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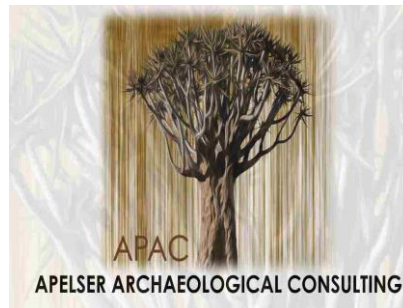
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APAC020/57

2021-07-06

To: Mr. Andrew Salomon
South African Heritage Resource Agency
P O Box 4637
Cape Town
8000

RE: MOTIVATION FOR PHASE 1 HERITAGE IMPACT ASSESSMENT (HIA) EXEMPTION FOR UNIVERSITY OF PRETORIA ONDERSTEPSPOORT VETERINARY CAMPUS INCINERATOR DECOMMISSIONING

APelser Archaeological Consulting cc (APAC cc) was appointed by EarthnSky Environmental to provide a Motivation for Exemption from a Phase 1 HIA for the University of Pretoria's application to decommission their Onderstepoort Veterinary Campus Incinerator. The incinerator and study site is located on the Remaining Extent of Portion 0 of the farm Onderstepoort 478JR, approximately 10km to the north of the Pretoria CBD, in the Tshwane Metropolitan Municipality, Gauteng Province.

Background to the Project

EarthnSky Environmental was appointed to undertake an application for the University of Pretoria's Onderstepoort Veterinary Campus Incinerator's Decommissioning. As part of this study SAHRA was informed by The University of Pretoria in early 2021 of their intention with the project entailing the ***"decommissioning and demolishing of the University of Pretoria's Onderstepoort Incinerator. The incinerator was constructed prior to 1989 (the exact date is unknown) and uses outdated technology. The outdated technology does not ensure compliance with the Maximum Emission Rates as stipulated in the incinerator's Atmospheric Emission Licence (Licence Number: 9/16/1/2/38/R; issued on 12 August 2019). It is financially more feasible for the University of Pretoria to dispose of the infectious waste generated at Onderstepoort, when compared to the costs that would be involved in operating the incinerator in future. Operational costs would include, for example, air quality monitoring costs and costs to replace/upgrade abatement technology on the incinerator to enable compliance to the Maximum Emission Rates. The applicant therefore wishes to rather decommission and demolish its Onderstepoort incinerator. An underground diesel tank linked to the incinerator will also be removed. The diesel tank is owned and managed by TOTAL and has a capacity of 8m3. The removal will be managed by TOTAL and they will be responsible for any rehabilitation of contaminated soil in the vicinity of the tank"***.

AJ Pelser BA (UNISA), BA (Hons) (Archaeology) [WITS], MA (Archaeology) [WITS]

In their response letter dated to the 3rd of February 2021 (**Case ID# 15705**) SAHRA indicated the following:

“In terms of the National Heritage Resources Act, (Act No. 25 of 1999), heritage resources, including archaeological or palaeontological sites over 100 years old, graves older than 60 years, structures older than 60 years are protected. They may not be disturbed without a permit from the relevant heritage resources authority. This means that prior to development it is incumbent on the developer to ensure that a Heritage Impact Assessment (HIA) is done. This must include the archaeological component (Phase 1) and any other applicable heritage components. Appropriate (Phase 2) mitigation, which involves recording, sampling and dating sites that are to be destroyed, must be done as required.

The quickest process to follow for the archaeological component is to contact an accredited specialist (see the web site of the Association of Southern African Professional Archaeologists: www.asapa.org.za) to provide a Phase 1 Archaeological Impact Assessment Report. This must be done before any large development takes place. The Phase 1 Impact Assessment Report will identify the archaeological sites and assess their significance. It should also make recommendations (as indicated in Section 38) about the process to be followed. For example, there may need to be a mitigation phase (Phase 2) where the specialist will collect or excavate material and date the site. At the end of the process the heritage authority may give permission for destruction of the sites.

Where bedrock is to be affected, or where there are coastal sediments, or marine or river terraces and in potentially fossiliferous superficial deposits, a Palaeontological Desk Top study must be undertaken to assess whether or not the development will impact upon palaeontological resources, or at least a letter of exemption from a Palaeontologist is needed to indicate that this is unnecessary. If the area is deemed sensitive, a full Phase 1 Palaeontological Impact Assessment will be required and if necessary a Phase 2 rescue operation might be necessary. Please note that a nationwide fossil sensitivity map is available on the South African Heritage Resources Information System (SAHRIS) to assist applicants with determining the fossil sensitivity of a study area.

If the property is very small or disturbed and there is no significant site the heritage specialist may choose to send a letter to the heritage authority motivating for exemption from having to undertake further heritage assessments. Any other heritage resources that may be impacted such as built structures over 60 years old, sites of cultural significance associated with oral histories, burial grounds and graves, graves of victims of conflict, and cultural landscapes or viewsapes must also be assessed”

Last mentioned option was decided on for this project which entailed desktop research as part of the assessment.

Relevant Legislation

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. These are the National Heritage Resources Act (Act No. 25 of 1999) and the National Environmental Management Act (Act No.107 of 1998), as amended.

The National Heritage Resources Act

According to the above-mentioned act the following is protected as cultural heritage resources:

- a. Archaeological artefacts, structures and sites older than 100 years;
- b. Ethnographic art objects (e.g. prehistoric rock art) and ethnography;
- c. Objects of decorative and visual arts;
- d. Military objects, structures and sites older than 75 years;
- e. Historical objects, structures and sites older than 60 years;
- f. Proclaimed heritage sites;
- g. Grave yards and graves older than 60 years;
- h. Meteorites and fossils; and
- i. Objects, structures and sites of scientific or technological value.

The National Estate includes the following:

- a. Places, buildings, structures and 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 features of cultural significance;
- e. Geological sites of scientific or cultural importance;
- f. Sites of Archaeological and palaeontological importance;
- g. Graves and burial grounds;
- h. Sites of significance relating to the history of slavery; and
- i. Movable objects (e.g. archaeological, palaeontological, meteorites, geological specimens, military, ethnographic, books etc.).

A Heritage Impact Assessment (HIA) is the process to be followed in order to determine whether any heritage resources are located within the area to be developed as well as the possible impact of the proposed development thereon. An Archaeological Impact Assessment (AIA) only looks at archaeological resources.

According to Section 38 (1) of the Act, an HIA must be done under the following circumstances:

- a. The construction of a linear development (road, wall, power line, canal etc.) exceeding 300m in length.
- b. The construction of a bridge or similar structure exceeding 50m in length.
- c. Any development or other activity that will change the character of a site and exceed 5 000m² or involve three or more existing erven or subdivisions thereof.
- d. Re-zoning of a site exceeding 10 000m².
- e. Any other category provided for in the regulations of the SAHRA or a provincial heritage authority.

Description of the Study Area

The incinerator and study site is located on the Remaining Extent of Portion 0 of the farm Onderstepoort 478JR, approximately 10km to the north of the Pretoria CBD, in the Tshwane Metropolitan Municipality, Gauteng Province. It is situated at the University of Pretoria's Onderstepoort Veterinary Campus.

The incinerator is located at **S25°38'54.83 E28°10'43.11**.

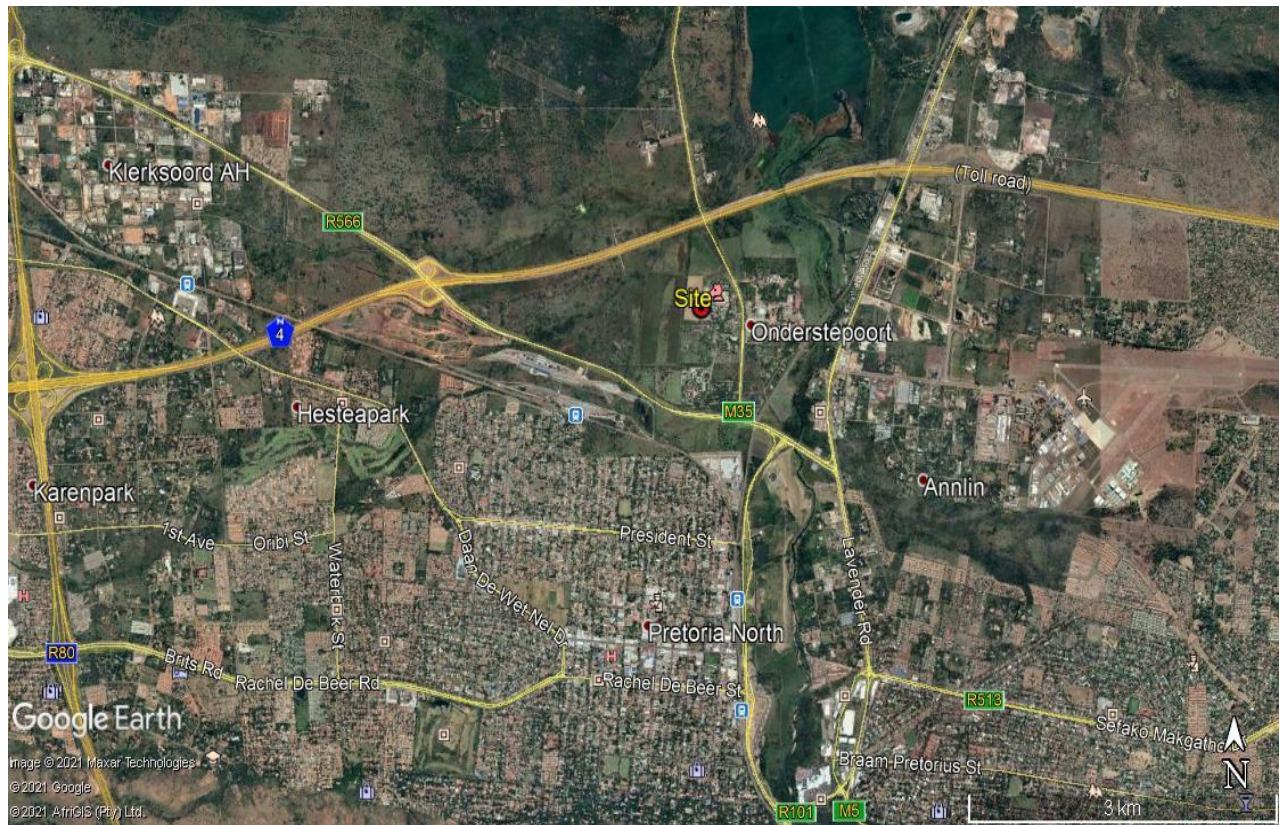


Figure 1: General location of the site (Google Earth 2021).



Figure 2: Closer view of the location of the site (Google Earth 2021).

Results of Desktop Research

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools. In South Africa the Stone Age can be divided into three periods. It is however important to note that dates are relative and only provide a broad framework for interpretation. A basic sequence for the South African Stone Age (Lombard et.al 2012) is as follows:

Earlier Stone Age (ESA) up to 2 million – more than 200 000 years ago

Middle Stone Age (MSA) less than 300 000 – 20 000 years ago

Later Stone Age (LSA) 40 000 years ago – 2000 years ago

It should also be noted that these dates are not a neat fit because of variability and overlapping ages between sites (Lombard et.al 2012: 125).

No known Stone Age sites or artefacts are present in the area. The closest known Stone Age sites are those of the well-known Early Stone Age site at Wonderboompoort and a number of sites in the Magaliesberg area (Bergh 1999: 4). Stone Age people occupied the larger area since earliest times. This, for example, is evidenced by the site they used to occupy in the Wonderboom neck, probably dating back as much as 200 000 years ago. Tools derived from these people's habitation of the area are found in a number of areas close to the Apies River to the west and the Hartebeesspruit to the east. Middle and Late Stone Age people also roamed over the area, sheltering close to the river banks, with the latter group usually settling in caves and rock shelters (Van Schalkwyk 2013: 7). If any Stone Age artefacts are to be found in the area then it would more than likely be single, out of context, stone tools. Urbanization over the last 150 years or so would have destroyed any evidence if indeed it did exist. Huffman, in a Phase 1 AIA report he did for a township development close to the study area, does indicate the existence of single and small clusters of MSA tools and flakes in the area (Huffman 2003: 2-3).

The Iron Age is the name given to the period of human history when metal was mainly used to produce metal artefacts. In South Africa it can be divided in two separate phases (Bergh 1999:96-98), namely:

Early Iron Age (EIA) 200 – 1000 A.D

Late Iron Age (LIA) 1000 – 1850 A.D.

Huffman (2007: xiii) however indicates that a Middle Iron Age should be included. His dates, which now seem to be widely accepted in archaeological circles, are:

Early Iron Age (EIA) 250 – 900 A.D.

Middle Iron Age (MIA) 900 – 1300 A.D.

Late Iron Age (LIA) 1300 – 1840 A.D.

No Early Iron Age sites are known in the larger geographical area of Pretoria, while Later Iron Age sites do occur in the Pretoria area (Bergh 1999: 7). The closest known LIA sites are at Silver Lakes and near Mamelodi on the farm Hatherley (Van Schalkwyk et.al 1996). These sites are related to the Manala Ndebele (Bergh 1999: 10) who was present in the area at the time when the first Europeans arrived here during the mid-19th century. Iron Age occupation of the area did not start much before the 1500s. By that time, groups of Tswana and Ndebele speaking people were moving into the area, occupying the different hills and outcrops, using the ample resources such as grazing, game and metal ores.

During the early decades of the 19th century, the Tswana- and Ndebele-speakers were dislodged by the Matabele of Mzilikazi. Internal strife caused Mzilikazi, a general of King Shaka, and his followers to move away from the area between the Thukela and Mfolozi River (KwaZulu- Natal). Eventually, after a sojourn in the Sekhukhuneland area, followed by a short stay in the middle reaches of the Vaal River, they settled north of the Magaliesberg. One of three main settlements established by them, eKungwini, was on the banks of the Apies River, just north of Wonderboompoort. However, no remains of this settlement have ever been identified. It was during the Matabele's stay along the Apies River that the first white people entered the area: travellers and hunters such as Cornwallis Harris and Andrew Smith, traders Robert Schoon and Andrew McLuckie, and missionaries James Archbell and Robert Moffat. It is known from oral

history the Robert Schoon sent Mzilikazi huge quantities of glass trade beads, rather than the guns that the latter coveted so much (Van Schalkwyk 2013: 7-8).

No Iron Age sites or material are located in the study area, with the closest known site located at the Wonderboom Nature Reserve a few kilometres to the south of the study area (Huffman 2003: 2).

The historical age started with the first recorded oral histories in the area. It includes the moving into the area of people that were able to read and write. The first Europeans to move through and into the area were the groups of Schoon and McLuckie and the missionaries Archbell and Moffat in 1829 (Bergh 1999: 12). They were followed by others such as Andrew Smith (1835), Cornwallis Harris (1836) and David Livingstone in 1847 (Bergh 1999: 13). These groups were closely followed by the Voortrekkers after 1844 and Pretoria was established in 1855 (Bergh 1999: 14-17). White settlers started to occupy huge tracts of land, claiming it as farms after the late 1840s. Of these, some of the earliest were Lucas Bronkhorst (Groenkloof), David Botha (Hartebeestpoort – Silverton) and Doors Erasmus (Wonderboom). With the establishment of Pretoria (1850) services such as roads, started to develop. An increase in population also demanded more food, which stimulated development of farming on the alluvial soils on the banks of the Apies River, close to the water (Van Schalkwyk 2013: 8).

The information below was taken from the Final Basic Assessment Report on the Decommissioning of the University of Pretoria's Onderstepoort Incinerator (EarthnSky Environmental June 2021 p.13-14)

“The Faculty of Veterinary Science, located at the Onderstepoort Campus, is one of 46 veterinary faculties in Africa and the only one of its kind in South Africa. It is the second oldest faculty in Africa, dating back to the early 1920’s. With the exception of the faculties in Khartoum (Sudan, 1938), and Cairo (Egypt, 1946), all the other African faculties were established after 1960. The Faculty has five academic Departments responsible for teaching, research and service rendering. These activities are further facilitated by well-developed support services provided by an academic hospital, various departmental laboratories, general and student administrative sections, a teaching animal unit and a number of research centres. The Veterinary Academic Hospital provides state of the art facilities for the clinical departments and is the focus of the Faculty’s service-rendering activities to the immediate community and also a national referral facility (<https://www.up.ac.za/faculty-of-veterinary-science/article/16343/about-veterinary-science>).

The Faculty of Veterinary Science has an incinerator (the Onderstepoort Incinerator) that is used to incinerate animal carcasses, contaminated bedding (shavings) and contaminated material (paper and DNA packaging) generated by the various Veterinary Departments located on the Onderstepoort Campus. The waste is stored in sealed containers for bio-security reasons and is weighed before being incinerated. After incineration, the remaining ash is removed from the incinerator (approximately 20kg of ash) and is placed into nearby waste skips. The skips and ash are removed by a waste contractor for disposal off-site on a regular basis.

The incineration of these waste types used to occur once a day, mainly in the morning. Batch incineration of mixed waste (800kg animal carcasses together with 250kg of shavings) for a period of 3 to 4 hours was regular practice. Currently, the incinerator is only operated for maintenance purposes. The applicant has a contract with a waste management service provider for the removal of the previously listed waste streams. The contractor removes the waste streams to a licensed waste management facility where the waste is incinerated.

Existing buildings on site

The following infrastructure is currently present at the project site:

- **The Onderstepoort incinerator;**
- **A brick-walled enclosure with palisade gates (within which the incinerator is located);**
- **An 8m³ underground diesel tank; and**
- **A fuel dispensing station (fuel pump no longer in place).**

The project entails the decommissioning and demolishing of the University of Pretoria's Onderstepoort Incinerator. The incinerator was constructed prior to 1989 (the exact date is unknown) and uses outdated technology. The outdated technology does not ensure compliance with the Maximum Emission Rates as stipulated in the incinerator's Atmospheric Emission Licence (Licence Number: 9/16/1/2/38/R; issued on 12 August 2019). It is financially more feasible for the University of Pretoria to dispose of the infectious waste generated at Onderstepoort, when compared to the costs that would be involved in operating the incinerator in future. Operational costs would include, for example, air quality monitoring costs and costs to replace/upgrade abatement technology on the incinerator to enable compliance to the Maximum Emission Rates. The applicant therefore wishes to rather decommission and demolish its Onderstepoort incinerator.

The proposed decommissioning will entail the dismantling and demolishing of the incinerator itself and the removal of the dismantled parts from site. Material that can be re-cycled or re-used will be provided to suitable facilities for re-use or recycling. Remaining material will be disposed at an adequately licensed landfill site/waste management facility. The brick-walled enclosure within which the incinerator is currently located as well as the concrete floor of the enclosure will also be removed. The area will then be converted into a landscaped garden. A freezer at the Pathology Department of the Onderstepoort Complex (Pathology Building Onderstepoort; Room 1-1) will be converted and used for the storage of the waste generated by the Veterinary Science activities at the Onderstepoort Campus prior to the waste being removed from site by a waste contractor. The freezer that will be used for the storage of waste has the following dimensions: 3.16m x 4.83m x 2.9m (44.26m³). The small size (less than 80m³) of the waste storage container means that it will not require a Registration application in terms of the National Norms and Standards for the Storage of Waste (GN No. 926 of 29 November 2013).

An underground diesel tank linked to the incinerator will also be removed. The diesel tank is owned and managed by TOTAL and has a capacity of 8m³. The removal will be managed by TOTAL and they will be responsible for any rehabilitation of contaminated soil in the vicinity of the tank (should any soil contamination be present)”

Although the exact age of the current incinerator is not known, a search in the National Archives of South Africa (NASA) database found some documents (See References) dating to between 1947 and 1953, referring to the Onderstepoort Laboratory By-Products Plant and erection of an incinerator. The incinerator itself is therefore older than 60 years of age and is protected by the National Heritage Resources Act. From photographs of the site provided by the client the structure around it seems to be fairly recent in age.

A search in the University of Pretoria Archives by Me. Ria van der Merwe (Assistant Archivist) found some information. According to this (in **Ad Destinatum I**) “the main building was completed in 1952 and another group of buildings, namely the Anatomy block, a building for Medicine, Surgery and Physiology as well as stables for large and small animals, were completed in 1955. There is no specific mention of an incinerator to be built, merely buildings and facilities for Anatomy, Physiology and Pharmacology, Medicine and Pathology and finally Surgery. However, in a report of 1953 on the construction of a post mortem hall it is made clear that it would not be possible to move carcasses from the faculty to the institute and vice versa due to quarantine regulations. Therefore a facility to deal with the carcasses would have to be built on the faculty grounds”.



Figure 3: View of the Incinerator site and building.



Figure 4: View of the Incinerator inside the building.



Figure 5: Closer view of the Incinerator and the structure housing it.



Figure 6: The building housing the incinerator is constructed of fairly modern bricks.



Figure 7: Another view of the incinerator.

It can therefore be assumed that the incinerator was constructed somewhere between 1952 and 1955. As the incinerator itself is older than 60 years of age, and forms part of the history of the UP Veterinary Campus and activities at Onderstepoort, it has some Cultural Heritage Significance. It is however old and uses out-dated technology that does not comply with the Maximum Emission Rates as stipulated in the incinerator's Atmospheric Emission Licence (Licence Number: 9/16/1/2/38/R; issued on 12 August 2019). From a cost point of view it is also financially more feasible for the University of Pretoria to dispose of the infectious waste generated at Onderstepoort, when compared to the costs that would be involved in operating the incinerator in future. Based on these facts it is therefore proposed to allow the decommissioning and demolition of the incinerator. The building housing the incinerator itself is not of any heritage significance and can be demolished.

As the incinerator is older than 60 years of age and is protected by the National Heritage Resources Act, the following is however recommended:

1. that the history of the incinerator and the role it played at the Onderstepoort Campus be recorded and that a plaque displaying this be erected at the Site for future generations. The facility itself will not add value to future generations.

Finally, from a Cultural Heritage point of view the Incinerator Site can be demolished and the proposed Decommissioning of the site be allowed to continue, Exemption from a Full Phase 1 HIA should also be provided to the applicant.

Conclusions & Recommendations

APelser Archaeological Consulting cc (APAC cc) was appointed by EarthnSky Environmental to provide a Motivation for Exemption from a Phase 1 HIA for the University of Pretoria's application to decommission their Onderstepoort Veterinary Campus Incinerator. The incinerator and study site is located on the Remaining Extent of Portion 0 of the farm Onderstepoort 478JR, approximately 10km to the north of the Pretoria CBD, in the Tshwane Metropolitan Municipality, Gauteng Province.

Although the exact age of the current incinerator is not known, a search in the National Archives of South Africa (NASA) database found some documents dating to between 1947 and 1953, referring to the Onderstepoort Laboratory By-Products Plant and erection of an incinerator. Information from the UP Archives found some information suggesting that the incinerator was constructed between 1952 and 1955. The incinerator itself is older than 60 years of age and is protected by the National Heritage Resources Act. From photographs of the site provided by the client the structure around it seems to be fairly recent in age.

As the incinerator is older than 60 years of age and is protected by the National Heritage Resources Act, the following is recommended:

1. that the history of the incinerator and the role it played at the Onderstepoort Campus be recorded and that a plaque displaying this be erected at the Site for future generations.

Finally, from a Cultural Heritage point of view the Incinerator Site can be demolished and the proposed Decommissioning of the site be allowed to continue, Exemption from a Full Phase 1 HIA should also be provided to the applicant.

The subterranean nature of cultural heritage resources (including low stone-packed or unmarked graves) should always be taken into consideration. Should any previously unknown or invisible sites, features or material be uncovered during any development actions then an expert should be contacted to investigate and provide recommendations on the way forward.

Should there be any questions or comments on the contents of this document please contact the author as soon as possible.

Kind regards



Anton Pelsers

References

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DEPOT: SAB
SOURCE: PWD
TYPE: LEER
VOLUME: NO 1582
SYSTEM: 01
REFERENCE; 58/5410
PART: 1
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STARTING: 1947
ENDING: 1953