

Draft Environmental Impact Assessment Report

for

KUBA BOELA GAE (PTY) LTD

REF NUMBER: NWP/EIA/110/2019

Prepared by:

Bucandi Environmental Solutions



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## 1. DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

### 1.1 Contact details

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Email address: [helen@bucandi.co.za](mailto:helen@bucandi.co.za)

Qualification: P.h.D (Conservation Management)

Experience: 13 years

Affiliation: SACNASP *Pri.Sci.Nat* 400108/11

**Assistant:** Anton Louw

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Email address: [info@bucandi.co.za](mailto:info@bucandi.co.za)

### 1.2 Experience of the EAP

The project coordinator, Ms. Helen Prinsloo, have 13 years' experience conducting Environmental Impact Assessments (EIA's) and other environmental management services in South Africa and the USA.

Please see Appendix J for a copy of her Curriculum Vitae.

## 2. LOCATION OF PROPOSED ACTIVITY

The proposed Molote Resort Project is located in Molote, Rustenburg Rural, North West Province, South Africa and covers an area of approximately 2 000 ha. The project area lies between Magaliesburg, GP (45km in the easterly direction) and Derby, NW (35 km in the North West direction) via R509 with a municipal road providing access to the site. It is situated within the Rustenburg Local Municipality and Bojanala Platinum District Municipality (Appendix A). More specifically it is located on the Rem Ext of Portion 1, Portions 4 and 5 of the farm Elandsfontein 21 IQ at 26°03'18.99"S; 27°14'4.86"E (Appendix A).

21 digit Surveyor General code	T0IQ0000000002100001 T0IQ0000000002100004 T0IQ0000000002100005
Physical address and farm name	Rem Ext of Portion 1, Portions 4 and 5 of the farm Elandsfontein 21 IQ
GPS coordinates	26°03'18.99"S; 27°14'4.86"E

Please see Appendix A for plans and maps showing the location of the proposed activity as well as the associated structures and infrastructure.

### 3. SCOPE OF ACTIVITY

#### 3.1 Listed activities triggered

##### NEMA

The proposed activity triggers the following Listed Activities in terms of the National Environmental Management Act, Act 107 of 1998 (NEMA):

The proposed activity may trigger the following activities as published in Government Gazette No. 38282 of **4 December 2014** as amended **7 April 2017** under the National Environmental Management Act, Act 107 of 1998:

##### Listing Notice 1 GNR 327

**12(ii)(c):** The development of (ii) infrastructure or structures with a physical footprint of 100 square metres or more (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of the watercourse; excluding... (none of the exclusions apply).

**56:** The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre (ii) where no reserve exists, where the existing road is wider than 8 metres; excluding where widening or lengthening occur inside urban areas.

**66:** The expansion of a dam where (i) the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, was originally 5 metres or higher and where the height of the wall is increased by 2,5 metres or more.

##### Listing Notice 2 GNR 328

**15:** The clearance of an area of 20 hectares or more of indigenous vegetation.

##### Listing Notice 3 GNR 324

**4:** The development of a road wider than 4 metres with a reserve less than 13,5 metres (h) in North West:

ii) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;

iv) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority.

**6:** The development of resorts, lodges, hotels, tourism or hospitality facilities that sleeps 15 people or more (h) in North West:

iv) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority;

v) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; or

vi) Areas within a watercourse or wetland, or within 100 metres from the edge of a watercourse or wetland.

**12:** The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan (h) in North West:

iv) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority;

v) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; or

vi) Areas within a watercourse or wetland, or within 100 metres from the edge of a watercourse or wetland

### **3.2 Description of activity**

The project entails construction of a resort and related infrastructure on the Rem Extent of Portion 1, Portions 4 and 5 of the farm Elandsfontein 21 IQ in Molote. The land is owned by the Bakubung Ba Ratheo of Molote Communal Property Association. The proposed resort will have 70 chalets, shops, pools, African village, restaurant, entertainment theatre, amphitheatre, support and administration buildings as well as a hiking trail. The main activities will include the construction and widening of access roads and the construction of buildings for the resort.

The old historical sites will be preserved and fenced off and used as an attraction feature. Consultation with SAHRA will be done to best find a way to preserve the site as well as make it a tourism site.

The development proposal is a very low density, low impact, private resort establishment. Resource consumption in the form of water and power will be minimal. The localities of the holiday stands have been selected based on ease of existing access to the sites, and have been clustered in close proximity to one another, to ensure that land is protected in a way that benefits the conservation of wildlife species and habitats.

#### **4. POLICY AND LEGISLATIVE FRAMEWORK**

##### **4.1 National Environmental Management Act**

The proposed activity may trigger the following activities as published in Government Gazette No. 38282 of **4 December 2014** as amended **7 April 2017** under the National Environmental Management Act, Act 107 of 1998:

##### **Listing Notice 1 GNR 327**

**12(ii)(c):** The development of (ii) infrastructure or structures with a physical footprint of 100 square metres or more (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of the watercourse; excluding... (none of the exclusions apply).

**56:** The widening of a road by more than 6 metres, or the lengthening of a road by more than 1 kilometre (ii) where no reserve exists, where the existing road is wider than 8 metres; excluding where widening or lengthening occur inside urban areas.

**66:** The expansion of a dam where (i) the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, was originally 5 metres or higher and where the height of the wall is increased by 2,5 metres or more.

##### **Listing Notice 2 GNR 328**

**15:** The clearance of an area of 20 hectares or more of indigenous vegetation.

##### **Listing Notice 3 GNR 324**

**4:** The development of a road wider than 4 metres with a reserve less than 13,5 metres (h) in North West:

ii) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority;

iv) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority.

**6:** The development of resorts, lodges, hotels, tourism or hospitality facilities that sleeps 15 people or more (h) in North West:

iv) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority;

v) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by the competent authority; or

vi) Areas within a watercourse or wetland, or within 100 metres from the edge of a watercourse or wetland.

**12:** The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan (h) in North West:

iv) Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority;



v) Sensitive areas as identified in an environmental management framework as contemplated in chapter 5 of the Act and as adopted by 100 metres from the edge of a watercourse or wetland.

The following legislation will also be considered and may be relevant to the application:

#### **4.2 The Conservation of Agricultural Resources (Act 43 of 1983)**

##### **Section 6**

Implementation of control measures for alien and invasive plant species.

##### **Section 29**

Weeds, invaders and indicators of bush encroachment.

CARA seeks to provide for the conservation of natural agricultural resources by maintaining the production potential of land, combating and preventing erosion and weakening or destruction of water resources, protecting vegetation and combating weeds and invader plant species.

#### **4.3 Atmospheric Pollution Prevention Act (Act 45 of 1964)**

##### **Sections 27 - 35**

Dust control.

##### **Sections 36 - 40**

Air pollution by vehicle emissions.

#### **4.4 Occupational Health and Safety Act (Act 85 of 1993)**

##### **Section 8**

General duties of employers to their employees.

##### **Section 9**

General duties of employers and self-employed persons to persons other than their employees.

#### **4.5 The National Water Act (Act 36 of 1998)**

##### **Chapter 3**

The protection of water resources.

##### **Section 19**

Prevention and remedying the effects of pollution.

##### **Section 20**

Control of emergency incidents.

##### **Chapter 4**

Water use licencing.

The National Water Act (NWA), 1998 (Act No. 36 of 1998), aims to manage national water resources in order to achieve sustainable use of water for the benefit of all water users. This

requires that the qualities of water resources are protected, and that integrated management of water resources takes place.

According to Section 21(c) and (i) Water Use Authorisation Application Process by the Department of Water Affairs and Sanitation, any development within 500m of a wetland boundary triggers a Water Use License Application (WULA). Any development within the 1:100 year floodline or riparian area also triggers a WULA. If the development crosses, diverts or alters any watercourses, is within the 1:100 year floodline and is also within 500m of wetlands, therefore an Aquatic Delineation and WULA will be required. Any one of these three triggers a WULA application

#### **4.6 The National Roads Act (Act 7 of 1998)**

The provision for a national roads agency to manage and control the Republic's national roads system and take assume responsibility for the development, maintenance and rehabilitation of national roads.

#### **4.7 The Hazardous Substances (Act 15 of 1973)**

Provides for the definition, classification, use, operation, and disposal of hazardous substances.

#### **4.8 The National Road Traffic Act (Act 93 of 1996)**

The provision for road traffic concerns, which applies uniformly throughout the Republic.

#### **4.9 The Constitution Act (Act 108 of 1996)**

##### **Chapter 2**

Bill of rights

##### **Section 24**

Environmental rights

##### **Section 25**

Rights in property

#### **4.10 National Veld and Forest Fires Act (Act 101 of 1998)**

Control of and prevention of veld fires.

#### **4.11 National Heritage Resources Act (Act 25 of 1999)**

The National Heritage Resources Act (Act No. 25 of 1999) (NHRA) is intended to provide an integrated system which allows for the management of national heritage resources and to empower civil society to conserve heritage resources for future generations. Section 38 of NHRA provides a list of activities which require approval from the relevant heritage resources authority.

##### **Section 34**

Any structure older than 60 years is protected in terms of the National Heritage Resources Act. A permit to alter or demolish any structure older than 60 years is required from the Provincial Heritage Resources Authority.

### **Section 35**

No person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter, deface or otherwise disturb any archaeological or palaeontological site.

### **Section 36**

No person may, without a permit issued by the South African Heritage Resource Agency (SAHRA) or a provincial heritage resources authority destroy, damage, alter, exhume, remove from its original position or otherwise disturb any grave or burial ground older than 60 years which is situated outside a formal cemetery administered by a local authority.

"Grave" is widely defined in the Act to include the contents, headstone or other marker of such a place, and any other structure on or associated with such place.

### **Section 38**

Heritage Resources Management

1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as –

a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300 m in length;

b) the construction of a bridge or similar structure exceeding 50 m in length;

c) any development or other activity which will change the character of a site –

i) exceeding 5 000m<sup>2</sup> in extent; or

ii) involving three or more existing erven or subdivisions thereof; or

iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or

iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;

must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

### **4.12 National Environmental Management Waste Act (Act 59 of 2008)**

This act was developed to reform the law regulating waste management in order to protect health and the environment.

This act places a high liability on waste producers and government to supply adequate waste removal, treatment and disposal facilities to ensure that waste is not threatening the health and safety of citizens.

Waste management was previously conducted in terms of the NWA and several sections of law have been repealed by NEMWA. This act must be read with NEMA and application must be guided by principles set out in Section 2 of NEMA.

Ablution facilities will be installed at the resort, consultation with the relevant department will be required as a Waste Management License may be required.

## **5. NEED AND DESIRABILITY OF THE PROJECT**

### **5.1 Motivation for the project**

The proposed development will result in the creation of new direct and indirect employment opportunities associated with construction and operational phases of the development. Different contractors will be involved with the development of infrastructure and buildings of the resort which will not only provide jobs, but will also facilitate skills transference, support to small scale enterprises, introduce new technologies and result in the improvement of service infrastructure like roads.

Because of the scale of the municipal area, communities in the area are ignorant of fundamental environmental principles such as water saving and pollution management. Tourism has been identified as a tool to develop the area and strategies have been put in place to stimulate tourism growth and to develop and market opportunities. There is a need to stimulate community tourism structures and other stakeholders involved in tourism.

The screening report indicates that 1 new job is created for every 11 tourists and for every job created a further 5 job opportunities are created indirectly. Tourism also acts as a stimulant for economic employment growth and should therefore be developed in the region. The proposed development will create a tourism node and jobs and is thus in line with the spatial growth and economic contribution of the Molote area.

### **5.2 Specific technology and location**

The resort will be designed to fit in with the natural beauty and unique topography of this location, to create an outstanding mixed-use eco-Tourism resort. Resort residences will be constructed using indigenous and natural materials to give the impression of simplicity and organic assimilation within the setting, in so doing, promoting a sense of wellbeing and a holistic ecological balance.

Technical aspects will be implemented in such a manner so as to provide the most economically effective solutions.

Wetlands occurring on the site will be enhanced to attract water-fowl and create a further attraction to the resort.

## **6. PROJECT ALTERNATIVES**

### **6.1 Property or location alternatives**

The location and layout were designed according to the topography of the property and no alternatives were considered.

### **6.2 Activity alternatives**

The activity applied for is the construction of a resort. If this activity is not approved the site will continue to be used for cattle grazing.

### **6.3 Design of layout alternatives**

Design and layout alternatives are still being considered by the project engineers. All alternatives considered will be included in the EIA report.

#### 6.4 Technology alternatives

No technology alternatives were considered for the proposed project.

#### 6.5 Operational alternatives

No operational alternatives were considered for the proposed project.

#### 6.6 The “no-go” activity alternative

If the proposed activity is not implemented, the site will continue to be used for agriculture. This will have a minimal environmental impact, but will have less of an economic advantage to the owner.

### 7. PUBLIC PARTICIPATION PROCESS

#### 7.1 Details of public participation process

Please see Appendix C1 for a copy of the newspaper notice that was placed in “Die Beeld” 21 January 2019.

Please see Appendix C2 for a photo of the notices placed at the site.

Please see Appendix C3 for the notifications that was sent to all the neighbours as well as the Local and District Municipalities on 21 January 2019.

No responses were received from any I&AP.

##### 7.1.1 Summary of Public Participation Process

Potential I&AP	Sent 1 <sup>st</sup> letter	Sent (correct) 2 <sup>nd</sup> letter and invitation to public meeting	Comments received	Sent DSR	Comments received
Bosparadys Vogelstruisfontein (Nina Khourie)	√	N/A	No		
Gibson Trust (Ms Coetze)	√	N/A	No		
Syferfontein (Byron Cueman)	√	N/A	No		
DWS(Portia Chawane)	√	N/A	No		
Bojanala Platinum District Municipality (Innocent Sirovha, Mr)	√	N/A	No		
Rustenburg Local Municipality (Kelebogile Mekgoe)	√	N/A	Yes		

SAHRA (Ms Lungisa Malgas)	√	N/A	No		
North West Department of Roads and Transport	√	N/A	No		
Housing Development Agency (Amogelang Motlhale)	√	N/A	No		
Eskom	√	N/A	No		
Sanral (Victoria Bota)	√	N/A	No		
Wessa	√	N/A	No		
Birdlife South Africa	√	N/A	No		

**7.2 Summary of issues raised**

Interested and Affected Parties		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section of reference in this report
<b><u>AFFECTED PARTIES</u></b>					
<b>Landowner/s</b>					
None (land is owned by applicant)					
<b>Lawful occupier/s of the land</b>					
None					
<b>Landowners or lawful occupiers on adjacent properties</b>	<b>X</b>				
Bosparadys Vogelstruisfontein (Nina Khourie)	X	None			
Gibson Trust (Ms Coetze)		None			
Syferfontein (Byron Cueman)	X	None			
Bosparadys Vogelstruisfontein	X	None			
<b>Municipal councillor</b>					
<b>Municipality</b>	<b>X</b>				
Bojanala Platinum District	X	None			

Interested and Affected Parties		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section of reference in this report
Municipality (Innocent Sirovha, Mr)					
Rustenburg Local Municipality (Kelebogile Mekgoe)	X	None	Official requested a copy of the draft Scoping report	EAP sent a copy of the draft Scoping Report. Please see attached in Appendix D 3.	
<b>Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWS</b>					
SAHRA (Ms Lungisa Malgas)	X	None			
North West Department of Roads and Transport		None			
Housing Development Agency (Amogelang Motlhale)		None			
Eskom		None			
Sanral (Victoria Bota)		None			
Wessa		None			
Birdlife South Africa		None			
<b>Communities</b>					
None					
<b>Dept. Land Affairs</b>					
None					
<b>Traditional Leaders</b>					
None					
<b>Dept. Environmental Affairs</b>					



Interested and Affected Parties		Date comments received	Issues raised	EAPs response to issues as mandated by the applicant	Section of reference in this report
Department of Economic Development, Environment, Conservation and Tourism (Ms. Q. Imasiku)	Yes	29/10/2020	<ul style="list-style-type: none"> <li>- A3 Layout plan</li> <li>- Sewage disposal method</li> <li>- Detailed information regarding solid waste management</li> <li>- Consultation with DWS</li> <li>- Consultation with SAHRA</li> <li>- Specialist studies</li> <li>- Draft EIA report must be sent to all I&amp;AP</li> <li>- EMPr must be included</li> </ul>	All the information requested in the comments received from DEDECT was incorporated in the Draft EIA report.	
<b>Other Competent Authorities affected</b>					
<b><u>OTHER AFFECTED PARTIES</u></b>					
<b><u>INTERESTED PARTIES</u></b>					
None					

## 8. ENVIRONMENTAL ISSUES AND POSSIBLE IMPACTS

### 8.1 Bio-physical environment

\* See 9.2 for methodology of calculating significance.

#### 8.1.1 Climate

The study area is located in climate zones 18S, 19S and 20S. It forms part of a warm semi-arid region on the interior plateau of South Africa. The area normally receives about 513mm of rain per year, with most rainfall occurring mainly during mid-summer. On average it receives the lowest rainfall (0mm) in June and the highest (101mm) in January. The monthly distribution of average daily maximum temperatures shows that the average midday temperatures for range from 19.3°C in June to 29.4°C in January. The region is the coldest during July when the mercury drops to 1.7°C on average during the night.

#### **Potential impact on climate:**

- None

#### 8.1.2 Landtype (soils and geology)

The proposed development is located on landtypes Ba43, Ba44 and Fb14 in the Transvaal Basin. The Transvaal Basin is one of three basins of the Transvaal Supergroup on the Kaapvaal craton. The evolution of this 2.65 – 2.05 Ga Neoproterozoic – Palaeoproterozoic basin is thought to have been derived largely from magmatism, palaeoclimate and eustasy, while plate tectonics played an intermittent role. The supergroup is made up of basal 'protobasinal' rocks, upon which followed the Black Reef Formation, Chuniespoort Group and the uppermost Pretoria Group. The area is characterised by sediments of mostly shale with less quartzite and conglomerate. Carbonates, volcanic rock, breccias and diamictites also occur. Bronzite, harzburgite, gabbro and norite are also found in the area. Soils are mostly deep, red-yellow, apedal and freely drained with high base status and with some vertic or melanic clays.

The following rock and soil types occur on the relevant landtypes:

Msinga Hu26, Williamson Gs16, Mispah Ms10, Klipfontein Ms11, Kanonkop Gs13, Southwold Cv26, Glencoe Gc26, Sibasa We13, Rietvlei We12, Doveton Hu27, Makatini Hu37, Rensburg Rg20, Chinyika Wo21, Lichtenburg Hu23, Avalon Av26, Valsrivier Va40, Lindley Va41, Glendale Sd21, Shortlands Sd22, Sibasa We13, Trevanian Gs17, Leeufontein Oa16, Jozini Oa36, Highflats Oa17, Dundee Du10, Gelykvlakte Ar20 and Ofazi Cv23.

The geology consists mainly of Pretoria shale, slate and quartzite with Hekpoort lava and occasional diabase sills. Crests and scarps usually occur on quartzite and footslopes are located on shale, slate or diabase covered by mixed colluvium. There is sporadic occurrence of Chuniespoort Group in the south.

#### **Potential impact on soils and geology:**

Impacts associated with the construction and operation of the resort.

- Contamination of soils due to leakages from construction vehicles entering and exiting the site.
- Soil pollution due to ineffective waste management.
- Soil pollution due to poor ablution facilities.
- Soil erosion caused by land clearance and construction activities.

<b>Specific risks identified and reversibility/avoidance:</b>						
1) Contamination of soils due to leakages from construction vehicles entering and exiting the site.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Study area	Temporary	Temporary	40-70%	Probable	Low	Negative
This impact is not reversible, but can be completely avoided by the following measures: <ul style="list-style-type: none"> <li>• Vehicles utilising the road infrastructure should be serviced regularly and in a good condition.</li> </ul>						
2) Soil pollution due to ineffective waste management.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Local	Short-term	Short-term	70-90%	Probable	Medium	Negative
This impact is not reversible, but can be completely avoided by the following measures: <ul style="list-style-type: none"> <li>• General waste will be collected in bins, recycled as far as possible and disposed of at a licenced facility.</li> <li>• A registered waste removal company will be contracted to remove recyclable waste from the site and to be on call for spill clean-up in case of an emergency spill occurring.</li> </ul>						
3) Soil pollution due to poor ablution facilities.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Local	Short-term	Short-term	70-90%	Probable	Medium	Negative
This impact is not reversible, but can be completely avoided by the following measures: <ul style="list-style-type: none"> <li>• Chemical toilets should be provided for workers on the site.</li> </ul>						
4) Soil erosion caused by land clearance and construction activities.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
On site	Medium term	Medium term	40-70%	Probable	Low	Negative
This impact can't be avoided, but can be sufficiently mitigated through the correct management measures: <ul style="list-style-type: none"> <li>• All steep slopes and open drainage areas should be planted with vegetation before commencement of the Operational Phase.</li> </ul>						

### 8.1.3 Ecology and sensitive habitats

#### Rand Highveld Grassland

The northern 798.41 ha of the property historically consists of Rand Highveld Grassland which is an endangered vegetation type located in the Mesic Highveld Grassland Bioregion of the Grassland Biome (Appendix A). According to the South African National Spatial Biodiversity Assessment of 2004 about 58.5% of the vegetation type remains. It has a conservation target of 24% and currently only 0.9% is statutorily conserved in the Kwaggavoetpad, Van Riebeeck Park, Bronkhorstspuit and Boskop Dam Nature Reserves and in private conservation areas (e.g. Doornkop, Zemvelo, Rhenosterpoort and Mpopomeni).). Almost half has been transformed by cultivation, plantations, urbanisation or dam-building. Scattered aliens (most prominently *Acacia mearnsii*) occur in about 7% of this unit. Erosion is classified as moderate to high in 7% of this vegetation type.

The proposed development will have an impact on 1.4ha of land in this vegetation type.

### **Gauteng Shale Mountain Bushveld**

The southern 610.61 ha of the property historically consists of Gauteng Shale Mountain Bushveld which is classified as Vulnerable and located in the Central Bushveld Bioregion of the Savanna Biome (Appendix A). According to the South African National Spatial Biodiversity Assessment of 2004 about 79.4% of the vegetation type remains. It has a conservation target of 24% and currently only 0.4% is statutorily conserved the Skanskop and Hartbeesthoek Nature Reserves, Magaliesberg Nature Area and Groenkloof National Park. Additionally, with 1% conserved in other reserves including the John Nash Nature Reserve, Cheetah Park and Hartbeesthoek Radio Astronomy Observatory. About 21% is transformed mainly by urban and built-up areas, mines and quarries, cultivation and plantations. Wattles (*Acacia mearnsii*) are a common invasive plant occurring in places throughout this vegetation type. Erosion is classified as very low to low.

The proposed development will have an impact on 290.46ha of land in this vegetation type.

### **Moot Plains Bushveld**

The north-eastern 25.57ha southern 610.61 ha of the property historically consists of Moot Plains Bushveld which is classified as Vulnerable and located in the Central Bushveld Bioregion of the Savanna Biome (Appendix A). According to the South African National Spatial Biodiversity Assessment of 2004 about 72.5% of the vegetation type remains. It has a conservation target of 19% and currently only 13% is statutorily conserved mainly in the Magaliesberg Nature Area. About 28% is transformed mainly by cultivation and urban and built-up areas. Very scattered to sometimes dense patches of aliens occur in places including *Cereus jamacaru*, *Eucalyptus* species, *Jacaranda mimosifolia*, *Lantana camara*, *Melia azedarach* and *Schinus* species. Erosion is classified mainly as very low to low and moderate in some areas.

The proposed development will have no impact on this vegetation type.

Potential impact on vegetation:

- Damage and loss of vegetation of conservation significance.
- Proliferation of exotic vegetation in disturbed areas.

### **Sensitive areas**

The property contains 337.82ha of terrestrial Critical Biodiversity Area (CBA) 1, 1096.71ha of terrestrial CBA 2, 14.06ha of aquatic CBA 1, 58.13ha of aquatic CBA 2 and 93.69ha of aquatic Ecological Support Area (ESA) 1 (Appendix A).

The proposed development will have no impact on the areas classified as terrestrial CBA 1 or on any of the areas classified as aquatic CBA 1 or aquatic CBA 2. It will have an impact on 82.23ha of terrestrial CBA 1, 209.64ha of terrestrial CBA 2, 8.8ha of aquatic CBA 1, 37.22ha of aquatic CBA 2 and on 26.41ha of aquatic ESA 1 (Appendix A).

Potential impact on sensitive habitats:

- Loss of sensitive indigenous vegetation.
- The introduction and spreading of exotic invasive weed species at cleared areas.
- Loss of habitat of conservation importance.
- Loss of terrestrial fauna of conservation importance.
- Obstruction to animal movement corridors.

**Specific risks identified and reversibility/avoidance:**

1) Loss of sensitive indigenous vegetation.

Extent	Duration	Severity	Certainty	Probability	Significance	Status
Study area	Permanent	Permanent	>90%	Definite	Very high	Negative

- In the event of any protected or Declining species being recorded within the approved development site, permission for the removal of such species should be obtained from the Permitting Office of DEDECT, and the appropriate in situ and / or ex situ conservation measures should be developed and implemented with the approval of the DEDECT conservation authorities. Where feasible, protected or Declining species can be translocated to degraded or untransformed parts of the study area which provide potentially suitable habitat, but such translocations will have to be carried out in a way that ensures no ecological degradation of the host habitat occurs, and will have to be evaluated by an ecologist for each species and each potential translocation area. Alternatively, protected or Declining species can be rescued and donated to appropriate conservation and research institutions such as the Walter Sisulu National Botanical Garden (Roodepoort) or the Pretoria National Botanical Garden of SANBI.
- Where possible, development should avoid habitat identified with high ecological sensitivity.
- According to the AIS regulations all declared alien weeds must be effectively controlled or eradicated.

2) The introduction and spreading of exotic invasive weed species at cleared areas.

Extent	Duration	Severity	Certainty	Probability	Significance	Status
Local	Short-term	Medium term	70-90%	Highly probable	Medium	Negative

3) Loss of habitat of conservation importance.

Extent	Duration	Severity	Certainty	Probability	Significance	Status
Study area	Permanent	Permanent	>90%	Definite	Very high	Negative

This impact is not reversible, but can be completely avoided by the following measures:

- In the event of any protected or Declining species being recorded within the approved development site, permission for the removal of such species should be obtained from the Permitting Office of DEDECT, and the appropriate in situ and / or ex situ conservation measures should be developed and implemented with the approval of the DEDECT conservation authorities. Where feasible, protected or Declining species can be translocated to degraded or untransformed parts of the study area which provide potentially suitable habitat, but such translocations will have to be carried out in a way that ensures no ecological degradation of the host habitat occurs, and will have to be evaluated by an ecologist for each species and each potential translocation area. Alternatively, protected or Declining species can be rescued and donated to appropriate conservation and research institutions such as the Walter Sisulu National Botanical Garden (Roodepoort) or the Pretoria National Botanical Garden of SANBI.
- Where possible, development should avoid habitat identified with high ecological sensitivity.
- According to the AIS regulations all declared alien weeds must be effectively controlled or eradicated.

4) Loss of terrestrial fauna of conservation importance.

Extent	Duration	Severity	Certainty	Probability	Significance	Status
Study area	Permanent	Permanent	>90%	Definite	Very high	Negative

- In the event of any protected or Declining species being recorded within the approved development site, permission for the removal of such species should be obtained from the Permitting Office of DEDECT, and the appropriate in situ and / or ex situ conservation measures should be developed and implemented with the approval of the DEDECT conservation authorities. Where feasible, protected or Declining species can be translocated to degraded or untransformed parts of the study area which provide potentially suitable habitat, but such translocations will have to be carried out in a way that ensures no ecological degradation of the host habitat occurs, and will have to be evaluated by an ecologist for each species and each potential translocation area. Alternatively, protected or Declining species can be rescued and donated to appropriate conservation and research institutions such as the Walter Sisulu National Botanical Garden (Roodepoort) or the Pretoria National Botanical Garden of SANBI.
- Where possible, development should avoid habitat identified with high ecological sensitivity.
- According to the AIS regulations all declared alien weeds must be effectively controlled or eradicated.
- A Water Use Licence needs to be applied for.

5) Obstruction to animal movement corridors.

Extent	Duration	Severity	Certainty	Probability	Significance	Status
Study area	Permanent	Permanent	>90%	Definite	Very high	Negative
<ul style="list-style-type: none"> <li>In the event of any protected or Declining species being recorded within the approved development site, permission for the removal of such species should be obtained from the Permitting Office of DEDECT, and the appropriate in situ and / or ex situ conservation measures should be developed and implemented with the approval of the DEDECT conservation authorities. Where feasible, protected or Declining species can be translocated to degraded or untransformed parts of the study area which provide potentially suitable habitat, but such translocations will have to be carried out in a way that ensures no ecological degradation of the host habitat occurs, and will have to be evaluated by an ecologist for each species and each potential translocation area. Alternatively, protected or Declining species can be rescued and donated to appropriate conservation and research institutions such as the Walter Sisulu National Botanical Garden (Roodepoort) or the Pretoria National Botanical Garden of SANBI.</li> <li>Where possible, development should avoid habitat identified with high ecological sensitivity.</li> <li>According to the AIS regulations all declared alien weeds must be effectively controlled or eradicated.</li> </ul>						

A site layout and composite ecological map with sensitive areas is included as Appendix F.

#### 8.1.4 Topography

Steep slopes are inherently sensitive to change. In keeping with current developments in the EIA policies in the country steep slopes have been identified in the area. The site is approximately 1600 meters above average mean sea level.

#### **Potential impact on topography:**

- The proposed development has been designed to follow the natural occurring topography and should not have an impact on topography.

#### 8.1.5 Current land use and general status

The proposed is located on unimproved (natural) grassland and savanna. It is neighbored by Urban Build up areas and located in the municipal development focus area. Due to the topography the site is not suitable for high intensity agriculture and the development of a tourism facility will be a good use of the available land.

#### **Potential impact on land use practices:**

- The unavailability of land for urban development.
- Increase in tourism related infrastructure and activities.

#### **Specific risks identified and reversibility/avoidance:**

1) The unavailability of land for urban development.

Extent	Duration	Severity	Certainty	Probability	Significance	Status
			y			

On site	Permanent	Permanent	>90%	Definite	High	Negative
This impact is not reversible or avoidable.						
<ul style="list-style-type: none"> <li>No development should take place outside of the site boundary.</li> </ul>						
2) Increase in tourism related infrastructure and activities.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Regional or Provincial	Permanent	Permanent	>90%	Definite	Very high	Positive
No mitigation suggested.						

### 8.1.6 Air quality

The site is located adjacent to Molote development and any air pollution will have an impact on the village.

#### Possible impact on air pollution levels:

- Dust generation during Construction Phase.
- Vehicle emissions during Construction and Operational Phases.

<b>Specific risks identified and reversibility/avoidance:</b>						
1) Increase in dust levels, during the Construction Phase.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Local	Temporary	Temporary	70-90%	Probable	Low	Negative
This impact is not reversible, but can be completely avoided by the following measures:						
<ul style="list-style-type: none"> <li>Dust suppression should be implemented during construction activities.</li> </ul>						
2) Air pollution caused by emissions from construction vehicles.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Local	Temporary	Temporary	70-90%	Probable	Low	Negative
This impact is not reversible, but can be completely avoided by the following measures:						
<ul style="list-style-type: none"> <li>Vehicles used at the site should be serviced regularly and in a good condition.</li> </ul>						

### 8.1.7 Water

The proposed development falls within the Crocodile (West) and Marico water management area. Economic activity in the water management area is dominated by the urban and industrial complexes of northern Johannesburg and Pretoria and platinum mining north-east of Rustenburg. It is the second most populous water management area in the country and has the largest proportionate contribution to the national economy. Aquifers are utilised extensively for urban and irrigation purposes and localised over-exploitation of groundwater occurs in the Molopo area.



The proposed development is located on an aquifer and surface water occur in areas where the aquifer has fractured to the surface. Some development activities will occur near the watercourses on the site and a water use licence will be applied for. Due to the prolific occurrence of surface and ground water on the property, a high risk of water pollution should be considered and waste management practices have to be strictly controlled to prevent this.

**Potential impact on water:**

- Surface and ground water pollution due to poor ablution practices.
- Surface and ground water pollution due to poor waste management practices.
- Alteration of flow of watercourses.
- Enhancement of wetlands occurring on the site.

Specific risks identified and reversibility/avoidance:						
1) Surface and ground water pollution due to poor ablution practices.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Regional / Provincial	Long term	Short-term	40-70%	Probable	Medium	Negative
This impact is not reversible, but can be completely avoided by the following measures: <ul style="list-style-type: none"> <li>• Chemical toilets should be provided for workers on the site.</li> </ul>						
2) Surface and ground water pollution due to poor waste management practices.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Local	Long term	Short-term	40-70%	Probable	Medium	Negative
This impact is not reversible, but can be completely avoided by the following measures: <ul style="list-style-type: none"> <li>• General waste will be collected in bins, recycled as far as possible and disposed of at a licenced facility.</li> <li>• A registered waste removal company will be contracted to remove recyclable waste from the site and to be on call for spill clean-up in case of an emergency spill occurring.</li> </ul>						
3) Alteration of flow of watercourses.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Study area	Permanent	Permanent	>90%	Highly probable	High	Negative
<ul style="list-style-type: none"> <li>• A Water Use Licence should be applied for.</li> </ul>						
4) Enhancement of wetlands occurring on the site.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Local	Permanent	Long-term	70-90%	Probable	Medium	Positive
Proposed mitigation and management: <ul style="list-style-type: none"> <li>○ Regular clean-up programs must be applied at and around the site to prevent litter and to ensure proper housekeeping practices.</li> </ul>						

- In order to contain oil and fuel spills, drip pans or PVC lining shall be provided for drip pans. Spill kits be readily available on site and in every vehicle.
- Existing roads / tracks should be used wherever possible.
- Any new tracks must be pre-approved by the ECO and landowner. It should be ensured that steep slopes and sensitive environments (e.g. watercourses) are avoided during the planning of the new routes.
- Any stock piles that start to erode significantly or cause dust problems, should be covered with hessian or a plastic cover.
- To prevent storm water damage, the increase in storm water run-off resulting from mining activities must be estimated and the drainage system assessed accordingly, to prevent downstream impacts on water resources (including but not limited to: scouring, sedimentation, erosion and undercutting).
- Water should be used sparingly and it should be ensured that no water is wasted e.g. regular inspection of pipes to ensure that no leaks occur.
- Water tanks should be regularly inspected to ensure that no leaks occur.

## 8.2 Human environment

### 8.2.1 Cultural heritage

Historical kraals occur on the proposed development. The resort road will be located within 500m of the kraals and a heritage impact assessment will be required in order to ensure that impact on the kraals are avoided.

#### Potential impact on cultural heritage:

- Damage to the heritage resource (historical kraal) during Construction and Operational Phases.

#### Specific risks identified and reversibility/avoidance:

1) Damage to the heritage resource (historical kraal) during Construction and Operational Phases.

Extent	Duration	Severity	Certainty	Probability	Significance	Status
Study area	Permanent	Permanent	40-70%	Probable	Low	Negative

This impact is not reversible, but can be completely avoided by the following measures:

- A Heritage Impact Assessment should be conducted to determine the exact location of heritage resources, possible impacts and measures to be implemented to avoid these impacts completely.

### 8.2.2 Socio-economic environment

The Rustenburg Local Municipality is a Category B municipality situated within the Bojanala Platinum District in the North West Province. It is one of the five municipalities in the district. It is home to Boekenhoutfontein, the farm of Paul Kruger, president of the South African Republic. Rustenburg is a large town situated at the foot of the Magaliesberg Mountain Range. Rustenburg (meaning 'town of rest' or 'resting place') was proclaimed a township in 1851. This large town is situated some 112km north-west and is a 90-minute drive from both Johannesburg and Pretoria. It is a malaria-free area. It is the fastest growing municipality in South Africa and the most populous municipality in the North West Province.

Rustenburg Local Municipality covers a total area of 3 416km<sup>2</sup> and includes the towns/cities of Hartbeesfontein-A, Marikana, Phatsima, Rustenburg and Tlhabane. The main economic sectors are mining and trade.

Demographic details for are listed below:

	<b>2016</b>	<b>2011</b>
<b>Population</b>	626 522	549 575
<b>Age Structure</b>		
Population under 15	28.1%	24.1%
Population 15 to 64	68.9%	72.5%
Population over 65	3.0%	3.4%
<b>Dependency Ratio</b>		
Per 100 (15-64)	45.2	37.9
<b>Sex Ratio</b>		
Males per 100 females	120.9	121.8
<b>Population Growth</b>		
Per annum	2.98%	n/a
<b>Labour Market</b>		
Unemployment rate (official)	n/a	26.4%
Youth unemployment rate (official) 15-34	n/a	34.7%
<b>Education (aged 20 +)</b>		
No schooling	4.7%	5.4%
Matric	34.6%	31.0%
Higher education	7.4%	8.9%
<b>Household Dynamics</b>		
Households	262 576	199 044
Average household size	2.4	2.5
Female headed households	24.3%	26.4%
Formal dwellings	68.1%	68.7%
Housing owned	45.0%	31.4%
<b>Household Services</b>		
Flush toilet connected to sewerage	52.9%	52.7%
Weekly refuse removal	67.1%	69.2%
Piped water inside dwelling	28.5%	35.8%
Electricity for lighting	83.7%	83.0%

The size of the Molote area has brought about a situation where there are areas that are fairly well developed in contrast with other areas, which have developed very slowly. Because of the scale of the municipal area, communities in the area are ignorant of fundamental environmental principles such as water saving and pollution management. Tourism has been identified as a tool to develop the area and strategies have been put in place in order to stimulate tourism growth in the Molote area and to develop opportunities and market the tourism within the municipality. There is a need to stimulate community tourism structures and other stakeholders involved in tourism. Research indicates that 1 new

job is created for every 11 tourists and for every job created a further 5 jobs opportunities are created indirectly. It is also pointed out in these policy documents that tourism has the ability to act as a stimulant and catalyst for economic employment growth and that tourism potential should be identified and exploited. The proposed development will create a tourism node and jobs and is thus in line with the spatial growth and economic contribution of the Molote area.

**Potential impact on socio-economics:**

- The construction and operation of the proposed operation will provide employment opportunities to the local communities.
- An increase in tourism related infrastructure and activities in the region.
- An increase in environmental knowledge in the region.
- Safety risk to local community.
- Safety risk for workers working in close proximity to existing services such as electric cables.

Working in close proximity to services such as electric cables.

<b>Specific risks identified and reversibility/avoidance:</b>						
1) The construction and operation of the proposed operation will provide employment opportunities to the local communities.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Regional/ Provincial	Short term	Medium	>90%	Definite	Very high	Positive
No mitigation suggested.						
2) An increase in tourism related infrastructure and activities in the region.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Regional/ Provincial	Permanent	Permanent	>90%	Definite	Very high	Positive
No mitigation suggested.						
3) An increase in environmental knowledge in the region.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Regional/ Provincial	Permanent	Permanent	>90%	Definite	Very high	Positive
No mitigation suggested.						

4) Safety risk to local community.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
On site	Permanent	Short term	40%-70%	Improbable	Low	Negative
<p>This impact can be avoided through the implementation of the correct safety and management measures.</p> <ul style="list-style-type: none"> <li>Access to the site should be controlled and only employees should be allowed on the site.</li> </ul>						
5) Safety risk for workers working in close proximity to existing services such as electric cables.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
On site	Permanent	Short term	40%-70%	Improbable	Low	Negative
<p>This impact can be avoided through the implementation of the correct safety and management measures.</p> <ul style="list-style-type: none"> <li>A Health and Safety Management Plan needs to be developed and implemented by all contractors involved in construction of the infrastructure.</li> </ul>						

### 8.2.3. Waste

Ablution facilities will be constructed at the caravan park and in public areas. The accommodation and administrative buildings will also be equipped with ablution facilities. Septic tank systems will be used. General waste will be collected in bins, recycled as far as possible and disposed of at a licenced facility. A registered waste removal company will be contracted to remove recyclable waste from the site and to be on call for spill clean-up in case of an emergency spill occurring.

#### Potential impact on waste:

- Soil pollution due to ineffective waste management.
- Surface water pollution due to ineffective waste management.
- Contamination of ground water as a result of poor waste management practices.

<b>Specific risks identified and reversibility/avoidance:</b>						
1) Soil pollution due to ineffective waste management.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Local	Short term	Short term	70%-90%	Probable	Medium	Negative
<p>This impact is not reversible, but can be completely avoided by the following measures:</p> <ul style="list-style-type: none"> <li>General waste will be collected in bins, recycled as far as possible and disposed of at a licenced facility.</li> <li>A registered waste removal company will be contracted to remove recyclable waste from the site and to be on call for spill clean-up in case of an emergency spill occurring.</li> </ul>						

2) Surface water pollution due to ineffective waste management.

Extent	Duration	Severity	Certainty	Probability	Significance	Status
Local	Long term	Short term	40%-70%	Probable	Medium	Negative

This impact is not reversible, but can be completely avoided by the following measures:

- General waste will be collected in bins, recycled as far as possible and disposed of at a licenced facility.
- A registered waste removal company will be contracted to remove recyclable waste from the site and to be on call for spill clean-up in case of an emergency spill occurring.

3) Contamination of ground water as a result of poor waste management practices

Extent	Duration	Severity	Certainty	Probability	Significance	Status
Local	Long term	Short term	40%-70%	Probable	Medium	Negative

This impact is not reversible, but can be completely avoided by the following measures:

- General waste will be collected in bins, recycled as far as possible and disposed of at a licenced facility.
- A registered waste removal company will be contracted to remove recyclable waste from the site and to be on call for spill clean-up in case of an emergency spill occurring.

### 8.2.4 Traffic

Traffic to the site will be increased due to tourists travelling to the facility.

**Potential impact on traffic:**

- Degradation of the access road to the site.

**Specific risks identified and reversibility/avoidance:**

1) Degradation of the access road to the site.

Extent	Duration	Severity	Certainty	Probability	Significance	Status
Local	Medium term	Medium term	70%-90%	Probable	Medium	Negative

This impact cannot be avoided, but can be minimised through correct management measures:

- Speed limits should be strictly enforced.

### 8.2.5 Noise

The increased traffic on the road will also increase the amount of noise. Hooting by vehicles will be prohibited as this is already causing a nuisance. The increase of people in the area and recreational activities taking place on the site will also increase the amount of noise produced.

**Potential impact on noise:**

- Increase in noise in the area.

<b>Specific risks identified and reversibility/avoidance:</b>						
1) Increase in noise in the area.						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Local	Temporary	Temporary	>90%	Definite	Low	Negative
This impact is not reversible or preventable, but can be mitigated and minimised. <ul style="list-style-type: none"> <li>• Construction activities should only take place during working hours (8h00 – 17h00), Monday to Saturday.</li> <li>• This impact is not reversible or preventable, but can be mitigated and minimised.</li> <li>• Speed limits should be adhered to at all times.</li> <li>• Hooting should be prohibited and signs stating this should be erected at the entrance.</li> <li>• Operations causing noise should only take place between normal working hours – Monday to Friday from 8h00 to 17h00.</li> </ul>						

### 8.2.6. Visual

The site will be visible from the access road, however it will be designed to fit in with the surrounding landscape and contribute to the general feeling of well-being in the area.

**Potential visual impact:**

- Reduction in visual quality of the area.

<b>Specific risks identified and reversibility/avoidance:</b>						
1) Reduction in visual quality of the area						
Extent	Duration	Severity	Certainty	Probability	Significance	Status
Local	Permanent	Medium term	70%-90%	Probable	Medium	Negative
This impact cannot be avoided, but can be minimised by the following measures: <ul style="list-style-type: none"> <li>• Infrastructure should be designed in such a way to fit in with the topography and colour scheme of the surrounding environment and contribute to a sense of general well-being.</li> </ul>						

**9. POTENTIAL IMPACTS**

**9.1 Full description of impacts and risks identified**

Impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts and the degree to which these impacts can be mitigated

9.1.1 Activity alternative 1 – Construction and operation of a holiday resort and lodge (preferred activity)

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
<b>Construction Phase</b>								
Contamination of soils due to leakages from construction vehicles entering and exiting the site.	2	1	1	3	3	Low	Negative	This impact is not reversible, but can be completely avoided by the following measures: Vehicles utilising the road infrastructure should be serviced regularly and in a good condition.
Soil pollution due to ineffective waste management.	3	2	2	2	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: General waste will be collected in bins, recycled as far as possible and disposed of at a licenced facility. A registered waste removal



Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								company will be contracted to remove recyclable waste from the site and to be on call for spill clean-up in case of an emergency spill occurring.
Soil pollution due to poor ablution facilities.	3	2	2	2	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: Chemical toilets should be provided for workers on the site.
Soil erosion caused by land clearance and construction activities.	1	3	3	3	3	Low	Negative	This impact can't be avoided, but can be sufficiently mitigated through the correct management measures: All steep slopes and open drainage areas should be planted with vegetation before commencement of the Operational Phase.

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
Loss of sensitive indigenous vegetation.	2	5	5	1	5	Very high	Negative	The entire proposed development (291.86ha) is located on indigenous vegetation and the terrestrial areas have been classified as CBA1 (82.23ha) and CBA2 (209.63ha). A biodiversity and ecological assessment should be conducted in order to determine the extent of impacts and the possibilities of managing and mitigating these impacts.
The introduction and spreading of exotic invasive weed species at cleared areas.	3	2	3	2	4	Medium	Negative	This impact can be avoided through the correct management measures: An Alien Vegetation Management Plan needs to be instituted identifying the existing and possible future extent of alien vegetation invasion and the correct treatment

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								measures to eradicate them.
Loss of habitat of conservation importance.	2	5	5	1	5	Very high	Negative	The entire proposed development (291.86ha) is located on indigenous vegetation and the terrestrial areas have been classified as CBA1 (82.23ha) and CBA2 (209.63ha). Sensitive aquatic areas at risk of being impacted include 8.83ha of CBA1, 37.22ha of CBA2 and 26.4ha of ESA1. A biodiversity and ecological assessment as well as a wetland delineation and assessment should be conducted in order to determine the extent of these impacts and the possibilities of managing and mitigating these impacts. A Water Use Licence needs to be applied for.

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
Loss of terrestrial fauna of conservation importance.	3	3	4	3	4	High	Negative	The entire proposed development (291.86ha) is located on indigenous vegetation and the terrestrial areas have been classified as CBA1 (82.23ha) and CBA2 (209.63ha). A biodiversity and ecological assessment should be conducted in order to determine the extent of these impacts and the possibilities of managing and mitigating these impacts.
Obstruction to animal movement corridors.	2	5	5	1	5	Very high	Negative	The entire proposed development (291.86ha) is located on indigenous vegetation and the terrestrial areas have been classified as CBA1 (82.23ha) and CBA2 (209.63ha). A biodiversity and ecological assessment should be conducted in

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								order to determine the extent of these impacts and the possibilities of managing and mitigating these impacts.
Loss of aquatic-dependent biodiversity.	3	3	3	3	3	Medium	Negative	Sensitive aquatic areas at risk of being impacted include 8.83ha of CBA1, 37.22ha of CBA2 and 26.4ha of ESA1. A biodiversity and ecological assessment as well as a wetland delineation and assessment should be conducted in order to determine the extent of these impacts and the possibilities of managing and mitigating these impacts.
Alteration to surface water flow.	2	5	5	1	4	High	Negative	Sensitive aquatic areas at risk of being impacted include 8.83ha of CBA1, 37.22ha of CBA2 and 26.4ha of ESA1. A wetland delineation and

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								assessment should be conducted in order to determine the extent of these impacts and the possibilities of managing and mitigating these impacts. A Water Use Licence should be applied for.
Surface water pollution due to ineffective waste management.	3	4	2	3	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: General waste will be collected in bins, recycled as far as possible and disposed of at a licenced facility. A registered waste removal company will be contracted to remove recyclable waste from the site and to be on call for spill clean-up in case of an emergency spill occurring.

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
Surface water pollution due to poor ablution facilities	4	4	2	3	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: Chemical toilets should be provided for workers on the site.
Ground water pollution due to poor waste management practices	3	4	2	3	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: General waste will be collected in bins, recycled as far as possible and disposed of at a licenced facility. A registered waste removal company will be contracted to remove recyclable waste from the site and to be on call for spill clean-up in case of an emergency spill occurring.
Ground water pollution due to poor	4	4	2	3	3	Medium	Negative	This impact is not reversible, but can be completely avoided by

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
ablution facilities								the following measures: Chemical toilets should be provided for workers on the site.
The unavailability of land for urban development	1	5	5	1	5	High	Negative	This impact is not reversible or avoidable. No development should take place outside of the site boundary.
An increase in dust during construction activities.	3	1	1	2	3	Low	Negative	This impact is not reversible, but can be completely avoided by the following measures: Dust suppression should be implemented during construction activities.
Air pollution caused by emissions from construction vehicles.	3	1	1	2	3	Low	Negative	This impact is not reversible, but can be completely avoided by the following measures: Vehicles used at the site should be serviced regularly and in a good condition.
Damage to heritage resources.	2	5	5	3	2	Low	Negative	This impact is not reversible, but can be completely avoided by



Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								the following measures: A Heritage Impact Assessment should be conducted to determine the exact location of heritage resources, possible impacts and measures to be implemented to avoid these impacts completely.
Safety risk to the local community.	1	5	2	3	2	Low	Negative	This impact can be avoided through the implementation of the correct safety and management measures. Access to the site should be controlled and only employees should be allowed on the site.
Safety risk for workers working in close proximity to existing services such as electric cables.	1	5	2	3	2	Low	Negative	This impact can be avoided through the implementation of the correct safety and management measures. A Health and Safety Management Plan needs

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								to be developed and implemented by all contractors involved in construction of the infrastructure.
The construction of the holiday resort will provide employment opportunities to the local communities.	4	2	3	1	5	High	Positive	No mitigation suggested.
Degradation of the access road to the site.	3	3	3	2	3	Medium	Negative	This impact cannot be avoided, but can be minimised through correct management measures: Speed limits should be strictly enforced.
Increase in noise in the area.	3	1	1	1	5	Low	Negative	This impact cannot be avoided, but can be minimised through correct management measures: Construction activities should only take place during working hours

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								(8h00 – 17h00), Monday to Saturday.
Reduction in visual quality of the area.	3	5	3	2	3	Medium	Negative	This impact cannot be avoided, but can be minimised by the following measures: Infrastructure should be designed in such a way to fit in with the topography and colour scheme of the surrounding environment and contribute to a sense of general well-being.
<b>Operational Phase</b>								
Contamination of soils due to leakages from vehicles entering and exiting the site.	1	5	2	3	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: Vehicles utilising the road infrastructure should be serviced regularly and in a good condition.
Air pollution caused by vehicles entering	3	1	1	2	3	Low	Negative	This impact is not reversible, but can be

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
and exiting the site.								completely avoided by the following measures: Vehicles utilising the road infrastructure should be serviced regularly and in a good condition.
Soil pollution due to ineffective waste management.	3	4	2	3	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: General waste will be collected in bins, recycled as far as possible and disposed of at a licenced facility. A registered waste removal company will be contracted to remove recyclable waste from the site and to be on call for spill clean-up in case of an emergency spill occurring.
Soil pollution due to poor ablution	4	4	2	3	3	Medium	Negative	All septic tanks have to be cleaned regularly.

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
facilities.								No ablution facilities other than the systems connected to septic tanks should be used.
Surface water pollution due to ineffective waste management.	3	4	2	3	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: General waste will be collected in bins, recycled as far as possible and disposed of at a licenced facility. A registered waste removal company will be contracted to remove recyclable waste from the site and to be on call for spill clean-up in case of an emergency spill occurring.
Surface water pollution due to ineffective ablution facilities.	4	4	2	3	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: All septic tanks have to be cleaned regularly.

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								No ablution facilities other than the systems connected to septic tanks should be used.
Enhancement of wetlands and watercourses on the site.	3	5	4	2	3	Medium	Positive	Sensitive aquatic areas at risk of being impacted include 8.83ha of CBA1, 37.22ha of CBA2 and 26.4ha of ESA1. A biodiversity and ecological assessment as well as a wetland delineation and assessment should be conducted in order to determine the extent of these impacts and the possibilities of managing and mitigating these impacts.
Contamination of ground water as a result of poor ablution practices.	4	4	2	3	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: All septic tanks have to be cleaned regularly.

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								No ablution facilities other than the systems connected to septic tanks should be used.
Contamination of ground water as a result of poor waste management practices.	3	4	2	3	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures: General waste will be collected in bins, recycled as far as possible and disposed of at a licenced facility. A registered waste removal company will be contracted to remove recyclable waste from the site and to be on call for spill clean-up in case of an emergency spill occurring.
Damage to heritage resources.	2	5	5	3	3	Medium	Negative	This impact is not reversible, but can be completely avoided by the following measures:

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								A Heritage Impact Assessment should be conducted to determine the exact location of heritage resources, possible impacts and measures to be implemented to avoid these impacts completely.
Degradation of the access road to the site.	3	3	3	2	3	Medium	Negative	This impact is not reversible or preventable, but can be mitigated and minimised. Speed limits should be adhered to at all times Vehicles accessing and leaving the site should not be overloaded.
Increase in noise in the area.	3	1	1	1	5	Low	Negative	This impact is not reversible or preventable, but can be mitigated and minimised. Speed limits should be adhered to at all times. Hooting should be prohibited and signs



Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance prior to mitigation	Status of Impact	Reversibility/Mitigation Measures to be Implemented
								stating this should be erected at the entrance. Operations causing noise should only take place between normal working hours – Monday to Friday from 8h00 to 17h00.
Increase in tourism related infrastructure and activities.	4	5	5	1	5	Very high	Positive	No mitigation suggested.
The operation of the holiday resort will provide employment opportunities to the local communities.	4	2	3	1	5	High	Positive	No mitigation suggested.
Increase in environmental knowledge in the area.	4	2	3	1	5	High	Positive	No mitigation suggested.

9.1.2 “No-go” alternative

Site to be used for agriculture development.

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
Contamination of soils due to leakages from construction vehicles entering and exiting the site.							No impact	No mitigation to be implemented since no activity will take place.
Soil pollution due to ineffective waste management.							No impact	No mitigation to be implemented since no activity will take place.
Soil pollution due to poor ablution facilities.							No impact	No mitigation to be implemented since no activity will take place.
Soil erosion caused by land clearance and construction activities.	2	5	5	1	5	Medium	Negative	No mitigation to be implemented since no activity will take place.
Loss of sensitive indigenous vegetation.	2	5	5	1	5	Medium	Negative	No mitigation to be implemented since no activity will take place.
The introduction and spreading of exotic invasive weed	2	5	5	1	5	Medium	Negative	No mitigation to be implemented since no

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
species at cleared areas.								activity will take place.
Loss of habitat of conservation importance.	2	5	5	1	5	Negative	Negative	No mitigation to be implemented since no activity will take place.
Loss of terrestrial fauna of conservation importance.	2	5	5	1	5	Medium	Negative	No mitigation to be implemented since no activity will take place.
Obstruction to animal movement corridors	2	5	5	1	5	Medium	Negative	No mitigation to be implemented since no activity will take place.
Loss of aquatic-dependent biodiversity.	2	5	5	1	5	Medium	Negative	No mitigation to be implemented since no activity will take place.
Alteration to surface water flow.							No impact	No mitigation to be implemented since no activity will take place.
Surface water pollution due to ineffective waste management.							No impact	No mitigation to be implemented since no activity will take place.

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
Surface water pollution due to poor ablution facilities	2	5	5	1	5	Medium	Negative	No mitigation to be implemented since no activity will take place.
Ground water pollution due to poor waste management practices							No impact	No mitigation to be implemented since no activity will take place.
Ground water pollution due to poor ablution facilities							No impact	No mitigation to be implemented since no activity will take place.
The unavailability of land for urban development	2	5	5	1	5	Medium	Negative	No mitigation to be implemented since no activity will take place.
An increase in dust during construction activities.	2	5	5	1	5	Medium	Negative	No mitigation to be implemented since no activity will take place.
Air pollution caused by emissions from construction vehicles.	2	5	5	1	5	Medium	Negative	No mitigation to be implemented since no activity will take place.
Damage to heritage	2	5	5	1	5	Medium	Negative	No mitigation to be implemented since no

Specific Impact & Risk	Extent	Duration	Severity	Degree of Certainty	Probability	Significance	Status of Impact	Reversibility/Mitigation Measures to be Implemented
resources.								activity will take place.
Safety risk to the local community.							No impact	No mitigation to be implemented since no activity will take place.
Safety risk for workers working in close proximity to existing services such as electric cables.							No impact	No mitigation to be implemented since no activity will take place.
The construction of the holiday resort will provide employment opportunities to the local communities.	4	2	3	1	5	High	Positive	No mitigation to be implemented since no activity will take place.
Degradation of the access road to the site.							No impact	No mitigation to be implemented since no activity will take place.
Increase in noise in the area.	2	5	5	1	5	Medium	Negative	No mitigation to be implemented since no activity will take place.

**9.2 Methodology of determining impacts**

- Various site visits were conducted by the EAP and information was gathered regarding the nature of the process and the baseline environment.
- Comments were gathered from I&APS in order to identify additional possible impacts that may have been overlooked.
- An Air Quality Specialist was appointed to determine the impacts and mitigation related to air quality.
- The significance of identified impacts were determined as follows:
- **Extent**

The extent of the impact refers to the spatial dimension to which an impact will be felt (i.e. site, study area, local, regional, or national scale). The criteria for rating the impact extent are described in more detail in Table 1.

**Table 1: Extent of Impact**

Extent					
Rating	1	2	3	4	5
Description	On site or the impact will be restricted to its immediate area	Study area Or the impact will be restricted to the site or route	Local Or the impact will affect an area up to 5 km from the site and route	Regional/Provincial Or the impact will be felt on a Local, district municipal or Provincial level	National/International Or the maximum extent of any impact

- **Duration**

In order to accurately describe the impact it is necessary to understand the duration and persistence of an impact in the environment. The criteria for rating the duration of the impact is described in more detail in Table 2.

**Table 2: Duration of Impact**

Duration					
Rating	1	2	3	4	5
Description	Temporary Or the impact will occur very sporadically or less than 1 year from commencement of activity	Short-term Or the impact will continue to occur for a period between 1 to 5 years from commencement of activity	Medium term Or the impact will continue to occur for a period between 5 to 10 years from commencement of activity	Long term Or the impact will continue to occur for a period longer than 10 years from commencement of activity	Permanent Or the impact will be continue until the conclusion of activity

- Severity**

A description must be given as to whether an impact is destructive, or benign. It determines whether the intensity of the impact on the natural environment or society is permanently, significantly changes its functionality, or slightly alters it. The mitigation potential must be determined for each impact. If limited information or expertise exists, estimates based on experience will be made. The criteria for rating the severity of the impact are described in more detail in Table 3.

**Table 3: Severity of Impact**

Severity					
Rating	1	2	3	4	5
Description	Temporary impact easily reversible. Insignificant change or deterioration or disturbance Or improvement of	Short-term impact. Low cost to mitigate Small Moderate change or deterioration or disturbance	Medium term impact, which require substantial cost to mitigate. Potential to mitigate and potential to	Long term impact High cost to mitigate Possible to mitigate Very significant change or deterioration or	Permanent impact Prohibitive cost to mitigate Little or no mechanism to mitigate

	natural and social environments	Or improvement of natural and social environments	reverse impact Significant change or deterioration or disturbance Or improvement of natural and social environments	disturbance Or improvement of natural and social environments	Irreversible Disastrous change or deterioration or disturbance or improvement of natural and social environments
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- **Degree of certainty**

As with all studies it is not possible to be 100% certain of all facts and for this reason a standard “Degree of certainty” scale is used as discussed in Table 4.

**Table 4: Degree of Certainty of Impact Occurrence**

Degree of Certainty					
Rating	1	2	3	4	5
Description	Definite Or more than 90% sure of the fact or the likelihood of the impact occurring	Probable Or between 70% and 90% sure of the fact or the likelihood of the impact occurring	Possible Or between 40% and 70% sure of the fact or the likelihood of the impact occurring	Unsure Or less than 40% sure of a the fact or the likelihood of the impact occurring.	Unknown or the consultant or specialist believes an assessment is not possible even with additional research.

- **Probability**

The criteria used for rating the likelihood of impact occurrence are described in more detail in Table 5.



**Table 5: Probability of Impact Occurrence**

Probability					
Rating	1	2	3	4	5
Description	Impossible Or the impact will not occur	Improbable Or the possibility of the impact occurring is very low	Probable Or there is a possibility that the impact will occur, provision must be provided	Highly probable Or It is most likely that the impact will occur at some stage, provision must be provided	Definite Or the impact will take place regardless of any prevention plans and there can only be relied on mitigation measures to contain the impact

- **Significance**

Evaluating the significance of environmental impacts is a critical component of impact analysis. The matrix uses the consequence and the probability of the different activities and associated impacts to determine the significance of the impacts. Consequence is determined by the sum total of criteria like extent, duration and severity, degree of certainty of impact as well as compliance to applicable legislation. Values of 1-5 are assigned to each of the different criteria to determine the overall consequence, which is divided by 3 to give a criterion rating.

The overall consequence and probability rating are multiplied to give a final significance rating. The values as shown in the following table are then used to rank the significance. It must be said however that in the end, a subjective judging of an impact can still be done, but the reasons for doing so must be qualified. The matrix used to determine the significance of each of the identified impact in this study is shown in Table 6.

**Table 6: Impact Significance Matrix**

Impact Significance Matrix
----------------------------

Rating	Very Low	Low	Medium	High	Very High
	1-4	5-10	11-15	16-20	21-25+
Description	There is little or no impact at all	Impact is of a low order and therefore likely to have little real effect In the case of adverse impacts: mitigation and or remedial activity is either easily achieved or little will be required, or both In the case of beneficial impacts, alternative means for achieving this benefit are likely to be easier, cheaper, more effective, less time consuming, or some combination of these.	Impact is real but not substantial in relation to other impacts, which might take effect within the bounds of those which could occur In the case of adverse impacts: mitigation and or remedial activity are both feasible and fairly easily possible In the case of beneficial impacts: other means of achieving this benefit are about equal in time, cost, effort, etc.	Impact is of substantial order within the bounds of impacts which could occur In the case of adverse impacts: mitigation and or remedial activity are feasible but difficult, expensive, time-consuming or some combination In the case of beneficial impacts, other means of achieving this benefit are feasible but they are more difficult, expensive, time-consuming or some combination of these.	Of the highest order possible within the bounds of impacts which could occur In the case of adverse impacts: there is no possible mitigation and or remedial activity which could offset the impact In the case of beneficial impacts, there is no real alternative to achieving this benefit.

**Table 7: How to Apply the Rating Scale**

Consequence
Impact Significance = (Extent + Duration + Severity + Degree of Certainty)/3] X Probability



### 9.3 Summary of positive and negative impacts

<b>Construction Phase</b>	
Contamination of soils due to leakages from construction vehicles entering and exiting the site.	Negative
Soil pollution due to ineffective waste management.	Negative
Soil pollution due to poor ablution facilities.	Negative
Soil erosion caused by land clearance and construction activities.	Negative
Loss of sensitive indigenous vegetation.	Negative
The introduction and spreading of exotic invasive weed species at cleared areas.	Negative
Loss of habitat of conservation importance.	Negative
Loss of terrestrial fauna of conservation importance.	Negative
Obstruction to animal movement corridors.	Negative
Loss of aquatic-dependent biodiversity.	Negative
Alteration to surface water flow.	Negative
Surface water pollution due to ineffective waste management.	Negative
Surface water pollution due to poor ablution facilities.	Negative
Ground water pollution due to poor waste management practices.	Negative
Ground water pollution due to poor ablution facilities.	Negative
The unavailability of land for urban development.	Negative
An increase in dust during construction activities.	Negative
Air pollution caused by emissions from	Negative

construction vehicles.	
Damage to heritage resources.	Negative
Safety risk to the local community.	Negative
Safety risk for workers working in close proximity to existing services such as electric cables.	Negative
The construction of the holiday resort will provide employment opportunities to the local communities.	Positive
Degradation of the access road to the site.	Negative
Increase in noise in the area.	Negative
Reduction in visual quality of the area.	Negative
<b>Operational Phase</b>	
Contamination of soils due to leakages from vehicles entering and exiting the site.	Negative
Air pollution caused by vehicles entering and exiting the site.	Negative
Soil pollution due to ineffective waste management.	Negative
Soil pollution due to poor ablution facilities.	Negative
Surface water pollution due to ineffective waste management.	Negative
Surface water pollution due to ineffective ablution facilities.	Negative
Enhancement of wetlands and watercourses on the site.	Positive
Contamination of ground water as a result of poor ablution practices.	Negative
Contamination of ground water as a result of poor waste management practices.	Negative
Damage to heritage resources.	Negative
Degradation of the access road to the site.	Negative

Increase in noise in the area.	Negative
Increase in tourism related infrastructure and activities.	Positive
The operation of the holiday resort will provide employment opportunities to the local communities.	Positive
Increase in environmental knowledge in the area.	Positive

#### 9.4 Reversibility of impacts

Risk or impact	Significance	Can impact be avoided? (Y/N)	Can impact be mitigated? (Y/N)	Significance after mitigation
<b>CONSTRUCTION PHASE</b>				
Contamination of soils due to leakages from construction vehicles entering and exiting the site.	Low	Y	Y	Very low
Soil pollution due to ineffective waste management.	Medium	Y	Y	Very low
Soil pollution due to poor ablution facilities.	Medium	Y	Y	Very low
Soil erosion caused by land clearance and construction activities.	Low	Y	Y	Very low
Loss of sensitive indigenous vegetation.	Very High	N	Y	Medium
The introduction	Medium	N	Y	Medium

Risk or impact	Significance	Can impact be avoided? (Y/N)	Can impact be mitigated? (Y/N)	Significance after mitigation
and spreading of exotic invasive weed species at cleared areas.				
Loss of habitat of conservation importance.	Very High	No	Y	Medium
Loss of terrestrial fauna of conservation importance.	High	N	Y	Medium
Obstruction to animal movement corridors.	Very High	N	Y	Medium
Loss of aquatic-dependent biodiversity.	Medium	N	Y	Low
Alteration to surface water flow.	High	N	Y	Medium
Surface water pollution due to ineffective waste management.	Medium	N	Y	Very low
Surface water pollution due to poor ablution facilities.	Medium	N	Y	Very low
Ground water pollution due to poor waste management practices.	Medium	Y	Y	Very low
Ground water pollution due to poor ablution	Medium	N	Y	Very low

Risk or impact	Significance	Can impact be avoided? (Y/N)	Can impact be mitigated? (Y/N)	Significance after mitigation
facilities.				
The unavailability of land for urban development.	High	N	Y	Medium
An increase in dust during construction activities.	Low	Y	Y	Low
Air pollution caused by emissions from construction vehicles.	Low	N	Y	Low
Damage to heritage resources.	Low	Y	N	Very low
Safety risk to the local community.	Low	Y	Y	Low
Safety risk for workers working in close proximity to existing services such as electric cables.	Low	Y	Y	Low
The construction of the holiday resort will provide employment opportunities to the local communities.	Medium	N	N	Medium
Degradation of the access road to the site.	Medium	N	Y	Low



Risk or impact	Significance	Can impact be avoided? (Y/N)	Can impact be mitigated? (Y/N)	Significance after mitigation
Increase in noise in the area.	Low	N	Y	Very low
Reduction in visual quality of the area.	Medium	N	Y	Low
<b>OPERATIONAL PHASE</b>				
Contamination of soils due to leakages from vehicles entering and exiting the site.	Medium	Y	Y	Low
Air pollution caused by vehicles entering and exiting the site.	Low	N	Y	Very low
Soil pollution due to ineffective waste management.	Medium	Y	Y	Very low
Soil pollution due to poor ablution facilities.	Medium	Y	Y	Very low
Surface water pollution due to ineffective waste management.	Medium	Y	Y	Very low
Surface water pollution due to ineffective ablution facilities.	Medium	Y	Y	Very low
Enhancement of wetlands and watercourses on the site.	Medium	N	N	Medium

Risk or impact	Significance	Can impact be avoided? (Y/N)	Can impact be mitigated? (Y/N)	Significance after mitigation
Contamination of ground water as a result of poor ablution practices.	Medium	Y	Y	Very low
Contamination of ground water as a result of poor waste management practices.	Medium	Y	Y	Very low
Damage to heritage resources.	Medium	Y	N	Very low
Degradation of the access road to the site.	Medium	N	Y	Low
Increase in noise in the area.	Low	N	Y	Very low
Increase in tourism related infrastructure and activities.	Very High	N	N	Very high
The operation of the holiday resort will provide employment opportunities to the local communities.	High	N	N	High
Increase in environmental knowledge in the area.	High	N	N	High
<b>DECOMMISSIONING PHASE</b>				
The introduction and spreading	High	N	Y	Low

Risk or impact	Significance	Can impact be avoided? (Y/N)	Can impact be mitigated? (Y/N)	Significance after mitigation
of exotic invasive weed species at cleared areas.				
The rehabilitation process will enhance the scenic beauty of the area.	Very high	N (Positive impact)	N (Positive impact)	Very high

**9.5 Activities resulting in impacts**

Name of activity	Potential impact	Aspects affected	Phase	Significance before mitigation	Significance after mitigation
Use of access roads	Drainage disturbance	Increased turbidity as a result of storm water run-off from cleared areas and roads.	Pre-construction, Construction, Operational and Decommissioning Phases	High	Very low
	Surface water pollution	Chemical pollution of water as a result of leaks or spills from vehicles.		Low	Very low
	Noise	Elevated noise levels in the area as a result of the front-end loader and the movement of hauling trucks along the access route.		High	Very low
	Disturbance	Nuisance to the surrounding residents and livestock caused by excessive movement of construction vehicles or machinery on the property.		Low	Very low
	Air pollution	Increased levels of noxious gas emissions from construction vehicles and machinery.		Low	Very low
	Air pollution	Increase in dust levels, especially during the dry and windy season.		Low	Low
Construction of resort infrastructure	Soil pollution	Soil pollution caused by leakages and spills from vehicles and littering.	Pre-construction and Construction Phase	Low	Very low
	Surface water pollution	Contamination of surface water by the storage and disposal of construction and domestic waste.		Low	Low
	Disturbance of	Acceleration of erosion and loss of		High	Very low

Name of activity	Potential impact	Aspects affected	Phase	Significance before mitigation	Significance after mitigation
	land forms and soils	topsoil at cleared areas.			
	Drainage disturbance	Increased turbidity as a result of storm water run-off from cleared areas and roads.		High	Very low
	Surface water pollution	Chemical pollution of water as a result of leaks or spills from vehicles.		Low	Very low
	Surface water pollution	Decrease in water quality as a result of the transportation of stockpiled material (topsoil and infill material by means of wind and rain.		High	Low
	Groundwater pollution	Added pressure on water resources.		Low	Low
	Disturbance of aesthetic environment	Loss of sense of place.		Very high	Low
	Disturbance of aesthetic environment	Visual disturbance to surrounding residents as a result of the temporary structures and mining activities.		Very high	Low
	Noise	Elevated noise levels in the area as a result of the front-end loader and the movement of hauling trucks along the access route.		High	Very low
	Disturbance	Nuisance to the surrounding residents and livestock caused by		Low	Very low

Name of activity	Potential impact	Aspects affected	Phase	Significance before mitigation	Significance after mitigation
		excessive movement of construction vehicles or machinery on the property.			
	Air pollution	Increased levels of noxious gas emissions from construction vehicles and machinery.		Low	Very low
	Air pollution	Increase in dust levels, especially during the dry and windy season.		Low	Low
	Health, safety and security problems	Loss of human lives as a result of mining activities and the movement of construction vehicles on site.		Medium	Low
	Health, safety and security problems	Injuries to residents and construction workers as a result of mining activities and the movement of construction vehicles on site.		Medium	Low
	Health, safety and security problems	Increased criminal activities.		Low	Low
	Environmental protection	Increasing environmental awareness by educating community and contractors on the outlines of the EMP.		High	High
	Disturbance	Degradation of the access road.		Medium	Low
	Disturbance of land forms and soils	Loss of available agricultural land.		High	Low
	Ecological	Loss of indigenous vegetation		High	Low

Name of activity	Potential impact	Aspects affected	Phase	Significance before mitigation	Significance after mitigation
	disturbance				
	Ecological disturbance	Loss of wildlife habitat		High	Low
Chemical and fuel transportation	Soil pollution	Soil pollution caused by leakages and spills from vehicles and littering.	Construction and Operational Phases	Low	Very low
Equipment transportation	Soil pollution	Soil pollution caused by leakages and spills from vehicles and littering.	Construction and Operational Phases	Low	Very low
	Surface water pollution	Chemical pollution of water as a result of leaks or spills from vehicles.		Low	Very low
	Disturbance	Nuisance to the surrounding residents and livestock caused by excessive movement of construction vehicles or machinery on the property.		Low	Very low
	Air pollution	Increased levels of noxious gas emissions from construction vehicles and machinery.		Low	Very low
Waste removal and disposal	Soil pollution	Soil pollution caused by littering	Operational Phase	Low	Low
	Surface water pollution	Contamination of surface water caused by the storage and disposal of domestic waste.		Low	Low
Sewage removal and disposal	Surface water pollution	Contamination of surface water caused by the storage and disposal of domestic waste.	Operational Phase	Low	Low
General site-levelling and	Noise	Elevated noise levels in the area.	Decommissioning and Rehabilitation Phases	High	Very low
	Disturbance	Nuisance to the surrounding		Low	Very low

Name of activity	Potential impact	Aspects affected	Phase	Significance before mitigation	Significance after mitigation
reinstatement		residents and livestock caused by excessive movement of construction vehicles or machinery on the property.			
	Air pollution	Increased levels of noxious gas emissions from construction vehicles and machinery.		Low	Very low
	Air pollution	Increase in dust levels, especially during the dry and windy season.		Low	Low
	Health, safety and security	Loss of human lives as a result of mining activities and the movement of construction vehicles on site.		Medium	Low
	Health, safety and security	Injuries to residents and construction workers as a result of mining activities and the movement of construction vehicles on site.		Medium	Low
Soil amelioration and revegetation	Ecological disturbance	The introduction and spreading of exotic invasive weed species at cleared areas.	Decommissioning and Rehabilitation Phases	High	High
	Aesthetic environment	The rehabilitation process will enhance the scenic beauty of the area.		Very high	Very high
	Air pollution	Increase in dust levels, especially during the dry and windy season.		Low	Low



### 9.6 Summary of specialist reports

Study	Recommendations	Included in the report	Applicable section
Vegetation diversity assessment	<ul style="list-style-type: none"> <li>○ In the event of any protected or Declining species being recorded within the approved development site, permission for the removal of such species should be obtained from the Permitting Office of DEDECT, and the appropriate in situ and / or ex situ conservation measures should be developed and implemented with the approval of the DEDECT conservation authorities. Where feasible, protected or Declining species can be translocated to degraded or untransformed parts of the study area which provide potentially suitable habitat, but such translocations will have to be carried out in a way that ensures no ecological degradation of the host habitat occurs, and will have to be evaluated by an ecologist for each species and each potential translocation area. Alternatively, protected or Declining species can be rescued and donated to appropriate conservation and research institutions such as the Walter Sisulu National Botanical Garden (Roodepoort) or the Pretoria National Botanical Garden of SANBI.</li> <li>○ Where possible, development should avoid habitat identified with high ecological sensitivity.</li> <li>○ According to the AIS regulations all declared alien weeds must be effectively controlled or eradicated.</li> </ul>	Y	8.1.3 9.4
Baseline wetland study	A wetland and floodline determination were completed by the applicant. Results will be included in the Final EIAr.	Y	8.1.3
Cultural heritage assessment	A Heritage Assessment was included by the applicant. Results will be included in the Final EIAr.	Y	8.2.1

## 9.7 Motivation for alternative selection

The proposed alternative was selected as it will have minimal impact on the environment after mitigation measures have been implemented.

## 10. ENVIRONMENTAL IMPACT STATEMENT

### 10.1 Key findings of the environmental impact assessment

The final site map was created taking into account all the concerns raised by the public, specialist reports and impact assessment. If this map is followed, and if proper management and mitigation is implemented and rehabilitation is done and monitored, the impact can be kept relatively low. The site can be rehabilitated to its current status which will minimise the long-term impact of the proposed activity. The proposed activity should follow the guidelines of the final site map. Mitigation and management measures as stipulated in Sections 9 and 11 should be implemented. The rehabilitation and soil management must be done in accordance with the guidelines provided in the EMPr. Environmental audits should be conducted every two months during the Construction Phase and every six months during the Operational Phase. Rehabilitation monitoring should be conducted according to the EMPr. Rehabilitation should be ongoing while operation is taking place.

### 10.2 Summary of the positive and negative impacts

Specific impact or risk	Preferred activity (Activity alternative 1)	“No-go” alternative
<b>Construction Phase</b>		
Contamination of soils due to leakages from construction vehicles entering and exiting the site.	Negative	No impact
Soil pollution due to ineffective waste management.	Negative	No impact
Soil pollution due to poor ablution facilities.	Negative	Negative
Soil erosion caused by land clearance and construction activities.	Negative	Negative
Loss of sensitive indigenous vegetation.	Negative	Negative
The introduction and spreading of exotic invasive weed species at cleared areas.	Negative	No impact
Loss of habitat of conservation importance.	Negative	No impact

Specific impact or risk	Preferred activity (Activity alternative 1)	“No-go” alternative
Loss of terrestrial fauna of conservation importance.	Negative	No impact
Obstruction to animal movement corridors.	Negative	Negative
Loss of aquatic-dependent biodiversity.	Negative	No impact
Alteration to surface water flow.	Negative	No impact
Surface water pollution due to ineffective waste management.	Negative	No impact
Surface water pollution due to poor ablution facilities.	Negative	Negative
Ground water pollution due to poor waste management practices.	Negative	No impact
Ground water pollution due to poor ablution facilities.	Negative	No impact
The unavailability of land for urban development.	Negative	No impact
An increase in dust during construction activities.	Negative	No impact
Air pollution caused by emissions from construction vehicles.	Negative	No impact
Damage to heritage resources.	Negative	No impact
Safety risk to the local community.	Negative	No impact
Safety risk for workers working in close proximity to existing services such as electric cables.	Negative	Negative
The construction of the holiday resort will provide employment opportunities to the local communities.	Positive	No impact
Degradation of the access road to the site.	Negative	No impact
<b>Operational phase</b>		

Specific impact or risk	Preferred activity (Activity alternative 1)	“No-go” alternative
Contamination of soils due to leakages from vehicles entering and exiting the site.	Negative	No impact
Air pollution caused by vehicles entering and exiting the site.	Negative	No impact
Soil pollution due to ineffective waste management.	Negative	Negative
Soil pollution due to poor ablution facilities.	Negative	Negative
Surface water pollution due to ineffective waste management.	Negative	No impact
Surface water pollution due to ineffective ablution facilities.	Negative	Negative
Enhancement of wetlands and watercourses on the site.	Positive	No impact
Contamination of ground water as a result of poor ablution practices.	Negative	Negative
Contamination of ground water as a result of poor waste management practices.	Negative	No impact
Damage to heritage resources.	Negative	No impact
Degradation of the access road to the site.	Negative	No impact
Increase in noise in the area.	Negative	No impact
Increase in tourism related infrastructure and activities.	Positive	No impact
The operation of the holiday resort will provide employment opportunities to the local communities.	Positive	No impact
Increase in environmental knowledge in the area.	Positive	No impact

## **11. IMPACT MANAGEMENT OBJECTIVES AND OUTCOMES**

### **11.1 Ecological environment**

- Injudicious and unnecessary destruction of natural vegetation should be avoided at all costs.
- Plant species of conservation significance should be conserved as far as possible by means of:
  - Avoidance of unnecessary disturbance or destruction of their habitat.
  - If possible, developments that jeopardize any specimens or large populations of red data or protected species should be planned in such a way as to avoid the specimens or populations.
- The eradication of declared weed and invader plant populations in the study area is strongly advised. A management plan and proper follow-up strategy for the prevention of the spread or establishment of new populations of such species should be developed and enforced.
- Where necessary, temporary water control structures should be put in place to minimize erosion and to create a favourable habitat for the establishment of vegetation during and after rehabilitation/landscaping.
- A legitimate and well-designed rehabilitation plan must be set in place before quarrying commences and be strictly enforced on an on-going basis throughout the operational phase and thereafter.
- In the event of any protected or Declining species being recorded within the approved development site, permission for the removal of such species should be obtained from the Permitting Office of DEDECT, and the appropriate in situ and / or ex situ conservation measures should be developed and implemented with the approval of the DEDECT conservation authorities. Where feasible, protected or Declining species can be translocated to degraded or untransformed parts of the study area which provide potentially suitable habitat, but such translocations will have to be carried out in a way that ensures no ecological degradation of the host habitat occurs, and will have to be evaluated by an ecologist for each species and each potential translocation area. Alternatively, protected or Declining species can be rescued and donated to appropriate conservation and research institutions such as the Walter Sisulu National Botanical Garden (Roodepoort) or the Pretoria National Botanical Garden of SANBI.
- Where possible, development should avoid habitat identified with high ecological sensitivity.
- According to the AIS regulations all declared alien weeds must be effectively controlled or eradicated.

### **11.2 Landforms and soils**

- Drip trays must be used when refuelling and servicing construction vehicles or equipment. A spill “sock” should permanently be placed within the drip tray and replaced as and when required. Drip trays must be placed underneath stationary construction vehicles and the hazardous waste (e.g. fuel, oils etc.) taken to the nearest approved oil refiner or fuel recycling point for recycling.
- The existing road infrastructure as indicated in the land use map should be used, where possible.
- Care must be taken that unnecessary clearance of vegetation does not take place. The footprint of disturbance outside the Molote Resort Project area must be kept as small as possible, and must be rehabilitated as soon as possible.
- Regular clean-up programs must be applied at and around the site to prevent litter and to ensure proper housekeeping practices.

### **11.3 Surface water**

- Regular clean-up programs must be applied at and around the site to prevent litter and to ensure proper housekeeping practices.
- In order to contain oil and fuel spills, drip pans or PVC lining shall be provided for drip pans. Spill kits be readily available on site and in every vehicle.
- Existing roads / tracks should be used wherever possible.
- Any new tracks must be pre-approved by the ECO and landowner. It should be ensured that steep slopes and sensitive environments (e.g. watercourses) are avoided during the planning of the new routes.
- Any stock piles that start to erode significantly or cause dust problems, should be covered with hessian or a plastic cover.
- To prevent storm water damage, the increase in storm water run-off resulting from Molote Resort Project activities must be estimated and the drainage system assessed accordingly, to prevent downstream impacts on water resources (including but not limited to: scouring, sedimentation, erosion and undercutting).
- Water should be used sparingly and it should be ensured that no water is wasted e.g. regular inspection of pipes to ensure that no leaks occur.
- Water tanks should be regularly inspected to ensure that no leaks occur.
- Regular clean-up programs must be applied at and around the site to prevent litter and to ensure proper housekeeping practices.

#### **11.4 Groundwater**

- Drip trays must be used when refuelling and servicing construction vehicles or equipment. A spill “sock” should permanently be placed within the drip tray and replaced as and when required. Drip trays must be placed underneath stationary construction vehicles and the hazardous waste (e.g. fuel, oils etc.) taken to the nearest approved oil refiner or fuel recycling point for recycling.

#### **11.5 Aesthetic environment:**

- Care must be taken that unnecessary clearance of vegetation does not take place. The footprint of disturbance outside the Molote Resort Project area must be kept as small as possible, and must be rehabilitated as soon as possible.
- The rehabilitation and soil management must be done in accordance with the guidelines provided in the EMPr.
- Any stock piles that start to erode significantly or cause dust problems, should be covered with hessian or a plastic cover.
- Regular clean-up programs must be applied at and around the site to prevent litter and to ensure proper housekeeping practices.
- Access to the site should be pre-arranged with the landowner. Only authorised personnel may be permitted on site.
- The Molote Resort Project area and stockpiled material must be positioned and managed in an ecologically sound manner, minimising the potential negative impacts on the surrounding environment.
- It should be ensured that the personnel comply with speed restriction of 20 km per hour within the site boundaries to reduce the generation of dust.
- Disturbance should be limited to the minimum and agreed upon footprint, and no vehicle turning, parking or access, or other form of disturbance e.g. vegetation clearance, soil compaction or excavation should be allowed outside these areas.
- Any damage to public or private property, including roads, storm water systems, fences, gates, buildings and other structures, pipes, lines and other utilities or infrastructure and movable properties, should be repaired, replaced or otherwise compensated for as agreed with the affected person.

- The applicant must arrange for a discussion session with the surrounding access route users with regard to the maintenance of the access road.
- A complaints register should be maintained to log complaints by landowners, occupants and other Interested and Affected Parties, and response to such complaints.
- The complaints register should be provided to DEDECT on an annual basis and at any point in time if requested by the DEDECT.
- Care must be taken that unnecessary clearance of vegetation does not take place. The footprint of disturbance outside the Molote Resort Project area must be kept as small as possible, and must be rehabilitated as soon as possible.
- Alien invasive plants should be removed from all disturbed and subsequently rehabilitated areas.

### **11.6 Noise**

- Vehicles and construction equipment must be well serviced so that they do not produce excessive noise.
- Construction should only take place between 08h00 and 17h00 from Monday to Friday.
- It should be ensured that the personnel comply with speed restrictions of 20 km per hour within the site boundaries to reduce the generation of noise.
- Contractors must comply with provincial noise regulations. The construction machinery must be fitted with noise mufflers and be maintained properly.
- Construction should only take place between 08h00 and 17h00 from Monday to Friday.

### **11.7 Air quality**

- It should be ensured that the personnel comply with speed restriction of 20 km per hour within the site boundaries to reduce the generation of dust.
- Dust suppression through the spraying of water should be practiced.

### **11.8 Health, safety and security hazards**

- The site must be properly demarcated and the proposed access routes approved by the ECO and landowner prior to the commencing of the construction activities.
- No open fires are allowed outside designated cooking areas.
- Site supervisors must ensure that the staff remains within the demarcated Molote Resort Project areas and access routes at all times.
- No smoking is to be allowed in the vicinity of fuel dispensing areas (smoking is only to be allowed in designated “safe” areas).
- Adequate firefighting equipment must be available onsite at all times and at least one person present on the site must be trained in the use thereof.
- Labourers and contract workers (if any) should be accompanied by a responsible supervisor at all times.
- Strict access control must be exercised to ensure that no unauthorised persons enter the property.
- The workers must wear Personal Protective Equipment (PPE) to ensure their safety during construction.
- Workers may not receive any visitors while they are within the property.
- Workers should not be allowed to keep or use alcohol, recreational drugs, traditional or modern weapons, snares or otherwise dangerous objects on-site, or to enter the Molote Resort Project area while on the influence of alcohol or drugs.
- Disturbance should be limited to the minimum and agreed upon footprint, and no vehicle turning, parking or access, or other form of disturbance e.g. vegetation clearance, soil compaction or excavation should be allowed outside these areas.
- It must be ensured by the relevant contractor that a list of all the relevant emergency telephone numbers and contact persons are kept up to date and posted at relevant locations at the site.

- A complaints register should be maintained to log complaints by landowners, occupants and other Interested and Affected Parties, and response to such complaints. The complaints register should be provided to DEDECT on an annual basis and at any point in time if requested by the DEDECT.

## **12. ASPECTS FOR INCLUSION IN AUTHORISATION**

### **12.1 Reasoned opinion**

The final site map was created taking into account all the concerns raised by the public, specialist reports and impact assessment. If this map is followed, and if proper management and mitigation is implemented and rehabilitation is done and monitored, the impact can be kept relatively low. The site can be rehabilitated to its current status which will minimise the long-term impact of the proposed activity.

It is recommended that the activity should be authorised.

### **12.2 Conditions that must be included in the authorisation**

The proposed activity should follow the guidelines of the final site map.

Mitigation and management measures as stipulated in Sections 9 and 11 should be implemented.

The rehabilitation and soil management must be done in accordance with the guidelines provided in the EMPr.

Environmental audits should be conducted every two months during the Construction Phase and every six months during the Operational Phase.

Rehabilitation monitoring should be conducted according to the EMPr.

Rehabilitation should be ongoing while operation is taking place.

### **12.3 Period for which the Environmental Authorisation is required.**

10 years



### 13. UNDERTAKING

The EAP herewith confirms

- a) the correctness of the information provided in the reports
- b) the inclusion of comments and inputs from stakeholders and I&APs ;
- c) the inclusion of inputs and recommendations from the specialist reports where relevant; and
- d) that the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein.



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Signature of the environmental assessment practitioner:

Bucandi Environmental Solutions

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Name of company:

20/01/2021

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Date:

## **14. APPENDICES**

Appendix A: Maps

Appendix B: Site photographs

Appendix C1: Newspaper advertisements

Appendix C2: Site notices

Appendix C3: Copies and proof of letters send to I&APs together with Draft Scoping Report

Appendix C4: Comments and Responses Report including a list of Registered I&APs

Appendix D1: Terrestrial ecology assessment

Appendix D2: Baseline wetland study

Appendix D3: Heritage impact assessment

Appendix D4: Geo Tech Study

Appendix D5: Water Supply

Technical Report

Appendix E: Final site map

Appendix F: CV of EAP

Appendix G: Environmental Management Programme

Appendix H: Contractors Agreement

Appendix I: Screening Tool Report

Appendix J: Landowner Consent Letter