).

L. RECOMMENDATIONS

Including:

(a) An assessment of the potential impact of the development on these sites, relative to sustainable social and economic benefits;
(b) Proposals for *protection* or *mitigation* relating to:

(i) Possible alternatives in the development that might allow the protection and conservation of the sites; or

[27] South African Heritage Resources Agency (SAHRA). 2007. Minimum Standards for the Archaeological and Palaeontological Components of Impact Assessment Reports.

(ii) The need for mitigation of adverse impacts; or

(iii) The need to conserve certain sites because of their high heritage value.

(c) Detailed recommendations with regard to *burial grounds and graves*. This must inform the client about the full process and enable the heritage authority to make decisions about permits. This must include:

(i) Recommendations for protection of the grave(s) during the development and in the long term, e.g. fencing and plans for maintenance (mini-management plan); OR

(ii) Recommendations for relocation of the grave(s), public participation and possibly further archival research, or both (i) & (ii).

(d) An indication of what must be done at each site:

(i) If the site is of Low4 Significance (see Kg above) the recommendation may be that the site must be mapped, documented and then destroyed (with a permit / letter of permission / Record of Decision from the heritage authority);

(ii) If the site is of Medium Significance the recommendation may be for a measure of mitigation after which the site may be destroyed. Mitigation usually involves a requirement to collect or excavate a sample of the cultural and other remains that will adequately allow characterization and dating of the site. (The archaeologist will require a permit for the excavation and collection. If, after this mitigation significant archaeological residues or parts of sites remain, the archaeologist should request the developer to apply for a permit for destruction or fill in the application for them to sign!

In this way the heritage resources authority can help the archaeologist ensure that the recommended mitigation takes place;

(iii) If the site is of High Significance the recommendation may be that it be formally graded and conserved (with provision of boardwalks, fencing, signage, guides) and protected as a heritage resource (either being listed on the Heritage Register or being declared as a Provincial or National Heritage Site).

If sites are to be protected a Site Management Plan should be required. For mini-plans, where small sites are incorporated into developments, this must include an indication of who is responsible for maintenance and how this process will be monitored.