

Annexure B: Site Sensitivity Verification Report: the Un-subdivided Portion of Remainder of Portion 1 of farm Driefontein No. 87-IR, Germiston Knights

1. Introduction

In March 2020, the DEFF published procedures for the assessment and minimum criteria for reporting of identified environmental themes for an EIA application. The procedures include verifying the findings of the DEFF's Screening Tool application with regards to the sensitivity of a site (where the Screening Tool provides a broad-scale means of identifying possible natural, cultural-historical and other sensitivities on the site, in order to guide the EIA process. The Tool incorporates available national datasets on terrestrial and aquatic biodiversity, agricultural soil potential, heritage features, etc. The Tool is required to be used in an EIA process in terms of Regulation 16 (1) (b) (v) of the EIA Regulations).

This Site Sensitivity Verification Report has been compiled in fulfilment of the requirements of the DEFF's published procedures, as well as to provide information on the characteristics of the site.

2. Description of site and surrounds

The un-subdivided portion of Remainder of Portion 1 of farm Driefontein No. 87-IR, situated at No. 51 Shaft Road, Germiston, is a developed industrial premise, surrounded by other industrial and mining operations. The un-subdivided portion of Remainder of Portion 1 of farm Driefontein No. 87-IR has long been developed for industrial and commercial purposes and no natural sensitivities remain.

Figure 1: The un-subdivided portion of Remainder of Portion 1 of farm Driefontein No.87-IR: Site Locality

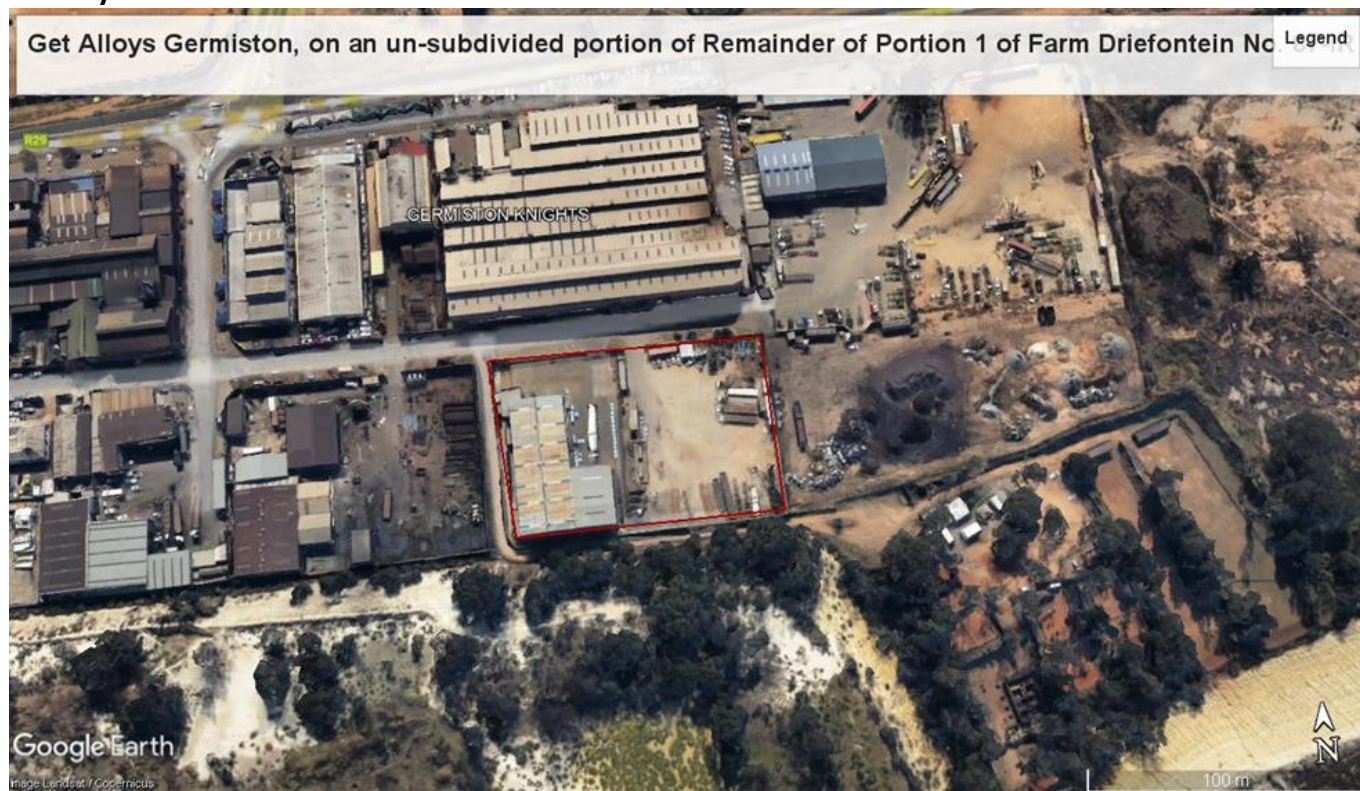
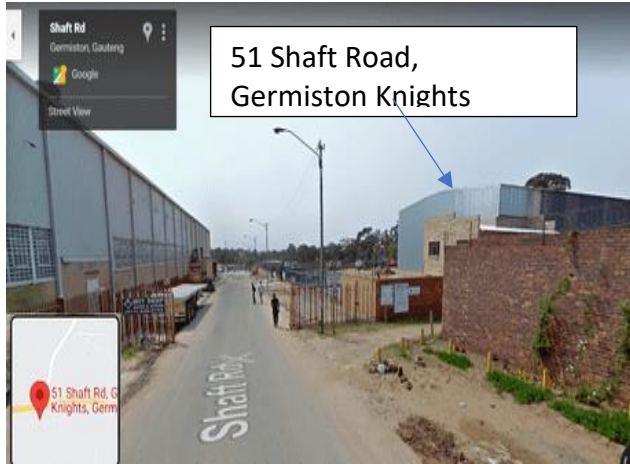


Image courtesy of Google Earth 2021

Figure 2: Photos of the un-subdivided portion of Remainder of Portion 1 of farm Driefontein No. 87-IR, July 2021



51 Shaft Road,
Germiston Knights

the Remainder of Portion 1 of farm Driefontein No. 87-IR factory from Shaft Road



Site entrance to the Remainder of Portion 1 of farm Driefontein No. 87-IR, 51 Shaft Road looking south west towards factory.



Entrance to the reception



Parking area
The whole site is already paved.



Bunding area for fuel storage already in place



Entrance to the transporters yard (where the dross recovery facility will be constructed)

2.1 The site surrounds

The un-subdivided portion of Remainder of Portion 1 of farm Driefontein No. 87-IR is situated outside of the historic core of Germiston. Germiston is an industrial and mining town in the Ekurhuleni municipality (formally known as East Rand).

The site is situated in the industrial area Germiston Knights, with some residential land use (mostly to the north and west) and a mining reach to the south, west and east. The site is situated in an area of the town earmarked for industrial use in the Ekurhuleni Municipality's 2014 Spatial Development Framework. The site is surrounded on all sides by industrial and mining development. Neighbours include car spare parts manufacturers, gold and steel manufacturers, a mechanic, among others.

Figure 3: Photos of the site surrounds



Aerial view of Shaft Road (the un-subdivided portion of Remainder of Portion 1 of farm Driefontein No. 87-IR) and neighbours. Area in black is the proposed development area.



6m unofficial road between the proposed development Shaft Road and scrap vehicles neighbour (west of the un-subdivided portion of Remainder of Portion 1 of farm Driefontein No. 87-IR)



Back of premises – old mine dump (south of the un-subdivided portion of Remainder of Portion 1 of farm Driefontein No. 87-IR entrance)

3. Possible sensitivities identified in the DEFF Screening Tool & specialist studies required

The DEFF Screening Tool found as follows with regards to possible sensitivities on the site:

- a) Terrestrial biodiversity and Archaeological and Cultural Heritage: very high sensitivity.
- b) Civil Aviation: high sensitivity.
- c) Agricultural; animal species and Plant species: medium sensitivity.
- d) Aquatic biodiversity; Defence; Palaeontology and: low sensitivity.

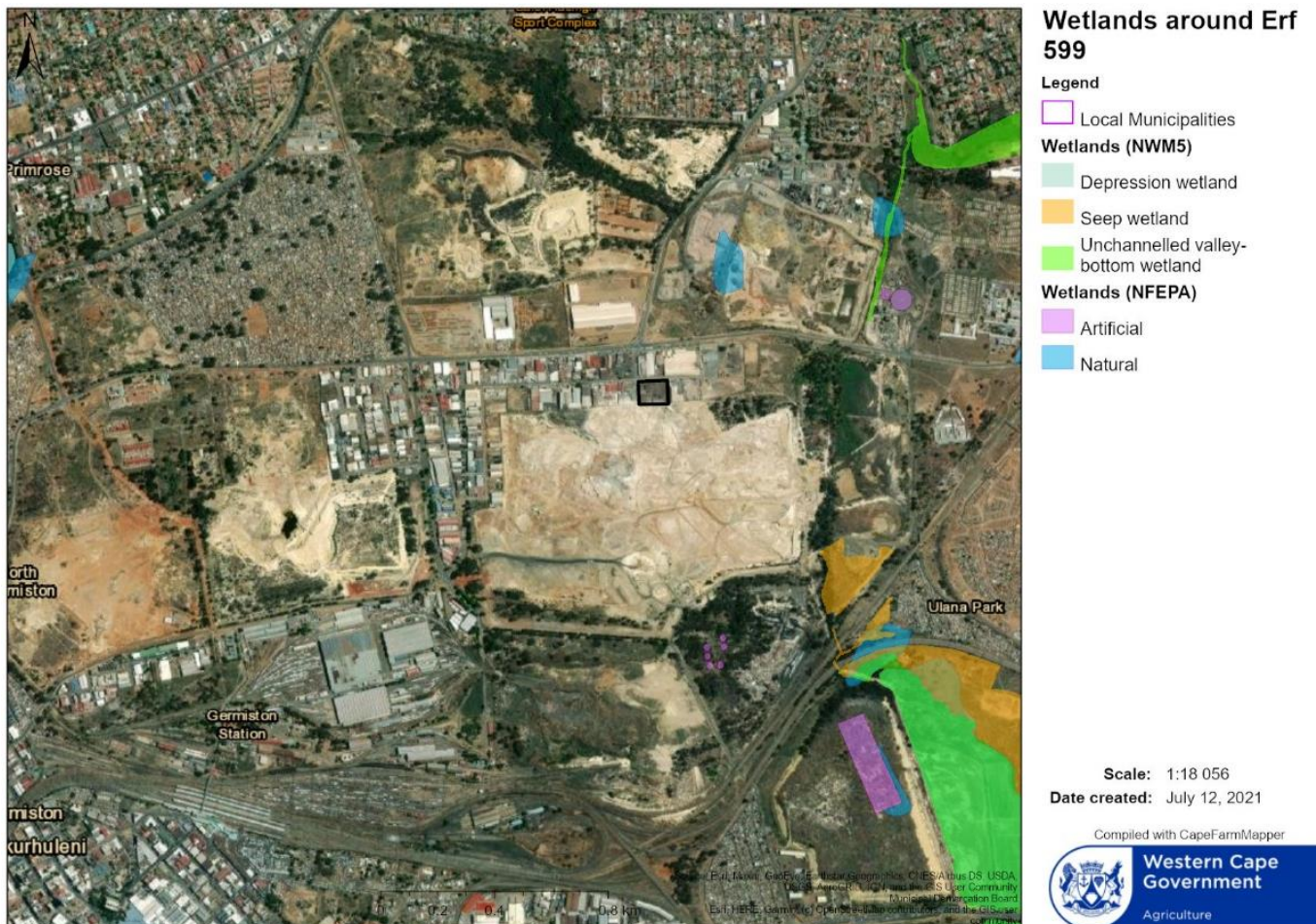
Based on the proposed development description, the condition and characteristics of the site and its locality; and within the developed town of Germiston, it has been determined as follows with regards to the various sensitivity findings and required specialist input from the DEFF Screening Tool:

3.1.1 Terrestrial biodiversity and plant species

The site has been used for industrial purposes for many years. According to the EMM Strategic Environmental Assessment, the site falls within the Grassland Biome, but due to extensive urbanisation of the region, and based on the wetlands map and ridges map, the study area does not contain any terrestrial biodiversity or plant species.

The site and immediate surrounds are therefore not deemed to be at all sensitive from a terrestrial biodiversity perspective and botanical specialist input is not deemed necessary for this application.

Figure 4: National Wetlands Map of site area



3.1.2 Aquatic biodiversity

According to the National Freshwater Priority Areas map, there is a heavily degraded natural wetland 380m north east of the site, that has been developed. According to the National Wetland Map 5, there is also a seep wetland 750m south east of the site. There are thus no indigenous or potentially sensitive natural features identified in close proximity to the site. This is based on a desktop survey of available biodiversity maps.

The site and immediate surrounds are therefore not deemed to be at all sensitive from an aquatic biodiversity perspective and specialist input is not deemed necessary for this application.

3.1.3 Archaeological and cultural heritage

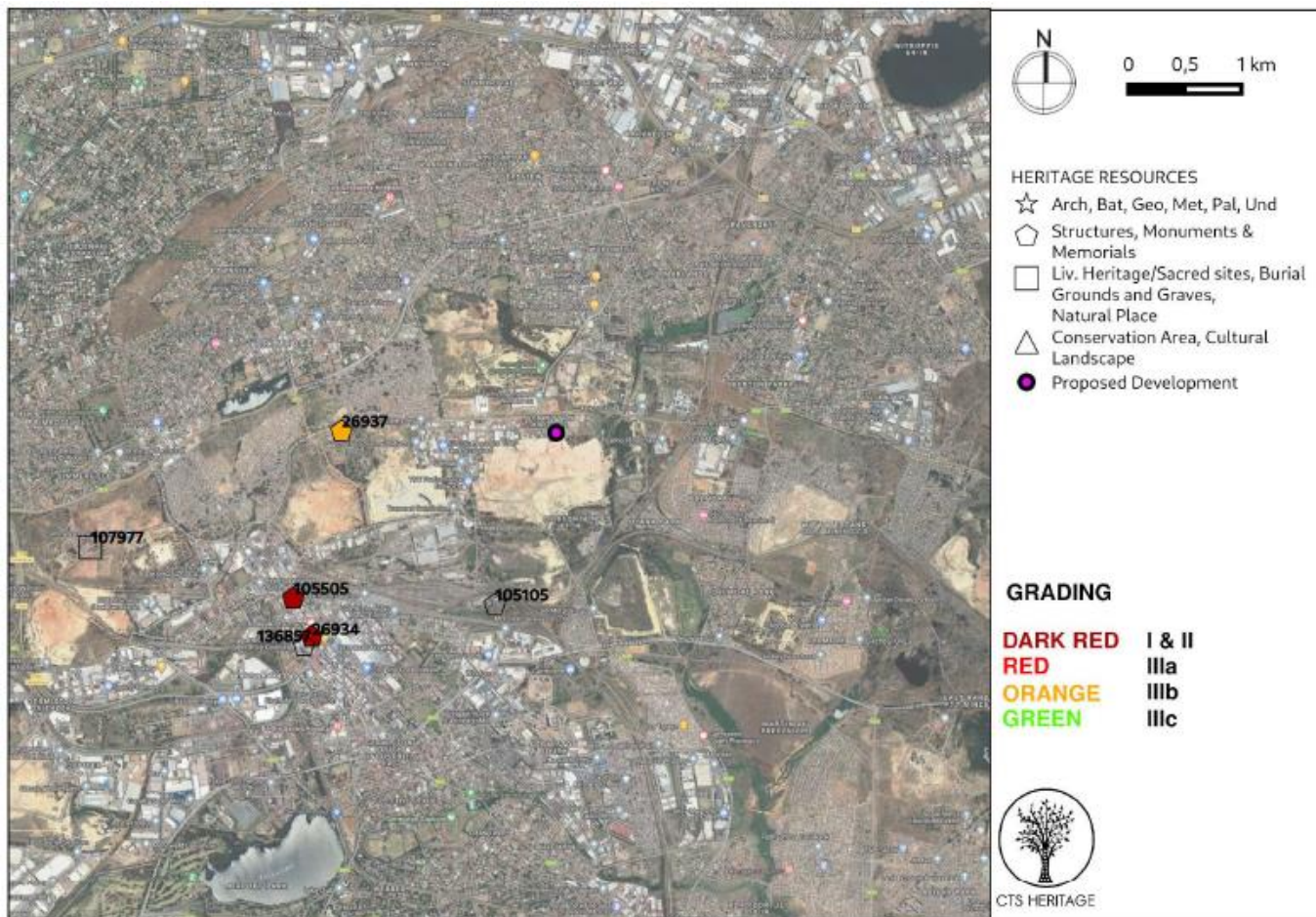
According to Dr Jonathan Kaplan of the Agency for Cultural Resource Management (ACRM) and Jenna Lavin of CTS Heritage, the Screening Tool found the site to be of very high sensitivity in terms of heritage due to its location about 3,9km north east driving distance from the Victoria street bridge and St Andrew's Presbyterian Church. The bridge was built between the 1880's and 1900's and forms part of the Nederlandsche Zuid-Afrikaansche Spoorweg-Maatschappij. The church was built in 1890. Both these sites are Grade 2 heritage sites and both are still in use.

Two other sites have also been flagged – the Germiston Cenotaph / Theatre, opposite the St Andrew's church and the Simmer and Jack Mine House buildings in Main Reef Road, about 2km to the west of the Remainder of Portion 1 of farm Driefontein No. 87-IR.

As these heritage sites are more than two kilometers away, the development is not expected to have any impact on these structures; and the site is also not situated within the historic core of the Germiston town. The site is therefore not deemed to be at all sensitive from a heritage perspective. As such a screening level heritage study has therefore been deemed suitable to inform this EIA phase report submitted for this application.

The heritage screening report compiled by CTS Heritage, January 2022, describes the heritage character of the development area – which includes a depiction of the known identified heritage resources located in relation to the development site (see figure below).

Figure 5 Location of know identified heritage resources in relation to the Development area



The expected impacts on heritage resources are summarized as follows:

- Potential impact on the **Built Environment Heritage and Cultural Landscape:** - Although Germiston has a number of heritage buildings, none of the known significant architecture from Germiston is located near to the area proposed for development and no negative impact is anticipated to any significant built environment heritage resources or any significant cultural landscapes.
- Potential impact on **Archaeology:** - Although numerous archaeologically significant finds have been identified in proximity to the development area. Based on the already transformed nature of the area proposed for development, and considering that no additional excavation is anticipated, it is not expected that any significant archaeological heritage will be impacted by the proposed development.
- Potential impact on **Palaeontology:** - According to the SAHRIS Palaeo-sensitivity Map, the area proposed for development is underlain by sediments of low palaeontological sensitivity. Based on the information available, and considering that no additional excavation is anticipated, it is not expected that any significant palaeontological heritage will be impacted by the proposed development.

The heritage impact statement concludes:

- Based on the available information, it is unlikely that the proposed development will impact on significant heritage resources.
- As such it is recommended that no further studies are required in terms of section 38 of the NHRA.

- Should any heritage resources such as archaeological material, unmarked burials or fossil material be unearthed during excavations, work must cease in this area and SAHRA must be contacted regarding an appropriate way forward.

3.1.4 Civil Aviation

The Screening Tool states that the site is within 8km of a civil aviation aerodrome and is in dangerous and restricted airspace. However, the site is already developed and is surrounded by the town of Germiston and other industrial and mining operations, which includes other metallurgical industry. This development is not considered to impact on flight paths and so the high sensitivity rating is not deemed suitable for this application.

3.1.5 Agricultural potential

The medium sensitivity rating for the site found by the Screening Tool, is not agreed with. The site has been used for industrial purposes for many years. The site has no agricultural value. The site is therefore not considered to be at all sensitive from an agricultural potential perspective.

3.1.6 Defence

The Screening Tool does not identify any defence-related sensitivities on or in close proximity to the site. The EAP site visit and desktop survey support this finding.

3.1.7 Palaeontology

The Screening Tool finding of low sensitivity from a palaeontological perspective is agreed with and no specialist assessment is included in this application.

4. Other potential sensitivities identified & specialist studies undertaken

Concerns might be raised around *inter alia* the potential contamination and air quality impacts associated with the foundry development.

4.1.1 Air pollution impacts

The scrap metal recovery development proposal will have associated impacts on ambient air quality: pollutant emissions from fuel combustion for heating the furnaces, and from the heat treatment / melting of the scrap. Also, dust from materials handling. An Air Quality Impact Assessment, which complies with the requirements of the Atmospheric Impact Report Regulations and with the regulations governing air dispersion modelling, will be undertaken by Soundscape Consulting. The AQIA will inform the design of the foundry, as well as inform optimal operating procedures for minimising potential air quality impacts.

4.1.2 Soil, groundwater, and freshwater contamination

Enviroprac has identified potential soil and groundwater contamination from the storage of dross and storage of fuel needed to fuel the furnaces, as a potential impact associated with the proposed foundry. As the property is already developed with hard standing surfaces, leachate from dross and leaks or spills of fuel into the surrounding environment should be minimised. Also, no natural sensitivities such as watercourses or valuable indigenous vegetation, have been identified on or near the site.

However, the precautionary principle must be followed. Leaks and spills of both dross and fuels need to be prevented with appropriate design- and operational phase mitigation measures included in the development proposal.

4.1.3 Health and safety, fire, and explosion impacts

Enviroprac has identified risk of fire and explosion and attendant health and safety impacts as associated with the foundry (handling of molten metal; operating extreme-temperature furnaces; handling hazardous aluminium dross and its associated ammonia and hydrogen vapours if wet). Adequate design – and operational-phase mitigation measures are therefore essential for preventing health and safety impacts and damage to property.

4.1.4 Impact of site geology on the development proposal

In December 2021, the Gauteng's Department of Agriculture and Rural Development (GDARD) provided feedback on the Draft Scoping Report, identifying that the development site is situated within a Dolomite area. GDARD identified that there is therefore a risk of sinkholes occurring in the area, which could impact negatively on the development of the site.

GDARD has requested that a Dolomite Feasibility Investigation and that a Geotechnical Investigation are conducted, in order to ensure that risk to the development from possible sinkholes is avoided or minimized.

Headroom Initiative together with their strategic partner Rock and Stock Investments have provided a geological review of the development site which aims to determine the probability of development site intercepting underlain dolomite formations and the potential impacts and risk factors it may have on the development proposal.

The Geological Review (***Rock and Stock, 2022 in Annexure C4***) concludes:

“The site is not affected by dolomite. The site is underlain by quartzites of the Johannesburg Subgroup of the Central Rand Group. At the 350m to 400m depths indicated by the BGC plan, there should be no building restrictions (Brink, 1979), unless specifically imposed by authorities. The shaft indicated on the BGC plan could be of concern should it be a surface shaft which was capped in the past (though this seems less likely than a sub-level shaft). Furthermore, notwithstanding the general absence of specific restrictions due to the mining being at intermediate depths, engineering design should take cognisance of the possibility of differential subsidence on the site related to closures at depth. As a final note, the site is surrounded by old mine dumps, which due to oxidation of contained pyrite, result in acidic (sulphuric) waters draining from them. Adequate protection must be provided for concrete in contact with soils on the site.”

Therefore, the impact associated with dolomite geological formations is negligible. However, the site may be affected by mining related issues – most notably subsidence related to closure of underground excavations and tension cracking around mining created fulcrum points.

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5. Summary

The un-subdivided portion of Remainder of Portion 1 of farm Driefontein No. 87-IR is transformed and situated in a long-developed industrial area in Germiston. The site is situated between many other mining and industrial operations.

The site is not sensitive from the perspective of heritage and archaeology and palaeontology; or from the perspective of terrestrial plant species and terrestrial or aquatic biodiversity. Development on the site is also not deemed to have any impact on defense and civil aviation and agricultural sensitivities in the surrounds. The site is situated in an area whose underlying geology is quartzites of the Johannesburg Subgroup of the Central Rand Group. Historical mining activities being at intermediate depths (350-400m), engineering design should take cognizance of the possibility of differential subsidence on the site related to closures at depth. Overall, the site should be suitable for development provided certain mitigation measures are implemented throughout the life cycle of the development.

The development proposal has potential air emissions, soil and groundwater contamination and health and safety impacts which must be adequately mitigated.

Specialist studies that have been undertaken to inform the EIA application are:

- Freshwater Opinion – **No** Section 21 (c) and (i) water uses. Confluent Environmental, July 2021. **[Annexure C1]**
- Atmospheric Impact Report. Soundscape Consulting (Pty) Ltd. November 2021. **[Annexure C2]**
- Heritage Screener. CTS Heritage. January 2022. **[Annexure C3]**
- Geological Review. Rock & Stock Investments. February 2022. **[Annexure C4]**

Additionally, Enviroprac has conducted desktop research and conducted a site inspection in order to inform the application process. Enviroprac has also drawn on experience with previous EIA processes in the investigation of potential contamination and health and safety impacts associated with the development.

In conclusion, there are no aspects of the site or development proposal that have been identified as sufficiently sensitive or as having sufficiently high adverse impacts, that should prevent the development from proceeding.