

APPENDIX F: IMPACT ASSESSMENT

Expansion of the Excelsior Abattoir – Kuruman



EARTHnSKY
environmental



1. IMPACT ASSESSMENT

1.1 THE PROCESS TO IDENTIFY, ASSESS AND RANK IMPACTS

According to the EIA Regulations, 2014 (as amended), the objective of the impact assessment process is to, through a consultative process-

- a) *determine the policy and legislative context within which the proposed activity is located and how the proposed activity complies with and responds to the policy and legislative context;*
- b) *identify the alternatives considered, including the activity, location, and technology alternatives;*
- c) *describe the need and desirability of the proposed alternatives;*
- d) *through the undertaking of an impact and risk assessment process, inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine—*
 - i. *the nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and*
 - ii. *the degree to which these impacts—*
 - (aa) *can be reversed;*
 - (bb) *may cause irreplaceable loss of resources; and*
 - (cc) *can be avoided, managed or mitigated.*
- e) *through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—*
 - (i) *identify and motivate a preferred site, activity and technology alternative;*
 - (ii) *identify suitable measures to avoid, manage or mitigate identified impacts; and*
 - (iii) *identify residual risks that need to be managed and monitored.*

1.2 DESCRIPTION OF ENVIRONMENTAL IMPACTS AND RISKS IDENTIFIED

Elements of this project that could have interacted with the environment are deemed to be environmental aspects. These have been identified during the Environmental Authorisation Application and associated Basic Environmental Impact Assessment process. Potential impacts as a result of the project's aspects have been identified by the EAP and specialists. The impacts, whether positive or negative, are defined as any change to the environment resulting from the identified environmental aspects.

1.3 IMPACT ASSESSMENT METHODOLOGY

Assessing the significance of the impacts as a result of the proposed development has been conducted using the parameters listed in the Table 1 below. Direct, indirect and cumulative impacts have been assessed (where relevant).

Table 1: Impact assessment methodology

Nature of the impact	This will include a qualitative description of what caused the impact and how it will affect the environment.
Extent of the impact	The size (physical/geographical) that will be affected by the impact: <ul style="list-style-type: none">• Onsite impact: Weighting value 1: The impact is confined to the project site/property• Local impact: Weighting value 2: The impact is confined to the project site/property and a 10km radius around the project site/property• Regional impact: Weighting value 3: The impact extends further than a 10km radius around the project site/property
Duration of the impact	The length of time over which the impact will persist: <ul style="list-style-type: none">• Short term impact: Weighting value 1: The impact will persist for up to one year• Medium term impact: Weighting value 2: The impact will persist for longer than one year, but shorter than five years

	<ul style="list-style-type: none"> • Long term impact: Weighting value 3: The impact will persist for longer than five years
Magnitude of the impact	<p>The intensity of the impact on the environment:</p> <ul style="list-style-type: none"> • Low impact: Weighting value 1: Natural processes continue, albeit in an altered manner • Medium impact: Weighting value 2: Natural processes cease temporarily • High impact: Weighting value 3: Natural processes cease indefinitely
Probability of the Impact	<p>How likely it is that the impact will happen:</p> <ul style="list-style-type: none"> • Improbable: Weighting value 1: It is unlikely that the impact will occur • Probable: Weighting value 2: There is a chance that the impact will occur • Definite: Weighting value 3: The impact will most certainly occur
Status of the impact	<p>A qualitative description of the impact:</p> <ul style="list-style-type: none"> • Whether the impact is positive or negative in nature • The degree to which the impact can be reversed • The degree to which the impact can be mitigated • The degree to which the impact may cause irreplaceable loss of resources
Significance of the impact	<p>This will be calculated using the formula below:</p> <p>Significance = (Extent + Duration + Magnitude) x Probability</p> <p>The significance of each impact will be divided into the following ratings, according to the results of the Significance calculation given above:</p> <ul style="list-style-type: none"> • Low Impact: Significance value: 1-9 • Medium Impact: Significance value: 10-18 • High Impact: Significance value: 19-27

1.4 IMPACT ASSESSMENT

The following impacts have been assessed as part of this Basic Assessment process:

Construction Phase:

- Soil
- Fauna
- Socio-economic
- Health and safety
- Ground- and surface water
- Paleontological resources
- Heritage resources
- Waste
- Traffic
- Air Quality
- Noise

Operational Phase:

- Odour
- Health and safety
- Traffic
- Socio-economic
- Waste

Tables 2 to 4 below detail the impacts and risks identified, including the nature, significance, consequences, extent, duration and probability of the impacts, the degree to which the impacts can be reversed; may cause irreplaceable loss of resources; and can be avoided, managed or mitigated.

Important Notes:

1. **Only the construction and operational phase impacts have been assessed as part of this Application;**
2. **The decommissioning of the abattoir not foreseen at this stage and no impacts have therefore been identified or rated. A NEMA Basic Assessment application would need to be undertaken for decommissioning activities, as required;**
3. **No project (site, location, routing etc.) alternatives have been included or assessed as there are no feasible alternatives for consideration as motivated in the Basic Assessment Report;**
4. **No cumulative impacts have been identified for the proposed project; and**
5. **The No-Go alternative has been assessed.**

Table 2: Impact assessment (construction phase)

ASPECT AND NATURE OF POTENTIAL IMPACTS	IMPACT SIGNIFICANCE BEFORE MITIGATION	IMPACT SIGNIFICANCE AFTER MITIGATION	STATUS OF THE IMPACT	RISK OF THE IMPACT AND MITIGATION NOT BEING IMPLEMENTED
SOIL				
Soil pollution (diesel, oil etc.) and compaction	Extent of impact: 1 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 2 Significance of impact: Low (8) (-)	Extent of impact: 1 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 1 Significance of impact: Low (4) (-)	Nature of impact: Negative The degree to which the impact can be reversed: Medium The degree to which the impact can be mitigated: High The degree to which the impact may cause irreplaceable loss of resources: Low	Low
Soil erosion and sedimentation	Extent of impact: 1 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 2 Significance of impact: Low (8) (-)	Extent of impact: 1 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 1 Significance of impact: Low (4) (-)	Nature of impact: Negative The degree to which the impact can be reversed: Medium The degree to which the impact can be mitigated: High The degree to which the impact may cause irreplaceable loss of resources: Low	Low
FAUNA				
Accidental disturbance of small fauna such as snakes, lizards, frogs etc.	Extent of impact: 1 Duration of impact: 1 Magnitude of impact: 1 Probability of impact: 1 Significance of impact:	Extent of impact: 1 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 1 Significance of impact:	Nature of impact: Negative The degree to which the impact can be reversed: High The degree to which the impact can be mitigated: High	Low

	Low (3) (-)	Low (3) (-)	The degree to which the impact may cause irreplaceable loss of resources: Low	
SOCIO-ECONOMIC				
Job opportunities for local community.	Extent of impact: 3 Duration of impact: 1 Magnitude of impact: 1 Probability of impact: 3 Significance of impact: Medium (15) (+)	N/A	Nature of impact: Positive The degree to which the impact can be reversed: N/A The degree to which the impact can be mitigated: N/A The degree to which the impact may cause irreplaceable loss of resources: N/A	N/A
GROUND- AND SURFACE WATER				
Ground and surface water pollution through accidental spills and leaks from any equipment as well as the improper storage of fuels and chemicals, inadequate hazardous waste disposal or the mixing of cement / concrete.	Extent of impact: 2 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 2 Significance of impact: Medium (10) (-)	Extent of impact: 2 Duration of impact: 1 Magnitude of impact: 1 Probability of impact: 1 Significance of impact: Low (4) (-)	Nature of impact: Negative The degree to which the impact can be reversed: Medium The degree to which the impact can be mitigated: High The degree to which the impact may cause irreplaceable loss of resources: Low	Low
Stormwater pollution through accidental spills and leaks from any equipment as well as the improper storage of fuels and chemicals, inadequate hazardous waste disposal or the mixing of cement / concrete.	Extent of impact: 2 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 2 Significance of impact:	Extent of impact: 2 Duration of impact: 1 Magnitude of impact: 1 Probability of impact: 1 Significance of impact:	Nature of impact: Negative The degree to which the impact can be reversed: Medium The degree to which the impact can be mitigated: High	Low

	Medium (10) (-)	Low (4) (-)	The degree to which the impact may cause irreplaceable loss of resources: Low	
HEALTH AND SAFETY				
Unsafe working conditions leading to worker health and safety risks.	Extent of impact: 1 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 2 Significance of impact: Low (8) (-)	Extent of impact: 1 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 1 Significance of impact: Low (4) (-)	Nature of impact: Negative The degree to which the impact can be reversed: Low The degree to which the impact can be mitigated: High The degree to which the impact may cause irreplaceable loss of resources: Medium-High	Low
AIR QUALITY				
Dust pollution and nuisance to workers and community.	Extent of impact: 1 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 2 Significance of impact: Low (8) (-)	Extent of impact: 1 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 1 Significance of impact: Low (4) (-)	Nature of impact: Negative The degree to which the impact can be reversed: High The degree to which the impact can be mitigated: High The degree to which the impact may cause irreplaceable loss of resources: Low	Low
WASTE				
Incorrect storage, handling and disposal of general and hazardous waste generated.	Extent of impact: 2 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 2	Extent of impact: 2 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 1	Nature of impact: Negative The degree to which the impact can be reversed: Medium The degree to which the impact can be mitigated: High	Low

	Significance of impact: Medium (10) (-)	Significance of impact: Low (5) (-)	The degree to which the impact may cause irreplaceable loss of resources: Low	
NOISE				
Temporary increase in noise levels during the site preparation and construction activities.	Extent of impact: 1 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 2 Significance of impact: Low (8) (-)	Extent of impact: 1 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 1 Significance of impact: Low (4) (-)	Nature of impact: Negative The degree to which the impact can be reversed: High The degree to which the impact can be mitigated: Medium The degree to which the impact may cause irreplaceable loss of resources: Low	Low
TRAFFIC				
Temporary increase in traffic levels during the site preparation and construction activities.	Extent of impact: 2 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 2 Significance of impact: Medium (10) (-)	Extent of impact: 2 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 1 Significance of impact: Low (5) (-)	Nature of impact: Negative The degree to which the impact can be reversed: High The degree to which the impact can be mitigated: Medium The degree to which the impact may cause irreplaceable loss of resources: Low	Low
HERITAGE RESOURCES				
Impact on archaeological and heritage resources during excavating, drilling, clearing or digging activities.	Significance of impact: Low (-) *Rating as per specialist report (2023)	Significance of impact: Low (-) *Rating as per specialist report (2023)	Nature of impact: Negative The degree to which the impact can be reversed: Low The degree to which the impact can be mitigated: High	Low

			The degree to which the impact may cause irreplaceable loss of resources: High	
PALEONTOLOGICAL RESOURCES				
Impact on fossils during excavating, drilling, clearing or digging activities.	Extent of impact: 1 Duration of impact: 3 Magnitude of impact: 1 Probability of impact: 1 Significance of impact: Low (5) (-) *Rating as per specialist report (2023)	Extent of impact: 1 Duration of impact: 3 Magnitude of impact: 1 Probability of impact: 1 Significance of impact: Low (5) (-) *Rating as per specialist report (2023)	Nature of impact: Negative The degree to which the impact can be reversed: Low The degree to which the impact can be mitigated: High The degree to which the impact may cause irreplaceable loss of resources: High	Low

Table 3: Impact assessment (operational phase)

ASPECT AND NATURE OF POTENTIAL IMPACTS	IMPACT SIGNIFICANCE BEFORE MITIGATION	IMPACT SIGNIFICANCE AFTER MITIGATION	STATUS OF THE IMPACT	RISK OF THE IMPACT AND MITIGATION NOT BEING IMPLEMENTED
ODOUR				
Unwanted odours emanating from abattoir could include odours from urine and manure in holding pens, blood residues and hide storage.	Extent of impact: 2 Duration of impact: 1 Magnitude of impact: 2 Probability of impact: 2 Significance of impact: Medium (10) (-)	Extent of impact: 2 Duration of impact: 1 Magnitude of impact: 1 Probability of impact: 2 Significance of impact: Low (8) (-)	Nature of impact: Negative The degree to which the impact can be reversed: Medium The degree to which the impact can be mitigated: High The degree to which the impact may cause irreplaceable loss of resources: Low	Low
SOCIO-ECONOMIC				
Job opportunities for local community	Extent of impact: 3 Duration of impact: 3 Magnitude of impact: 1 Probability of impact: 3 Significance of impact: High (21) (+)	N/A	Nature of impact: Positive The degree to which the impact can be reversed: N/A The degree to which the impact can be mitigated: N/A The degree to which the impact may cause irreplaceable loss of resources: N/A	N/A
Business growth of cattle farmers as a result of access to the market (off-set)	Extent of impact: 3 Duration of impact: 3 Magnitude of impact: 1 Probability of impact: 3	N/A	Nature of impact: Positive The degree to which the impact can be reversed: N/A The degree to which the impact can be mitigated: N/A	N/A

	Significance of impact: High (21) (+)		The degree to which the impact may cause irreplaceable loss of resources: N/A	
WASTE				
The improper disposal of the respective abattoir wastes generated	Extent of impact: 2 Duration of impact: 2 Magnitude of impact: 2 Probability of impact: 2 Significance of impact: Medium (12) (-)	Extent of impact: 2 Duration of impact: 2 Magnitude of impact: 2 Probability of impact: 1 Significance of impact: Low (6) (-)	Nature of impact: Negative The degree to which the impact can be reversed: Medium The degree to which the impact can be mitigated: High The degree to which the impact may cause irreplaceable loss of resources: Low	Low
HEALTH AND SAFETY				
Unhygienic working conditions at the abattoir leading to worker health and safety risks	Extent of impact: 1 Duration of impact: 2 Magnitude of impact: 2 Probability of impact: 2 Significance of impact: Medium (10) (-)	Extent of impact: 1 Duration of impact: 2 Magnitude of impact: 2 Probability of impact: 1 Significance of impact: Low (5) (-)	Nature of impact: Negative The degree to which the impact can be reversed: Medium The degree to which the impact can be mitigated: High The degree to which the impact may cause irreplaceable loss of resources: Low	Low
TRAFFIC				
Minor increase in traffic to and from the site	Extent of impact: 2 Duration of impact: 3 Magnitude of impact: 1 Probability of impact: 2	Extent of impact: 2 Duration of impact: 3 Magnitude of impact: 1 Probability of impact: 1	Nature of impact: Negative The degree to which the impact can be reversed: High The degree to which the impact can be mitigated: Low	Low

	Significance of impact: Medium (12) (-)	Significance of impact: Low (6) (-)	The degree to which the impact may cause irreplaceable loss of resources: Low	
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Table 4: NO-GO ALTERNATIVE

ASPECT AND NATURE OF POTENTIAL IMPACTS	IMPACT SIGNIFICANCE BEFORE MITIGATION	IMPACT SIGNIFICANCE AFTER MITIGATION	STATUS OF THE IMPACT	RISK OF THE IMPACT AND MITIGATION NOT BEING IMPLEMENTED
SOCIO-ECONOMIC				
Loss of job opportunities for local community	Extent of impact: 3 Duration of impact: 3 Magnitude of impact: 1 Probability of impact: 3 Significance of impact: High (21) (-)	N/A	Nature of impact: Negative The degree to which the impact can be reversed: High The degree to which the impact can be mitigated: N/A The degree to which the impact may cause irreplaceable loss of resources: High	N/A
Loss of business growth of cattle farmers as a result of access to the market (off-set)	Extent of impact: 3 Duration of impact: 3 Magnitude of impact: 1 Probability of impact: 3 Significance of impact: High (21) (-)	N/A	Nature of impact: Positive The degree to which the impact can be reversed: High The degree to which the impact can be mitigated: N/A The degree to which the impact may cause irreplaceable loss of resources: High	N/A