



## PROPOSED NEW 15MI CONCRETE RESERVOIR, LENASIA SOUTH

### Heritage Impact Assessment

November 2014



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## EXECUTIVE SUMMARY

Nemai Consulting has been appointed by Johannesburg Water to compile an Environmental Screening Report for the proposed construction of a 15Ml concrete reservoir in Lenasia South in Gauteng Province. The new reservoir will be located along the north western boundary of the existing Lenasia Reservoir.

The area in which the proposed reservoir will be built is close to a one hectare (1 ha) in size. Due to its size, the development triggers Section 38 of the National Heritage Resources Act 1999 (Act No 25 of 1999) that states the following:

*“(1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—*

*(c) any development or other activity which will change the character of a site-*

*(i) exceeding 5 000 m<sup>2</sup> in extent*

*must notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*

A site visit of the area where the proposed reservoir is to be built was conducted on 20 November 2014. The area is situated in an undeveloped and relatively undisturbed area. Disturbance to the site can be attributed to its location close to the existing reservoir and an existing power line that is situated close to its north eastern boundary. In addition, geotechnical test pits had been sunk at the site for the geotechnical assessment for the project. The topography of the reservoir site is relatively flat although there are some ridges to the north of the site and some rocky outcrops on the project site.

No visible heritage resources including archaeological material or sites were found during the site inspection. Due to the undisturbed nature of the site, it is possible that once excavations occur, sub-surface archaeological remains may be found but there was no surface indication of this. Mitigation measures if such finds are made are provided in the body of this report.

The project area falls in a high fossil sensitivity zone and therefore a desktop paleontological impact assessment must be carried out prior to construction. Depending on the outcome of the desktop study a field assessment may be required if there is a high possibility that fossils will be found on the site of the proposed development

If significant fossils are found during the field assessment, then a permit will be required from Provincial Heritage Resources Agency – Gauteng (PHRA-G) or the South African Heritage Resources Agency (SAHRA) to either remove or destroy the fossils.

The report will be submitted to the PHRA-G for comment as per the requirements of the National Heritage Resources Act 1999.

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**AUTHOR DETAILS**

<b>Verification</b>	<b>Name</b>	<b>Qualification</b>	<b>Professional Registration</b>
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## 1. INTRODUCTION

Nemai Consulting has been appointed by Johannesburg Water to compile an Environmental Screening Report for the proposed construction of a 15Ml concrete reservoir in Lenasia South in Gauteng Province. The new reservoir will be located along the north western border of the existing Lenasia Reservoir.

The area in which the proposed reservoir will be built is close to one hectare (1 ha) in size. Due to its size, the development triggers Section 38 of the National Heritage Resources Act 1999 (Act No 25 of 1999) that states the following:

*“(1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as—*

*(c) Any development or other activity which will change the character of a site-*

*(i) Exceeding 5 000 m<sup>2</sup> in extent*

*must notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*

The heritage impact assessment was undertaken to assess the area where the new reservoir is to be constructed in order to ascertain whether heritage resources would be impacted by the proposed development. If heritage resources are impacted the report will provide mitigation measures to either avoid or limit the impact.

According to Section 3 of the National Heritage Act 25 of 1999, heritage resources include 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 natural features of cultural significance;
- (e) geological sites of scientific or cultural importance;
- (f) archaeological and paleontological sites;
- (g) graves and burial grounds, including—
  - (i) ancestral graves;
  - (ii) royal graves and graves of traditional leaders;
  - (iii) graves of victims of conflict;
  - (iv) graves of individuals designated by the Minister by notice in the *Gazette*;

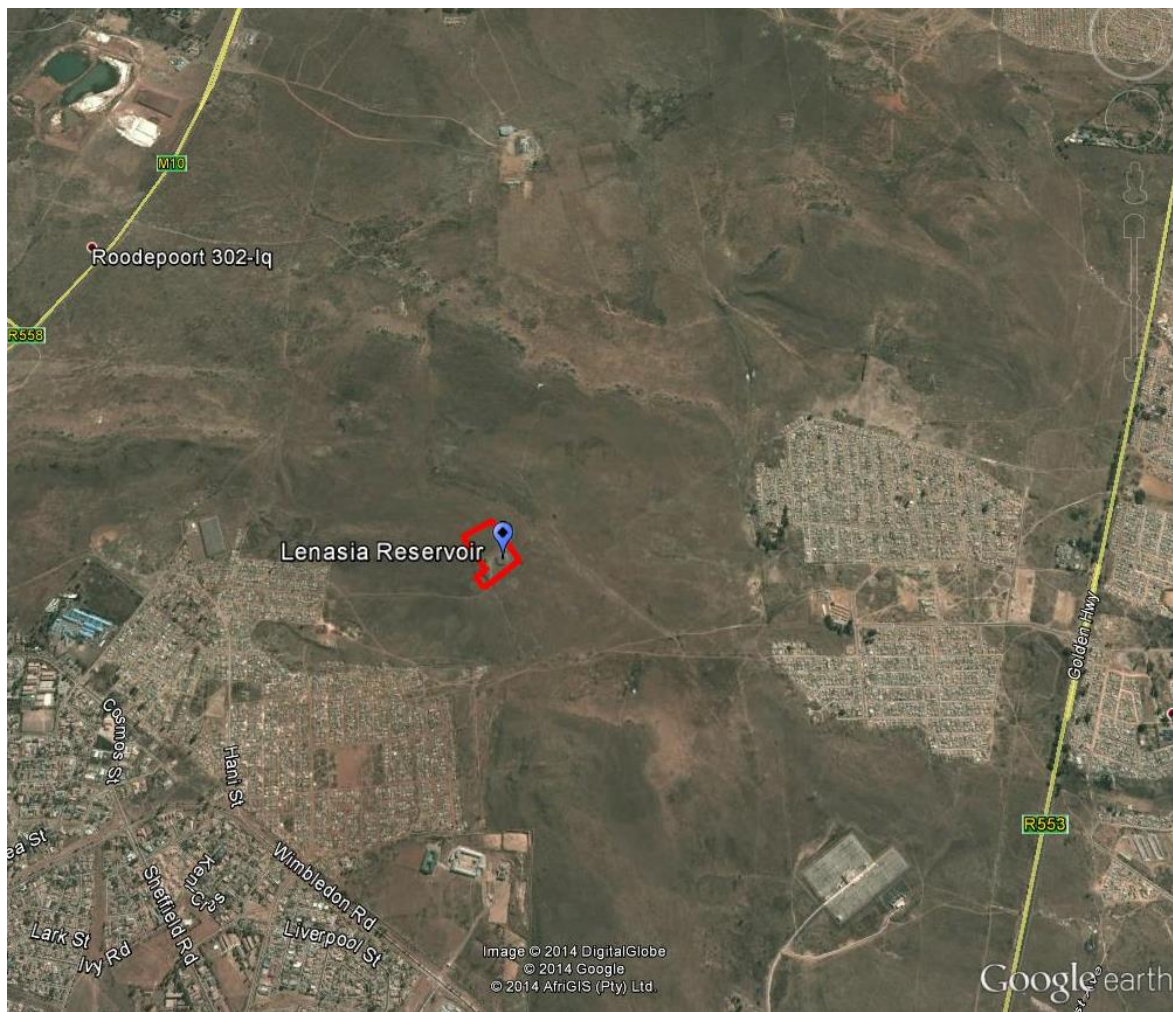
- (v) historical graves and cemeteries; and
- (vi) other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
- (h) sites of significance relating to the history of slavery in South Africa;
- (i) movable objects, including:
  - (i) objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
  - (ii) objects to which oral traditions are attached or which are associated with living heritage;
  - (iii) ethnographic art and objects;
  - (iv) military objects;
  - (v) objects of decorative or fine art;
  - (vi) objects of scientific or technological interest; and
  - (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section 1(xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).

## 2. TERMS OF REFERENCE (ToR)

- Undertake a Heritage Impact Assessment in order to determine the possible existence of archaeological and historical sites or features in the project area that could be impacted by the proposed activity
- Provide mitigation measures if it is found that the proposed new reservoir will have a negative impact on heritage resources.

## 3. LOCATION AND DESCRIPTION OF THE STUDY AREA

The proposed reservoir is situated in the township of Lenasia South which is situated in the City of Johannesburg Metropolitan Municipality in Gauteng Province (**Figure 1**). Lenasia is approximately 35km south west of the Johannesburg central business district. The new reservoir will be constructed on the North-western side of the existing Lenasia High Level (HL) reservoir (26°22'32.90"S; 27°51'52.93"E) (**Figure 2**). .



**Figure 1: Locality of proposed reservoir showing existing reservoir**

Formal and informal residential areas are found to the south west, south and east of the site.

## 4. METHODOLOGY

A survey of literature, including other Heritage/Archaeological Impact Assessment Reports completed in the area, was undertaken in order to place the development area in an archaeological and historical context. The sources consulted in this regard are indicated in the bibliography.

A site inspection was undertaken on 20 November 2014 where the site of the new reservoir was inspected by foot. Visibility was good with low grass cover and very few bushes. Power lines are situated close to the north eastern boundary of the site.



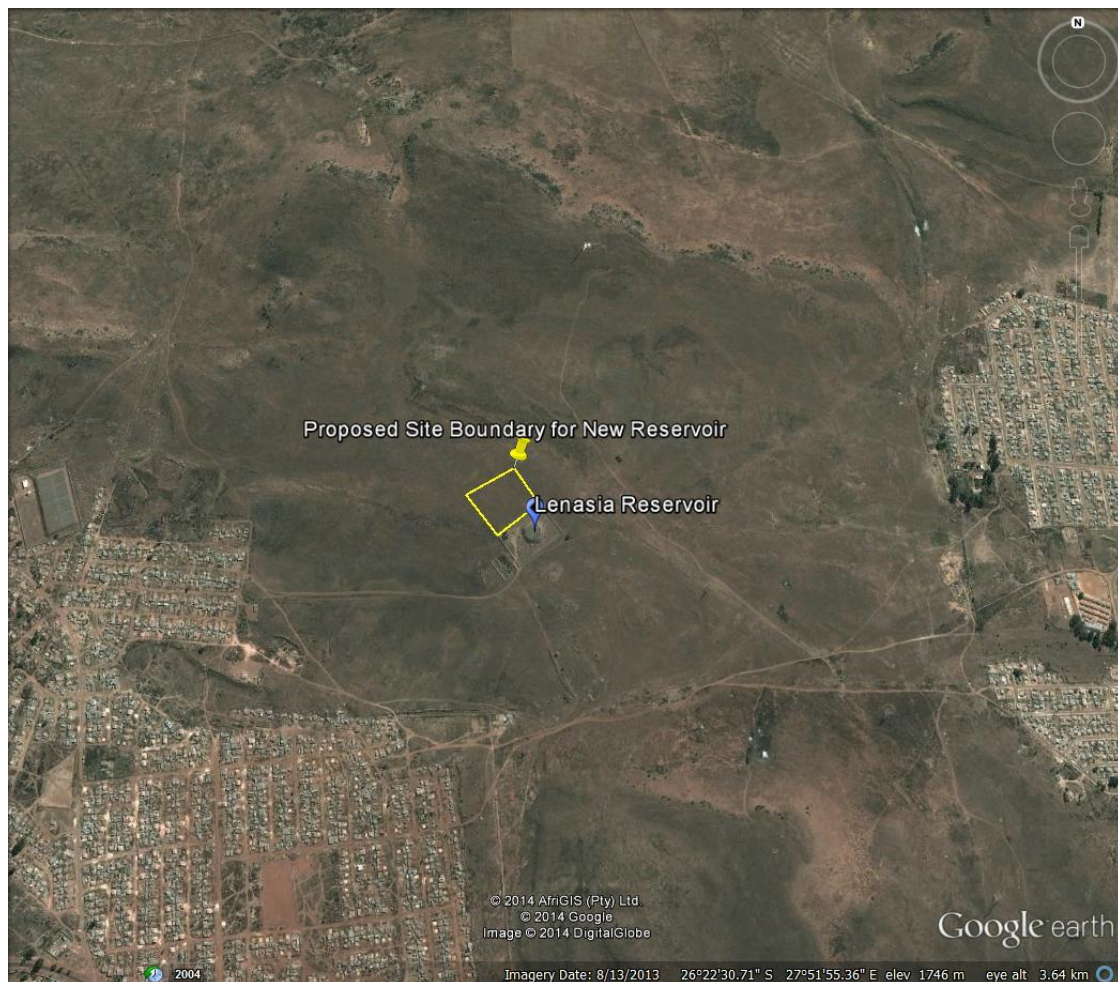


Figure 2: Aerial view of the proposed and existing reservoir sites

## 5. HISTORICAL BACKGROUND OF THE STUDY AREA

### Archaeological

The archaeology of Gauteng, like that of most of southern Africa covers several archaeological periods including the Stone Age (Early, Middle & Late) and the Iron Age and more recent historic archaeology (the last 500 years).

The Stone Age is a time period that dates between 2 million years ago (ya) to 2000 ya. Due to the vast character found within stone tools of this period, it was then divided into three phases; Early Stone Age (ESA), Middle Stone Age (MSA) and the Late Stone Age (LSA). ESA dates between 2 million ya and 2 00 000 (Pelser: 2009).

The Iron Age marks the early evidence of farming community in southern Africa. Due to technological discrepancies and settlement pattern within this period, it was divided into three.

The Early Iron Age (EIA) dates to AD 200 – 900, Middle Iron Age (MIA) dates to AD 900 – 1300, and the Late Iron Age (LIA) dates to AD 1300 – 1840 (Huffman 2007).

It is believed that Bantu peoples settled at the Soutpansberg Mountains in Limpopo, 400 kilometres north of Johannesburg, around 350 AD. In another wave of migration, people settled again in Limpopo, about 1 000 years ago. Another group reached the Soutpansberg in the Northern Province about 1300 AD and spread further into the Magaliesberg about 1400 AD. These settlements grew southwards to the Witwatersrand.<sup>1</sup>

These settlers were pastoralists and as pastures in the Magaliesberg were exploited, they moved into the grasslands of Johannesburg and beyond. According to Prins (2006), the Vaal Triangle which is situated south of Lenasia, is endowed with a prehistory that commenced c. 1.5 million years ago, when a succession of Stone Age cultures flourished in the fertile Vaal-Klip valley in the environs of the modern industrial city of Vereeniging. Stone artefacts scattered throughout the Vaal Triangle area, attest to these settlements.

According to Pelsler (2012), there is no indication of known Stone Age sites nor EIA sites in the greater geographical area although extensive stone-walled sites are known to exist on the Klipriviersberg north of the project site.

## **Historical<sup>2</sup>**

After the National Party won the 1948 election on an apartheid ticket, the government introduced new laws to separate race groups and deposit them in racially exclusive locations. The first step was the passing of the Group Areas Act in 1950.

Indians had been living in various suburbs in and around Johannesburg for decades. In towns such as Turffontein little pockets forming small communities had taken root, while in others there were larger communities, such as in Fordsburg, Doornfontein, Vrededorp, Sophiatown, Newclare and other areas.

The Nationalist Government at first proposed an alternative to re-housing the Indians by offering them a free passage back to India, but very few took up this offer. So the plan was for the Indians to be moved to a suburb populated only by Indians. The government at first offered the community the area today known as Robertsham, about 10km from the city, but community leaders refused

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<sup>1</sup> [http://www.joburg.org.za/index.php?option=com\\_content&task=view&id=292&Itemid=52](http://www.joburg.org.za/index.php?option=com_content&task=view&id=292&Itemid=52)

<sup>2</sup> <http://www.sahistory.org.za/indian-community-lenasia>

to be housed there. Eventually some accepted relocation to an area known as Lenz from where Lenasia developed.

Working class people in areas such as Sophiatown and Newlands, were evicted from their lodgings by the authorities, with no alternative accommodation, their possessions dumped onto pavements. The Reverend Sigamany, a prominent figure in the Indian community, arranged for these people to take up accommodation at a military barracks in Lenz.

The surrounding property was owned by a German national by the name of Lenz. He had acquired the property and settled there much earlier but he eventually sold the property to the government for housing developments.

At first, the entirety of Lenasia consisted of the people living at the military barracks. Later the government sold plots for around R60 each, in the first extension to be established. By 1955, the first school was established, the Lenasia High School. In 1958, Lenasia was proclaimed an Indian township under the Group Areas Act.

## 6. RESULTS AND DISCUSSION

### Archaeological

The area where the proposed reservoir will be built is largely undisturbed (see **Figs. 3 - 6**). No visible archaeological sites were discovered during the site assessment. Due to the undeveloped nature of the area, there is a possibility that once excavations start on the site, sub-surface archaeological remains or sites may be found. See Section 8 of this report regarding measures to be undertaken if such finds are made.

### Historical

No heritage resources such as buildings or structures of significance were noted during the site inspection as well as no graves or other historical sites were observed.





**Figure 3: North western boundary fence of existing reservoir and test pit excavation of new site**



**Figure 4: View of new reservoir site with existing reservoir in background**





**Figure 5: Rocky outcrop with existing reservoir and power lines in background**



**Figure 6: Proposed new reservoir site and power lines looking north**

## Palaeontological

The South African Heritage Resources Agency's (SAHRA) Fossil Sensitivity Map indicates that the project area is situated in an area of high palaeontological or fossil sensitivity. See Fig. 7 below. A palaeontological desk top study must be undertaken prior to construction and depending on the findings of the study a field assessment may be required if there is a high possibility that fossils will be destroyed by the proposed development.

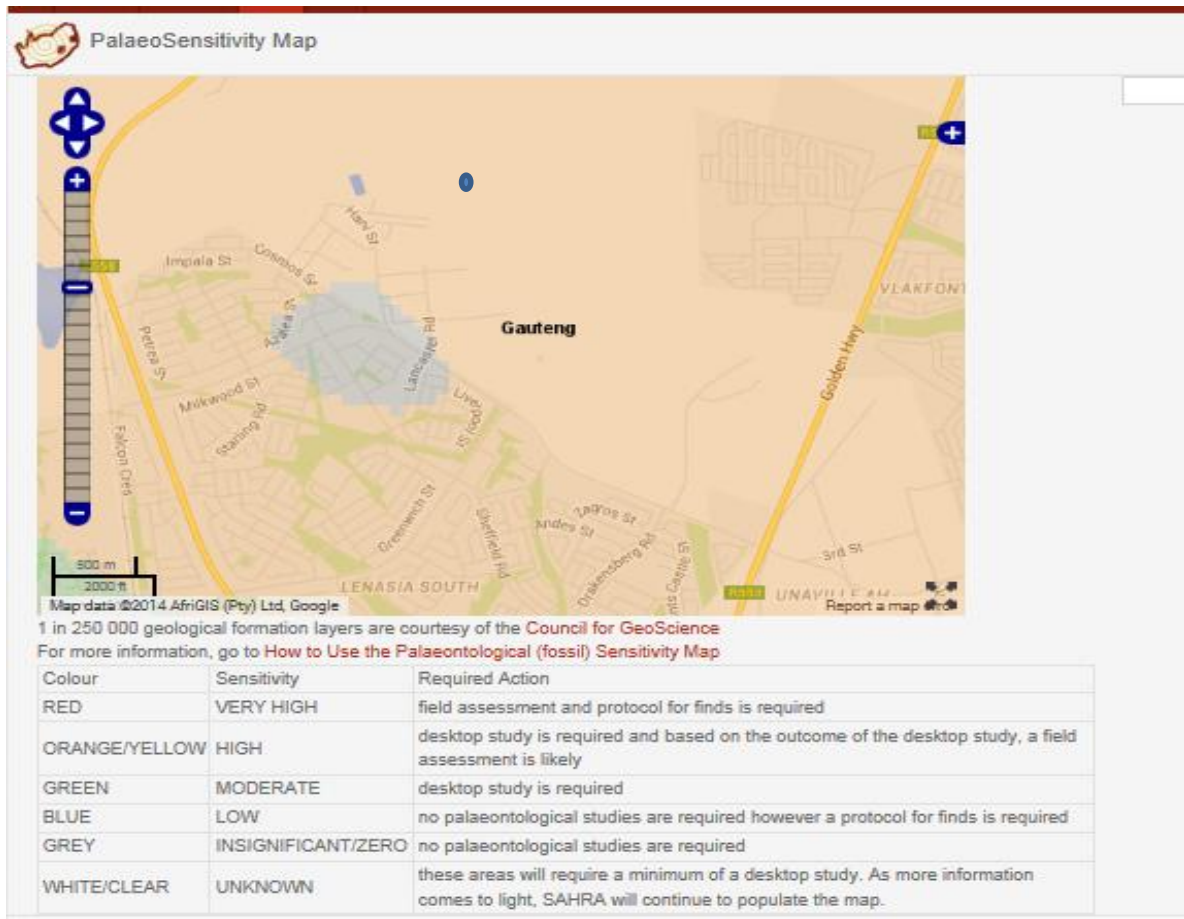


Figure 7: Fossil sensitivity of project area

## 7. RECOMMENDATION AND CONCLUSION

According to the assessment, there are no significant cultural heritage and archaeological sites on the project area. However, it should be noted that archaeological sites that may have remained undisturbed could be found beneath the surface once excavations take place hence care must be taken when the site is excavated. Mitigation measures described below deal with such chance finds.

Due to the high fossil sensitivity of the project area, a desktop palaeontological study must be undertaken in order to establish the existence of fossils on the project site. If recommended, a field survey may have to be undertaken. If significant fossils are found during this survey, then a permit will be required from Provincial Heritage Resources Agency – Gauteng (PHRA-G) or from SAHRA to either remove or destroy the fossils.

This report will be submitted to the PHRA-G for comment and approval as required per the National Heritage Resources Act of 1999.

## 8. MITIGATION MEASURES

- For any chance finds, all work will cease in the area affected and the Contractor will immediately inform the Project Manager. A registered heritage specialist must be called to site for inspection. The relevant heritage resource agency (PHRA-G) must be informed about the finding.
- The heritage specialist will assess the significance of the resource and provide guidance on the way forward.
- Permits to be obtained from PHRA-G if heritage resources are to be removed, destroyed or altered.
- All heritage resources found in close proximity to the construction area to be protected by a 10m buffer in which no construction can take place. The buffer to be highly visible to construction crews.
- Under no circumstances may any heritage material be destroyed or removed from site unless under direction of a heritage specialist.
- Should any remains be found on site that is potentially human remains, the South African Police Service should also be contacted.

## 9. REFERENCES

Huffman, T. N 2007. Handbook to the Iron Age. The archaeology of Pre-Colonial farming societies in southern Africa. University of KwaZulu Natal Press. South Africa.

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