destea
department of
economic, small business development,
tourism and environmental affairs
FREE STATE PROVINCE

(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.

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 as amended 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 **09 August 2022**. 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 and **EAPASA registered** 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.
14. Two (2) colour hard copies and one (1) electronic copy of the report must be submitted to the competent authority.
15. Shape files (.shp) for maps must be included in the electronic copy of the report submitted to the competent authority.

SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section? | **YES** | ~~NO~~ |

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

1. PROJECT DESCRIPTION

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

Environmental Management Group (Pty) Ltd has been appointed as an independent environmental Assessment Practitioner (EAP) to conduct the Basic Assessment (BA) process with regard to the proposed new development of a cattle feedlot on Farm Doornkop No. 148, Parys, Free State. The BA process is being carried out in compliance with the EIA Regulations 2014 (amended), which have been promulgated in accordance with the National Environmental Management Act (NEMA: Act No. 107 of 1998).

The proposed project aims to build a cattle feedlot facility that can accommodate up to 7,500 large stock units (LSU) of cattle. The development will consist of the following:

- A holding camp.
- A silage storage area.
- Three sedimentation ponds.
- A holding pond.
- Area for composting and managing dry manure.

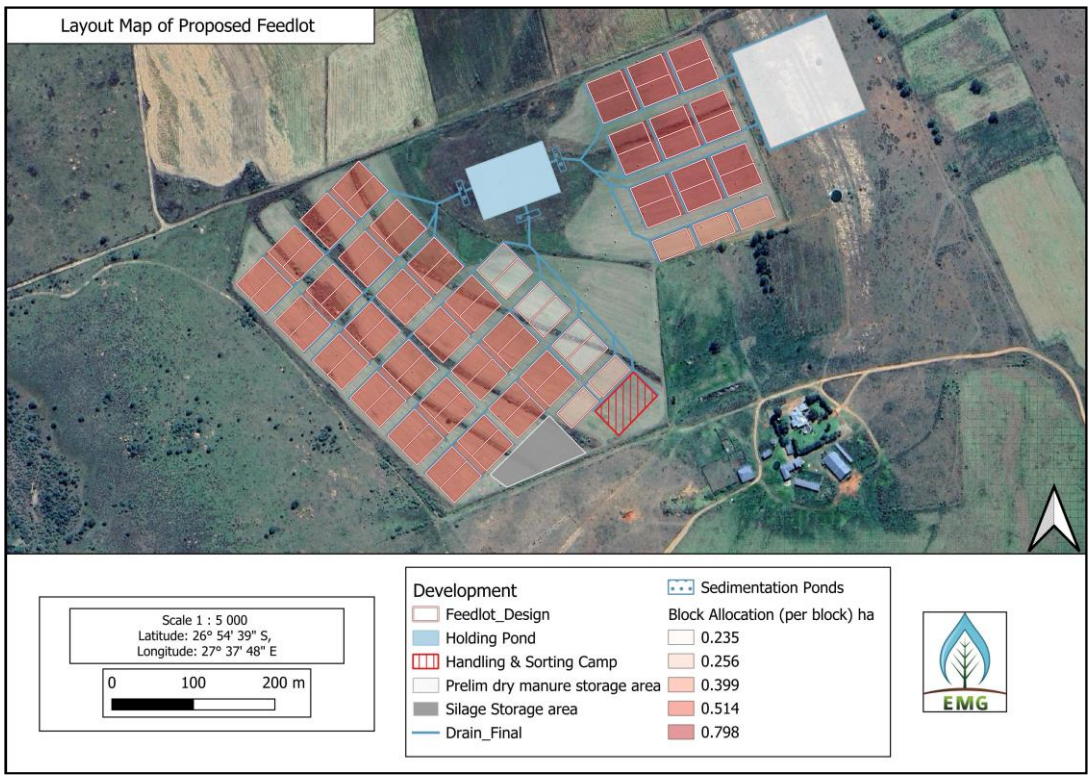


Figure 1 Proposed design of feedlot camps, silage area, composting area, handling camps, sedimentation & holding ponds.

The facility will focus on sustainable development practices and reducing environmental impact (i.e. applying the mitigation hierarchy principles). Incorporating sedimentation and holding ponds will aid in managing waste and runoff, ensuring the facility operates in an environmentally responsible manner. Additionally, the designated area for composting and managing dry manure will enable the facility to manage waste effectively, contributing to the overall sustainability of the operation. The feedlot facility will provide a way to manage livestock responsibly while at the same time offering financial opportunities for the local community.

Proposed Feedlot Development

The infrastructure will entail 77 camps that can each house 98 cattle. The camps will be organised into alphabetically arranged blocks consisting of 6, 4, 3, and 2 pens, respectively, where the specific dimensions of each block are illustrated in Table 1 below. A schematic of the feedlot layout is presented in Figure 1. The development includes a silage storage area and a handling/sorting camp to ensure efficient and effective cattle management. To ensure optimal nutrition, the feedlot will be equipped with a feed management system that will enable the execution of a well-structured feeding schedule.

Table 1 Proposed feedlot camps per block allocation, with designated physical area size per block.

Feedlot Block No.	Camps per Block	LSU per Camp	LSU per Block in total	Area of Block (ha)
A	4	98	392	0.514
B	4	98	392	
C	4	98	392	
D	4	98	392	
E	4	98	392	
F	4	98	392	
G	4	98	392	
H	4	98	392	
I	2	98	196	0.235
J	4	98	392	0.514
K	4	98	392	
L	2	98	196	0.235
M	4	98	392	0.514
N	4	98	392	
O	2	98	196	0.253
P	2	98	196	0.256
Q	3	98	294	0.399
R	6	98	588	0.798
S	6	98	588	
T	6	98	588	

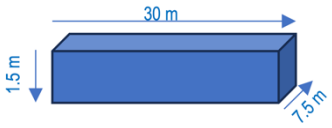
20	**77**	**7546**	**9.937**

Waste and Stormwater Management:

Cattle produce an estimated amount of waste equivalent to 5-6% of their body weight daily. To account for the different sizes of cattle, it is estimated their weight at the introduction is 250 kg, at the growing stage is 375 kg, and at the exit is 500 kg. After analysing the data presented in Table 2, it has been found that the total manure production of all three weight categories of cattle is 5453.70 tons per month. The manure will be deposited in a composting and drying area, reaching 1 meter in height and 125 meters in length and width, respectively. The compost area (1.5625 ha) will have a capacity of 15,625 cubic meters, which will be sufficient to accommodate all of the manure produced by the cattle. The farmer intends to utilise the dehydrated manure, which is essentially compost, to fertilise his crop production. Should rainfall occur, any manure that may enter the stormwater channel will be intercepted by one of three sedimentation ponds. The water, free of effluent will be transferred to the holding pond. In addition, the sedimentation ponds will be de-sludged during dry conditions, and the manure collected will be deposited in the composting area.

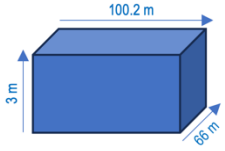
The proposed cattle feedlot pens have been designed to use the landscape's natural slope to direct runoff into a lined stormwater channel that will run parallel and horizontally with the feedlots. A stormwater layout plan has been compiled and will conform to industry best practice design (Appendix J). The runoff from the stormwater channel will be guided to the waste management system, which consists of three sedimentation ponds, each respectively 0.22 ha, designed to handle the entire catchment area. The ponds were constructed with the following dimensions:

- Width: 7.4 meters
- Length: 30 meters
- Depth: 1.5 meters



To accommodate the entire catchment area and the influx of effluent from 77 additional feedlots, a strategic plan has been devised to implement sedimentation ponds in three cardinal directions encompassing the primary holding pond. The design of the holding pond meticulously considered an extreme weather event at an estimated daily rainfall of 100 mm, supplemented by an additional 20% allowance to accommodate water utilisation and cattle waste. Consequently, the holding pond must possess a volumetric capacity of 19,822 cubic meters to effectively manage the anticipated water influx from an extreme precipitation event.

- Width: 66 meters
- Length: 100.2 meters
- Depth: 3 meters



Strategic placement dictates the construction of the holding pond at the epicentre of the feedlots, aligning with the geographical elevation shift towards the development's central axis. This positioning

maximises efficiency and accessibility, rendering it the most viable location for construction. The construction methodology will follow established engineering principles, using strong materials and techniques to ensure the structure's durability and longevity. Detailed engineering specifications will guide excavation, lining, and reinforcement procedures, ensuring compliance with environmental regulations and sustainable water management practices. Comprehensive monitoring and maintenance protocols will be in place to ensure operational efficiency and mitigate risks associated with water containment and discharge. The water accumulated in the holding pond of 0.660 ha will be discharged by the farmer, who will use the water for irrigation to fertilise his crops.

Table 2 Estimated manure production of proposed feedlot development.

Total Estimated Manure Production						
Camp	**LSU per Camp**	**Weight class (Kg)**	**Manure/day/LSU (Kg)**	**Manure (Kg)/month/LSU**	**Total Manure/month (Kg)**	**Total Manure/month (Ton)**
A	392	250	12.5	375.00	147000.00	147
B	392			375.00	147000.00	147
C	392			375.00	147000.00	147
D	392			375.00	147000.00	147
E	392			375.00	147000.00	147
F	392			375.00	147000.00	147
G	392	375	22.5	675.00	264600.00	264.6
H	392			675.00	264600.00	264.6
I	196			675.00	132300.00	132.3
J	392			675.00	264600.00	264.6
K	392			675.00	264600.00	264.6
L	196			675.00	132300.00	132.3
M	392			675.00	264600.00	264.6
N	392	500	35	1050.00	411600.00	411.6
O	196			1050.00	205800.00	205.8
P	196			1050.00	205800.00	205.8
Q	294			1050.00	308700.00	308.7
R	588			1050.00	617400.00	617.4
S	588			1050.00	617400.00	617.4
T	588			1050.00	617400.00	617.4
20	7546				5453700.00	5453.70

Feedlot Water Management

In the context of feedlot water management, it is imperative to accurately estimate and provide the requisite water volume to ensure livestock's well-being and productivity. According to recommended guidelines, the daily water requirement for cattle can be estimated based on their live weight, with a

standard ratio of 5 litres per 50 kilograms of LSU. Table 3 presents a breakdown of the estimated water requirements per LSU on a daily basis.

Table 3 Quantity water needed per LSU per day for each weight class.

	Water need per day (litres)
LSU 250kg	25
LSU 375kg	37.5
LSU 500kg	50
Average	37.5

The cumulative water demand for the entire cattle population can be calculated by extrapolating these daily requirements to an annual scale, as demonstrated below:

37.5 L (per LSU per day) x 7 500 (LSU) x 365(days) = **102 656 m³/per year**

It is paramount that the water supplied to the cattle meets stringent quality standards and is clean, cool, and of high purity. Adequate water provision is indispensable for sustaining high-density cattle production and ensuring optimal health and performance outcomes. Three existing boreholes on the property premises will be sufficient to satisfy the significant water demand. The precise geographical coordinates of these boreholes are as follows:

- BH01 (Lat/Long): -26.912000° 27.635647°
- BH02 (Lat/Long): -26.911081° 27.635036°
- BH03 (Lat/Long): -26.910053° 27.634611°

Practical measures, such as supplying drinking water via elevated troughs, are advocated to minimise contamination from livestock excretions, thereby maintaining water integrity and hygiene standards. The operational activities for the proposed feedlot facility will require authorisation in terms of Section 21 of the National Water Act. The proponent is in the process of submitting a water use license application to the Department of Water and Sanitation (DWS).

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
GN 327 Activity 4 - The development and related operation of facilities or infrastructure for the concentration of animals in densities that exceed— (i) 20 square metres per large stock unit and more than 500 units per facility;	The proposed development involves the construction of a new feedlot, which will accommodate around 7,500 cattle. The cattle will be spread out across the development area which will include 77 pens, each of which will hold 98 cattle. It should be noted that these feedlots will exceed the 20 square metres per LSU threshold, thereby triggering this activity.

<table>
<tr>
<td>GN 327 Activity 8 -

The development and related operation of hatcheries or Agri-industrial facilities outside industrial complexes where the development footprint covers an area of 2,000 square metres or more.</td>
<td>The development area spans approximately 19.5 hectares. Given that the development site falls outside industrial complexes and the development's footprint exceeds 2,000 square meters, the activity will be triggered.</td>
</tr>
<tr>
<td>GN 327 Activity 27 -

The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation</td>
<td>The total clearance required for the construction of the feedlots was calculated, and the following results were obtained:

<table>
<tr><th>Feedlot Feature</th><th>Area (ha)</th></tr>
<tr><td>Pens with additional space</td><td>12.693</td></tr>
<tr><td>Holding Pond, Sedimentation Ponds</td><td>3.7</td></tr>
<tr><td>Silage and Handling and Sorting camp</td><td>1</td></tr>
<tr><td>Composting Area</td><td>1.5625</td></tr>
</table>

The proposed feedlot will clear a total area of 18.9555 hectares of vegetation for construction.</td>
</tr>
</table>

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) of GN 326, Regulation 2014 as amended. 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.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. 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)
The proposed new feedlot development location has been selected for various reasons. Firstly, the site has a history of prior cultivation, which proves its agricultural potential. This makes it an excellent candidate, particularly as it falls under the "other" category within the Critical Biodiversity Area framework. Additionally, the applicant owns the property, which eliminates the need for additional leasing arrangements, streamlining the development process. The site's topography, characterised by a slope, offers a natural advantage by facilitating efficient water runoff towards the designated sedimentation and holding ponds, ensuring effective environmental impact management. This finding is a direct result of the site's past degradation from land use activities. Therefore, the proposed development on Doornkop Farm No. 148 is the most suitable option, meticulously evaluated for its alignment with key criteria encompassing location, infrastructure accessibility, cost-effectiveness, and sensitivity to environmental factors. This conclusion solidifies its status as the preferred locale for developing the cattle feedlot.	26° 54' 40.03" S	27° 37' 48.47" E
~~**Alternative 2**~~		
~~Description~~	~~Lat (DDMMSS)~~	~~Long (DDMMSS)~~
~~**Alternative 3**~~		
~~Description~~	~~Lat (DDMMSS)~~	~~Long (DDMMSS)~~

~~In the case of linear activities:~~

~~**Alternative:**~~	~~**Latitude (S):**~~	~~**Longitude (E):**~~
~~Alternative S1 (preferred)~~		
~~• 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~~		

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

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
The proposed development has a layout design that is well-suited for its location. The natural slope of the area directs runoff water to designated sedimentation and holding ponds. This design feature ensures that water will not accumulate in the holding pens where the cattle will be housed during precipitation. All facilities - including feedlot pens, sorting and handling camps, holding and sedimentation ponds, and silage storage areas - have been thoughtfully designed considering the area's slope. This contributes to the efficient sorting and handling of the cattle. The feedlot development will be able to accommodate 7,500 cattle in 77 holding pens. These pens will be strategically located throughout the development area to efficiently sort and handle the different weight groups of cattle. This will also help manage the manure and wastewater runoff. The manure will be collected and deposited in a separate composting area, which will be situated away from the feedlot pens.	26° 54' 40.03" S	27° 37' 48.47" E
Alternative 2		
Description	Lat (DDMMSS)	Long (DDMMSS)
The feedlot can be designed in one of two ways: a mono slope, which features a roof that slopes over the cattle pens to offer protection from the weather and shade, or an open-air feedlot, which provides an open area with ample shade structures. After thorough evaluation, the EAP and applicant have concluded that an open-air feedlot would be the most suitable design. **Consequently, the mono-slope design will not be further considered.**		

Alternative 3		
Description	Lat (DDMMSS)	Long (DDMMSS)
The applicant has been offered a suggestion to explore diversified livestock farming as a potential option. This method involves raising various types of livestock, including sheep, goats, pigs, or poultry, in conjunction with cattle. The benefits of this approach include a more varied income stream and more efficient use of land. However, it is important to note that the applicant has preferred solely raising cattle, and their customer base expects to purchase cattle exclusively. **As a result, the option of diversified livestock farming has been deemed impractical and will not be pursued any further.**		
Alternative 4		
Description	Lat (DDMMSS)	Long (DDMMSS)
The production of grass-fed beef entails raising cattle on open pastures and implementing rotational grazing systems. This method prioritises the consumption of natural forage and discourages using intensive feedlots. However, as the applicant is faced with limited grazing pastures necessary for optimal livestock production, they have opted to continue with the cattle feedlot. **As a result, this alternative will not be explored any further.**		

c) Technology alternatives

Alternative 1 (preferred alternative)
The applicant chooses to use silage from their own cultivated crops and the manure produced by the cattle as a nutrient-rich fertilizer for these crops. This creates a cost-effective system that operates within a circular business model.
~~**Alternative 2**~~
~~**Alternative 3**~~

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

Alternative 1 (preferred alternative)
If any other alternatives arise before the final BAR is submitted, they will be discussed and presented to the case officer.
Alternative 2
Alternative 3

e) No-go alternative

The "no-go" alternative refers to the option of not going ahead with a proposed project, which means not constructing the proposed development. Choosing this alternative would result in no environmental

impact on the site or the surrounding local area. It provides a baseline against which other alternatives can be compared. If the "no-go" alternative is implemented, the following implications will occur:

- No benefits will be derived from implementing an additional land use.
- The cattle feedlot will not create additional food security for South Africa.
- This will further burden the local communities with more food security-related strain.
- No economic revenue will be generated from purchasing cattle or associated purchases.
- Socio-economic benefits such as job creation, skills development, and local economic growth will be lost.

In addition to the benefits already mentioned, implementing the no-go alternative would result in the following advantages:

- There will be no further removal or disturbance of vegetation.
- The natural state of the land will remain mostly unaltered.
- The existing landscape will not undergo any changes.
- No additional construction waste will end up in landfills.

It is important to note that while the no-go alternative may not have any negative environmental impacts, it will also not provide any socio-economic benefits to the local community. In addition, this alternative will not assist the government in addressing concerns such as food security, job creation, and economic revenue. **Therefore, it is not considered the preferred alternative.**

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

3. PHYSICAL SIZE OF THE ACTIVITY

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

Alternative:	**Size of the activity:**
Alternative A1[1] (preferred activity alternative)	194 132 m²
~~Alternative A2 (if any)~~	m²
~~Alternative A3 (if any)~~	m²

or, for linear activities:

~~**Alternative:**~~	~~**Length of the activity:**~~
~~Alternative A1 (preferred activity alternative)~~	~~m~~
~~Alternative A2 (if any)~~	~~m~~
~~Alternative A3 (if any)~~	~~m~~

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

~~Alternative:~~ **~~Size of the site/servitude:~~**

[1] "Alternative A.." refer to activity, process, technology or other alternatives.

~~Alternative A1 (preferred activity alternative)~~	~~m^2~~
~~Alternative A2 (if any)~~	~~m^2~~
~~Alternative A3 (if any)~~	~~m^2~~

4. SITE ACCESS

Does ready access to the site exist?	**YES**	~~NO~~
~~If NO, what is the distance over which a new access road will be built~~		~~m~~

~~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.~~

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.

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.

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.

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.

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.

10. ACTIVITY MOTIVATION

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

1. Is the activity permitted in terms of the property's existing land use rights?	**YES**	~~NO~~	Please explain
The land where the cattle feedlot will be developed is currently used for agriculture, and as the proponent owns the land, the construction of the feedlot will be in line with the existing land use activities.			

2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES	~~NO~~	Please explain
Fezile Dabi is an important agricultural production area in the Free State. The Free State Spatial Development Framework (SDF) has identified potential for small agricultural holdings in Parys. The proposed feedlot development addresses the need for food security and socio-economic factors such as job creation within the province. This development aligns with the Free State's SDF. The Provincial Spatial Development Framework (PSDF) emphasises the importance of expanding agricultural development as a driver for economic growth and sustainable job creation.			
(b) Urban edge / Edge of Built environment for the area	YES	~~NO~~	Please explain
Farm Doornkop No. 148 is situated on the outskirts of Parys, beyond the urban edge, and is surrounded by vast agricultural expanses primarily dedicated to crop cultivation. Previously, *Digitaria eriantha* was cultivated on the land, but it has been left to weather and is now in a state of degradation, devoid of natural vegetation. Furthermore, two vulnerable vegetation types were identified in the development area. However, the specialist has classified the area as degraded and identified no sensitive areas. Despite its desolate appearance, the terrain's topography offers sloping contours. These natural gradients act as effective channels for managing water runoff, reducing the environmental impact of the proposed feedlot development.			
(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?).	YES	~~NO~~	Please explain
The Ngwathe local municipality's economic growth and sustainability rely heavily on agricultural development. To ensure future progress, the municipality is preparing to establish a framework and opportunities for agricultural development. The Ngwathe Spatial Development Framework (SDF) has six key spatial planning categories, including agriculture area development. The municipality has emphasised that increased agriculture will drive the region's future growth as it plays a significant role in the Gross Geographic Product (GGP). According to the plan, the town of Parys is set to become the primary growth area.			
(d) Approved Structure Plan of the Municipality	~~YES~~	NO	Please explain
The Ngwathe Local Municipality does not have a Structure Plan; however, the development aligns with the municipality's approved IDP.			

(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?)	~~YES~~	**NO**	Please explain

The proposed development, aligning with the Environmental Management Framework (EMF) established by the Ngwathe Local Municipality, demonstrates a clear commitment to preserving the area's natural and cultural heritage. This alignment is crucial in determining the project's potential impact, as it ensures that any compromise to these environmental management priorities is justifiable regarding sustainability considerations.

The proposed development will not threaten the unique geology and historical significance of the Vredefort Dome. The following geological features may be present: undifferentiated granite and gneiss, sandstone shale and coal, and possible dolerite intrusion. According to the EMF, the influence of the Vredefort Dome characteristics should be acknowledged; however, mitigation measures will be implemented for conservation measures to ensure the unique characteristics are minimally influenced. Furthermore, the HIA indicated that paleontologically insignificant rock will be destroyed due to the development and that no important heritage features have been discovered in the development area.

Regarding biodiversity, the EMF focuses on activities that would negatively affect terrestrial and aquatic biodiversity, including vulnerable ecosystems, unique species, indigenous flora and fauna. According to the ecological specialist, the area is already in a degraded state, and the conservation CBA map indicates that most of the development area falls within a degraded area. Most of the development area has lost its dense natural vegetation due to cultivation, and the areas with more vegetation are mostly bush encroachment. Mitigation measures will be considered and can adequately offset any potential biodiversity loss.

One of the goals stated in the EMF is to ensure the appropriate management of water resources while promoting economic development. To achieve this, a stormwater management plan will be implemented, and the development area's slope will be considered. Sedimentation ponds will aid in water management, and the run-off water collected in the holding pond will be utilised to irrigate additional crop fields for the farmers. The farmer will use three boreholes on the property and not exceed the threshold prescribed by the National Water Use Licence. Furthermore, the water will be utilised for the cattle and benefit the municipality economically and in terms of food security.

A key goal is to encourage the sustainable, long-term utilisation and preservation of agricultural resources. This encompasses safeguarding and upholding farmland, securing its utilisation, ensuring food safety and security for households and the nation, and generating profitable agricultural output. The project will work towards these objectives by enhancing food security and economic gains while prioritising the preservation and sustainability of the agricultural sector.

In addition, an Environmental Management Plan has been compiled, which ensures the identified impacts are mitigated and managed correctly (Appendix G).

(f) Any other Plans (e.g. Guide Plan)	**YES**	~~NO~~	Please explain
The EMP has been compiled and used as a guideline document for the management of impacts that can negatively impact the environment during the construction and operational phases of the proposed development.			
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)?	**YES**	~~NO~~	Please explain
The proposed development aligns with the municipal IDP goals of expanding agricultural development to create sustainable jobs and economic growth.			
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.)	**YES**	~~NO~~	Please explain
The proposed development stands to bring about significant advantages for both the local community and the nation. With a focus on agricultural growth and improved land use, the development promises to enhance the region's productivity. Additionally, the project will generate employment opportunities during its construction and operation phases, boosting economic activity. Furthermore, the development will help fortify food security by producing additional food. Taken together, these benefits are expected to drive economic growth at both the local and national levels by buying construction equipment and materials, creating jobs, and enhancing food security.			
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.)	~~YES~~	**NO**	Please explain
The electrical services currently available on the farm are adequate and will support the construction and operation of the development. As for water usage, three boreholes situated on the property will be utilised to extract the necessary amount of water to run and maintain the feedlot and cattle. The process of obtaining a water use license for water extraction is currently underway.			
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.)	~~YES~~	**NO**	Please explain
The proposed development is not included in the municipality's infrastructure planning. However, it will be in an area allocated for agricultural activities, aligning with the municipality's goal for agricultural growth, as stated in IDP.			

7. Is this project part of a national programme to address an issue of national concern or importance?	~~YES~~	**NO**	Please explain
The National Development Plan (NDP) has developed a comprehensive strategy to enhance the growth of the agriculture sector and create more employment opportunities. It also advocates for the use of water resources for agricultural activities and the expansion of commercialised agriculture. The key objective of the plan is to stimulate technological advancements in the field of agriculture. The proposed development is a new initiative that requires modern technology during both the construction and operation phases, contributing to the overall goals of the NDP. This proposed development is aligned with the NDP's objectives and is expected to have a positive impact on several critical areas, including job creation, addressing national unemployment levels, boosting economic revenue, reducing poverty nationwide, and increasing food production and agricultural growth to address the national need for food security.			
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.)	**YES**	~~NO~~	Please explain
The proposed development is in accordance with the current land use zoning and will be located on the applicant's property. The area has been meticulously planned to accommodate the size of the development, ensuring a smooth integration with the surrounding landscape. It is worth noting that the development is advantageous for manure production, as the cattle's manure will be composted and used as fertiliser to benefit crop production in the surrounding area. Moreover, since the development is surrounded by cultivated fields, it will have a minimal impact on humans regarding odour and noise pollution, allowing for harmonious coexistence with the community.			
9. Is the development the best practicable environmental option for this land/site?	**YES**	~~NO~~	Please explain
The proposed development will occur on existing agricultural fields. The favourable slope of the terrain presents an opportunity for efficient water management, particularly in managing run-off during rainfall events, which will be directed towards a holding pond. The elevation and existing vegetation further contribute to the potential for minimal environmental impact. Moreover, the accrued water reserves in the holding pond, coupled with the utilisation of manure for agricultural purposes, underscores a proactive approach towards sustainable resource management, thereby curbing potential negative ecological impacts. The surrounding terrain predominantly comprises cultivated land, indicative of the feedlot's capacity to harmonise with existing agricultural practices without exacerbating landscape degradation. Furthermore, the development's design and implementation strive for seamless integration with the surrounding environment, enhancing compatibility with the broader ecological context.			

10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	**YES**	~~NO~~	Please explain
The designated area for the proposed development has already been degraded due to past agricultural activities and currently has minimal to no indigenous vegetation. However, the development's environmental impact is expected to not negatively affect the current state of the development area. On the contrary, the development is expected to bring several benefits, and as a result, the positive impacts will outweigh the negative impacts.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	**YES**	~~NO~~	Please explain
The proposed land use and development can potentially set a significant precedent within the Ngwathe local municipality, particularly for future agricultural developments. The National Development Plan (NDP) aims to attract investors for agricultural ventures, and the introduction of the cattle feedlot development could act as a catalyst for similar initiatives in the area. This proposed development aims to showcase a commitment to socio-economic advancement and environmental stewardship, setting a high standard. Its adherence to stringent guidelines, emphasising the containment of surface and groundwater contamination, utilisation of already disturbed land, and limitation of its physical footprint, underscores its responsible approach. This project could boost the local economy and serve as a blueprint for future developments. Demonstrating the viability of responsible land use practices paves the way for a more sustainable and beneficial approach to development within the region, thus setting a precedent for others to follow suit.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	~~YES~~	**NO**	Please explain
The Public Participation Process (PPP) allows the community and all landowners in the surrounding area to express their concerns and issues regarding the development. The PPP is currently in progress, and all comments and concerns will be addressed and made available in Appendix E.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	~~YES~~	**NO**	Please explain
The proposed cattle feedlot development is located beyond the "urban edge" defined by the local municipality. It will be developed at a distance from this line. It is not anticipated that the proposed activity will exceed beyond the proposed development footprint, and therefore, it will not compromise or pose a risk to the "urban edge" of the local municipality.			
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	~~YES~~	**NO**	Please explain
N/A			

15. What will the benefits be to society in general and to the local communities?	Please explain

The development will contribute to the following benefits regarding society in general and the local communities:

- Feedlot operations will contribute to economic growth by creating jobs by operating the feedlot and the associated industries, such as transport, veterinary service, feed supply, and meat processing facilities.
- Tax revenue will increase further and be allocated to SARS, which can then be distributed to municipalities to fund public services.
- The local economy will be supported by purchasing equipment, feed, and supplies.
- The feedlot will ensure a stable food supply by providing consumers with a consistent source of meat products. This can contribute to food security at both local and national levels.
- Introducing the feedlot development can diversify the local agricultural landscape, providing farmers with additional options for livestock production and potentially reducing dependence on single crops or activities.

16. Any other need and desirability considerations related to the proposed activity?	Please explain

The proposed development is expected to result in a rise in employment opportunities, effectively addressing a significant demand within the local community while simultaneously strengthening both the local economy and the community. Moreover, this initiative is anticipated to play a role in alleviating the national food security concerns pertaining to the demand for food. Additionally, the establishment of the feedlot is projected to generate supplementary economic revenue, thereby fulfilling a crucial financial requirement for the nation.

17. How does the project fit into the National Development Plan for 2030?	Please explain

The project aligns closely with South Africa's National Development Plan for 2030, particularly in its emphasis on promoting sustainable agricultural practices while addressing social equity and economic development in rural communities. By advocating for efficient land use and recognising the importance of subsistence agriculture, the NDP aims to balance agricultural productivity and equitable access to resources.

Moreover, the project addresses waste management issues, aiming to decrease emissions by minimising solid waste disposal and implementing recycling and composting initiatives. This aligns with national goals to reduce environmental impact and enhance resource efficiency. The project supports job creation and livelihood improvement in rural areas by channelling public investment into agricultural technologies for both commercial and small-scale farming.

The NDP's goal of creating close to 1 million new jobs by 2030 through agricultural expansion is a testament to its significance in achieving broader employment targets. Strategies such as expanding irrigated agriculture, utilising underused land, and supporting promising agricultural sectors highlight a comprehensive approach to boosting productivity and income generation in rural communities. The project's emphasis on agricultural training further underscores the need for capacity building to ensure the sustainability of these efforts.

The proposed development aligns with this aim as it will create job opportunities within the local community, provide regional expansion of food production, address the national need for food security, and promote agricultural growth.

18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.

According to Section 23 of NEMA, 1998, the following should be considered:

This section aims to promote the application of appropriate environmental management tools to ensure the integrated environmental management of activities.

The general objective of integrated environmental management is to –

- Promote the integration of the principles of environmental management set out in section 2 of NEMA (Principles) into the making of all decisions which may have a significant effect on the environment.
- Identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage, the risks and consequences and alternatives and options for mitigation of activities, with a view to minimising negative impacts, maximising benefits, and promoting compliance with the principles of environmental management set out in section 2.
- Ensure that the effects of activities on the environment receive adequate consideration before actions are taken in connection with them.
- Ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment.
- Ensure the consideration of environmental attributes in management and decision-making which may have a significant effect on the environment; and
- Identify and employ the modes of environmental management best suited to ensuring that a particular activity is pursued in accordance with the principles of environmental management set out in section 2.

The Director-General must coordinate the activities of organs of state referred to in section 24(1) and assist them in giving effect on the objectives of this section and such assistance may include training, the publication of manuals and guidelines and the co-ordination of procedures

The following was considered according to Section 23 of NEMA, 1998 :

- EIA process for listed activities should be followed.
- An application for environmental authorisation was submitted to the Department of Agriculture, Environmental Affairs, Rural Development and Land Reform (DAERL)
- Baseline and specialist assessment was undertaken
- Compilation of a Draft Basic Assessment Report (BAR) which includes the potential impacts identified during the assessments.
- The draft reports to be submitted to the competent authorities for inspection and approval or amendments.
- The subsequent final BAR will also be made available to the respective competent authorities.

19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.
An application for environmental authorisation was made to the DESTEA as stated in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998). Through the implementation of the guidelines set by the Environmental Management Program (EMP), as required by the NEMA, wherein any disturbance to the environment should be minimised where they cannot be altogether avoided and subsequently remedied. The needed environmental authorisation has been applied for, and the relevant specialists have been appointed for any possible environmental impact that the project might pose. The relevant specialists in accordance with this project are a terrestrial ecologist and a heritage specialist. A public participation process will be undertaken, in which the I&APs will be given the opportunity to register and comment on the Draft BAR. The principles of environmental management, as set out in Section 2 of NEMA, have been taken into account through the following means: • There will be no loss of endangered or protected biological diversity. • Pollution will be minimised; and • This activity will reduce the exploitation of non-renewable resources.

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
The Constitution of South Africa Act, 1996 (Act No. 108 of 1996)	The proponent must ensure that the proposed development's construction or operation does not contravene the Constitution. The proponent should comply with the Constitution by providing that no pollution or ecological degradation occurs due to the proposed development and by conducting environmentally sustainable developmental practices. The Environmental Management Plan stipulates strict mitigation measures to	Minister for Justice and Constitutional Development	1996

	mitigate and prevent possible pollution incidents.		
The National Water Act, 1998 (Act No. 36 of 1998)	The proposed development activities will trigger licensing in terms of the National Water Act, 1998. Application for Section 21 (g) will be required.	Department of Water and Sanitation	1998
The White Paper on Integrated Pollution and Waste Management for South Africa	The proponent must ensure that the proposed development's construction or operation aligns with the guidelines stipulated. The proponent should comply with the White Paper by providing that no pollution or ecological degradation occurs due to the proposed development and by conducting environmentally sustainable developmental practices.	The Ministries and Departments of Environmental Affairs and Tourism and of Water Affairs and Forestry	2000
The National Heritage Resources Act (Act 25 of 1999)	It is a legal requirement of this Act that a Heritage Impact Assessment be conducted. Refer to Appendix D for the complete Heritage Impact Assessment Report.	South African Heritage Resources Agency (SAHRA)	1999
The Constitution of South Africa Act, 1996 (Act No. 108 of 1996)	The proponent must ensure that the proposed development's construction or operation does not contravene the Constitution. The proponent should comply with the Constitution by providing that no pollution or ecological degradation occurs due to the proposed development and by conducting environmentally sustainable developmental practices. The Environmental Management Plan stipulates strict mitigation measures to mitigate and prevent possible pollution incidents.	Minister for Justice and Constitutional Development	1996
The National Water Act, 1998 (Act No. 36 of 1998)	The proposed development activities will trigger licensing in terms of the National Water Act of 1998. Application for Section 21 (g) will be required.	Department of Water and Sanitation	1998
The White Paper on	The proponent must ensure	The Ministries and	2000

Integrated Pollution and Waste Management for South Africa	that the proposed development's construction or operation aligns with the guidelines stipulated. The proponent should comply with the White Paper by providing that no pollution or ecological degradation occurs due to the proposed development and by conducting environmentally sustainable developmental practices.	Departments of Environmental Affairs and Tourism and of Water Affairs and Forestry	

12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?	**YES**	~~NO~~
If YES, what estimated quantity will be produced per month?	6.15 m^3	

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

The waste will be collected in refuse bins or tipper trucks and transported to a licensed landfill site in Parys for disposal.

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

The construction waste generated on-site will be disposed of at a licensed landfill.

Will the activity produce solid waste during its operational phase?	**YES**	~~NO~~
If YES, what estimated quantity will be produced per month?	15443.16 m^3	

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

The manure produced by the cattle in the pens will be cleaned regularly and transferred to a temporary dry storage area located at 26°54'33"S, 27°38'0"E. The manure will be left to dry over an extended period, after which it will be used as fertilizer on the nearby crop fields of the farmer.

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

N/A

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

The manure will be dried in a specific area located at 26° 54' 33" S, 27° 38' 0" E, which is where the development project will take place. The area is approximately 1.5 hectares in size, which will be sufficient to accommodate the manure. Once the manure is dried it will fertilise the farmer's crop fields. The manure is rich in nitrogen, phosphorus, and potassium, making it a highly beneficial crop fertiliser.

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?	~~YES~~	**NO**

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?	~~YES~~	**NO**

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?	~~YES~~	**NO**
If YES, what estimated quantity will be produced per month?		~~m^3~~
Will the activity produce any effluent that will be treated and/or disposed of on site?	**YES**	~~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?	~~YES~~	**NO**

If YES, provide the particulars of the facility:

Facility name:			
Contact person:			
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 proposed development's stormwater management plan showcases a comprehensive strategy for optimizing the reuse and recycling of wastewater. Through the implementation of stormwater drainage lines, sedimentation ponds, and a holding pond, runoff water, including that containing manure, is effectively directed towards designated collection points while allowing suspended solids and contaminants to settle out in the sedimentation ponds. The holding pond serves as a reservoir, providing water for agricultural use and further enhancing water quality through additional settling. By utilizing this water for crop irrigation, the development promotes sustainable practices and reduces reliance on freshwater sources. Regular cleaning and maintenance of sedimentation ponds ensure their continued effectiveness, with waste material being transferred to dry manure storage for eventual use as fertilizer. This integrated approach prioritizes environmental conservation and sets a commendable standard for wastewater management in similar developments, contributing to collective efforts towards sustainability.

c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other that exhaust emissions and dust associated with construction phase activities?	**YES**	~~NO~~
If YES, is it controlled by any legislation of any sphere of government?	~~YES~~	**NO**

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:

With its capacity for 7500 cattle, the proposed feedlot development will inevitably result in emissions, primarily from animal manure and bodily gases. Leytem et al. (2009) conducted a comprehensive study on emission rates, detailing the average emissions per cow per day from various sources within a farm setting. In summary, the average emissions per cow per day from the open lots, wastewater pond, and compost area are as follows:

Open lots:

- 0.13 kg NH_3
- 0.49 kg CH_4
- 28.1 kg CO_2
- kg N_2O

Wastewater pond (per unit area per day):

- 2.0 g NH_3
- 103 g CH_4
- 637 g CO_2
- 0.49 g N_2O

Compost area (per unit area per day):

- 1.6 g NH_3
- 13.5 g CH_4
- 516 g CO_2
- 0.90 g N_2O

Combined emissions per cow per day:

- 0.15 kg NH_3
- 1.4 kg CH_4
- 30.0 kg CO_2
- 0.02 kg N_2O

The open lots are identified as the primary source of emissions, contributing significantly to NH_3, CO_2, and N_2O emissions, accounting for 78%, 80%, and 57% of the total farm emissions, respectively. Several factors influence these emissions, such as type of feed, water quality, and cattle type. However, this was used as a case study to predict the estimated emissions produced by the cattle.

In assessing compliance with environmental regulations, specifically the **National Environmental Management Air Quality Act No. 39 of 2004,** it's crucial to ensure that ambient air quality standards are not exceeded. The Act stipulates the following standards concerning the development:

Nitrogen Dioxide (NO_2) Concentrations:

- One-hour average: 0.2 parts per million (ppm)
- 24-hour average: 0.1 ppm (not to be exceeded more than three times in one year)
- One-month average: 0.08 ppm
- Annual average: 0.05 ppm

Total Suspended Solids (TSS) Concentrations:

- 24-hour average: 300 µg/m³
- Annual average: 100 µg/m³

These standards serve as benchmarks to ensure air quality is maintained within acceptable limits, safeguarding both environmental and public health. Adherence to these standards requires thorough monitoring and quarterly evaluation of air quality using an EVM/Particulate Meter, as well as consistent maintenance to alleviate any potential adverse impacts stemming from the proposed feedlot development.

d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?	~~YES~~	**NO**

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**	~~NO~~
If YES, is it controlled by any legislation of any sphere of government?	~~YES~~	**NO**

Describe the noise in terms of type and level:

There may be some noise generated during the development's construction phase. In addition, there may be some occasional noise from the livestock handling at the feedlot. It's worth noting that this noise won't be constant and will only occur at certain times. Furthermore, during the cattle transportation, noise levels may increase due to the truck movement and the handling of the cattle.

However, the development area is surrounded by cultivated lands, where tractors are used. The movement of tractors in the nearby cultivated land may cause noise levels to reach between 80 dBA and 90 dBA. Compared to the surrounding area, the noise generated by the cattle will be lower.

13. WATER USE

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

~~Municipal~~	~~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:	7 950 000 litres	
Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?	**YES**	~~NO~~

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

14. ENERGY EFFICIENCY

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

Given that the feedlot has an open-plan design and relies on manual feeding systems, the amount of energy needed to operate it is expected to be quite low. However, to further minimize energy consumption, it may be advisable to consider using LED lights for illumination purposes and installing motion sensors in strategically targeted areas. This would help to conserve energy while still maintaining a safe and efficient environment.

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

N/A

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** ~~NO~~

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:

Province	Free State
District Municipality	Fezile Dabi District Municipality
Local Municipality	Ngwathe Local Municipality
Ward Number(s)	7
Farm name and number	Farm Doornkop
Portion number	Parcel No. 148
SG Code	F02500000000014800000

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:

The property is zoned for Agriculture

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~~ **NO**

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

~~**Alternative S2 (if any):**~~

~~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~~

~~**Alternative S3 (if any):**~~

~~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~~

2. LOCATION IN LANDSCAPE

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

~~2.1 Ridgeline~~		~~2.4 Closed valley~~		2.7 Undulating plain/low hills	X
~~2.2 Plateau~~		~~2.5 Open valley~~		~~2.8 Dune~~	
~~2.3 Side slope of hill/mountain~~		~~2.6 Plain~~		~~2.9 Seafront~~	
~~2.10 At sea~~					

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)	~~YES~~	**NO**	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Dolomite, sinkhole or doline areas	~~YES~~	**NO**	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Seasonally wet soils (often close to water bodies)	~~YES~~	**NO**	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Unstable rocky slopes or steep slopes with loose soil	~~YES~~	**NO**	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Dispersive soils (soils that dissolve in water)	~~YES~~	**NO**	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Soils with high clay content (clay fraction more than 40%)	~~YES~~	**NO**	~~YES~~	~~NO~~	~~YES~~	~~NO~~
Any other unstable soil or geological feature	~~YES~~	**NO**	~~YES~~	~~NO~~	~~YES~~	~~NO~~
An area sensitive to erosion	~~YES~~	**NO**	~~YES~~	~~NO~~	~~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 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).

~~Natural veld - good condition[E]~~	~~Natural veld with scattered aliens[E]~~	~~Natural veld with heavy alien infestation[E]~~	~~Veld dominated by alien species[E]~~	~~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. SURFACE WATER

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

Perennial River	~~YES~~	**NO**	~~UNSURE~~
Non-Perennial River	~~YES~~	**NO**	~~UNSURE~~
Permanent Wetland	~~YES~~	**NO**	~~UNSURE~~
Seasonal Wetland	~~YES~~	**NO**	~~UNSURE~~
Artificial Wetland	~~YES~~	**NO**	~~UNSURE~~
Estuarine / Lagoonal wetland	~~YES~~	**NO**	~~UNSURE~~

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

N/A

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~~
~~Low density residential~~	~~Hospital/medical centre~~	~~Filling station[H]~~
~~Medium density residential~~	~~School~~	~~Landfill or waste treatment site~~
~~High density residential~~	~~Tertiary education facility~~	~~Plantation~~
~~Informal residential[A]~~	~~Church~~	**Agriculture**
~~Retail commercial & warehousing~~	~~Old age home~~	**River, stream, or wetland**

~~Light industrial~~	~~Sewage treatment plant[A]~~	~~Nature conservation area~~
~~Medium industrial [AN]~~	~~Train station or shunting yard [N]~~	~~Mountain, koppie or ridge~~
~~Heavy industrial [AN]~~	~~Railway line [N]~~	~~Museum~~
~~Power station~~	~~Major road (4 lanes or more) [N]~~	~~Historical building~~
~~Office/consulting room~~	~~Airport [N]~~	~~Protected Area~~
~~Military or police base/station/compound~~	~~Harbour~~	~~Graveyard~~
~~Spoil heap or slimes dam[A]~~	~~Sport facilities~~	~~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 will this impact / 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)	~~YES~~	**NO**
Core area of a protected area?	~~YES~~	**NO**
Buffer area of a protected area?	~~YES~~	**NO**
Planned expansion area of an existing protected area?	~~YES~~	**NO**
Existing offset area associated with a previous Environmental Authorisation?	~~YES~~	**NO**
Buffer area of the SKA?	~~YES~~	**NO**

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

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:	~~YES~~	**NO**
	~~Uncertain~~	
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:

A Phase 1 Heritage Impact Assessment was carried out for the development of a new cattle feedlot on the farm Doornkop 148 near Parys, Free State Province. The site is located about 1.3 km due east of the N1 National Road and 6.5 km due south of the N1/R59 junction. The study area has been severely degraded by previous (modern) farming activities, where no *in situ* Stone Age archaeological material, rock art (engravings), prehistoric structures, graves or historically significant buildings older than 60 years were observed. Underlying rocks are made up of ~3 Ga-year-old, undifferentiated Archaean granites and gneiss. The proposed development will affect severely degraded agricultural land and paleontologically insignificant rocks where the anticipated impact will have negligible negative effects on palaeontological, archaeological, or historical heritage with no further mitigation required. Archaeologically, the proposed feedlot area and the dry manure storage area are assigned a rating of Generally Protected C (GP.C). Regarding palaeontological and archaeological heritage, the proposed development may proceed provided that all planned activities are restricted to within the boundaries of the demarcated footprints.

Will any building or structure older than 60 years be affected in any way?	~~YES~~	**NO**
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 provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.

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:

The following table displays the employment and unemployment status along with the unemployment rate of Ngwathe Local Municipality. The unemployment rate has decreased from 47.1 to 35.0 over the past decade, but despite the improvement, 13,814 people remain unemployed.

Table 4 Distribution of population by employment status and unemployment rate: Ngwathe LM, 1996 2001 and 2011

	Employed	Unemployed	Unemployment rate
1996	26313	13335	33.6
2001	22064	19643	47.1
2011	25376	13814	35.0

Source: STATSSA, Census 1996, 2001 and 2011

Economic profile of local municipality:

The graph shows Ngwathe's GVA contribution to Fezile Dabi District Municipality in 2019. It is evident that the Agriculture Sector accounts for 10% of Ngwathe's GVA. However, it is important to note that the Agriculture Sector had the lowest average annual growth rate at -2.71%.

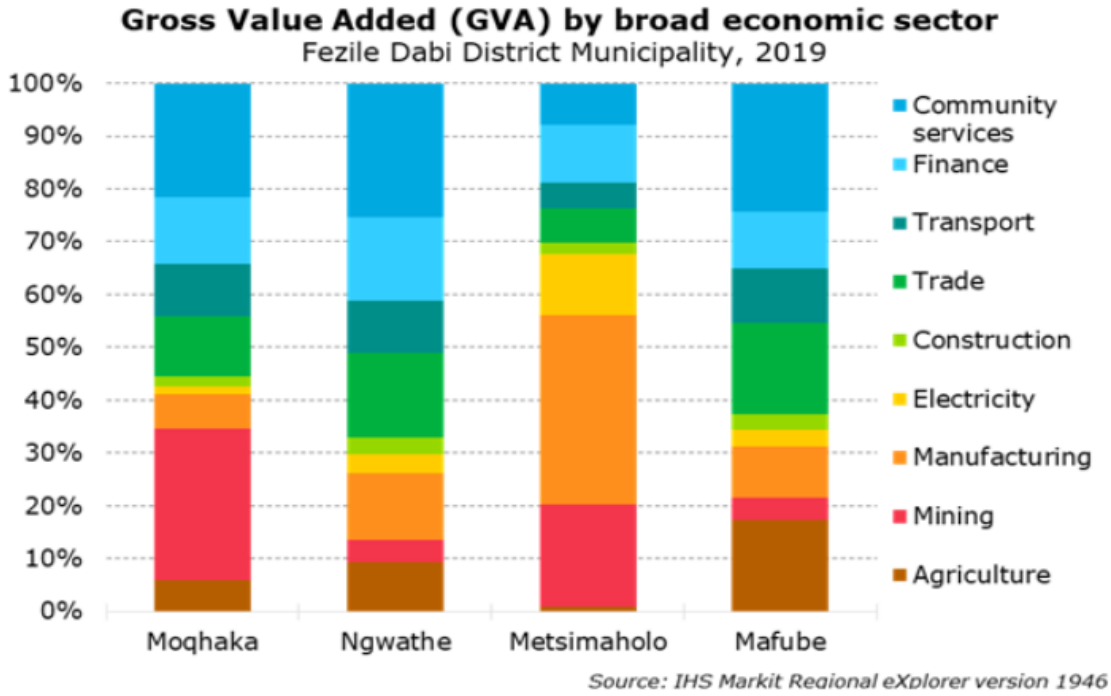


Figure 2 Graph illustrating Fezile Dabi District Municipality Gross Value Added (GVA) across a broad spectrum of each Local Municipality within this district.

Level of education:

The following table indicates the education levels of Ngwathe Local Municipality by age and gender in 1996, 2001, and 2011. There has been an improvement from 1996 through to 2011. The total number of individuals who have completed grade 12 increased by 10,801, and higher education has also increased by 1,245 individuals.

Table 5 Distribution of population by age/gender/education levels: Ngwathe LM,1996, 2001 and 2011

	1996		2001		2011	
	Male	Female	Male	Female	Male	Female
No schooling	4680	6247	5066	6839	2657	3531
Some primary	7132	8709	7250	8783	5820	7910
Completed primary	2356	3019	2259	2812	1696	2172
Some secondary	10083	11779	9617	11385	11780	13338
Grade 12 / Std. 10	3780	4153	5329	5803	9148	9586
Higher	1699	1698	1763	1877	2202	2440

Source: STATSSA, Census 1996, 2001 and 2011,

Table 6 Educational household survey of 2016

No schooling	4301
Grade 0	3432
Grade 1/Sub A/Class 1	3568
Grade 2/Sub B/Class 2	3244
Grade 3/Standard 1/ABET 1	4809
Grade 4/Standard 2	4927
Grade 5/Standard 3/ABET 2	5099
Grade 6/Standard 4	6059
Grade 7/Standard 5/ABET 3	5948
Grade 8/Standard 6/Form 1	7732
Grade 9/Standard 7/Form 2/ABET 4/Occupational certificate NQF Level 1	8313
Grade 10/Standard 8/Form 3/Occupational certificate NQF Level 2	11406
Grade 11/Standard 9/Form 4/NCV Level 3/ Occupational certificate NQF Level 3	9426
Grade 12/Standard 10/Form 5/Matric/NCV Level 4/ Occupational certificate NQF Level 3	21877
NTC I/N1	98
NTCII/N2	28
NTCIII/N3	166
N4/NTC 4/Occupational certificate NQF Level 5	333
N5/NTC 5/Occupational certificate NQF Level 5	153
N6/NTC 6/Occupational certificate NQF Level 5	273
Certificate with less than Grade 12/Std 10	43
Diploma with less than Grade 12/Std 10	195
Higher/National/Advanced Certificate with Grade 12/Occupational certificate NQF	493
Diploma with Grade 12/Std 10/Occupational certificate NQF Level 6	1426
Higher Diploma/Occupational certificate NQF Level 7	534
Post-Higher Diploma (Master's	304
Bachelor's degree/Occupational certificate NQF Level 7	1001
Honours degree/Post-graduate diploma/Occupational certificate NQF Level 8	565

The table above illustrates the educational levels within households and shows an increase in higher education attainment. From 2011 to 2016, the number of individuals who completed matric increased by 3,143, and the number of people with tertiary education increased by 1,441.

b) Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R 8 000 000	
What is the expected yearly income that will be generated by or as a result of the activity?	R 99 750 000	
Will the activity contribute to service infrastructure?	~~YES~~	**NO**
Is the activity a public amenity?	~~YES~~	**NO**
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	15	
What is the expected value of the employment opportunities during the development and construction phase?	R 3 000 000	
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?	7	

What is the expected current value of the employment opportunities during the first 10 years?	R 5 040 000
What percentage of this will accrue to previously disadvantaged individuals?	%

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. 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
~~Critical Biodiversity Area (CBA)~~	~~Ecological Support Area (ESA)~~	~~Other Natural Area (ONA)~~	**No Natural Area Remaining (NNR)**	

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	3%	The remaining natural vegetation has been impacted by surrounding agricultural practices and alien invasions. The vegetation composition for the proposed development area is lacking with respect to its original form of the Vredefort Dome Granite Grassland and Soweto Highveld Grassland vegetation types, with species diversity consisting mostly of alien and invasive species, naturalised alien species, and monoculture cultivation.
Near Natural (includes areas with low to moderate level of alien invasive plants)	0%	Due to the area's transformation through cultivation and isolation resulting from surrounding agricultural use, 0% of it is considered near natural.
Degraded	7%	The site exhibits degradation and is in a poor ecological

(includes areas heavily invaded by alien plants)		state, characterised by the prevalence of alien invasive species and encroachment of bushes within the vegetation.
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	90%	Vegetation found on site showed signs of severe agricultural disturbances, which led to poor site functionality and overall poor species richness in the affected areas. The proposed development has a history of agricultural land use up to date and is located in a developing agricultural environment. Roughly 90% of the site has been transformed through previous agricultural land use practices.

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)	~~Critical~~ ~~Endangered~~ **Vulnerable** ~~Least Threatened~~	Wetland (including rivers, depressions, channelled and unchanneled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline	
		~~YES~~	**NO**	~~UNSURE~~	~~YES~~	**NO**	~~YES~~	**NO**

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)

Vegetation found on site showed signs of severe agricultural disturbances, which led to poor site functionality and overall poor species richness in the affected areas. The proposed development has a history of agricultural land use up to date and is in a developing agricultural environment. Roughly 90% of the site has been transformed through agricultural land use practices. Less than 10% of the proposed development area consists of natural vegetation. However, surrounding agricultural practices and alien invasions have impacted this remaining natural vegetation. The vegetation composition for the proposed development area is lacking with respect to its original form of the Vredefort Dome Granite Grassland and Soweto Highveld Grassland vegetation types, with species diversity consisting mostly of alien and invasive species, naturalised alien species and monoculture cultivation. Few indigenous species remain, with no floral SCC or nationally protected species observed within the proposed development area. One provincially protected species was observed on site. However, the proposed development is not expected to influence the species. The occurrence of floral SCC or protected species is low in the vegetation's current state, with little ecological functioning.

SECTION C: PUBLIC PARTICIPATION

1. ADVERTISEMENT AND NOTICE

Publication name	Parys Gazette	
Date published	25 April 2024	
Site notice position	**Latitude**	**Longitude**
Site notice 1	26°90'95"S	27°64'69"E
Site notice 2	26°54'15"S	27°38'41"E
Site notice 3	26°54'21"S	27°38'44"E
Site notice 4	26°54'11"S	27°27'43"E
Date placed	15 April 2024	

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

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 326

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 326

Title, Name and Surname	**Affiliation/ key stakeholder status**	**Contact details (tel number or e-mail address)**
Johan Dannhauser	Neighbour	0826554271/ consideratasa@gmail.com
Willem Coetzer	Neighbour	0826513686
Pierre Kotzé	Neighbour	0832275088

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. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	**Summary of response from EAP**
Pending	Pending

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.

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
Ngwathe Local Municipality MM	Cllr Victoria de Beer	056 816 2700		mmadmin@ngwathe.co.za	Liebenberg straat, Parys
MM Ngwathe Local Municipality Manager	Ms TN Baleni	016 973 8313		mmadmin@ngwathe.co.za	Civic Centre, Fichardt Street, Sasolburg
Department of Community Safety, roads & Transport	MR Ndaba	082 525 3072		ndabaroads@gmail.com	Medfontein Building, 153 St Andrew Street, Bloemfontein
Department of Agriculture and Rural Development	Dr T Masiteng	051 861 8363 060 983 8820		masitengt@dard.gov.za degracia@fs.agric.za	Gielie Joubert St Glen, BFN, 9360
Department of Economic Development, Tourism, Environmental Affairs & Small Business	Mrs Grace Skosana	051 400 4800		mkhosanag@destea.fs.gov.za manakeo@destea.fs.gov.za molokwanen@destea.fs.gov.za	113 St Andrews Street Bloemfontein 9300
Department of Water & Sanitation	Mr. Vernon Blair Deputy Director: Water Use	051 405 9000 082 807 3552		BlairV@dws.gov.za NelG@dws.gov.za	Bloem Plaza 2nd Floor c/o Charlotte Maxeke & East Burger Streets, Bloemfontein, 9300
Free State Department of Public Works	Mr M Mohlahlo	051 492 3915		hodoffice@fsworks.gov.za kgabalem@fsworks.gov.za	Room 146, OR Tambo House Cnr St, Andrews

and Infrastructure					and Markgraaf Streets Bloemfontein 9300
Fezile Dabi District Municipality	Cllr Dennis Khasudi Executive Mayor	016 970 8600		info@feziledabi.gov.za	Jhon Voster Road, Sasolburg
Fezile Dabi District Municipality	Cllr Siidney Pittaway Municipal Speaker	016 970 8600		info@feziledabi.gov.za	Jhon Voster Road, Sasolburg

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.

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.

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 as amended 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. 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.

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative)			
Loss of habitat and species diversity because of construction and indigenous vegetation clearance.	***Direct impacts:*** Los of natural habitat and species	Low	• Removal of natural vegetation should be kept to a minimum. • The construction footprint will be demarcated according to the construction phase conditions. Construction activities should only occur within the development boundary/ demarcated area. • Disturbance-related activities must be restricted to the authorised development site. • Prioritise the use of existing service or single-track roads. • No off-roading or reckless driving should be allowed. • Post-construction open areas should be rehabilitated and revegetated with indigenous vegetation. • No harvesting of plant material should be allowed. • No illicit fires may be allowed during construction. • A fire management plan should be drafted and kept on site for all phases of the development. • Littering should be prohibited.
	Indirect impacts: Reduction in biological diversity, loss of habitat for animal and plant species, and changes in ecosystem function.	Low	
	Cumulative impacts: The overall decline in ecosystem functioning is a result of the destruction of habitats and the diminishing populations of animal and plant species.	Low	

Activity	Impact summary	Significance	Proposed mitigation
			• No burning of any material is allowed on site. • Cleared alien and invasive vegetation should be burned within a controlled area or removed from the site and taken to a registered waste facility. • An alien and invasive management plan should be drafted and implemented. • All barren/unvegetated spaces cleared during construction, which also includes the creation of topsoil stockpiles, should be kept clear of vegetation. • Adhere to mitigation measures outlined in the EMPr (Appendix G)
Proliferation of exotic plant species due to environmental disturbance.	***Direct impacts:*** Loss of native animal and plant species.	Low-Medium	• Cleared alien and invasive vegetation should be burned within a controlled area or removed from the site and taken to a registered waste facility. • An alien and invasive management plan should be drafted and implemented. • Disturbance-related activities may not exceed the authorised development boundary. • Exotics may not be allowed to proliferate within the development area. • The vegetation on stockpiles needs to be eradicated from all vegetation on a quarterly basis. • All open spaces post-construction need to be rehabilitated with indigenous species. • Adhere to mitigation measures outlined in the EMPr (Appendix G)
	Indirect impacts: Changes in ecosystem function and plant populations lead to an increase in pathogens and the spread of diseases. A decrease in native animal and plant species leads to biodiversity loss.	Low	
	Cumulative impacts: Loss of biodiversity and change of ecosystem functioning.	Low	
Destruction of any	***Direct impacts:***	Low	• SAHRA and a qualified

Activity	Impact summary	Significance	Proposed mitigation
archaeological artefacts or fossils	Loss of cultural heritage through destruction of historical artefacts.		archaeologist must be consulted immediately in the event of accidental archaeological exposure. In the unlikely event of accidental archaeological exposure, all excavations should stop immediately. No loose-chance finds, such as Stone Age artefacts (arrowheads, stone flake blades, etc.), may be collected. All construction debris and waste should be removed from the site and may not be deposited in on-site excavated waste pits. No unauthorised excavations or construction may be allowed. Construction activities should be restricted to the development footprint. Adhere to mitigation measures outlined in the EMPr (Appendix G)
	Indirect impacts: Loss of cultural and historical significance within the community	Low	
	Cumulative impacts: The loss of cultural heritage, degradation of ecosystems, and economic decline.	Low	
The pollution of surface and groundwater resources due to the proposed development	***Direct impacts:*** Chemical and pathogen contamination of groundwater due to manure production.	Low-Medium	A stormwater management plan should be implemented to avoid the increased runoff from eroding soils. Holding ponds and drainage lines should be lined with clay or any other suitable impermeable material to prevent seepage and groundwater contamination. Soil erosion prevention should be implemented. Soil polluted with hazardous substances, such as fuel, oil, paint, etc., should be removed and managed as hazardous waste—i.e., stored in the hazardous waste disposal area. Waste must be collected and stored in waste bins/skips
	Indirect impacts: Eutrophication on surrounding watercourses soil degradation and spread of diseases.	Low-Medium	
	Cumulative impacts: Long-term decrease in water quality, soil degradation, and loss of ecosystem functioning.	Low-Medium	

Activity	Impact summary	Significance	Proposed mitigation
			prior to disposal to prevent soil contamination. On completion of construction work, all areas that are prone to erosion must be re-vegetated with indigenous species. Anti-erosion measures must be implemented in areas where erosion is observed or is likely to occur, especially on topsoil, subsoil, and other stockpile areas. Chemical toilets must be available during construction. The proponent or responsible person operating the feedlot should draft and maintain a monitoring programme. A baseline groundwater test should be conducted, and biannual tests thereafter should be implemented to assess the possibility of groundwater pollution. The feedlot pens interface layer should be maintained to ensure water run-off is sufficient. The interface layer should be levelled as needed. Pens should be cleaned of loose manure and deposited in the manure storage area. Sedimentation ponds should be maintained and cleaned once they reach 70% capacity. Dry manure storage areas must be maintained, and any accumulated water puddles should be removed. Water in the holding pond should be utilised before overflow can occur. E-coli tests should be done regularly at composting area to ensure pathogen spread and leakage do not occur. Adhere to mitigation measures

Activity	Impact summary	Significance	Proposed mitigation
			outlined in the EMPr (Appendix G)
The alteration of landscape appreciation, visual deterioration, and visual impacts from the feedlot development.	***Direct impacts:*** Loss of natural vegetation and visual alteration towards landscape.	Low-Medium	Construction debris should be removed regularly and not allowed to pile up. A designated construction waste area should be allocated away from the stockpiling area and demarcated. All domestic waste and construction debris should be removed to a designated waste landfill site. Complaints register needs to remain on-site in which all complaints raised by the public are to be filed. Construction should finish as quickly as possible. All open spaces after construction need to be revegetated with indigenous vegetation. Construction activities should remain within the development footprint. Access routes must be used to limit vegetation disturbance outside affected areas. Vehicles are to be restricted to existing access roads. Trees should be planted between immediate neighbouring farms and the feedlot to function as a dense wall to minimise the visual impact. Adhere to mitigation measures outlined in the EMPr (Appendix G)
	Indirect impacts: Reduced air quality, decrease in property value and change in ecosystem functioning.	Low	
	Cumulative impacts: Environmental degradation and loss of cultural and historical value due to changes in landscape.	Low	
Additional air pollution introduced due to the mobilisation of vehicles, land clearance and the smell of cattle manure.	***Direct impacts:*** Decrease in air quality due to odours, dust accumulation and emissions from vehicles.	Low	Areas cleared of vegetation must be wet down to prevent excessive dust during construction; suppression measures must be implemented, including
	Indirect impacts:	Medium	

Activity	Impact summary	Significance	Proposed mitigation
	The decline in biodiversity is a result of animal species migrating due to changes in the atmosphere. A decline in community health, contributing to respiratory issues.		periodic wetting of exposed soils. Enforce a speed limit of 20 km/h and optimise the working schedule to reduce vehicle mobilisation. Limit the clearance of vegetation to only necessary areas. The construction of new dirt roads should be restricted by prioritising existing roads. Development should remain within the authorised area. Construction should be completed as soon as possible. Cleared vegetation and open areas susceptible to wind-blown dust must be rehabilitated and stabilised as soon as possible. Stockpiled material must either be covered or wet down to prevent dust particulates from entering the atmosphere. Construction vehicles must be maintained to prevent excessive release of emissions. No burning of waste shall be allowed on site. Parking areas should be demarcated and strictly controlled so vehicles are limited to specific areas. Frequently wet bare surface area to prevent dust accumulation form vehicle movement. Implement biofilters or vegetative buffers around the feedlot to help capture and absorb odorous compounds. Planting trees, shrubs, and other vegetation can help filter and neutralise odours.
	Cumulative impacts: Alteration in ecosystem functioning, economic repercussions, including diminished property values, heightened health issues, and an exacerbation of climate change.	Low -Medium	

Activity	Impact summary	Significance	Proposed mitigation
			• Promptly remove and properly manage manure to minimise its contact with air. Frequent manure removal reduces the production of odorous gases. • Remove manure and waste materials regularly to keep the feedlot clean. Cleaning pens regularly helps prevent the buildup of odour-causing compounds. • Clean and de-sludge sedimentation ponds once they reach 70% capacity to prevent the buildup of manure and odour. • Maintain an even pen floor surface to ensure rapid drying of manure, as wet manure releases more odour • Clean drainage lines regularly to prevent manure and sediment buildup, which could lead to increased odours. • Ensure the composting area is maintained and has sufficient runoff to ensure sufficient drying • In the event of precipitation, it is advisable to remove manure from pens to prevent further odour accumulation. • Don't spread sewage on windy days. • Holding pond water should not be irrigated on windy days. • Adhere to mitigation measures outlined in the EMPr (Appendix G)
Vehicles and equipment utilised and noises associated with cattle.	***Direct impacts:*** Increase in noise levels.	Low-Medium	• No loud music allowed on-site. • Vehicles must be maintained in such a manner as not to cause excessive noise when operating them. • Select 'quiet' construction equipment and working
	Indirect impacts: Loss of biodiversity in animal and plant species due to behavioural changes,	Low	

Activity	Impact summary	Significance	Proposed mitigation
	noise-induced stress on the surrounding environment and community, and decreased property values.		methods to avoid unnecessary revving and hooting. The working schedule for activities with high noise levels will be limited to 07:00 AM to 17:00 PM. Machinery should be serviced regularly during the construction stage. Refrain from unnecessary honking and revving while on-site. Implement scheduling and operational practices that minimise noisy activities during periods when noise-sensitive areas are most affected, such as early morning or late at night. Vehicles must be maintained in such a manner as not to cause excessive noise when operating them. Adequate signage and speed bumps must be provided around the feedlot development to limit fast vehicle movement and avoid simultaneous noisy activities. Utilize natural barriers like trees, shrubs, and earthen berms to help block and absorb sound. Create buffer zones between the feedlot and neighbouring properties. Vegetation that acts as a noise barrier can be planted in these areas. Properly manage animal handling and movement to minimise noise. This could involve using quieter techniques and equipment. Consider grouping animals based on behaviour and size to reduce vocalisations and stress-related noise. Adhere to mitigation measures
	Cumulative impacts: Disruption to natural landscape and functioning**.**	Low-Medium	

Activity	Impact summary	Significance	Proposed mitigation
			outlined in the EMPr (Appendix G)
Impacts associated with the need for locally appointed construction/operation workers	***Direct impacts:*** Job creation	Medium (Positive)	Ensure transparent and fair recruitment and procurement practices. The selected contractor should prioritize involving local communities in construction and support activities, based on their available skill levels. Additionally, training programs should be developed to meet both immediate construction needs and long-term employment demands. Adhere to mitigation measures outlined in the EMPr (Appendix G)
	Indirect impacts: Conducive to achieving economic growth.	Medium	
	Cumulative impacts: Job creation, economic gain and community cohesion.	Medium	
General solid waste pollution	***Direct impacts:*** Contamination of soil, water pollution and odour emissions.	Low	Reduce, reuse, and recycle strategy needs to be implemented. Waste receptacles must be made available, and all waste shall be adequately stored and removed. General site clean-up must be conducted on a daily basis. All waste management strategies employed by the contractor should comply with environmental / waste management legislation. Waste that can easily be dispersed by wind should be appropriately discarded in bins with lids. The contractor must provide adequate on-site waste collection facilities to efficiently collect and store waste before disposal. Construction waste (i.e. building rubble) must be separated from domestic waste. Waste should be regularly removed from the site to a
	Indirect impacts: Contaminated groundwater contributes to the proliferation of diseases, degradation of habitats, and loss of biodiversity.	Low-Medium	
	Cumulative impacts: Soil contamination, water contamination, decrease in air quality and increase of emissions.	Low	

Activity	Impact summary	Significance	Proposed mitigation
			registered landfill. The contractor should develop and comply with an on-site specific waste management plan. No waste may be buried in an on-site waste pit. No burning of waste material on site. Adhere to mitigation measures outlined in the EMPr (Appendix G)
Land contamination due to organic manure	***Direct impacts:*** Soil contamination and an increase in nutrient accumulation	Medium	A comprehensive stormwater management network should be implemented and regularly inspected for faults. To prevent seepage, the stormwater channels should be lined with clay or any other suitable impermeable material. The sedimentation pond, evaporation pond, and temporary storage/drying area should also be lined. Dried manure should not be unutilised for more than four months. Unutilised manure stockpiles should be sold or, at the very least, be given away to other farmers for secondary use. The last option would be to transport the manure to an appropriate waste-handling facility. Sedimentation ponds should be cleaned and maintained once capacity reaches 70%. Drainage lines need to be kept free of sediment and manure buildup to maintain maximum flow capacity. Pens should be cleaned of manure and deposited in designated dry manure storage areas. Pen should be cleaned every 3 months when manure is
	Indirect impacts: Change in pH of soil, groundwater contamination due to leaching, runoff entering nearby water bodies. Species displacement and migration.	Medium	
	Cumulative impacts: Groundwater depletion, soil productivity loss, contaminant accumulation, and decreased ecosystem functioning.	Medium	

Activity	Impact summary	Significance	Proposed mitigation
			moist to ensure easy removal of manure and minimum disruption to pen layer surface. For easy management, manure can be mounded in pens to ensure regular cleaning and confident removal. Spoilt silage should be removed and deposited at the composting area. Mortalities should be removed immediately from the pens and can be utilised in the composting area or buried or be donated to the nearest wildlife farm. Record the date of each manure deposit at the composting windrow to monitor the management of compost.
~~Alternative 2~~			
	~~*Direct impacts:*~~		
	~~*Indirect impacts:*~~		
	~~*Cumulative impacts:*~~		
	~~*Direct impacts:*~~		
	~~*Indirect impacts:*~~		
	~~*Cumulative impacts:*~~		
~~Alternative 3~~			
	~~*Direct impacts:*~~		
	~~*Indirect impacts:*~~		
	~~*Cumulative impacts:*~~		
	~~*Direct impacts:*~~		
	~~*Indirect impacts:*~~		

Activity	Impact summary	Significance	Proposed mitigation
	~~***Cumulative impacts:***~~		
No-go option			
Feedlot will not be developed	***Direct impacts:***	Medium	While the no-go alternative will not generate any negative environmental impacts, it will surely remove any socio-economic benefit the local community will receive. The no-go alternative will also not aid the government in addressing the national food security matter and job creation. Therefore, the no-go alternative is not considered the preferred alternative.
	Indirect impacts:	Medium	
	Cumulative impacts:	Medium	

A complete impact assessment in terms of Regulation 19(3) of GN 326 must be included as Appendix F.

2. 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.

Alternative A (preferred alternative)

The projected development's impact on the ecological aspect of the environment is deemed to be of low significance, contingent upon the correct adherence to mitigation measures. As per the assessment of the heritage specialist, no noteworthy archaeological or cultural features have been identified. Thus, the proposed development is expected to yield a low impact on the cultural and historical aspects of the environment.

No watercourses have been identified within a 32-meter radius of the development boundary. Nonetheless, there is a risk of groundwater contamination. It is imperative to strictly adhere to mitigation measures to uphold the low to medium significance of the development's impact. The surrounding land uses are predominantly agricultural, and the proposed feedlot is anticipated to affect the visual landscape aesthetic. Nevertheless, the overall impact of this development is deemed to be low, as it is expected to harmonize with the surrounding activities.

The air quality pertaining to the operational phase of the development is deemed to be moderately significant due to the introduction of cattle into the environment and the resultant emission of odours from their manure. Following mitigation efforts, the impact of noise and vibration is expected to be low, with surrounding activities being the primary contributors to the noise levels.

The environmental impact of waste varies between general and organic waste. Proper mitigation

measures can minimize the environmental impact of general waste. However, organic waste from cattle has a comparatively higher environmental impact. The proposed development has a medium-significant socio-economic impact, with the potential for job creation, increased local spending, training opportunities, economic growth, and addressing food security needs for the growing population.

Alternative B

Alternative C

No-go alternative (compulsory)

The no-go alternative assumes that the proposed project will not go ahead, i.e. it is the option of not establishing the feedlot. This alternative would result in no environmental impacts on the site or the surrounding local area. It provides the baseline against which other alternatives were compared. The following implications will occur if the "no go" alternative is implemented:

- The cattle feedlot will not provide additional food security to South Africa.
- This will further enforce more strain on the local communities.
- Socio-economic benefits such as job creation, skills development, and local economic growth will be lost.

Besides the above-mentioned, the following benefits might occur if the no-go alternative is implemented:

- No vegetation will be removed and or disturbed.
- No change/ alteration to the existing landscape.
- No additional construction waste will end up in landfill sites.

While the no-go alternative will not generate any negative environmental impacts, it will have a negative socio-economic impact on the local community. The no-go alternative will also not aid the government in addressing the national food security matter and job creation. Therefore, the no-go alternative is not considered the preferred alternative.

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**	~~NO~~

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.

Mitigation measures and conditions are listed within the Environmental Management Plan.

Is an EMPr attached?	**YES**	~~NO~~

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.

Sampie van Rooyen

NAME OF EAP

22 May 2024

SIGNATURE OF EAP DATE

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