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Final Basic Assessment Report

PROPOSED ESTABLISHMENT OF TOWNSHIP  
DEVELOPMENT AT PLOT 67, 68, 69 ESTOIRE,  
BLOEMFONTEIN, FREE STATE PROVINCE.

May 2015

**Applicant:**

**Pearl Construction (Pty) Ltd**

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**Prepared by:**

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Reference No.: EMB/23(ii)/14/49  
NEAS Ref FSP/EIA/0000418/2014

(For official use only)

**File Reference Number:**  
**Application Number:**  
**Date Received:**


Basic assessment report in terms of the Environmental Impact Assessment Regulations, 2010, 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, 2010 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. 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.
3. Where applicable **tick** the boxes that are applicable in the report.
4. An incomplete report may be returned to the applicant for revision.
5. 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.
6. This report must be handed in at offices of the relevant competent authority as determined by each authority.
7. No faxed or e-mailed reports will be accepted.
8. The report must be compiled by an independent environmental assessment practitioner.
9. 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.
10. A competent authority may require that for specified types of activities in defined situations only parts of this report need to be completed.

## SECTION A: ACTIVITY INFORMATION

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

	NO
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If YES, please complete the form entitled "Details of specialist and declaration of interest"

for appointment of a specialist for each specialist thus appointed:

Any specialist reports must be contained in Appendix D.

### 1. ACTIVITY DESCRIPTION

Describe the activity, which is being applied for, in detail<sup>1</sup>:

#### **Description of the environment:**

The development will entail the development of a residential area. The development will involve Plots 67, 68 and 69. While plots 67 and 69 will be developed into residential housing while Plot 68 will remain undeveloped as open space. Currently these plots form part of the Estoire Small Holdings. The plots are situated on Kruger Ave. The coordinates for the site is S 29.108339° E 26.273688°.

The entire area has an extent of 12.8404 ha. However, the area to be developed into residential units only has a size of 8.5654 ha while the remainder situated on Plot 68 will be excluded as open space and no development will occur on this property. The development will have two entrances, one each on Plot 67 and 69. The residential development will consist of a portion of businesses, flats and group housing. These will have respected sizes of 1.1720 ha for the business development area, 2.847 ha for the group housing development and 2.6802 for the flat housing development. The remainder of the site will be utilised for road infrastructure and installation of services.

Plot 67 consists of a homestead with two windrows and numerous sheds and outbuildings. The remainder of the plot consists of grassland. Plot 68 consists of a homestead with large garden trees and a few outbuildings. The remainder of the plot consists of grassland. Plot 69 consists of a homestead with large garden trees and a few outbuildings. The remainder of the plot has previously been cleared.

The vegetation which naturally occurs in this area consist of Bloemfontein Dry Grassland which is considered a Threatened Ecosystem and is listed as being Vulnerable. However, due to historic land use the vegetation has been transformed and no longer forms part of this vegetation type. This is substantiated by the current SANBI List of Threatened Ecosystem which indicates that the site does not form part of this vegetation type.

Construction of the residential development will necessitate clearing of the vegetation on the site and limited levelling of the surface where necessary.

#### **Description of the proposed development:**

Transformation of undeveloped land will take place and clearing of the vegetation layer where this remains will occur. However, Plot 68 will remain undeveloped as private open space. Construction will only take place on Plots 67 and 69.

The residential development will consist of two types of residential units. General residential units will cover an area of approximately 4 hectares with a density of 120 units per hectare. The total units of this type to be constructed will be 454 units. These units will be constructed as double storey apartments. Intermediate residential units will cover an area of approximately 1.5 hectares with a density of 50 units per hectare. The

<sup>1</sup> Please note that this description should not be a verbatim repetition of the listed activity as contained in the relevant Government Notice, but should be a brief description of activities to be undertaken as per the project description.

total units of this type to be constructed will be 74 units. This will be a more spacious type of housing but will also consist of apartments. A portion of Plot 67 will also consist of a business complex with a surface size of approximately 1.1 hectares. Intermingled in the development will be open spaces for residents with two distinct large open park areas for recreation of residents.

The residential area will contain an internal road network with stormwater drainage alongside. The area will be accessed from Kruger Avenue via two separate entrances to Plot 67 and 69 respectively. A traffic impact assessment has been conducted to determine the feasibility of these entrances and the impact on surrounding traffic. According to this assessment the following can be concluded:

- The development will potentially generate 644 trips per day.
- The intersections in the area will be able to continue operating at acceptable levels.
- The Rudolph Greyling/Tibbie Visser intersection is already experiencing capacity problems and is in need of upgrading and signalisation which must be undertaken by the Mangaung Metro.
- The layout of the proposed development is acceptable according to the traffic impact assessment.

The residential development will install potable water supply to all residential units as well as the business development. Determination of available potable water has been done by Thusabato Consulting Engineers. The result of this assessment is as follows:

- The existing 200 mm diameter municipal water pipe located in Kruger Avenue adjacent to the development will be utilised.
- This water supply will have sufficient water pressure to accommodate the development.
- No external infrastructure will be required.
- Internal distribution will be done via 100 mm piping network without significant loss in pressure.

Stormwater management of the proposed development and its effect on the surrounding stormwater system has been investigated by Thusabatho Consulting Engineers with the following results:

- The existing system consists of surface and piping within Kruger Ave.
- Run-off from the development will be accommodated in new side channels within the road network linking with the existing system.

The sanitation need of the development has also been assessed by Thusabatho Consulting Engineers with the following conclusions:

- The existing adjacent 300 mm diameter sewer line which flows to the newly constructed north western Waste Water Treatment Works (WWTW) will be utilised for this development.
- The outfall sewer of the WWTW is adequate to accommodate the additional flow from the development.
- The WWTW itself also has sufficient capacity.
- The sewer system was recently upgraded and no external infrastructure is required.
- An internal system of 160 mm will be installed linking to a 200 mm fallout line extending to the 300 mm line.

Electricity supply to the development has been assessed by FCE Consulting Engineers with the following results:

- The development falls within the service area of the Clover Distribution Centre.
- The expected demand of the development will be 1,100 kVA.

- The Clover Distribution Centre has sufficient capacity for the development.
- Upgrading and expansion is however required within the development and a primary and miniature substation will be constructed on Plot 67 and 69 respectively.

Weekly refuse generated by the residential development will be removed by municipal waste removal.

**Decommissioning Phase:**

No Decommissioning Phase is foreseen for the proposed project. However, should the residential development be decommissioned in future and dependant on the end land use at the time, this phase will entail the demolishing of infrastructure and rehabilitation of the site.

**Rehabilitation:**

A rehabilitation plan will be developed should the residential area be decommissioned and rehabilitation be implemented.

**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. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity 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.

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

**Note:**

The plots considered for development is the only property in the area that the applicant owns. It is therefore not possible to considered other site alternatives. However, two other layout and technological alternatives were considered for the development and will be assessed in this report.

Preferred Alternative - as discussed within the activity description above.

First alternative - Septic tank technology

As the Estoire is not yet connected to all municipal services it was considered to make use of a septic tank system within the development to cater for sewage management. This is considered to be viable but would have several disadvantages compared to connection with the existing municipal sewer line.

Second alternative - Industrial development

As the Estoire area consists of mixed zoning with light industrial areas. It was then considered to develop the site as a light industrial complex. This is usually a high return investment and is normally a desirable development. However, the site is surrounded by residential area and would not be viable.

**No-go alternative:** The “no-go” alternative will be considered throughout the assessment of the proposed project.

### 3. ACTIVITY POSITION

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.

**Note:** Only one site is considered for this development although one layout alternative and one technological alternative has been considered. These are all situated on the same site.

List alternative sites, if applicable:

**Alternative:**

Alternative S1<sup>2</sup> (preferred or only site alternative)

Alternative S2 (Septic tank technology)

Alternative S3 (Industrial development)

**In the case of linear activities: N/A**

**Alternative:**

Alternative S1 (preferred or only route alternative)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Alternative S2 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

Alternative S3 (if any)

- Starting point of the activity
- Middle/Additional point of the activity
- End point of the activity

**Latitude (S):**

**Longitude (E):**

29°	6.457'	26°	16.437'
29°	6.457'	26°	16.437'
29°	6.457'	26°	16.437'

**Latitude (S):**

**Longitude (E):**

0	'	0	'
0	'	0	'
0	'	0	'

0	'	0	'
0	'	0	'
0	'	0	'

0	'	0	'
0	'	0	'
0	'	0	'

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.

### 4. PHYSICAL SIZE OF THE ACTIVITY

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

**Alternative:**

Alternative A1<sup>3</sup> (preferred activity alternative)

**Size of the activity:**

Physical footprint:

<sup>2</sup> “Alternative S..” refer to site alternatives.

<sup>3</sup> “Alternative A..” refer to activity, process, technology or other alternatives.

Alternative A2 (Septic tank technology)

12.8404 ha

Alternative A3 (Industrial development layout)

Physical footprint:  
12.8404 ha

Physical footprint:  
12.8404 ha

or, for linear activities:

**Length of the activity:**

**Alternative: N/A**

Alternative A1 (preferred activity alternative)

m

Alternative A2 (if any)

m

Alternative A3 (if any)

m

Indicate the size of the alternative sites or servitudes (within which the above footprints will occur):

**Size of the site/servitude:**

**Alternative:**

Alternative A1 (preferred activity alternative)

m<sup>2</sup>

Alternative A2 (if any)

m<sup>2</sup>

Alternative A3 (if any)

m<sup>2</sup>

## 5. SITE ACCESS

Does ready access to the site exist?

YES

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

m

Describe the type of access road planned:

Existing tarred road border the site.

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.

## 6. SITE OR 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:

- 6.1 the scale of the plan which must be at least a scale of 1:500;
- 6.2 the property boundaries and numbers of all the properties within 50 metres of the site;
- 6.3 the current land use as well as the land use zoning of each of the properties adjoining the site or sites;
- 6.4 the exact position of each element of the application as well as any other structures on the site;
- 6.5 the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, street lights, sewage pipelines, storm water infrastructure and telecommunication infrastructure;
- 6.6 all trees and shrubs taller than 1.8 metres;
- 6.7 walls and fencing including details of the height and construction material;
- 6.8 servitudes indicating the purpose of the servitude;
- 6.9 sensitive environmental elements within 100 metres of the site or sites including (but not limited thereto):
  - rivers;
  - the 1:100 year flood line (where available or where it is required by DWA);
  - ridges;



- cultural and historical features;
  - areas with indigenous vegetation (even if it is degraded or invested with alien species);
- 6.10 for gentle slopes the 1 metre contour intervals must be indicated on the plan and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the plan; and
- 6.11 the positions from where photographs of the site were taken.

## 7. 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 form. It must be supplemented with additional photographs of relevant features on the site, if applicable.

## 8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 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.

## 9. ACTIVITY MOTIVATION

### 9(a) 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?
- Is the activity a public amenity?
- How many new employment opportunities will be created in the development phase of the activity?
- What is the expected value of the employment opportunities during the development phase?
- What percentage of this will accrue to previously disadvantaged individuals?
- How many permanent new employment opportunities will be created during the operational phase of the activity?
- What is the expected current value of the employment opportunities during the first 10 years?
- What percentage of this will accrue to previously disadvantaged individuals?

±R 125 million
The development will not generate an income.
YES
NO
25
±R 10 million
80%
10
R 2 million
100%

### 9(b) Need and desirability of the activity

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

#### Note:

The proposed residential development is essential to provide for an ever growing population. The area where this residential is proposed has been identified by the Mangaung SDF as an area to be developed for residential housing. The area has been identified as a priority area for the N8 development.

#### NEED:

1.	Was the relevant provincial planning department involved in the application?	YES
2.	Does the proposed land use fall within the relevant provincial planning	YES

	framework?		
3.	If the answer to questions 1 and / or 2 was NO, please provide further motivation / explanation:		

<b>DESIRABILITY:</b>			
1.	Does the proposed land use / development fit the surrounding area?	YES	
2.	Does the proposed land use / development conform to the relevant structure plans, SDF and planning visions for the area?	YES	
3.	Will the benefits of the proposed land use / development outweigh the negative impacts of it?	YES	
4.	If the answer to any of the questions 1-3 was NO, please provide further motivation / explanation:		
5.	Will the proposed land use / development impact on the sense of place?		NO
6.	Will the proposed land use / development set a precedent?		NO
7.	Will any person's rights be affected by the proposed land use / development?		NO
8.	Will the proposed land use / development compromise the "urban edge"?		NO
9.	If the answer to any of the question 5-8 was YES, please provide further motivation / explanation.		
	N/A		

<b>BENEFITS:</b>			
1.	Will the land use / development have any benefits for society in general?	YES	
2.	Explain: The development will contribute to the need for housing and will provide residential units for substantial number of families.		
3.	Will the land use / development have any benefits for the local communities where it will be located?	YES	
4.	Explain: During construction local labour will be sourced which will benefit the local community. The development will provide housing to the local community.		

## 10. 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:	Administering authority:	Date:
National Environmental Management Act (Act 107 of 1998)	Department of Environmental Affairs and Tourism	1998
Occupational Health and Safety Act (Act 85 of 1993)	South African Department of Labor	1993
National Heritage Resources Act (Act 25 of 1999)	South-African Heritage Resources Agency	1999

## 11. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

### 11(a) Solid waste management

Will the activity produce solid construction waste during the 

Yes	
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construction/initiation phase?

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

20 m <sup>3</sup>
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How will the construction solid waste be disposed of (describe)?

The existing homesteads on the site will require demolishing. The construction rubble generated by this will be disposed of at the local Bloemfontein Landfill Site.

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

Construction solid waste will be disposed of at the local Bloemfontein Landfill Site.

Will the activity produce solid waste during its operational phase?

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

The residential development will produce approximately 16 m<sup>3</sup> of general waste per month. As the site forms part of the municipal service area the refuse will be removed on a weekly basis by the municipality.

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

**General waste:**

- The site forms part of the municipal service area and therefore refuse will be removed on a weekly basis by the municipality and disposed of at the local landfill site.

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

Refuse will feed into the municipal waste stream.

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 relevant legislation?

	NO
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If yes, inform the competent authority and request a change to an application for scoping and EIA.

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

	NO
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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.

**11(b) Liquid effluent**

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

	NO
--	----

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

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

	NO
--	----

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?

	NO
--	----

If yes, provide the particulars of the facility:

Facility name:

--

Contact

person:

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Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

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

The waste water system of the residential developmetn will feed directly into the municipal waste water system.

**11(c) Emissions into the atmosphere**

Will the activity release emissions into the atmosphere?

	NO

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

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.

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

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**11(d) Generation of noise**

Will the activity generate noise?

	NO

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

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.

If no, describe the noise in terms of type and level:

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**Note:** Construction of the development will generate noise during business hours and will therefore not generate noise when most adjacent residents are at home after hours.

**12. WATER USE**

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

<input checked="" type="checkbox"/> municipal	<input type="checkbox"/> water board	<input type="checkbox"/> groundwater	<input type="checkbox"/> river, stream, dam or lake	<input type="checkbox"/> other	<input type="checkbox"/> the activity will not use water
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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:


Does the activity require a water use permit from the Department of Water Affairs?

	NO
--	----

If yes, please submit the necessary application to the Department of Water Affairs and attach proof thereof to this application if it has been submitted.

**13. ENERGY EFFICIENCY**

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

--

The residential buildings will be of brick and mortar construction with insulating properties including roofing insulation. The orientation will also be of design to allow for maximum sun exposure.

Other measures to improve energy efficiency which will be considered for the development will include LED bulbs and solar geysers.

These design measures will decrease the necessary need for electric heating during winter and will ensure a cooler environment during summer.

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

No alternative energy source was considered at this stage, but may be considered in future.

## 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 C and indicate the area, which is covered by each copy No. on the Site Plan.

Section C Copy No.   
(e.g. 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	
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If YES, please complete the form entitled "Details of specialist and declaration of interest"

for each specialist thus appointed:

All specialist reports must be contained in Appendix D.

Property description/physical address:

Plots 67, 68, 69 Estoire, Bloemfontein, Free State Province.

(Farm name, portion etc.) Where a large number of properties are involved (e.g. linear activities), please attach a full list to this application.

**N/A**

In instances where there is more than one town or district involved, please attach a list of towns or districts to this application.

Current land-use zoning:

Holdings

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?

	NO
YES	

Must a building plan be submitted to the local authority?

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 indication of the project site position as well as the positions of the alternative sites, if any;
- 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)

## 1. GRADIENT OF THE SITE

Indicate the general gradient of the site.

### Alternative S1:

Flat	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 (Septic tank technology):

Flat	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 S3 (Industrial development):

Flat	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. LOCATION IN LANDSCAPE

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

2.1 Ridgeline

2.2 Plateau

2.3 Side slope of hill/mountain

2.4 Closed valley

2.5 Open valley

**2.6 Plain**

2.7 Undulating plain / low hills

2.8 Dune

2.9 Seafront

### 3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

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

	Alternative S1:		Alternative S2 (Septic tank technology):		Alternative S3 (Industrial development):	
Shallow water table (less than 1.5m deep)	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO
Dolomite, sinkhole or doline areas	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO
Seasonally wet soils (often close to water bodies)	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO
Unstable rocky slopes or steep slopes with loose soil	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO
Dispersive soils (soils that dissolve in water)	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO
Soils with high clay content (clay fraction more than 40%)	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO
Any other unstable soil or geological feature	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO
An area sensitive to erosion	<input type="checkbox"/>	NO	<input type="checkbox"/>	NO	<input type="checkbox"/>	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 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).

### 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).

#### Alternative S1: Preferred Site

Natural veld - good condition <sup>E</sup>	Natural veld with scattered aliens <sup>E</sup>	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	Bare soil

If any of the boxes marked with an "E" 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.

### 5. LAND USE CHARACTER OF SURROUNDING AREA

Indicate land uses and/or prominent features that does 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:

## Alternative S1: Preferred Site

5.1 Natural area

### **5.2 Low density residential**

5.3 Medium density residential

5.4 High density residential

5.5 Informal residential<sup>A</sup>

### **5.6 Retail commercial & warehousing**

### **5.7 Light industrial**

5.8 Medium industrial <sup>AN</sup>

5.9 Heavy industrial <sup>AN</sup>

5.10 Power station

5.11 Office/consulting room

5.12 Military or police base/station/compound

5.13 Spoil heap or slimes dam<sup>A</sup>

5.14 Quarry, sand or borrow pit

5.15 Dam or reservoir

5.16 Hospital/medical centre

5.17 School

5.18 Tertiary education facility

5.19 Church

5.20 Old age home

5.21 Sewage treatment plant<sup>A</sup>

5.22 Train station or shunting yard <sup>N</sup>

5.23 Railway line <sup>N</sup>

5.24 Major road (4 lanes or more) <sup>N</sup>

5.25 Airport <sup>N</sup>

5.26 Harbour

5.27 Sport facilities

5.28 Golf course

5.29 Polo fields

5.30 Filling station <sup>H</sup>

5.31 Landfill or waste treatment site

5.32 Plantation

5.33 Agriculture

5.34 River, stream or wetland

5.35 Nature conservation area

5.36 Mountain, koppie or ridge

5.37 Museum

5.38 Historical building

5.39 Protected Area

5.40 Graveyard

5.41 Archaeological site

5.42 Other land uses

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

**N/A**

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

**N/A**

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



N/A

**6. 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 palaeontological sites, on or close (within 20m) to the site?

	NO
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If YES, explain:

N/A

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

Briefly explain the findings of the specialist:

Dr. Lloyd Rossouw indicated that exemption can be given from doing a Phase 1 HIA as the potential for archaeological impact at the site is considered to be non-existent. An exemption letter will be included in the Final BAR.

Permission to remove or alter the existing residential structure must be obtained from the relevant provincial heritage resources authority in the form of an official destruction permit.

Refer to the Letter of Exemption attached in Appendix C.

Will any building or structure older than 60 years be affected in any way?  
 Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	
	NO

If yes, please submit or, make sure that the applicant or a specialist submits the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application if such application has been made.

**SECTION C: PUBLIC PARTICIPATION**

**1. ADVERTISEMENT**

The person conducting a public participation process must take into account any guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of the application which is subjected to public participation by—

- (a) fixing a notice board (of a size at least 60cm by 42cm; and must display the required information in lettering and in a format as may be determined by the competent authority) at a place conspicuous to the public at the boundary or on the fence of—
  - (i) the site where the activity to which the application relates is or is to be undertaken; and
  - (ii) any alternative site mentioned in the application;
- (b) giving written notice to—
  - (i) the owner or person in control of that land if the applicant is not the owner or person in control of the land;
  - (ii) the occupiers of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iii) owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
  - (iv) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;

- (v) the municipality which has jurisdiction in the area;
- (vi) any organ of state having jurisdiction in respect of any aspect of the activity; and
- (vii) any other party as required by the competent authority;
- (c) placing an advertisement in—
  - (i) one local newspaper; or
  - (ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;
- (d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or local municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in subregulation 54(c)(ii); and
- (e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person desires of but unable to participate in the process due to—
  - (i) illiteracy;
  - (ii) disability; or
  - (iii) any other disadvantage.

## 2. CONTENT OF ADVERTISEMENTS AND NOTICES

A notice board, advertisement or notices must:

- (a) indicate the details of the application which is subjected to public participation; and
- (b) state—
  - (i) that the application has been submitted to the competent authority in terms of these Regulations, as the case may be;
  - (ii) whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation;
  - (iii) the nature and location of the activity to which the application relates;
  - (iv) where further information on the application or activity can be obtained; and
  - (iv) the manner in which and the person to whom representations in respect of the application may be made.

## 3. PLACEMENT OF ADVERTISEMENTS AND NOTICES

Where the proposed activity may have impacts that extend beyond the municipal area where it is located, a notice must be placed in at least one provincial newspaper or national newspaper, indicating that an application will be submitted to the competent authority in terms of these regulations, the nature and location of the activity, where further information on the proposed activity can be obtained and the manner in which representations in respect of the application can be made, unless a notice has been placed in any *Gazette* that is published specifically for the purpose of providing notice to the public of applications made in terms of the EIA regulations.

Advertisements and notices must make provision for all alternatives.

## 4. DETERMINATION OF APPROPRIATE MEASURES

The practitioner must ensure that the public participation is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees, ratepayers associations and traditional authorities where appropriate. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was inadequate.

## 5. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments and respond to each comment of the public before the application 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 this application. The comments and response report must be attached under Appendix E.

## 6. AUTHORITY PARTICIPATION

**Please note that a complete list of all organs of state and or any other applicable authority with their contact details must be appended to the basic assessment report or scoping report, whichever is applicable.**

Authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input.

List of authorities informed:

- Municipal Manager: Mangaung Metro Municipality
- Municipal Ward Councillor (Ward 17): Mangaung Metro Municipality
- Planning Department: Mangaung Metro Municipality
- Environmental Department: Mangaung Metro Municipality
- Director Land Use and Soil Management: Department of Agriculture
- Department of Water and Sanitation
- South African Heritage Resources Agency

List of authorities from whom comments have been received:

- Mangaung Metro Municipality has registered as an Interested & Affected Party.
- Department of Water and Sanitation has provided comments and conditions pertaining to the development.
- (Refer to Appendix E for public consultation)

## 7. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for linear activities, or 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.

Has any comment been received from stakeholders?

YES

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

Several comments and concerns were received from neighbouring landowners as well as the general community. These were addressed during two separate Public Participation Meetings and all concerns were resolved after these meetings. Please see attached in Appendix E the minutes of these meetings.

## SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, 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.

### 1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

List the main issues raised by interested and affected parties.

A public meeting was held with Registered Interested & Affected Parties on 29/02/2015.

Mr. Fanie van der Walt has registered on behalf of the Estoire Tax Payers Association as I&AP.

Mr. Johan Zeelie:

Is concerned that Plot 68 will also be developed.

Is concerned that this will constitute low income housing.

Is concerned about storm water management.

Is concerned about the sewage system.

Ms. Rina van Aardt has registered as an I&AP.

Mr. Ockert Killian:

Size, layout and type of housing.

Concerned that development will impact negatively on surrounding property.

Concerned over increased traffic and road capacity.

Concerned over dust and noise.

Will there be extra amenities, schools, etc.

A second public meeting was held with Registered I&AP's on 16/03/2015. During this meeting the development was discussed in detail and all issues as previously listed by I&AP's were resolved.

Please refer to Appendix E for the minutes of both the public meetings which illustrates all concerns and the manner in which they were resolved with I&AP's.

Response from the practitioner to the issues raised by the interested and affected parties (A full response must be given in the Comments and Response Report that must be attached to this report as Appendix E):

**In response to concerns from the community these were addressed in the following manner:**

- **Density Concerns:** It was illustrated by artist interpretation and in comparison to surrounding proposed developments that this proposed residential development is below the density level of surrounding areas. A traffic impact assessment has been conducted which concluded that the area will be able to handle the projected traffic volumes.
- **The type of residential development:** The development is aimed at the upper-high middle class, young families starting in the property market and bank mortgaged property buyers. Detailed description of the development was given to the community. The need for the business portion of the development was also illustrated and will alleviate congestion at other business areas. The developer has illustrated other similar developments of high standard and assured the community that the proposed development will be of high standards and neat finish.

- **Fragmentation of the Estoire area:** The developer has expressed a desire to enlarge the development area and so prevent fragmentation of the Estoire area. However, the proposed development will first have to be completed and thereafter new developments alongside it can be considered and commenced.
- **Required adequate services for the proposed development:** Assurance was given to the community that it will not be possible for the development to commence before adequate services has not been installed where required. Detailed assessments has been conducted to determine the need for additional services:
  - **Potable water:** An existing 200mm diameter water line in Kruger Ave has sufficient water pressure and will be able to accommodate the development without loss of pressure.
  - **Stormwater:** The existing system consists of surface flow and piping in Kruger Ave. Runoff from the development will be accommodated in new side channels within the internal road network and connect to the existing system.
  - **Sanitation:** An existing 300 mm sewer line will be utilised which will drain to the new Waste Water Treatment Works which has sufficient capacity.
  - **Streets:** Streets will require upgrading by municipality to 6 m wide with a 3% cross-fall.
  - **Electricity:** The Clover Distribution Centre contains sufficient capacity for the development. A primary substation on Plot 67 and miniature substation on Plot 69 will be constructed.

Overall the community members present did not have any significant concerns regarding the development. A more detailed description of development has been given to the community and provides a much better idea of the proposed development.

Please refer to Appendix E for the minutes of both the public meetings which illustrates all concerns and the manner in which they were resolved with I&AP's.

## 2. 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

List the potential direct, indirect and cumulative property/activity/design/technology/operational alternative related impacts (as appropriate) 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.

### Alternative (preferred alternative)

<u>Potential Impacts</u>	<u>Recommended mitigation measures</u>
<p><b>Planning and Design Phase</b>            Direct impacts: None            Indirect impacts: None            Cumulative impacts: None</p>	<p><b>Planning and Design Phase</b>            No impacts expected</p>

No-go: None

**Construction Phase**

*Direct impacts:*

- Removal of topsoil and potential loss thereof.
- Destruction of habitat for small animals.
- Removal of the vegetation layer on the site.
- Noise elevation due to construction activities.
- Nuisance dust generation.
- Possible damage to palaeontological heritage during excavation activities.
- Establishment and spread of exotic weeds and invaders.

*Indirect impacts:*

- Potential erosion of the exposed soil.
- Possible dumping of construction rubble and general waste on site.
- Possible spillage of products like paint, oil, cleaning agents etc. which may lead to water and/or soil contamination,
- Possible spillage of untreated sewage to the surrounding environment.

*Cumulative impacts:*

- None

*No-go:*

- Loss of job opportunities that will be associated with the Construction Phase.

**Operational Phase**

*Direct impacts:*

- Pollution on the site and surroundings due to increased littering.
- Polluting of surface and groundwater due to inadequate sewage system.
- Erosion and flooding due to inadequate stormwater

**Construction Phase**

- The surface of the site will be levelled to ensure a free-draining surface to prevent ponding of surface water as well as to limit erosion.
- During construction, storm water measures such as channels, diversion berms, etc. will be constructed around the construction site in order to limit and/or prevent erosion and separate clean and dirty runoff.
- Topsoil removed will be kept separate and re-used.
- The amount of topsoil removed will be kept to a minimum as excavation will only occur where foundations are excavated.
- The site is bordered by residential areas, is highly degraded, transformed, dominated by exotics and pioneers, consequently the impact on the vegetation will be minimal.
- Establish a weed eradication program and ensure that adequate weed control is done.
- Since the site is surrounded by residential areas and does not form part of a natural area it is unlikely that the site will still contain any significant small mammal population.
- A speed limit will be enforced on the construction vehicles.
- Construction activities will be limited to daytime to limit any disturbance to neighbouring landowners.
- Dust control measurements will be investigated if nuisance dust generation during construction proves to be problematic.
- SAHRA will be notified should traces of any palaeontological heritage be found during construction.
- No construction and / or any other waste may be dumped in the veld.
- All spills should be cleaned immediately
- All building rubble will be removed by the contractor on a regular basis and disposed of at an authorised landfill site in Bloemfontein or used as filling material during construction.
- Receptacles should be placed on site for the collection of general waste. These receptacles should be emptied on a regular basis and waste be disposed of at the authorised landfill site in the region.
- Temporary toilets should be placed on site for use by construction workers. Sewage from these toilets should be managed appropriately and not be disposed of on site or the surrounding environment.

**Operational Phase**

- Ample refuse bins will be placed within the residential area and emptied regularly by management.
- The sanitation need of the development has also been assessed by Thusabatho Consulting Engineers with the following conclusions:
  - The existing adjacent 300 mm diameter sewer line

management.

- The development will not be able to provide adequate potable water.
- The development will put a strain on the electricity supply.

*Indirect impacts:*

- The area will not be able to sustain a high density development.
- The type of residential development needs to fit the surrounding area.
- Increased crime due to the increase in housing.
- Lowering of neighbouring property values due to the development.
- Adjacent roadways will not be able to adequately handle the increase in traffic due to the increase in inhabitants.
- Increased traffic due to an increase in inhabitants will lead to serious traffic congestion.
- The area does not contain sufficient amenities to cater for the increase in inhabitants.

*Cumulative impacts:*

- None

*No-go:*

- Although no environmental impacts will occur if the no-go alternative is decided on, this alternative is not feasible as education facilities will remain inadequate and dilapidated and consequently education of youth will remain problematic.

**Decommissioning and Closure Phase**

*Direct impacts:*

- No Decommissioning Phase is foreseen for the proposed project.

which flows to the newly constructed north western Waste Water Treatment Works (WWTW) will be utilised for this development.

- The outfall sewer of the WWTW is adequate to accommodate the additional flow from the development.
- The WWTW itself also has sufficient capacity.
- The sewer system was recently upgraded and no external infrastructure is required.
- An internal system of 160 mm will be installed linking to a 200 mm fallout line extending to the 300 mm line.
- Stormwater management of the proposed development and its effect on the surrounding stormwater system has been investigated by Thusabatho Consulting Engineers with the following results:
  - The existing system consists of surface and piping within Kruger Ave.
  - Run-off from the development will be accommodated in new side channels within the road network linking with the existing system.
- Electricity supply to the development has been assessed by FCE Consulting Engineers with the following results:
  - The development falls within the service area of the Clover Distribution Centre.
  - The expected demand of the development will be 1,100 kVA.
  - The Clover Distribution Centre has sufficient capacity for the development.
  - Upgrading and expansion is however required within the development and a primary and miniature substation will be constructed on Plot 67 and 69 respectively.
- The residential development will install potable water supply to all residential units as well as the business development. Determination of available potable water has been done by Thusabatho Consulting Engineers. The result of this assessment is as follows:
  - The existing 200 mm diameter municipal water pipe located in Kruger Avenue adjacent to the development will be utilised.
  - This water supply will have sufficient water pressure to accommodate the development.
  - No external infrastructure will be required.
  - Internal distribution will be done via 100 mm piping network without significant loss in pressure.
- Ensure that the development does not decrease the property value of neighbouring properties. This can be achieved by ensuring that the residential development is of high standard and well maintained with adequate services. The proposed property type should also be such that it does not decrease the property value.
- The development fits into the surrounding area according to the SDF and the density of units will be lower than the

	<p>surrounding prescribed developments.</p> <p><b>Decommissioning and Closure Phase</b></p> <ul style="list-style-type: none"> <li>- Should the houses be decommissioned in future, a Rehabilitation Plan dependant on the end land use will be developed and be submitted to the Department for approval.</li> </ul>
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**Alternative (Septic tank technology)**

<u>Potential Impacts</u>	<u>Recommended mitigation measures</u>
<p><b>Planning and Design Phase</b></p> <p><i>Direct impacts:</i> None  <i>Indirect impacts:</i> None  <i>Cumulative impacts:</i> None  <i>No-go:</i> None</p> <p><b>Construction Phase</b></p> <p><i>Direct impacts:</i></p> <ul style="list-style-type: none"> <li>- Removal of topsoil and potential loss thereof.</li> <li>- Destruction of habitat for small animals.</li> <li>- Removal of the vegetation layer on the site.</li> <li>- Noise elevation due to construction activities.</li> <li>- Nuisance dust generation.</li> <li>- Possible damage to palaeontological heritage during excavation activities.</li> <li>- Establishment and spread of exotic weeds and invaders.</li> </ul> <p><i>Indirect impacts:</i></p> <ul style="list-style-type: none"> <li>- Potential erosion of the exposed soil.</li> <li>- Possible dumping of construction rubble and general waste on site.</li> <li>- Possible spillage of products like paint, oil, cleaning agents etc. which may lead to water and/or soil contamination,</li> <li>- Possible spillage of untreated sewage to the surrounding environment.</li> </ul> <p><i>Cumulative impacts:</i></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><i>No-go:</i></p> <ul style="list-style-type: none"> <li>- Loss of job opportunities that will be associated with the Construction Phase.</li> </ul>	<p><b>Planning and Design Phase</b></p> <p>No impacts expected</p> <p><b>Construction Phase</b></p> <ul style="list-style-type: none"> <li>- The surface of the site will be levelled to ensure a free-draining surface to prevent ponding of surface water as well as to limit erosion.</li> <li>- During construction, storm water measures such as channels, diversion berms, etc. will be constructed around the construction site in order to limit and/or prevent erosion and separate clean and dirty runoff.</li> <li>- Topsoil removed will be kept separate and re-used.</li> <li>- The amount of topsoil removed will be kept to a minimum as excavation will only occur where foundations are excavated.</li> <li>- The site is bordered by residential areas, is highly degraded, transformed, dominated by exotics and pioneers, consequently the impact on the vegetation will be minimal.</li> <li>- Establish a weed eradication program and ensure that adequate weed control is done.</li> <li>- Since the site is surrounded by residential areas and does not form part of a natural area it is unlikely that the site will still contain any significant small mammal population.</li> <li>- A speed limit will be enforced on the construction vehicles.</li> <li>- Construction activities will be limited to daytime to limit any disturbance to neighbouring landowners.</li> <li>- Dust control measurements will be investigated if nuisance dust generation during construction proves to be problematic.</li> <li>- SAHRA will be notified should traces of any palaeontological heritage be found during construction.</li> <li>- No construction and / or any other waste may be dumped in the veld.</li> <li>- All spills should be cleaned immediately</li> <li>- All building rubble will be removed by the contractor on a regular basis and disposed of at an authorised landfill site in Bloemfontein or used as filling material during construction.</li> <li>- Receptacles should be placed on site for the collection of general waste. These receptacles should be emptied on a regular basis and waste be disposed of at the authorised landfill site in the region.</li> <li>- Temporary toilets should be placed on site for use by construction workers. Sewage from these toilets should be</li> </ul>



### **Operational Phase**

#### *Direct impacts:*

- Pollution on the site and surroundings due to increased littering.
- Polluting of surface and groundwater due to inadequate sewage system.
- Erosion and flooding due to inadequate stormwater management.
- The development will not be able to provide adequate potable water.
- The development will put a strain on the electricity supply.

#### *Indirect impacts:*

- The area will not be able to sustain a high density development.
- The type of residential development needs to fit the surrounding area.
- Increased crime due to the increase in housing.
- Lowering of neighbouring property values due to the development.
- Adjacent roadways will not be able to adequately handle the increase in traffic due to the increase in inhabitants.
- Increased traffic due to an increase in inhabitants will lead to serious traffic congestion.
- The area does not contain sufficient amenities to cater for the increase in inhabitants.

#### *Cumulative impacts:*

- None

#### *No-go:*

- Although no environmental impacts will occur if the no-go alternative is decided on, this alternative is not feasible as education facilities will remain inadequate and dilapidated and consequently education of youth will remain problematic.

### **Decommissioning and Closure Phase**

#### *Direct impacts:*

- No Decommissioning Phase is foreseen for the proposed project.

managed appropriately and not be disposed of on site or the surrounding environment.

### **Operational Phase**

- Ample refuse bins will be placed within the residential area and emptied regularly by management.
- The use septic can be functional for small developments where it is unlikely to have a negative impact. However, with large developments water quality testing will have to be done to ensure groundwater quality remains acceptable.
- Stormwater management of the proposed development and its effect on the surrounding stormwater system has been investigated by Thusabatho Consulting Engineers with the following results:
  - The existing system consists of surface and piping within Kruger Ave.
  - Run-off from the development will be accommodated in new side channels within the road network linking with the existing system.
- Electricity supply to the development has been assessed by FCE Consulting Engineers with the following results:
  - The development falls within the service area of the Clover Distribution Centre.
  - The expected demand of the development will be 1,100 kVA.
  - The Clover Distribution Centre has sufficient capacity for the development.
  - Upgrading and expansion is however required within the development and a primary and miniature substation will be constructed on Plot 67 and 69 respectively.
- The residential development will install potable water supply to all residential units as well as the business development. Determination of available potable water has been done by Thusabatho Consulting Engineers. The result of this assessment is as follows:
  - The existing 200 mm diameter municipal water pipe located in Kruger Avenue adjacent to the development will be utilised.
  - This water supply will have sufficient water pressure to accommodate the development.
  - No external infrastructure will be required.
  - Internal distribution will be done via 100 mm piping network without significant loss in pressure.
- Ensure that the development does not decrease the property value of neighbouring properties. This can be achieved by ensuring that the residential development is of high standard and well maintained with adequate services. The proposed property type should also be such that it does not decrease the property value.
- The development fits into the surrounding area according to the SDF and the density of units will be lower than the surrounding prescribed developments.

### **Decommissioning and Closure Phase**

	- Should the houses be decommissioned in future, a Rehabilitation Plan dependant on the end land use will be developed and be submitted to the Department for approval.
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### Alternative (Industrial development)

<u>Potential Impacts</u>	<u>Recommended mitigation measures</u>
<p><b>Planning and Design Phase</b>  <i>Direct impacts:</i> None  <i>Indirect impacts:</i> None  <i>Cumulative impacts:</i> None  <i>No-go:</i> None</p> <p><b>Construction Phase</b>  <i>Direct impacts:</i></p> <ul style="list-style-type: none"> <li>- Removal of topsoil and potential loss thereof.</li> <li>- Destruction of habitat for small animals.</li> <li>- Removal of the vegetation layer on the site.</li> <li>- Noise elevation due to construction activities.</li> <li>- Nuisance dust generation.</li> <li>- Possible damage to palaeontological heritage during excavation activities.</li> <li>- Establishment and spread of exotic weeds and invaders.</li> </ul> <p><i>Indirect impacts:</i></p> <ul style="list-style-type: none"> <li>- Potential erosion of the exposed soil.</li> <li>- Possible dumping of construction rubble and general waste on site.</li> <li>- Possible spillage of products like paint, oil, cleaning agents etc. which may lead to water and/or soil contamination,</li> <li>- Possible spillage of untreated sewage to the surrounding environment.</li> </ul> <p><i>Cumulative impacts:</i></p> <ul style="list-style-type: none"> <li>- None</li> </ul> <p><i>No-go:</i></p> <ul style="list-style-type: none"> <li>- Loss of job opportunities that will be associated with the Construction Phase.</li> </ul>	<p><b>Planning and Design Phase</b>  No impacts expected</p> <p><b>Construction Phase</b></p> <ul style="list-style-type: none"> <li>- The surface of the site will be levelled to ensure a free-draining surface to prevent ponding of surface water as well as to limit erosion.</li> <li>- During construction, storm water measures such as channels, diversion berms, etc. will be constructed around the construction site in order to limit and/or prevent erosion and separate clean and dirty runoff.</li> <li>- Topsoil removed will be kept separate and re-used.</li> <li>- The amount of topsoil removed will be kept to a minimum as excavation will only occur where foundations are excavated.</li> <li>- The site is bordered by residential areas, is highly degraded, transformed, dominated by exotics and pioneers, consequently the impact on the vegetation will be minimal.</li> <li>- Establish a weed eradication program and ensure that adequate weed control is done.</li> <li>- Since the site is surrounded by residential areas and does not form part of a natural area it is unlikely that the site will still contain any significant small mammal population.</li> <li>- A speed limit will be enforced on the construction vehicles.</li> <li>- Construction activities will be limited to daytime to limit any disturbance to neighbouring landowners.</li> <li>- Dust control measurements will be investigated if nuisance dust generation during construction proves to be problematic.</li> <li>- SAHRA will be notified should traces of any palaeontological heritage be found during construction.</li> <li>- No construction and / or any other waste may be dumped in the veld.</li> <li>- All spills should be cleaned immediately</li> <li>- All building rubble will be removed by the contractor on a regular basis and disposed of at an authorised landfill site in Bloemfontein or used as filling material during construction.</li> <li>- Receptacles should be placed on site for the collection of general waste. These receptacles should be emptied on a regular basis and waste be disposed of at the authorised landfill site in the region.</li> <li>- Temporary toilets should be placed on site for use by</li> </ul>

### **Operational Phase**

#### *Direct impacts:*

- Pollution on the site and surroundings due to increased littering.
- Polluting of surface and groundwater due to inadequate sewage system.
- Erosion and flooding due to inadequate stormwater management.
- The development will not be able to provide adequate potable water.
- The development will put a strain on the electricity supply.

#### *Indirect impacts:*

- The area will not be able to sustain a high density development.
- The type of residential development needs to fit the surrounding area.
- Increased crime due to the increase in housing.
- Lowering of neighbouring property values due to the development.
- Adjacent roadways will not be able to adequately handle the increase in traffic due to the increase in inhabitants.
- Increased traffic due to an increase in inhabitants will lead to serious traffic congestion.
- The area does not contain sufficient amenities to cater for the increase in inhabitants.

#### *Cumulative impacts:*

- None

#### *No-go:*

- Although no environmental impacts will occur if the no-go alternative is decided on, this alternative is not feasible as education facilities will remain inadequate and dilapidated and consequently education of youth will remain problematic.

### **Decommissioning and Closure Phase**

#### *Direct impacts:*

- No Decommissioning Phase is foreseen for the proposed project.

construction workers. Sewage from these toilets should be managed appropriately and not be disposed of on site or the surrounding environment.

### **Operational Phase**

- Ample refuse bins will be placed within the industrial area and emptied regularly by management.
- The sanitation need of the development has also been assessed by Thusabatho Consulting Engineers with the following conclusions:
  - The existing adjacent 300 mm diameter sewer line which flows to the newly constructed north western Waste Water Treatment Works (WWTW) will be utilised for this development.
  - The outfall sewer of the WWTW is adequate to accommodate the additional flow from the development.
  - The WWTW itself also has sufficient capacity.
  - The sewer system was recently upgraded and no external infrastructure is required.
  - An internal system of 160 mm will be installed linking to a 200 mm fallout line extending to the 300 mm line.
- Stormwater management of the proposed development and its effect on the surrounding stormwater system has been investigated by Thusabatho Consulting Engineers with the following results:
  - The existing system consists of surface and piping within Kruger Ave.
  - Run-off from the development will be accommodated in new side channels within the road network linking with the existing system.
- Electricity supply to the development has been assessed by FCE Consulting Engineers with the following results:
  - The development falls within the service area of the Clover Distribution Centre.
  - The expected demand of the development will be 1,100 kVA.
  - The Clover Distribution Centre has sufficient capacity for the development.
  - Upgrading and expansion is however required within the development and a primary and miniature substation will be constructed on Plot 67 and 69 respectively.
- The industrial development will install potable water supply to all industrial. Determination of available potable water has been done by Thusabatho Consulting Engineers. The result of this assessment is as follows:
  - The existing 200 mm diameter municipal water pipe located in Kruger Avenue adjacent to the development will be utilised.
  - This water supply will have sufficient water pressure to accommodate the development.
  - No external infrastructure will be required.

	<ul style="list-style-type: none"> <li>• Internal distribution will be done via 100 mm piping network without significant loss in pressure.</li> <li>- An industrial development may decrease the value of adjacent properties.</li> <li>- An industrial development will impact of the sense of place and cause disturbance of adjacent land owners.</li> </ul> <p><b>Decommissioning and Closure Phase</b></p> <ul style="list-style-type: none"> <li>- Should the industrial complex be decommissioned in future, a Rehabilitation Plan dependant on the end land use will be developed and be submitted to the Department for approval.</li> </ul>
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### 3. 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.

The likelihood of significant expected impacts actually occurring is highly unlikely and limited if recommended mitigation measures are implemented throughout the phases of the project.

The site proposed for the development is situated within the urban area and is consequently degraded. Large portions of the site has previously been cleared of vegetation. The area has been utilised for different activities over a long period which has altered the natural environment of the site over time. Several residences and associated structures are also present on the site. It is considered highly unlikely that any conservation significant aspect would be affected by the development.

All necessary assessments have been conducted to determine the need for the provision of services. These have determined that:

Electricity - Will be supplied from the Clover Distribution Centre which has sufficient capacity.

Sanitation - Will connect to the adjacent existing municipal sewer line.

Water - Will connect to adjacent existing water line which has enough pressure.

Roads - Are currently sufficient for the development but will have to be upgraded by the municipality in future.

Stormwater - Will be managed internally via side channels and will connect to existing stormwater channels.

Implementation of these services will lead to least impacts.

Impacts that will be associated with the Construction Phase will be temporary in nature. Although the activities that will be associated with the Operational Phase will be permanent it should be clear from the above as well as the nature of the development that the potential impacts associated with this phase will be minimal and local in nature. The likelihood of potential impacts occurring during the operational phase is highly unlikely.

#### Alternative 1 (preferred alternative)

As above.

**Alternative 2 (second alternative - septic tank technology)**

The alternative will entail the use of septic tanks on-site instead of connecting to the existing municipal sewer line. This alternative was considered initially but found to be less desirable than connecting to the municipal sewer line.

The alternative would result in additional environmental impacts associated with likely groundwater pollution. Septic tank systems are normally acceptable but would require periodic water quality monitoring. Furthermore, this alternative is much less desirable than connection to the existing municipal sewer system. The Department of Water and Sanitation has also indicated that connection to the municipal sewer system is the more desired alternative.

**Alternative 3 (third alternative - Industrial development)**

This alternative would entail the development of a light industrial complex instead of residential housing. This alternative was considered initially but soon found to be unfeasible.

Although the Estoire area consists of mixed zoning the specific site is situated amongst residential areas and to develop a industrial complex in between residential housing will not be feasible.

**SECTION E. RECOMMENDATION OF PRACTITIONER**

Are 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	
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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

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:

In addition to the recommended mitigation and management measures described in Part 2 of Section D, the following conditions are recommended:

- Topsoil removed will be kept separate and re-used.
- A speed limit will be enforced on the construction vehicles.
- Construction activities will be limited to daytime to limit any disturbance to neighbouring land owners.
- Dust control measures will be investigated if nuisance dust generation during construction proves to be problematic.
- SAHRA will be notified should traces of any palaeontological heritage be found during construction.
- No construction and/or any other waste may be dumped in the veld.
- All spills will be cleaned immediately.
- All building rubble will be removed by the contractor on a regular basis and disposed of at an authorised landfill site in Bloemfontein or used as filling material during construction.
- Receptacles should be placed on the site for the collection of general waste. These receptacles should be emptied on a regular basis and waste disposed of at the authorised landfill site in the region.
- Temporary toilets should be placed on the site for use by construction workers. Sewage from these toilets should be managed appropriately and not disposed of on site or the surrounding environment.
- All services identified within this report should be connected and implemented as indicated.

Is an EMP attached?

YES	
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The EMP must be attached as Appendix F.