

30th August 2021

Mr Timo Smit
Windhoek
Namibia

For attention: Oliver Krappmann

**ARCHAEOLOGICAL RECONNAISSANCE SURVEY AND ASSESSMENT OF EPL 5885 (INCLUDING MCs
70783-84, KUNENE REGION, NAMIBIA**

DECLARATION

I hereby declare that I do:

- (a) have knowledge of and experience in conducting assessments, including knowledge of Namibian legislation, specifically the National Heritage Act (27 of 2004), as well as regulations and guidelines that have relevance to the proposed activity;
- (b) perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- (c) comply with the aforementioned Act, relevant regulations, guidelines and other applicable laws.

I also declare that I have no interests or involvement in:

- (i) the financial or other affairs of either the applicant or his consultant
- (ii) the decision-making structures of the National Heritage Council of Namibia.



John Kinahan, Archaeologist

EXECUTIVE SUMMARY

An archaeological reconnaissance survey was carried out on Mining Claims MC 70783 and 70784, registered in the name of Mr Timo Smit. The Claims are contained within EPL 5885 and situated in the vicinity of Ondoto in the Kunene Region, Namibia. The survey documented a number of burial sites near archaeological, historical and current settlements flanking the Kunene and Ondoto Rivers. The more recent burial sites, some comprising sizeable cemeteries, are for the most part well known and diligently maintained by communities resident in the same area. It is recommended that all of the burial sites should be protected from encroachment or disturbance by mining and related activities. It is also recommended that the project should adopt the attached Chance Finds Procedure devised for mining projects in the event that archaeological remains not visible from surface indications are encountered during earthmoving operations.

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1. INTRODUCTION

1.1 Background

Mr Timo Smit is carrying out mineral exploration and small-scale mining of semi-precious stones on his two Mining Claims 70783 and 70784, and has recently applied to the Ministry of Mines and Energy for including the commodity of Dimension Stones to the mineral group covered by his mineral rights. The Mining Claims are located in the Kunene Region, Namibia. The mineral licences lie near Ondoto in the north-eastern part of the EPL 5885 exploration tenement. Mining and exploration are listed in the Environmental Management Act (2007) as activities requiring environmental assessment and the granting of an Environmental Clearance Certificate. Archaeological remains in Namibia are likewise protected under the National Heritage Act (27 of 2004) and National Heritage Regulations (Government Notice 106 of 2005), and Mr Smit has accordingly appointed the undersigned, J. Kinahan, to carry out an archaeological reconnaissance of the project area for the purposes of obtaining consent under the provisions of the Heritage Act. A field visit to the site was carried out from 6th to 8th August 2021.

1.2 Terms of Reference

The primary task of the archaeological assessment reported here was to identify sensitive archaeological sites or areas that could be affected by exploration and mining activities. The archaeological assessment forms the basis of recommended management actions to avoid or reduce negative impacts, as part of the environmental assessment. The study is intended to satisfy the requirements of the relevant legislation and regulations, in which the process of review and clearance may require further, or different mitigation measures to be adopted.

The archaeological assessment addresses the following primary elements:

1. The identification and assessment of potential impacts on archaeological/heritage resources, including historical sites and settlement areas arising from the proposed exploration and mining activities.
2. The identification and demarcation of sensitive archaeological/heritage sites/zones requiring special mitigation measures to eliminate, avoid or compensate for possible destructive impacts.
3. Formulation and motivation of specific mitigation measures for the project to be considered by the authorities for the issuance of clearance certificates.
4. Identify permit requirements as related to the removal and/or destruction of heritage resources.

1.3 Assumptions & Limitations

Archaeological assessment relies on the indicative value of surface finds recorded in the course of field survey. Field survey results are augmented wherever possible by inference from the results of surveys and excavations carried out in the course of previous work in the same general area as the proposed project, as well as other sources such as historical documentation. Based on these data, it is possible to predict the likely occurrence of further archaeological sites with varying accuracy, and to present a general statement (see Environmental and

cultural setting, below) of the local archaeological site distribution and its sensitivity. However, since the assessment is limited to surface observations and existing survey data, it is necessary to caution the proponent that hidden or buried archaeological or palaeontological remains might be exposed as the project proceeds.

2. LEGAL REQUIREMENTS

The principal instrument of legal protection for archaeological/heritage resources in Namibia is the National Heritage Act (27 of 2004). Part V Section 46 of the Act prohibits removal, damage, alteration or excavation of heritage sites or remains. Section 48 *ff* sets out the procedure for application and granting of permits such as might be required in the event of damage to a protected site occurring as an inevitable result of development. Section 51 (3) sets out the requirements for impact assessment. Heritage sites or remains are defined in Part 1, Definitions 1, as “any remains of human habitation or occupation that are 50 or more years old found on or beneath the surface”.

It is important to be aware that no specific regulations or operating guidelines have been formulated for the implementation of the National Heritage Act in respect of archaeological assessment. However, archaeological impact assessment of large projects has become accepted practice in Namibia during the last 25 years, especially where project proponents need also to consider international guidelines. In such cases the appropriate international guidelines are those of the World Bank OP/ BP 4.11 in respect of “Physical Cultural Resources” (R2006-0049, revised April 2013). Of these guidelines, those relating to project screening, baseline survey and mitigation are the most relevant.

Archaeological impact assessment in Namibia may also take place under the rubric of the Environmental Management Act (7 of 2007) which specifically includes anthropogenic elements in its definition of environment. The List of activities that may not be undertaken without Environmental Clearance Certificate: Environmental Management Act, 2007 (Govt Notice 29 of 2012), and the Environmental Impact Assessment Regulations: Environmental Management Act, 2007 (Govt Notice 30 of 2012) both apply to the management of impacts on archaeological sites and remains whether these are considered in detail by the environmental assessment or not. Where graves and cemeteries are concerned the Burial Place Ordinance (27 of 1966) extends protection from desecration of disturbance and any encroachment on burial places is subject to official approval.

3. ENVIRONMENTAL AND CULTURAL SETTING

EPL 5885 covers an area of approximately 450km² from the eastern foothills of the Zebra Mountains to Swartboois Drift, an historical crossing point between Namibia and Angola on the perennial Kunene River. Mr Smit’s two Mining Claims are 36 hectares in size and situated within the north-western portion of the EPL 5885 exploration tenement. The area of the Mining Claims and surrounds is covered by rugged boulder slopes of anorthosite and other intrusives of the Kunene Complex with gentler gradients to the east where the episodic Ondoto River meanders towards its confluence with the Kunene. Both river valleys have extensive deposits of

sandy silt which support riparian woodlands dominated by mopane *Colophospermum mopane* the preferred setting for traditional settlement among Ovaherero communities who have been present in this area for at least 1000 years.

Kaoko and the valley of the Kunene River are less well explored archaeologically than the more southerly parts of the Namib Desert and its adjacent interior (see Figure 1). From the available evidence of human occupation of this area spans most of the last one million years, as represented by numerous open scatters of stone artefacts. The earliest evidence, dating from the mid-Pleistocene, is primarily in the form of crude stone implements found as surface scatters in the vicinity of major drainage lines. Later Pleistocene remains include well fashioned bifacial stone hand-axes which in the last 200 000 years were superseded by a complex toolkit of smaller artefacts.

The late Pleistocene and the Last Glacial Maximum¹ brought important environmental changes to this region, including the establishment of the mid-Kunene drainage as it exists today². Hydrological changes in major drainage basins during the Quaternary had fundamental effects on the viability of human settlement, such that while the region immediately to the south was abandoned under conditions of extreme aridity, the northern Kunene Region sustained almost continuous occupation over the last 10 000 years. The archaeological record of human occupation in the early to mid-Holocene shows an emphasis on rock shelter sites along the escarpment, used as hunting camps³.

In the last three or four centuries, and ending with the colonial era, Ovaherero cattle-owning communities extended their range southwards into central Namibia. The stability of the indigenous livestock economy was however threatened by a number of factors: severe intermittent drought throughout the so-called Little Ice Age (between 1300 and 1800 AD)⁴, the depredations of Oorlam cattle raiding parties whose operations extended as far as southern Angola and, in 1897, the catastrophic *Rinderpest* (Paramyxovirus) epidemic which resulted large scale loss of Ovaherero herds as well as many established settlement areas to land speculators and colonial settlers. The Ovaherero were severely affected by the anti-colonial uprising of 1904, although many escaped the ensuing genocide by withdrawing north to their former stronghold, the valley pasturelands of Kaoko.

Figure 2 shows the distribution of archaeological sites in the Kunene River valley based on low resolution data, which reveal no consistent patterns, on detailed field survey (area A) which indicates strong clustering, and on the results of the survey reported here (area B) which confirm the site distribution pattern in area A. In both area A and B the highest numbers of archaeological sites and the strongest local clusters are associated with two

¹ Deacon, J. & Lancaster, N. 1988. *Late Quaternary palaeoenvironments of southern Africa*. Oxford: Oxford University Press.

² Schneider, G. 2004. *The roadside geology of Namibia*. Sammlung Geologischer Führer, Berlin: Gebr. Borntraeger.

³ Jacobs, Z., Roberts, R.G., Galbraith, R.F., Deacon, H.J., Grün, R., Mackay, A., Mitchell, P., Vogelsang, R. & Wadley, L. 2008. Ages for the Middle Stone Age of southern Africa: Implications for human behaviour and dispersal. *Science* 322: 733–35.

⁴ Tyson, P.D., Karlén, W., Holmgren, K., & Heiss, G.A. 2000. The Little Ice Age and medieval warming in South Africa. *South African Journal of Science* 96: 121–6.

principal land units: gentle footslopes below steep gradient hills, and sandy silt deposits adjacent to drainage lines. In both cases relatively dense mopane *Colophospermum mopane* vegetation cover is also found, together with surface water in the form of springs, seepages or the Kunene River itself.

Only one detailed archaeological survey has been carried out thus far in the valley of the Kunene River but this has yielded a number of important insights into patterns of site distribution governed by terrain conditions and pastoral settlement and landuse practices which developed during the last one thousand years⁵. These patterns cultural preferences, the latter being of particular relevance for the understanding of Ovaherero and Ovahimba

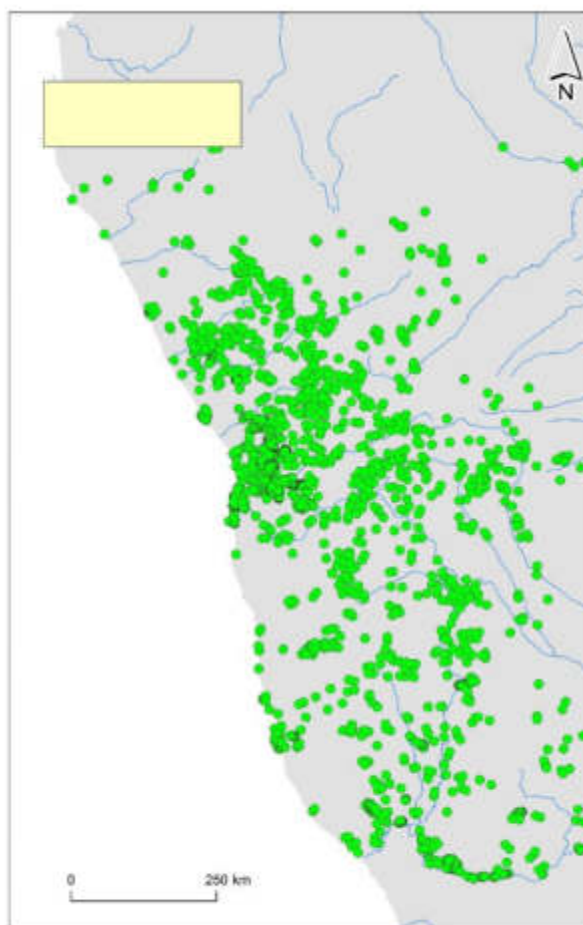


Figure 1: The distribution of archaeological sites in the Namib Desert and its adjacent interior shown in relation to the relatively less well studied northern Kaoko and Kunene River valley (rectangle).

⁵ Bollig, M. 2020. *Shaping the African savanna: From Capitalist Frontier to Arid Eden in Namibia*. Cambridge: Cambridge University Press; Kinahan, J. 2001b. The presence of the past: Archaeology, environment and land rights on the lower Cunene. *Cimbebasia* 17: 23–39; Kinahan, J. 2019. The Origins and Spread of Pastoralism in Southern Africa. *Oxford Research Encyclopedia, African History* (oxfordre.com/africanhistory). Oxford University Press; see also Vogelsang, R. & Eichhorn, B. 2011. *Under the mopane tree: Holocene settlement in northern Namibia*. Köln: Afrika Praehistorica 24; Vogelsang, R., Eichhorn, B. & Richter, J. 2002. Holocene human occupation and vegetation history in northern Namibia. *Die Erde* 133: 113–32.

of settlement and landuse are explicable in terms of basic land systems theory⁶ which reveals a number of consistent associations between terrain types and archaeological sites. On this basis it is possible to reliably predict the highest concentrations of archaeological sites and, moreover, to delineate areas of high and low archaeological sensitivity.

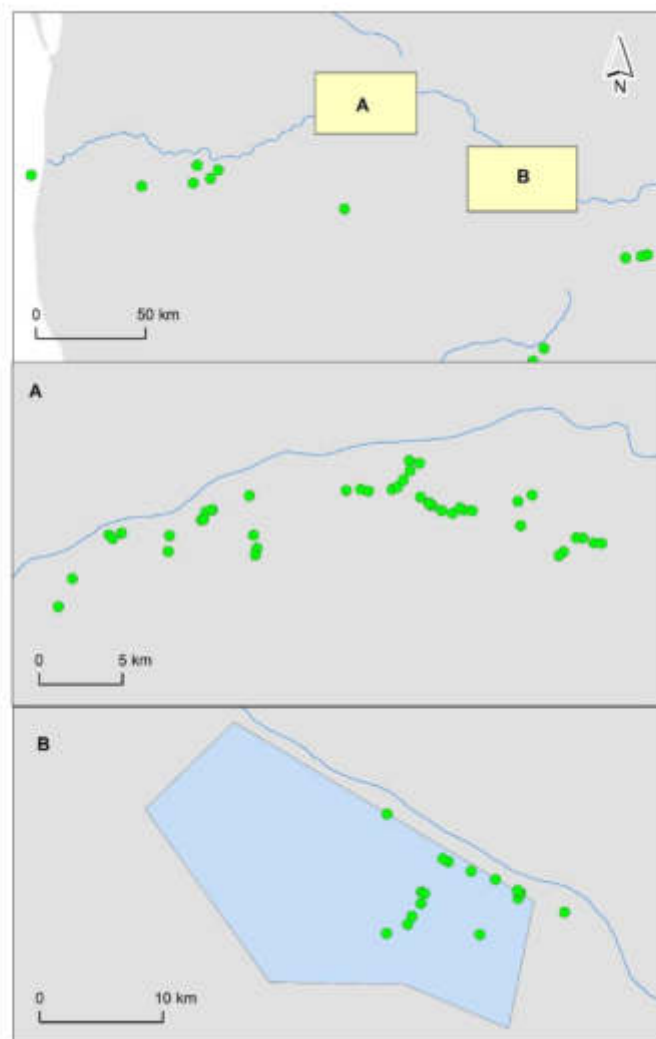


Figure 2: Low resolution survey data for the Kunene River valley at top; detailed site distribution Area A, Kunene River; Area B archaeological site distribution EPL 5885 with MCs 70783 and 70784 contained, this survey.

⁶ cf Strömquist, L., Yanda, P., Msemwa, P., Lindberg, C. and Simonsson-Forsberg, L. 1999. Utilizing landscape information to analyse and predict environmental change: the extended baseline perspective. *Ambio* 28 (5): 436-443.

4. OBSERVATIONS

A mid- to late Pleistocene human presence is evident over much of EPL 5885 but in the form of occasional scattered finds of artefact waste material, mainly fine grained quartzites and other raw materials with similar flaking properties, rather than discrete and clearly defined occupation sites. Overall, however, the predominant evidence of human occupation is of relatively recent pastoral settlement, mainly in the form of settlement scars up to 60m in diameter found both on the gentle eastern footslopes of the Zebra Mountains and on erosion surfaces flanking the Ondoto River. These settlement scars are a common feature in Kaoko, formed by long term occupation of Ovaherero or Ovahimba homesteads where high concentrations of soil phosphorus from accumulated cattle dung inhibit the recovery of the vegetation. Although no physical trace of habitations or stock enclosures remain on these sites even a very cursory inspection will reveal numerous grindstones as well as various manuports brought to the site as anchorstones.



Figure 3: Typical Ovaherero or Ovahimba settlement scar near Ondoto



Figure 4: Post-17th century AD maize grinding dimple quern from Ondoto.

Also associated with Ovaherero and Ovahimba settlement in this area are numerous burial sites containing between one and over forty graves, with the largest concentrations at Ondoto and Swartboois Drift, respectively. Most of the burials are located on sandy silt alluvium or on the lower footslopes of adjacent ground. The majority of the graves are typically Christian (i.e. elongated and oriented east-west, as opposed to traditional pre-Christian burial mounds which are circular in plan) and a large number have dolerite or concrete headstones indicating relatively recent dates. The burial sites do however include a small number of traditional or non-Christian graves without headstones. With few exceptions the graves are well tended and clearly of continuing significance to the community here. The distribution pattern of the graves shown in Figure 5 suggests that there was one established node of settlement at Ondoto and another at Swartboois Drift. The Ondoto burial site lies to the north of the Mining Claims in an area that is subject to on-going mining activity.

Two historical sites include the hilltop monument commemorating the crossing of the Dorslandtrekkers to Angola in 1881, a well maintained site with a number of graves. The second site which lies below the junction of the road to Epupa and that to Okangwati, comprises the stone foundations of a rectangular mudbrick building measuring 14 x 8m. The building overlooked the crossing point at Swartboois Drift and evidently had a flight of stone steps leading up to a verandah supported by wooden posts (see Figure 7). The German colonial maps do not indicate a police or military post at Swartboois Drift and it is therefore likely that the building dates from the post-1915 South African period when guard posts were established at numerous points along the Kunene River. The Dorslandtrekker site is evidently protected and the second site lies within the proclaimed road reserve and is therefore unlikely to be disturbed or encroached upon.

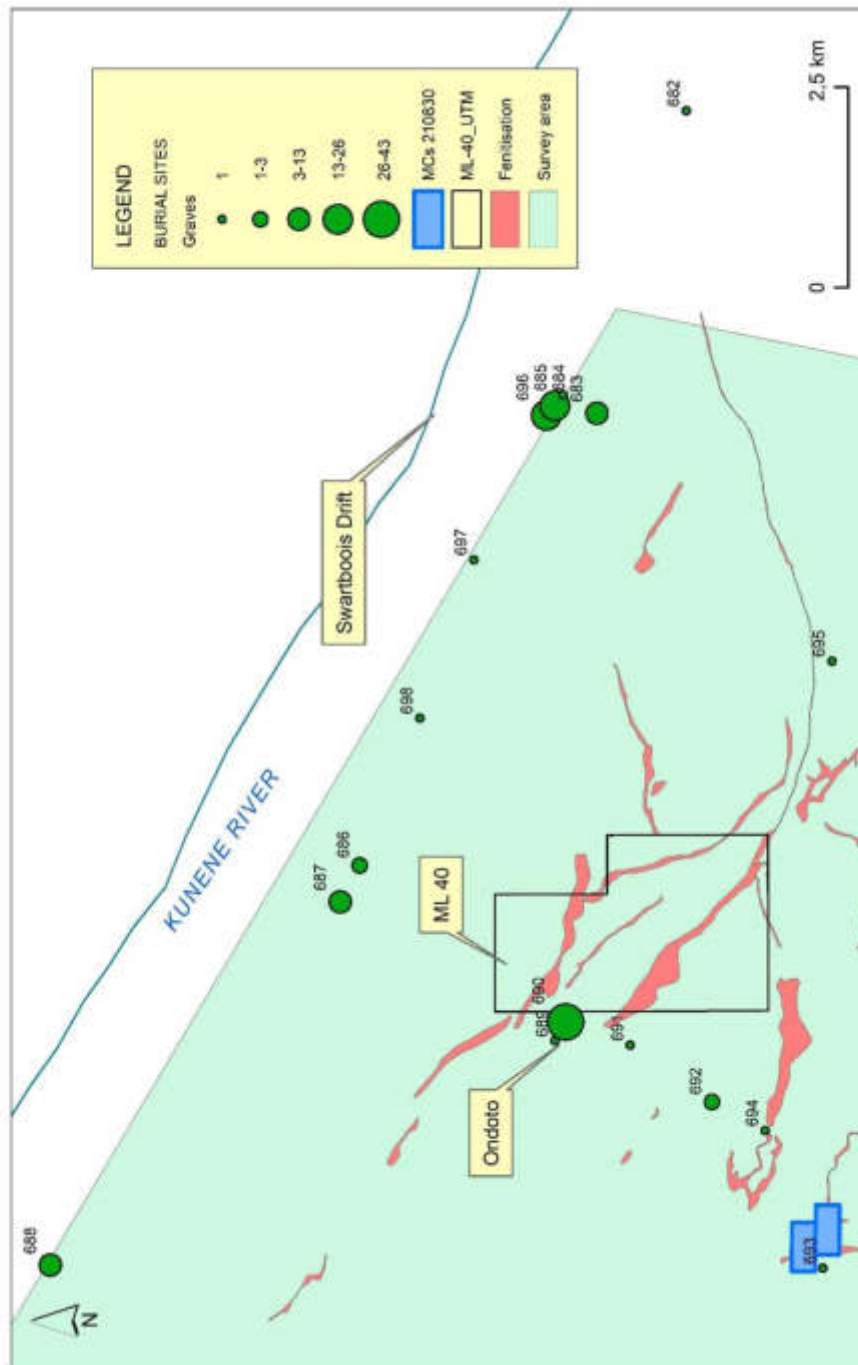


Figure 5: MCs 70783-84 located near the north-eastern end of EPL 5885 including Ondoto and Swartboois Drift, and showing the distribution of burial sites in five interval classes. The distribution indicates the largest burial site QRS 302/690 as located adjacent to ML 40.



Figure 6: Post-19th century AD Christian burial near Ondoto

Table 1: The location and number of graves at burial sites on the eastern end of EPL 5885

Site	Latitude S	Longitude E	n Graves
QRS 302/683	-17,344586	13,847079	10
QRS 302/684	-17,340781	13,849136	1
QRS 302/685	-17,339858	13,847936	18
QRS 302/686	-17,317924	13,796354	3
QRS 302/687	-17,315733	13,792273	9
QRS 302/688	-17,283178	13,751543	13
QRS 302/689	-17,339858	13,776672	1
QRS 302/690	-17,341063	13,778801	43
QRS 302/692	-17,357497	13,769831	2
QRS 302/693	-17,369954	13,751206	1
QRS 302/696	-17,338883	13,846847	26
QRS 302/698	-17,324675	13,812906	1

The eastern part of EPL 5885 is traversed by a number of well established tracks and some roadways that involved a small amount of earthmoving. There are also a number of quarry sites focussing on sodalite bodies; these are of varying size and two in particular have a number of dwellings as well as machinery and large heaps

of stockpiled sodalite awaiting processing and transport. Apart from the evidence of active, ongoing mining work there are some abandoned operations with discarded machinery and equipment. The current Ondoto Rare Earths project has begun construction of a plant on an area of approximately 15ha that has been cleared and landscaped. Foot survey of the plant area and adjacent ground found no archaeological sites.



Figure 7: Front steps and verandah post of mudbrick building overlooking Swartboois Drift

5. CONCLUSIONS & RECOMMENDATIONS

On the basis of the field reconnaissance survey reported here the eastern parts of EPL 5885 including ML 40, i.e an area to the north from the Smit Mining Claims are considered to be archaeologically sensitive due to the presence of a large number of graves. The graves are clearly visible and are well tended so that there is little risk of inadvertent damage or disturbance. However, the largest concentration of graves is adjacent to an active mining area and it is recommended that the applicant should take some precautions to avoid damage to the sites and to show that their presence is respected. In this regard it is recommended that:

- A. Existing roads and access tracks should be rerouted to detour the burial sites by at least 50m.
- B. The local community should be consulted about possible fencing of the burial sites.

There is a possibility that more burials could be found especially within the Ondoto and Swartboois Drift area during the course of site development and mining. It is therefore recommended that the applicant should adopt the Chance Finds Procedure in Appendix 1 as part of the project Environmental Management Plan. With these precautions in place it is recommended that the applicant should be granted consent to proceed with exploration and mining at the site.

Appendix 1: Chance Finds procedure

Areas of proposed development activity are subject to heritage survey and assessment at the planning stage. These surveys are based on surface indications alone, and it is therefore possible that sites or items of heritage significance will be found in the course of development work. The procedure set out here covers the reporting and management of such finds.

Scope: The “chance finds” procedure covers the actions to be taken from the discovery of a heritage site or item, to its investigation and assessment by a trained archaeologist or other appropriately qualified person.

Compliance: The “chance finds” procedure is intended to ensure compliance with relevant provisions of the National Heritage Act (27 of 2004), especially Section 55 (4): *“a person who discovers any archaeological ... objectmust as soon as practicable report the discovery to the Council”*. The procedure of reporting set out below must be observed so that heritage remains reported to the NHC are correctly identified in the field.

Responsibility:

Operator	To exercise due caution if archaeological remains are found
Foreman	To secure site and advise management timeously
Superintendent	To determine safe working boundary and request inspection
Archaeologist	To inspect, identify, advise management, and recover remains

Procedure:

Action by person identifying archaeological or heritage material

- a) If operating machinery or equipment stop work
- b) Identify the site with flag tape
- c) Determine GPS position if possible
- d) Report findings to foreman

Action by foreman

- a) Report findings, site location and actions taken to superintendent
- b) Cease any works in immediate vicinity

Action by superintendent

- a) Visit site and determine whether work can proceed without damage to findings
- b) Determine and mark exclusion boundary
- c) Site location and details to be added to project GIS for field confirmation by archaeologist

Action by archaeologist

- a) Inspect site and confirm addition to project GIS
- b) Advise NHC and request written permission to remove findings from work area

c) Recovery, packaging and labelling of findings for transfer to National Museum

In the event of discovering human remains

- a) Actions as above
- b) Field inspection by archaeologist to confirm that remains are human
- c) Advise and liaise with NHC and Police
- d) Recovery of remains and removal to National Museum or National Forensic Laboratory, as directed.

