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DATE – 19 MARCH 2022

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 conducted have been done in an objective manner – and that any circumstances that may have compromised objectivity have been reported on transparently;
- 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; and
- That work conducted have been done in accordance with relevant heritage legislation, regulations and policy guidelines, and with reference to relevant environmental legislation, regulations and policies, including the principle of Integrated Environmental Management (IEM).

SIGNATURE – 19 MARCH 2022

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 NR:**	2005/180719/23
PROFESSIONAL MEMBERSHIP & ACCREDITTION	ASAPA [Association of Southern African Professional Archaeologists] Member Nr. 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 DESCRIPTION

The proposed *Cluster 9 Tsomo Water Treatment Works Upgrade, Chris Hani District Municipality, Eastern Cape*, development is situated at general development coordinate S32°'01'56.5"; E27°49'29.5", on the property Tsomo Commonage, Erf 79, Tsomo, Ward No. 8, Intsika Yethu Local Municipality, and comprises an approximate 7ha study site. Due to the drought induced water crisis in the Amathole District Municipality, the Tsomo River Abstraction Works and Water Treatment Works (WTW) will be upgraded from its current 25Ml/day capacity to its full 42Ml/day capacity. The proposed WTW is based on a conceptual modular design. The modules will be supplied by existing abstraction pumps (to be upgraded) located in the Tsomo River Abstraction Works. Sludge from the lagoons will be deposited at the Intsika Yethu Local Municipality waste site at Cofimvaba, as per the current Waste Management Licence. The proposal includes the relevant subdivision and rezoning application for the new WTW plant.

THE PHASE 1 ARCHAEOLOGICAL & CULTURAL HERITAGE IMPACT ASSESSMENT (AIA)

Project Name & Locality –
Cluster 9 Tsomo Water Treatment Works Upgrade, Chris Hani District Municipality, Eastern Cape [1:50,000 Map Ref – 3227BB].

Summarised Phase 1 AIA Findings –
Pre-feasibility study: Limited SAHRIS database information, with only three (3) studies available, with assessments conducted within an approximate 40km radius from the *Cluster 9 Tsomo Water Treatment Works Upgrade* study site, is problematic from a pre-feasibility interpretive point of view. Limited information, however, indicated a dominance – in excess of fifteen (15) recorded resources – of Later Iron Age (LIA) sites, primarily being LIA settlement sites, and including infrequent cemeteries and grave sites, followed by a few Colonial Period records, including two (2) trading stores and a bridge, while no Stone Age sites, deposits or occurrences from the greater terrain have been reported on.

No Provincial Heritage Sites (PHSs) are recorded within an approximate 15km radius from the *Cluster 9 Tsomo Water Treatment Works Upgrade* study site.

Tsomo was founded in 1877, originally as a military station during the last, or Ninth Frontier / Xhosa War (1877–1879).

Field assessment: Field assessment of the *Cluster 9 Tsomo Water Treatment Works Upgrade* study site yielded two (2) archaeological and cultural heritage resources (Sites TWU-S1 and TWU-S2), as defined and protected by the NHRA 1999. Both resources are preliminary described as cultural stone markers, or "izivivane", but the possibility of them being grave sites are not excluded. Phase 2 archaeological testing is recommended, to be done prior to or at the time of construction site establishment. Archaeological testing must be done under an EC PHRA–APM Unit permit; it is recommended that the Phase 2 archaeological programme focus on verification testing of the resources as "izivivane" (including both scientific recording of the features and test-pit excavations) and the making of suitable arrangements for "on-site" feature relocation, be it at the existing Tsomo WTW, or the proposed WTW extension study site, or at a safe place in direct proximity to the study site, such as the riparian fringe. Should Phase 2 archaeological testing verify the identified resources to be grave sites, suitable recommendations (conservation or Phase 2 grave relocation) will be made for purposes of responsible development based on Phase 2 archaeological test data.

Conclusion: Based primarily on direct field assessment results, but with cognisance to pre-feasibility archaeological and cultural heritage sensitivity of the study site, it is recommended that development proceeds as applied for, provided developer compliance to the recommended Phase 2 archaeological programme (Sites TWU-S1 and TWU-S2). The proposed development poses no *Fatal Flaws* in its layout or design with regard protected archaeological and cultural heritage resources – provided Phase 2 archaeological heritage compliance requirements are met – and consideration of a *No Development* option is, resultantly, not warranted from a said heritage perspective. Compliance with the recommended Phase 2 archaeological programme will result in a positive cumulative impact of the *Cluster 9 Tsomo Water Treatment Works Upgrade* development with regard protected archaeological and cultural heritage resources, during the construction phase of development, but more importantly with reference to the long-term responsible management of affected heritage resources throughout the course of the development's implementation phase.

RECOMMENDATIONS

With reference to archaeological and cultural heritage compliance, as per the requirements of the NHRA 1999, it is recommended that the proposed *Cluster 9 Tsomo Water Treatment Works Upgrade, Chris Hani District Municipality, Eastern Cape* development proceeds as applied for, provided the recommended Phase 2 archaeological heritage compliance requirements are met.

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

ARCHAEOLOGICAL & CULTURAL HERITAGE SUMMARY CLUSTER 9 TSOMO WATER TREATMENT WORKS UPGRADE, CHRIS HANI DISTRICT MUNICIPALITY, EASTERN CAPE				
CLUSTER 9 TSOMO WATER TREATMENT WORKS UPGRADE – S32°'01'56.5"; E27°49'29.5"				
MAP CODE	**SITE**	**COORDINATE**	**SITE SIGNIFICANCE**	**RECOMMENDATIONS**
TWU-S1	Later Iron Age – Izivivane	S32°01'54.2"; E27°49'28.5"	SAHRA High / Medium Significance Generally Protected – Grade IV-A Field Rating	Phase 2 archaeological mitigation programme under EC PHRA–APM Unit Permit
TWU-S2	Later Iron Age – Izivivane	S32°01'53.4"; E27°49'29.0"	SAHRA High / Medium Significance Generally Protected – Grade IV-A Field Rating	Phase 2 archaeological mitigation programme under EC PHRA–APM Unit Permit

Table 1: Archaeological and cultural heritage development compliance summary

CONTENTS

LIST OF FIGURES

LIST OF MAPS

LIST OF PLATES

LIST OF TABLES

1 – PROJECT DESCRIPTION & TERMS OF REFERENCE

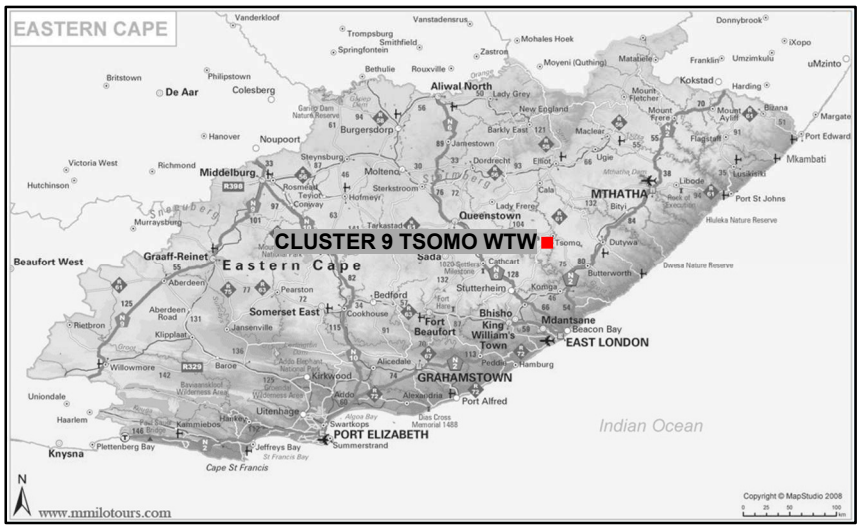
Isi-Xwiba Consulting was appointed as independent Environmental Assessment Practitioner (EAP) by the project proponent, the Chris Hani District Municipality (CHDM), to apply for the Environmental Authorisation (EA), including a Basic Assessment Report (BAR) and Environmental Management Programme (EMPr), to the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT), under the National Environmental Management Act, Act No. 107 of 1998 (NEMA 1998), as amended, and the NEMA Regulations 2012, 2014, 2017 and 2020, for the proposed *Cluster 9 Tsomo Water Treatment Works Upgrade, Chris Hani District Municipality, Eastern Cape* development (Bradfield 2022).

The *Cluster 9 Tsomo Water Treatment Works Upgrade* development is situated at general coordinate S32°'01'56.5"; E27°49'29.5", on the property Tsomo Commonage, Erf 79, Tsomo, Ward No. 8, Intsika Yethu Local Municipality, Chris Hani District Municipality, and comprises an approximate 7ha study site [1:50,000 Map Ref – 3227BB] (Bradfield 2022).

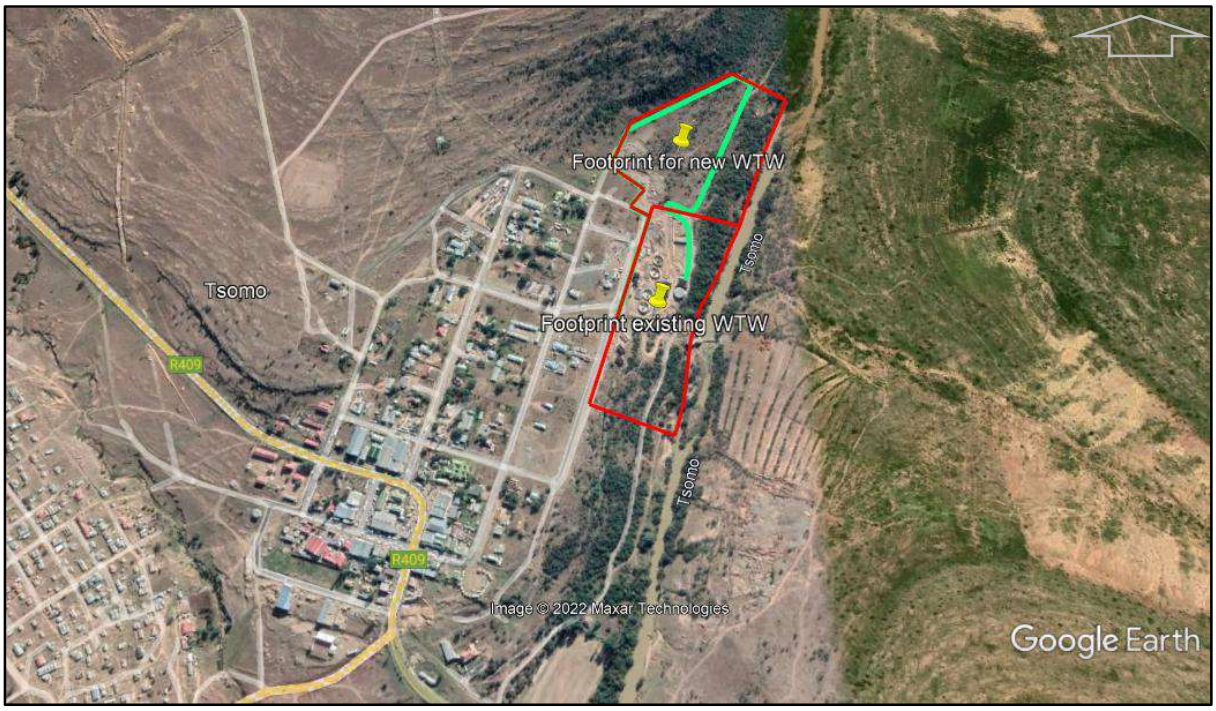
The Cluster 9 Tsomo Water Backlog Project is a regional cross boundary project that aims to provide bulk water to settlements in the Chris Hani and Amathole District Municipalities. Bulk supply infrastructure has been funded under the Regional Bulk Infrastructure Grant (RBIG) and reticulation under the Municipal Infrastructure Grant (MIG). Due to the drought induced water crisis in Butterworth and elsewhere in the Amathole District Municipality, the Tsomo River Abstraction Works and Water Treatment Works (WTW) will be upgraded from its current 25Ml/day capacity to its full 42Ml/day capacity. The proposed WTW is based on a conceptual modular design consisting of four treatment train modules, each comprising a flocculator and settler or clarifier. The four modules share a common filter gallery and combined chlorination and clear water storage. The modules will be supplied by existing abstraction pumps (to be upgraded) located in the Tsomo River Abstraction Works. Sludge from the lagoons will be deposited at the Intsika Yethu Local Municipality waste site at Cofimvaba, as per the current Waste Management Licence. The proposal includes the relevant subdivision and rezoning application for the new WTW plant (Bradfield 2022).

ArchaeoMaps had been appointed by Isi-Xwiba Consulting to compile the Phase 1 Archaeological & Cultural Heritage Impact Assessment (AIA) for the development, as specialist component to the application's Heritage Impact Assessment (HIA), in accordance with the National Heritage Resources Act, Act No. 25 of 1999 (NHRA 1999), and with findings and recommendations thereof to be included in the BAR and EMPr. The Terms of Reference (ToR) for the Phase 1 AIA is summarised as:

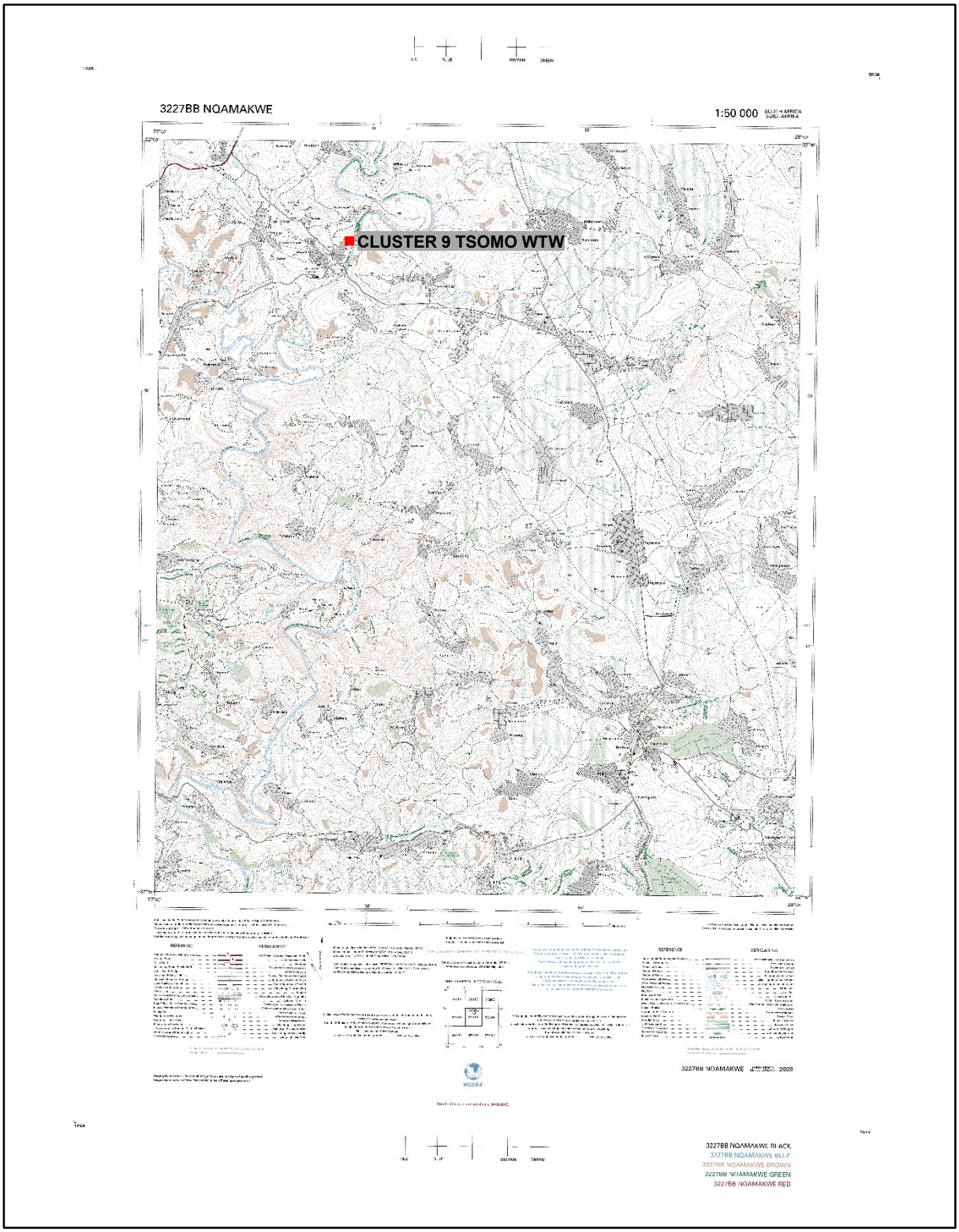
- Describe the existing area to be directly affected by the development proposal in terms of its archaeological and cultural heritage characteristics as formally protected by the NHRA 1999, and the general sensitivity of these components to change;
- Describe the likely scope, scale and significance of impacts (positive and negative) on the archaeological and cultural heritage resources of the area associated with the 1) construction and 2) implementation or use phases of the proposal;
- Make recommendations on the scope of any mitigation measures that may be applied during the 1) construction and 2) implementation or use phases to reduce / avoid the significance of negative-, and manage other impacts. Mitigation measures could be design recommendations, operational controls, and management procedures, or Phase 2 permitted heritage measures such as excavation, testing, monitoring and destruction, where necessary, and including Phase 3 heritage resources conservation and development.
- Broadly describe the implication of a *No Development* option;
- 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 proposal; and
- Confirm if there are any outright *Fatal Flaws* to the proposal at its current location from an archaeological and cultural heritage perspective.



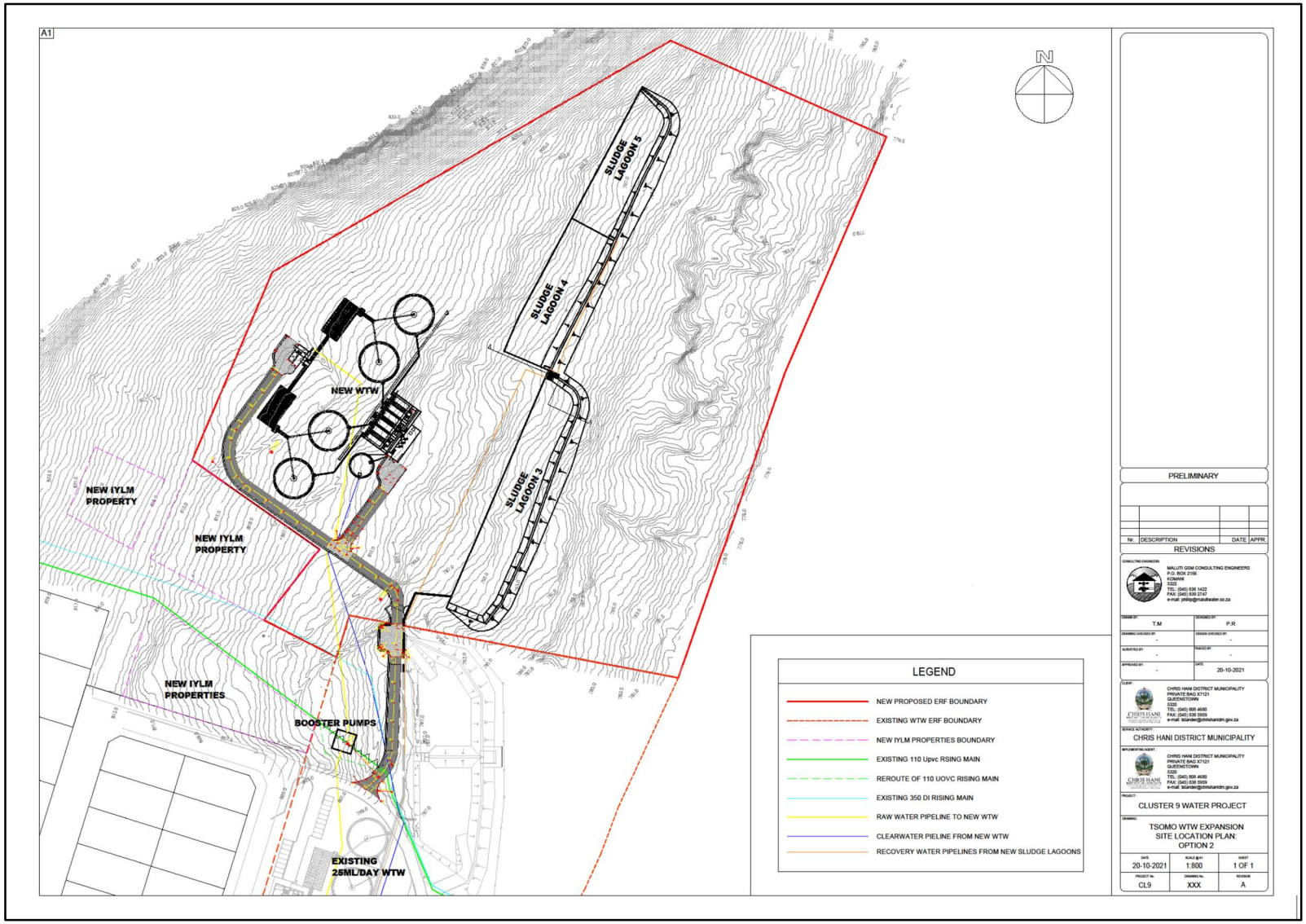
Map 1: General locality of the Cluster 9 Tsomo Water Treatment Works (WTW) Upgrade, Chris Hani District Municipality, Eastern Cape, development [1]



Map 2: General locality of the Cluster 9 Tsomo Water Treatment Works (WTW) Upgrade, Chris Hani District Municipality, Eastern Cape, development [2]



Map 3: General locality of the Cluster 9 Tsomo Water Treatment Works (WTW) Upgrade, Chris Hani District Municipality, Eastern Cape, development [1:50,000 Map Ref – 3227BB]



Map 4: Layout of the Cluster 9 Tsomo Water Treatment Works (WTW) Upgrade, Chris Hani District Municipality, Eastern Cape, development

2 – THE PHASE 1 ARCHAEOLOGICAL & CULTURAL HERITAGE IMPACT ASSESSMENT (AIA)

2.1. ARCHAEOLOGICAL & CULTURAL HERITAGE LEGISLATIVE COMPLIANCE

The Phase 1 Archaeological & Cultural Heritage Impact Assessment (AIA) for the *Cluster 9 Tsomo Water Treatment Works Upgrade, Chris Hani District Municipality, Eastern Cape*, was requested to meet the Eastern Cape Provincial Heritage Resources Authority's (EC PHRA) requirements with reference to archaeological and basic cultural heritage resources in terms of the National Heritage Resources Act, Act No. 25 of 1999 (NHRA 1999), with specific reference to Sections 38(1)(c)(i) and 38(1)(d). This report is submitted in (partial) fulfilment of the NHRA 1999, Section 38, Heritage Impact Assessment (HIA) requirements, for purposes of a NHRA 1999, Section 38(4) / 38(8) HIA Comment by the EC PHRA.

NHRA 1999, SECTION 38

1) Subject to the provisions of subsections 7), 8) and 9), any person who intends to undertake a development categorized as –
   - a) The construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
   - b) The construction of a bridge or similar structure exceeding 50m in length;
   - **c) Any development or other activity which will change the character of 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 which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
   - d) **The rezoning of a site exceeding 10,000m^2 in extent**;
   - 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.

Figure 1: The NHRA 1999, Section 38(1)

The Phase 1 AIA aimed to locate, identify and assess the significance of archaeological and cultural heritage resources, 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, basic living heritage, and cultural landscapes and viewscapes, as defined and protected by the NHRA 1999, Section 2, 34, 35 and 36, that may be affected by the development.

This report comprises a Phase 1 AIA, including a basic pre-feasibility study and field assessment only. The report was prepared in accordance with the South African Heritage Resources Agency's (SAHRA) *Minimum Standards* specifications for Phase 1 AIA reports (SAHRA 2007).

2.2. METHODOLOGY & HERITAGE PRACTICE STANDARDS

The Phase 1 AIA includes a basic pre-feasibility study and field assessment:

- The pre-feasibility assessment is based on the Appendix A schematic outline of South Africa's Pre-colonial and Colonial past, associated with introductory archaeological as well as general and scientific literature available and relevant to the study site. Databases consulted include the SAHRA 2009 Mapping Project Database (MPD), the South African Heritage Resources Information System (SAHRIS), and SAHRA database(s) on declared Provincial Heritage Sites (PHS), pertaining to the study site. The study excludes consultation of museum and university databases.
- The field assessment was done over a one-day period with fieldwork conducted by the author. GPS coordinates were taken with a Garmin Montana 680 (Datum: WGS84) Photographic documentation was done with a Canon EOS 1300D camera. A combination of Garmap (Base Camp) and Google Earth software was used in the display of spatial information.

The Phase 1 AIA methodology follows the SAHRA (2007) *Minimum Standards* system prescribed for the Phase 1–3 Heritage Impact Assessment (HIA) process:

- Phase 1 HIA – A Phase 1 HIA is compulsory for development types as stipulated in the NHRA 1999, Section 38(1) and Section 38(8), including any other development type or study site as required by the South African Heritage Resources Agency (SAHRA) or relevant Provincial Heritage Resources Authority (PHRA). A Phase 1 HIA comprises at minimum of: 1) An archaeological and cultural heritage (AIA) study; and 2) A palaeontological (PIA) study, but aims to address all heritage types protected by the NHRA 1999, and to alert developers to additional heritage specialist requirements, if and where relevant, to a development. Phase 1 HIA studies focus on pre-feasibility / desktop studies, routinely coined with field assessments in order to locate, describe and assign heritage site significance ratings to identified resources that may be impacted by development. The aim of a Phase 1 HIA is to make site specific and general development recommendations with regard identified heritage resources for development planning and implementation purposes, and thus include recommendations pertaining to the design and layout of a proposed development, operational controls, or management procedures, or Phase 2 permitted heritage measures such as excavation, testing, sampling, monitoring and destruction, where necessary, and including Phase 3 heritage resources conservation and development.
- Phase 2 HIA – Phase 2 HIAs are as a norm required where heritage resources of such significance have been identified during the Phase 1 HIA that mitigation (excavation, testing, monitoring, etc.) thereof is deemed necessary associated with development impact. Aside from large scale Phase 2 mitigation (routinely to precede development impact), lower keyed Phase 2 requirements may well include sampling, testing and monitoring during the construction or implementation phase of a development. Phase 2 HIA work is as a norm done under a heritage permit.
- Phase 3 HIA – As an extension to Phase 2 HIA work, in cases where significant heritage conservation formed part of a development's heritage compliance requirements, Phase 3 heritage site conservation or site development recommendations may include a site's scientific or heritage tourism development, or formal heritage declaration, within the development framework.

Archaeological and cultural heritage site significance assessment ratings are based on the combined NHRA 1999, Section 7(1) and SAHRA (2007) system.

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

2.1.1. PRE-FEASIBILITY ASSESSMENT: SUMMARY

Limited SAHRIS database information, with only three (3) studies available, with assessments conducted within an approximate 40km radius from the *Cluster 9 Tsomo Water Treatment Works Upgrade, Chris Hani District Municipality, Eastern Cape* study site, is problematic from a pre-feasibility interpretive point of view. Limited information, however, indicated a dominance – in excess of fifteen (15) recorded resources – of Later Iron Age (LIA) sites, primarily being LIA settlement sites, and including infrequent cemeteries and grave sites, followed by a few Colonial Period records, including two (2) trading stores and a bridge, while no Stone Age sites, deposits or occurrences from the greater terrain have been reported on.

No Provincial Heritage Sites (PHSs) are recorded within an approximate 15km radius from the *Cluster 9 Tsomo Water Treatment Works Upgrade* study site.

Tsomo was founded in 1877, originally as a military station during the last, or Ninth Frontier / Xhosa War (1877–1879).

2.1.2. THE SAHRA 2009 MPD & SAHRIS

A mere fifteen (15) SAHRIS cases are recorded within an approximate 40km radius from the *Cluster 9 Tsomo Water Treatment Works Upgrade* study site; with actual heritage work done even less than that indicated by the limited number of recorded SAHRIS cases. Only a single MPD–SAHRIS database report was available for purposes of this study, thus excluding recorded MPD–SAHRIS cases CTS-143814, CTS-259965 and CTS-309865. Two (2) SAHRIS cases comprise Notifications of Intent to Develop (NID) only, including SAHRIS CaseID's 1037 and 13814. Seven (7) SAHRIS cases apply to an *Amathole Municipal District Borrow Pit* project, being SAHRIS CaseID's 1140, 1153, 1161, 1162, 1163, 1171 and 2140, with an HIA submitted, but with the AIA component no longer available on SAHRIS. By implication only 3/15 listed SAHRIS cases were available or contained information for purposes of a pre-feasibility study. Available SAHRIS database reports are listed as:

- Anderson, G. (Umlando). 2009. Heritage Survey for the Chris Hani Cluster 9 Water Project, Eastern Cape. [MPD–SAHRIS CTS-309702].
- Van Ryneveld. (ArchaeoMaps). 2013. Phase 1 Archaeological and Cultural Heritage Impact Assessment – Mahlubini Residential Area Development, (Portion of) Erf 1, Cofimvaba, Eastern Cape, South Africa. [SAHRIS CaseID 4344].
- Van Ryneveld, K. (ArchaeoMaps). 2014. Letter of Recommendation – Exemption from a Full Phase 1 Archaeological Impact Assessment for the proposed Embokeni Hard Rock Quarry, near Cofimvaba, Insika Yethu Local Municipality, Eastern Cape, South Africa. [SAHRIS CaseID 6630].

2.1.3. SAHRA PROVINCIAL HERITAGE SITE DATABASE – EASTERN CAPE

One geo-referenced declared Provincial Heritage Site (PHS) is recorded in the SAHRA–Eastern Cape database (https://en.wikipedia.org/wiki/List_of_heritage_sites_in_Eastern_Cape) and situated within an approximate 15km radius from the *Cluster 9 Tsomo Water Treatment Works Upgrade* study site, referenced as:

- SAHRA Identifier 9/2/026/0013: Cuthbert's Building, 110 Oxford Street, East London – PHS – S321°00'54"; E27°54'12".

The SAHRA Identifier 9/2/026/0013 site record is evidently erroneous, and not reflective of PHS sensitivity in the vicinity of the study site.

In conclusion, there are no (correctly recorded) PHSs situated within an approximate 15km radius from the *Cluster 9 Tsomo Water Treatment Works Upgrade, Chris Hani District Municipality, Eastern Cape,* study site.

Map 5: Spatial distribution of geo-referenced PHSs in the SAHRA–Eastern Cape database, in relation to the study site

2.1.4. GENERAL ARCHAEOLOGICAL & CULTURAL HERITAGE SENSITIVITY OF THE STUDY SITE

Limited SAHRIS database information is problematic with reference to a reasonable pre-feasibility interpretation of the greater *Cluster 9 Tsomo Water Treatment Works Upgrade* terrain. Limited information, however, indicated a dominance of Later Iron Age (LIA) sites, followed by infrequent Colonial Period records. No Stone Age sites or deposits have been reported on in AIA reports consulted.

Anderson (2009) recorded fifteen (15) archaeological and cultural heritage resources during the *Chris Hani Cluster 9 Water Project* assessment, with the majority of the sites comprising LIA settlement sites, inferred no older than 100 years, although settlement sites are known from the region dating back to the 1870s. Many LIA settlement sites recorded constitute living heritage sites, with homesteads still occupied, or occupied in part, and generally typified by clusters of huts and associated livestock enclosures. Two (2) LIA settlement sites are associated with family cemeteries, comprising both modern and traditional stone cairn graves. One (1) recorded site constitute a cemetery of some eight (8) graves, including both modern and traditional stone cairn and stone marked graves, whilst another site is typified by a single stone marked grave site, associated with nineteenth century stone walling and terracing of typical Colonial Period stylistic character. Two (2) Colonial Period sites were recorded, including the Fairview Villa Trading Store and the Mbulukwera Store, both comprising structures older than 60 years of age. Van Ryneveld (2014) recorded three (3) LIA homestead sites, without associated grave sites, from the *Embokeni Hard Rock Quarry Site*, and a Colonial Period bridge, 54 years of age at the time of recording 2013, from the *Mahlubini Residential Development* site in Cofimvaba (Van Ryneveld 2013).

Tsomo was founded in 1877, originally as a military station during the last, or Ninth Frontier / Xhosa War (1877–1879). The town's name is derived from the Tsomo River on which it is situated, with the river believed to have been named after a Xhosa chief who resided near where the bridge now stands (https://en.wikipedia.org/wiki/Tsomo).

A brief history, although a political history only, of the greater Tsomo–Transkei area, with a focus only on the recent past, or later Colonial Period, and following through to the former Apartheid regime and the start of the Democratic era in South Africa, is relayed as (https://www.sahistory.org.za/place/transkei):

> *"Following the frontier war from 1846 to 1848, better known as the War of the Axe [Seventh Frontier / Xhosa War 1846–1847], the Ceded Territory was proclaimed the Division of Victoria on 23 December 1847, and on the same day the proclamation of British Kaffraria pushed the Cape-Xhosa boundary line to the Great Kei River, thereby returning it to its position in 1836.*
>
> *This was extended in 1848 by the annexation of additional territory between the White Kei and Black Kei Rivers, later to become the division of Queenstown. In December 1850 the amaNgqika rose in revolt. They were defeated in 1853 [Eighth Fronter / Xhosa War 1850–1853] and a complex re-allocation of*

lands with 'friendly' groups being allocated land in British Kaffraria while rebel clans were banished east of the Kei River, was initiated.

European settlement of this region was stepped up in 1857 with the arrival of German and British groups. In 1857 the so-called 'cattle-killing' [1856–1858] led to the starvation, and ultimate death of some 70,000 Xhosa people. In a brief period of 6 months their numbers were reduced from 105,000 to 37,200 persons. This effectively brought their armed resistance to European colonialism in the eastern Cape to an end. Barring a brief revolt in 1877 and 1878, when the amaGcaleka turned upon their amaMfengu neighbours, the British annexation of lands east of the Kei River was able to proceed unimpeded.

In 1866 British Kaffraria was annexed to the Cape Colony. In September 1879 [following the Ninth Frontier / Xhosa War 1877–1879] this was followed by Idutywa Reserve in Mfenguland, and Gcalekaland in 1885. It is assumed that the restructuring of these territories into the divisions of Butterworth, Idutywa, Kentani, Nqamakwe, Tsomo and Willowvale dates from these times […]."

The Transkei was the scene of various attempts to establish segregated districts before the period of Apartheid. The Glen Grey Act of 1894 saw the establishment of district councils under the leadership of chiefs. The idea of using chiefs as proxy rulers eventually became the cornerstone of the Bantustan policy of the apartheid government, announced in 1959.

Under the Bantu Authorities Act of 1951, the Transkei became, in 1959, the first region to be established as a Territorial Authority; and in 1963 it became the first Bantustan to be granted 'Self-government'. The area was divided into three physically separate regions and took up approximately 43,798 square kilometres. Due to its proximity to the Drakensberg Mountain Range it was extremely mountainous. Kaiser Matanzima, appointed Chief of the amaHala clan in 1940, supported and promoted the apartheid concept of separate development and played a crucial role in the politics of the homeland. Although chief of the amaHala, his authority was subject to the overrule of the Paramount Chief of the Thembu, Sabata Dalindyebo, who opposed the Bantu Authorities system. Matanzima entered the Transkei Territorial Authority (known as the Bunga) in 1955, and grew to become the favourite of apartheid's social engineers. To bypass the authority of Dalindyebo, they appointed him Regional Chief of Emigrant Thembuland in 1958, and in 1966 consolidated the position by making him Paramount Chief of the Emigrant Thembu, thus making him Dalindyebo's equal.

The constitution of the Transkei, drawn up in Pretoria under the watchful eye of Prime Minister Hendrik Verwoerd, determined that the Transkei cabinet was to be elected by ballot in the Legislative Assembly […].

The Assembly comprised the four Paramount Chiefs of the Transkei, 60 chiefs from regional authorities, and 45 members who would be elected in general elections. Although most of those elected were supporters of Paramount Chiefs Sabata Dalindyebo of Thembuland and Victor Poto of Western Pondoland, Kaiser Matanzima held sway over the legislature through the support of chiefs aligned to him. Matanzima was thus appointed Chief Minister of the Transkei, a 'Self-governing Territory within the Republic of South Africa' […].

Matanzima's rule and the apartheid regime had been opposed by more radical forces long before this [elections of 1963 and 1973]. In the early 1960s, the PAC's [Pan African Congress, founded 6 April 1959] armed wing, Poqo, launched several attempts to assassinate Matanzima, all of which failed […].

Matanzima ran a brutal regime, and using the infamous Proclamation R400, neutralized all opposition through bannings and detentions. The proclamation had been put in place to deal with the intense rural resistance to apartheid in Pondoland in 1960.

Matanzima developed an effective working knowledge of the Bantu Authorities system, and agitated for independence. He mounted a vigorous campaign to promote his homeland, pressuring the government to have border districts incorporated into the Transkei, and in 1972 he pushed for the amalgamation of all Xhosa territory, including the Ciskei, under his leadership.

In 1976 Transkei became the first of the four homelands to be granted independence. Supported by the South African government, Matanzima managed to overshadow rivals such as Dalindyebo, despite the latter's greater support among the people in the area. Matanzima ruled the Transkei as Prime Minister, with his brother George occupying the position of Minister of Justice […].

Despite his demands for more territory and his disputes with the South African government, Matanzima maintained power with the help of Pretoria and legislation modelled on the South African system.

Between April 1978 and April 1980, Matanzima engaged in a dispute over the status of Griqualand East, and broke off diplomatic ties with the apartheid government, and threatened an end to the 'Non-aggression Pact'. Weeks later, with its economy bankrupt, the homeland was forced to accept a bail-out of R73-million from the diplomatically alienated South African government. This grant was in addition to an annual grant of R113,5-million for the 1979/80 financial year. Between 1978 and 1980 South African grants amounted to approximately R573-million.

Corruption in the homeland drastically depleted its funds and in 1980 the South African state assumed control over the homeland's budget.

When the Minister of Education, Stella Sigcau, was fired in 1979, a cabinet crisis ensued, and the opposition Progressive Democratic Party [DPP] was formed under the leadership of Dalindyebo, Matanzima's old rival. But Matanzima used his 'state powers' against his opponent. Trumped-up charges against Dalindyebo saw him convicted on a minor charge, but he was acquitted of the more serious charges. There was much public support for Dalindyebo, and the Transkei administration suffered great embarrassment.

In 1980 most of the members of the opposition DPP were arrested, and some were banned. Dalindyebo fled and went into exile in Zambia, where he forged links with the ANC. He died in 1986.

However, Matanzima's TNIP [Transkeian National Independence Party] was also rocked by splits and divisions during 1979 and 1980. The party lost support in East Pondoland when the powerful Sigcau clan switched sides and allied with the DPP. Matanzima decided to appoint his brother George as Prime Minister, while he assumed the position of President.

George Matanzima's brutal attempts to centralise control resulted in a further disintegration of the tribal alliances his brother had painstakingly constructed. The entire ruling apparatus was wracked by crises. Heavy repressive measures saw many opposition leaders, former cabinet ministers and the head of the defence force and police detained. The former Rhodesian Selous Scout General Ron Reid-Daly was appointed head of the Transkei Defence Force.

In 1985, apartheid practitioners conceived a plan to merge the Transkei and Ciskei and create a 'United Nation of Xhosa Speakers' who they thought would support the South African government and help it to stamp out unrest in the Eastern Cape. Matanzima had long held ambitions to rule such a territory, and had opposed the 'independence' of Ciskei in 1981 in the hope that this merger would be realised. But the plan, which included having Ciskei's president, Lennox Sebe, assassinated, failed after it was leaked to General Bantu Holomisa.

Matanzima began to lose support by the mid-1980s, and resigned in 1986, but he managed to retain his seat as Paramount Chief of Western Thembuland. He was succeeded as President by Paramount Chief Tutor Ngangelizwe Ndamase, the son of Chief Victor Poto of Western Pondoland. George Matanzima, who had been embroiled in disputes with his brother, was effectively sidelined, but the conflicts intensified and brought much turbulence to Transkeian politics in the period from 1986 to 1989.

Eventually, both Chief Victor Poto and George Matanzima were overthrown, amid charges of corruption in government departments [...].

With the army in crisis, George Matanzima fled the country in October 1987, but was subsequently apprehended and charged with misappropriation of funds. The TNIP chose Stella Sigcau to replace him as Prime Minister, but she was ousted when General Bantu Holomisa mounted a bloodless coup in January 1988. Holomisa ruled as chairperson of the Military Council.

Earlier, in April 1986, the son of the deceased Sabata Dalindyebo, Buyelekhaya, brought his father's body back to the Transkei to be buried at the Great Place. Matanzima had the body seized and buried in a pauper's grave. But Holomisa supported Buyelekhaya, encouraging him to return and take up his father's position as Paramount Chief of Thembuland. With the support of the Congress of Traditional Leaders (Contralesa), Buyelekhaya returned in October 1989, and reburied his father's body in a public ceremony. Members of ANC [African National Congress, founded 8 January 1912]-aligned anti-apartheid groupings, together with King Mswati II of Swaziland, were among those who attended the ceremony.

In the meanwhile, Holomisa took the step to unban the UDF [United Democratic Front] and other anti-apartheid organisations in Transkeian territory, a move that could not be opposed by the newly inaugurated President of South Africa, F.W. de Klerk. Holomisa also announced that he would conduct a plebiscite to test whether Transkeians wanted their homeland to be reincorporated into South Africa.

All these events played out against a backdrop of economic failure and corruption. The homeland's leaders had never managed to develop an autonomous economy. Despite incentives to industrialists, Matanzima failed to persuade foreign firms to set up industrial plants in his territory. Only one bag factory was established in the early 1980s, and in the enterprises that were established, Transkeians were exploited in the workplace.

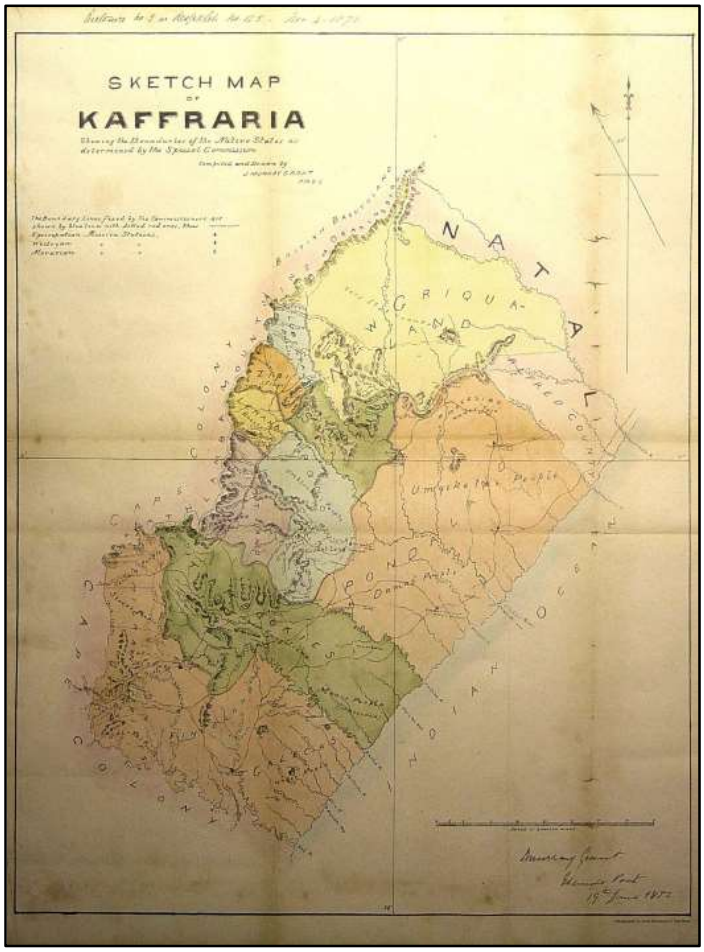
Most of the employed worked for the bureaucracy. A small consumer goods industry employed a total of 4,050 people in 1975. Of the total of 47,000 waged workers in the Transkei in 1975, more than 20,000 were employees of the 'State'. More than 500,000 Transkeians were working in South Africa, remitting money to their families. These remittances made up 70% of the homeland's total GNP [Gross National Product].

[...] George Matanzima demanded and received R2-million from [Sol] Kerzner so the latter could set up a gambling monopoly in the homeland.

A Commission of Enquiry appointed after George Matanzima fled the country established that between 1976 and 1988, R200-million had been misappropriated by the Matanzimas.

In November 1990, a group of six white and black soldiers attempted to mount a coup, but they failed when troops loyal to Holomisa overcame the plotters. Eighteen people were killed, including the leader of the coup, Colonel Craig Duli.

Under the new democratic dispensation in South Africa, the Transkei and all other homelands were incorporated into South Africa in 1994."



Map 6: Sketch map of the Transkei, 1872 (Braun 2008)

Map 7: District map of Tsomo, Transkei, 1916
(https://digitalcollections.lib.uct.ac.za/islandora/object/islandora%3A30089/datastream/OBJ/view)

2.2.1. FIELD ASSESSMENT: SUMMARY

Field assessment of the *Cluster 9 Tsomo Water Treatment Works Upgrade, Chris Hani District Municipality, Eastern Cape*, study site, typified by fair, albeit varying visibility across the terrain, yielded two (2) archaeological and cultural heritage resources (Sites TWU-S1 and TWU-S2), as defined and protected by the NHRA 1999. Both resources are preliminary described as cultural stone markers, or "izivivane", but the possibility of them being grave sites are not excluded. Phase 2 archaeological testing is recommended, to be done prior to or at the time of construction site establishment. Archaeological testing must be done under an EC PHRA–APM Unit permit; it is recommended that the Phase 2 archaeological programme focus on verification testing of the resources as "izivivane" (including both scientific recording of the features and test-pit excavations) and the making of suitable arrangements for "on-site" feature relocation, be it at the existing Tsomo WTW, or the proposed WTW extension study site, or at a safe place in direct proximity to the study site, such as the riparian fringe. Should Phase 2 archaeological testing verify the identified resources to be grave sites, suitable recommendations (conservation or Phase 2 grave relocation) will be made for purposes of responsible development based on Phase 2 archaeological test data.

Assessment of the remainder of the study site yielded no additional archaeological or cultural heritage resources, not within or in direct proximity to the study site's footprint, nor any indicators of heritage sensitivity that need to be taken into account for decision making purposes. The study site was used for storage and stockpiling during construction of the existing Tsomo WTW plant, and traces of this recent-past usage, including scraped sections and ridges, stone rich areas, with such stones being visibly out of context, or ex-situ, and areas of low-density localised construction rubble, were visible – none of which are of any heritage significance. Field assessment included a survey of the riparian fringe, situated between the *Cluster 9 Tsomo Water Treatment Works Upgrade* study site and the Tsomo River; the riparian fringe will be conserved within the development layout. The riparian fringe proved to be, on surface level, anthropogenically sterile, with interesting stratigraphy visible at in excess of 1.5m exposed erosion sections towards the north of the surveyed riparian fringe directly bordering the study site, but without identifiable anthropogenic members or lenses present in the exposed stratigraphic sequence.

A site visit to the existing Tsomo WTW indicated the north-eastern corner of the plant, where engineering and construction works included in the *Cluster 9 Tsomo Water Treatment Works Upgrade* proposal will take place, to be, similarly, on surface level, anthropogenically sterile. The site inspection across the remainder of the existing Tsomo WTW plant, conducted primarily for environmental compliance purposes, and not directly applicable to heritage requirements, also indicated no heritage concerns, although none were expected, especially from a heritage Built Environment perspective – the Tsomo WTW plant being a recent development. No anthropogenic members or lenses were identified in an on-site open section (visibility approximately 1–1.5m) at a bulk water pipeline, and being a fair determinant of general sub-surface anthropogenic sterility across the greater terrain.

Based primarily on direct field assessment results, but with cognisance to pre-feasibility archaeological and cultural heritage sensitivity of the *Cluster 9 Tsomo Water Treatment Works Upgrade* study site, it is recommended that development proceeds as applied for, provided developer compliance to the recommended Phase 2 archaeological programme (Sites TWU-S1 and TWU-S2). The proposed development poses no *Fatal Flaws* in its layout or design with regard protected archaeological and cultural heritage resources – provided Phase 2 heritage compliance requirements are met – and consideration of a *No Development* option is, resultantly, not warranted from a said heritage perspective. Compliance with the recommended Phase 2 archaeological programme will result in a positive cumulative impact of the *Cluster 9 Tsomo Water Treatment Works Upgrade* development with regard protected archaeological and cultural heritage resources, during the construction phase of development, but more importantly with reference to the long-term responsible management of affected heritage resources throughout the course of the development's implementation phase.

ARCHAEOLOGICAL & CULTURAL HERITAGE SUMMARY CLUSTER 9 TSOMO WATER TREATMENT WORKS UPGRADE, CHRIS HANI DISTRICT MUNICIPALITY, EASTERN CAPE				
CLUSTER 9 TSOMO WATER TREATMENT WORKS UPGRADE – S32°'01'56.5"; E27°49'29.5"				
MAP CODE	**SITE**	**COORDINATE**	**SITE SIGNIFICANCE**	**RECOMMENDATIONS**
TWU-S1	Later Iron Age – Izivivane	S32°01'54.2"; E27°49'28.5"	SAHRA High / Medium Significance Generally Protected – Grade IV-A Field Rating	Phase 2 archaeological mitigation programme under EC PHRA–APM Unit Permit
TWU-S2	Later Iron Age – Izivivane	S32°01'53.4"; E27°49'29.0"	SAHRA High / Medium Significance Generally Protected – Grade IV-A Field Rating	Phase 2 archaeological mitigation programme under EC PHRA–APM Unit Permit

Table 3: Field assessment findings – Archaeological and cultural heritage resources (and compliance) summary

2.2.2. ARCHAEOLOGICAL & CULTURAL HERITAGE RESOURCE / SITE DESCRIPTIONS

Two (2) archaeological and cultural heritage resources, as defined and protected by the NHRA 1999, were identified during the field assessment of the *Cluster 9 Tsomo Water Treatment Works Upgrade, Chris Hani District Municipality, Eastern Cape* study site.

2.2.2.1. SITE TWU-S1: S32°01'54.2"; E27°49'28.5" – Later Iron Age (LIA) – Izivivane

Site TWU-S1 comprises a stone cairn feature, inferred to be a stone marker or "izivivane" and preliminary ascribed to the Later Iron Age (LIA), although "izivivane" are known to have been used throughout the Iron Age, thus including the Middle (MIA) and Earlier (EIA) Iron Ages, and with cultural stone cairn markers also known to have been used by pastoralist Khoekhoen / Khoikhoi peoples. The possibility of the stone cairn as a grave site marker, and not an "izivivane", cannot be excluded.

Site Significance and Recommendations: Site TWU-S1 is formally protected by the NHRA 1999 and ascribed a *SAHRA High / Medium Significance* with a *Generally Protected Grade IV-A Field Rating*. Phase 2 mitigatory archaeological testing is recommended to, firstly, verify the site's identity as an "izivivane", grave site, or other, and secondly, in the event of the site being an "izivivane", make suitable arrangements for "on-site" feature relocation, be it at the existing Tsomo WTW, or the proposed WTW extension study site, or at a safe place in direct proximity to the study site, such as the riparian fringe. Should Phase 2 archaeological testing verify Site TWU-S1 as a grave site, suitable recommendations (conservation or Phase 2 grave relocation) will be made for purposes of responsible development based on Phase 2 archaeological test data. Phase 2 mitigation must be done under an EC PHRA–APM Unit Permit, issued to a suitably qualified and accredited heritage specialist. It is recommended that Phase 2 archaeological testing at Site TWU-S1 be done prior to, or at the time of construction site establishment.

2.2.2.2. SITE TWU-S2: S32°01'53.4"; E27°49'29.0" – Later Iron Age (LIA) – Izivivane

Similar to Site TWU-S1, Site TWU-S2 is typified by a stone cairn feature, preliminary described as an "izivivane", most possibly dating to Later Iron Age (LIA) times. Further archaeological testing is necessary to verify both site identity, for the cairn may be grave site marker, and cultural assignation, as "izivivane" were used throughout the Iron Age and stone cairn markers were also used by pastoralist Khoekhoen / Khoikhoi peoples.

Site Significance and Recommendations: Site TWU-S2 is formally protected by the NHRA 1999 and ascribed a *SAHRA High / Medium Significance* with a *Generally Protected Grade IV-A Field Rating*. Phase 2 mitigatory archaeological testing is recommended to verify the site's identity, and in the event of the site being an "izivivane" make suitable arrangements for "on-site" feature relocation, as described for Site TWU-S1. Should Phase 2 archaeological testing verify Site TWU-S2 as a grave site, recommendations (conservation or Phase 2 grave relocation) will accordingly be made for purposes of responsible development. Phase 2 mitigation must be done under an EC PHRA–APM Unit Permit, issued to a suitably qualified and accredited heritage specialist. It is recommended that Phase 2 archaeological testing at Site TWU-S1 be done prior to, or at the time of construction site establishment.

Plate 1: General view of the Cluster 9 Tsomo WTW Upgrade study site [1]

Plate 2: General view of the Cluster 9 Tsomo WTW Upgrade study site [2]

Plate 3: General view of the Cluster 9 Tsomo WTW Upgrade study site [3]

Plate 4: General view of the Cluster 9 Tsomo WTW Upgrade study site [4]

Plate 5: General view of the Cluster 9 Tsomo WTW Upgrade study site [5]

Plate 6: General view of the Cluster 9 Tsomo WTW Upgrade study site [6]

Plate 7: General view of the Cluster 9 Tsomo WTW Upgrade study site [7]

Plate 8: General view of the Cluster 9 Tsomo WTW Upgrade study site [8]

Plate 9: General view of the Cluster 9 Tsomo WTW Upgrade study site [9]

Plate 10: View of the riparian fringe along the Cluster 9 Tsomo WTW Upgrade study site [1]

Plate 11: View of the riparian fringe along the Cluster 9 Tsomo WTW Upgrade study site [2]

Plate 12: View of the riparian fringe along the Cluster 9 Tsomo WTW Upgrade study site [3]

Plate 13: General view of Site TWU-S1

Plate 14: Close-up of Site TWU-S1

Plate 15: General view of Site TWU-S2

Plate 16: Close-up of Site TWU-S2

Plate 17: General view of the existing Tsomo WTW plant [1]

Plate 18: General view of the existing Tsomo WTW plant [2]

Plate 19: General view of the existing Tsomo WTW plant [3]

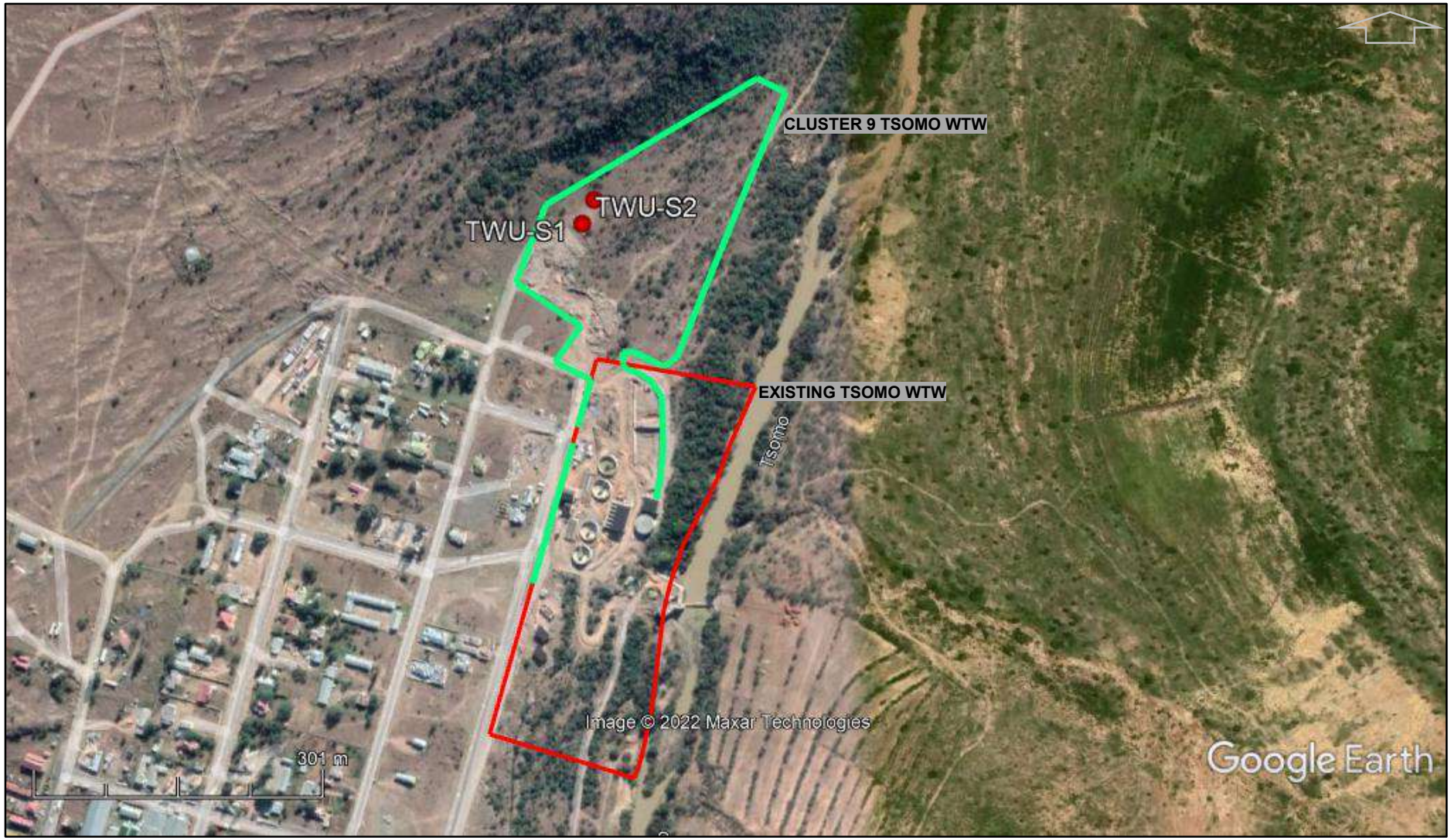
Plate 20: General view of the existing Tsomo WTW plant [4]

Plate 21: View of the Tsomo River from the existing Tsomo WTW plant [1]

Plate 22: General view of the existing Tsomo WTW plant [2]

Plate 23: General view of the existing Tsomo WTW plant [5]

Plate 24: General view of the existing Tsomo WTW plant [6]



Map 8: Field assessment results for the Cluster 9 Tsomo Water Treatment Works (WTW) Upgrade, Chris Hani District Municipality, Eastern Cape, study site [1]

Map 9: Field assessment results for the Cluster 9 Tsomo Water Treatment Works (WTW) Upgrade, Chris Hani District Municipality, Eastern Cape, study site [2]

Identified archaeological and cultural heritage resources are ascribed an Environmental Impact Assessment (EIA) rating, based on the outline presented below to provide a significance rating of development impact on resources, both during the 1) construction and 2) operation and use phases of development (in accordance with NEMA 1998, Regulations 2014 and 2017).

ENVIRONMENTAL IMPACT ASSESSMENT CRITERIA & RATING SCALES	
ENVIRONMENTAL 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: Environmental Impact Assessment (EIA) criteria and rating scales

ENVIRONMENTAL IMPACT ASSESSMENT RATING CLUSTER 9 TSOMO WATER TREATMENT WORKS UPGRADE, CHRIS HANI 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**	
SITES: TWU-S1 & TWU-S2												
Construction phase	Negative	Direct	Site	Short-term	Medium (-)	Completely reversable	Resource will not be lost	Definite	Moderate or partially mitigatable	Moderate	Negligible	- Phase 2 archaeological programme
Operational phase	Positive	Cumulative	Site	Permanent	High (+)	Completely reversable	Resource will not be lost	N/A	N/A	Substantial	Negligible	Permanent conservation
MITIGATION DETAILS: Sites TWU-S1 & TWU-S2: 1) Phase 2 archaeological programme, including testing of sites for verification purposes, and arrangements for "on-site" relocation, implying permanent conservation at a safe place. 2) Should Phase 2 testing indicate the sites to be grave sites, suitable recommendations for conservation (implying development layout changes) or Phase 2 grave relocation will be made. 3) Phase 2 archaeological work must be done under an EC PHRA–APM Unit permit issued to a suitably qualified and accredited heritage specialist.												

Table 5: Environmental Impact Assessment (EIA) rating: Cluster 9 Tsomo Water Treatment Works Upgrade, Chris Hani District Municipality, Eastern Cape

4.1. RECOMMENDATIONS FOR DEVELOPMENT

With reference to archaeological and cultural heritage compliance, as per the requirements of the NHRA 1999, it is recommended that the proposed *Cluster 9 Tsomo Water Treatment Works Upgrade, Chris Hani District Municipality, Eastern Cape* development proceeds as applied for, provided the recommended Phase 2 archaeological heritage compliance requirements are met.

The EC PHRA–APM Unit 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 & Affected Party (I&AP) wish to be consulted in terms of Section 38(3)(e) of the NHRA 1999 (Socio-cultural consultation / SAHRA SIA) it is recommended that the developer / EAP ensures that the consultation be prioritized within the timeframe of the Environmental Impact Assessment (EIA) process.

4.2. SUMMARISED PHASE 1 AIA FINDINGS

Pre-feasibility study: Limited SAHRIS database information, with only three (3) studies available, with assessments conducted within an approximate 40km radius from the *Cluster 9 Tsomo Water Treatment Works Upgrade* study site, is problematic from a pre-feasibility interpretive point of view. Limited information, however, indicated a dominance – in excess of fifteen (15) recorded resources – of Later Iron Age (LIA) sites, primarily being LIA settlement sites, and including infrequent cemeteries and grave sites, followed by a few Colonial Period records, including two (2) trading stores and a bridge, while no Stone Age sites, deposits or occurrences from the greater terrain have been reported on.

No Provincial Heritage Sites (PHSs) are recorded within an approximate 15km radius from the *Cluster 9 Tsomo Water Treatment Works Upgrade* study site.

Tsomo was founded in 1877, originally as a military station during the last, or Ninth Frontier / Xhosa War (1877–1879).

Field assessment: Field assessment of the *Cluster 9 Tsomo Water Treatment Works Upgrade* study site yielded two (2) archaeological and cultural heritage resources (Sites TWU-S1 and TWU-S2), as defined and protected by the NHRA 1999. Both resources are preliminary described as cultural stone markers, or "izivivane", but the possibility of them being grave sites are not excluded. Phase 2 archaeological testing is recommended, to be done prior to or at the time of construction site establishment. Archaeological testing must be done under an EC PHRA–APM Unit permit; it is recommended that the Phase 2 archaeological programme focus on verification testing of the resources as "izivivane" (including both scientific recording of the features and test-pit excavations) and the making of suitable arrangements for "on-site" feature relocation, be it at the existing Tsomo WTW, or the proposed WTW extension study site, or at a safe place in direct proximity to the study site, such as the riparian fringe. Should Phase 2 archaeological testing verify the identified resources to be grave sites, suitable recommendations (conservation or Phase 2 grave relocation) will be made for purposes of responsible development based on Phase 2 archaeological test data.

Conclusion: Based primarily on direct field assessment results, but with cognisance to pre-feasibility archaeological and cultural heritage sensitivity of the study site, it is recommended that development proceeds as applied for, provided developer compliance to the recommended Phase 2 archaeological programme (Sites TWU-S1 and TWU-S2). The proposed development poses no *Fatal Flaws* in its layout or design with regard protected archaeological and cultural heritage resources – provided Phase 2 archaeological heritage compliance requirements are met – and consideration of a *No Development* option is, resultantly, not warranted from a said heritage perspective. Compliance with the recommended Phase 2 archaeological programme will result in a positive cumulative impact of the *Cluster 9 Tsomo Water Treatment Works Upgrade* development with regard protected archaeological and cultural heritage resources, during the construction phase of development, but more importantly with reference to the long-term responsible management of affected heritage resources throughout the course of the development's implementation phase.

5 – ACRONYMS & ABBREVIATIONS

LIST OF ACRONYMS & ABBREVIATIONS	
AD	Anno Domini (the year 0)
AIA	Archaeological (and Cultural Heritage) Impact Assessment
AMAFA	Amafa aKwaZulu-Natali (Natal PHRA)
ASAPA	Association of Southern African Professional Archaeologists
BAR	Basic Assessment Report
BC	Before the Birth of Christ (the year 0)
BCE	Before the Common Era (the year 0)
BID	Background Information Document
BP	Before the Present (the year 0)
Cm	Centimetre
CMP	Conservation Management Plan
CRM	Cultural Resources Management
DAC	Department of Arts and Culture
DEAT	Department of Environmental Affairs and Tourism
DME	Department of Minerals and Energy
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
ELO	Environmental Liaison Officer
EC PHRA	Eastern Cape Provincial Heritage Resources Agency
EIA_1	Environmental Impact Assessment
EIA_2	Early Iron Age
EMPr	Environmental Management Plan / Programme Report
ESA	Earlier Stone Age
Ha	Hectare
HIA	Heritage Impact Assessment
HWC	Heritage Western Cape
ICOMOS	International Council on Monuments and Sites
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
Mm	Millimetre
MPRDA 2002	Mineral and Petroleum Resources Development Act, No 28 of 2002
MSA	Middle Stone Age
Mya	Millions of years ago
NEMA 1998	National Environmental Management Act, No 107 of 1998
NHRA 1999	National Heritage Resources Act, No 25 of 1999
PIA	Palaeontological Impact Assessment
PHRA	Provincial Heritage Resources Agency
PSSA	Palaeontological Society of Southern Africa
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
SIA	Social Impact Assessment

Table 6: List of acronyms and abbreviations

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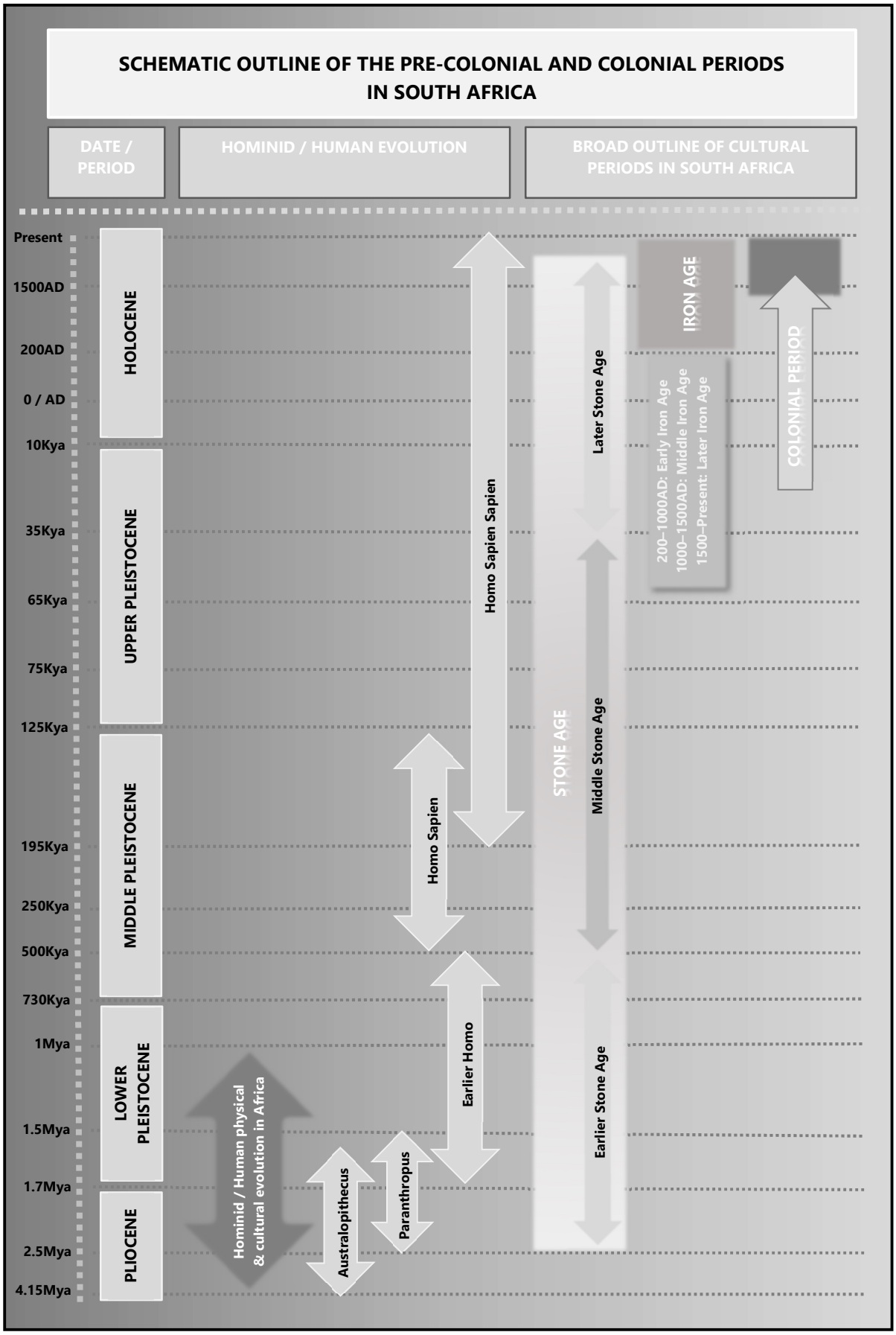
Appendix A: SCHEMATIC OUTLINE OF THE PRE-COLONIAL AND COLONIAL PERIODS IN SOUTH AFRICA



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

Phase 1 Archaeological & Cultural Heritage Impact Assessment (AIA) –
CLUSTER 9 TSOMO WATER TREATMENT WORKS UPGRADE, CHRIS HANI DISTRICT MUNICIPALITY, EASTERN CAPE

Should any archaeological or cultural heritage resources, including human remains / graves, as defined and protected by the NHRA 1999[1], 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 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 officer. [Should the find relate to human remains the SHE / SHEQ officer should immediately notify the nearest SAPS station informing them of the find].
4. The ECO / ELO officer should ensure that the find is within 72 hours after the SHE / SHEQ officers report reported on SAHRIS / EC PHRA / project heritage specialist, and that a relevant heritage specialist is contacted to make arrangements for a heritage site inspection. [Should the find relate to human remains the ECO / ELO officer should ensure that the archaeological 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 the site-specific situation / findings. The site inspection report should make recommendations for the destruction, conservation or mitigation 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 / arrange with the heritage specialist for submission on SAHRIS.
6. SAHRA / the relevant PHRA will state legal requirements for development to proceed in the SAHRA / PHRA Comment on the heritage site inspection report.
7. The developer should proceed with implementation of the SAHRA / PHRA Comment requirements. SAHRA / PHRA Comment requirements may stipulate permit specifications for development to proceed.
    - Should permit specifications stipulate further Phase 2 archaeological investigation (including grave mitigation) a suitably accredited heritage specialist should be appointed to conduct the work according to the applicable SAHRA / PHRA process. The heritage specialist should apply for the permit. Upon issue of the SAHRA / PHRA permit the Phase 2 heritage mitigation program may commence.
    - Should permit specifications stipulate destruction of the find under a SAHRA / PHRA permit the developer should immediately proceed with the permit application. Upon the issue of the SAHRA / PHRA permit the developer may legally proceed with destruction of the heritage resource.
    - Upon completion of the Phase 2 heritage mitigation program the heritage specialist will submit a Phase 2 report to the ECO / ELO, who should in turn ensure submission thereof on SAHRIS / arrange with the heritage specialist for submission on SAHRIS. Report recommendations may include that the remainder of a heritage site be

[1] **Simplified Guide to the Identification of Archaeological Sites:**

- **Stone Age** – Knapped stone display flakes and flake scars that appear unnatural and may result in similar type 'shaped' stones often concentrated in clusters or forming a distinct layer in the geological stratigraphy. ESA shapes may represent 'pear' or oval shaped stones, often in the region of 10cm or larger. Typical MSA types include blade-like or rough triangular shaped artefacts, often associated with randomly shaped lithics or flakes that display use- or edge-wear around the rim of the artefact. LSA types are similar to MSA types, but generally smaller (≤3cm in size), often informally shaped, and are frequently found in association with bone, pieces of charcoal, ceramic shards and food remains.
    - **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 often characterized by stone features, i.e. the remains of former livestock enclosures or typical household remains; huts are identified by either mound or depression hollows. Typical artefacts include ceramic remains, farming equipment, beads and trade goods, metal artefacts (including jewellery) etc. Remains of the 'Struggle' – events, histories and landmarks associated therewith are often, based on cultural association, classed as part of the Iron Age heritage of South Africa.
- **Colonial Period** – Built environment remains, either urban or rural, are of a Western cultural affiliation with typical artefacts representing early Western culture, including typical household remains, trade and manufactured goods, such as old bottle, porcelain and metal artefacts. War memorial remains, including the vast array of associated graves and the history of the Industrial Revolution form important parts of South Africa's Colonial Period heritage.
- **Grave and Cemetery Sites** – Marked grave and cemetery sites are routinely associated with the Iron Age and Colonial Period. Unmarked grave sites associated with the Stone Age, Iron Age and Colonial Period may be uncovered during the course of development.

destroyed under a SAHRA / 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: A SAHRA / PHRA permit will not be applicable.

NOTE: The SAHRA / PHRA permit requirements relating to the mitigation of human remains is subject to a prescribed process, including consultation, 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), by 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 officer. [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 officer, be deposited in a safe place (preferably on-site) for safekeeping.

❖ DUTIES OF THE ECO / ELO OFFICER

1. The ECO / ELO officer 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 officer 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 officer should facilitate appointment of the heritage specialist by the developer / construction consultant for the heritage site inspection.
4. The ECO / ELO officer should facilitate access by the heritage specialist to any retrieved artefacts / objects / remains that have been kept in safekeeping.
5. The ECO / ELO officer 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 officer should facilitate heritage reporting 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.