

Archaetnos Culture & Cultural  
Resource Consultants  
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**A HERITAGE IMPACT ASSESSMENT STUDY FOR  
THE PROPOSED EXPANSION OF THE  
MEYERTON WASTE WATER TREATMENT WORKS NEAR MEYERTON  
MIDVAAL LOCAL MUNICIPALITY, GAUTENG**

For:

***THE MSA GROUP***

**REPORT: AE1166**

by:

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## **SUMMARY**

Archaetnos cc was requested by the MSA Group, on behalf of the Midvaal Local Municipality, in July 2011 to conduct a Heritage Impact Assessment for the proposed upgrade of the existing Meyerton Waste Water Treatment Works near Meyerton in the Midvaal Local Municipality of Gauteng. The reason for the upgrade is the fact that the Treatment Works has become overloaded in terms of its capacity to handle wastewater (domestic sewerage and industrial effluent).

As part of the study a Desktop Study was also undertaken in order to determine the cultural heritage (archaeological and historical) of the area.

As the area has been extensively disturbed over the years, any sites that would have been present have most likely been destroyed. No sites, features or objects of any cultural heritage significance were recorded during the survey and the proposed development can therefore continue, taking into consideration the recommendations put forward at the end of this report.

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## **1. INTRODUCTION**

Archaetnos cc was requested by the MSA Group, on behalf of the Midvaal Local Municipality, in July 2011 to conduct a Heritage Impact Assessment for the proposed upgrade of the existing Meyerton Waste Water Treatment Works near Meyerton in the Midvaal Local Municipality of Gauteng. The reason for the upgrade is the fact that the Treatment Works has become overloaded in terms of its capacity to handle wastewater (domestic sewerage and industrial effluent).

The area that will be impacted on by the proposed upgrade was indicated to us by the client and by employees of the Midvaal Local Municipality. The area is located within the boundaries of the existing Meyerton WWTW, and has therefore been extensively disturbed over the years.

## **2. TERMS OF REFERENCE**

The Terms of Reference for the survey were to:

1. Identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located in the area of the proposed tailings dam.
2. Assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value.
3. Describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions.
4. Propose suitable mitigation measures to minimize possible negative impacts on the cultural resources.
5. Review applicable legislative requirements.

## **3. CONDITIONS & ASSUMPTIONS**

The following conditions and assumptions have a direct bearing on the survey and the resulting report:

1. Cultural Resources are all non-physical and physical man-made occurrences, as well as natural occurrences associated with human activity. These include all sites, structure and artifacts of importance, either individually or in groups, in the history, architecture and archaeology of human (cultural) development. Graves and cemeteries are included in this.
2. The significance of the sites, structures and artifacts is determined by means of their historical, social, aesthetic, technological and scientific value in relation to their uniqueness, condition of preservation and research potential. The various aspects are not mutually exclusive, and the evaluation of any site is done with reference to any number of these aspects.

3. Cultural significance is site-specific and relates to the content and context of the site. Sites regarded as having low cultural significance have already been recorded in full and require no further mitigation. Sites with medium cultural significance may or may not require mitigation depending on other factors such as the significance of impact on the site. Sites with a high cultural significance require further mitigation (see **Appendix B**).
4. The latitude and longitude of any archaeological or historical site or feature, is to be treated as sensitive information by the developer and should not be disclosed to members of the public.
5. All recommendations are made with full cognizance of the relevant legislation.
6. It has to be mentioned that it is almost impossible to locate all the cultural resources in a given area, as it will be very time consuming. Developers should however note that the report should make it clear how to handle any other finds that might be found.

#### **4. LEGISLATIVE REQUIREMENTS**

Aspects concerning the conservation of cultural resources are dealt with mainly in two acts. These are the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998).

##### **4.1 The National Heritage Resources Act**

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

- a. Archaeological artifacts, 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
- i. Objects, structures and sites or scientific or technological value.

The national estate (see **Appendix D**) 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
- 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. 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 000m<sup>2</sup> or involve three or more existing erven or subdivisions thereof
- d. Re-zoning of a site exceeding 10 000 m<sup>2</sup>
- e. Any other category provided for in the regulations of SAHRA or a provincial heritage authority.

### **Structures**

Section 34 (1) of the mentioned act states that no person may demolish any structure or part thereof which is older than 60 years without a permit issued by the relevant provincial heritage resources authority.

A structure means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

Alter means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or the decoration or any other means.

### **Archaeology, palaeontology and meteorites**

Section 35(4) of this act deals with archaeology, palaeontology and meteorites. The act states that no person may, without a permit issued by the responsible heritage resources authority (national or provincial):

- a. destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site or any meteorite;
- b. destroy, damage, excavate, remove from its original position, collect or own any archaeological or palaeontological material or object or any meteorite;
- c. trade in, sell for private gain, export or attempt to export from the Republic any category of archaeological or palaeontological material or object, or any meteorite; or
- d. bring onto or use at an archaeological or palaeontological site any excavation equipment or any equipment that assists in the detection or recovery of metals or archaeological and palaeontological material or objects, or use such equipment for the recovery of meteorites.

- e. alter or demolish any structure or part of a structure which is older than 60 years as protected.

**The above mentioned may only be disturbed or moved by an archaeologist, after receiving a permit from the South African Heritage Resources Agency (SAHRA). In order to demolish such a site or structure, a destruction permit from SAHRA will also be needed.**

### **Human remains**

Graves and burial grounds are divided into the following:

- a. ancestral graves
- b. royal graves and graves of traditional leaders
- c. graves of victims of conflict
- d. graves designated by the Minister
- e. historical graves and cemeteries
- f. human remains

In terms of Section 36(3) of the National Heritage Resources Act, no person may, without a permit issued by the relevant heritage resources authority:

- a. destroy, damage, alter, exhume or remove from its original position of otherwise disturb the grave of a victim of conflict, or any burial ground or part thereof which contains such graves;
- b. destroy, damage, alter, exhume or remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority; or
- c. bring onto or use at a burial ground or grave referred to in paragraph (a) or (b) any excavation, or any equipment which assists in the detection or recovery of metals.

Human remains that are less than 60 years old are subject to provisions of the Human Tissue Act (Act 65 of 1983) and to local regulations. Exhumation of graves must conform to the standards set out in the **Ordinance on Excavations (Ordinance no. 12 of 1980)** (replacing the old Transvaal Ordinance no. 7 of 1925).

Permission must also be gained from the descendants (where known), the National Department of Health, Provincial Department of Health, Premier of the Province and local police. Furthermore, permission must also be gained from the various landowners (i.e. where the graves are located and where they are to be relocated) before exhumation can take place. Human remains can only be handled by a registered undertaker or an institution declared under the **Human Tissues Act (Act 65 of 1983 as amended)**.

Unidentified/unknown graves are also handled as older than 60 until proven otherwise.



## 4.2 The National Environmental Management Act

This act states that a survey and evaluation of cultural resources must be done in areas where development projects, that will change the face of the environment, will be undertaken. The impact of the development on these resources should be determined and proposals for the mitigation thereof are made.

Environmental management should also take the cultural and social needs of people into account. Any disturbance of landscapes and sites that constitute the nation's cultural heritage should be avoided as far as possible and where this is not possible the disturbance should be minimized and remedied.

## 5. METHODOLOGY

### 5.1 Survey of literature

A survey of literature was undertaken in order to obtain background information regarding the archaeology and history of the area. Sources consulted in this regard are indicated in the bibliography.

### 5.2 Field survey

The survey was conducted according to generally accepted HIA/AIA practices and was aimed at locating all possible objects, sites and features of cultural (archaeological and historical) significance in the area of proposed development. If required, the location/position of any site is determined by means of a Global Positioning System (GPS), while photographs are also taken where needed.

The survey was undertaken on foot and the area where the development will take place was indicated to is by an employee of the Midvaal Local Municipality.

### 5.3 Oral histories

People from local communities are sometimes interviewed in order to obtain information relating to the surveyed area. It needs to be stated that this is not applicable under all circumstances. When applicable, the information is included in the text and referred to in the bibliography. **In this case no oral histories were recorded or interviews undertaken.**

### 5.4 Documentation

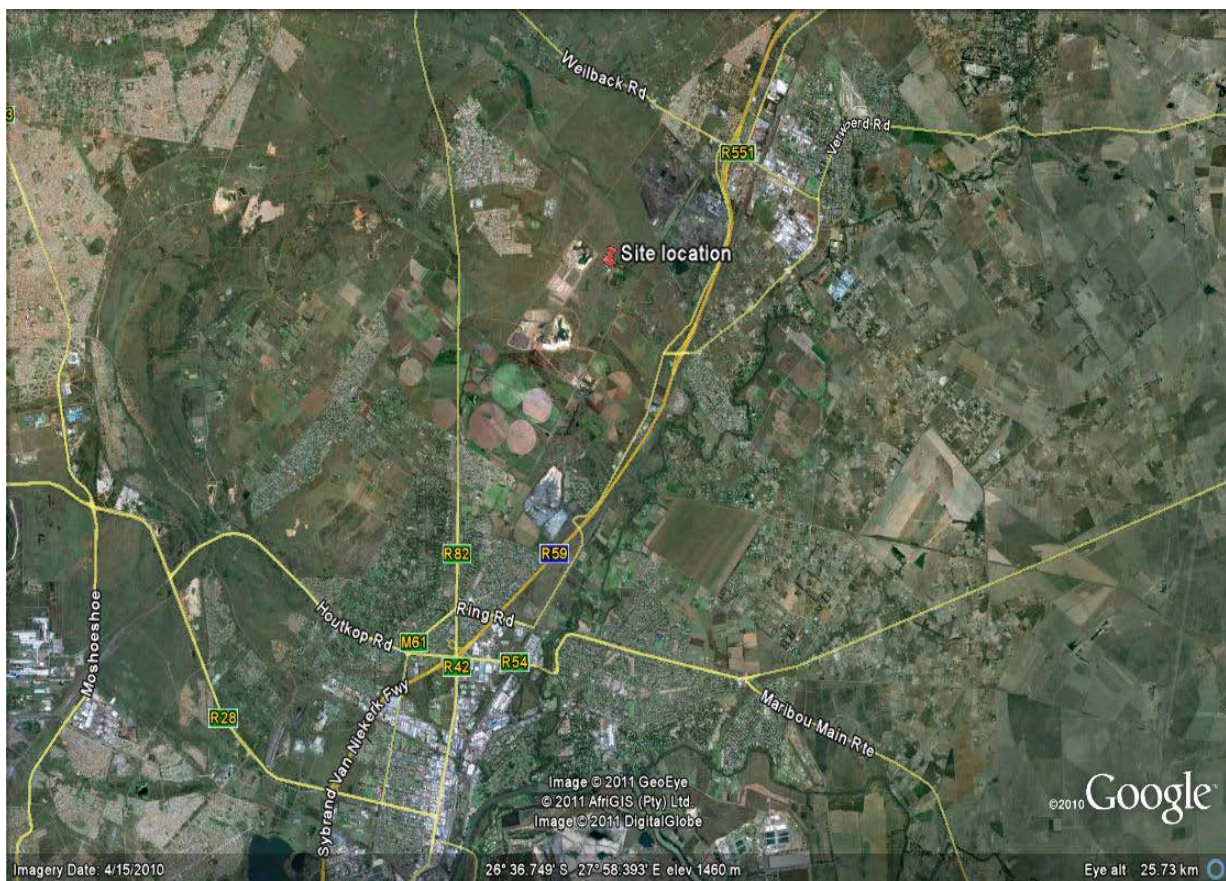
All sites, objects, features and structures identified are documented according to the general minimum standards accepted by the archaeological profession. Co-ordinates of individual localities are determined by means of the Global Positioning System (GPS).The information is added to the description in order to facilitate the identification of each locality.

## 6. DESCRIPTION OF THE AREA

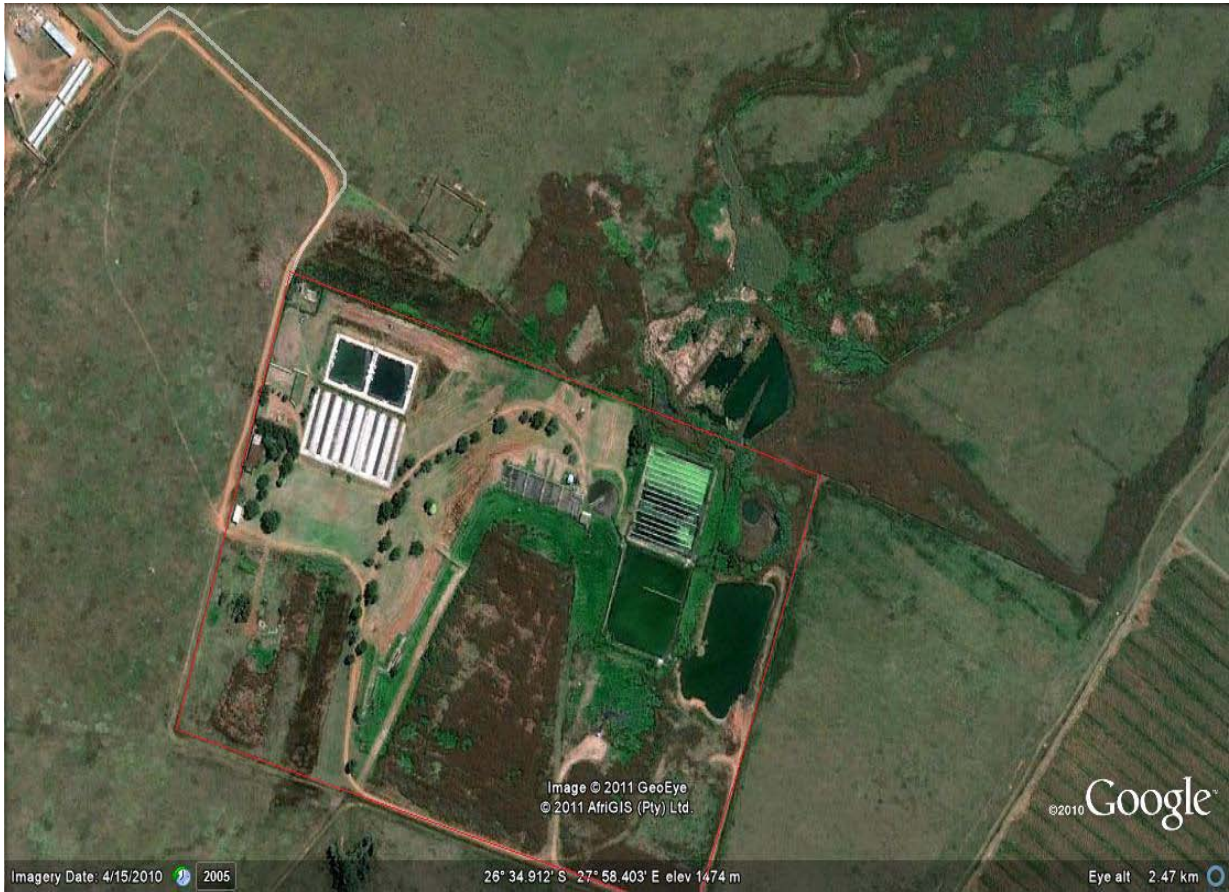
Meyerton is located around 15km north of Vereeniging in Gauteng, in the local municipality of Midvaal and the district municipality of Sedibeng. The Meyerton Waste Water Treatment Works is the largest of 3 WWTW's owned and managed by the Midvaal Local Municipality. It receives domestic sewage and industrial effluent via 2 pumpstations at Rothdene and Rust Ter Vaal.

The Works is located west of the Rothdene and Kookrus suburbs and south of Rust Ter Vaal and to the west of the R59 highway in the Klipriver catchment area.

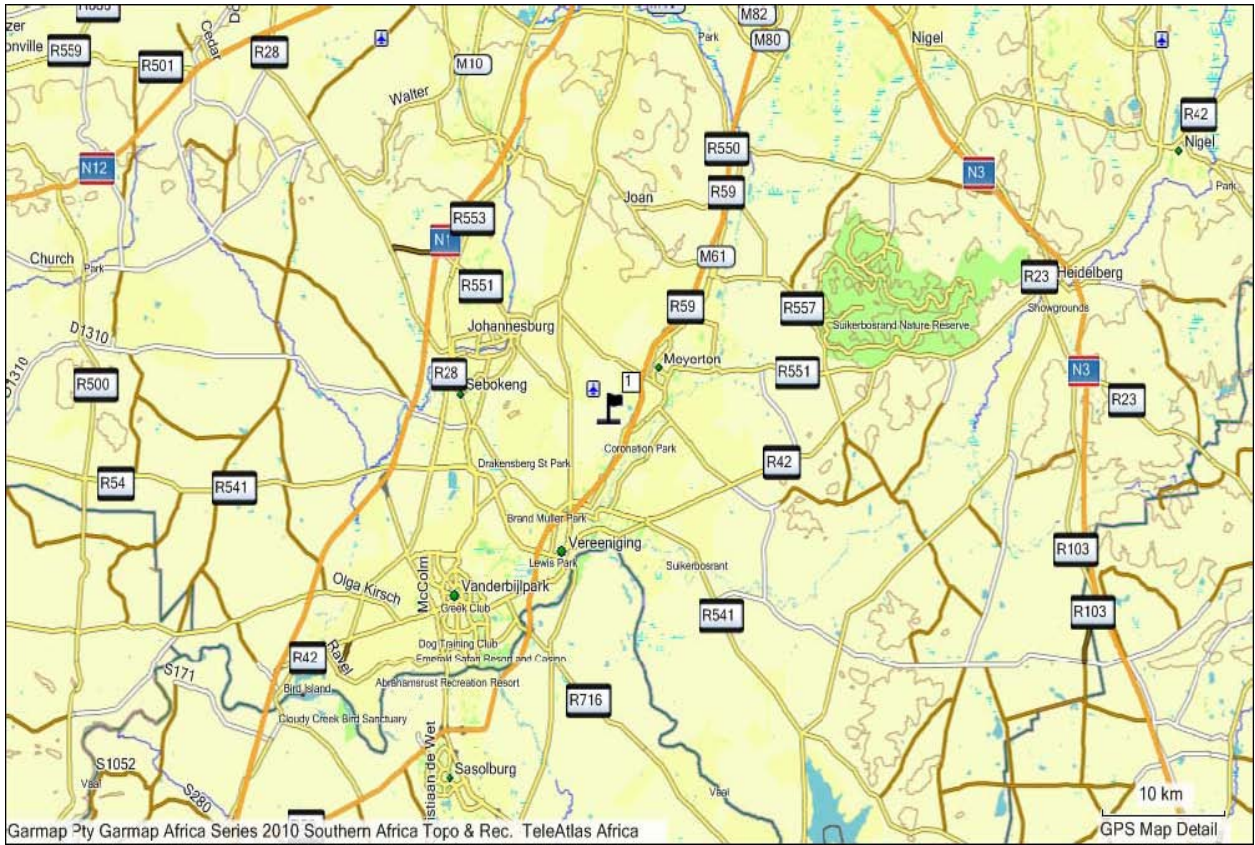
The area has been extensively disturbed in the past (original development of the Works as well as agricultural activities prior to it). Industrial developments, such as SAMANCOR has also impacted on the larger geographical area. A wetland forms part of the geographical features in and around the works.



**Figure 1: Location of site (courtesy Google Earth 2010).**



**Figure 2: Closer view of site. Note the general disturbed nature of the area, as well as wetland north of the works. The expansion will take place within the general boundaries of the works (courtesy Google Earth 2010).**



**Figure 3: Topographic location of site (1 on the map). Courtesy MapSource 2010.**



**Figure 4: View of area where new clarifier dam will be developed.**



**Figure 5: Photograph of existing dam.**



**Figure 6: Another view of the area.**



**Figure 7: View of wetland bordering facility.**



**Figure 8: Another view of the area.**

## **7. DISCUSSION**

Before the results of the survey are discussed, a general background to archaeology is given and the archaeology and history of the development area (and its broader geographical context) is given to provide a context for the findings made during the fieldwork.

### **7.1 Stone Age**

The Stone Age is the period in human history when lithic (stone) material was mainly used to produce tools (Coertze & Coertze 1996: 293). In South Africa the Stone Age can be divided in three periods. It is however important to note that dates are relative and only provide a

broad framework for interpretation. The division for the Stone Age according to Korsman & Meyer (1999: 93-94) is as follows:

Early Stone Age (ESA) 2 million – 150 000 years ago  
Middle Stone Age (MSA) 150 000 – 30 000 years ago  
Late Stone Age (LSA) 40 000 years ago – 1850 - A.D.

No Stone Age sites or occurrences (Stone Age artefacts) were identified during the survey. ESA and LSA sites, including rock art (engravings) are known from the larger geographical area near Vereeniging, Vanderbijlpark, Heidelberg and the Suikersbosrand Nature Reserve (Berg 1999: 4-5).

## 7.2 Iron Age

The Iron Age is the name given to the period of human history when metal was mainly used to produce artifacts (Coertze & Coertze 1996: 346). In South Africa it can be divided in two separate phases according to Van der Ryst & Meyer (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.

Once again no Iron Age sites were identified, and if they were present in the past they would have been completely destroyed by development and agricultural activities during the recent past. Late Iron Age settlements are known to occur near Vereeniging and Heidelberg (Berg 1999: 7).

## 7.3 Historical Age

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 or close to the area were the group of hunter and traveler Cornwallis Harris during 1836 (Berg 1999: 13). Meyerton was proclaimed a town in August 1892 (Berg 1999: 21; 147). During the Anglo-Boer War (1899-1902) there were two concentration camps situated near Meyerton – one for Whites and one for Blacks (Berg 1999: 54).

No sites, features or objects of any historical nature were recorded in the area where the proposed upgrade will take place.

**With the area already extensively disturbed in the past by various activities, including the development of the Waste Water Treatment Works and the infrastructure related to it, as well as previous agricultural activities (ploughing) any sites of cultural significance that could have existed here in the past would have been completely disturbed or**

**destroyed, with no physical evidence remaining visible. The original works were commissioned in 1977, and therefore all the buildings and structures on it would be less than 60 years of age. Should any of these buildings or structures be changed or destroyed as a result of the expansion no permission would therefore be required from a Heritage point of view.**

## **8. CONCLUSIONS AND RECOMMENDATIONS**

It can be concluded that the heritage study for the upgrade/expansion of the Meyerton Waste Water Treatment Works was conducted successfully. No sites, features or objects of any cultural heritage (archaeological or historical) significance were located or identified in the area. If any did exist here in the past, various activities, including the development of the original works in 1977 and previous agricultural activities (ploughing) would have destroyed all evidence. Therefore, from a Cultural Heritage perspective, the development can continue, taking cognizance of the following:

**It should be noted that the subterranean presence of archaeological and/or historical sites, features or artifacts are always a distinct possibility. Care should therefore be taken during any development activities that if any of these are accidentally discovered, a qualified archaeologist be called in to investigate.**

## **9. REFERENCES**

Aerial views of the area and the location of the development site: Google Earth

Topographic Location of sites: MapSource 2010

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## APPENDIX A

### Definition of terms:

Site: A large place with extensive structures and related cultural objects. It can also be a large assemblage of cultural artifacts, found on a single location.

Structure: A permanent building found in isolation or which forms a site in conjunction with other structures.

Feature: A coincidental find of movable cultural objects.

Object: Artifact (cultural object).

(Also see Knudson 1978: 20).

## **APPENDIX B**

### Cultural significance:

- Low            A cultural object being found out of context, not being part of a site or without any related feature/structure in its surroundings.
  
- Medium        Any site, structure or feature being regarded less important due to a number of factors, such as date and frequency. Also any important object found out of context.
  
- High            Any site, structure or feature regarded as important because of its age or uniqueness. Graves are always categorized as of a high importance. Also any important object found within a specific context.

## APPENDIX C

### **Heritage significance:**

- Grade I      Heritage resources with exceptional qualities to the extent that they are of national significance
- Grade II     Heritage resources with qualities giving it provincial or regional importance although it may form part of the national estate
- Grade III    Other heritage resources of local importance and therefore worthy of conservation

## APPENDIX D

### Protection of heritage resources:

#### - Formal protection

National heritage sites and Provincial heritage sites – grade I and II

Protected areas - an area surrounding a heritage site

Provisional protection – for a maximum period of two years

Heritage registers – listing grades II and III

Heritage areas – areas with more than one heritage site included

Heritage objects – e.g. archaeological, palaeontological, meteorites, geological specimens, visual art, military, numismatic, books, etc.

#### - General protection

Objects protected by the laws of foreign states

Structures – older than 60 years

Archaeology, palaeontology and meteorites

Burial grounds and graves

Public monuments and memorials