



**KARAN BEEF-PROPOSED EXTENSION AND
CONSTRUCTION OF A NEW FEEDLOT ON PORTION 3 OF
THE FARM WANGANELLA NO. 994, ALIWAL NORTH,
FREE STATE PROVINCE**

**KARAN BEEF: FINAL ENVIRONMENTAL MANAGEMENT
PLAN**

April 2019

Prepared for:



Prepared by:

Marius Venter

marius@enviroworks.co.za

051 436 0793

Today's Impact | Tomorrow's Legacy


	Issue 1	Revision 1	Revision 2
Issue/Revision Name	KARAN BEEF ENVIRONMENTAL MANAGEMENT PLAN	KARAN BEEF ENVIRONMENTAL MANAGEMENT PLAN	
Report prepared/revised by:	Marius Venter	Christoff du Plessis	
Date:	January 2019	January 2019	
Signature:			

Table of Contents

1	Introduction	1
1.1	NEMA Regulation 19(4) Report Compliance.....	1
1.2	Report Layout.....	3
2	Environmental Assessment Practitioner	4
2.1	Details of the EAP.....	4
2.2	Expertise of the EAP.....	5
3	Project Description	7
	9
3.1	Project Phases.....	10
3.1.1	Construction phase.....	10
3.1.2	Operational Phase.....	10
3.1.3	Decommissioning Phase.....	10
3.2	NEMA Listed Activities Triggered.....	10
4	Existing Environmental and Impact Assessment Summary	12
5	Persons Responsible for Implementing this EMPr	16
5.1	On-site Communication.....	17
5.1.1	Site Instruction Entries.....	17
5.1.2	Method Statements.....	17
5.1.3	Record Keeping.....	18
6	Monitoring, Performance Assessment and Reporting on EMPr Compliance	18
6.1	Monitoring.....	18
6.2	Performance Assessment and Reporting on EMPr Compliance.....	19
6.2.1	ECO Site Inspection Reports.....	20
6.2.2	Photographs.....	20
7	Environmental Awareness Plan	20
7.1	Environmental Awareness and Risk Training.....	20
7.1.1	Basic Rules of Conduct.....	20
	Identification of persons responsible for implementation of the EMPr	21
	Construction Phase.....	21
	Operational Phase.....	22
8	Impacts and Mitigation Measures	23
8.1	Planning and Construction Phase.....	24
8.2	Operational Phase Environmental Management Programme.....	47
8.3	Decommissioning Phase Environmental Management Programme.....	59
9	Emergency Response Plan	60

EMPr: KARAN BEEF – ALIWAL NORTH

9.1	Fire Emergency Procedures	62
9.2	First Aid Emergency Procedures	64
9.3	Roles in an Emergency	65
10	Incident Register	69
11	Rehabilitation Measures and Closure Plan	70
11.1	Rehabilitation Measures	70
12	Prevention of Triggering other Listed Activities	71
13	Guidelines with regard to vegetation	71
	Removal of vegetation	71
	Protected plant species	72
14	References	72

List of Tables

Table 1: Environmental Management Programme requirements in terms of the EIA Regulations of 2014	1
Table 2: Summary of report content layout.....	3
Table 3: Listed Activities applicable to this application.....	10

List of Acronyms and Abbreviations

AIA	Archaeological Impact Assessment
DEA	Department of Environmental Affairs
DWA	Department of Water Affairs
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMPr	Environmental Management Program
GIS	Geographic Information System
HIA	Heritage Impact Assessment
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
NSBA	National Spatial Biodiversity Assessment
NWA	National Water Act, 1998 (Act No. 36 of 1998)
PHRA	Provincial Heritage Resources Agency
PSSA	Paleontological Society of South Africa
PPP	Public Participation Process
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
SDF	Spatial Development Framework

GLOSSARY OF TERMS

Alien species: A plant or animal species introduced from elsewhere: neither endemic nor indigenous.

Applicant: Any person who applies for an authorisation to undertake an activity or undertake an Environmental Process in terms of the Environmental Impact Assessment Regulations – National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) as contemplated in the scheduled activities listed in Government Notice (GN) No R. 983, 984 and 985 of 2014.

Arable potential: Land with soil, slope and climate components where the production of cultivated crops is economical and practical.

Archaeological resources: This includes:

- material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;
- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation; features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

Alluvial: Resulting from the action of rivers, whereby sedimentary deposits are laid down in river channels, floodplains, lakes, depressions etc

Biodiversity: The variety of life in an area, including the number of different species, the genetic wealth within each species, and the natural areas where they are found.

Cultural significance: This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance

Cumulative Impact: In relation to an activity, cumulative impact means the impact of an activity that in itself may not be significant, but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

EMPr: KARAN BEEF – ALIWAL NORTH

Ecology: The study of the interrelationships between organisms and their environments.

Environment: All physical, chemical and biological factors and conditions that influence an object.

Environmental Impact Assessment: In relation to an application, to which Scoping must be applied, means the process of collecting, organising, analysing, interpreting and communicating information that is relevant to the consideration of the application.

Environmental Impact Report: In-depth assessment of impacts associated with a proposed development. This forms the second phase of an Environmental Impact Assessment and follows on from the Scoping Report.

Environmental Management Programme: A legally binding working document, which stipulates environmental and socio-economic mitigation measures that must be implemented by several responsible parties throughout the duration of the proposed project.

Heritage resources: This means any place or object of cultural significance. See also archaeological resources above

Hydromorphic / hydric soil: Soil that in its undrained condition is saturated or flooded long enough during the growing season to develop anaerobic conditions favouring growth and regeneration of hydrophytic vegetation. These soils are found in and associated with wetlands.

Local relief: The difference between the highest and lowest points in a landscape. For this study, it is based on 1:50 000 scale.

Precipitation: Any form of water, such as rain, snow, sleet, or hail that falls to the earth's surface.

Red Data species: All those species included in the categories of endangered, vulnerable or rare, as defined by the International Union for the Conservation of Nature and Natural Resources.

Riparian: The area of land adjacent to a stream or river that is influenced by stream induced or related processes.

Soil compaction: Soil becoming dense by blows, vehicle passage or other type of loading. Wet soils compact easier than moist or dry soils.

1 Introduction

This Environmental Management Programme Report (EMPr), amongst others, describes the mitigation measures and identifies the specific people that will be responsible for implementation of the mitigation measures, in order to ensure that impacts on the environment are minimised during the construction, operational, decommissioning and closure phases of the Karan Beef Feedlot, Aliwal North, Mohokare Local Municipality, Free State.

This EMPr must form part of the contractual agreement between the relevant contractor(s) and the developer.

1.1 NEMA Regulation 19(4) Report Compliance

Regulation 19(4) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) Environmental Impact Assessment (EIA) Regulations of 2014 provides the content requirements for Environmental Management Programmes. The table below lists the relevant requirements, indicates whether the relevant information is included in this report or not, and provides cross-references as to where the relevant information can be found in this report.

Table 1: Environmental Management Programme requirements in terms of the EIA Regulations of 2014

Reg.	EMPr Content	Included (Yes, No or N/A)	Report Section Reference
(a)	(1) An EMPr must comply with section 24N of the Act and include-	Yes	Chapter 2
	(a) details of - (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae		
(b)	a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Yes	Chapter 9
(c)	a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;	Yes	Refer to Basic Assessment report
(d)	a description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-	Yes	Refer to Basic Assessment Report

EMPr: KARAN BEEF – ALIWAL NORTH

Reg.	EMPr Content	Included (Yes, No or N/A)	Report Section Reference
	(i) planning and design;	No	Chapter 8
	(ii) pre-construction and construction activities;	No	Chapter 8
	(iii) construction activities;	No	Chapter 8
	(iv) rehabilitation of the environment after construction and where applicable post closure; and	No	Chapter 8
	(v) where relevant, operation activities;	Yes	Chapter 8
(e)	Item 1(1)(e) deleted by Government Notice 326 in Government Gazette 40772 dated 7 April 2017		
(f)	a description of proposed impact management actions, identifying the manner in which the impact management outcomes contemplated in paragraphs (d) will be achieved, and must, where applicable, include actions to	Yes	Chapter 8
	(i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;	Yes	Chapter 8
	(ii) comply with any prescribed environmental management standards or practices;	Yes	Chapter 8
	(iii) comply with any applicable provisions of the Act regarding closure, where applicable; and	Yes	Chapter 8
	(iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;	Yes	N/A
(g)	the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Yes	Chapter 6 and 8
(h)	the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Yes	Chapter 8
(i)	an indication of the persons who will be responsible for the implementation of the impact management actions;	Yes	Chapter 8
(j)	the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Yes	Chapter 8
(k)	the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Yes	Chapter 8
(l)	a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Yes	Chapter 8
(m)	an environmental awareness plan describing the manner in which-		
	(i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and	Yes	Chapter 7

EMPr: KARAN BEEF – ALIWAL NORTH

Reg.	EMPr Content	Included (Yes, No or N/A)	Report Section Reference
	(ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	Yes	Chapter 7
(n)	any specific information that may be required by the competent authority.		

1.2 Report Layout

The table below summarises the content layout of this report.

Table 2: Summary of report content layout

Chapter	Chapter Heading	Content Summary
1	Introduction	Provides a brief background to the project, and explains the compliance of this report with regards to Regulation 33 of the NEMA.
2	Environmental Assessment Practitioner	Provides details of the EAP who prepared this EMPr, and provides information on the expertise of the EAP.
3	Project Description and Listed Activities Covered by this EMPr	Provides a brief project description, and describes the relevant project phases and the NEMA Listed Activities triggered.
4	Existing Environmental and Impact Assessment Summary	Summarises the biophysical, social, economic and cultural aspects of the existing environment, and provides a summary of the impact assessment outcome.
5	Persons Responsible for Implementing this EMPr	Provides information on the persons who will be responsible for implementing this EMPr, and explains requirements with regards to on-site communication, site instruction entries, method statements, and record keeping.
6	Monitoring, Performance Assessment and Reporting on EMPr Compliance	Provides information on monitoring, performance assessment and reporting on EMPr Compliance, ECO site inspection reports, and photographs.
7	Environmental Awareness Plan	Provides information on environmental awareness and risk training, and basic rules of conduct. Also provides an environmental risk plan.
8	Impacts and Mitigation Measures	Provides EMPrs for the relevant project phases.
9	Emergency Response	Provides information on the emergency response plan.

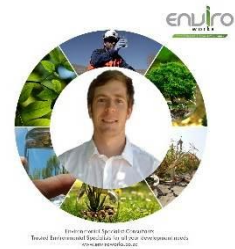
EMPr: KARAN BEEF – ALIWAL NORTH

Chapter	Chapter Heading	Content Summary
	Plan	
10	Incident Register	Stipulates the content requirements for incident registers.
11	Rehabilitation Measures and Closure Plan	Provides rehabilitation measures and closure plan objectives.
12	Prevent Triggering of Further Listed Activities	Warns the proponent not to contravene the NEMA by engaging in unauthorised NEMA Listed Activities.
13	References	Lists all references referred to in this EMPr.

2 Environmental Assessment Practitioner

This EMPr was prepared by Mr. Marius Venter from Enviroworks. The sections below provide the detail of the EAP and explain the EAP's expertise to prepare this EMPr.

2.1 Details of the EAP



Name:	Marius
Surname:	Venter
Highest qualification:	BSc Conservation Ecology and Entomology (SU)
IAIA registered:	No. 10458590
SACNASP Candidate Scientist:	No. 117708
Postal address:	Enviroworks Suite 116 Private Bag X01

EMPr: KARAN BEEF – ALIWAL NORTH

	Brandhof 9324
Physical address:	103 Donald Murray Avenue Park West Bloemfontein 9301
Cell phone:	072 286 6683
E-mail:	marius@enviroworks.co.za

2.2 Expertise of the EAP

Relevant qualifications

- BSc Conservation Ecology and Entomology (SU)

Work experience

- January 2017- July 2017: Research assistant, University of the Free State (UFS)
- July 2018- current: Environmental Consultant and Legal Assistant at Enviroworks

Key project experience

- I am currently completing my MSc in Environmental Management at the University of the Free State (2017-2018).
- Experience in 1) Compilation of documentation and report writing 2) Legal compliance and notices 3) Conducting ecological studies and reviews 4) Environmental Audits 5) Environmental Authorisations.

Ecological Impact Assessment Specialist Report Experience

- Ecological Impact Assessment: The proposed development of an oil recycling plant, near Lakeview, Mangaung, Free State
- Ecological Impact Assessment: Supreme Poultry, Bloemfontein, Free State

EMPr: KARAN BEEF – ALIWAL NORTH

- Ecological Impact Assessment Karan Beef near Aliwal North, Mhokare, Free State
- Review Ecological Studies: 8 Ecological Studies reviewed for establishment of borrow pits for road construction by SANRAL

Wetland Delineation

Wetland delineation and risk assessment for water use license application for the proposed Zachtevlei dam and bulk conveyance infrastructure, Lady Grey, Eastern Cape.

Legal Queries and Site Inspections

- The construction of a 9 km steel pipeline for irrigation at Witbank, Namakwa District Municipality, Northern Cape
- Proposed development of a Waste Water Treatment Works and associated pipeline on the remaining extent of Erf no 424, Britsown, Northern Cape Province
- Request for conformation that the existing Carpe Diem farm operations is lawful / or not and if a section 24G rectification application will be required, Northern Cape Province
- Environmental subservices for the improvement of National Route 7 Section 2 between Roodraai (km 7.49) and Moorreesburg (km 33.90)
- Environmental subservices for the improvement of National Route 7 Section 3 between Piketberg (km 31.53) and Piekenierskloof Pass (km 65.3)
- The construction of a pipeline to pump water from a river into two dams at the Krugers Post Farm
- Proposed development of a security village and associated infrastructure on erf 3952 & 3975, Hartswater, Northern Cape Province
- 8 (eight) development option reports for Phunga Consulting Engineers in the Northern Cape Province

GIS

- Sensitivity map Between Moreesburg and Roodraai
- Sensitivity map Between Piketberg and Piekenierskloof
- Environmental subservices for the improvement of National Route 7 Section 2 between Roodraai (km 7.49) and Moorreesburg (km 33.90)
- Environmental subservices for the improvement of National Route 7 Section 3 between Piketberg (km 31.53) and Piekenierskloof Pass (km 65.3)

Public Participation

EMPr: KARAN BEEF – ALIWAL NORTH

- Proposed development of a security village and associated infrastructure on Erf 3952 & 3975, Hartswater, Northern Cape Province

ECO - Environmental audits

- Mission Point Mine – Free State Province
- The construction of a 132kV powerline between Tweespruit and Driedorp, Free State Province

3 Project Description

Karan Beef has a feedlot on Portion 3 of the Farm Wanganella No. 994, near Aliwal North, Mohokare Local Municipality, Free State. Karan Beef is the largest producer of beef and accommodates about 150 000 head of cattle. With an ever growing demand on meat and the implications of drought on the agricultural sector, Karan Beef proposes to construct an extra feedlot (2000 heads of cattle), as well as extending the currently existing feedlot which will increase the heads of cattle with a 1000, to prevent the break in change of demand.

Enviroworks, was appointed to undertake the Basic Assessment Application as set out in terms of the National Environmental management Act and its regulations.

The activity applied for entails the construction of:

Feedlot pens: The Feedlot will accommodate 2000 cattle. The pens will receive cattle that will be fed for two weeks where after they will be transported to the Heidelberg feedlot.

Extension of the existing feedlot: No construction is proposed, but an additional 1000 heads of cattle will be inserted into the feedlot pens.

Road: A road of approximately 200 metres and wider than four (4) metres

Manure flow off dam: A proposed dam of 5000cm³ are proposed for the flow off of effluent

EMPr: KARAN BEEF – ALIWAL NORTH

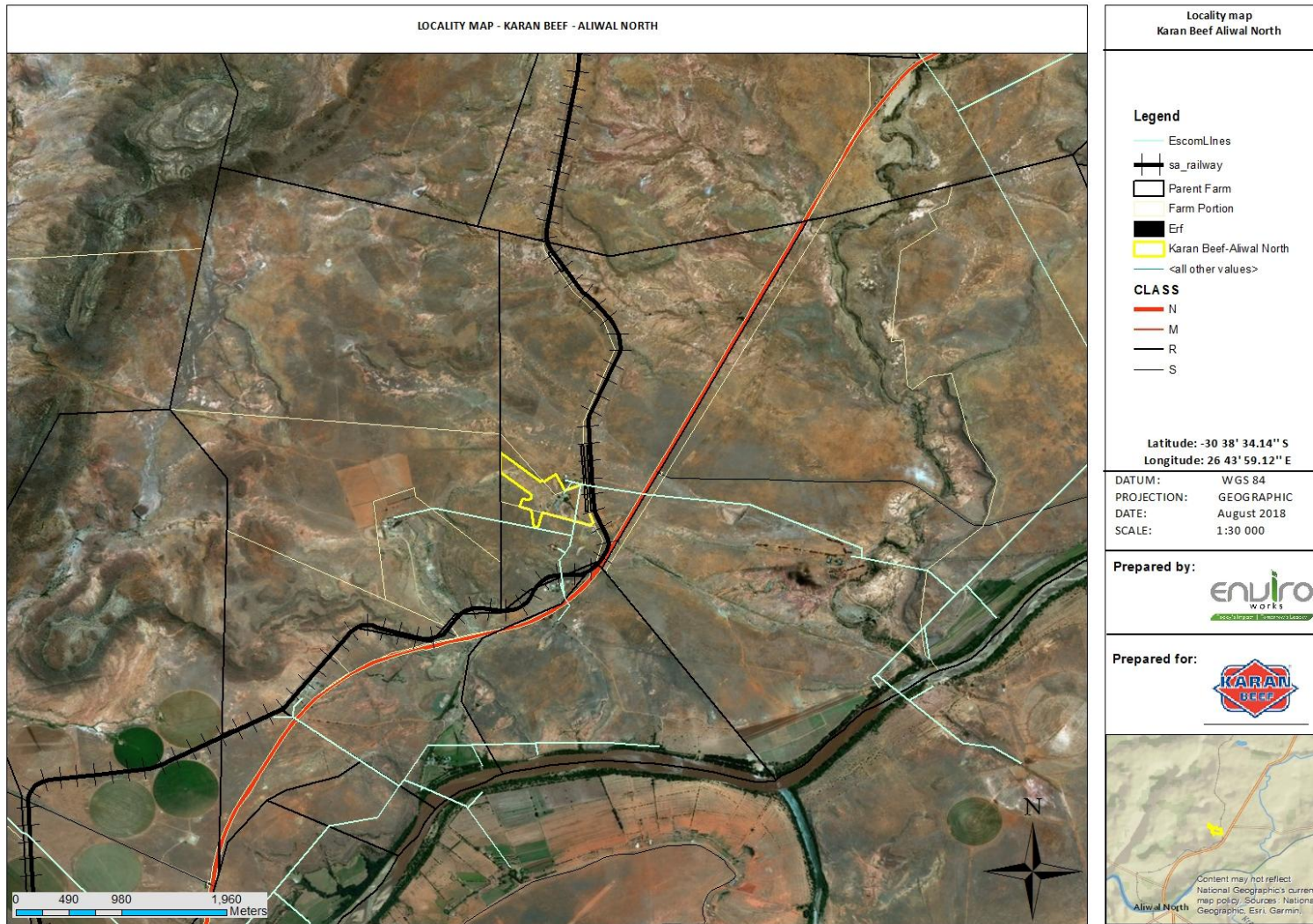


Figure 1: Locality Map

EMPr: KARAN BEEF – ALIWAL NORTH

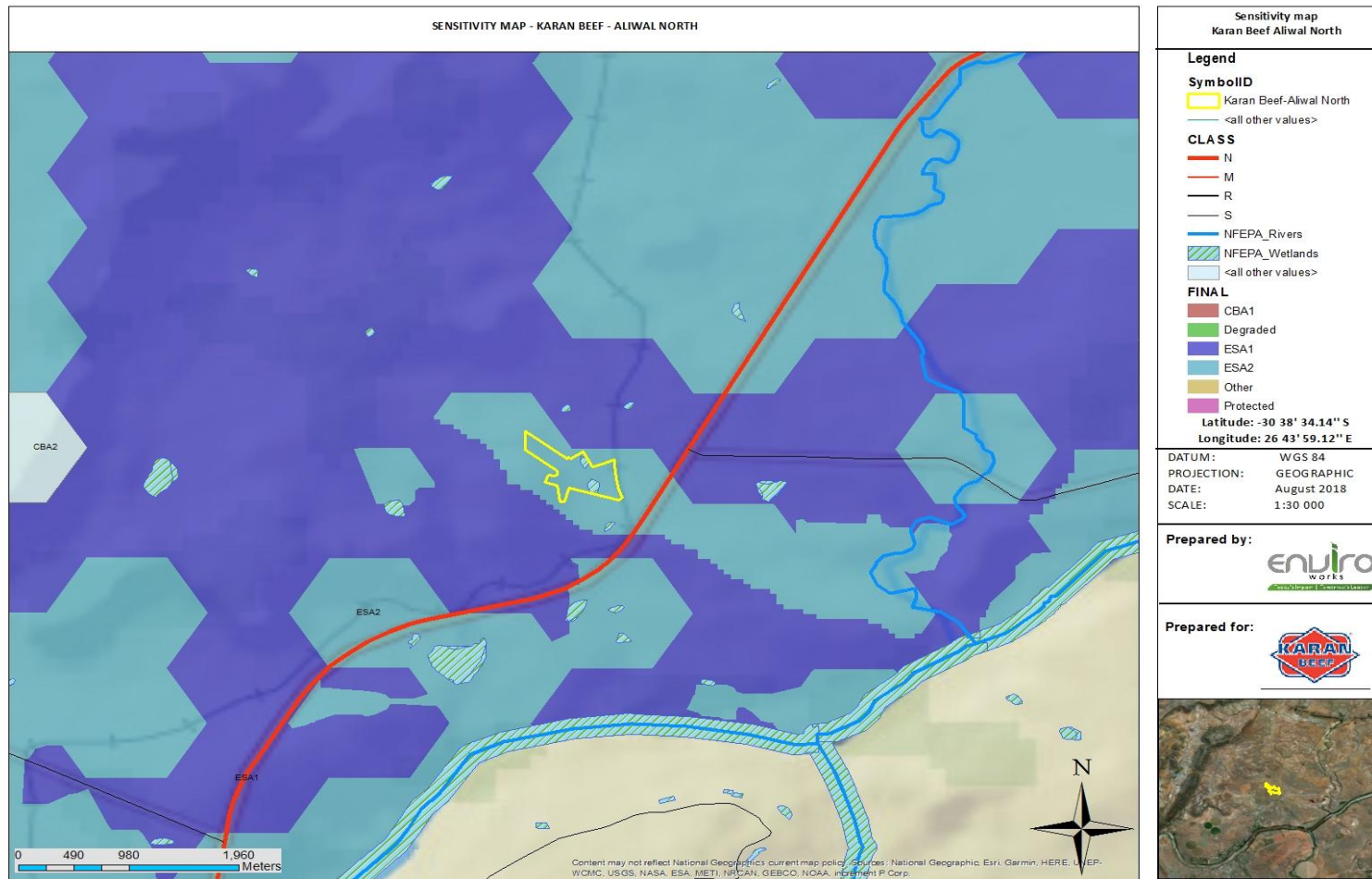


Figure 2 - Sensitivity map - Karan Beef

3.1 Project Phases

This document will include the EMP for the construction, operational and decommissioning phases of the proposed feedlot pens, extension of a feedlot, road and dam.

3.1.1 Construction phase

Feedlot pens: The Feedlot will accommodate 2000 cattle. The pens will receive cattle that will be fed for two weeks where after they will be transported to the Heidelberg feedlot.

Extension of the existing feedlot: No construction is proposed, but an additional 1000 heads of cattle will be inserted into the feedlot pens.

Road: A road of approximately 200 metres and wider than four (4) metres

Manure flow off dam: A proposed dam of 5000cm³ are proposed for the flow off of effluent

3.1.2 Operational Phase

- **Feedlot pens:** The Feedlot will accommodate 2000 cattle. The proposed feedlot covers an area of 1.35 hectare.
- **Extension of the existing feedlot:** No construction is proposed, but an additional 1000 heads of cattle will be inserted into the feedlot pens. The feedlot covers an area of 1.35 hectare.
- **Road:** A road of approximately 200 metres and wider than four (4) metres
- **Manure flow off dam:** A proposed dam of 5000cm³ are proposed for the flow off of effluent

3.1.3 Decommissioning Phase

The activity will not be decommissioned in the future and therefore the proposed impacts thereof were not assessed.

3.2 NEMA Listed Activities Triggered

The proposed activities is a listed activity in terms of the Environmental Impact Assessment Regulations of 2017, Government Notice 327 of 2017: Listing Notice 1 of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

Table 3: Listed Activities applicable to this application.

GNR 327 – Listed Activities	Activity Details
Activity 4: The development and related operation of facilities or infrastructure for the concentration of animals for the purpose of commercial	As the proposed feedlot will constitute of 2000 cattle confined in an area of 13 500m ² this activity will be triggered.

GNR 327 – Listed Activities	Activity Details
<p>production in densities that exceed -</p> <p>(i) 20 square meters per large stock unit and more than 500 units per facility;</p> <p>Activity 27:</p> <p>The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for—</p> <p>(i) the undertaking of a linear activity; or</p> <p>(ii) maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>Activity 39:</p> <p>The expansion and related operation of facilities for the concentration of animals in densities that will exceed—</p> <p>(i) 20 square metres per large stock unit, where the expansion will constitute more than 500 additional units</p> <p>GN R324 (LN 3), Activity 4:</p> <p><u>Activity 4:</u></p> <p>The development of a road wider than 4 metres with a reserve less than 13.5 metres</p> <p>Outside urban areas:</p> <p>(aa) A protected area identified in terms of NEMPAA, excluding disturbed areas;</p> <p>(bb) National Protected Area Expansion Strategy Focus areas;</p> <p>(cc) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;</p> <p>(dd) Sites or areas identified in terms of an international convention;</p> <p>(ee) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans;</p>	<p>As confirmed by the Ecological Impact Assessment, there are Indigenous plant species found on site. The proposed feedlot will consist of an area approximately 1.35 hectares of which the vegetation on the proposed site will be cleared.</p> <p>The addition/extension of the already existing feedlot, 800 cattle, with another 1000 heads of cattle will trigger this activity.</p> <p>The proposed project includes the construction of a road of approximately 200 metres and wider than 4 metres. As for this reason this activity was included per request of the client.</p>

GNR 327 – Listed Activities	Activity Details
(ff) Core areas in biosphere reserves; or (gg) Areas within 10 kilometres from national parks or world heritage sites or 5 kilometres from any other protected area identified in terms of NEMPAA or from the core areas of a biosphere reserve, excluding disturbed areas	

4 Existing Environmental and Impact Assessment Summary

The sections below summarise the existing environment, and the outcome of the impact assessment that was undertaken for this proposed project.

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Nature of impact: Negative impact of haphazard placement of infrastructure on the environment.	Activity: The establishment of a main site office and storage site during the construction period will ensure that the poor placement of materials and infrastructure will be avoided. This could also result in the damage or pollution to surrounding areas caused by construction activities.			
Significance rating:	L	L	L	L
Cumulative impact:	-	-	-	-
Nature of impact: Topsoil Removal and Soil Erosion	Activity: The clearing of topsoil and excavation for the establishment of building foundations may result in the destruction of fertile topsoil.			
Significance rating:	MH	L	MH	L
Cumulative impact:	L	L	L	L
Nature of impact: Surface and groundwater contamination due to construction activities such as the use of hazardous materials on site e.g. fuel and oil.	Activity: Spills could possibly occur on site and lead to the contamination of soil and groundwater.			
Significance rating:	M	L	M	L
Cumulative impact:	L	-	L	-
Nature of impact: Handling of general waste materials on the development site.	Activity: The presence of personnel and construction operations on site will increase the likelihood of littering and the dumping of solid waste.			
Significance rating:	M	L	M	L
Cumulative impact:	-	-	-	-
Nature of impact: Increased risk of veld	Activity: Due to the presence of construction personnel in natural areas, fires can occur if not managed to the			

EMPr: KARAN BEEF – ALIWAL NORTH

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
fires.	correct standard.			
Significance rating:	MH	L	MH	L
Cumulative impact:	-	-	-	-
Nature of impact: Traffic impacts associated with the movement of construction vehicles on site.	Activity: The movement of vehicles on site may result in the destruction of biodiversity, compaction of valuable topsoil and mortalities of fauna on site.			
Significance rating:	M	L	M	L
Cumulative impact:	-	-	-	-
Nature of impact: Traffic impacts associated with the movement of construction vehicle.	Activity: The movement of vehicles in the vicinity of the construction site may cause damage to road surfaces as well as increase in the traffic volume of National Route Six (N6).			
Significance rating:	M	L	M	L
Cumulative impact:	M	L	M	L

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Nature of impact: Direct impact on vegetation during construction and loss of species.	Activity: The construction of several permanent structures on site will result in the loss of vegetation due to foundation excavation.			
Significance rating:	M	L	M	L
Cumulative impact:	-	-	-	-
Nature of impact: Dust nuisance generated by the operation of machinery and vehicles.	Activity: The construction activities of the proposed project could potentially result in fugitive dust emissions due to vegetation removal. Dust could spread into the surrounding areas. The significance of this potential impact will likely; however, be only temporary.			
Significance rating:	L	L	L	L
Cumulative impact:	L	L	L	L
Nature of impact: Fauna and Flora will be directly impacted as a result of construction activities and human presence at the site.	Activity: The construction of facilities will result in some habitat loss for resident fauna, as some species will occur within the affected areas. In addition, increased levels of noise, pollution, disturbance and human presence during construction will be detrimental to resident fauna. Sensitive and shy fauna may move away from the area during the construction phase as a result of the noise and human activities present, while some slow-moving species (such as mole rats or blind snakes) would not be able to avoid the construction activities and might be killed.			
Significance rating:	L	L	L	L
Cumulative impact:	-	-	-	-
Nature of impact:	Activity:			

EMPr: KARAN BEEF – ALIWAL NORTH

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Spread and establishment of Alien and Invasive Species	Soil disturbances from construction will enhance the encroachment of Alien and Invasive vegetation that will out compete indigenous counterpart species for resources, displace and reduce faunal and flora biodiversity. Clearing current Invasive Alien species will increase the risk of spreading species if not properly removed and safety transported.			
Significance rating:	M	L	M	L
Cumulative impact:	L	-	L	-
Nature of impact: Water quality of run-off water.	Activity: The drainage line can potentially be at risk to increased surface runoff due to change in surface texture and effluent from the proposed development.			
Significance rating:	M	L	M	L
Cumulative impact:	-	-	-	-

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Nature of impact: Occupational Health and Safety.	Activity: During the construction phase, accidents, occupational diseases, ill health and damage to property can occur if pre-cautionary measures are not taken. Increased movement of vehicles may lead to increased accidents among local communities, construction workers and vehicle operators.			
Significance rating:	M	L	M	L
Cumulative impact:	-	-	-	-
Nature of impact: Construction activities may have a positive impact on the local and regional socio economic conditions.	Activity: During the construction phase of the project the construction process may have a positive impact on the local and regional socio-economic conditions by means of job creation.			
Significance rating:	L+	-	L+	-
Cumulative impact:	-	-	-	-

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Nature of impact: Damage and destruction of vertebrate fossils during excavation activities.	Activity: Excavation activities can result in the discovery of cultural and historical artefacts beneath the earth surface. Damage or loss can occur if the correct procedures are not followed.			
Significance rating:	L	L	L	L
Cumulative impact:	-	-	-	-

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Nature of impact: Impact on the sense of place for surrounding users.	Activity: The movement of construction vehicles, machinery and personnel on site shall result in a visual impact on surrounding users. Furthermore to this, the storage of materials and excavation shall result in disturbance and an unsightly character.			
Significance rating:	M	L	M	L
Cumulative impact:	L	-	L	-

EMPr: KARAN BEEF – ALIWAL NORTH

Planning, design and construction phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Nature of impact: Noise nuisance generated by construction works, vehicles and personnel.	Activity: The operating of vehicles and machinery on site results in the generation of noise disturbing users of the surrounding area.			
Significance rating:	M	L	M	L
Cumulative impact:	L	-	L	-

- (b) Impacts that may result from the operational phase (briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the operational phase.

Operational Phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Nature of impact: Handling of general waste materials on the development site.	Activity: Waste will be generated on site, if not disposed of correctly it will become a nuisance within the area.			
Significance rating:	M	L	M	L
Cumulative impact:	-	-	-	-
Nature of impact: Traffic impacts associated with the movement of vehicles within the area.	Activity: The regular movement of residents and business clients within the area would increase traffic flow and impede vehicle movement.			
Significance rating:	M	L	M	L
Cumulative impact:	L	L	L	L
Nature of impact: Surface and groundwater contamination from the Feedlot Facilities.	Activity: Surface and groundwater can become contaminated due to operation of the feedlot facilities.			
Significance rating:	M	L	M	L
Cumulative impact:	-	-	-	-
Nature of impact: Soil Compaction	Activity: Erosion and degradation of soil surrounding the feedlot.			
Significance rating:	M	L	M	L
Cumulative impact:	L	-	L	-
Nature of impact: Increased risk of veld fires.	Activity: Due to the presence of construction personnel in natural areas, fires can occur if not managed to the correct standard.			

Operational Phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Nature of impact: Infestation of the area with Alien and Invasive Species	Activity: Implementation of an Alien and Invasive Management Plan in order to control and eradicate Alien and Invasive Species.			
Significance rating:	M	L	M	L
Cumulative impact:	-	-	-	-

EMPr: KARAN BEEF – ALIWAL NORTH

Operational Phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Nature of impact: Operation Activities may have a positive impact on the local and regional socio economic conditions.	Activity: During the operational phase of the proposed development will create employment opportunities for individuals from the Local Community.			
Significance rating:	M (+)		M (+)	
Cumulative impact:	-	-	-	-
Nature of impact: Occupational Health and Safety.	Activity: During the operation phase, accidents, occupational diseases, ill health and damage to property can occur if pre-cautionary measures are not taken. Increased movement of vehicles may lead to increased accidents among local communities, construction workers and vehicle operators.			
Significance rating:	M	L	M	L
Cumulative impact:	-	-	-	-

Operational Phase	Layout Alternative 1		Layout Alternative 2	
	Before Mitigation	After Mitigation	Before Mitigation	After Mitigation
Nature of impact: Noise nuisance generated by site operations.	Activity: Noise nuisance that may be created by the operation and maintenance work.			
Significance rating:	L	L	L	L
Cumulative impact:	L	-	L	-

5 Persons Responsible for Implementing this EMPr

The “Responsibility” columns in the impact and mitigation tables provided below indicate which team member(s) are responsible for implementation of the identified mitigation measures, these team members include the following:

- Operational manager;
- Construction contractor(s)
- Applicant / Developer; and the
- Designated Environmental Officer

The sections below list further supplementary measures, which should also be implemented by the relevant team members.

During the construction phase, the construction contractor will:

- Be responsible to have the EMPr available on site at all times;
- Provide the applicant with a “Method Statement” which will indicate the procedures that will be applied in order to meet the requirements of any aspect of the EMPr; and
- Ensure that all problems identified during environmental inspections, are addressed and rectified as soon as reasonably possible.

During the **operational phase** the **operational manager**, will be responsible to prevent negative environmental impacts, and as such will be responsible to:

- Set aside a budget for maintenance;
- Maintain all facilities and infrastructure in good working order to effectively fulfil its intended purpose and to prevent negative environmental impacts;
- Not construct any additional buildings, infrastructure, etc. contrary to the Environmental Authorisation, without performing an environmental impact assessment where listed activities of the 2017 NEMA EIA Regulations are triggered; and
- To immediately remedy any aspects that contribute to negative environmental impacts.
- During this phase the applicant, will be responsible to prevent negative environmental impacts, and as such will be responsible for providing a budget for maintenance,
- Maintaining all approved infrastructure in good working order to effectively fulfil its intended purpose and to prevent negative environmental impacts,
- Not construct any additional buildings, infrastructure, etc. contrary to the approved Environmental Authorisation, without performing an environmental impact assessment to evaluate alternatives and environmental impacts,
- To immediately remedy any factors that contribute to negative environmental impacts, and
- To engage an independent auditor to do an annual environmental audit and to have the results in writing available at the administration offices of the Local Municipality

5.1 On-site Communication

The following sections describe the site communication measures that will need to be implemented.

5.1.1 Site Instruction Entries

The Site Instruction book should be used for the recording of general site instructions as they relate to the works on site. It should also be used for the issuing of **stop work orders** for the purposes of immediately halting any particular activities of the contractor in lieu of the environmental risk that they may pose.

5.1.2 Method Statements

Method statements from the Contractor will be required for specific sensitive actions on request by the authorities or the ECO.

A method statement forms the baseline information on which work in sensitive environments takes place and is a “live document” allowing for modifications to be negotiated between the Contractor and ECO / Engineer, as circumstances unfold.

A method statement describes the scope of the intended work, step-by-step, in order for the ECO and Engineer to understand the Contractor’s intentions. This will enable them to assist in devising any mitigation measures, which would minimise environmental impact during these tasks. For each instance wherein it is requested that the Contractor submit a method statement to the satisfaction of the ECO, the format should clearly indicate the following:

- **What** – a brief description of the work to be undertaken;
- **How** – a detailed description of the process of work, methods and materials;
- **Where** – a description/sketch map of the locality of work (if applicable); and
- **When** – the sequencing of actions with due commencement dates and completion date estimates.

All method statements will form part of the EMPr documentation and are subject to all terms and conditions contained within the EMPr main document.

The Contractor must submit the method statement to the ECO before any particular construction activity is due to start. Work may not commence until the method statement has been approved by the ECO.

5.1.3 Record Keeping

All records related to the implementation of this EMPr (e.g. site instruction book, method statements) must be kept together in an office where it is safe and can be retrieved easily. These records should be kept for two years and should at any time be available for scrutiny by any relevant authorities.

6 Monitoring, Performance Assessment and Reporting on EMPr Compliance

6.1 Monitoring

Several monitoring actions are proposed which would be undertaken by various project role players.

For detail on these actions, “Responsible Person/Party”, and “Monitoring Frequency” associated with the identified mitigation measures, refer to the “Monitoring” column in the impact assessment tables below (Chapter 8).

6.2 Performance Assessment and Reporting on EMPr Compliance

A suitably-qualified Environmental Control Officer (ECO) should be appointed by the Applicant / Developer to oversee the implementation of the construction and operational phase mitigation measures described in this EMPr, as well as the conditions of authorisation as described in the Environmental Authorisation.

The ECO should have at least 5 years' experience as an ECO, or be supported by a qualified ECO. He/she may not be someone appointed by the contractor, engineer or other party involved with this project, other than the Applicant / Developer.

The following applies, amongst others, to the ECO's role:

- The ECO should undertake **monthly site visits** during the **construction phase**,
- The ECO must **report to** the Applicant / Developer only.
- The ECO should present an **environmental site induction / awareness training session** to all personnel before work on site commences, as are also described below; and
- After completion of the construction activities, an environmental audit should be undertaken by the ECO, before commencement of the operational phase, in order to determine compliance with the EMPr and the Environmental Authorisation. The audit report should be submitted to the competent authority.
- The ECO should undertake **bi-annual** site visits during the **operational phase of the project**,
- Ground water sampling must be taken **quarterly (once every 3 month) during the operational phase**.

The ECO can recommend the stopping of works if in his/her opinion there is a serious threat to, or impact on the environment, caused directly from the construction and / or operational phase. This authority is to be limited to emergency situations where consultation with the engineer or applicant is not immediately available and proof of that made available. In all such work stoppage situations the ECO is to inform the engineer and applicant of the reasons for the stoppage as soon as possible.

Upon failure by the contractor or his employee(s) to show adequate consideration to the environmental aspects of this contract, the ECO may recommend to the engineer to have the contractor's representative or any employee(s) removed from the site or work suspended until the

matter is remedied. No extension of time will be considered in the case of such suspensions and all costs will be borne by the contractor.

6.2.1 ECO Site Inspection Reports

The ECO site inspection reports (also called “ECO checklists”) will report on the compliance of the construction and operational phase mitigation measures contained in the EMPr, as well as the conditions of approval described in the Environmental Authorisation. The report should be submitted to the applicant, within five (5) days of the ECO site inspection. Copies of the inspection reports should be kept on site.

The contractor’s meeting minutes must reflect environmental queries, agreed actions and dates of eventual compliance. These minutes form part of the official environmental record.

6.2.2 Photographs

Photographs of all environmental transgression during the construction and operational phase must be included in ECO reports. These photographs should be stored with other records related to this EMPr. If captured in digital format, hard copies, in colour, must be kept with all other records relevant to the implementation of this EMPr.

7 Environmental Awareness Plan

7.1 Environmental Awareness and Risk Training

All staff members involved in work on site are to be briefed on their obligations towards environmental controls and methodologies in terms of this EMPr, prior to work commencing. The briefing will usually take the form of an on-site talk and demonstration by the ECO. The education / awareness programme should be aimed at all levels of management within the contractor team. See “basic rules of conduct” below.

7.1.1 Basic Rules of Conduct

The following list represents the basic *Do’s* and *Don’ts* towards environmental awareness, which all participants in this project must consider whilst carrying out their tasks. These are not exhaustive and serve as a quick reference aid. **NOTE: ALL new site personnel must** attend an environmental awareness/induction presentation. Please inform your foreman or manager if you have not attended such a presentation or contact the ECO.

DO:

EMPr: KARAN BEEF – ALIWAL NORTH

- Clear your work areas of litter and building rubble at the end of each day – use the waste bins provided and prevent litter from being blown away by wind.
- Report all fuel or oil spills immediately and stop the spill from continuing.
- Dispose of cigarettes and matches carefully, so to prevent veld fires (arson and littering is an offence).
- Confine work and storage of equipment to within the immediate work area.
- Use all safety equipment and comply with all safety procedures.
- Ensure a working fire extinguisher is immediately at hand.
- Prevent excessive noise.

DO NOT:

- Do not litter - report dirty or full facilities, i.e. full dustbins and dirty or blocked toilets.
- Do not make any fires.
- Do not enter any fenced off or demarcated areas.
- Do not allow waste, litter, oils or foreign materials into any storm water channels or drains or watercourses.
- Do not litter or leave food lying around.

Identification of persons responsible for implementation of the EMPr

Construction Phase

The construction contractor will:

- Be held responsible for the implementation of the EMPr,
- Be responsible to have the EMPr available on site at all times,
- Identify the need/extent, and be responsible for the implementation on of an environmental awareness-training program for construction staff, to be conversant with EMPr content and their responsibilities before the commencement of construction,
- Be held responsible for compliance with all relevant aspects of the EMPr,

EMPr: KARAN BEEF – ALIWAL NORTH

- Be held responsible for all environmental issues on site, for one raining season after finishing of the construction phase to determine the effectiveness of the storm water control measures,
- Provide the applicant with a “Method Statement” which will indicate the procedures that will be applied in order to meet the requirements of any aspect of the EMPr,
- Ensure that all problems identified during environmental inspections, are addressed and rectified as soon as reasonable possible,
- After ceasing of construction activities, an environmental audit should be done, by the ECO, before commencing with the operational phase, to determine compliance with the EMPr.

Operational Phase

During this phase the applicant, Karan Beef will be responsible to prevent negative environmental impacts, and as such will be responsible for:

- Providing a budget for maintenance,
- Maintaining all approved infrastructure in good working order to effectively fulfil its intended purpose and to prevent negative environmental impacts,
- Not construct any additional buildings, infrastructure, etc. contrary to the approved Environmental Authorization, without performing the relevant environmental impact assessment process to evaluate alternatives and environmental impacts,
- To immediately remedy any factors that contribute to negative environmental impacts,
- To do an annual environmental audit and to have the results in writing available at the offices of Karan Beef.

8 Impacts and Mitigation Measures

A number of potential environmental impacts that may arise during the project have been identified. These are outlined in the following table below, and guidelines and mitigation measures are provided.

The tables below pertain to the construction and operational phases of the proposed optic fibre cable route. **Decommissioning has not been included as it is not foreseen that the proposed development will be decommissioned, but rather that it will be upgraded and maintained.** However, in the event that the site is decommissioned, the construction phase impact and mitigation measures will be sufficient to mitigate impacts associated with this phase.

The Contractor must familiarise himself with the requirements of the EMPr, keeping in mind that other site-specific requirements as outlined in the Environmental Authorisation must also be complied with.

8.1 Planning and Construction Phase

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
GENERAL				
1. Activity: Permits and authorisations				
1.1	<p>Aspects: Legislative compliance</p> <p>Impact: Non-compliance with South African environmental legislation.</p> <p>Objective: Ensure compliance with all triggered environmental legislation.</p> <p>Target: Commence site establishment with all permission and approvals received and on hand.</p> <p>Mitigation/Management Measures:</p> <p>a. The Developer is to have the following permits on commencement:</p> <ul style="list-style-type: none"> • Environmental Authorisation • Environmental Management Program 	Developer	<p>Monitoring Action:</p> <p>Obtain copies of all permits; Record Keeping</p> <p>Responsible Person/Party:</p> <p>Developer</p> <p>Monitoring Frequency:</p> <p>Once off</p>	
2. Activity: Site Layout Planning				
2.1	Aspects: Site Layout Plan	Developer	Monitoring Action:	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
<p>Impact: Negative impact of haphazard placement of Infrastructure on the environment.</p> <p>Objective: To ensure acceptable impact and management of environmental issues at main site and storage site during construction by proper planning of layout of infrastructure placement.</p> <p>Target: All areas not demarcated for construction should remain vegetated.</p> <p>Mitigation/Management Measures:</p> <p>a. Draw up and submit for approval a Site Layout Master Plan. This plan must show the final positions and extent of all permanent and temporary site structures and infrastructure,</p> <p>b. The planning for layout must be done in consultation with the ECO.</p>			<p>Record Keeping</p> <p>Responsible Person/Party:</p> <p>Contract Project Manager / Engineer</p> <p>Monitoring Frequency:</p> <p>Once off</p>	
3. Activity: Construction Programme / Schedule				
3.1	<p>Aspects: Project Management</p> <p>Impact: Order and timing of construction activities and associated impacts</p> <p>Objective: To Provide a clear indication of the order by which key construction activities will transpire.</p> <p>Target: Anticipate timing of impacts to coordinate the availability of any specialists and/or authorities who may be required to conduct site inspections.</p> <p>Mitigation/Management Measures:</p> <p>a. Draw up and sign off a project schedule with all contributing parties and service providers to commit to a</p>	Contract Project Manager / Contractor	<p>Monitoring Action:</p> <p>Meetings; Risk Register; ECO Audit Checklist; Photographs</p> <p>Responsible</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<p>timeline during which time construction milestones will be completed;</p> <p>b. Communicate any deviation from this schedule with all parties, so as to provide parties with sufficient opportunity for alternative arrangements to be made;</p> <p>c. Establish a risk register to identify and monitor potential factors which may result in setbacks/ delays on tasks within the project schedule;</p> <p>d. Hold management meetings with representatives of the project manager, contractor, engineer and other contributing parties to monitor and anticipate changes;</p> <p>e. Should circumstances/ incidents arise which may pose a risk to the project schedule, the construction contractor, engineer and ECO are to keep records of this and the latter communicate this in the ECO Bi-Weekly Audit Checklist.</p>		<p>Person/Party: Contract Manager / Contractor / ECO</p> <p>Monitoring Frequency: Once off</p>	
4. Activity: Communication with land-owners				
4.1	<p>Aspects: Landowner Consent</p> <p>Impact: Disturbance of existing land use</p> <p>Objective: Maintain a conflict-free relationship with landowners / users.</p> <p>Target: No complaints received from landowners / users of affected property.</p>	Contract Project Manager / Contractor	Monitoring Action: Meetings; Risk Register.	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
<p><u>Mitigation/Management Measures:</u></p> <p>a. Landowners are to be aware and in agreement of site access arrangements;</p> <p>b. The landowner has to be requested to liaise with the site supervisor of the construction contractor prior to entering the construction footprint area for safety purposes;</p> <p>c. All property gates are to be kept closed when not in use (or kept in the open/closed state in which it was found);</p> <p>d. Any complaint or liaison with regard to environmental aspects, compensation or disorder to economic activities, must not be addressed by the contractor. A public complaint register must be kept on site and the contract project manager must inform the Developer and/or ECO to take further action.</p>			<p><u>Responsible Person/Party:</u></p> <p>Contract Manager / Contractor / ECO</p> <p><u>Monitoring Frequency:</u></p> <p>Once off</p>	
5. Activity: Site Establishment				
5.1	<p><u>Aspects:</u> Demarcation of the site and vegetation removal</p> <p><u>Impact:</u> Destruction of habitat</p> <p><u>Objective:</u> Prevent unnecessary habitat destruction.</p> <p><u>Target:</u> All areas not demarcated for construction should remain vegetated.</p>	Construction contractor	<p><u>Monitoring Action:</u></p> <p>ECO to take photographs of site before clearance;</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<p><u>Mitigation/Management Measures:</u></p> <p>a. No natural surfaces are to be marked other than using droppers, beacons or other artificial object;</p> <p>b. Ensure the upkeep of demarcation boundaries throughout the period of construction until rehabilitation has been completed;</p> <p>c. Construction areas must be fenced;</p> <p>d. The contractor may only clear vegetation within the construction area. Furthermore, a phased approach should be adopted in the clearing of vegetation where possible;</p> <p>e. No vegetative matter may be used for firewood;</p> <p>f. No fires may occur at or outside of the construction site;</p> <p>g. Restrict construction activities to the boundaries of the development;</p> <p>h. Restrict movement of vehicles and personnel to the footprint of the construction site;</p>		<p>ECO Audit Checklist.</p> <p><u>Responsible Person/Party:</u> ECO</p> <p><u>Monitoring Frequency:</u> Bi-Weekly</p>	
5.2	<p><u>Aspects:</u> Topsoil stripping and conservation</p> <p><u>Impact:</u> Deterioration of topsoil</p> <p><u>Objective:</u> Conserve and protect topsoil from erosion and deterioration.</p> <p><u>Target:</u> Topsoil condition maintained.</p>	Construction contractor	<p><u>Monitoring Action:</u></p> <p>ECO Audit Checklist; Photographs;</p> <p><u>Responsible</u></p>	
	<p><u>Mitigation/Management Measures:</u></p>			

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
<ul style="list-style-type: none"> a. In the absence of a distinguishable topsoil layer, strip the uppermost 300 mm of soil; b. Stockpile topsoil separately from subsoil, in heaps no higher than 2m; c. Topsoil stockpiles are to be kept free of weeds; d. Limit unnecessarily prolonged exposure of stripped areas and stockpiles; e. Topsoil stockpiles to be placed on a levelled area and measures to be implemented to safeguard the piles from being washed away in the event of heavy rains/ storm water; f. Topsoil need to be stored on designated areas only. This need to be planned and indicated on the site-layout plan; g. Retain vegetation and soil in position for as long as possible, removing it immediately ahead of construction/ earthworks in that area; h. Strip and stockpile herbaceous vegetation, overlying grass and other fine organic matter along with the topsoil; i. Do not strip topsoil when it is wet; j. Do not mix topsoil obtained from different sites, unless the ECO gives permission. 			<p><u>Person/Party:</u> ECO</p> <p><u>Monitoring Frequency:</u> Bi-Weekly</p>	
6. Activity: Earth-works				
6.1	<u>Aspects:</u> Excavations; cut and fill; shaping and trimming.	Construction	<u>Monitoring Action:</u>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
<p>Impact: Alteration of the terrain by civil works</p> <p>Objective: Minimise impact to the physical terrain features of the site.</p> <p>Target: Maintain Civil Works to within the construction footprint area.</p>		contractor	<p>ECO Audit Checklist</p> <p>Responsible Person/Party:</p> <p>ECO</p> <p>Monitoring Frequency:</p> <p>Bi-Weekly</p>	
<p>Mitigation/Management Measures:</p> <p>a. Cut and fill areas must be identified by the Engineer and protection measures provided through an appropriate method and technology;</p> <p>b. Dispose of excess material at a registered solid waste landfill site;</p> <p>c. Shaping and trimming operations are to be planned to allow for topsoil application, with provision for the specified depth of reapplied topsoil made.</p>				
7. Activity: Site Infrastructure placement and operation				
7.1	<p>Aspects: Structures and lay-down areas</p> <p>Impact: Deterioration of site features and surrounding areas</p> <p>Objective: Prevent the deterioration of site features like soil, rainwater runoff and erosion.</p> <p>Target: The preservation of site conditions evident on establishment of structures and lay-down areas.</p>	Construction contractor	<p>Monitoring Action:</p> <p>Photographs; ECO Audit Checklist</p> <p>Responsible</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
<p><u>Mitigation/Management Measures:</u></p> <p>a. Locate all structures and storage areas, including offices, workshops and stores in approved locations as per the Site Layout Plan;</p> <p>b. The camp with storage and laydown areas are to be kept secure and neat with access control measures adopted during construction;</p> <p>c. Clearly define which activities are to occur within which areas of the site by erecting signage.</p> <p>d. All hazardous substances, such as fuel, oil, diesel, paint, etc., must be stored in a secondary containment system (trays or bund) which is capable of storing at least 110% of the liquid capacity. If bund areas is used, bund areas should be sealed on the inside to avoid seepages.</p> <p>e. A vehicle service area should be in place, for vehicle repairs, in such way that no spillages will occur into the environment.</p>			<p><u>Person/Party:</u> ECO</p> <p><u>Monitoring Frequency:</u> Bi-Weekly</p>	
8. Activity: Construction site operations				
8.1	<p><u>Aspects:</u> Security and fencing</p> <p><u>Impact:</u> Prevent danger to trespassing of persons.</p> <p><u>Objective:</u> Keep the site secure from trespassing or theft and keep animals out.</p> <p><u>Target:</u> Site remains secure during construction with no incidences of trespassing, theft and injury or death to</p>		<p><u>Monitoring Action:</u> Photographs; ECO Audit Checklist</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<p>animals.</p> <p>Mitigation/Management Measures:</p> <p>a. Be responsive to open or closed status of gates;</p> <p>b. New or the upkeep of fences should align to ensure safety of animals and maintain a reliable boundary area;</p> <p>c. Limit clearing of vegetation for fencing to the removal of trees and shrubs within 1 m of the fence line. All undergrowth should be maintained;</p> <p>d. Should construction activity require the removal of fences or gates to execute tasks, this must be replaced as soon as possible following completion;</p> <p>e. In all cases, the landowners on whose property any use of fences or gates is being made, must be consulted, to ensure that parties are informed of construction activity, schedules and vehicle movement.</p>		<p>Responsible Person/Party: ECO</p> <p>Monitoring Frequency: Bi-Weekly</p>	
8.2	<p>Aspects: Existing Services and Infrastructure</p> <p>Impact: Damage to existing services and infrastructure</p> <p>Objective: No damages to existing services and infrastructure</p> <p>Target: No damages to existing services and infrastructure</p>	Construction contractor	<p>Monitoring Action: Photographs; ECO Audit Checklist</p> <p>Responsible</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<p><u>Mitigation/Management Measures:</u></p> <p>a. Take cognisance of the position of existing services and infrastructure (e.g. roads, pipelines, power lines and telephone services) that may get damaged due to construction activities.</p> <p>b. Ensure that existing services are not damaged or disrupted unless required by the contract and with the permission of the project manager.</p> <p>c. In the event that infrastructure is damaged or services interrupted during construction, it will be done at the expense of the Contractor and shall receive top priority over all other activities.</p>		<p><u>Person/Party:</u></p> <p>Contractor</p> <p><u>Monitoring Frequency:</u></p> <p>Bi-Weekly</p>	
8.3	<p><u>Aspects:</u> Traffic</p> <p><u>Impact:</u> Impact on traffic</p> <p><u>Objective:</u> Minimise the disruption of road users</p> <p><u>Target:</u> Minimal disruption of road users</p> <p><u>Mitigation/Management Measures:</u></p> <p>a. All vehicles must be road-worthy and drivers must be qualified, made aware of the potential road safety issues, and need for strict speed limits;</p> <p>b. Only authorised roads and access routes may be used by construction personnel and equipment.</p> <p>c. Construction vehicles may not leave the designated roads and tracks and turnaround points must be limited</p>	Construction contractor	<p><u>Monitoring Action:</u></p> <p>Incident Register; Photographs; ECO Audit Checklist</p> <p><u>Responsible Person/Party:</u></p> <p>Contractor</p> <p><u>Monitoring</u></p>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<p>to specific sites.</p> <p>d. Traffic deviations around the construction area must be planned in conjunction with the local authority to ensure safe and free flow of traffic. Safety signs must be utilised.</p>		<p>Frequency:</p> <p>Bi-Weekly</p>	
8.4	<p>Aspects: Erosion Control</p> <p>Impact: Loss of topsoil, formation of bare soil and deterioration of habitat quality</p> <p>Objective: Prevent soil erosion</p> <p>Target: No signs of soil erosion are evident on site.</p> <p>Mitigation/Management Measures:</p> <p>a. Disturb as little ground area as possible, stabilize that area as quickly as possible, control drainage through the area, and trap sediment onsite.</p> <p>b. Conserve topsoil with its leaf litter and organic matter, and reapply this material to local disturbed areas to promote the growth of local native vegetation.</p> <p>c. Apply erosion control measures before the rainy season begins and after each season of construction, preferably immediately following construction.</p>	Construction contractor	<p>Monitoring Action:</p> <p>Incident Register; Photographs; Audit Checklist</p> <p>Responsible Person/Party:</p> <p>Contractor</p> <p>Monitoring Frequency:</p> <p>Bi-Weekly</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	d. Maintain and reapply erosion control measures until vegetation is successfully established. Do soil chemistry tests if necessary to determine available soil nutrients.			
8.5	<p>Aspects: Rubble and waste rock</p> <p>Impact: The generation of excess waste rock material for disposal</p> <p>Objective: Optimise the disposal and reuse of rubble and waste rock.</p> <p>Target: No soil erosion should take place on site.</p> <p>Mitigation/Management Measures:</p> <p>a. The storage of inert building rubble and waste rock should be done in a designated, flat area for stockpiling;</p> <p>b. If no on-site disposal opportunities exist, then rubble and waste rock must be disposed of at the nearest registered solid waste disposal facility;</p>	Construction contractor	<p>Monitoring Action:</p> <p>ECO Audit Checklist</p> <p>Responsible Person/Party:</p> <p>ECO</p> <p>Monitoring Frequency:</p> <p>Bi-Weekly</p>	
8.6	<p>Aspects: Solid Waste Handling</p> <p>Impact: Pollution and site contamination by solid waste</p>		<p>Monitoring Action:</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<p>Objective: Dispose of solid waste in the appropriate manner.</p> <p>Target: No record of pollution or site contamination by solid waste.</p> <p>Mitigation/Management Measures:</p> <ol style="list-style-type: none"> 1. An adequate number of scavenger proof litter bins are to be placed throughout the site; 2. Waste sorting and separation should form part of the environmental induction and awareness programme, to encourage personnel to collect waste paper, glass and metal waste separately; 3. Keep all Work Sites including storage areas, offices and workshops neat and tidy; 4. Dedicate a demarcated and signposted storage area on site for the collection of construction waste; 5. All domestic waste is to be removed from site and disposed of at a registered solid waste landfill site; 6. Care should be taken to ensure that no waste fall off disposal vehicles en-route to the landfill. If needed, a tarpaulin can be utilised; 7. Do not dump waste of any nature, or any foreign material in any River or drainage line; 8. The burning or burying of solid waste on site is prohibited. 		<p>ECO Audit Checklist</p> <p>Responsible Person/Party: ECO</p> <p>Monitoring Frequency: Bi-Weekly</p>	
8.7	<p>Aspects: Sewage waste</p> <p>Impact: Pollution and site contamination by sewage.</p> <p>Objective: Provide facilities for appropriate collection and disposal of sewage.</p>	Construction contractor	<p>Monitoring Action: ECO to take photographs of site</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<p>Target: No record of pollution or site contamination by sewage.</p> <p>Mitigation/Management Measures:</p> <ol style="list-style-type: none"> Provide portable chemical toilets, situated at convenient locations in proximity to work areas. This must be in relation to the quantity of users on site, with 1 toilet per 15 users and for each gender; Locations for the placement of toilets include the workshop and areas for resting and eating. Do not locate a site toilet within the 1:100 year floodline, or within a distance of 100m of any drainage lines; Toilets are to be maintained and cleaned regularly to ensure functionality and an adequate level of hygiene; Drinking water facilities, comprising a water tank with a manual tap can be combined with hand washing facilities near site toilets; Only toilet paper is to be flushed down the chemical toilets. Personnel are to be informed on sanitary implementation as part of the environmental awareness. 		<p>before clearance; ECO Audit Checklist</p> <p>Responsible Person/Party: ECO</p> <p>Monitoring Frequency: Bi-Weekly</p>	
8.8	<p>Aspects: Dust Generation and visual Impact</p> <p>Impact: Dust nuisance from site operations and visual impact of site operations on surrounding land owners</p> <p>Objective: To avoid dust from excavated materials and construction activity and unnecessary visual impact caused by site operations.</p> <p>Target: Minimise the incidence of dust generation and visual impact.</p>	Construction contractor	<p>Monitoring Action: ECO to take photographs of site before clearance;</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

<p align="center">CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE</p>	<p align="center">RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)</p>	<p align="center">MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY</p>	<p align="center">COMPLIANT? (for use by ECO)</p>
<p><u>Mitigation/Management Measures:</u></p> <ul style="list-style-type: none"> a. Implement dust suppression measures by watering areas to be cleared as well as already exposed surfaces with damaged soil particles, particularly during dry, windy periods; b. Ensure all vehicles remain on designated roads; c. Dust masks are to be supplied to workers; d. The transfer of soil or aggregate should be done over the shortest possible distance; e. Access roads are to be kept clean; f. Surface material that is scraped off during construction should be conserved and used for rehabilitation. Any spoil material must be disposed of in a manner that appears natural; g. Lay-down area(s) should be screened with shade cloth in an earth tone or other appropriate neutral colour; h. Site offices and structures should be limited to one location and carefully situated to reduce visual intrusion. Roofs should be grey and non-reflective; i. Litter should be strictly controlled, as the spread thereof through wind could have a very negative visual impact; j. The minimum amount of topsoil and vegetation should be removed during construction, and should be conserved and used for final rehabilitation. 		<p>ECO Audit Checklist</p> <p><u>Responsible Person/Party:</u></p> <p>ECO</p> <p><u>Monitoring Frequency:</u></p> <p>Bi-Weekly</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
8.9	<p>Aspects: Noise Generation</p> <p>Impact: Noise nuisance from site operations</p> <p>Objective: To avoid excessive noise generation from site operations.</p> <p>Target: Minimise the incidence of noise generation.</p> <hr/> <p>Mitigation/Management Measures:</p> <ol style="list-style-type: none"> Should multiple activities result in the excessive generation of noise, it should be strived to coordinate the incidence of these at the same time; Fit machinery with silencers; All stationary noisy equipment such as compressors and pumps should be contained behind acoustic covers, screens or sheds where possible; The regular inspection and maintenance of equipment must be undertaken to ensure that all components function optimally; Vehicles should avoid use of the reverse gear as far as possible so as to avoid the sounding of sirens. This should not be considered for temporary access routes as disturbance of adjacent vegetation is to be avoided; Where recurrent use of machinery is frequent, machines should be shut down during intermediate periods; Machinery and vehicles are to operate during working hours between 07H00–18H00; 	Construction contractor	<p>Monitoring Action:</p> <p>ECO to take photographs of site before clearance; ECO Audit Checklist</p> <p>Responsible Person/Party:</p> <p>ECO</p> <p>Monitoring Frequency:</p> <p>Bi-Weekly</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	<u>MONITORING:</u> ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	h. Vehicles are to abide by speed restrictions on access roads and limit trip generation so as to minimise disturbance to surrounding land users.			
8.10	<p>Aspects: Fire Prevention</p> <p>Impact: Uncontrollable fire</p> <p>Objective: Prevent the outbreak of fires emanating from construction activity.</p> <p>Target: No incidences of fires are recorded for the site.</p>			

EMPr: KARAN BEEF – ALIWAL NORTH

<p align="center">CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE</p>	<p align="center">RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)</p>	<p align="center"><u>MONITORING:</u> ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY</p>	<p align="center">COMPLIANT? (for use by ECO)</p>
<p><u>Mitigation/Management Measures:</u></p> <ol style="list-style-type: none"> 1. The potential risk of veld fires is heightened by windy conditions in the area, specifically during the dry, windy winter months; 2. Assume acceptable precautions to guarantee that fires are not started as a result of Works on site as specified below: the Contractor will be held responsible for any damage to structures or property on or neighbouring the Site as a result of any fire caused by personnel; 3. Contractor should ensure that construction related activities that pose a potential fire risk, such as welding etc., are properly managed and confined to areas where the risk of fires has been reduced. Measures to reduce the risk of fires include clearing working areas and avoiding working in high wind conditions when the risk of fires is greater. In this regard special care should be taken during the high risk dry, windy winter months; 4. Contractor should provide fire-fighting training to selected construction staff and take cognisance of the Veld and Forest Fire Act, Act No. 101, 1998; 5. As per the conditions of the Code of Conduct, in the advent of a fire being caused by construction workers and or construction activities, the appointed contractors must compensate farmers for any damage caused to their farms. The contractor should also compensate the fire-fighting costs borne by farmers and local 	<p>Construction contractor</p>	<p><u>Monitoring Action:</u> ECO to take photographs of site before clearance; ECO Audit Checklist.</p> <p><u>Responsible Person/Party:</u> ECO</p> <p><u>Monitoring Frequency:</u> Bi-Weekly</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<p>authorities;</p> <p>6. Fire breaks are to be established and maintained around the Work Sites as and when specified by the ECO;</p> <p>7. Equip vehicles and site structures with fire extinguishers. Rubber beaters should also be stored on site;</p> <p>8. No open fires are allowed anywhere on site;</p> <p>9. Storage of fuel or chemicals under trees is not permitted;</p> <p>10. Gas and liquid fuel is not to be stored in the same place;</p> <p>11. Smoking may only occur within a 3m radius from designated areas.</p> <p>12. Fuel, diesel, oil, or any other flammable substance should be stored 6m away from the smoking area.</p>			
8.11	<p>Aspects: Local communities</p> <p>Impact: Impact of construction workers on local communities, construction personnel and the local community.</p> <p>Objective: Construction workers should not alter existing social dynamics of local communities.</p> <p>Target: No incidences of conflict</p>	Construction contractor	<p>Monitoring Action:</p> <p>ECO Audit Checklist</p> <p>Responsible</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

<p align="center">CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE</p>	<p align="center">RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)</p>	<p align="center">MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY</p>	<p align="center">COMPLIANT? (for use by ECO)</p>
<p><u>Mitigation/Management Measures:</u></p> <p>a. Where possible, the Employer should make it a requirement for contractors to implement a ‘locals first’ policy for construction jobs, specifically semi and low-skilled job categories. This will reduce the potential impact that this category of worker could have on local family and social networks;</p> <p>b. The Employer should consider the establishment of a Monitoring Forum (MF) for the construction phase. The MF should be established before the construction phase commences and should include key stakeholders, including representatives from the local community, local councillors, farmers, and the contractor. The role of the MF would be to monitor the construction phase and the implementation of the recommended mitigation measures. The MF should also be briefed on the potential risks to the local community associated with construction workers;</p> <p>c. The Employer and the contractors should, in consultation with representatives from the MF, develop a Code of Conduct for the construction phase. The code should identify what types of behaviour and activities by construction workers are not permitted. Construction workers that breach the code of good conduct should be dismissed. All dismissals must comply with the South African labour legislation;</p> <p>d. The Employer and the contractor should implement an HIV/AIDS awareness programme for all construction workers at the outset of the construction phase;</p>		<p><u>Person/Party:</u> ECO</p> <p><u>Monitoring Frequency:</u> Bi-Weekly</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<p>e. The movement of construction workers on and off the site should be closely managed and monitored by the contractors. In this regard the contractors should be responsible for making the necessary arrangements for transporting workers to and from site on a daily basis;</p> <p>f. The contractor should make necessary arrangements to enable workers from outside the area to return home over weekends and or on a regular basis during the 12-18 month construction phase. This would reduce the risk posed by non-local construction workers to local family structures and social networks;</p> <p>g. The contractor should make the necessary arrangements for ensuring that all non-local construction workers are transported back to their place of residence once the construction phase is completed. This would reduce the risk posed by non-local construction workers to local family structures and social networks;</p> <p>h. No construction workers, will be permitted to stay overnight on the site. Security personnel will be housed in the vicinity of the site.</p>			
8.12	<p>Aspects: Erosion Control</p> <p>Impact: Loss of topsoil, formation of bare soil and deterioration of habitat quality</p> <p>Objective: Prevent soil erosion</p> <p>Target: No signs of soil erosion are evident on site.</p>	Construction contractor	<p>Monitoring Action:</p> <p>Incident Register; Photographs; ECO Audit Checklist</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<p><u>Mitigation/Management Measures:</u></p> <p>a. Disturb as little ground area as possible, stabilize that area as quickly as possible, control drainage through the area, and trap sediment onsite.</p> <p>b. Conserve topsoil with its leaf litter and organic matter, and reapply this material to local disturbed areas to promote the growth of local native vegetation.</p> <p>c. Apply erosion control measures before the rainy season begins and after each season of construction, preferably immediately following construction.</p> <p>d. Maintain and reapply erosion control measures until vegetation is successfully established. Do soil chemistry tests if necessary to determine available soil nutrients.</p>		<p><u>Responsible Person/Party:</u> Contractor</p> <p><u>Monitoring Frequency:</u> Bi-Weekly</p>	
8.13	<p><u>Aspects:</u> Soil and water contamination</p> <p><u>Impact:</u> Pollution and soil and water contamination by hazardous waste</p> <p><u>Objective:</u> Provide facilities for appropriate collection and disposal of hazardous waste.</p> <p><u>Target:</u> No record of pollution or site contamination by hazardous waste.</p>	Construction contractor	<p><u>Monitoring Action:</u> Incident Register; Photographs; ECO Audit Checklist</p> <p><u>Responsible Person/Party:</u> Contractor</p>	
	<p><u>Mitigation/Management Measures:</u></p> <p>a. Protect surface and ground water bodies from direct or indirect spills of pollutants such as garbage, sewage, cement, concrete wash out water, oils, fuels, or organic material or any hazardous substances resulting from</p>			

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<p>the Contractor’s activities.</p> <p>b. Soil contaminated with oil, diesel, petrol or other foreign matter must be excavated as far as contaminated and disposed of at a licensed hazardous waste disposal site. Proof of such disposal must be kept on site.</p> <p>c. All equipment on site must be inspected for diesel leaks prior to operation,</p> <p>d. Leakages must be repaired as soon as possible and drip trays must be placed underneath machinery until such leakages have been repaired,</p> <p>e. Polluted runoff water must be isolated and not be allowed to enter drainage lines, wetland areas or storm water canals.</p> <p>f. Topsoil and subsoil must be protected from contamination by means of proper site management, for example collect and recycle lubricants and avoid accidental spills of pollutants,</p> <p>g. Vehicles and machinery may not be serviced on site.</p>		<p>Monitoring</p> <p>Frequency:</p> <p>Bi-Weekly</p>	
8.14	<p>Aspects: Heritage</p> <p>Impact: Minimising impacts on important heritage areas</p> <p>Objective: Minimising impacts on important heritage areas</p> <p>Target: No damage to existing archaeological and Palaeontological features</p>		<p>Monitoring</p> <p>Frequency:</p> <p>Bi-Weekly</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

CONSTRUCTION PHASE: KARAN BEEF-PROPOSED EXTENSION AND CONSTRUCTION OF A NEW FEEDLOT–ALIWAL NORTH, FREE STATE PROVINCE	RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	<u>MONITORING:</u> ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
<p><u>Mitigation/Management Measures:</u></p> <ol style="list-style-type: none"> Should any objects of archaeological or palaeontological remains be found during construction activities, work must immediately stop in that area and the Environmental Control Officer (ECO) must be informed. The ECO must inform the South African Heritage Recourse Agency (SAHRA) and contact an archaeologist and/or palaeontologist, depending on the nature of the find, to assess the importance and rescue them if necessary (with the relevant SAHRA permit). No work may be resumed in this area without the permission from the ECO and SAHRA. A buffer zone of 50m must be established around the cemetery. If the newly discovered heritage resource is considered significant a Phase 2 assessment may be required. A permit from the responsible heritage authority will be needed. 			

8.2 Operational Phase Environmental Management Programme

OPERATIONAL PHASE: KARAN BEEF, GAUTENG PROVINCE	RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	<u>MONITORING:</u> ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)

EMPr: KARAN BEEF – ALIWAL NORTH

OPERATIONAL PHASE: KARAN BEEF, GAUTENG PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
1. ACTIVITY: FEEDLOT				
1.1	<p>Aspects: Surface water and/or existing storm water systems</p> <p>Impact: Degradation of water resources</p> <p>Objective: Ensure the proper working status of all storm water channels.</p> <p>Target: No pollution of water courses</p> <hr/> <p>Mitigation/Management Measures:</p> <ol style="list-style-type: none"> 1. Manage and maintain all storm water systems to keep them in working condition, 2. Water samples must be taken from the nearest borehole and be tested for any pollution (every 3 months). 3. Storm water handling to be done in order to prevent erosion, 4. Measures have to be implemented to prevent the contamination of clean run-off water and to contain run-off from the site in order to protect the degradation of the wetland area and the water quality in the river. 	Operational Manager	<p>Monitoring Action:</p> <p>Surface and Groundwater monitoring records</p> <p>Responsible Person/Party:</p> <p>Operational Manager</p> <p>Monitoring Frequency:</p> <p>Throughout the life span of the activity</p>	
1.2	<p>Aspects: Soil Compaction</p> <p>Impact: Erosion and degradation of soil surrounding the feedlot</p> <p>Objective: Prevention soil erosion.</p> <p>Target: No soil erosion on site or in direct vicinity thereof.</p> <hr/> <p>Mitigation/Management Measures:</p>	Operational Manager	<p>Monitoring Action:</p> <p>Inspection for soil erosion and photographic evidence.</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

OPERATIONAL PHASE: KARAN BEEF, GAUTENG PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<ol style="list-style-type: none"> 1. Ensure proper storm water drainage, 2. The layout of the area should be optimised to limit the erosion potential, 3. Rehabilitate denuded areas especially slopes with appropriate species and erosion protection measures i.e. geotextiles, rocks: topsoil mixtures as per specifications. 4. Conduct integrity test on feedlot surface layers; 5. Limit overcrowding in feedlots; 6. Existing irrigation operations should be maintained. 7. The impact from irrigation with manure water on soils should be monitored and evaluated. 		<p>Responsible Person/Party: Operational Manager</p> <p>Monitoring Frequency: Throughout the live span of the activity</p>	
1.3	<p>Aspects: Weed and invader plant control</p> <p>Impact: Deterioration of the area due to the invasion of weed and/or invader plants</p> <p>Objective: To avoid the invasion of problem plants.</p> <p>Target: No weed or invader plants will be present at the proposed site.</p> <p>Mitigation/Management Measures:</p> <ol style="list-style-type: none"> 1. A weed and invader control program needs to be implemented. 2. Management must familiarise themselves with the Alien Invasive Species Regulations of 2016, and send selected personnel to training on how to identify, control and eradicate listed species. 	Operational Manager	<p>Monitoring Action: Management of Alien Invasive Plants</p> <p>Responsible Person/Party: Operational Manager</p> <p>Monitoring Frequency: Throughout the live</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

OPERATIONAL PHASE: KARAN BEEF, GAUTENG PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
			span of the activity	
1.4	<p>Aspects: Waste, Manure and Odour Handling</p> <p>Impact: Pollution of environment with waste materials</p> <p>Objective: Appropriate management of waste</p> <p>Target: To avoid pollution of environment with waste materials.</p> <p>Mitigation/Management Measures:</p> <ol style="list-style-type: none"> 1. Provide adequate waste bins on-site equipped with a lid to ensure no pollution, 2. General waste must be collected in containers disposed of bi-monthly at the nearest permitted Municipal landfill site. 3. Recyclable waste must be recovered for recycling purposes, 4. Manure from intensive feedlots, where the cattle are confined in high densities or on hard stand for extended periods, should be scraped up and removed as necessary. 5. The frequency with which pens are cleaned will depend on factors such as the stocking density and the size of the animals. 6. Manure should be stored in a stockpile and covered on an impervious surface where water from rain, sprinklers or surface drainage cannot access the manure. 7. Low moisture content in the manure will minimise odour and generation of leachate. 	Operational Manager	<p>Monitoring Action:</p> <p>Monitoring of Waste Management Plan and implementation thereof</p> <p>Responsible Person/Party:</p> <p>Operational Manager</p> <p>Monitoring Frequency:</p> <p>Throughout the live span of the activity</p>	
1.5	Aspects: Traffic.	Operational	Monitoring Action:	

EMPr: KARAN BEEF – ALIWAL NORTH

OPERATIONAL PHASE: KARAN BEEF, GAUTENG PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<p>Impact: Impact on traffic.</p> <p>Objective: Minimise the disruption of road users.</p> <p>Target: Minimal disruption of road users.</p> <p>Mitigation/Management Measures:</p> <ol style="list-style-type: none"> 1. All vehicles must be road-worthy and drivers must be qualified, made aware of the potential road safety issues, and need for strict speed limits; 2. Vehicles used for transport of materials and sand must be fitted with tarpaulins to prevent the release of such material or items onto road surfaces; 3. Construction vehicles may not leave the designated roads and tracks and turnaround points must be limited to specific sites; 4. Abnormal loads should not be transported after dark; 5. Abnormal loads should be timed to avoid times of year when traffic volumes are likely to be higher, as would be expected over national holidays, weekends and school holiday periods; 6. Transport of materials should be limited to the least amount of trips possible; and 7. Traffic deviations around the construction area must be planned in conjunction with the local authority to ensure safe and free flow of traffic. Safety signs must be utilised. 	Manager	<p>Monitoring of traffic on site.</p> <p>Responsible Person/Party: Operational Manager</p> <p>Monitoring Frequency: Throughout the live span of the activity</p>	
1.6	<p>Aspects: Access Road</p> <p>Impact: Erosion and dilapidation of the access route</p>	Operational Manager	Monitoring Action:	

EMPr: KARAN BEEF – ALIWAL NORTH

OPERATIONAL PHASE: KARAN BEEF, GAUTENG PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<p>Objective: Prevent erosion and the dilapidation of the access road.</p> <p>Target: The access road is in a acceptable condition</p> <p>Mitigation/Management Measures:</p> <ol style="list-style-type: none"> 1. Ensure that only authorised roads and access routes are used, 2. Vehicles may not leave the designated roads and tracks and turnaround points needs to be limited to specific sites, 3. Maintain the access road adequately in order to minimise erosion and undue surface damage, 4. Repair rutting and potholing and maintain stormwater drainage canals. 		<p>Monitoring of access road condition and access road maintenance plan.</p> <p>Responsible Person/Party: Operational Manager</p> <p>Monitoring Frequency: Throughout the live span of the activity</p>	
1.7	<p>Aspects: Dust Generation and Visual Impact.</p> <p>Impact: Dust nuisance from site operations and visual impact of site operations on surrounding land owners.</p> <p>Objective: To avoid dust from excavated materials and construction activity and unnecessary visual impact caused by site operations.</p> <p>Target: Minimise the incidence of dust generation and visual impact.</p> <ol style="list-style-type: none"> 1. Implement dust suppression measures by watering (or acceptable methods) areas to be cleared as well as already exposed surfaces with damaged soil particles, particularly during dry, windy periods; 	Operational Manager	<p>Monitoring Action: Monitoring of Dust Generation and visual impact.</p> <p>Responsible Person/Party:</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

<p align="center">OPERATIONAL PHASE: KARAN BEEF, GAUTENG PROVINCE</p>	<p align="center">RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)</p>	<p align="center"><u>MONITORING:</u> ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY</p>	<p align="center">COMPLIANT? (for use by ECO)</p>
<ol style="list-style-type: none"> 2. Ensure all vehicles remain on designated roads; 3. Dust masks are to be supplied to workers; 4. The transfer of soil or aggregate should be done over the shortest possible distance; 5. Access roads are to be kept clean; 6. Surface material that is scraped off during construction should be conserved and used for rehabilitation. Any spoil material must be disposed of in a manner that appears natural; 7. After construction decommissioning, if access roads or portions thereof will not be of further use to the landowner, remove all foreign material and rip the area to facilitate the establishment of vegetation, followed by a suitable revegetation program; 8. Lay-down area(s) should be screened with shade cloth in an earth tone or other appropriate neutral colour; 9. Site offices and structures should be limited to one location and carefully situated to reduce visual intrusion. Roofs should be non-reflective; 10. Lights within the construction camp should face directly downwards (angle of 180°); 11. Avoid shiny materials in structures. Where possible shiny metal structures should be darkened or screened to prevent glare; 12. Litter should be strictly controlled, as the spread thereof through wind could have a very negative visual impact; and, 13. The minimum amount of topsoil and vegetation should be removed during construction, and should be conserved 		<p>Operational Manager</p> <p><u>Monitoring Frequency:</u> Throughout the live span of the activity</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

OPERATIONAL PHASE: KARAN BEEF, GAUTENG PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	and used for final rehabilitation.			
1.8	<p>Aspects: Effluent Dam management/ Liquid Waste Management</p> <p>Impact: Contamination of clean water.</p> <p>Objective: To avoid clean water contamination</p> <p>Target: Minimise contamination</p> <ol style="list-style-type: none"> Clean stormwater should be channelled away from the feedlot area, using bunds, culverts or drains, to ensure it does not become contaminated with manure or urine. Surface run-off from the feedlot should be collected in a drainage channel, with a sufficient cross-section. To prevent effluent being washed into a watercourse, all contaminated flows should be directed to stabilisation ponds for treatment before being spread over land by tanker or irrigation. Where liquid and solid waste is combined and drain to a pond, effluent treatment is recommended using a multi-pond stabilisation system, incorporating anaerobic and aerobic treatment. The effluent dams should be monitored regularly for leaks and should be repaired accordingly. The irrigation of waste water should be done according to the conditions stipulated in the Water Use License. 			

EMPr: KARAN BEEF – ALIWAL NORTH

OPERATIONAL PHASE: KARAN BEEF, GAUTENG PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
2. ACTIVITY: DAM				
2.1	<p>Aspects: Surface water and/or existing storm water systems</p> <p>Impact: Degradation of water resources</p> <p>Objective: Ensure the proper working status of all storm water channels.</p> <p>Target: No pollution of water courses</p> <p>Mitigation/Management Measures:</p> <ol style="list-style-type: none"> 1. Manage and maintain all storm water systems to keep them in working condition, 2. Water samples must be taken from the nearest borehole and be tested for any pollution (every 3 months). 3. Storm water handling to be done in order to prevent erosion, 4. Oil traps must be monitored and inspected on weekly basis. 5. All hazardous substances must be stored on an impermeable surface and away from any stormwater drainage to prevent polluted water to enter the dam. 	Operational Manager	<p>Monitoring Action:</p> <p>Stormwater monitoring records</p> <p>Responsible Person/Party:</p> <p>Operational Manager</p> <p>Monitoring Frequency:</p> <p>Throughout the live span of the activity.</p>	
2.2	<p>Aspects: Water Conservation.</p> <p>Impact: Wasting water as a result of negligence.</p> <p>Objective: Promote and implement water use efficiency mechanisms.</p> <p>Target: No Water Wastage.</p> <p>Mitigation/Management Measures:</p> <ol style="list-style-type: none"> 1. Re-use water were possible; 	Operational Manager	<p>Monitoring Action:</p> <p>Monitoring of water conservation measures.</p> <p>Responsible</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

OPERATIONAL PHASE: KARAN BEEF, GAUTENG PROVINCE		RESPONSIBLE PARTY/PERSON (implementation of mitigation measures)	MONITORING: ACTION, RESPONSIBLE PERSON/PARTY AND FREQUENCY	COMPLIANT? (for use by ECO)
	<ol style="list-style-type: none"> 2. Implement rain catchment strategies; 3. Prevent leakages at taps and hoses by means of maintenance; 4. Capture and reuse stormwater runoff for site cleaning, truck washing and dust suppression; 5. Make sure that sediment, concrete, sand and rubbish does not end up going down the stormwater drain. Cover or filter stormwater inlets and drains; and, 6. Require workers to use a broom rather than a hose to clean paths and gutters. If water use is necessary, use high pressure hoses which are both water efficient and more effective cleaners. 		<p>Person/Party: Operational Manager</p> <p>Monitoring Frequency: Throughout the live span of the activity.</p>	

3. ACTIVITY: ROAD				
3.1	<p>Aspects: Fire Prevention.</p> <p>Impact: Uncontrollable fire.</p> <p>Objective: Prevent the outbreak of fires emanating from construction activity.</p> <p>Target: No incidences of fires are recorded for the site.</p> <hr/> <p>Mitigation/Management Measures:</p> <ol style="list-style-type: none"> 1. The potential risk of veld fires is heightened by windy conditions in the area, specifically during the dry, windy winter months; 2. Assume acceptable precautions to guarantee that fires are not started as a result of works on site as specified below: the Contractor will be held responsible for any damage to structures or property on or neighbouring the Site as a 	Operational Manager	<p>Monitoring Action: Fire prevention measures.</p> <p>Responsible Person/Party: Operational Manager</p> <p>Monitoring Frequency: Throughout the live span of the activity</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

	<p>result of any fire caused by personnel;</p> <ol style="list-style-type: none"> 3. Equip vehicles and site structures with fire extinguishers. Rubber beaters should also be stored on site; 4. No open fires are allowed anywhere on site; 5. Storage of fuel or chemicals under trees is not permitted; 6. Gas and liquid fuel is not to be stored in the same place; 7. Smoking may only occur within a 3m radius from designated areas; 8. Personnel must be adequately trained in the handling of firefighting equipment; and, 9. Fuel, diesel, oil, or any other flammable substance should be stored 6m away from the smoking area. 			
3.2	<p>Aspects: Traffic.</p> <p>Impact: Impact on road.</p> <p>Objective: Minimise the disruption of road users.</p> <p>Target: Minimal disruption of the road.</p> <hr/> <p>Mitigation/Management Measures:</p> <ol style="list-style-type: none"> 1. All vehicles must be road-worthy and drivers must be qualified, made aware of the potential road safety issues, and need for strict speed limits; 2. Vehicles used for transport of materials and sand must be fitted with tarpaulins to prevent the release of such material or items onto road surfaces; 3. Construction vehicles may not leave the designated roads and tracks and turnaround points must be limited to specific sites; 4. Abnormal loads should not be transported after dark; 5. Abnormal loads should be timed to avoid times of year when traffic volumes are likely to be higher, as would be expected over national holidays, weekends and school holiday periods; 6. Transport of materials should be limited to the least amount of trips possible; and 	Operational Manager	<p>Monitoring Action:</p> <p>Monitoring of Traffic at Workshop.</p> <p>Responsible Person/Party:</p> <p>Operational Manager</p> <p>Monitoring Frequency:</p> <p>Throughout the live span of the activity</p>	

EMPr: KARAN BEEF – ALIWAL NORTH

	7. Traffic deviations around the construction area must be planned in conjunction with the local authority to ensure safe and free flow of traffic. Safety signs must be utilised.			
--	--	--	--	--

8.3 Decommissioning Phase Environmental Management Programme

The activity will not be decommissioned in the future and therefore the proposed impacts thereof were not assessed.

9 Emergency Response Plan

A Service Provider will be contracted to undertake clean-up of large accidental spills on site. The spills size will be determined by the discretion of a competent SECO (Site Environmental Control Officer), who will determine the size of the spill accordingly to the spill substance.

If Karan Beef chooses not to make use of a Hazmat Service, they must ensure that they are compliant according to SANS standards and relevant legislation to transport the hazardous waste. If Karan Beef does not appoint a HazMat Service provider they must ensure that employees are trained and competent to perform HazMat tasks.

Smaller spills will be treated in-house by using appropriate spill absorbent kits and materials in accordance to a Spill Response Plan.

Staff using spill absorbent kits and materials will be trained in the application of the various products and the use of the products should a spill occur.

The following preventative measures will be undertaken:

- All sensitive sites will be identified such as rivers, drainage lines and wetlands and procedures developed to ensure proper handling of oil/fuel or chemical spillages in these areas.
- It will be ensured that all employees are aware of the procedure to be followed in case of accidental spills and leaks.
- It will be ensured that the necessary materials and equipment for dealing with spills and leaks is available on site at all times.

All hazardous substances on site must be accompanied by their relevant MSDS (Material Safety Data Sheet) training must be given to people working with these substances according to the MSDS.

RESPONSE METHOD:

The responsible must act as quickly as possible to locate the source and, if possible, to neutralize the spread of the liquid product.

- Be careful – do not take any action if there is imminent danger. (if toxic fumes or gases are present, or if there is any risk of explosion, wait for the response team to arrive)
- If appropriate, approach the site carefully, with the wind at your back
- Close taps or valves

EMPr: KARAN BEEF – ALIWAL NORTH

- Make temporary repairs to containers and temporarily seal all cracks

The response steps mentioned will be applicable to all spills on site and in a water body or wetlands.

SPILL ON THE GROUND:

To contain such spills, use appropriate spill absorbents from the spill kit. The material will be stored in a designated bunded area. This will be disposed of at an approved licensed facility.

SPILL INTO WATER BODY OR ARTIFICIAL WETLAND (DAM):

Regardless of the size of the spill, the following will apply to all spills occurring near or into a stream, wetland or other water body:

- FOR A SPILL INTO STANDING WATER THE **FOLLOWING MUST BE USED:**

Floating booms, floating barriers or absorbent socks. Holding tanks will be used by the contractor to recover and contain released materials on the surface of the water.

- **FOR SPILLS THREATENING A WATER BODY THE FOLLOWING MUST BE DONE:**

Berms and or trenches must be constructed to contain the spill before it reaches the water body. It may necessary to deploy booms and absorbent materials if the spill reaches the water body. The spill will be collected (by any of the above mentioned) and cleaned up in accordance with legislation.

- **FOR SPILLS INTO A WETLAND THE FOLLOWING MUST BE DONE:**

The contaminated soil in the wetland must be excavated and placed on and covered by plastic sheeting. This must be stored in a designated area at least 100m away from the wetland system. The contaminated soil will be disposed of as soon as possible in accordance with legislation. It is important to remember that when a major spill occurs that the relevant Environmental Authorities are contacted.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEAN UP:

Small spills:

- Stop leak if without risk.
- Move containers from spill area.
- Dilute with water and mop up if water-soluble. Alternatively if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container.
- Use spark-proof tools (non-spark tool) and explosion-proof equipment.
- Dispose of via a licensed waste disposal contractor or at a licensed facility.

Large spills:

- Stop leak if without risk.
- Move containers from spill area.
- Approach the release from upwind. Prevent entry into sewers, water courses or confined areas.
- Proceed as follows:
 - Contain and collect spillage with non-combustible, absorbent material e.g. absorbents from spill kit, and place in container for disposal according to local regulations.
 - Use spark-proof tools and explosion-proof equipment.
- Dispose of via a licensed waste disposal contractor or at a licensed facility.
- If spillage is too large then a HazMat team must be contacted.

ACCIDENTAL RELEASE MEASURES:

No action shall be taken involving any personal risk or without suitable training.

Steps to be followed:

- Evacuate surrounding areas.
- Keep unnecessary and unprotected personnel from entering.
- Do not touch or walk through spilt material.
- Shut off all ignition sources.
- Avoid breathing vapour or mist.
- Provide adequate ventilation.
- Wear appropriate respirator when ventilation is inadequate.
- Put on appropriate personal protective equipment.

ENVIRONMENTAL PRECAUTIONS:

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

9.1 Fire Emergency Procedures

‘No smoking’ signs will be displayed at areas of high fire risk throughout the site e.g. the workshop, feed store and fuel storage areas. Smoking will only be allowed at designated area to be established by SECO Officer.

EMPr: KARAN BEEF – ALIWAL NORTH

Karan beef shall ensure that all their fire equipment to be used on site will comply with the following:

- Extinguishers shall be placed in positions to ensure fast and easy access is maintained at all times.
- Placement of all extinguishers shall be depicted with the required pictograms.
- Extinguishers shall be serviced once annually, and after discharge or visible signs of depressurization.
- Karan Beef shall ensure a person is appointed to inspect the extinguishers on a monthly basis and the results of which are to be entered into a register designed for that purpose.

Karan beef will provide training for Fire Extinguisher usage and only trained employees will attempt to use these site Fire Extinguishers.

UPON DISCOVERY OF A FIRE/HEARING EXPLOSION:

- Sound the alarm (if available) and attempt to put out the fire with an extinguisher if you have been trained to do so – do not place yourself at any risk of injury;
- Inform your Supervisor immediately;
- Call the fire services if required;
- Leave the site and assemble at the assembly point;
- Receive and work with the emergency services;
- Take measures to prevent a repetition.

UPON HEARING THE FIRE ALARM:

- Vacate the works area;
- Report to the assembly point;
- Do not return to the works area until given the all clear by Management.

RESOURCES:

- Presence of first aid kit and fire extinguishers;
- Presence of communications equipment;
- Presence of alarm card with important telephone numbers;
- Presence of assembly point.

TESTING EMERGENCY PROCEDURES

Procedures will be tested during the works at appropriate intervals. Roll Call registers will be completed after every emergency procedure performed on site.

9.2 First Aid Emergency Procedures

Karan Beef shall ensure that all working areas and remote work locations are adequately provided with first aiders and first aid boxes/equipment, as necessary and in accordance with legal requirements. Karan Beef must ensure medical treatment for its workforce including emergency evacuation.

Karan beef shall ensure that all working areas and remote work locations are adequately provided with first aiders and first aid boxes/equipment, as necessary and in accordance with legal requirements.

The following first aid/medical treatment is recommended to be available:

- Treatment for vector borne disease such as malaria;
- Treatment for burns/scalds and sunburn;
- Eye Injuries;
- Treatment for sprains and broken bones;
- Treatment for serious cuts;
- Treatment for Bilharzia;
- Treatment for cholera;
- Treatment for local climate factors:
 - Heat stress/ exhaustion/stroke;
 - Dehydration;
 - Insect bites/stings, spider and scorpion bites;
 - Be aware where anti-venom is available for snake bites.

The First Aid attendant shall be trained in accordance with the requirements set out in the OHSA with recognized and accredited service providers.

Proof of training attended (certificate, registers) shall be attached to the written acceptance of appointment. It will be the first aid attendant's responsibility to ensure the contents of the first aid boxes are monitored and inspections recorded on the contents of the first aid box register.

EMPr: KARAN BEEF – ALIWAL NORTH

Each first aid box shall be clearly marked “FIRST AID”.

PROCEDURE IN THE EVENT OF AN ACCIDENT:

All incidents where an employee is injured on duty to the extent that he/she:

- Dies
- becomes unconscious
- loses a limb or part of a limb

OR where:

- a major incident occurred
- the health or safety of any person was endangered
- where a dangerous substance was spilled
- machinery ran out of control

Procedure:

- Assess the situation and ensure it is safe before proceeding.
- Contact First Aider and/or emergency services.
- Do not move the person unless there is a life or death situation.

Such incidents shall be reported as follow:

- Within 2 hours telephonically,
- Preliminary report within 48 hours;
- Final report within 7 days.

Reports and statistics (if required) will be submitted to the Manager at the end of each month on all accidents/incidents involving any person, material or equipment that was injured, damaged or lost.

9.3 Roles in an Emergency

The following is an outline of roles and responsibilities for all workers during an emergency. The Emergency Management Team or responsible people has specifically assigned roles during an emergency

PERSONNEL GUIDE

ALL WORKERS

All workers should:

EMPr: KARAN BEEF – ALIWAL NORTH

- FOLLOW all instructions in the Emergency Management Procedures including heading to assembly point for roll call and waiting for emergency to be declared over
- FOLLOW all instructions given to the by the Emergency Management Team and be where they should be.

MANAGER

The Manager is the overall in charge of the site and shall delegate duties as required by the Emergency Management Procedures and shall empower the SHE Officer to lead the Emergency Management Team. He shall also approve and facilitate for all resources required for use in the emergency.

SHE OFFICER/ ECO OFFICER/ RESPONSIBLE PERSON

Responsibilities include:

- Take steps deemed necessary to ensure the safety of all workers and other individuals in the implementation of Emergency Management Procedures
- Determine whether to implement Universal Emergency Procedures (evacuation; reverse evacuation; shelter in place; severe weather/safe area; drop, cover and hold; lockdown)
- Activate the Emergency Management Team or responsible people.
- Arrange for transfer of workers and other individuals when safety is threatened by a disaster.
- Work with emergency service personnel
- Maintain a line of communication with the emergency agencies, Relevant Government Agencies, Project Site Manager.
- Declare the emergency over when all has been done to secure the site
- Initiate investigation procedures

HEALTH AND SAFETY COMMITTEE (IF APPLICABLE)

Health and Safety Committee shall be responsible for assisting the overall direction of the emergency procedures at the site. Responsibilities include:

- Take steps deemed necessary to ensure the safety of workers, and other individuals in the implementation of Emergency Management Protocols.
- Render first aid if necessary.

EMPr: KARAN BEEF – ALIWAL NORTH

- Assist in the transfer of workers, staff and other individuals when their safety is threatened by a disaster.
- Help coordinate the activities of emergency service personnel.
- Maintain a line of communication with the Emergency Management Team leader.
- Assist as directed by the SHE Officer/Responsible person.

The following table is provided to assist the ECO and Manager with remedial work options and problem solving:

EMPr: KARAN BEEF – ALIWAL NORTH

Observation or Event	Action by Inspector or Observer	Action by Site Manager
<p>Spillage of diesel or hydrocarbons on soil</p>	<p>Report to Site Manager and continue observations.</p> <p>Also check:</p> <ul style="list-style-type: none"> ➤ That the source causing the spillage has ceased, and that the affected area is isolated to prevent spreading of the hazardous substance, where after it should be rehabilitated. 	<p>Action will be required ASAP by following the next steps:</p> <ul style="list-style-type: none"> ➤ Dig down into the soil to see how far down the pollution penetrated, ➤ If less than 300mm penetrated: <ul style="list-style-type: none"> a. Turn the soil over to expose it to the air. b. Apply Mono Ammonium Phosphate (MAP) at a rate of 58gr/m² to the overturned soil. c. Water enough to keep the soil moist. ➤ If penetration is greater than 300mm: <ul style="list-style-type: none"> a. Remove the affected soil and spread in a layer not more than 300mm thick. b. Apply MAP at a rate of 50gr/m². c. Water enough to keep the soil moist. ➤ Repeat the above steps every 6 weeks or until the soil is clean.
<p>Erosion</p>	<p>Report to Site Manager and continue observations.</p> <p>Also check:</p> <ul style="list-style-type: none"> ➤ That all vehicular movement is restricted to existing access routes to prevent crisscrossing of tracks through undisturbed areas. 	<p>Action will be required ASAP:</p> <ul style="list-style-type: none"> ➤ Implement erosion protection works at identified problem areas. ➤ Implement remedial works at affected areas in order to restore the area to its previous or better status.

10 Incident Register

INCIDENT REGISTER: PROPOSED EXPANSION OF DIESEL STORAGE FACILITIES					
NAME OF PERSON REPORTING THE INCIDENT	INCIDENT	DATE OF INCIDENT IDENTIFIED	HOW WAS INCIDENT ADDRESSED?	DATE OF RECTIFICATION	SIGNATURE

11 Rehabilitation Measures and Closure Plan

The rehabilitation phase follows completion of the operational phase and entails site clean-up and site rehabilitation. The underlying aim of rehabilitation is the process of returning land within the site boundary to some degree of its former natural state.

Key aspects within this process include the:

- Removal of structures and infrastructure;
- Handling of inert waste and rubble;
- Handling of hazardous waste and pollution control;
- Final shaping of the terrain;
- Topsoil replacement and soil amelioration;
- Ripping and scarifying of surfaces;
- Planting of indigenous occurring vegetation (if deemed necessary); and
- Maintenance.

11.1 Rehabilitation Measures

Removal of structures and infrastructure

- On completion of a section of works, the area must be rehabilitated by suitable landscaping, levelling, topsoil dressing, land preparation, alien plant eradication and where ascribed for by the ECO, vegetation establishment;
- Clear and completely remove from site all operational structures and temporary infrastructure;
- All permanent infrastructures must be returned to a useable state.

Topsoil replacement and soil amelioration

- The reinstatement of disturbed areas must follow immediately after the removal of structures and temporary infrastructure;
- Topsoil backfilling must be undertaken when the soil is dry, and not following any recent rainfall events;
- All stockpiled topsoil together with herbaceous vegetation should be replaced and redistributed over a disturbed area such as temporary access roads;
- Topsoil must be returned to the same site from where it was stripped;
- When insufficient topsoil remains, soil of a similar quality can be obtained from a nearby area within the site area which was disturbed;
- Once topsoil has been returned to the ground, stripped vegetation should be randomly spread by hand over the area.

Inert waste

- Domestic waste must be completely removed from the site and disposed of at a landfill site.

Maintenance

- All re-growth of invasive vegetative material will be monitored by the Developer for one year;
- All areas under rehabilitation are to be treated as no-go areas using danger tape and steel droppers/fencing and cordoned off, to prevent vehicular, pedestrian and livestock access.
- Any re-vegetation must be done using plant species in occurrence on site;
- Control invasive plant species and weeds using approved methods of manual or chemical intervention;
- The reestablishment of vegetation should be allowed several rainy seasons, given the arid nature of the climate and region.

12 Prevention of Triggering other Listed Activities

The proposed development will occur under certain thresholds as listed in GNR 327, 325 and 324. However the thresholds of these listed activities must be adhered to otherwise it will be deemed the commencement of a listed activity without the proper authorisation.

13 Guidelines with regard to vegetation

Removal of vegetation

- The insensitive removal of vegetation can be catastrophic for a number of reasons:
- Unnecessary clearing of areas leave the soil barren and prone to erosion,
- Indigenous vegetation removal will lead to diminishing of natural habitat for fauna,
- Indigenous vegetation removal will have a negative impact on the ecological integrity, biodiversity of the site & destroying of one of the main natural attributes of the area.
- Recommendations are made to assist in mitigating the environmental impact of the proposed project. These should be included as conditions of approval.

Minimizing of habitat destruction:

- If fires are lit on private property, provision must be made that no accidental fires are started,
- No firewood may be collected,
- Fire extinguishers must be available on site,
- Vehicles should be driven at a moderate speed on the roads,
- Construction camp and site offices must be removed and rehabilitated on completion of the contract. The site should be rehabilitated as close as possible to its original condition,

Soil management

- In the event of topsoil being stripped it shall be stockpiled on the site for later reuse. (Topsoil is considered to be a minimum of thickness of \pm 300mm of the natural soil, including all vegetation and organic matter),
- Weeds appearing on stockpiled topsoil shall be removed by hand before seeding, and
- Soil contaminated by hazardous substances shall be disposed of at a Department of Water and Environmental Affairs licensed landfill site,

Protected plant species

Care should be taken not to remove or damage any protected/red data vegetation species during the establishment of the optic fibre cable.

Discovery of fossils:

In the unlikely event of fossil discovery within previously undisturbed Tarkastad Subgroup sediments, a professional palaeontologist must be called in immediately to confirm and record the finds. In the meantime, ex situ remains must be wrapped in paper towels or heavy duty tin foil and stored in a safe place. The material should not be washed or cleaned in any way. In situ material must be kept in place and protected from further damage by covering it with light but rigid object like a box, bucket or metal sheet until further confirmation by the palaeontologist.

14 References

Republic of South Africa. Environmental Impact Assessment Regulations, 2014. Department of Environmental Affairs: Pretoria.