

HERITAGE IMPACT ASSESSMENT SCOPING REPORT

THE PROPOSED DEVELOPMENT OF A BORROW PIT AT MARQUARD SETSOTO LOCAL MUNICIPALITY FREE STATE PROVINCE

Report prepared for:

ENVIROMATRIX Environmental Services Consultants
P O Box 2580
BETHLEHEM
9700

Report prepared by:

eThembeni Cultural Heritage
P O Box 20057
ASHBURTON
3213

30 January 2020

Executive Summary

eThembeni Cultural Heritage was appointed by ENVIROMATRIX Environmental Management Services to undertake a Heritage Impact Scoping of a proposed Borrow Pit at Marquard, Setsoto Local Municipality, in the Free State Province. This as required by the National Environmental Management Act 107 of 1998 (NEMA), as amended; and in compliance with Section 38 of the National Heritage Resources Act 25 of 1999 (NHRA), as amended.

Assessment of development impact

The proposed borrow pit described will have no impact on heritage resources as none were observed. Any such resources discovered during operation of the borrow pit will be subject to the chance finds protocol below.

Recommended mitigation measures

Archaeological sites

No archaeological residues of significance were observed.

Palaeontological deposits

No likely impacts due to the dolerite intrusions into the overlying sedimentary horizons at the respective sites.

Graves and cemeteries

None observed.

Should any graves be located during the establishment and / or operation of the borrow pits mitigation will have to be done by an ASAPA accredited grave specialist, under a permit and protocols issued by SAHRA under a separate Phase 2 mitigation programme.

Recommended monitoring

None

CONCLUSION

We recommend that the borrow pit development proceeds with the proposed heritage chance find protocol being part of the anticipated Record of Decision (R.o.D); and will submit this report electronically via SAHRIS¹ to SAHRA², in fulfilment of the requirements of the National Heritage Resources Act (NHRA).

If permission is granted for development to proceed, the client is reminded that the NHRA requires that a developer cease all work immediately and adhere to the protocol described in Appendix 1 of this report should any heritage resources, as defined in the Act, be discovered during the course of development activities.

¹ SAHRIS – South African Heritage Resources Inventory System

² SAHRA – South African Heritage Resources Agency as established in terms of the National Heritage Resources Act, 25 of 1999 (NHRA), as amended.

INDEPENDENT HERITAGE SPECIALIST

Consultant: eThembeni Cultural Heritage
Contact person: Leonard van Schalkwyk
Physical address: 7 Dely Crescent, Ashburton
Postal address: PO Box 20057, Ashburton, 3213
Telephone: 0826559077 Fax: 086 672 8557
Email: thembeni@iafrica.com

DECLARATION OF INDEPENDENCE

I, Leonard van Schalkwyk, declare that I act as the independent specialist in this application.

I will 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.

I declare that there are no circumstances that may compromise my objectivity in performing such work. I have no, and will not engage in, conflicting interests in the undertaking of the activity. I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing any decision to be taken with respect to the application by the competent authority; and the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority.



Signed:

Date: 30 January 2020

Introduction

Setsoto Local Municipality intends to establish and legalise a borrow pit, one located at Marquard. The objective is to provide good quality filling and cover material for the Municipality Roads and Stormwater Department for future maintenance and expansion projects.

EnviroMatrix, an Environmental Management Company, has been appointed as Independent Environmental Consultants by Setsoto Local Municipality, to undertake the Mining Right application and Environmental Impact Assessments as part of the environmental authorisations process.

eThembeni Cultural Heritage was appointed by ENVIROMATRIX Environmental Management Services to undertake a Heritage Impact Scoping of the borrow pit site. This in terms the Scoping and Environmental Impact Assessment (EIA) Process as part of the Environmental Authorisation for the proposed borrow pit establishments; as governed by the National Environmental Management Act 107 of 1998 (NEMA), as amended; and in compliance with Section 38 of the National Heritage Resources Act 25 of 1999 as amended (NHRA).

Scope of work

The scope of work for the project will include the following primary aspects -

- Legal compliance and development of a borrow pit at Marquard.
- Excavation of aggregate from the borrow pits; and,
- Access roads to the excavation sites.

All excavation activities will be undertaken with due cognisance to minimise the impact on the environment and limiting the disruptions to the local community.

In respect of the heritage assessment, ENVIROMATRIX required that information must be provided on the following, where applicable, at the respective sites:

- Results of the field survey of the study area and the identification of any heritage resources that may be affected by the proposed infrastructure, or which may affect the construction and operation of the proposed infrastructure.
- The early identification of any red flag and fatal flaw issues or impacts.
- Recommendations on alternatives where additional alternatives could be identified to avoid negative impacts.
- Recommended mitigation measures for enhancing positive impacts and avoiding or minimizing negative impacts and risks (to be implemented during design, construction and operation).
- Formulation of a protocol or heritage management plan to be followed for the identification, protection or recovery of cultural heritage resources during construction and operation.
- Address any other sensitivities and important issues from a specialist perspective that are not identified in these terms of reference.

Methodology

Appendix 2 describes the methodology employed for this project, which included drive/walkovers of proposed borrow pit area on 25-27 October 2019, and a desktop study. Appendix 3 also includes heritage resource significance assessment criteria; development impact assessment criteria; and the assumptions and limitations associated with this project and report.

Marquard Borrow Pit

The borrow pit site is situated some 800 m NE of the town edge of Marquard and 400 m N of the furthest green of the golf course, on the property described as MARQUARD TOWN LANDS 426; SG No: F02300000000042600000, at **28°39'22.18"S; 27°26'28.14"E**.

The immediate area surrounding the site has been subject to much surface disturbance, and seemingly opportunistic sand and aggregate winning activities are apparent. A feral eucalyptus plantation screens the proposed site from the golf course. No heritage residues were observed on the disturbed borrow pit area and the Geotech inspection pit indicated the presence of subsurface dolerite (see Figs.1 & 2).



Figure 1 Location of proposed Marquard Borrow Pit



Figure 2 Geotech Inspection at the locus of the Borrow Pit



Figure 3 Feral eucalyptus plantation around a Geotech test pit

Description and Significance of Heritage Resources

No quarrying activities associated with the proposed project had begun at the time of our site visit, only the artisanal and opportunistic sand and gravel winning stated above.

No heritage resources were observed at the proposed borrow pit site and consequently no mitigation or monitoring measures are required.

CONCLUSION

- WE RECOMMEND THAT THE BORROW PIT DEVELOPMENT PROCEEDS WITH THE PROPOSED HERITAGE MITIGATIONS BEING PART OF THE ANTICIPATED RECORD OF DECISION (R.O.D); AND WILL SUBMIT THIS REPORT ELECTRONICALLY VIA SAHRIS TO SAHRA, IN FULFILMENT OF THE REQUIREMENTS OF THE NATIONAL HERITAGE RESOURCES ACT.
- IF PERMISSION IS GRANTED FOR DEVELOPMENT TO PROCEED, THE CLIENT IS REMINDED THAT THE NHRA REQUIRES THAT A DEVELOPER CEASE ALL WORK IMMEDIATELY AND ADHERE TO THE PROTOCOL DESCRIBED IN SECTION 7 OF THIS REPORT SHOULD ANY HERITAGE RESOURCES, AS DEFINED IN THE ACT, BE DISCOVERED DURING THE COURSE OF DEVELOPMENT ACTIVITIES.

APPENDIX 1

Protocol for the Identification, Protection and Recovery of Heritage Resources during Inception, Construction, and Operation

1. It is possible that sub-surface heritage resources could be encountered during the construction phase of this project. The environmental control officer and all other persons responsible for site management and excavation should be aware that indicators of sub-surface sites could include:
 - Ash deposits (unnaturally grey appearance of soil compared to the surrounding substrate);
 - Bone concentrations, either animal or human;
 - Ceramic fragments, including potsherds;
 - Stone concentrations that appear to be formally arranged (may indicate the presence of an underlying burial, or represent building/structural remains); and
 - Fossilised remains of fauna and flora, including trees.
2. In the event that such indicator(s) of heritage resources are identified, the following actions should be taken immediately:
 - All construction within a radius of at least 20m of the indicator should cease. This distance should be increased at the discretion of supervisory staff if heavy machinery or explosives could cause further disturbance to the suspected heritage resource.
 - This area must be marked using clearly visible means, such as barrier tape, and all personnel should be informed that it is a no-go area.
 - A guard should be appointed to enforce this no-go area if there is any possibility that it could be violated, whether intentionally or inadvertently, by construction staff or members of the public.
 - No measures should be taken to cover up the suspected heritage resource with soil, or to collect any remains such as bone or stone.
3. If a heritage practitioner has been appointed to monitor the project, s/he should be contacted, and a site inspection arranged as soon as possible.
4. If no heritage practitioner has been appointed to monitor the project, SAHRA or FSPHRA should be contacted.
5. The South African Police Services should be notified by a SAHRA/FSPHRA staff member or an independent heritage practitioner if human remains are identified. No SAPS official may disturb or exhume such remains, whether of recent origin or not.
6. All parties concerned should respect the potentially sensitive and confidential nature of the heritage resources, particularly human remains, and refrain from making public statements until a mutually agreed time.

Any extension of the project beyond its current footprint involving vegetation and/or earth clearance should be subject to prior assessment by a qualified heritage practitioner, considering all information gathered during the initial assessment.

APPENDIX 2

Methodology

Site survey

eThembeni staff inspected the project area on 30 and 31 July 2019, and completed a controlled-exclusive surface survey, where 'sufficient information exists on an area to make solid and defensible assumptions and judgements about where [heritage resource] sites may and may not be' and 'an inspection of the surface of the ground, wherever this surface is visible, is made, with no substantial attempt to clear brush, turf, deadfall, leaves or other material that may cover the surface and with no attempt to look beneath the surface beyond the inspection of rodent burrows, cut banks and other exposures that are observed by accident' (King 1978; see bibliography for other references informing methodological approach).

The site survey comprised a drive/walkover visual survey of the proposed activity area. Geographic coordinates were obtained using a handheld Garmin global positioning unit (WGS 84). **See Track Log loaded to SAHRIS Case File.**

Database and literature review

Existing maps and Google Earth imagery were studied in detail prior to and during fieldwork. Existing specialist reports, including research papers and HIA reports, were reviewed where relevant and available. Archaeological site data was sought for the project area from the National Museum, Bloemfontein database and SAHRIS.

Methodology References

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- Butler, W. 1984. *Cultural Resource Management: The No-Collection Strategy in Archaeology*. American Antiquity 44(4):795-799.
- Deacon, J. 1996. *Archaeology for Planners, Developers and Local Authorities*. National Monuments Council. Publication no. PO21E.
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- Dunnell, R.C., and Dancey, W.S. 1983. *The Siteless Survey: A Regional Scale Data Collection Strategy*. In: Advances in Archaeological Method and Theory 6:267-287. M.B. Schiffer, ed. Academic Press, New York.
- King, T.F. 1978. *The Archaeological Survey: Its Methods and Uses*. Interagency Archaeological Services, Department of the Interior, Washington, D.C.
- Lightfoot, K.G. 1989. *A Defense of Shovel Test Sampling: A Reply to Short*. American Antiquity 54(2):413-416.
- McManamon, F.P. 1984. *Discovering Sites Unseen*. In Advances in Archaeological Method and Theory 8:223-292, M.B. Schiffer, ed. Academic Press, New York.
- Schiffer, M. B., Sullivan A.P., and Klinger T.C. 1978. *The Design of Archaeological Surveys*. World Archaeology 10:1-28.
- Zubrow, E.B.A. 1984. *Small-Scale Surveys: A Problem for Quality Control*. American Archaeology 4(1):16-27.

APPENDIX 3

Assessment of heritage resource value and significance

Heritage resources are significant only to the extent that they have public value, as demonstrated by the following guidelines for determining site significance developed by Heritage Western Cape (HWC 2007) and utilised during this assessment.

Grade I Sites (National Heritage Sites)³

Grade I heritage resources are heritage resources with qualities so exceptional that they are of special national significance should be applied to any heritage resource which is

- a) Of outstanding significance in terms of one or more of the criteria set out in section 3(3) of the NHRA;
 - b) Authentic in terms of design, materials, workmanship or setting; and is of such universal value and symbolic importance that it can promote human understanding and contribute to nation building, and its loss would significantly diminish the national heritage.
1. Is the site of outstanding national significance?
 2. Is the site the best possible representative of a national issue, event or group or person of national historical importance?
 3. Does it fall within the proposed themes that are to be represented by National Heritage Sites?
 4. Does the site contribute to nation building and reconciliation?
 5. Does the site illustrate an issue or theme, or the side of an issue already represented by an existing National Heritage Site – or would the issue be better represented by another site?
 6. Is the site authentic and intact?
 7. Should the declaration be part of a serial declaration?
 8. Is it appropriate that this site be managed at a national level?
 9. What are the implications of not managing the site at national level?

Grade II Sites (Provincial Heritage Sites)

Grade II heritage resources are those with special qualities which make them significant in the context of a province or region and should be applied to any heritage resource which -

- a) is of great significance in terms of one or more of the criteria set out in section 3(3) of the NHRA; and
- (b) enriches the understanding of cultural, historical, social and scientific development in the province or region in which it is situated, but that does not fulfil the criteria for Grade 1 status.

Grade II sites may include, but are not limited to –

- (a) places, buildings, structures and immovable equipment of cultural significance;
- (b) places to which oral traditions are attached or which are associated with living heritage;
- (c) historical settlements and townscapes;
- (d) landscapes and natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and palaeontological sites; and
- (g) graves and burial grounds.

The cultural significance or other special value that Grade II sites may have, could include, but are not limited to –

³ Regulation 43 Government Gazette no 6820. 8 No. 24893 30 May 2003, Notice No. 694

- (a) its importance in the community or pattern of the history of the province;
- (b) the uncommon, rare or endangered aspects that it possess reflecting the province's natural or cultural heritage
- (c) the potential that the site may yield information that will contribute to an understanding of the province's natural or cultural heritage;
- (d) its importance in demonstrating the principal characteristics of a particular class of the province's natural or cultural places or objects;
- (e) its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group in the province;
- (f) its importance in demonstrating a high degree of creative or technical achievement at a particular period in the development or history of the province;
- (g) its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; and
- (h) its strong or special association with the life or work of a person, group or organization of importance in the history of the province.

Grade III (Local Heritage Resources)

Grade III heritage status should be applied to any heritage resource which

- (a) fulfils one or more of the criteria set out in section 3(3) of the NHRA; or
- (b) in the case of a site contributes to the environmental quality or cultural significance of a larger area which fulfils one of the above criteria, but that does not fulfill the criteria for Grade 2 status.

Grade IIIA

This grading is applied to buildings and sites that have sufficient intrinsic significance to be regarded as local heritage resources; and are significant enough to warrant any alteration being regulated. The significances of these buildings and/or sites should include at least some of the following characteristics:

- Highly significant association with a
 - historic person
 - social grouping
 - historic events
 - historical activities or roles
 - public memory
- Historical and/or visual-spatial landmark within a place
- High architectural quality, well-constructed and of fine materials
- Historical fabric is mostly intact (this fabric may be layered historically and/or past damage should be easily reversible)
- Fabric dates to the early origins of a place
- Fabric clearly illustrates an historical period in the evolution of a place
- Fabric clearly illustrates the key uses and roles of a place over time
- Contributes significantly to the environmental quality of a Grade I or Grade II heritage resource or a conservation/heritage area

Such buildings and sites may be representative, being excellent examples of their kind, or may be rare: as such they should receive maximum protection at local level.

Grade IIIB

This grading is applied to buildings and/or sites of a marginally lesser significance than grade IIIA; and such marginally lesser significance argues against the regulation of internal alterations. Such buildings and sites may have similar significances to those of a grade IIIA building or site, but to a lesser degree. Like grade IIIA buildings and sites, such buildings and sites may be representative, being excellent examples of their kind, or may be rare, but less so than grade IIIA examples: as such they should receive less stringent protection than grade IIIA buildings and sites at local level and internal alterations should not be regulated (in this context).

Grade IIIC

This grading is applied to buildings and/or sites whose significance is, in large part, a significance that contributes to the character or significance of the environs. These buildings and sites should, as a consequence, only be protected and regulated if the significance of the environs is sufficient to warrant protective measures. In other words, these buildings and/or sites will only be protected if they are within declared conservation or heritage areas.

Assessment of development impacts

A heritage resource impact may be defined broadly as the net change, either beneficial or adverse, between the integrity of a heritage site with and without the proposed development. Beneficial impacts occur wherever a proposed development actively protects, preserves or enhances a heritage resource, by minimising natural site erosion or facilitating non-destructive public use, for example. More commonly, development impacts are of an adverse nature and can include:

- destruction or alteration of all or part of a heritage site;
- isolation of a site from its natural setting; and / or
- introduction of physical, chemical or visual elements that are out of character with the heritage resource and its setting.

Beneficial and adverse impacts can be direct or indirect, as well as cumulative, as implied by the aforementioned examples. Although indirect impacts may be more difficult to foresee, assess and quantify, they must form part of the assessment process. The following assessment criteria have been used to assess the impacts of the proposed development on identified heritage resources:

Criteria	Rating Scales	Notes
Nature	Positive	An evaluation of the type of effect the construction, operation and management of the proposed development would have on the heritage resource.
	Negative	
	Neutral	
Extent	Low	Site-specific, affects only the development footprint.
	Medium	Local (limited to the site and its immediate surroundings, including the surrounding towns and settlements within a 10 km radius);
	High	Regional (beyond a 10 km radius) to national.
Duration	Low	0-4 years (i.e. duration of construction phase).
	Medium	5-10 years.
	High	More than 10 years to permanent.
Intensity	Low	Where the impact affects the heritage resource in such a way that its significance and value are minimally affected.
	Medium	Where the heritage resource is altered and its significance and value are measurably reduced.
	High	Where the heritage resource is altered or destroyed to the extent that its significance and value cease to exist.
Potential for impact on irreplaceable resources	Low	No irreplaceable resources will be impacted.
	Medium	Resources that will be impacted can be replaced, with effort.
	High	There is no potential for replacing a particular vulnerable resource that will be impacted.
Consequence (a combination of extent, duration, intensity and the potential for impact on irreplaceable resources).	Low	A combination of any of the following: - Intensity, duration, extent and impact on irreplaceable resources are all rated low. - Intensity is low and up to two of the other criteria are rated medium. - Intensity is medium and all three other criteria are rated low.
	Medium	Intensity is medium and at least two of the other criteria are rated medium.
	High	Intensity and impact on irreplaceable resources are rated high, with any combination of extent and duration. Intensity is rated high, with all of the other criteria being rated medium or higher.
Probability (the likelihood of the impact occurring)	Low	It is highly unlikely or less than 50 % likely that an impact will occur.
	Medium	It is between 50 and 70 % certain that the impact will occur.
	High	It is more than 75 % certain that the impact will occur or it is definite that the impact will occur.
Significance (all impacts including potential cumulative impacts)	Low	Low consequence and low probability. Low consequence and medium probability. Low consequence and high probability.
	Medium	Medium consequence and low probability. Medium consequence and medium probability. Medium consequence and high probability. High consequence and low probability.
	High	High consequence and medium probability. High consequence and high probability.

Assumptions and limitations of this HIA

- The description of the proposed project, provided by the client, is accurate.
- The public consultation process undertaken as part of the Environmental Impact Assessment is sufficient and adequate and does not require repetition as part of the heritage impact assessment.
- Soil surface visibility varied from good to non-existent. Heritage resources might be present below the surface or in areas of dense vegetation and we remind the client that the NHRA requires that a developer cease all work immediately and observe the protocol in Section 7 of this report should any heritage resources, as defined in the Act, be discovered during the course of development activities.
- No subsurface investigation (including excavations or sampling) were undertaken, since a permit from SAHRA or the FSPHRA is required to disturb a heritage resource.
- A key concept in the management of heritage resources is that of non-renewability: damage to or destruction of most resources, including that caused by bona fide research endeavours, cannot be reversed or undone. Accordingly, management recommendations for heritage resources in the context of development are as conservative as possible.
- Human sciences are necessarily both subjective and objective in nature. eThembeni staff members strive to manage heritage resources to the highest standards in accordance with national and international best practice; but recognise that their opinions might differ from those of other heritage practitioners.
- Staff members involved in this project have no vested interest in it; are qualified to undertake the tasks as described in the terms of reference; and comply at all times with the Codes of Ethics and Conduct of the Association of Southern African Professional Archaeologists (ASAPA) and the Association of Professional Heritage Practitioners (APHP).
- **ETHEMBENI STAFF MEMBERS TAKE NO PERSONAL OR PROFESSIONAL RESPONSIBILITY FOR THE MISUSE OF THE INFORMATION CONTAINED IN THIS REPORT, ALTHOUGH THEY WILL TAKE ALL REASONABLE PRECAUTIONS AGAINST SUCH MISUSE.**

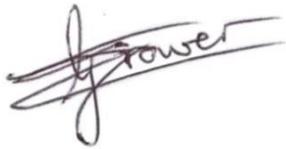
APPENDIX 4

**PALAEONTOLOGY DESKTOP REPORT
G. TROWER – 28 JANUARY 2020**

**GARY TROWER
P.O. Box 2878
WELKOM 9460
PHD CANDIDATE (ARCHAEOLOGY) UNIVERSITY OF THE WITWATERSRAND
MASTERS (ENVIRONMENTAL MANAGEMENT) UNIVERSITY OF THE FREE STATE, 2011
HONOURS (PALAEONTOLOGY) UNIVERSITY OF THE WITWATERSRAND, 2008**

DECLARATION OF CONSULTANTS INDEPENDENCE

I, GARY TROWER, AM AN INDEPENDENT CONSULTANT AND HAVE NO BUSINESS, FINANCIAL, PERSONAL OR OTHER INTEREST IN THE PROPOSED DEVELOPMENT PROJECT IN RESPECT OF WHICH I WAS APPOINTED TO DO A PALAEONTOLOGICAL ASSESSMENT OTHER THAN FAIR REMUNERATION FOR WORK PERFORMED. THERE ARE NO CIRCUMSTANCES WHATSOEVER THAT COMPROMISE THE OBJECTIVITY OF THIS SPECIALIST PERFORMING SUCH WORK.

A handwritten signature in black ink, appearing to read 'G. Trower', with a large, stylized flourish above the name.

GARY TROWER
