



**PROPOSED DEVELOPMENT OF A SECURITY VILLAGE AND  
ASSOCIATED INFRASTRUCTURE ON ERF 3952 & 3975,  
HARTSWATER, NORTHERN CAPE PROVINCE**

**Draft Basic Assessment Report**

August 2018

Prepared for:



Today's Impact | Tomorrow's Legacy

## EXECUTIVE SUMMARY

### Introduction and Background

Make Space Architects appointed Enviroworks, an Independent Environmental Assessment Practitioner (EAP), on behalf of Mr Julius Mongwaketse (The Applicant) to undertake the required Basic Assessment Process for the proposed residential development on Erf 3952 and 3975, Hartswater (hereafter referred to as the Proposed Project), Northern Cape Province. The two erven will be consolidated and registered as Erf 3976.

The proposed project is a listed activity in terms of Sections 24(2) and 24(d) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) (as amended). The Environmental Impact Assessment (EIA) Regulations, 2017 promulgated in terms of Chapter 5 of the NEMA provide for the control of certain activities that are listed in Government Notice Regulations (GN R) No. R327, R325 and R324. Activities listed in these notices must comply with the regulatory requirements listed in GN R No. R326, which prohibits such activities until written Authorisation is obtained from the Competent Authority. Such Environmental Authorisation, which may be granted subject to conditions, will only be considered once there has been compliance with the EIA Regulations, 2017. GN R No. 326 sets out the procedure and documentation that need to be compiled with undertaking a Basic Assessment Report.

### Project Description

Make Space Architects (PTY) Ltd appointed Enviroworks, an independent Environmental Consultant on behalf of Mr Julius Mongwaketse for the proposed residential development on Erf 3976, Hartswater, Northern Cape Province.

The proposed development will consist of the following:

- Forty two (42) residential erven varying between three hundred and seventy squares meters (378 m<sup>2</sup>) and eight hundred and twenty eight square meters (828 m<sup>2</sup>);
- A business centre with a development footprint of eight hundred and fifty square meters (850 m<sup>2</sup>) inclusive of:
  - Office spaces on the ground floor; and,
  - Thirty (30) apartment dwellings distributed over three (3) floors.
- Two Parking Areas:
  - Parking Area 1 is situated at the Business Centre and will provide 65 parking areas with a total development footprint of two thousand two hundred and sixty two square meters (2 262 m<sup>2</sup>); and,
  - Twenty visitor (20) parking's situated adjacent to the access road.
- Service Delivery Infrastructure:
  - Water and Sewage pipes;
  - Power supply cables (to be supplied by the Local Municipality); and,
  - Internal paved roads (please refer to Appendix C: Facility Illustrations).

The proposed development will have a total development footprint of three and a half hectares (3.6 ha). A re-zoning application will be submitted for the sub-division of Remainder of Erf 259 and subsequent consolidated with Erf 3952 to form Erf 3976.

### Legislative Context

The proposed project constitutes the following Listed Activities in terms of the NEMA:

Government Notice 327 of 2017: Listing Notice 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

**Activity 27:** The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation.

**Triggered reason:** The proposed development will have a development footprint of three and a half hectares (3.6 ha) on an area with indigenous vegetation.

Government Notice 324 of 2017: Listing Notice 3 of the National Environmental Management Act, 1998 (Act No. 107 of 1998)

**Activity 12:** The clearance of an area of 300 square meters or more of indigenous vegetation.

#### g. Northern Cape

- ii. Within critical biodiversity areas identified in bioregional plans.
- iv. On land, where at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.

**Triggered reason:** The proposed development will have a development footprint of three and a half hectares (3.6 ha) and is situated within an area classified as an Ecological Support Area (ESA). Furthermore, the site is currently zoned as Public Open Space.

National Heritage Resources Act, 1999 (Act No. 25 of 1999)

Section 38(1):*Subject to the provision 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.
- (d) The re-zoning of a site exceeding 10 000 m<sup>2</sup> in extent.

**Trigger Reason:** The proposed development footprint will be three and a half hectares (3.6 ha) in size.

National Water Act, 1998 (Act No. 36 of 1998)

**21.** For the purpose of this Act, water use includes –

- (c) impeding or diverting the flow of water in a watercourse;
- (i) altering the bed, banks, course or characteristics of a watercourse;

**Trigger Reason:** The proposed development will be situated within thirty two meters (32 m) from a watercourse.

### Report Structure

This report is set out as followed:

- **Section A: Activity Description** provides an overview of the development proposal and listed activities which are triggered in terms of listing notices GN R. 327 and R. 324; of the EIA

Regulations, 07 April 2017.

- **Section B: Description of Receiving Environment** provides detail on the affected landscape in its present state. A range of aspects relating to the biophysical (e.g. geology, soil surface and sub-surface water and biodiversity), socio-economic and historic and cultural character of the immediate site and surrounding areas are described herein, whilst applicable legislation, policy and guidelines considered are recognised.
- **Section C: Public Participation** describes the consultation component of this study between the EAP and Interested or Affected Parties (I&AP's) and organs of state. Regulatory requirements of this process are discussed, with a summary of consultation made with state departments and comments and response given. Comment periods were afforded to parties, with an initial registration period provided to parties.
- **Section D: Impact Assessment, Management, Mitigation and Monitoring Measures**, describe how the proposed project may impact on the geographical and physical, biodiversity, socio-economic and historical and cultural aspects of the receiving environment. Resource uses of the proposed project phases, attributed to waste and emissions, water use, power supply and energy efficiency are further discussed.
- **Section E: Recommendation of the EAP** provides, based on such findings as various site surveys, impact assessment, investigation of alternatives and the review of strategic policy to consider the needs and desirability, the outgoing opinion of the EAP is detailed. Any noteworthy recommendations emanating from the study are described here.
- **Section F: Appendices** lists all supportive documents enclosed with this report, after which declarations of the Applicant, EAP and Specialist Parties are given.

#### **Public Participation Process**

A comprehensive **Public Participation** will be undertaken to engage stakeholders and Interested and Affected Parties on the development proposal. I&AP's will be informed of the Basic Assessment Process through an advertisement in one (1) local newspapers and poster notices will be erected at strategic locations. The surrounding landowners will be informed of the proposed project by means of the distribution of comment forms and the Basic Assessment Report (BAR), as well as the relevant Organs of State.

This BAR will be made available for a 30 day comment period from **02 August 2018 to 03 September 2018**. The Basic Assessment (BA) will be made available on Enviroworks website ([www.enviroworks.co.za](http://www.enviroworks.co.za)) and a link to Enviroworks website will be sent via email to all relevant stakeholders and Organs of State. Background Information Documents (BID) will be sent to all adjacent landowners that will be impacted on during the construction phase.

#### **Specialist Findings**

On assessment of the proposed location for the alternatives, the specialist determined the following:

##### **Ecological**

The vegetation on site is largely degraded. The property has been subjected to vegetation destruction and Alien Invasive species establishment. There are several pioneer, weedy and alien invasive species found in the footprint area. The species will spread and re-emerge continually if not controlled and removed in a proper manner.

The relatively flat topography has facilitated water accumulating during wet periods, as evident from species present that prefer such a habitat. Stormwater management and draining should be implemented to properly drain run-off water.

No sensitive species or species of conservation concern were observed during the site visit. It is also unlikely that any species of conservation concern will occur on site. It is suggested that a botanical walkthrough be conducted before construction commences, to detect any flowering species that were missed before, that are of conservation concern.

It is important to prevent any sediment, pollution or litter from the site to enter the irrigation canal.

### Conclusion:

If mitigation measures are implemented, the likelihood of significant ecological impacts occurring on ecosystem will be reduced to low levels. The overall footprint of the proposed facility is not likely to generate a significant impact on broad scale ecological processes or landscape connectivity, on condition that all mitigation measures are followed. Any risk of pollution due to inappropriate disposal of waste and litter can be mitigated to an acceptable level through the appropriate waste management and ensuring that no runoff or contaminated effluent from the construction site or development enters the environment.

Overall, the likely impacts associated with the development are likely to be low and there are no anticipated impacts of high significance. Consequently, it is suggested that the proposed project to continue only if all recommended mitigation measures as per this ecological report and Risk Matrix are adequately implemented and managed during the construction phase, operational – and decommissioning phase of the proposed project. All necessary authorizations and permits must also be obtained prior to any commencement (Mostert, 2018).

### **Geo-Technical Investigation:**

#### General

The most important consideration in relation to the proposed development is the ubiquitous presence of thick potentially collapsible silty clayey or clayey silty Aeolian soils to on average 1.65 m depth.

#### Geology & Ground Conditions

The site is underlain by a thin fill horizon, further underlain by Aeolian deposits to around 1.65 m depth, further underlain by calcretized Aeolian soils to around 2.5 m depth, but many in fact extended deeper than this.

#### Excavations

Soft excavation in terms of SABS 1200 D may be anticipated to around 2.5 m in depth on site.

#### Foundations

Three provincial foundation options have been provided.

#### Further Investigation

Finally, the ground conditions described in the report refer specifically to those encountered at the test positions advanced on site. It is therefore possible that conditions at variance with those discussed above may be encountered elsewhere on the site. In this regard it is critical that material management be maintained continuously on site and that GCS Geotechnical carry out periodic

inspections of the site during construction to ensure that any variation in the anticipated ground condition can be assessed and revised recommendations subsequently provided in order to avoid unnecessary delays and expense. Furthermore, it is important that the construction phase of the project be treated as an augmentation of the geo-technical investigation.

### **Heritage Impact Assessment**

The affected area is underlain by intrusive volcanic rocks that are considered to be of no paleontological significance. It is highly unlikely that fossil remains will be encountered during excavation activities within the study area. There is little chance of finding fossil material within the superficial overburden due to a lack of suitable Quaternary-aged alluvial deposits at the site.

There are no major palaeontological grounds to suspend excavation activities within the proposed development footprint. Impact on potential *in situ* archaeological remains, engravings localities or historically significant structures within the study area is considered unlikely. There are no major archaeological grounds to suspend excavation activities within the proposed development footprint. The proposed development footprint is assigned a site rating of Generally Protected C (GP C).

## BASIC ASSESSMENT CONTENT CHECKLIST

A Basic Assessment Report must contain the following information that is necessary for the Competent Authority to consider and come to a decision on the Application, and must include the below mentioned as stipulated in Appendix 1 of GN R. 326 of 07 April 2017.

Content Requirements of a Basic Assessment Process	Section in the Report
(a) details of – (i) the EAP who prepared the report, and (ii) the expertise of the EAP, including a curriculum vitae;	Curriculum Vitae of the EAP
(b) the location of the activity, including: (i) the 21 digit Surveyor General code of each cadastral land parcel; (ii) where available, the physical address and farm name; (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section B: Receiving Environment
(c) a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale;	Appendix C: Facility Illustrations
(d) a description of the scope of the proposed activity, including – (i) all listed and specified activities triggered and being applied for; and (ii) a description of the activities to be undertaken including associated structures and infrastructure;	Section A: Activity Information
(e) a description of the policy and legislative context within which the development is proposed including – (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to <b>this</b> activity and have been considered in the preparation of the report; and (ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools framework, and instruments;	Section A: Activity Information
(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Section E: Impact Assessment
(g) a motivation for the preferred site, activity and technology alternative;	Section A: Activity Information
(h) a full description of the process followed to reach the proposed preferred alternative within the site, including: (i) details of all the alternatives considered; (ii) details of the public participation process undertaken in terms of Regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; (iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts – (aa) can be reversed;	Section A: Activity Information

## BASIC ASSESSMENT REPORT

<p>(bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;</p> <p>(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risk associated with the alternatives;</p> <p>(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;</p> <p>(viii) the possible mitigation measures that could be applied and level of residual risk;</p> <p>(ix) the outcome of the site selection matrix;</p> <p>(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and</p> <p>(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;</p>	
<p>(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including –</p> <p>(i) a description of all environmental issues and risk that were identified during the environmental impact assessment process; and</p> <p>(ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;</p>	<p>Section E: Impact Assessment</p>
<p>(j) an assessment of each identified potentially significant impact and risk, including-</p> <p>(i) cumulative impacts;</p> <p>(ii) the nature, significance and consequences of the impact and risk;</p> <p>(iii) the extent and duration of the impacts and risk occurring;</p> <p>(iv) the probability of the impact and risk occurring;</p> <p>(v) the degree to which the impact and risk can be reversed;</p> <p>(vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and</p> <p>(vii) the degree to which the impact and risk can be avoided, managed or mitigated;</p>	<p>Section E: Impact Assessment</p>
<p>(k) where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulation and an indication as to how these findings and recommendations have been included in the final report;</p>	<p>Section E: Impact Assessment</p>
<p>(l) an environmental impact statement which contains –</p> <p>(i) a summary of the key findings of the environmental impact assessment;</p> <p>(ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and</p> <p>(iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;</p>	<p>Section E: Impact Assessment</p>
<p>(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management outcomes for the development for inclusion in the EMPr;</p>	<p>Section E: Impact Assessment</p>
<p>(n) any aspects which were conditional to the findings of the assessment either</p>	<p>Section E:</p>



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by the EAP or specialist which are to be included as conditions of authorisation;	Recommendations of the Practitioner
(o) a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Section E: Impact Assessment
(p) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	Section E: Impact Assessment
(q) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	N/A
(r) an undertaking under oath or affirmation by the EAP in relation to: (i) the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and	Declaration of the EAP.
(s) where applicable, details of any financial provision for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	N/A
(t) any specific information that may be required by the competent authority; and	Appendix I: Other Information
(u) any other matters required in terms of section 24(4)(a) and (b) of the Act.	N/A

## CURRICULUM VITAE OF THE EAP



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**Christoff du Plessis**

### **RELEVANT QUALIFICATIONS**

Baccalaureus Scientiae (B.Sc.) in Environmental Geography: University of the Free State (2014)

Baccalaureus Scientiae (B.SC) Honours in Environmental Management: University of South Africa (2018)

### **WORK EXPERIENCE**

**January 2015 – Present:** Environmental Specialist on contract at Enviroworks

### **KEY PROJECT EXPERIENCE**

#### **Environmental Impact Assessment Experience**

- Environmental Impact Assessment for the proposed 171ha expansion of Nalisview Cemetery in Bloemfontein on behalf of Mr. Jannie Nel

### **BASIC ASSESSMENT EXPERIENCE**

- Construction of 30 Broiler Houses and an Abattoir, Leipoldtville, Western Cape Province (Mocke Poultry).
- Dewetsdorp Reservoir System Augmentation, Dewetsdorp, Free State Province (Bloemwater).
- Construction of the Palmiet Truck Stop, Vrede, Free State Province (DeStudio Town Planning).
- Section 24G for the unlawful operation of a Recycling Centre, Swellendam, Western Cape Province (Agri-World Recyclers).
- Construction of a 3.2 kilometre pipeline and associated infrastructure, Olifantshoek, Northern Cape Province (Ghamagara Local Municipality).
- Construction of 4 telecommunication masts, Cape Town, Western Cape Province (Highwave Consultants).
- Installation of a 90 000l LPG Cylinder, Bloemfontein, Free State Province (EASIGAS).
- Installation of a 45 000l LPG Cylinder, East London, Eastern Cape Province (EASIGAS).
- Upgrade of Day-visitor facilities at Kraalbaai, West Coast National Park, Western Cape Province (SANParks).
- Development of the Phalaborwa Wildlife Activity Hub, Kruger National Park, Limpopo Province (SANParks).
- Periodic maintenance of National Route 2 Section 4 between Riviersonderend (Km 0.0) and Swellendam (Km 56.9), Western Cape Province (SANRAL).
- Proposed development of the Klein Mooimaak Rest Camp Facility, West Coast National Park (SANParks).
- Proposed development of the 35m Buffeljagsrivier Monopole Mast, Western Cape Province (Coast to Coast Towers).
- Compilation of a River Maintenance Management Plan for Bath River, Caledon, Western Cape Province (Theewaterskloof Local Municipality).
- Proposed development of a 12.5 ha cemetery, Grabouw, Western Cape Province (Theewaterskloof Local Municipality).
- Proposed development of Hostels and Orientation Centres, Mapungubwe National Park, Limpopo

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Province (SANParks).

- Proposed upgrade of the R27 Gate & Geelbek Restaurant, West Coast National Park, Western Cape Province SANParks).
- Proposed development of the 25m Joostenbergvlakte Monopole Mast, Western Cape Province (Coast to Coast Towers).
- Proposed development of 30 Chicken Houses and an Abattoir, Odendaalsrus, Free State Province (Chridel Consulting).
- Design, Rehabilitation / Improvement, Routine Maintenance works of N220: Chissano to Chibuto and N/C Crz. N220 to N1, Mozambique (World Bank).
- Proposed development of a Curro Castle on Portion 54 of the Farm Blue Hills No. 397, Midrand, Gauteng Province (Curro Holdings).
- Proposed development of a 25m Monopole Mast on Portion 25 of the Farm Klein Bottelary No. 17, Brackenfell, Western Cape Province (Coast to Coast Towers).

### **EXPERIENCE IN PERMITS AND LICENCING**

- Water Use License (General Authorisation) for the expansion of a cemetery by more than 2500 m<sup>2</sup>.
- Water Use License for 30 Broiler Houses and Abattoir, Leipoldville, Western Cape Province.
- Waste Management License and Section 24 G report for Agri World Recycling, Swellendam, Western Cape Province.
- Water Use License (General Authorisation) for the construction of a 3.2km pipeline, Olifantshoek, Northern Cape Province (Ghamagara Local Municipality).

### **ENVIRONMENTAL CONTROL OFFICER (ECO)**

- The construction of the Cecilia Park powerline and sub-station, Bloemfontein, Free State Province (Centlec).
- The construction of a dual carriageway and bridge from Mthatha up to and including the Ngqeleni interchange of Provincial Road 61 Section 8, Eastern Cape Province.
- The construction of a road from Moretele to Khaukhwe, North West Province (Department Public Works).
- The construction of a 14km water pipeline, Botshabelo, Free State Province (Bloemwater).
- The construction of a sub-station, Bloemfontein, Free State Province (Centlec).
- The rehabilitation of bridges on National Route 14: Upington to Kuruman, Northern Cape Province (SANRAL).
- The rehabilitation of the Theekloof Pass, Fraserburg, Northern Cape.
- Annual Audit on the Waste Management License for Elgin Fruit Juice, Grabouw, Western Cape (Elgin Fruit Juice).
- Reseal of Diversional Road 1468, 1470, 1473 and Minor Road 5873 on behalf of Actophambili, Witzenberg, Western Cape Province.
- Reseal of Section MR 201 and MR 305 on behalf of Actophambili, Wolsely, Western Cape Province.
- Reseal of the National Route 1, on behalf of Actophambili, Leeu Ghamka, Western Cape Province (SANRAL).
- The widening of Pella Road on behalf of the City of Cape Town, Atlantis, Western Cape Province (City of Cape Town).
- The widening of structures over the Orange River on National Route 12 Section 9 near Hopetown, Northern Cape Province (SANRAL).
- The construction of a bulk water supply reservoir, Olifantshoek, Northern Cape Province (Ghamagara Local Municipality).
- Rehabilitation of the Donkergat Road within the West Coast National Park on behalf of BVI Procurement Management Engineers, Western Cape Province (Department of Defence & Department of Public Works).

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- Periodic Maintenance of National Route 2 Section 4 between Swellendam and Riviersonderend, Western Cape Province (SANRAL).

### **VISUAL IMPACT ASSESSMENT (VIA):**

- Phalaborwa Wildlife Activity Hub, Kruger National Park, Limpopo Province (SANParks).
- 4.9ha Sand Mine on Portion 5 of the Farm Doornekraal No. 830, Western Cape Province (Greenmined).
- Proposed development of the Harvard Powerline, Bloemfontein, Free State Province (Centlec).
- Proposed development of the 35m Buffeljagsrivier Monopole Mast, Buffeljagsrivier, Western Cape Province (Coast to Coast Towers).
- Proposed development of the 25m Robertson Monopole Mast, Robertson, Western Cape Province (Coast to Coast Towers).
- Proposed development of the Klein Mooimaak Rest Camp Facility, West Coast National Park (SANParks).
- Proposed development of a Sand Mine near Malmesbury, Western Cape Province (Greenmined).
- Proposed upgrade of the R27 Gate and Geelbek Restaurant, West Coast National Park, Western Cape Province (SANParks).
- Proposed development of the 25m Roodekrans Monopole Mast, Krugersdorp, Gauteng Province (Coast to Coast Towers).
- Proposed development of a 25m Monopole Mast on Portion 25 of the Farm Klein Bottelary No. 17, Brackenfell, Western Cape Province (Coast to Coast Towers).

### **WETLAND DELINEATION STUDIES:**

- Development of 13 borrow pits along National Road 8, Ladybrand, Free State Province (SANRAL).
- Development of a 12.5ha cemetery on Erf 4233, Western Cape Province (Theewaterskloof Local Municipality).
- Proposed development for the proposed Sarah Baartman Agri-Hub, Cederville, Eastern Cape Province (Department Public Works).

### **STORMWATER MANAGEMENT PLANS:**

- Stormwater Management Plan for a Recycling Plant on Erf 5273, Swellendam, Western Cape Province (Agri-World Recycling).
- Stormwater Management Plan for the proposed Granite Mine on the Remaining Extent of the Farm Biesjesfontein No. 218, Springbok, Northern Cape Province (Greenmined Environmental).

### **OTHER EXPERIENCE**

- Conducting the Public Participation Process on the Draft Management Plan for the Goukamma Nature Reserve Complex, Western Cape Province (Cape Nature).
- Compilation of an Environmental Management Plan and a Risk Assessment for the pressure testing of a 1 000 000 litre LPG Cylinder within the Port Elizabeth Harbour, Eastern Cape Province (EASIGAS).
- Compilation of an Environmental Management Plan for the development of two billboards, Bloemfontein, Free State Province (Outdoor Network).
- Decommissioning Audit for the closure of a warehouse, Cape Town, Western Cape Province (Wweatherford).
- GIS mapping and technical for various projects, including the drawing of locality, sensitivity, and alien and invasive management maps.
- Public Participation Processes and assistance to several projects.

# BASIC ASSESSMENT REPORT



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Department:  
Environment & Nature Conservation  
NORTHERN CAPE PROVINCE  
REPUBLIC OF SOUTH AFRICA

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(For official use only)

File Reference Number:

Application Number:

Date Received:


**Basic Assessment Report in terms of the Environmental Impact Assessment Regulations, 2014, promulgated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.**

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**Kindly note that:**

1. This **basic assessment report** is a standard report that may be required by a competent authority in terms of the EIA Regulations, 2014 and is meant to streamline applications. Please make sure that it is the report used by the particular competent authority for the activity that is being applied for.
2. This report format is current as of **07 April 2017**. It is the responsibility of the applicant to ascertain whether subsequent versions of the form have been published or produced by the competent authority
3. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
4. Where applicable **tick** the boxes that are applicable in the report.
5. An incomplete report may be returned to the applicant for revision.
6. The use of “not applicable” in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the rejection of the application as provided for in the regulations.
7. This report must be handed in at offices of the relevant competent authority as determined by each authority.
8. No faxed or e-mailed reports will be accepted.
9. The signature of the EAP on the report must be an original signature.
10. The report must be compiled by an independent environmental assessment practitioner.
11. Unless protected by law, all information in the report will become public information on receipt by the competent authority. Any interested and affected party should be provided with the information contained in this report on request, during any stage of the application process.
12. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.
13. Should a specialist report or report on a specialised process be submitted at any stage for any part of this application, the terms of reference for such report must also be submitted.

# BASIC ASSESSMENT REPORT

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**1 SECTION A: ACTIVITY INFORMATION**

Has a specialist been consulted to assist with the completion of this section?

YES	
X	

If YES, please complete the form entitled “Details of specialist and declaration of interest” for the specialist appointed and attach in Appendix I.

**1.1 ACTIVITY DESCRIPTION**

**a) Describe the project associated with the listed activities applied for**

Make Space Architects (PTY) Ltd appointed Enviroworks, an independent Environmental Consultant on behalf of Mr Julius Mongwaketse for the proposed residential development on Erf 3976, Hartswater, Northern Cape Province.

The proposed development will consist of the following:

- Forty two (42) residential erven varying between three hundred and seventy squares meters (378 m<sup>2</sup>) and eight hundred and twenty eight square meters (828 m<sup>2</sup>);
- A business centre with a development footprint of eight hundred and fifty square meters (850 m<sup>2</sup>) inclusive of:
  - Office spaces on the ground floor; and,
  - Thirty (30) apartment dwellings distributed over three (3) floors.
- Two Parking Areas:
  - Parking Area 1 is situated at the Business Centre and will provide 65 parking areas with a total development footprint of two thousand two hundred and sixty two square meters (2 262 m<sup>2</sup>); and,
  - Twenty visitor (20) parking’s situated adjacent to the access road.
- Service Delivery Infrastructure:
  - Water and Sewage pipes;
  - Power supply cables (to be supplied by the Local Municipality); and,
  - Internal paved roads (please refer to Appendix C: Facility Illustrations).

The proposed development will have a total development footprint of three and a half hectares (3.6 ha). A re-zoning application will be submitted for the sub-division of Remainder of Erf 259 and subsequent consolidated with Erf 3952 to form Erf 3976.

**b) Provide a detailed description of the listed activities associated with the project as applied for**

Listed activity as described in GN 327, 325 and 324.	Description of project activity
<p><b>GN R327 (Listing Notice 1) Activity 12:</b>                      The development of –                      (ii) infrastructure or structures with a physical footprint of 100 square meters or more;                      Where such development occurs –</p>	<p>The proposed development will be situated twenty meters from a manmade channel. It must be noted that the manmade canal does flow into the natural environment.</p>

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(c) if no development setback exists, within 32 meters of a watercourse, measured from the edge of a watercourse.	
<b>GN R327 (Listing Notice 1) Activity 27:</b> The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation.	The total development footprint will be three and a half hectares (3.6 ha).
<b>GN R324 (Listing Notice 3) Activity 12:</b> The clearance of an area of 300 square meters or more of indigenous vegetation –  <b>g. Northern Cape</b> ii. Within critical biodiversity areas identified in bioregional plans.	The proposed development is situated within an Ecological Support Area (ESA). The development footprint will be three and a half hectares (3.6 ha) in total.

### 1.2 FEASIBLE AND REASONABLE ALTERNATIVES

**“alternatives”**, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h), Regulation 2017. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the, competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if it is clear that realistic alternatives have not been considered to a reasonable extent.

Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees, minutes and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

#### a) Site alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)

**BASIC ASSESSMENT REPORT**

	27° 45' 23.11" S	24° 48' 04.13" E
--	------------------	------------------

In the case of linear activities:

	Latitude (S):	Longitude (E):
<p><b>Alternative:</b></p> <p>Alternative S1 (preferred)</p> <ul style="list-style-type: none"> <li>Starting point of the activity</li> <li>Middle/Additional point of the activity</li> <li>End point of the activity</li> </ul>	N/A	N/A
<p>Alternative S2 (if any)</p> <ul style="list-style-type: none"> <li>Starting point of the activity</li> <li>Middle/Additional point of the activity</li> <li>End point of the activity</li> </ul>		
<p>Alternative S3 (if any)</p> <ul style="list-style-type: none"> <li>Starting point of the activity</li> <li>Middle/Additional point of the activity</li> <li>End point of the activity</li> </ul>		

For route alternatives that are longer than 500m, please provide an addendum with co-ordinates taken every 250 meters along the route for each alternative alignment.

In the case of an area being under application, please provide the co-ordinates of the corners of the site as indicated on the lay-out map provided in Appendix A of this form.

**b) Lay-out alternatives**

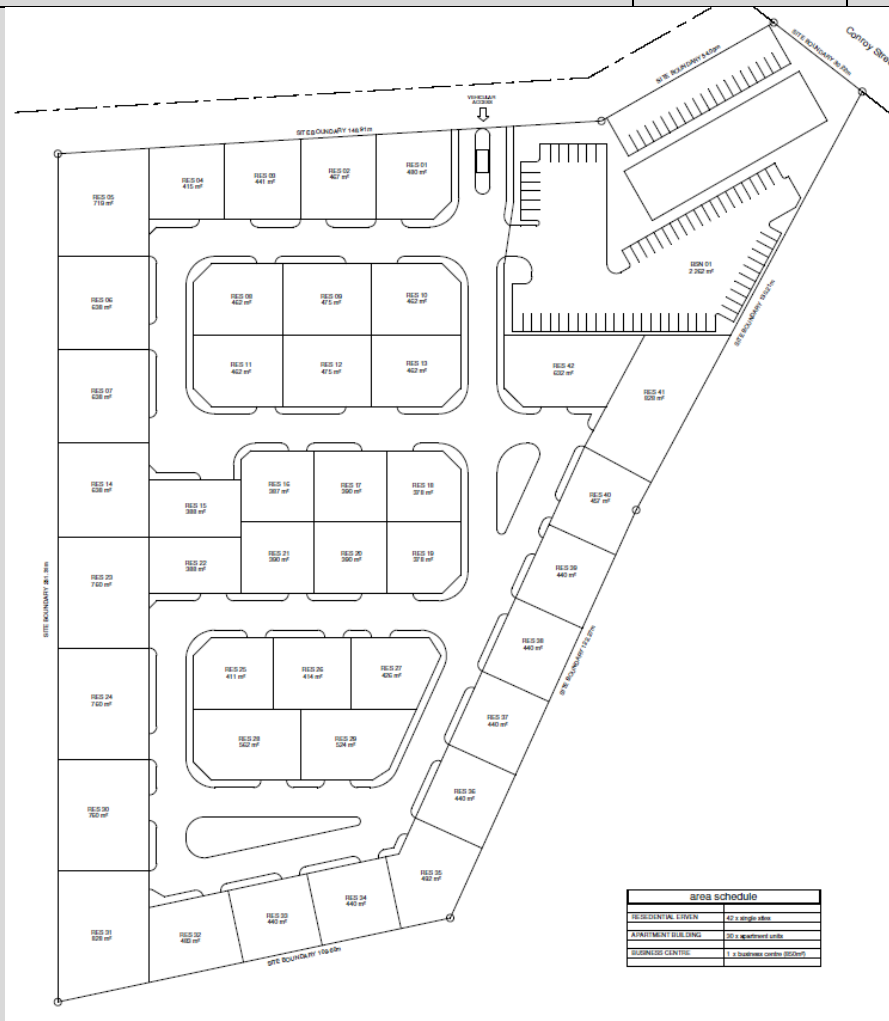
<b>Alternative 1 (preferred alternative)</b>		
<b>Description</b>	<b>Lat (DDMMSS)</b>	<b>Long (DDMMSS)</b>
<p>The proposed Layout Alternative will consist of the following:</p> <ul style="list-style-type: none"> <li>Forty two (42) residential erven varying between three hundred and seventy squares meters (378 m<sup>2</sup>) and eight hundred and twenty eight square meters (828 m<sup>2</sup>) in size;</li> <li>A business centre with a development footprint of eight hundred and fifty square meters (850 m<sup>2</sup>) inclusive of: <ul style="list-style-type: none"> <li>➤ Office spaces on the ground floor; and,</li> <li>➤ Thirty (30) apartment dwellings distributed over three (3) floors.</li> </ul> </li> <li>Two Parking Areas: <ul style="list-style-type: none"> <li>➤ Parking Area 1 is situated at the Business Centre and will provide 65 parking areas with a total development footprint of two thousand two hundred and sixty two square meters (2 262 m<sup>2</sup>); and,</li> <li>➤ Twenty visitor (20) parking's situated adjacent to the access road.</li> </ul> </li> </ul>	27° 45' 23.11" S	24° 48' 04.13" E

# BASIC ASSESSMENT REPORT

- Service Delivery Infrastructure:
  - Water and Sewage pipes;
  - Power supply cables (to be supplied by the Local Municipality); and,
  - Internal paved roads (please refer to Appendix C: Facility Illustrations).

The preferred layout alternative have the following advantages:

1. The preferred layout only has one entrance, allowing for better security and monitoring of vehicles and visitors;
2. Ten (10) more visitor parking is allowed for;
3. Internal Roads have been upgraded to allow better access for the Municipal Waste Vehicle.



## Alternative 2

### Description

Alternative 1 consist of the following:

- Forty two (42) residential erven varying between three hundred and seventy square meters (378 m<sup>2</sup>) and

**Lat (DDMMSS)**

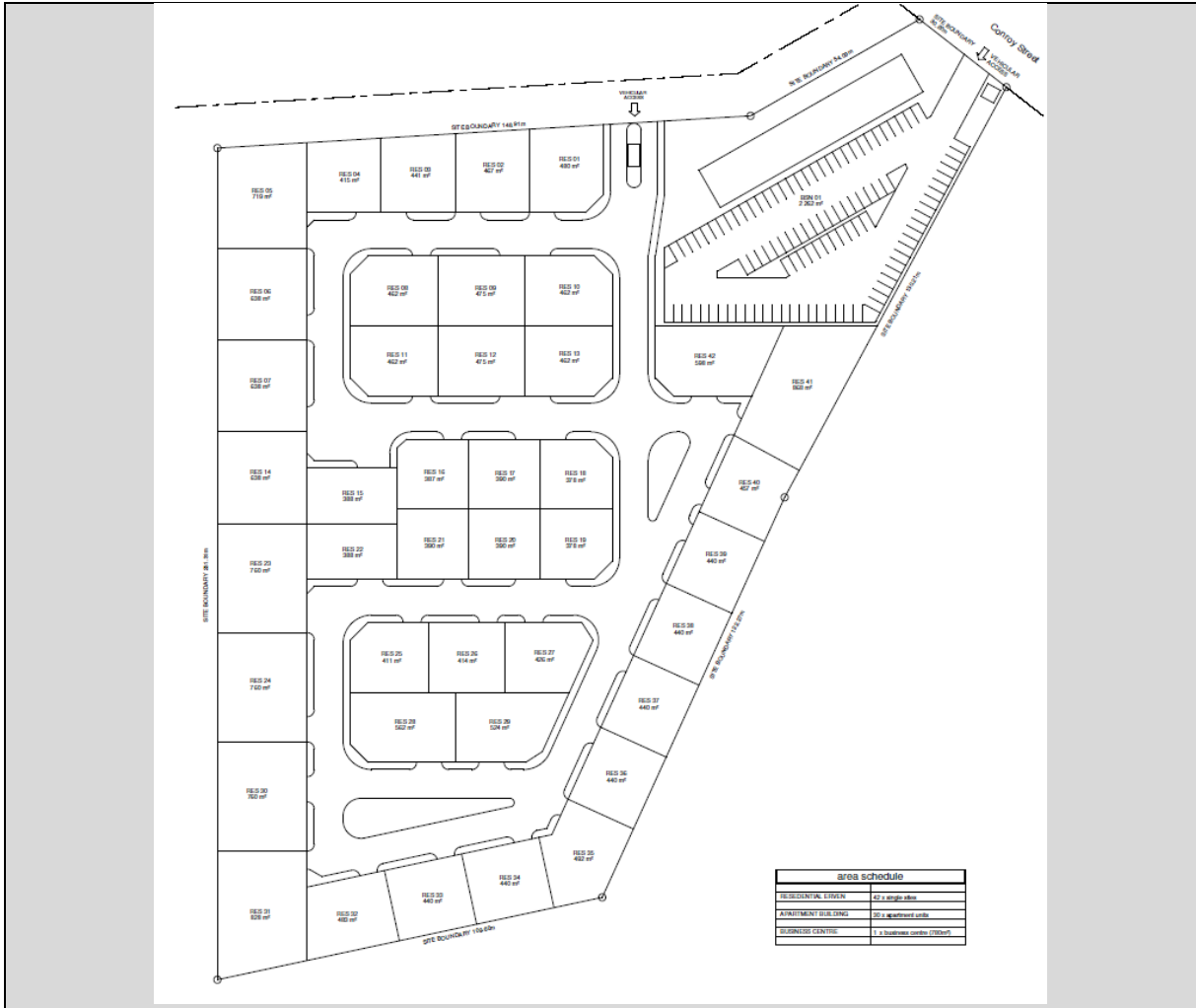
**Long (DDMMSS)**

27° 45' 23.11" S

24° 48' 04.13" E

<p>eight hundred and twenty eight square meters (828 m<sup>2</sup>) in size;</p> <ul style="list-style-type: none"> <li>• A business centre with a development footprint of eight hundred and fifty square meters (850 m<sup>2</sup>) inclusive of: <ul style="list-style-type: none"> <li>➤ Office spaces on the ground floor; and,</li> <li>➤ Thirty (30) apartment dwellings distributed over (3) floors.</li> </ul> </li> <li>• One parking area: <ul style="list-style-type: none"> <li>➤ The parking area is situated at the Business Centre and will provide seventy five (75) parking areas with a total development footprint of two thousand two hundred and sixty two square meters (2 262 m<sup>2</sup>).</li> </ul> </li> <li>• Service Delivery Infrastructure: <ul style="list-style-type: none"> <li>➤ Water and Sewage pipes;</li> <li>➤ Power supply cables (to be supplied by the Local Municipality); and,</li> <li>➤ Internal paved roads (please refer to Appendix C: Facility Illustrations).</li> </ul> </li> </ul> <p>Advantages of the Alternative Layout will be as follow:</p> <ol style="list-style-type: none"> <li>1. Traffic will be regulated through two (2) gates; and,</li> <li>2. The Business centre and apartments will be in a separate complex, thus increasing security to the free standing houses.</li> </ol> <p>Negatives impacts of the Alternative Layout:</p> <ol style="list-style-type: none"> <li>1. Ten (10) less visitor parking's;</li> <li>2. The business centres gate is situated in Conroy Street; and,</li> <li>3. Municipal waste trucks will struggle to navigate through the entrance gates.</li> </ol>		
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**c) Technology alternatives**

<b>Alternative 1 (preferred alternative)</b>
N/A
<b>Alternative 2</b>
N/A
<b>Alternative 3</b>
N/A

**d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)**

<b>Alternative 1 (preferred alternative)</b>
N/A
<b>Alternative 2</b>
N/A
<b>Alternative 3</b>
N/A

**e) No-go alternative**

The no-go option will result in the non-construction of the proposed development. The even

currently serves no ecological function and is degraded with minimal vegetation cover. Furthermore, should the development not be constructed a lack of rentable accommodation within the town of Hartswater will persist. As the development will result in additional office space new business and employment opportunities may arise through the development, thus should the development not be constructed these opportunities will be lost.

**Paragraphs 3 – 13 below should be completed for each alternative.**

**1.3 PHYSICAL SIZE OF THE ACTIVITY**

**a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):**

**Alternative:**

Alternative A1<sup>1</sup> (preferred activity alternative)

Alternative A2 (if any)

**Size of the activity:**

	36 000 m <sup>2</sup>
	36 000 m <sup>2</sup>

or, for linear activities:

**Alternative:**

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

**Length of the activity:**

	N/A
	N/A

**b) Indicate the size of the Alternative Sites or servitudes (within which the above footprints will occur):**

**Alternative:**

Alternative A1 (preferred activity alternative)

Alternative A2 (if any)

**Size of the site/servitude:**

	36 000 m <sup>2</sup>
	36 000 m <sup>2</sup>

**1.4 SITE ACCESS**

Does ready access to the site exist?

If NO, what is the distance over which a new access road will be built

<b>YES</b>	
<b>X</b>	
N/A	

Describe the type of access road planned:

N/A

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

---

<sup>1</sup> "Alternative A.." refer to activity, process, technology or other alternatives.



### 1.5 LOCALITY MAP

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any;
- indication of all the alternatives identified;
- closest town(s);
- road access from all major roads in the area;
- road names or numbers of all major roads as well as the roads that provide access to the site(s);
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow;
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).

**PLEASE REFER TO APPENDIX A: MAPS**

### 1.6 LAYOUT/ROUTE PLAN

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site;
- the current land use as well as the land use zoning of the site;
- the current land use as well as the land use zoning each of the properties adjoining the site or sites;
- the exact position of each listed activity applied for (including alternatives);
- servitude(s) indicating the purpose of the servitude;
- a legend; and
- a north arrow.

### 1.7 SENSITIVITY MAP

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses;
- the 1:100 year flood line (where available or where it is required by DWS);

- ridges;
- cultural and historical features;
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

**PLEASE REFER TO APPENDIX A: MAPS**

**1.8 SITE PHOTOGRAPHS**

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.

**PLEASE REFER TO APPENDIX B: PHOTOGRAPHS**

**1.9 FACILITY ILLUSTRATION**

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

**PLEASE REFER TO APPENDIX C: FACILITY ILLUSTRATIONS**

**1.10 ACTIVITY MOTIVATION**

Motivate and explain the need and desirability of the activity (including demand for the activity):

<b>1. Is the activity permitted in terms of the property's existing land use rights?</b>	<b>YES</b> <b>X</b>	
The proposed development will be situated on two (2) erven which will be consolidated into one. A rezoning application will need to be submitted to the Phokwane Local Municipality for approval. The site is currently zoned as public open space. The town planning application will be submitted to the Local Municipality once the outcome of the Environmental Authorisation has been received.		
<b>2. Will the activity be in line with the following?</b>		
<b>(a) Provincial Spatial Development Framework (PSDF)</b>	<b>YES</b> <b>X</b>	
Within the Northern Cape Provincial Spatial Development Framework it is stated that new development promotes qualitative urban integration, affordable housing and densification in a financially viable manner, without undermining existing property values. It further states that the goal of an integrated approach to urban design should be to promote closer proximity between housing and employment where ever possible, without compromising the quality of living. Office space will be developed on the property together with apartments and free standing		

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housing, thus the proposed development will be in line with the Provincial Spatial Development Plan.		
<b>(b) Urban edge / Edge of Built environment for the area</b>	YES X	
The proposed development is situated within the Urban Edge of the town of Hartswater as outlined in the Spatial Development Framework.		
<b>(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).</b>	YES X	
As stipulated in the Integrated Development Plan 2017 – 2018 for the Phokwane Local Municipality the majority of residence lives within brick structures. It is; however, outlined that rental accommodation has been an issue for the past decade.		
<b>(d) Approved Structure Plan of the Municipality</b>	YES X	
As per the Spatial Development Framework the proposed area is earmarked for Middle Class and affordable Housing. The area was owned by the Municipality; however, it has been sold to the Applicant.		
<b>(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)</b>	YES X	
The Environmental Management Framework for the Francis Baard District Municipality states that urban-related activities should be developed within the Urban Edge of a town. It further stipulates that the core objective of an environmental urban zone is urbanisation and densification. Housing developments should preferably be developed within the urban edge; however, all necessary approvals must be obtained from the relevant town planning Authority as well as the Environmental Authority.		
<b>(f) Any other Plans (e.g. Guide Plan)</b>		NO X
None		
<b>3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?</b>	YES X	
The Integrated Development Plan for the Phokwane Local Municipality 2017 – 2018 states that rental accommodation within the Municipality boundaries have been a priority issue for the past ten (10) years. The proposed development will address this priority issue, providing the		

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community with affordable housing.		
<b>4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)</b>	YES X	
The Integrated Development Plan for the Phokwane Local Municipality 2017 – 2018 states that rental accommodation within the Municipality boundaries have been a priority issue for the past ten (10) years. The proposed development will address this priority issue, providing the community with affordable housing.		
<b>5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</b>	YES X	
A letter has been sent to the Local Municipality to confirm whether adequate services are available for the proposed development.		
<b>6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)</b>	YES X	
The proposed development will connect to the existing municipal sewage, power and potable water network. A letter will be obtained from the Local Municipality stating that the proposed development is provided for in the infrastructure planning.		
<b>7. Is this project part of a national programme to address an issue of national concern or importance?</b>		NO X
Although housing is listed as a national concern, it relates to government housing. The proposed development will be done by a private individual and will be rented or sold to community members within the Hartswater area.		
<b>8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)</b>	YES X	
The proposed project is situated within the urban edge of the development. Current infrastructure is available as access is gained through an existing tar road. Erf 3952 & 3975 would need to be connected to the municipal power grid, sewage network and water supply infrastructure.		
<b>9. Is the development the best practicable environmental option for this land/site?</b>	YES X	
The proposed development is situated within the Urban Edge of Hartswater. The site is highly degraded and is currently not utilised for any activities. The site is surrounded by residential		

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developments as well as commercial land uses. The residential development will not negatively impact the surrounding environment.

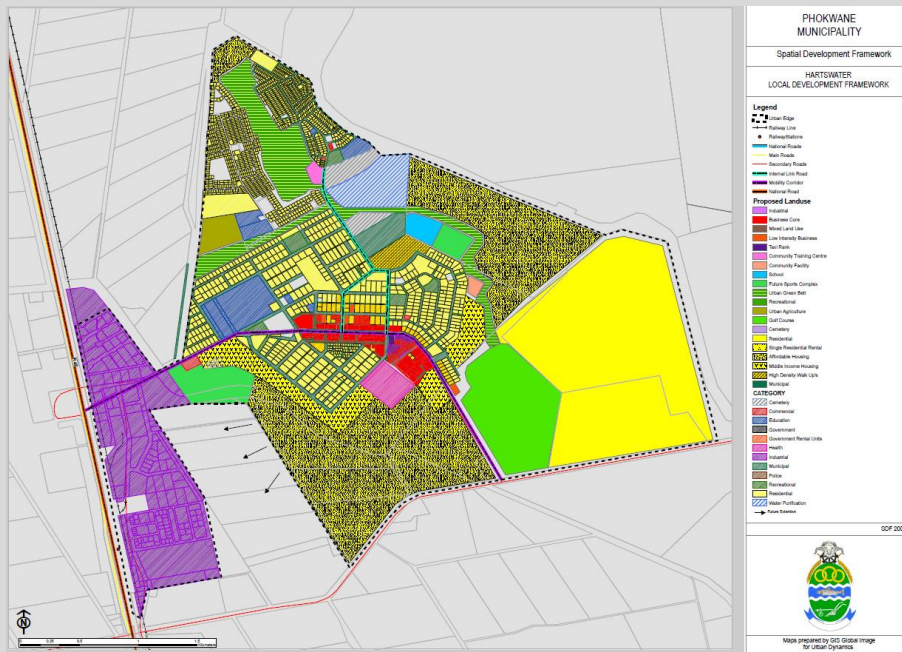
<b>10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?</b>	<b>YES</b> <b>X</b>
--	------------------------

Impacts during the construction phase after mitigation will be low. Constructions vehicles within the immediate vicinity may cause an increase in traffic volumes; however, the cumulative impact is considered to be low due to Hartswater being classified as a countryside town. Furthermore to afore mentioned dust caused by construction activities will contribute to the cumulative impact as vegetation cover within the immediate vicinity is considered to be scarce. From a Socio-Economic perspective jobs will be created which will be awarded to members from the local community during the construction phase. Noise; however, may cause disturbance to local community member residing or operating businesses within the area.

The proposed development will provide housing within the town of Hartswater, as well as office space. During the operational phase waste management will have a low cumulative impact as there are two similar complexes within a two hundred meter (200 m) radius. As the proposed development will provide housing traffic flow will increase in the morning and late afternoons; however, the cumulative impact is considered to be low as Hartswater is a small town.

<b>11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?</b>	<b>NO</b> <b>X</b>
--	-----------------------

The proposed development will provide housing within the Urban Edge of Hartswater. The Municipality has earmarked large pieces of land (marked in yellow) for future housing developments. The security complex may not set a precedent for similar activities necessarily; however, the municipality already made provision for similar activities in the future.



<b>12. Will any person's rights be negatively affected by the proposed activity/ies?</b>	<b>NO</b> <b>X</b>
--	-----------------------

All potential impacts during the construction and operational phases of the proposed development can be mitigated to a low standard. The community will not be negatively affected by the proposed development.

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<b>13. Will the proposed activity/ies compromise the “urban edge” as defined by the local municipality?</b>		<b>NO</b>	
		<b>X</b>	
The proposed development will be situated within the urban edge of Hartswater.			
<b>14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?</b>		<b>NO</b>	
		<b>X</b>	
The proposed development will not contribute to any of the seventeen (17) Strategic Integrated Projects.			
<b>15. What will the benefits be to society in general and to the local communities?</b>			
The proposed development will create employment opportunities for the local community. Furthermore rentable housing will be provided as well as office space, attracting new businesses to the area.			
<b>16. Any other need and desirability considerations related to the proposed activity?</b>			
N/A			
<b>17. How does the project fit into the National Development Plan for 2030?</b>			
As per the National Development Plan vision 2030, part of the enabling milestones is to ensure that mixed housing strategies are promoted and more compact urban development to help people access public spaces and facilities, state agencies, and work and business opportunities. It further mentions that more capital spending is needed for the development of housing facilities. The State thus focus on partnerships with the private sector in order to bridge the housing gap market.			
<b>18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.</b>			
Through the undertaking of a Basic Assessment Process by a competent EAP, informed by guidelines, the consideration of impacts and alternatives (advantages and disadvantages coupled thereto) has been made. Moreover, the conducting of public participation and specialist investigations form part of the process, whilst mitigation measures and the need and desirability of the proposed project were interrogated. This ensured that all provisions of the Act were considered and as such Integrated Environmental Management were accounted for.			
<b>19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.</b>			
Through the undertaking of a Basic Assessment (BA) process by a competent EAP, informed by guidelines, the considerations of impacts and alternatives (advantages and disadvantages coupled thereto) have been made. Moreover, the conducting of a public participation process and specialist investigations formed part of this basic assessment process, whilst mitigation measures and the needs and desirability of the proposed project were interrogated. This ensured that all provisions of the Act were considered and as such integrated environmental management were accounted for as follow:			
<i>(2) Environmental Management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural heritage and social interests equitably.</i>			
The goal of this BA is to identify and mitigate potential socio-economic impacts in order to meet			

the terms of Section 24 of the Constitution.

*(3) Development must be socially, environmentally and economically sustainable.*

The overall goal of this BA is to predict, identify and manage potential positive and negative impacts in the socio-economic, cultural-heritage and biophysical environments in order to meet the needs of present generations without compromising the needs of future generations which will give effect to sustainable development.

*(4)(a) Sustainable development requires the consideration of all relevant factors including the following:*

- i. That the disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*
- ii. that pollution and degradation of the environment are avoided, or, where they cannot be altogether avoided, are minimised and remedied;*
- iii. that the disturbance of landscapes and sites that constitute the nation's cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;*
- iv. that waste is avoided, or where it cannot be altogether avoided, minimised and reused or recycled where possible and otherwise disposed of in a responsible manner;*
- v. that the use and exploitation of non-renewable natural resources is responsible and equitable, and takes into account the consequences of the depletion of the resource;*
- vi. that the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceed the level beyond which their integrity is jeopardised;*
- vii. that a risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; and*
- viii. that negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.*

Specialists were appointed to undertake, Ecological, Palaeontological and Archaeological Impact Assessments as part of this Basic Assessment Process to consider all impacts relating to the above. An Environmental Management Program Report (EMPr) was compiled to mitigate and manage all activities during the planning, construction and operational phases.

*(b) Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.*

All aspects, including socio-economic, cultural-heritage and biophysical was evaluated and assessed in order to minimize potential negative impacts which will give effect to Integrated

Environmental Management, as set out in Chapter 5 of NEMA, 1998.

*(c) Environmental justice must be pursued so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.*

A public participation process was undertaken in terms of Section 41 of the NEMA EIA Regulations, which came into effect on 7 April 2017, in order to give effect to Section 32 of the Constitution in such a way that adherence is given to Section 24 of the Constitution.

*(d) Equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing must be pursued and special measures may be taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination.*

The proposed development will provide rentable housing within the town of Hartswater. Through the implementation of an Environmental Management Plan (EMP) it is ensured that negative impacts are adequately addressed. Basic human needs will be met as they will have adequate housing.

*(e) Responsibility for the environmental health and safety consequences of a policy, programme, project, product, process, service or activity exists throughout its life cycle.*

The EMPr will be applicable throughout the lifecycle of the project.

*(f) The participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantaged persons must be ensured.*

A public participation process will be undertaken in terms of Section 41 of the NEMA EIA Regulations, which came into effect on 7 April 2017, in order to give effect to Section 32 of the Constitution in such a way that adherence is given to Section 24 of the Constitution.

*(g) Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.*

The Department of Environment and Nature Conservation (DENC) decision making process has to be in accordance with the abovementioned.

*(h) Community wellbeing and empowerment must be promoted through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means.*

All Contractors and Construction Personnel will receive Environmental Awareness Training prior to the construction phase of the proposed development.

*(i) The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.*

This BAR does give effect to Section 5 of NEMA whereby all social, economic and environmental impacts of activities were considered, assessed and evaluated.



*(j) The right of workers to refuse work that is harmful to human health or the environment and to be informed of dangers must be respected and protected.*

Human rights will be taken into account during all phases of the proposed project.

*(k) Decisions must be taken in an open and transparent manner, and access to information must be provided in accordance with the law.*

The decision will take place in an open and fair manner and to give effect to Section 32 of the Constitution. I&AP's will be notified of the decision in terms of the requirements as set out in Section 41 of the NEMA EIA Regulations, 2017.

*(l) There must be intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment.*

All Governmental Authorities will be consulted during the BA process to obtain their inputs on the proposed development.

*(m) Actual or potential conflicts of interest between organs of state should be resolved through conflict resolution procedures.*

Actual or potential conflicts of interest between organs of state should / will be resolved through conflict resolution procedures through consultation with all relevant parties.

*(n) Global and international responsibilities relating to the environment must be discharged in the national interest.*

The proposed project will contribute to local housing delivery.

*(o) The environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people's common heritage.*

It is not foreseen that any cultural-heritage resources will be affected by the proposed project. The appropriate Heritage Specialists were appointed to undertake Impact Assessments in this field. All mitigation measures that were recommended by the Heritage specialist are included in the Environmental Management Programme report (EMP'r) in **Appendix G** of this report.

*(p) The costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment.*

An EMP'r were compiled in order to prevent or minimize any potential negative impacts to the environment. It will be the responsibility of the Applicant and Contractor to adhere to all measures set out in the EMP'r, in order to give effect to Section 28 (1) of NEMA.

*(q) The vital role of women and youth in environmental management and development must be recognised and their full participation therein must be promoted.*

Women and youth should be awarded all employment opportunities which are not labour intensive.

*(r) Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage*

*and development pressure.*

An Ecologist was appointed to undertake an Ecological Impact Assessment in which all possible impacts on wetlands, rivers and ecosystems were assessed and mitigation measures will be implemented. Refer to the **EMP-r in Appendix G** of this report.

### 1.11 APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act, 1998 (Act No. 107 of 1998)	The proposed project triggers listed activities which may not commence without authorisation as stipulated in Section 24 (2)(a) of The National Environmental Management Act (NEMA).	The Department of Environment and Nature Conservation, Northern Cape Province (DENC).	1998
Environmental Impact Assessment Regulations 2017 as promulgated in terms of Section 24(5) of NEMA.	The proposed project triggers activities that would require environmental authorisation as set out in GN R. 326.	The Department of Environment and Nature Conservation, Northern Cape Province (DENC).	2017
National Heritage Resources Act, 1999 (Act No. 25 of 1999).	The proposed project need a Heritage permit as it will trigger activities as listed in Section 38 of the National Heritage Act, 1999.	South African Heritage Resource Agency (SAHRA)	1999
National Water Act, 1998 (Act No. 36 of 1998).	The proposed project will traverse within a radius of 32 metres from a watercourse.	Department of Water and Sanitation (DWS)	1998
Phokwane Local Municipality Northern Cape Province Spatial Development Framework (SDF)	The proposed project falls within infrastructure development of the Phokwane Spatial Development Framework.	Phokwane Local Municipality, Northern Cape Province.	2017 - 2018
Phokwane Local Municipality, Northern Cape Province Integrated Development Plan (2018 – 2019)	The proposed project forms part of key service delivery risks that need to be addressed.	Phokwane Local Municipality, Northern Cape Province.	2018 - 2019
National Development Plan 2030	The proposed project will be in line with the National Development Plan.	National Planning Commission	2030

## BASIC ASSESSMENT REPORT

Northern Cape Provincial Spatial Development Plan	The proposed project is situated within the Northern Cape Province.	Department of Cooperative Governance, Human Settlements and Traditional Affairs.	2012
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### 1.12 WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

#### a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

<b>YES</b> X	
	± 10 m <sup>3</sup>

If YES, what estimated quantity will be produced per month?

How will the construction solid waste be disposed of (describe)?

Waste comprising of cement bags and general construction-related solid waste will be collected on site and kept at a temporary designated area and regularly removed by the Contractor to be disposed of at a permitted landfill site. The contractor must ensure that waste separation between hazardous and non-hazardous waste take place on site and hazardous waste must be delivered to a registered hazardous waste management facility.

Where will the construction solid waste be disposed of (describe)?

All non-hazardous construction waste must be disposed of by the Contractor at the Hartswater Solid Waste registered landfill. The Hartswater landfill is situated two and a half kilometers towards the south east of the proposed development.

Will the activity produce solid waste during its operational phase?

	<b>NO</b> X
	± 5 tons

If YES, what estimated quantity will be produced per month?

Households within South Africa produce approximately two kilograms (2 kg) of waste per day (Writer, 2016). The following quantities will be generated per day:

- 42 Residential developments: 84 kg per day;
- 30 Apartments: 60 kg; and,
- 12 Offices: 24 kg.

This results in one hundred and fifty six kilograms per day for the entire proposed development. The aforementioned will result in the five tons per month generated.

How will the solid waste be disposed of (describe)?

Waste will be collected from each dwelling area and stored within a designated waste storage area. As per municipal waste services across South Africa, waste will be collected once a week and disposed of at the municipal landfill site.

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

The Hartswater Municipal Landfill Site, no registration number could be obtained.

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Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

N/A
-----

*If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.*

Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?

	<b>NO</b> X
--	----------------

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility?

	<b>NO</b> X
--	----------------

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM:WA must also be submitted with this application.

**b) Liquid effluent**

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

	<b>NO</b> X
--	----------------

If YES, what estimated quantity will be produced per month?

	N/A
--	-----

Will the activity produce any effluent that will be treated and/or disposed of on site?

	<b>NO</b> X
--	----------------

*If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.*

Will the activity produce effluent that will be treated and/or disposed of at another facility?

	<b>NO</b> X
--	----------------

If YES, provide the particulars of the facility:

<b>Facility name:</b>	N/A		
<b>Contact person:</b>			
<b>Postal address:</b>			
<b>Postal code:</b>			
<b>Telephone:</b>	<b>Cell:</b>		
<b>E-mail:</b>	<b>Fax:</b>		

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

No waste water will be re-used or recycled on site, all waste water will be disposed of into the municipal sewage system.

**c) Emissions into the atmosphere**

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

	NO X
	NO X

If YES, is it controlled by any legislation of any sphere of government?

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

N/A, no emissions other than that of exhaust emissions and dust associated emissions will be released on site.

**d) Waste permit**

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

	NO X
--	---------

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

**e) Generation of noise**

Will the activity generate noise?

YES X	
	NO X

If YES, is it controlled by any legislation of any sphere of government?

Describe the noise in terms of type and level:

Noise impacts will be associated with the construction phase and operational phase. The level of noise generated will be temporary and is anticipated not to be significant.

**The sources of construction noise include the following:**

- The establishment of the construction site camp;
- The delivery of materials that will be used during the construction phase;
- Movement of heavy vehicles for delivery and installation purposes;
- Excavations of trenches for the potable pipes.

**The sources of operational noise include the following:**

- Wheel traffic from residence as well as Clients visiting the Office perimeter;
- During some weekends it can be anticipated that some residence may play music or have social functions; however, as with any residential complex, a curfew will be apply.

### 1.13 WATER USE

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

Municipal <input checked="" type="checkbox"/>	Water board	Groundwater	River, stream, dam or lake	Other	The activity will not use water				
If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:					N/A				
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?					<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: center;">YES</td> <td style="width: 50%; text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table>	YES	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
YES	<input type="checkbox"/>								
<input checked="" type="checkbox"/>	<input type="checkbox"/>								
A General Authorisation must be applied for as the proposed development will be situated within thirty two meters (32 m) of a watercourse. The watercourse is a manmade channel; however, it does feed into the natural environment. A Risk Assessment has been compiled under Section 21 c & i of the Natural Water Act, 1998 (Act No. 36 of 1998) and will be submitted to the Department of Water and Sanitation.									

If YES, please provide proof that the application has been submitted to the Department of Water Affairs (**Please refer to Appendix J: Additional Information for proof of the WULA**).

### 1.14 ENERGY EFFICIENCY

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

N/A
-----

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

None
------

## 2 SECTION B: SITE/AREA/PROPERTY DESCRIPTION

### Important notes:

1. For linear activities (pipelines, etc) as well as activities that cover very large sites, it may be necessary to complete this section for each part of the site that has a significantly different environment. In such cases please complete copies of Section B and indicate the area, which is covered by each copy No. on the Site Plan.

Section B Copy No. (e.g. A):

A

2. Paragraphs 1 - 6 below must be completed for each alternative.

3. Has a specialist been consulted to assist with the completion of this section?

YES	
X	

If YES, please complete the form entitled “Details of specialist and declaration of interest” for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

**Property description/physical address:**

<b>Province</b>	Northern Cape Province
<b>District Municipality</b>	Frances Baard District Municipality
<b>Local Municipality</b>	Phokwane Local Municipality
<b>Ward Number(s)</b>	Ward No. 6
<b>Farm name and number</b>	1. Remainder of Erf 259. 2. Erf 3592.
<b>Portion number</b>	N/A
<b>SG Code</b>	1. C081000 100000 259 00000

Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application including the same information as indicated above.

**Current land-use zoning as per local municipality IDP/records:**

Public Open Space
-------------------

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

YES	
X	

## 2.1 GRADIENT OF THE SITE

Indicate the general gradient of the site.

### Alternative S1:

Flat X	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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### Alternative S2 (if any):

Flat X	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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## 2.2 LOCATION IN LANDSCAPE

Indicate the landform(s) that best describes the site:

2.1 Ridgeline	<input type="checkbox"/>	2.4 Closed valley	<input type="checkbox"/>	2.7 Undulating plain / low hills	<input type="checkbox"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input type="checkbox"/>	2.8 Dune	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	X	2.9 Seafront	<input type="checkbox"/>
2.10 At sea	<input type="checkbox"/>				

## 2.3 GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on any of the following?

	Alternative S1:	Alternative S2 (if any):	Alternative S3 (if any):	
Shallow water table (less than 1.5m deep)	NO X	NO X	YES	NO
Dolomite, sinkhole or doline areas	NO X	NO X	YES	NO
Seasonally wet soils (often close to water bodies)	NO X	NO X	YES	NO
Unstable rocky slopes or steep slopes with loose soil	NO X	NO X	YES	NO
Dispersive soils (soils that dissolve in water)	NO X	NO X	YES	NO
Soils with high clay content (clay fraction more than 40%)	NO X	NO X	YES	NO
Any other unstable soil or geological feature	NO X	NO X	YES	NO
An area sensitive to erosion	NO X	NO X	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in



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the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of Local Authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

### 2.4 GROUNDCOVER

Indicate the types of groundcover present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition <sup>E</sup>	<b>Natural veld with scattered aliens<sup>E</sup></b> <b>X</b>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	Gardens
Sport field	Cultivated land	Paved surface	Building or other structure	<b>Bare soil</b> <b>X</b>

If any of the boxes marked with an “<sup>E</sup>” is ticked, please consult an appropriate specialist to assist in the completion of this section if the Environmental Assessment Practitioner doesn’t have the necessary expertise.

### 2.5 SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River		<b>NO</b> <b>X</b>	
Non-Perennial River	<b>YES</b> <b>X</b>		
Permanent Wetland		<b>NO</b> <b>X</b>	
Seasonal Wetland	<b>YES</b> <b>X</b>		
Artificial Wetland		<b>NO</b> <b>X</b>	
Estuarine / Lagoonal wetland		<b>NO</b> <b>X</b>	

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

**N/A.** No surface water is present on site and the finding has been justified by the Ecologist and the Geo-Technical Specialists.

### 2.6 LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area	Dam or reservoir	Polo fields
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<b>Low density residential</b>	Hospital/medical centre	Filling station <sup>H</sup>
<b>Medium density residential</b>	<b>School</b>	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
<b>Informal residential<sup>A</sup></b>	<b>Church</b>	<b>Agriculture</b>
<b>Retail commercial &amp; warehousing</b>	Old age home	<b>River, stream or wetland</b>
Light industrial	Sewage treatment plant <sup>A</sup>	Nature conservation area
Medium industrial <sup>AN</sup>	Train station or shunting yard <sup>N</sup>	Mountain, koppie or ridge
Heavy industrial <sup>AN</sup>	Railway line <sup>N</sup>	Museum
Power station	Major road (4 lanes or more) <sup>N</sup>	<b>Historical building</b>
<b>Office/consulting room</b>	Airport <sup>N</sup>	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam <sup>A</sup>	<b>Sport facilities</b>	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

If any of the boxes marked with an "N" are ticked, how this impact will / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "AN" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

N/A

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)		NO X
Core area of a protected area?		NO X
Buffer area of a protected area?		NO X
Planned expansion area of an existing protected area?		NO X
Existing offset area associated with a previous Environmental Authorisation?		NO X
Buffer area of the SKA?		NO X

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

## 2.7 CULTURAL/HISTORICAL FEATURES

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:

NO  
X

N/A

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

### Background Information

According to the 1:250 000 scale geological map of the region (2724 Christiana), the study area is underlain by Precambrian, Ventersdorp Supergroup lavas (basalts and andesites of the Rietgat Formation *Rr*), that are capped by geologically recent (Quaternary) Aeolian sand, alluvium and residual soils. The Rietgat Formation is not palaeontologically significant, but glacial striations are recorded in the basaltic andesites of the Ventersdorp Supergroup.

The striations occurred about 300 million years ago when Southern Africa was near the South Pole and large ice sheets or glaciers (Dwyka) covered high-lying areas. As the glaciers moved, the rocks and rubble that became embedded in their under surface scoured out scratch marks (striations) on the underlying andesite rock pavements.

Sections of these andesite glacial pavements are exposed at numerous localities along the lower Vaal Basin including the Christiana area. The nearby Vaal River dates back to the late Cretaceous and is one of the principal fluvial conduits in Southern Africa. The alluvial formations of the Vaal River Basin are best developed along the lower three hundred kilometres (300 km) of the river. These alluvial formations are well known for their unique record of the Pleistocene. Numerous Early Stone Age hand axes as well as the remains of Pleistocene mammalian fossils have been recovered in the region, from gravel deposits twenty meters (20 m) to fifty meters (50 m) above the current riverbed.

Early to Middle Stone Age artefacts are derived from the Vaal gravels and include an abundance of Acheulian (Early Stone Age) hand axes, cleavers and core-axes, primarily made from quartzite. In addition, the gravel deposits are largely mantled by undifferentiated deposits of unconsolidated to semi-consolidated sediments, including calcrete, Aeolianite, clay and Kalahari/Hutton Sands, of which the lower levels have shown evidence of high densities of Fauresmith blades, which is regarded as an important transitional stone tool industry at the beginning of the Middle Stone Age.

Later Stone Age artefacts preserved in open-site scatters have been recorded on the modern land surfaces flanking the river and its tributaries. There are plentiful rock art sites with engravings in the Lower Vaal River Basin including the area around Christiana on the farm Stowlands and Stows

Kopje. Further south, rock engravings have been recorded at Four Streams, Nasareth and Schoolplaats that include human figures, animals, therianthropes and geometric motifs. Koranna and Bushman bands occupied the Harts-Vaal valley by the beginning of the 19<sup>th</sup> century and competed for territory with the Tswana/Thlaping immigrants from the north.

In 1867 the discovery of diamonds near the Vaal/Gariep confluence brought about enormous changes in the social and economic make-up of the region. Diamond diggers first located the diamondiferous alluvial gravels of the Vaal River in the vicinity of Christiana and Bloemhof in the mid 1880's and by 1912, the rich diggings on Mooifontein and London, south of Schweizer Reneke, had been discovered, as had the equally rich deposits to the southwest of Wolmaransstad. Hartswater was laid out as part of the Vaal – Harts Irrigation Scheme in 1948 and reached municipal status in 1960.

### Field Assessment

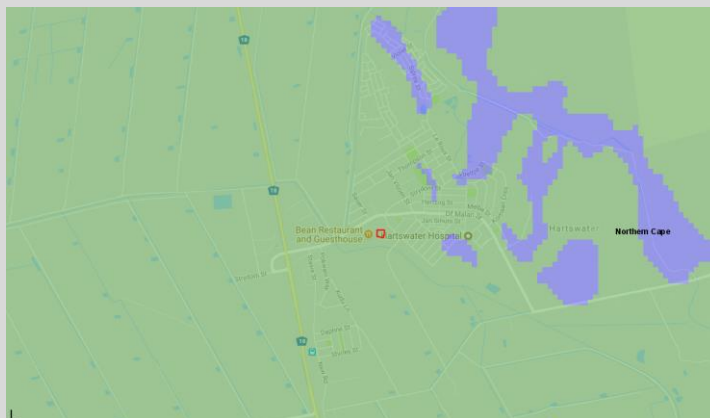
A foot survey of the terrain revealed a degraded terrain with no evidence for the accumulation and preservation of intact fossil material within the superficial Quaternary sediments. The pedestrian survey revealed no indication of *in situ* Stone Age archaeological material, capped or distributed as surface scatters on the landscape. There are no indications of rock art (engravings) or glacial striations, prehistoric structures, graves or historically significance buildings older than 60 years within the boundaries of the study area.

### Impact Statement and Recommendation

The affected area is underlain by intrusive volcanic rocks that are considered to be of no paleontological significance. It is highly unlikely that fossil remains will be encountered during excavation activities within the study area. There is little chance of finding fossil material within the superficial overburden due to a lack of suitable Quaternary-aged alluvial deposits at the site. There are no major palaeontological grounds to suspend excavation activities within the proposed development footprint.

Impact on potential *in situ* archaeological remains, engraving localities or historically significant structures within the study area is considered unlikely. There are no major archaeological grounds to suspend excavation activities within the proposed development footprint. The proposed development footprint is assigned a site rating of Generally Protected C (GP C).

### Palaeontological Sensitivity



The South African Resources Agency developed the Palaeontological Sensitivity Map as illustrated

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on their website. If a site is reflected in green, the impact on the palaeontology is considered to be moderate. The South African Resources Heritage Agency stipulates that a Desktop Study need to be compiled and submitted to the Agency.

Will any building or structure older than 60 years be affected in any way?

**NO**  
**X**

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

**YES**  
**X**

If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

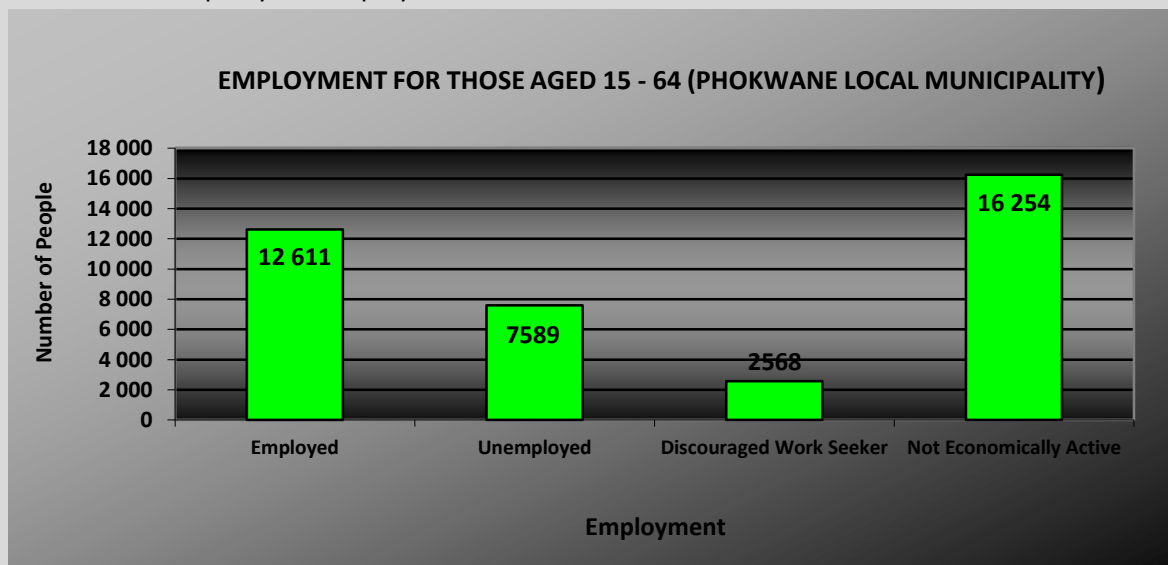
**2.8 SOCIO-ECONOMIC CHARACTER**

**a) Local Municipality**

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

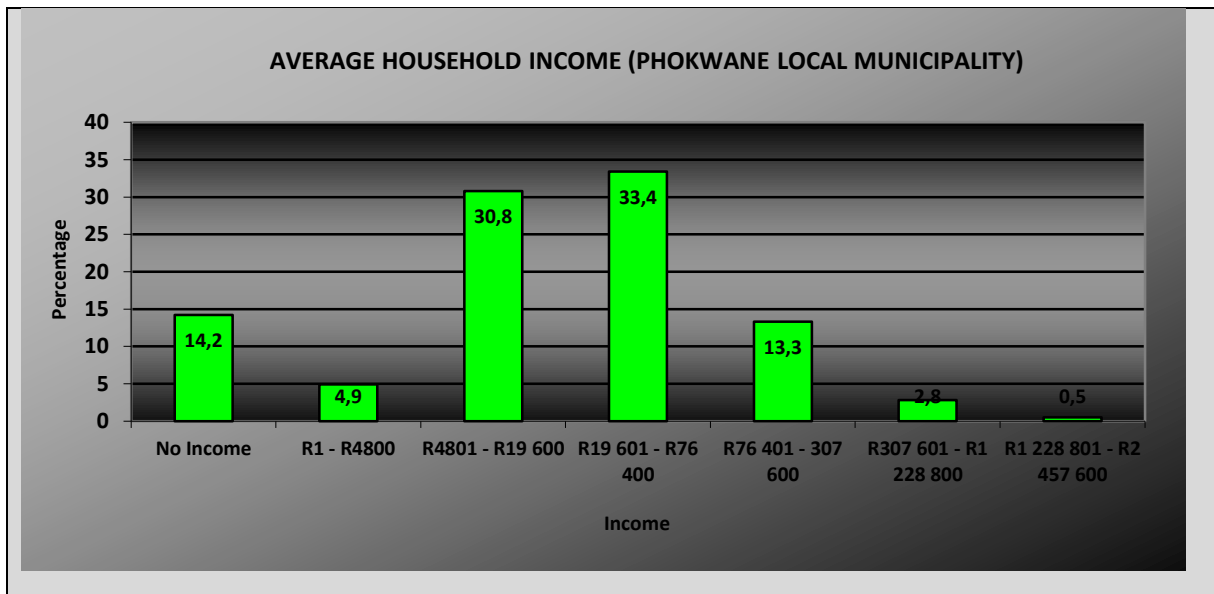
According to Statistics South Africa, individuals that are unemployed within the Phokwane Local Municipality are estimated to be seven thousand five hundred and eighty nine (7 589)(37.6%) where a further sixteen thousand two hundred and fifty four (16 254) individuals are not economically active. However, twelve thousand six hundred and eleven (12 611) individuals within the Local Municipality are employed.



Economic profile of local municipality:

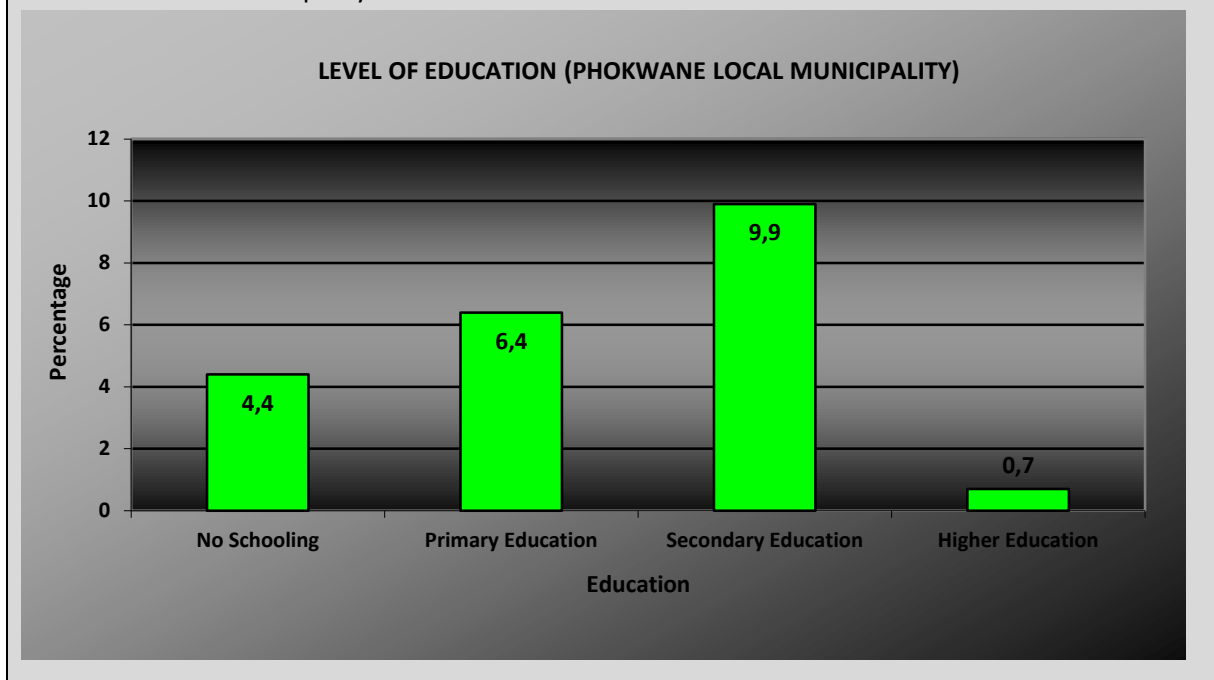
The economic profile of the Phokwane Local Municipality is summarized in the graph below. The graph was compiled using data gathered by Statistics South Africa.

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Level of education:

The population figures estimate that there are fifty one thousand five hundred and sixty seven (51 567) inhabitants within the Phowane Local Municipality. The level of education for the aforementioned municipality is as follow:



**b) Socio-economic value of the activity**

What is the expected capital value of the activity on completion?

What is the expected yearly income that will be generated by or as a result of the activity?

Will the activity contribute to service infrastructure?

Confidential
Unknown
NO
X

Is the activity a public amenity?	<b>NO</b> <b>X</b>
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Unknown
What is the expected value of the employment opportunities during the development and construction phase?	Unknown
What percentage of this will accrue to previously disadvantaged individuals?	Unknown
How many permanent new employment opportunities will be created during the operational phase of the activity?	2
What is the expected current value of the employment opportunities during the first 10 years?	To be Determined
What percentage of this will accrue to previously disadvantaged individuals?	100 %

## 2.9 BIODIVERSITY

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or [BGIShelp@sanbi.org](mailto:BGIShelp@sanbi.org). Information is also available on compact disc (cd) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP’s responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix D to this report.

- a) **Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)**

Systematic Biodiversity Planning Category	If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Ecological Support Area (ESA) X	An ESA is an area that must retain its ecological processes in order to: <ul style="list-style-type: none"> <li>Meet biodiversity targets for ecological processes that have not been met in Critical Biodiversity Areas (CBAs) or protected areas;</li> <li>Meet biodiversity targets for representation of ecosystem types or species of special concern when it is not possible to meet them in CBAs;</li> <li>Support ecological functioning of a protected area or CBA or a combination of these.</li> </ul>



**b) Indicate and describe the habitat condition on site**

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	0 %	-
Near Natural (includes areas with low to moderate level of alien invasive plants)	10 %	Indigenous species have been observed on site; however, all species has been classified as Least concern.
Degraded (includes areas heavily invaded by alien plants)	20 %	At a local scale the site is degraded and poses very little significant ecological species. No species of conservation concern were found present or are likely expected to be present. The property is surrounded by transformed and urban land uses, making recovery to a functional and representative ecosystem unlikely and very slow. The disturbed conditions and alien invasion have resulted in the area achieving low PES and EIS scores.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	80 %	The area is largely modified by the disruption in natural vegetation composition, structure and ecosystem functioning due to previous vegetation clearing, soil compaction and continues disturbance from vehicles. A large loss of natural habitat, biota and basic ecosystem functions has occurred.

**c) Complete the table to indicate:**

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems			
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)		Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)		Estuary	Coastline
	Least Threatened X		NO X	NO X	NO X

- d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g. threatened species and special habitats)

**1. Vegetation**

The vegetation type consists of plains often slightly irregular with well-developed tree layer with *Vachellia erioloba*, *V. tortilis*, *V. karroo* and *Boscia albitrunca* and well-developed shrub layer with occasional dense stands of *Tarchonanthus camphoratus* and *Senegalia mellifera*. The grass layer is open with much uncovered soil (Mostert, 2018).

The vegetation type is Least Threatened. Two percent of the vegetation type is statutory conserved and about 18% is transformed mostly by cultivation. The area is classified as an Ecological Support Area (Please refer to **Appendix A: Maps**). An ESA is an area that must retain its ecological processes in order to: meet biodiversity targets for ecological processes that have not been met in Critical Biodiversity Areas (CBAs) or protected areas; meet biodiversity targets for representation of ecosystem types or species of special concern when it is not possible to meet them in CBAs; support ecological functioning of a protected area or CBA (e.g. protected area buffers); or a combination of these. All ecological processes important for the long-term persistence of ecosystems and species should be adequately included in the portfolio of protected areas, CBAs and ESAs. In this case the area has been degraded in the past. Due to the total urban and transformed surrounding land uses and land cover, the likelihood of the area restoring to an important ecological functioning unit is unlikely (Mostert, 2018).

The time of site visit was summer. The annual cover of herbs and grasses were fairly well represented. Bulbs were poorly represented as expected. It is advised that a botanical walkthrough be conducted during the flowering season, before construction starts (Mostert, 2018).

The area is dominated by sprawling herbaceous ground cover such as Khakiweed (*Alternanthera pungens*) and sparse grasses. Few shrubs and trees are presents and are common of the area, Buffalo Thorn (*Ziziphus mucronata*), Boksdoring (*Lycium cinereum*) and Umbrella Thorn (*Vachellia tortilis ssp. Heteracantha*). The majority of species is either weedy and/or prefers disturbed soil. Some serious invaders, such as Tumbleweed (*Salsola kali*) are found on the property and will have to be carefully removed and controlled in the future (Mostert, 2018).

The vegetation composition and structure, being dominated by disturbance loving, weedy and pioneer species confirms the observation that the area is degraded and that the topsoil was disturbed by vegetation clearing and a sport field. Continuous disturbances includes thoroughfare for vehicles to adjacent properties (Mostert, 2018).

Some species also prefer areas where water accumulates. Some water is likely to accumulate on the property, due to the relatively flat topography. This is in concurrence with the geo-technical report that recommended that water drainage should be properly planned and addressed to drain water from the site and prevent any accumulation on site. No species of conservation concern or provincially Protected were observed (Mostert, 2018).

Table 1: Species list of plants that were encountered during the survey

SPECIES	COMMON NAME	FAMILY	ORIGIN	CONSERVATION STATUS
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<i>Datura spp.</i>	Devil's trumpet	Solanaceae	Alien	N/A
<i>Melia azedarach</i>	Syringa	Meliaceae	Alien	CARA-3; NEM:BA - 1b
<i>Salsola kali</i>	Tumbleweed	Chenopodiaceae	Alien	NEM:BA-1b
<i>Sphaeralcea bonariensis</i>	Latin globealow	Malvaceae	Alien	N/A
<i>Cenchrus ciliaris</i>	Blue buffalo grass	Poaceae	Indigenous	Least Concern
<i>Chloris virgata</i>	Feathered Chloris	Poaceae	Indigenous	Least Concern
<i>Cynodon dactylon</i>	Common couch grass	Poaceae	Indigenous	Least Concern
<i>Enneapogon cenchroides</i>	Nine-awned grass	Poaceae	Indigenous	Least Concern
<i>Eragrostis trichophora</i>	Hairy love grass	Poaceae	Indigenous	Least Concern
<i>Lycium cinereum</i>	Boksdoring	Solanaceae	Indigenous	Least Concern
<i>Talinum caffrum</i>	Porcupine root	Anacampserotaceae	Indigenous	Least Concern
<i>Tragus berteronianus</i>	Carrot-seed grass	Poaceae	Indigenous	Least Concern
<i>Tribulus terrestris</i>	Devil's thorn	Zygophyllaceae	Indigenous	Least Concern
<i>Urochloa panicoides</i>	Annual signal grass	Poaceae	Indigenous	Least Concern
<i>Vachellia tortilis ssp. Heteracantha</i>	Umbrella thorn	Fabaceae	Indigenous	Least Concern
<i>Ziziphus mucronata</i>	Buffalo-thorn	Rhamnaceae	Indigenous	Least Concern
<i>Alternanthera pungens</i>	Khakiweed	Amaranthaceae	Weed	N/A
<i>Boerhavia diffusa</i>	Spiderling	Nyctaginaceae	Weed	N/A
<i>Urocloa mosambicensis</i>	Bushveld signal grass.	Poaceae	Weed	N/A

**Fauna and Flora of Conservation Concern**

Species known to occur from the Quarter Degree Square (QDS, 2724DD) were extracted from the Animal Demography Unit website, the Second South African Bird Atlas and the Botanical Database of South Africa. No plants of conservation concern are known from the QDS. Five species birds of conservation concern from the QDS are listed below. The likelihood of the species using the

proposed site as a habitat is also given. No species of conservation concern were observed in the development footprint (Mostert, 2018).

No trees are listed from the QDS in terms of Red List or the Protected Trees Act (2014). No orchids from the QDS are listed. No listed dung beetles are found in the QDS. No Neuroptera and Megaloptera of conservation concern are known from the QDS. No listed spiders or scorpions are known to occur in the area and these species are presumed to move away from the construction site due to increased disturbance. No amphibians of conservation concern are known from the QDS. The only mammal of conservation concern is known from the QDS which is *Hippotragus niger subsp. Niger*. No animals were directly observed (Mostert, 2018).

**Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS)**

The mixed use development will transform the existing surface vegetation inside the development footprint. The PES score of the development footprint is D. The area is largely modified by the disruption in natural vegetation composition, structure and ecosystem functioning due to previous vegetation clearing, soil compaction and continuous disturbance from vehicles. A large loss of natural habitat, biota and basic ecosystem functions has occurred (Mostert, 2018).

The EIS is scored a D having low importance and sensitivity in the landscape. It is not ecologically important and sensitive at any scale. Biodiversity is usually ubiquitous and not sensitive to flow and habitat modifications. It is classified as an Ecological Support Area and the vegetation type is least Threatened. At a local scale the site is degraded and poses very little significance ecologically. No species of conservation concern were found present or are likely expected to be present. The property is surrounded by transformed and urban land uses, making recovery to a functional and representative ecosystem unlikely and very slow (Mostert, 2018).

The disturbed conditions and alien invasions have resulted in the area achieving low PES and EIS scores. This section is therefore not of high conservational significance for habitat preservation or ecological functionality persistence in support of the surrounding ecosystem or broader vegetation type.

### 3 SECTION C: PUBLIC PARTICIPATION

#### 3.1 ADVERTISEMENT AND NOTICE

<b>Publication name</b>	Express: Northern Cape	
<b>Date published</b>	02 August 2018	
<b>Site notice position</b>	<b>Latitude</b>	<b>Longitude</b>
Municipal Office	27° 45' 10.34" S	24° 48' 37.91" E
Library	27° 45' 10.17" S	24° 48' 40.85" E
Site Notices	27° 45' 19.42" S	24° 48' 08.93" E
<b>Date placed</b>	02 August 2018	

Include proof of the placement of the relevant advertisements and notices in Appendix E1.

#### 3.2 DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 41(2)(e) and 41(6) of GN 733.

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

<b>Title, Name and Surname</b>	<b>Affiliation/ key stakeholder status</b>	<b>Contact details (tel number or e-mail address)</b>
To be completed once the initial Public Participation Process has been conducted.		

Include proof that the key stakeholder received written notification of the proposed activities as Appendix E2. This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

#### 3.3 ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

<b>Summary of main issues raised by I&amp;APs</b>	<b>Summary of response from EAP</b>
To be completed once the initial Public Participation Process has been conducted.	

#### 3.4 COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E3.

### 3.5 AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	E-mail	Postal address
NCDENC	Enrico Oosthuysen	053 807 7300	053 807 7328	enricoosthuysen@gmail.com	Private Bag X6120, Kimberley, 8301
South African National Heritage Resources Agency	T.B.C	021 462 4502	021 462 4509	T.B.C	P.O. Box 4637, Cape Town, 8001
Department of Water and Sanitation	Lerato Mokhoantle	053 836 7600	053 831 4534	mokhoantle@dws.gov.za	Private Bag X6101, Kimberley, 8300
Phokwane Local Municipality	Mr Richard Sengani	053 474 9700	053 474 1768	-	Private Bag X3, Hartswater, 8570
Frances Baard District Municipality	Mr Kenneth Lucas	053 838 0970		Kenneth.lucas@fbdm.co.za	Private Bag X6088, Kimberley, 8301
Department of Agriculture, Land Reform and Rural Development	N Yende	053 838 9100	053 831 4685	nyende@ncpg.gov.za	Private Bag X5018, Kimberley, 8300

Include proof that the Authorities and Organs of State received written notification of the proposed activities as Appendix E4.

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

### 3.6 CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the Public Participation requirements may be appropriate, the person conducting the Public Participation process may

deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the Competent Authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the Public Participation Process must be submitted prior to the commencement of the Public Participation Process.

A list of registered I&APs must be included as appendix E5.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E6.

## 4 SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2017 and should take applicable official guidelines into account. The issues raised by Interested and Affected Parties should also be addressed in the assessment of impacts.

### 4.1 IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

#### Impact Assessment Methodology

For each potential impact, the EXTENT (spatial scale), MAGNITUDE, DURATION (time scale), PROBABILITY of occurrence, IRREPLACEABLE loss of resources and the REVERSIBILITY of potential impacts must be assessed by the specialist by using the results of their specialist studies. The assessment of the above criteria will be used to determine the significance of each impact, with and without the implementation of the proposed mitigation measures. The scales to be used to assess these variables and to define the rating categories are tabulated in Table 1 and Table 2 below.

Evaluation component	Ranking scale and description (criteria)
<b>MAGNITUDE of NEGATIVE IMPACT</b> (at the indicated spatial scale)	<p><b>10 - Very high:</b> Bio-physical and/or social functions and/or processes might be <i>severely</i> altered.</p> <p><b>8 - High:</b> Bio-physical and/or social functions and/or processes might be <i>considerably</i> altered.</p> <p><b>6 - Medium:</b> Bio-physical and/or social functions and/or processes might be <i>notably</i> altered.</p> <p><b>4 - Low :</b> Bio-physical and/or social functions and/or processes might be <i>slightly</i> altered.</p> <p><b>2 - Very Low:</b> Bio-physical and/or social functions and/or processes might be <i>negligibly</i> altered.</p> <p><b>0 - Zero:</b> Bio-physical and/or social functions and/or processes will remain <i>unaltered</i>.</p>
<b>MAGNITUDE of POSITIVE IMPACT</b> (at the indicated	<p><b>10 - Very high (positive):</b> Bio-physical and/or social functions and/or processes might be <i>substantially</i> enhanced.</p> <p><b>8 - High (positive):</b> Bio-physical and/or social functions and/or processes might be <i>considerably</i> enhanced.</p> <p><b>6 - Medium (positive):</b> Bio-physical and/or social functions and/or processes might be <i>notably</i> enhanced.</p>



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spatial scale)	<p><b>4 - Low (positive):</b> Bio-physical and/or social functions and/or processes might be <i>slightly</i> enhanced.</p> <p><b>2 - Very Low (positive):</b> Bio-physical and/or social functions and/or processes might be <i>negligibly</i> enhanced.</p> <p><b>0 - Zero (positive):</b> Bio-physical and/or social functions and/or processes will remain <i>unaltered</i>.</p>
<b>DURATION</b>	<p><b>5 - Permanent</b></p> <p><b>4 - Long term:</b> Impact ceases after operational phase/life of the activity &gt; 60 years.</p> <p><b>3 - Medium term:</b> Impact might occur during the operational phase/life of the activity – 60 years.</p> <p><b>2 - Short term:</b> Impact might occur during the construction phase - &lt; 3 years.</p> <p><b>1 - Immediate</b></p>
<b>EXTENT</b> (or spatial scale/influence of impact)	<p><b>5 - International:</b> Beyond National boundaries.</p> <p><b>4 - National:</b> Beyond Provincial boundaries and within National boundaries.</p> <p><b>3 - Regional:</b> Beyond 5 km of the proposed development and within Provincial boundaries.</p> <p><b>2 - Local:</b> Within 5 km of the proposed development.</p> <p><b>1 - Site-specific:</b> On site or within 100 m of the site boundary.</p> <p><b>0 - None</b></p>
<b>IRREPLACEABLE</b> loss of resources	<p><b>5 – Definite</b> loss of irreplaceable resources.</p> <p><b>4 – High</b> potential for loss of irreplaceable resources.</p> <p><b>3 – Moderate</b> potential for loss of irreplaceable resources.</p> <p><b>2 – Low</b> potential for loss of irreplaceable resources.</p> <p><b>1 – Very low</b> potential for loss of irreplaceable resources.</p> <p><b>0 - None</b></p>
<b>REVERSIBILITY</b> of impact	<p><b>5 – Impact cannot</b> be reversed.</p> <p><b>4 – Low</b> potential that impact might be reversed.</p> <p><b>3 – Moderate</b> potential that impact might be reversed.</p> <p><b>2 – High</b> potential that impact might be reversed.</p> <p><b>1 – Impact will be</b> reversible.</p> <p><b>0 – No</b> impact.</p>
<b>PROBABILITY</b> (of occurrence)	<p><b>5 - Definite:</b> &gt;95% chance of the potential impact occurring.</p> <p><b>4 - High probability:</b> 75% - 95% chance of the potential impact occurring.</p> <p><b>3 - Medium probability:</b> 25% - 75% chance of the potential impact occurring</p> <p><b>2 - Low probability:</b> 5% - 25% chance of the potential impact occurring.</p> <p><b>1 - Improbable:</b> &lt;5% chance of the potential impact occurring.</p>
<b>Evaluation component</b>	<b>Ranking scale and description (criteria)</b>

<b>CUMULATIVE impacts</b>	<p><b>High:</b> The activity is one of several similar past, present or future activities in the same geographical area, and might contribute to a very significant combined impact on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p><b>Medium:</b> The activity is one of a few similar past, present or future activities in the same geographical area, and might have a combined impact of moderate significance on the natural, cultural, and/or socio-economic resources of local, regional or national concern.</p> <p><b>Low:</b> The activity is localised and might have a negligible cumulative impact.</p> <p><b>None:</b> No cumulative impact on the environment.</p>
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Table 2: Evaluation components, ranking scales and descriptions (criteria).

Once the evaluation components have been ranked for each potential impact, the significance of each potential impact will be assessed (or calculated) using the following formula:

- **SP (Significance Points) = (Magnitude + Duration + Extent + Irreplaceable + Reversibility) x Probability.**

The maximum value is 150 SP (significance points). The unmitigated and mitigated scenarios for each potential environmental impact should be rated as per Table below.

Significance Points	Environmental Significance	Description
125 – 150	Very high (VH)	An impact of very high significance will mean that the project cannot proceed, and that impacts are irreversible, regardless of available mitigation options.
100 – 124	High (H)	An impact of high significance which could influence a decision about whether or not to proceed with the proposed project, regardless of available mitigation options.
75 – 99	Medium-high (MH)	If left unmanaged, an impact of medium-high significance could influence a decision about whether or not to proceed with a proposed project. Mitigation options should be relooked.
40 – 74	Medium (M)	If left unmanaged, an impact of moderate significance could influence a decision about whether or not to proceed with a proposed project.
<40	Low (L)	An impact of low is likely to contribute to positive decisions about whether or not to proceed with the project. It will have little real effect and is unlikely to have an influence on project design or alternative motivation.
+	Positive impact (+)	A positive impact is likely to result in a positive consequence/effect, and is likely to contribute to positive decisions about whether or not to proceed with the project.

Table 3: Definition of significance ratings (positive and negative)

#### 4.2 POTENTIAL IMPACTS DURING THE PLANNING, DESIGN AND CONSTRUCTION PHASE

#### 4.3 POTENTIAL IMPACTS DURING OPERATIONAL PHASE

A complete impact assessment in terms of Regulation 19(3) of GN 733 must be included as Appendix F.

#### 4.4 ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Impacts during the construction phase after mitigation will be low. Constructions vehicles within the immediate vicinity may cause an increase in traffic volumes; however, the cumulative impact is considered to be low due to Hartswater being classified as a countryside town. Furthermore to afore mentioned dust caused by construction activities will contribute to the cumulative impact as vegetation cover within the immediate vicinity is considered to be scarce. From a Socio-Economic perspective jobs will be created which will be awarded to members from the local community during the construction phase. Noise; however, may cause disturbance to local community member residing or operating businesses within the area.

The proposed development will provide housing within the town of Hartswater, as well as office space. During the operational phase waste management will have a low cumulative impact as there are two similar complexes within a two hundred meter (200 m) radius. As the proposed development will provide housing traffic flow will increase in the morning and late afternoons; however, the cumulative impact is considered to be low as Hartswater is a small town.

#### 4.5 POTENTIAL IMPACTS DURING CONSTRUCTION PHASE (PREFERRED ALTERNATIVE A)

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS</b>				
<b>Nature of impact:</b> Negative impact of haphazard placement of infrastructure on the environment.	<b>Activity:</b> The establishment of a main site office and storage site during the construction period will ensure that the poor placement of materials and infrastructure will be avoided. This could also result in the damage or pollution to surrounding areas caused by construction activities.			
<b>Significance rating:</b>	M	L	M	L
<b>Cumulative impact:</b>	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• Draw up and submit for approval a Site Layout Master Plan. This plan must show the final positions and extent of all permanent and temporary site structures and infrastructure;</li> <li>• The planning for layout must be done in consultation on-site with the Environmental Control Officer (ECO);</li> <li>• The contractor may not deface, paint, damage or mark any natural features situated in or around the site for survey or other purposes;</li> <li>• The contractor must ensure that all construction personnel, labourers and equipment remain within the demarcated construction sites at all times;</li> <li>• No servicing of vehicles may be permitted on site, unless for emergency purposes;</li> </ul>			

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Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS</b>				
	<ul style="list-style-type: none"> <li>• Stockpiles may not be situated in such a manner that they obstruct pathways;</li> <li>• Location of storage area must take into account prevailing winds, distance to water bodies and general on-site topography;</li> <li>• Place infrastructure as far as possible on sites that have already been transformed;</li> <li>• Facilities may not be used as staff accommodation;</li> <li>• The Contractors camp layout must take into account availability of access for deliveries and services and any future works;</li> <li>• The Contractors camp must be of sufficient size to accommodate the needs of all sub-contractors that may work on the project; and,</li> <li>• The Contractor must implement the following as required:               <ul style="list-style-type: none"> <li>➢ Suitable sanitation facilities, adequate for the number of staff on site (1 for every 15 personnel and 1 for each gender); and,</li> <li>➢ Facilities for solid waste collection.</li> </ul> </li> </ul>			
<b>Nature of impact:</b> Topsoil Removal and Soil Erosion	<b>Activity:</b> The clearing of topsoil and excavation for the establishment of building foundations may result in the destruction of fertile topsoil.			
<b>Significance rating:</b>	L	L	L	L
<b>Cumulative impact:</b>	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• Remove topsoil approximately 300mm deep from establishment area and stockpile areas;</li> <li>• Topsoil stockpiles to be kept free from weeds;</li> <li>• Stormwater management should prevent excessive sediment to be carried into the irrigation canal;</li> <li>• Construction should take place during the low flow months (winter) in order to minimise the risk to the hydrology of the system and to prevent excessive sediment and debris being washed downstream;</li> <li>• Correct site reinstatement and landscaping following any disturbances will abate channel and gully formation;</li> <li>• Disturbed areas, that will not form part of the operational footprint but which were disturbed as part of the construction activities, should be rehabilitated and re-vegetated using site-appropriate indigenous vegetation and/or seed mixes;</li> <li>• Sheet runoff from cleared areas, paved surfaces and access roads needs to be curtailed;</li> <li>• Topsoil stockpiles to be placed on a levelled area and measures to be implemented to safeguard the piles from being washed away in the event of heavy rain/storm water;</li> <li>• Topsoil need to be stored on designated areas only. This need to be planned and indicated in the site-layout plan;</li> <li>• Ensure that topsoil is not mixed with subsoil and/or any other excavated material;</li> <li>• Provide containment and settlement facilities for effluents from concrete mixing and washing facilities;</li> <li>• Temporarily stored topsoil must be re-applied within 6 months, topsoil stored for longer need to be managed according to a detailed topsoil management plan;</li> <li>• Provide spill containment facilities for hazardous materials like fuel and oil; and,</li> <li>• Topsoil must be used in all rehabilitation activities, and may not be compacted to ensure that its plant support capacity remain of high quality.</li> </ul>			
<b>Nature of impact:</b> Surface and groundwater contamination due to construction activities such as the use of hazardous materials on site e.g. fuel and oil.	<b>Activity:</b> Spills could possibly occur on site and lead to the contamination of soil and groundwater.			
<b>Significance rating:</b>	M	L	M	L
<b>Cumulative impact:</b>	L	-	L	-

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Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS</b>				
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Concrete must be mixed on mixing trays only and not on exposed soil. Concrete must be mixed only in areas which have been specially demarcated for this purpose (preferable where no natural vegetation occur);</li> <li>Concrete mixing to be carried out away from sensitive areas and on impermeable surfaces;</li> <li>Material Safety Data Sheets (MSDSs) must be available on site for all chemicals and hazardous substances to be used on-site, including information on their ecological impacts and how to minimise the impacts in case of leakage;</li> <li>All spillage must be cleaned up immediately after they have occurred;</li> <li>Spillage of petrochemical products must be avoided. In the case of accidental spillage, contaminated soil must be removed for bio-remediation or disposed of at a facility for the substance concerned. Disturbed land must be rehabilitated and seeded with vegetation seed naturally occurring on site;</li> <li>Do not locate any ablution facilities, sanitary convenience, septic tank or French drain within the 1:100 year flood line, or within a horizontal distance of 100m (whichever is greater) of a watercourse or drainage line;</li> <li>Vehicles and machinery must be regularly serviced to avoid leakages;</li> <li>At the work site the Contractor must maintain strict surveillance to ensure that no spills occur;</li> <li>No water courses may be used to clean equipment, or for bathing. All cleaning operations must take place off site at a location where waste water can be disposed of correctly;</li> <li>The discharge of any pollutants such as cement, concrete, lime, chemicals, etc. into the natural environment and the storm water system must strictly be prohibited;</li> <li>Fuel and chemical storage must be done within a designated area only, which is properly bund and able to contain 110% of the capacity of fuel or chemicals stored within;</li> <li>Construction vehicles must be inspected every morning before work commence to ensure that no leakages do occur;</li> <li>All personnel must receive induction on how to report spillages, contain them and treat them accordingly;</li> <li>Spill kits must be available at each working station;</li> <li>Drip trays must be placed beneath all construction equipment that is stationary on site or within the site camp; and,</li> <li>Hazardous waste must be stored in bins with a lid in a demarcated waste area, and must be disposed of at a hazardous treatment facility with records on file.</li> </ul>			
<b>Nature of impact:</b> Handling of general waste materials on the development site.	<b>Activity:</b> The presence of personnel and construction operations on site will increase the likelihood of littering and the dumping of solid waste.			
<b>Significance rating:</b>	M	L	M	L
<b>Cumulative impact:</b>	L	-	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>An adequate number of scavenger proof litter bins are to be placed throughout the site. Two waste bins at least must be present, one (1) for hazardous waste and one (1) for non-hazardous waste at each working site. Dumping of waste on site is prohibited;</li> <li>Waste sorting and separation must form part of the environmental induction and awareness programme, to encourage personnel to collect waste paper, glass and metal waste separately;</li> <li>Keep all work sites including storage areas, offices and workshops neat and tidy;</li> <li>Dedicate a demarcated and signposted storage area on site for the collection of construction waste;</li> <li>All domestic waste is to be removed from site and disposed of at a registered solid waste landfill site (Hartswater Landfill site) as mentioned in the Basic Assessment Report;</li> <li>Care must be taken to ensure that no waste fall off disposal vehicles on-route to the landfill. If needed, a tarpaulin can be utilised;</li> <li>The burning or burying of solid waste on site is prohibited. Do not burn PVC pipes or other plastic materials, as this is regarded as hazardous waste;</li> </ul>			

## BASIC ASSESSMENT REPORT

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS</b>				
	<ul style="list-style-type: none"> <li>Littering by construction workers shall not be permitted;</li> <li>General refuse/rubbish shall be removed from site on a weekly basis to an approved registered landfill site or as soon as the waste bins are reaching full capacity;</li> <li>Minimise waste by sorting wastes into recyclable and non-recyclable waste;</li> <li>Ablution facilities must be serviced by a registered service provider, cleaned at least once a week, and safe disposal slips must be on file at the site office;</li> <li>A bi-weekly (twice a week) litter patrol of the entire site shall be conducted by the designated Environmental Site Agent (ESA);</li> <li>Hazardous waste must be sorted from non-hazardous waste and disposed of at a hazardous treatment facility, records and proof of disposal must be kept; and,</li> <li>A register must be kept of the quantities of waste disposed and proof of disposal must be available at the site office.</li> </ul>			
<b>Nature of impact:</b> Increased risk of veld fires.	<b>Activity:</b> Due to the presence of construction personnel in natural areas, fires can occur if not managed to the correct standard.			
<b>Significance rating:</b>	M	L	M	L
<b>Cumulative impact:</b>	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>The Contractor shall take all reasonable and precautionary steps to ensure that fires are not started as a consequence of the activities on site;</li> <li>Ensure the work site and the contractor's camp is equipped with adequate firefighting equipment. This includes at least rubber beaters when working in veldt areas, and at least one fire extinguisher of the appropriate type irrespective of the site;</li> <li>Workers must be adequately trained in the handling of firefighting equipment, and can include but not limited to: <ul style="list-style-type: none"> <li>➤ Regular fire prevention talks and drills; and,</li> <li>➤ Posting of regular reminders to staff;</li> </ul> </li> <li>No open fires are permitted anywhere on site;</li> <li>Do not store any fuel or chemicals under trees;</li> <li>Do not store gas and liquid fuel in the same storage area (Hazardous substances to be stored in accordance with SANS);</li> <li>Any fires that occur on site shall be reported to the ECO immediately and then to the relevant Authorities;</li> <li>In the event of a fire, the Contractor shall immediately employ such plant and personnel as is at his disposal and take all necessary action to prevent the spread of the fire and bring it under control;</li> <li>Do not permit any smoking within 3m of any fuel or chemical storage area, or refuelling area. A designated smoking area must be established on site; and,</li> <li>All construction vehicles must be fitted with at least one fire extinguisher.</li> </ul>			
<b>Nature of impact:</b> Traffic impacts associated with the movement of construction vehicles on site.	<b>Activity:</b> The movement of vehicles on site may result in the destruction of biodiversity, compaction of valuable topsoil and mortalities of fauna on site.			
<b>Significance rating:</b>	L	L	L	L
<b>Cumulative impact:</b>	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>During construction create designated turning areas and strictly prohibit any off-road driving or parking of vehicles and machinery outside designated areas;</li> <li>Monitor the establishment of (Alien) Invasive Species and remove as soon as detected, before regenerative material can be formed;</li> <li>Abnormal loads and machinery should avoid movement over gravel roads during and immediately after rainfall events, so as to limit destruction of road surfaces and sedimentation of downhill rivers/streams;</li> </ul>			

## BASIC ASSESSMENT REPORT

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS</b>				
	<ul style="list-style-type: none"> <li>All vehicles must be road-worthy, be maintained to prevent fuel or oil leaks and drivers are to be licensed appropriately for the driving of their assigned vehicle. Drivers responsible for the transportation of personnel must be specifically licensed to do so;</li> <li>Construction vehicles may not leave the designated roads and tracks, whilst U-Turns are prohibited on all roads;</li> <li>Signage is to be placed on vehicles at all times;</li> <li>All construction vehicles must adhere to construction sites and avoid off road to minimise impact on vegetation and soil;</li> <li>After decommissioning, if access roads or portions thereof will not be of further use to the landowner, remove all foreign material and rip area to facilitate the establishment of vegetation, followed by a suitable revegetation program, and</li> <li>Construction-related vehicles and machinery may not operate on site without reflective safety signage, car-top lights and reflective personnel gear.</li> </ul>			
<b>Nature of impact:</b> Traffic impacts associated with the movement of construction vehicle.	<b>Activity:</b> The movement of vehicles in the vicinity of the construction site may cause damage to road surfaces as well as increase in the traffic volume of Hartswater.			
<b>Significance rating:</b>	M	L	M	L
<b>Cumulative impact:</b>	M	L	M	L
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Abnormal loads must be timed to avoid times of year when traffic volumes are likely to be higher, as would be expected over national holidays, weekends and school holiday periods;</li> <li>Vehicles used for transport of materials and sand must be fitted with tarpaulins to prevent the release of such material or items onto road surfaces;</li> <li>Any damage to public roads is to be reported to the management Authority and repaired to its original condition;</li> <li>Transport of materials should be limited to the least amount of trips possible; and,</li> <li>Abnormal loads may not be transported after dark.</li> </ul>			

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL IMPACTS ON BIOLOGICAL</b>				
<b>Nature of impact:</b> Direct impact on vegetation during construction and loss of species.	<b>Activity:</b> The construction of several permanent structures on site will result in the loss of vegetation due to foundation excavation.			
<b>Significance rating:</b>	M	L	M	L
<b>Cumulative impact:</b>	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>It is recommended that a botanical walkthrough be conducted prior to the commencement of the project during the flowering period of most species (spring). This will ensure that no protected or significant species have potentially been omitted;</li> <li>All disturbed and compacted soils need to be ripped, re-profiled and reseeded and/or replanted with indigenous species;</li> <li>Keep areas affected to a minimum, strictly prohibit any disturbance outside the demarcated foundation footprint area;</li> <li>Clear as little indigenous vegetation as possible, aim to maintain vegetation where it will not interfere with the construction or operation of the development, rehabilitate an acceptable vegetation layer according to rehabilitation recommendations of the relevant EMP'r, if possible;</li> <li>Indigenous vegetation unique to the area must be used during landscaping activities;</li> <li>There should be a pre-construction environmental induction for all construction staff on site to ensure</li> </ul>			

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL IMPACTS ON BIOLOGICAL</b>				
	<p>that basic environmental biodiversity principles are adhered to;</p> <ul style="list-style-type: none"> <li>Restoration measures will be required to reinstate functionality in the disturbed soil and vegetation;</li> <li>Impacts to sensitive sites (drainage lines) must be avoided;</li> <li>No vegetation may be gathered for the purpose of creating fire; and,</li> <li>Areas to be cleared should be agreed and demarcated before the start of the clearing operations.</li> </ul>			
<b>Nature of impact:</b> Dust nuisance generated by the operation of machinery and vehicles.	<b>Activity:</b> The construction activities of the proposed project could potentially result in fugitive dust emissions due to vegetation removal. Dust could spread into the surrounding areas. The significance of this potential impact will likely; however, be only temporary.			
<b>Significance rating:</b>	L	L	L	L
<b>Cumulative impact:</b>	M	L	M	L
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Implement suitable dust management and prevention measures during the construction phase;</li> <li>Ensure all vehicles remain on designated roads and avoid the opening of detour or by-pass tracks;</li> <li>Vehicles delivering or removing soil must be covered to reduce spills and windblown dust;</li> <li>Any complaints received by the Contractor regarding dust will be recorded and communicated to the ECO; and,</li> <li>Areas around the proposed project footprint must be adequately rehabilitated to prevent significant dust emissions.</li> </ul>			
<b>Nature of impact:</b> Fauna will be directly impacted as a result of construction activities and human presence at the site.	<b>Activity:</b> The construction of facilities will result in some habitat loss for resident fauna, as some species will occur within the affected areas. In addition, increased levels of noise, pollution, disturbance and human presence during construction will be detrimental to resident fauna. Sensitive and shy fauna may move away from the area during the construction phase as a result of the noise and human activities present, while some slow-moving species (such as mole rats or blind snakes) would not be able to avoid the construction activities and might be killed.			
<b>Significance rating:</b>	L	L	L	L
<b>Cumulative impact:</b>	L	-	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>No hunting, snaring, shooting, nest raiding or egg collection by the construction staff may be allowed;</li> <li>Holes and trenches must not be left open for extended periods of time and should only be dug when needed for immediate construction. Trenches that may stand open for some days should have places where the loose material has been returned to the trench to form an escape ramp present at regular intervals to allow any fauna that fall in to escape;</li> <li>Fires should only be allowed within fire safe demarcated area;</li> <li>Construction workers should be educated on sensitive species likely to be found in the area and posters should be put up of species of conservation concern. If any of these species are found during construction, they will be advised to contact the ECO immediately in order to prevent harm to these species and their habitats;</li> <li>Keep the facility neat, tidy and clean in order not to attract scavenging animals such as rats and mice;</li> <li>Ensure that the construction area is fenced off from adjacent areas which may harbour wild animals;</li> <li>Do not store building materials and excess stockpiled soils within riparian zones or within areas where natural vegetation occur; and</li> <li>Should any fauna be discovered it should be relocated to an area outside the development footprint by a trained professional.</li> </ul>			
<b>Nature of impact:</b> Spread and establishment of Alien and Invasive Species	<b>Activity:</b> Soil disturbances from construction will enhance the encroachment of Alien and Invasive vegetation that will out compete indigenous counterpart species for resources, displace and reduce faunal and flora biodiversity. Clearing current Invasive Alien species will increase the risk of spreading species if not properly removed and safety transported.			
<b>Significance rating:</b>	M	L	M	L
<b>Cumulative impact:</b>	L	-	L	-



## BASIC ASSESSMENT REPORT

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL IMPACTS ON BIOLOGICAL</b>				
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• Alien plant material removed during construction and eradication efforts should be contained and disposed of properly to limit accidental spread;</li> <li>• Construction activities must be limited to the smallest possible area;</li> <li>• Designated authorised service roads must be used by all Construction Vehicles; and,</li> <li>• Ongoing Alien and Invasive vegetation removal should take place in and around the development footprint.</li> </ul>			
<b>Nature of impact:</b> Water quality of the nearby canal	Activity: The irrigation canal can potentially be at risk to increased surface runoff due to change in surface texture and effluent from the housing development.			
<b>Significance rating:</b>	M	L	M	L
<b>Cumulative impact:</b>	L	-	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>• Provision of adequate on-site sewerage management;</li> <li>• Sewerage and sanitation facilities should be regularly maintained and checked;</li> <li>• An integrated waste management programme must be developed for the development;</li> <li>• Sufficient waste receptacles should be placed around the development in order to encourage people to use them;</li> <li>• The principle of reduce; re-use and recycle should be followed;</li> <li>• The Construction site should be kept clean and tidy;</li> <li>• Any waste should be disposed in a registered landfill and not be allowed to be dumped in the surrounding landscape;</li> <li>• All surface used for waste storage and loading areas should have an impermeable surface;</li> <li>• Avoid the use of concrete lined channels for stormwater management as this can increase the speed of water. This in turn increases erosion potential that can cause erosion on site and in riverbanks and increase siltation downstream. If concrete-lined channels are used, they should end in silt traps;</li> <li>• Structures must be inspected regularly for the accumulation of debris, blockages, instabilities and erosion with concomitant remedial and maintenance actions;</li> <li>• Regular inspections will be undertaken of any access roads and stormwater management drains for signs of erosion and sedimentation;</li> <li>• Regularly inspect all construction vehicles for leaks. Re-fuelling of vehicles must take place on a sealed surface area surrounded by berms to prevent ingress of hydrocarbons into topsoil;</li> <li>• No dumping of waste or any other materials is allowed within any stormwater canals or the irrigation canal;</li> <li>• If any spills occur, they should be immediately cleaned up;</li> <li>• If water is sprayed on the construction surface for any reason during the construction process, utmost care must be taken to ensure the runoff water does not pollute the irrigation canal;</li> <li>• Spill kits must be stored on site. In case of accidental spills of oil, petroleum products etc., good oil absorbent materials must be on hand to allow for the quick remediation of the spill. The kits should also be well marked and all personnel should be educated to deal with the spill. Vehicles must be kept in good working order and leaks must be fixed immediately on an oil absorbent mat. The use of a product such as Sunorb is advised;</li> <li>• Removed soil and stockpiling of soil must occur outside the extent of canals and water affected areas to prevent siltation and increased runoff during construction; and,</li> <li>• Proper ablution facilities must be available during the construction and decommissioning phases. The impact of human waste on the system is immense. Chemical toilets must be provided which should always be well serviced and spaced as per the occupational health and safety laws, and placed outside one hundred meters (100 m) from any watercourses.</li> </ul>			

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL IMPACTS ON SOCIO-ECONOMIC ASPECTS</b>				

## BASIC ASSESSMENT REPORT

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL IMPACTS ON SOCIO-ECONOMIC ASPECTS</b>				
<b>Nature of impact:</b> Occupational Health and Safety.	<b>Activity:</b> During the construction phase, accidents, occupational diseases, ill health and damage to property can occur if pre-cautionary measures are not taken. Increased movement of vehicles may lead to increased accidents among local communities, construction workers and vehicle operators.			
<b>Significance rating:</b>	M	L	M	L
<b>Cumulative impact:</b>	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>The Contractor shall comply with all standard and legally required Health and Safety Regulations;</li> <li>The Contractor shall provide a standard first aid kit at the site offices;</li> <li>There must be a Safety Officer on site who has first aid training and knowledge of safety procedures;</li> <li>The Contractor shall provide the appropriate Personal Protective Equipment for staff; and,</li> <li>The Contractor must have insurance cover for the workmen.</li> </ul>			
<b>Nature of impact:</b> Construction activities may have a positive impact on the local and regional socio economic conditions.	<b>Activity:</b> During the construction phase of the project the construction process may have a positive impact on the local and regional socio-economic conditions by means of job creation.			
<b>Significance rating:</b>	L (+)	M (+)	L (+)	M (+)
<b>Cumulative impact:</b>	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Where reasonable and practical the contractors appointed by the proponent should appoint local contractors and implement a "Local First" policy, especially for semi and low-skilled job categories;</li> <li>Where feasible, efforts should be made to employ Local Contractors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria;</li> <li>Trench bedding material (sand) should be sought locally;</li> <li>Prior to construction phase the proponent and its Contractors should meet with representatives' from the Local Municipality to establish the existence of a skills database for the area. If such a database exists it should be made available to the Contractors appointed for the construction phase; and,</li> <li>The recruitment selection process should seek to promote gender equality and the employment of women where possible, particularly for less labour-intensive work such as supervision.</li> </ul>			

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL IMPACTS ON CULTURAL-HISTORICAL ASPECTS</b>				
<b>Nature of impact:</b> Damage and destruction of vertebrate fossils during excavation activities.	<b>Activity:</b> Excavation activities can result in the discovery of cultural and historical artefacts beneath the earth surface. Damage or loss can occur if the correct procedures are not followed.			
<b>Significance rating:</b>	L	L	L	L
<b>Cumulative impact:</b>	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Should any heritage resources (including but not limited to fossil bones, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, stone artefacts or bone remains, structures and other built features, rock art and rock engravings) be exposed during excavation for the purpose of construction, construction in the vicinity of the finding must be stopped. A trained palaeontologist or heritage specialist must be notified to assess the finds, and this must then be reported to the South African National Resources Agency;</li> <li>Heritage remains uncovered or disturbed during earthworks must not be disturbed further until the necessary approval has been obtained from the Heritage Authority. A registered heritage specialist must be called to the site for inspection and removal once authority to do so, has been given;</li> <li>Excavations must be limited to the footprint area and be maintained in a narrow corridor;</li> <li>All operations of excavation equipment must be made aware of the possibility of the occurrence of sub-surface heritage features and the following procedures must be followed:</li> </ul>			

## BASIC ASSESSMENT REPORT

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL IMPACTS ON CULTURAL-HISTORICAL ASPECTS</b>				
	<ul style="list-style-type: none"> <li>○ All construction in the immediate 50 m vicinity radius of the site must cease;</li> <li>○ The heritage practitioner must be informed as soon as possible;</li> <li>○ In the event of obvious human remains SAPS must be notified;</li> <li>○ Mitigation measures (such as refilling, etc.) must not be attempted;</li> <li>○ The area in a 50 m radius of the find must be cordoned off with hazard tape; and,</li> <li>● Public access must be limited and the area must be placed under guard.</li> </ul>			

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL VISUAL IMPACTS</b>				
<b>Nature of impact:</b> Impact on the sense of place for surrounding users.	<b>Activity:</b> The movement of construction vehicles, machinery and personnel on site shall result in a visual impact on surrounding users. Furthermore to this, the storage of materials and excavation shall result in disturbance and an unsightly character.			
<b>Significance rating:</b>	M	L	M	L
<b>Cumulative impact:</b>	L	-	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>● Access roads are to be kept clean and dust suppression techniques should be implemented to minimise impacts of vehicle movement;</li> <li>● Site offices and structures should be limited to one location and carefully situated to reduce visual intrusions. Roofs should be grey and non-reflective;</li> <li>● Construction camps as well as development areas must be screened with netting;</li> <li>● Lights within the construction camp must face directly down (angle of 180°);</li> <li>● Minimum vegetation may be removed to ensure the visual absorption capacity remain high;</li> <li>● Litter should be strictly controlled, as the spread thereof through wind could have a very negative visual impact; and,</li> <li>● Avoid shiny materials in structures. Where possible shiny metal structures should be darkened or screened to prevent glare.</li> </ul>			

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL NOISE IMPACTS</b>				
<b>Nature of impact:</b> Noise nuisance generated by construction works, vehicles and personnel.	<b>Activity:</b> The operating of vehicles and machinery on site results in the generation of noise disturbing users of the surrounding area.			
<b>Significance rating:</b>	M	L	M	L
<b>Cumulative impact:</b>	M	L	M	L
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>● Limit working hours of noisy equipment to daylight;</li> <li>● No unnecessary hooting by project and resident vehicles;</li> <li>● Any complaints received by the Contractor regarding noise will be recorded and communicated to the Environmental Officer;</li> <li>● All stationary noisy equipment such as compressors and pumps should be contained behind acoustic covers, screens or sheds where possible;</li> <li>● The regular inspection and maintenance of equipment must be undertaken to ensure that all components is functioning optimally;</li> <li>● Where recurrent use of machinery is frequent, machines should be shut down during intermediate periods;</li> <li>● Fit silencers to equipment;</li> <li>● Unless otherwise specified by the ESA, normal work hours will apply (i.e. from 06:30 to 17:00, Mondays to Fridays);</li> </ul>			

BASIC ASSESSMENT REPORT

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL NOISE IMPACTS</b>				
	<ul style="list-style-type: none"> <li>Ensure that Employees and staff conduct themselves in an acceptable manner while on site, both during work hours and after hours; and,</li> <li>No loud music is permitted on site or in the Camp.</li> </ul>			

**4.6 POTENTIAL IMPACTS DURING OPERATIONAL PHASE (PREFERRED ALTERNATIVE A)**

Operational Phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL IMPACTS ON GEOGRAPHICAL AND PHYSICAL ASPECTS</b>				
<b>Nature of impact:</b> Handling of general waste materials on the development site.	<b>Activity:</b> Due to the increase in homeowners within the area, waste will be generated.			
<b>Significance rating:</b>	M	L	M	L
<b>Cumulative impact:</b>	L	L	L	L
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Waste generated from the complex need to be stored in a designated storage area. The storage area must be covered with a roof and surrounded by brick walls in order to ensure that it can't be impacted upon by water and wind;</li> <li>The storage area need to be placed in an area easy accessible for the Municipality to collect it;</li> <li>Residents need to be encouraged to sort all recyclable waste. A two bag system can be implemented by the Body Corporate;</li> <li>The waste storage area should have a lockable door on the outside to ensure that waste pickers do not pollute the surrounding area through the sorting of waste in the street; and,</li> <li>Waste must be removed by the Municipality or a licensed Contractor appointed by the Local Community.</li> </ul>			
<b>Nature of impact:</b> Traffic impacts associated with the movement of vehicles within the area.	<b>Activity:</b> The regular movement of residents and business clients within the area would increase traffic flow and impede vehicle movement.			
<b>Significance rating:</b>	M	L	M	L
<b>Cumulative impact:</b>	L	L	L	L
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>A stop sign must be placed at the exit of the complex to ensure that residents take other motorist into consideration;</li> <li>Adequate parking must be provided for residents, visitors and business clients to ensure that vehicles are not parked within the road reserve;</li> <li>All speed limits need to be adhered to; and,</li> <li>U-turns within Conroy Street and in front of the complex will be prohibited.</li> </ul>			
<b>Nature of impact:</b> Surface and groundwater contamination from the Complex Facility.	<b>Activity:</b> Surface and groundwater can become contaminated due to operation of the complex facility.			
<b>Significance rating:</b>	M	L	M	L
<b>Cumulative impact:</b>	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>It should be ensured that all associated infrastructure (sewerage pipes) operate within their design measures. Should it happen that a pipe is blocked/leaking it must be reported to the Municipality at once to ensure that effluent does not drain into the natural environment;</li> <li>The waste area must be properly bund to ensure that no natural water can enter the storage area;</li> <li>All effluent generated from households must be disposed of into the Municipal network; and,</li> <li>Stormwater should be implemented in such a manner that dirty water is diverted into the Municipal network and not into the natural channel.</li> </ul>			

## BASIC ASSESSMENT REPORT

Operational Phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL IMPACTS ON SOCIO-ECONOMIC ASPECTS</b>				
<b>Nature of impact:</b> The development may lead to higher criminal activities in the area.	<b>Activity:</b> Due to the high concentration of residents and business properties on Erf 3952 & 3975 criminals may be drawn to the area.			
<b>Significance rating:</b>	L	L	L	L
<b>Cumulative impact:</b>	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>The Local Community should start a neighbourhood watch, if there is not an existing one;</li> <li>Adequate security must be provided to ensure no irregular movements occur within the area; and,</li> <li>The Department of Police, Roads and Transport have been notified of the project and the neighbourhood/security contractor should liaise with the Department if any criminal activities take place within the area.</li> </ul>			
<b>Nature of impact:</b> Operation Activities may have a positive impact on the local and regional socio economic conditions.	<b>Activity:</b> During the operational phase of the proposed development housing and business opportunities will be created for the Local Community of Hartswater.			
<b>Significance rating:</b>	M (+)	N/A	M (+)	N/A
<b>Cumulative impact:</b>	-	-	-	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Mitigation measures are not applicable as the impact is positive.</li> </ul>			

Operational Phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
<b>POTENTIAL IMPACTS ON NOISE</b>				
<b>Nature of impact:</b> Noise nuisance generated by residents and businesses.	<b>Activity:</b> Noise nuisance that may be created by residents, businesses and maintenance work due to operational/living activities.			
<b>Significance rating:</b>	MH	L	MH	L
<b>Cumulative impact:</b>	L	-	L	-
<b>Proposed Mitigation:</b>	<ul style="list-style-type: none"> <li>Limit working hours of noisy equipment to daylight hours;</li> <li>The body corporate must implement a curfew for loud music. Should residence not adhere to the curfew, they must pay a fine. The amount will be determined by the body corporate; and,</li> <li>Ensure that Employees and maintenance staff conduct themselves in an acceptable manner while on site, both during work hours and after hours.</li> </ul>			

### 4.7 NO-GO ALTERNATIVE (COMPULSORY)

The no-go option will result in the non-construction of the proposed development. The erven currently serves no ecological function and is degraded with minimal vegetation cover. Furthermore, should the development not be constructed a lack of rentable accommodation within the town of Hartswater will persist. As the development will result in additional office space new business and employment opportunities may arise through the development, thus should the development not be constructed these opportunities will be lost.

**5 SECTION E. RECOMMENDATION OF PRACTITIONER**

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES X	
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If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

N/A
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If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

<p>The following recommendations have been made by the Environmental Assessment Practitioner:</p> <ol style="list-style-type: none"> <li>1. All Specialist recommendations must be strictly adhered to;</li> <li>2. The Construction Contractor must ensure that no effluent water enters the drainage canal situated to the south of the proposed development;</li> <li>3. Where applicable members from the local community must be employed during the construction phase as well as the operational phase;</li> <li>4. The site must be landscaped once construction has ended to ensure that the aesthetics of the environment is not negatively affected;</li> <li>5. The Environmental Management Plan Report should form part of the conditions of approval of this Application;</li> <li>6. An Environmental Control Officer must be appointed to monitor environmental compliance at least twice a month;</li> </ol> <p>The Environmental Impact Assessment process has assessed impact associated with the proposed development and determined, based on the outcomes of a multitude of contributing information that the proposed development would not result in any unacceptable impact or fatal flaws and as such may be authorized.</p>
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Is an EMPr attached?

YES X	
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The EMPr must be attached as Appendix G.

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as Appendix H.

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix I.

Any other information relevant to this application and not previously included must be attached in Appendix J.

BASIC ASSESSMENT REPORT

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Christoff du Plessis

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NAME OF EAP

1 August 2018

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SIGNATURE OF EAP

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DATE

## **6 SECTION F: APPENDIXES**

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information