FINAL ENVIRONMENTAL IMPACT REPORT

APPLICATION FOR RECTIFICATION FOR THE UNLAWFUL COMMENCEMENT OF ACTIVITIES IN TERMS OF SECTION 24G OF NEMA (107 OF 1998), ON SANDFONTEIN (FARM 232 PORTION 2), BONNIEVALE, WESTERN CAPE

DEA&DP Ref No.: E12/2/4/4-B1/3-1001/11

OCTOBER 2011
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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>CARA</td>
<td>Conservation of Agricultural Resources Act, 1983 (Act no. 43 of 1983)</td>
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<td>CBA</td>
<td>Critical Biodiversity Area</td>
</tr>
<tr>
<td>DEA&amp;DP</td>
<td>Department of Environmental Affairs and Development Planning</td>
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<tr>
<td>DWA</td>
<td>Department of Water Affairs</td>
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<tr>
<td>EAP</td>
<td>Environmental Assessment Practitioner</td>
</tr>
<tr>
<td>ECA</td>
<td>Environment Conservation Act (Act no. 73 of 1989)</td>
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<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
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<td>EIR</td>
<td>Environmental Impact Report</td>
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<td>EMP</td>
<td>Environmental Management Programme</td>
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<td>GN</td>
<td>Government Notice</td>
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<tr>
<td>I&amp;APs</td>
<td>Interested and Affected Parties</td>
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<td>IEM</td>
<td>Integrated Environmental Management</td>
</tr>
<tr>
<td>NEMA</td>
<td>National Environmental Management Act (Act no. 107 of 1998)</td>
</tr>
<tr>
<td>NEMBA</td>
<td>National Environmental Management: Biodiversity Act (Act no. 10 of 2004)</td>
</tr>
<tr>
<td>NHRA</td>
<td>National Heritage Resources Act (Act no. 25 of 1999)</td>
</tr>
<tr>
<td>NWA</td>
<td>National Water Act (Act no. 36 of 1998)</td>
</tr>
<tr>
<td>SAHRA</td>
<td>South African Heritage Resources Agency</td>
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<tr>
<td>SPC</td>
<td>Spatial Planning Categories</td>
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1. INTRODUCTION

This section introduces the activities for which rectification is sought, discusses their need and desirability, describes the scope of work and records the assumptions and limitations that informed and defined the environmental assessment.

1.1 DESCRIPTION OF UNAUTHOURISED ACTIVITIES GIVING RISE TO THE APPLICATION

The Rhebokskloof Trust, represented by Mr. M. Brandon-Kirby, hereafter referred to as the ‘Applicant’, as owner of the Farm ‘Sandfontein’ Portion 2 of Farm 232, Bonnievale, hereafter referred to as the ‘Property’, purchased the farm with the intention of clearing and developing the site in order to build a house on the Property. He also planned to make a small dam across an ephemeral watercourse which would provide water, as well as facilitate access to the building site.

The property is located about 16 km south-west of Bonnievale, in the Langeberg Municipal Area (Appendix A).

The unlawful actions that were undertaken to date in order to prepare the site are as follows:

- A small instream dam was excavated in an unnamed ephemeral watercourse between the existing gravel road and the site of the proposed dwelling (Figure 1). The dam was bulldozed to provide a crossing over the watercourse. An earthen overflow (spillway) was also bulldozed. The downstream side height of the dam wall is 4.9m high and the dam does not require a water use license in terms of capacity (± 3200m$^3$).

- An access road (track) of about 150 m long was cleared to link the proposed site of the dwelling with the existing gravel road (Figure 1). The newly-cleared track traverses across the top of the dam wall to the cleared site (terrace) for the proposed dwelling. The track is 4.2 m in width, the width of the bulldozer blade. A total area of approximately 0.063 ha (630 m$^2$) of natural fynbos vegetation was cleared for the construction of the track.

- An area of approximately 0.387 ha (3 870 m$^2$) of natural vegetation was cleared for the house. The cleared area comprises the following elements: a flat terrace on which the proposed dwelling will be built, rock and soil spoil downslope face of the terrace and exposed rock upslope face of the terrace face. The rock face upslope is 3 - 4 metres high and about 20 m wide, the spoil downslope face is 3 - 4 metres high and about 20 m wide (Figure 1). Refer to Appendices B and D for a site layout and photo record, respectively.
Figure 1: Preparation of the site includes an excavated terrace for the proposed dwelling, a small instream dam, and an access track that runs from an existing gravel road (servitude road providing access to adjacent Farm 232/1) to the proposed dwelling, as viewed from the east.

The activities in question commenced in October 2010. All work on the site ceased by December 2010. There has been no further development since.

The activities that were triggered by these unauthorised operations are listed below.

Activities for which authorisation should have been sought:

<table>
<thead>
<tr>
<th>Government Notice No. R544 Activity No(s):</th>
<th>Activities</th>
</tr>
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<tbody>
<tr>
<td>11</td>
<td>The construction of (iv) dams.... where such construction occurs within a watercourse or within 32 m of a watercourse.</td>
</tr>
<tr>
<td>18</td>
<td>The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock from (i) a watercourse.</td>
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<table>
<thead>
<tr>
<th>Government Notice No. R546 Activity No(s):</th>
<th>Activities</th>
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<tr>
<td>4</td>
<td>The construction of a road wider than 4 metres with a reserve less than 13.5 metres.</td>
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<td></td>
<td>(d) In Western Cape: (ii) All areas outside urban areas.</td>
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</table>

Please note that Activity 12 of Listing Notice 3 (R546) was considered in this application, i.e. clearance of 300m² or more, within a CBA identified in bioregional plans, since the disturbed site is more than 300m² in size (smaller than 1ha) and located in a core area. However, it was later excluded as there are no bioregional plans currently adopted by the competent authority.
1.2. SCOPE OF THE WORK TO BE UNDERTAKEN

The scope of the study is determined with reference to the requirements of the relevant legislation namely section 24G of the National Environmental Management Act (Act 107 of 1998) (NEMA), as amended by section 3 of Act 56 of 2002 and substituted by section 12 of Act 46 of 2003.

The main responsibilities of the Environmental Assessment Practitioner (EAP) would include but not be limited to, the following:

- Submission of the required Application Form to the relevant authority to register the proposed project;
- Consultation with the relevant authorities and stakeholders, through the EIA process, to ensure that identification of relevant issues or concerns are undertaken in accordance with the EIA Regulations;
- Ensure the assessment of and response to the issues that are raised throughout the process;
- Compile a report containing —
  (i) an assessment of the nature, extent, duration and significance of the impacts of the activity on the environment, including the cumulative effects;
  (ii) a description of mitigation measures undertaken or to be undertaken in respect of the impacts of the activity on the environment;
  (iii) a description of the public participation process followed during the course of compiling the report, including all comments received from interested and affected parties and an indication of how issues raised have been addressed; and
  (iv) an environmental management plan;
- Provide such other information or undertake such further studies as the relevant authority may deem necessary;
- Submission of the above-mentioned report (draft) to the public and commenting authorities for comment, and
- Submission of the final report to the competent authority, specifically the Department of Environmental Affairs and Development Planning (DEA&DP), for a decision.

1.3. ASSUMPTIONS AND LIMITATIONS

- This is an application for rectification in terms of section 24G of the NEMA (as amended) of certain listed activities that were commenced without authorisation.
- The type, extent, duration, magnitude and significance of impacts can be predicted with a moderate to high degree of confidence due to (a) a sound understanding of the site in its pre-disturbance condition, (b) the availability of reliable contextual information about the site’s relative importance for biodiversity conservation, and (c) the well-documented nature of impacts, resulting disturbance, and prospects for effective restoration.
Overall, there are no evident limitations that would detract from the predictive reliability of this EIA.

It is assumed, unless indicated otherwise, that the EAPs conducting this EIA have been provided with all information that is relevant to this investigation and the decision that it must inform.

1.4. THE NEED AND DESIRABILITY OF THE PROPOSED DEVELOPMENT

‘Need’ is understood to mean requiring something because it is essential or very important, and not just desirable. ‘Desirability’, in turn, refers to wanting or wishing for something owing to its attractiveness, utility or necessity (cf. The New Oxford Dictionary of English, 1998). The draft DEADP guideline on need and desirability (2009) suggests that ‘need’ refers to the ‘timing’ of a proposed development, and ‘desirability’ to place. Jointly, the concepts raise questions about “wise use of land”.

Here, the ‘need’ for a proposed development would depend on the degree of social or public harm that would result from the development not going ahead. ‘Desirability’ can reflect both a private desire that, if not met, will result in disappointment, as well as a more objective aspect – namely, would a proposed development be strategically and contextually appropriate?

1.4.1 Need

The Applicant owns two adjacent farms: Portions 2 and 5 of Farm 232. Portion 5 lies directly abutting the northern boundary of the Property. The Applicant intends farming on Portion 5, while living on Portion 2.

His current residence is in Bonnievale, some 19 km away by road of which about 7.5 km are untarred. It would be impractical and expensive to have to commute daily between the town and the farm. It is against this background that he started clearing land on Farm 232/2 on which to build a residence that would be located within 1.5 km of the second farm.

The Applicant commenced preparing the land with the intention of constructing a single private dwelling which, in his understanding, would be consistent with the consent uses for land with agricultural zoning. The proposed dwelling would be designed according to ‘green’ architectural principles that would allow it to merge with its surrounds and be operated independently of the electricity grid, and other municipal services such as water, refuse and sewerage.

The proposed house will be designed to incorporate passive solar and solar voltaic to ensure a minimum impact on the environment. It will essentially be an underground house with north facing windows at the front to collect maximum sunlight. The roof will consist of a concrete slab and will
be covered with aggregate and top soil already stockpiled at the rear of the site (Figures 2 and 3, Appendix D). The house will not be seen from above. There will be a concrete drainage channel at the rear against the existing rock slope from where the slab will extend upwards at two degrees to the front. The house will be fitted with water saving features for the latrines and a septic system that is designed with safety features and it will be at least 100m away from any stream.

Figure 2: Photo montage portraying the proposed house against the cleared mountain slope.

Figure 3: Edited photo montage portraying the proposed house after rehabilitating the remainder of the cleared terrace and road. Also refer to Appendix D.

The small dam was constructed to provide a safe stream crossing to the building site, while also creating and to optimise the excavated area as a small reservoir for recreational and aesthetic purposes. At 3200m³, the dam is too small to be considered an irrigation dam, and does not require any licensing in terms of the National Water Act (Act 36 of 1998).

The development in question was initiated to meet the needs of the Applicant on a property that he owns, and which was specifically purchased in order to build a home in close and convenient proximity to an adjacent property of which he is also the owner and intends developing for agricultural purposes.
1.4.2 Desirability

The site subject to this Application is located on land with an agricultural zoning outside the urban edge.

It is also located within a terrestrial Critical Biodiversity Area and intrudes on a watercourse with the status of an ‘Other Ecological Support Area’ (cf. Western Cape Biodiversity Framework, 2010). See Section 3 for figures depicting the Property in relation to the CBAs. The land in question would be designated a ‘Core 1’ spatial planning category (SPC) owing to its CBA status.\(^1\) In terms of CBA mapping, the management objective for CBA is to “maintain such land in a natural condition or, where it is no longer natural, to restore it to a natural or near natural state”.

From a spatial planning perspective, Core 1 SPCs should be treated as ‘no go’ areas and, as far as possible, remain undisturbed by human impact. Owing to physical scarring of the mountain slope, the site was initially readily visible from the nearest public road, some 3.5 km to the north-west, after the activities commenced. The visual impact has however been reduced by the onset of the rainy season (see Appendix D).

The disturbed area appears to be located in largely untransformed McGregor Arid Fynbos as classified by the C.A.P.E. Fine-Scale Planning Project’s Integrated Vegetation Map for the Langeberg Municipality (Maree and Vromans, 2010). The South African Vegetation Map (Mucina et al., 2006) defines the affected vegetation types North Sonderend Sandstone Fynbos (a ‘least threatened’ ecosystem). The conservation target for North Sonderend Sandstone Fynbos is 30%. It appears to be relatively well protected as some 21% occurs in the Riviersonderend Nature Reserve. However, according to Rebelo et al. (2006, p. 114) none of the deep-sand areas of the northern plateau is protected. The site subject to this Application is located against a lower, dissected slope with numerous rock outcrops and therefore does not correspond with the deep sand habitat to which Rebelo et al. (2006) draw attention.

The proposed dwelling, access track and dam would appear to be consistent with the consent uses for the land in question.

At the same time, the site is designated as having high regional conservation importance owing to its CBA status and its development would therefore in principle be undesirable. However, the guidelines published with the biodiversity sector plan for the Langeberg Municipality (Maree and

\(^1\) The Draft Western Cape Guidelines for Rural Land-use Planning and Management (DEA&DP 2009) uses a system of ‘spatial planning categories’ (SPCs) by means of which municipal spatial development frameworks must clarify the inherent land suitability of different landscapes (DEA&DP 2009, p 30). SPCs are aligned with the categories used by biodiversity sector plans to depict an area’s importance for achieving biodiversity targets and thresholds. CBAs have ‘Core 1’ status in terms of the SPC system.
Vromans, 2010) do not explicitly rule out the siting of ‘rural residential’ properties in CBAs in ‘Category A’ or ‘Core’ areas, and provide concrete guidance as to what may constitute acceptable development in these circumstances.

The Draft Western Cape Provincial SDF rural land use guidelines (2009) state that “where buildings and structures in Core Areas are justifiable, ‘touch the earth lightly’ construction principles should be applied to ensure that development is in harmony with the character of the surrounding landscape”.

Overall, it still needs to be established to what extent the disturbances in question, and the proposed construction of a dwelling, would compromise the achievement of biodiversity thresholds and targets presupposed by the strategic biodiversity importance of the site and its surrounds. Considerations that would influence such an assessment include the direct impacts of habitat loss on species of special concern and the implications of this for the achievement of biodiversity targets.

The evaluation of the significance of potential impacts on biodiversity pattern and process would have to be informed by factors such as the actual, immediate extent of the disturbance (cumulative total for this land parcel of less than one hectare), the extent to which this would have compromised the integrity of the affected CBA, and the least threatened status of the affected vegetation type.

It follows, for the purposes of determining the ‘desirability’ of the proposed development, that a finding needs to be made that distinguishes between the desirability of the proposed project at a conceptual and normative level, and desirability in terms of substantive considerations such as impacts on biodiversity at various scales of organisation, hydrological functioning, and the actual visibility of the proposed development over time. It may well be found, through a structured process of impact assessment and evaluation, that although the disturbances and transformation that have occurred may well be in conflict with certain values and policies, and therefore normatively undesirable, measurable impacts may in fact not significantly detract – at least with the passage of time – from the standards and desired outcomes captured in policy and legislation.
2. LEGAL AND POLICY REQUIREMENTS

This Environmental Impact Assessment (EIA) is being undertaken in terms of Section 24G of the National Environmental Management Act (Act 107 of 1998), which relates to the rectification of the unlawful commencement of listed activities.

Other legislation and policy may, however, also apply to this application. Other potentially relevant regulatory and policy instruments include:

- The National Environmental Management: Biodiversity Act 10 of 2004;
- The National Water Act 38 of 1998;
- The Conservation of Agricultural Resources Act 43 of 1983;
- The Land Use Planning Ordinance 15 of 1985;
- The draft Western Cape Rural Land-use Planning and Management Guidelines (2009);
- The draft Langeberg Spatial Development Framework (2010); and
- CapeNature’s requirements and recommendations with respect to applications for environmental, mining, agriculture, water, and planning-related authorisations (2009).

Several technical and interpretive guidelines may also apply to aspects of the application. These include:

- DEA&DP. 2010. Guideline on Need and Desirability, EIA Guideline and Information Document Series. Western Cape Department of Environmental Affairs & Development Planning (DEA&DP);

The implications of each of these regulatory or policy instruments are set out below.

2.1 THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA (108 OF 1996)

The Constitution of the Republic of South Africa (Act 108 of 1996) states that everyone has a right to a non-threatening environment and to have the environment protected for the benefit of present and future generations through reasonable measures. This includes preventing pollution and
promoting conservation and environmentally sustainable development, while promoting justifiable social and economic development.

2.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (NEMA) (107 OF 1998) AND THE NEMA EIA REGULATIONS (GN 543, 544, 545 AND 546 OF 2010)

The interpretation and application of environmental legislation is governed by the Constitution of the Republic of South Africa Act 108 of 1996.

Chapter 2 of the Constitution constitutes a Bill of Rights that includes an environmental clause.² Section 24 of the Bill of Rights states that “everyone has the right to have the environment protected through reasonable laws or other means that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development”.

Constitutional provisions relating to the promotion of administrative justice and promotion of access to information have a direct bearing on the environmental regulatory dispensation, which obtain statutory expression through framework legislation in the form of the National Environmental Management Act 107 of 1998, as amended.

NEMA is enforced by the national Department of Environmental Affairs, but certain powers have been assigned to the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP), which in this instance is the recognised competent authority.

NEMA Chapter 1: The National Environmental Management Principles

Chapter 1 of NEMA (the National Environmental Management Principles) lays down principles³ that apply the actions of all organs of state that may significantly affect the environment. These principles serve as guidelines by reference to which any organ of state must exercise any function when taking any decision in terms of any statutory provision concerning the protection of the environment.⁴

The National Environmental Management Principles therefore apply to this application.

The National Environmental Management Principles place people and their needs at the forefront of environmental management, and require that development must be socially, environmentally

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² s 24, The Constitution of RSA
³ Section 2, Act 107 of 1998 as amended
⁴ Section 2(1)c), Act 107 of 1998 as amended
and economically sustainable.\(^5\) They also endorse the participation of all interested and affected parties in environmental governance.\(^6\)

The principles that would have particular relevance to decisions relating to the transformation of undisturbed habitats and ecosystems are those that require that environmental management must (in paraphrased format):

- Avoid, minimise or remedy disturbance of ecosystems and loss of biodiversity;
- Avoid degradation of the environment;
- Avoid jeopardising ecosystem integrity;
- Pursue the best practicable environmental option by means of integrated environmental management; and
- Pay specific attention to management and planning procedures pertaining to sensitive, vulnerable, highly dynamic or stressed ecosystems.\(^7\)

**NEMA Chapter 5: Rectification of unlawful commencement of listed activities**

NEMA section 24(F)(1) specifies that no-one may undertake a listed or specified activity without environmental authorisation and, in terms of NEMA s 24F(2)(a), it is an offence to do so.

NEMA, through s 24G, provides a process that can lead to the rectification of unauthorised, unlawful activities. The ‘rectification process’ entails submission of an environmental impact assessment to the competent authority that, in turn, can have two potential outcomes:

- An instruction to ceased the activity, either wholly or in part, and to rehabilitate the environment;\(^8\) or
- Authorisation, subject to conditions, of the activity/ies that had been commenced unlawfully (i.e. continuation);\(^9\)

The prescribed EIA process may, depending on what the competent authority requires, entail:

- An environmental impact assessment;
- A description of mitigation measures;
- A description of the public participation process, the issues raised by interested and affected parties, and how these had been addressed; and
- An environmental management programme.\(^10\)

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\(^5\) Section 2(2), Act 107 of 1998 as amended  
\(^6\) Section 2(4)(f), Act 107 of 1998 as amended  
\(^7\) Cf. sub-sections 2(4)(a)(i), (ii), (vi); (b); and (r)  
\(^8\) s 24G(2)(a), NEMA  
\(^9\) s 24G(2b), NEMA  
\(^10\) s 24G(1)(a), NEMA
The findings of any other studies that may be required by the relevant authorities would also have to be recorded in the environmental impact report.\(^{11}\)

It is assumed for this purposes of this application that s 24G rectification applications culminate in ‘environmental authorisations’ as defined by NEMA\(^ {12}\), namely: “(The) authorisation by a competent authority of a listed activity or specified activity in terms of this Act....”

If this interpretation is correct, this application for rectification of an unlawful activity would be subject to the NEMA section 24(4) procedures for the investigation, assessment and communication potential environmental impacts of activities on the environment.\(^ {13}\) These are presented below.

**NEMA Chapter 5: Integrated Environmental Management**

One of the primary objectives of integrated environmental management is to promote the integration of the National Environmental Management Principles into all decision making that may significantly affect the environment.\(^ {14}\) Section 24(4)(a) of NEMA, in turn, lays down minimum, non-discretionary procedures\(^ {15}\) that apply to every application for an ‘environmental authorisation’, i.e. a listed or specified activity.

**Mandatory and discretionary procedures relating to applications for environmental authorisation**

The mandatory and discretionary procedures relating to environmental assessment in support of applications for environmental authorisation are summarised as follows:

<table>
<thead>
<tr>
<th>NEMA s 24(4)(a)</th>
<th>NEMA s 24(4)(b)</th>
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<tbody>
<tr>
<td>Minimum, non-discretionary requirements that apply to every application for environmental authorisation</td>
<td>Minimum, discretionary requirements that may apply with respect to every application for environmental authorisation</td>
</tr>
<tr>
<td>There must be co-ordination and co-operation between organs of state where an activity may fall under the jurisdiction of more than one organ of</td>
<td>All applications for an environmental authorisation must include, where applicable:</td>
</tr>
<tr>
<td></td>
<td>− Investigation of the potential consequences</td>
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\(^{11}\) s 24G(1)(b), NEMA

\(^{12}\) s 24(1)(g), NEMA

\(^{13}\) “An application (or EIA process followed) in terms of section 24G of NEMA is also subject to the minimum requirements of section 24(4)(a) and (b) of NEMA. As such, the requirement to investigate the impact of alternatives is applicable. The requirement for public participation is applicable, but the extent thereof is left to the discretion of the competent authority.” Paul Hardcastle, DEA&DP, by e-mail 01.04.2010.

\(^{14}\) s 23(2)(a), NEMA

\(^{15}\) As amended by the National Environmental Management Amendment Act 62 of 2008
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| state. | or impacts of alternatives to the activity on the environment; and
| − Assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity. |  |
| Any decision by an organ of state must take into account: | Where applicable, measures must be investigated to mitigate adverse consequences or impacts to the minimum. |
| − The findings and recommendations flowing from an environmental assessment; |  |
| − The general objectives of integrated environmental management as provided for in Chapter 5 of NEMA |  |
| − The national environmental management principles (section 2, NEMA). |  |
| An application must contain a description of the environment likely to be significantly affected by the proposed activity. | Where applicable, potential impacts on heritage resources (the ‘national estate’ in terms of section 3(2) of the National Heritage Resources Act 25 of 1999) must be investigated, assessed and evaluated. |
| There must be an investigation of: | Where applicable, gaps in knowledge, the adequacy of predictive methods and underlying assumptions and uncertainties arising from the compilation of information must be reported. |
| − The potential environmental consequences for, or impacts on, of the activity; and |  |
| − The significance of those potential consequences or impacts. |  |
| The public and all organs of state with jurisdiction over any aspect of the activity must be given a reasonable opportunity to participate in public information and participation procedures. |  |
|  | Where applicable, arrangements for monitoring and managing environmental consequences and impacts must be investigated and formulated, as must the effectiveness of such arrangements. |
Where applicable, applications must consider information and maps that specify the attributes of the environment in particular geographic areas where such information and maps have been complied by either the national Minister of Water and Environmental Affairs or a provincial MEC.

Where applicable, environmental assessments must also adhere to the requirements prescribed in other environmental management Acts that may be relevant to the listed or specified activity in question.

NEMA section 24: Listed activities that require environmental authorisation

‘Listed activities’ refer to activities listed or specified in terms of, respectively, NEMA s 24(2)(a) or (b) that may not be commenced without environmental authorisation issued in terms of section 24(1) of NEMA and which are defined by Listing Notices 1, 2 and 3 of the NEMA Environmental Impact Assessment Regulations (GN R. 544, 545 and 546, of 18 June 2010).

The NEMA EIA regulations and listing notices

NEMA section 24(5) provides for regulations that lay down procedures for applications for environmental authorisations and which are generally known as the ‘EIA regulations’ (GN R. 543 of 18 June 2010). Whereas the three listing notices identify activities that require environmental authorisation, the EIA regulations (GN R. 543 of 18 June 2010) stipulate ‘the rules of the game’ for applications for environmental authorisation.

The EIA regulations provide, depending on the type of activities that may be triggered by a proposed development, for two types of application procedures: the basic assessment (for activities reflected in Listing Notice 1 and Listing Notice 3), and the more comprehensive scoping and EIA process for activities on Listing Notice 2.

The developments that occurred on the subject property, and for which rectification is being sought, appeared to entail the following listed activities and their respective listing notices:

<table>
<thead>
<tr>
<th>Government Notice No. R544 Activity No(s):</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>The construction of (iv) dams…. where such construction occurs within a watercourse or within 32 m of a watercourse.</td>
</tr>
</tbody>
</table>
18 The infilling or depositing of any material of more than 5 cubic metres into, or the
dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or
rock from (i) a watercourse.

Government Notice
No. R546 Activity
No(s):

4 The construction of a road wider than 4 metres with a reserve less than 13.5
metres.

(d) In Western Cape: (ii) All areas outside urban areas.

Please note that Activity 12 of Listing Notice 3 (R546) was considered in this application, i.e. clearance of 300m² or more, within a CBA identified in bioregional plans, since the disturbed site is more than 300m² in size (smaller than 1ha) and located in a core area. However, it was later excluded as there are no bioregional plans currently adopted by the competent authority.

Applicability of the NEMA EIA regulations to s 24G applications

The NEMA EIA regulations only apply to applications as defined by chapters 3, 4 and 5 of GN R. 543. Of most relevance here is Chapter 3 of the regulations, which deals with applications for environmental authorisation.

Regulation 12(1) stipulates that applications apply to environmental authorisation for the commencement (own emphasis) of listed activities, i.e. not for listed activities that have already been commenced without environmental authorisation. The NEMA EIA regulations also seem to apply exclusively to the basic assessment and scoping/EIA options and therefore not, to section 24G applications. It is understood that the NEMA section 24G dispensation was specifically created to deal with the eventuality of listed activities that had been commenced illegally, i.e. without authorisation and outside of the prescribed regulatory dispensation.

The NEMA EIA regulations therefore do not, in our understanding, apply to rectification applications in terms of section 24G of NEMA. Failing further instruction in this regard from the Department of Environmental Affairs and Development Planning, this application is guided by the minimum mandatory and discretionary requirements of NEMA, i.e. as articulated in sections 24(4)(a) and 24(4)(b).

NEMA Chapter 7: The Duty of Care

Chapter 7 of the National Environmental Management Act 107 of 1998 prescribes a general ‘duty of care’ and requirement to remediate environmental damage. Section 28(1) of NEMA states:
Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, insofar as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution or degradation of the environment.

The Duty of Care can, *inter alia*, be enforced through directives issued by the competent authority.

**Appeals**

In terms of section 43(1) of NEMA, any affected person may appeal to the Minister against a decision taken by any person acting under a power delegated by the Minister under Act of 107 of 1998.

### 2.3 NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT (10 OF 2004)

The National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEMBA) has the purpose to provide for the:

- Management and conservation of South Africa’s biodiversity within the framework of the National Environmental Management Act, 107 of 1998;
- Protection of species and ecosystems that warrant national protection;
- Sustainable use of indigenous biological resource;
- Fair and equitable sharing of benefits arising from bio-prospecting involving indigenous biological resources; Establishment and functions of a South African National Biodiversity Institute; and
- For matters connected therewith.

The NEMBA is part of a suite of legislation falling under NEMA, which includes the Protected Areas Act, the NEM: Air Quality Act and the NE: Coastal Zone Act.

Chapter 3 of NEMBA provides a framework for integrated and co-ordinated biodiversity planning, monitoring of conservation status and promote research in biodiversity.

Chapter 4 deals with threatened and protected ecosystems and species and related threatening processes and restricted activities.

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16 s 28(4), NEMA
Section 73 deals with Duty of Care relating to invasive species, while Section 76(2) calls for development of invasive species monitoring, control and eradication plans by all organs of state in all spheres of government, as part of environmental management plans required in terms of Section 11 of NEMA.

2.4 NATIONAL WATER ACT (36 OF 1998)

The National Water Act (NWA) (Act 36 of 1998) has the purpose to ensure that South Africa’s water resources are protected, used, developed, conserved, managed and controlled in ways which inter alia (b) promotes equitable access to water, (c) redress for past racial discrimination, (e) facilitates social and economic development, (g) protects aquatic and associated ecosystems and their biological diversity, (h) reduces and prevents pollution and degradation of water resources and (k) manages floods and droughts.

Section 4 of the NWA describes the entitlement to water use, (2) whereby a person may continue with an existing lawful water use, (3) a persons may use water in terms of a general authorisation or license (4) (a) to take or use water, (b) to obstruct or divert a flow of water, (c) affect the quality of water ... (f) construct, operate or maintain any waterwork.

Section 39 describes how general authorisations that are gazetted by the responsible authority, describe conditions under which water may be used.

Government Notice 398 (26 March 2004) published General Authorisations in terms of Section 39. The General Authorisation 1 - Impeding or diverting the flow of water in a watercourse – has the purpose to replace the need for a water user to apply for a license in terms of the National Water Act. The notice states 1.7. (1) that a person who owns or lawfully occupies land, may on that property impede or divert the flow of water in a watercourse if:

(i) the diversion of flow (aa) does not impact on a water resource or on another person water use, property or land;
(ii) the natural migration patterns of aquatic biota and sustainable ecological functioning of the system are not interfered with;
(iii) any structure built fully or partially in or across a water course does not – (aa) exceed a foundation width of 15m, (bb) exceed a length of 200 metres measured from the one side of the watercourse to another or (cc) occur within a distance of 500 metres upstream or downstream of another structure that impedes or diverts flow on the same watercourse, measured along the same watercourse;
(vi) strict erosion control measures are to be taken during and after construction to ensure no erosion of the bed or banks of a watercourse takes place, and
(vii) all necessary measures are taken to stabilise the diversion structure and surrounding area, which will include:

(aa) rehabilitation of the riparian habitat integrity by ensuring that during rehabilitation only indigenous shrubs and grasses are used in restoring the bio-diversity;
(bb) rehabilitation of disturbed and degraded riparian areas to restore and upgrade the riparian habitat integrity to sustain a bio-diverse riparian ecosystem;
(cc) removal of alien vegetation and all new alien vegetation recruitment must be controlled; and
(dd) annual habitat assessment must be carried out to monitor the sustainability of the diversion and compliance with the above conditions. Action must be taken to rectify any impacts.

The General Authorisation 2 - Altering the bed, banks or characteristics of a watercourse has a similar purpose to 1, in that (2.7) a person who owns or occupies land may alter the beds, banks or characteristics of a watercourse ... except (iii) that the alteration should not extend for more than 50 metres continuously or a cumulative distance of 100 metres on that property or land measured along the watercourse, and (vii) any structure built in or across a watercourse does not exceed (aa) height of 10 metres or, (bb) width of 10 metres, or (cc) length of 50 metres or, (dd) occur within 500 metres upstream or downstream of another structure that alters the watercourse.

2.5 CONSERVATION OF AGRICULTURAL RESOURCES ACT (43 OF 1983)

The Conservation of Agricultural Resources Act (CARA) (Act 43 of 1983) has the objectives of conserving the natural agricultural resources of South Africa, through the maintenance of the production potential of the land, by combating and preventing erosion and the weakening of water sources, the protection of vegetation and the combating of weeds and invader plants.

CARA provides for prescribed Control Measures, enforced through regulations. A directive also may be issued in order to compel landowners to comply with a Control Measure.

Section 6 describes how that the Minister to achieve the objects of the Act, may prescribe control measures which may relate to (a) cultivation of virgin soil, (b) the utilisation and protection of land which is cultivated, (c) the irrigation of land, (d) the prevention or control of water logging or salination of the land, (e) the utilisation and protection of vleis, marshes, water sponges, water courses and water sources, (f) the regulating of the flow pattern of run-off water, (g) the utilisation and protection of vegetation ... (l) the control of weeds and invader plants, (m) the restoration or reclamation of eroded land or land which is otherwise disturbed or denuded, ...

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17 s 6 of CARA.
18 s 29 of CARA.
19 s 7 of CARA.
construction, maintenance, alteration or removal of soil conservation works or other structures on land.

The CARA regulations give regulatory effect to the Section 6 Control Measures. They inter alia deal with the cultivation of virgin soil (i.e. soil that has not been mechanically disturbed for 10 years or more), cultivation of land with a slope, protection of cultivated land against erosion through the action of water and wind, and utilisation and protection of vleis, marshes, water sponges and water courses.

Permits for the cultivation of virgin soil are issued in terms of Regulation 2, R1048 of 25 May 1984. CARA is enforced by the Department of Agriculture, Forestry and Fisheries (DAFF).

It is understood that CARA would only be applicable if the proposed change in land use was for agricultural purposes which, in this case, would not apply.

2.6 LAND USE PLANNING ORDINANCE (15 OF 1985)

The Land Use Planning Ordinance 15 of 1985 (LUPO) provides a framework for strategic spatial planning as well as land use control.

Chapter 1 of LUPO provides for structure plans that lay down guidance for the future spatial development of an area, such as a municipality. Structure plans do not confer or take away rights in land. However, applications for rezoning must be consistent with an applicable structure plan. Structure plans must give regard to the preservation of the natural and developed environments.

Chapter 2 of LUPO deals with zoning schemes which form the core of municipal land use regulation. Zoning schemes determine land-use rights, provide for control over these rights and the utilisation of land in the area of jurisdiction of a municipality. Scheme regulations give effect to control over zoning, and scheme regulations may authorise the granting of departures and sub-divisions by a municipal council.

Land use must be consistent with its zoning, and the province or a municipal council – if authorised by the provisions of a structure plan – may grant or refuse an application for rezoning. Rezoning applications are dealt with by municipal councils and must follow prescribed procedures. Land must first be rezoned before it can be sub-divided.

Farm 232/2 Bonnievale is zoned as Agriculture I. In terms of the 1988 Scheme Regulations (Provincial Notice 1048/1988), Agriculture I provides for a primary dwelling unit. Building plans will be submitted by the Applicant to the Langeberg Municipality before commencing with construction of the house. Council consent must be obtained for the erection of additional dwellings up to a maximum number of five further units at a density of one unit per 10 ha.
2.7 THE WESTERN CAPE PROVINCIAL DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING (DEA&DP) GUIDELINES

There are a number of guideline documents and conservation plans that must inform the work of both the environmental practitioner and specialists. Of direct relevance are:

- The Department of Environmental Affairs and Development Planning Guidelines on Public Participation (2009);
- DEA&DP guideline on involving biodiversity specialists in EIA (2005);
- DEA&DP guideline on involving visual specialists in EIA (2005); and
- The Draft Western Cape Rural Land-use Planning and Management Guidelines (2009).

Salient aspects of each of the guidelines are summarised below.

Public participation

The public participation guideline provides information on the DEA&DP’s interpretation of the public participation requirements of the EIA regulations (2009). Of direct relevance here are the guidelines relating to appropriate mechanisms for notifying interested and affected parties of their right to comment on applications for environmental authorisation and rectification (e.g. use of notice boards on site, or the placement of notices in local or regional newspapers). Also applicable are the minimum periods for public comment: 40 days in the case of draft reports, and 21 days for final documents.

Biodiversity

The DEA&DP guideline on involving biodiversity specialists in EIA processes (2005) places a very strong emphasis on pre-empting irreversible loss of biodiversity and ecological functioning through proactive planning and impact avoidance.

These considerations can no longer apply, however, once transformation has occurred and mitigation through remediation – not avoidance – is the only alternative strategy.

Key elements of the DEA&DP biodiversity guidelines that do apply to the application in question, and have been implemented, are:

- Adoption of an ecosystem approach to impact assessment;
- Addressing impacts on biodiversity at the major levels of hierarchical organisation (species, communities/habitats, and the landscape);
− Reference to the *Fynbos Forum Ecosystem Guidelines for Environmental Assessment in the Western Cape* (De Villiers et al, 2005); and
− Relating impact significance to ecological management objectives and the thresholds that underpin Critical Biodiversity Areas,

The environmental assessment also makes explicit the substantive and qualitative differences between environmental rehabilitation and ecological restoration.

**Visual impacts**

The guideline on involving visual specialists in EIA (2005) was used to define the various categories of visual impact in terms of the scale and significance of the activity and the nature and sensitivity of the receiving environment, thus obtaining a categorisation of ‘visual impact’ and the level of study required to assess and mitigate impact.

### 2.8 THE DRAFT WESTERN CAPE RURAL LAND-USE PLANNING AND MANAGEMENT GUIDELINES

The draft Western Cape Rural Land-use Planning and Management Guidelines (DEA&DP 2009a)\(^\text{20}\) are based on the Western Cape Provincial Spatial Development Framework, an approved section 4(6) structure plan in terms of the Land-use Planning Ordinance 15 of 1985. They aim to:

− Promote sustainable development in appropriate rural locations throughout the Western Cape;
− Safeguard the functionality of the province’s life-supporting ecosystem services;
− Maintain the integrity, authenticity and accessibility of the province’s significant farming, ecological, cultural and scenic rural landscapes and natural resources;
− Assist Western Cape municipalities to plan and manage their rural areas more effectively; and
− Provide clarity to the province’s social partners on what kind of development is appropriate beyond the urban edge, suitable locations where it could take place, and the desirable form and scale of such development.

These guidelines delineate Spatial Planning Categories (SPCs) in terms of, among others, the biodiversity categories that are used by CapeNature’s Critical Biodiversity Area maps\(^\text{21}\) for Western Cape municipalities (Pence, 2008; Maree and Vromans, 2010). Such SPCs indicate the type of land use that should be accommodated in the SPC and where these land use should take


\(^{21}\) Cf. [http://bgis.sanbi.org](http://bgis.sanbi.org)
place. CBA maps, in turn, provide desired management objectives for the various mapped biodiversity categories that underpin SPCs.

The following CBAs and corresponding spatial planning categories apply to this application:

<table>
<thead>
<tr>
<th>CBA category (Spatial planning category)</th>
<th>Desired conservation management objective</th>
<th>Appropriate activities</th>
</tr>
</thead>
</table>
| Terrestrial CBA – Critical Biodiversity Area (Core 1) | - Maintain natural land.  
- Rehabilitate degraded areas to natural or near-natural state.  
- Manage against further degradation | - ‘No go’ for development. Should remain undisturbed by human impact.  
- Conservation management to be encouraged.  
- Subject to stringent controls, these biodiversity-compatible, low impact land uses may be accommodated:  
  o Non-consumptive low impact ecotourism  
  o Harvesting of natural resources  
  o No further loss of natural habitat  
  o No large-scale ecotourism developments  
  o Encourage land consolidation & discourage sub-division. |
| Aquatic OESA – Other Ecological Support Area (Core 2) | - Maintain ecological processes | - Biodiversity – compatible and low impact conservation land uses, but allowing for a limited increase in scale of development in less sensitive areas (provided ecological processes not disrupted).  
- No further extensions of intensive or extensive agriculture. |

The CBAs and SPCs are particularly relevant to evaluation of the significance of potential impacts on biodiversity and ecosystems.

**2.9 CAPENATURE’S REQUIREMENT WITH RESPECT TO BIODIVERSITY IN DEVELOPMENT APPLICATIONS**

The Western Cape Nature Conservation Board Act (15 of 1998) designates CapeNature as the statutory custodian of biodiversity in the Western Cape.
The organisation requires that a biodiversity assessment must be undertaken if a development may result in the loss of habitat or ecological functioning in any of the following situations, or if there is any doubt about the biodiversity value of an area (CapeNature 2008):

- Rivers, wetlands, groundwater-dependent communities and estuaries;
- Critical Biodiversity Areas and Ecological Support Areas;
- Viable or connected Critically Endangered and Endangered ecosystems;
- Any area identified by a systematic conservation plan as important for biodiversity conservation;
- Any special habitat with unique signature of species;
- Any habitat with rare, threatened or range-restricted plant or animal species;
- Natural habitat in ecological corridors or along vegetation boundaries, including frontal dune systems; or
- Mountain Catchment Areas.

CapeNature recommends that CBA maps be used as the primary biodiversity informant in the Western Cape Province. Although the CBA maps represent the best available information, they need to be ground-truthed and do not replace the need for a specialist assessment (Ralston et al., 2009). Ground-truthing is also needed to identify potential errors in land cover mapping.
3. THE RECEIVING ENVIRONMENT

3.1 LOCATION

The Sandfontein property (Portion 2 of Farm 232) is located about 15 km south-west of Bonnievale in the Langeberg Municipality. The site subject to this application is located at 34° 02' 53.30"S; 20° 00’ 27.96"E, on a north-facing slope about 300 m AMSL in the Riviersonderend Mountains.

**Figure 4:** Locality map showing the Farm 232/2 (Sandfontein). Map sourced from Government topo-cadastral 1:250 000 map series 3319, 3419 and 3420.

**Figure 5:** Locality map showing the Farm 232/2 (Sandfontein) and the development site (red circle). Map sourced from 3319DD, 3320CC, 3419BB and 3420AA.
3.2 GEOMORPHOLOGY, GEOLOGY AND SOILS

Topographically, the area is defined by the east-west trending Riviersonderend Mountains that form the southerly backdrop to the site, and the Breede River, about 9.5 km to the north-east. The site is against a slope of about 2.8 : 1. It is flanked by two relatively incised seasonal watercourses with dendritic patterning that join about 300 m below the site and into the north-flowing Boesmansrivier, a tributary of the Breede River.

The geology of the area is dominated by sandstones of the Ordovician Table Mountain Supergroup, (Peninsula Formation), glacial diamictite deposits (Pakhuis Formation), thinshale band of the Cederberg Formation, capped by the quartzitic sandstones of the Nardouw Group (Skurweberg). The mountain range is associated with the massively uplifted and folded Cape Table Mountain Supergroup. Sandstones, quartzites and diamictites are more resistant to weathering than the softer, more pliable shales, which present as smoother, less broken slopes than the more rugged sandstone formations. See Malan et al. (1994) for an authoritative explanation of the geology in this area.

Soils are leached and acidic lithosols, derived from the sandstones of the Table Mountain Group (Rebelo et al 2006 in Mucina and Rutherford (eds), pp 113 and 114).

Figure 6: Map showing geology and stratigraphic legend of the Farm 232/2 (Sandfontein) development site (red circle) and surrounding areas. Maps sourced from the Council for GeoSciences 1:250 000 scale geological map series 3320 and 3420.
3.3 CLIMATE

The site is located in the winter rainfall region of South Africa and has a Mediterranean climate (i.e. cool, wet winters and dry, windy summers. Late summer fires, sparked by lightning, are not uncommon.

Mean annual precipitation ranges from 250 to 1 410 mm (mean: 605 mm), peaking May to August. Mean daily maximum and minimum temperatures 26.2°C and 4.4°C for February and July respectively. Frost incidence 7 to 10 days p.a. (Rebele et al, 2006 in Mucina and Rutherford, 2006, p 113).

North-facing slopes are generally drier than those that face south, as evidenced by the MAP for South Sonderend Sandstone Fynbos – 380 to 1 650 mm (mean 785 mm).

Figure 7: Climate graphs for Bonnievale depicting monthly distribution of average rainfall and temperatures (After SA Explorer.co.za website).

3.4 BIODIVERSITY CONTEXT

The site in question is located in the Cape Floristic Region, one of 34 ‘global biodiversity hotspots’ – areas of great natural wealth that are under extreme pressure. At a regional scale, ecosystems and habitats would be those associated with the south-western parts of the Fynbos Biome.

The fynbos component accounts for 70-80% of the region’s flora with a high degree of plant diversity at a local scale and between sites (Manning, 2007).
Much of the remnant lowland vegetation of the Cape Floristic Region and supporting ecosystems in these areas is either highly threatened (especially in the Fynbos Biome, which represents more than 66% of South Africa’s Critically Endangered ecosystems) or hosts globally unique plants that have undergone unique evolutionary adaptations to their environments.

The site in question would be associated with midland and mountain fynbos ecosystems (De Villiers et al., 2005), rather than lowland ones. Although of high conservation significance (see below), the site is located in a vegetation type that is not threatened – largely because it has escaped the type and scale of agricultural transformation associated with alluvial floodplains and shale-dominated habitats.

The northernmost parts of the Farm 232/2 Bonnievale fall within a terrestrial Critical Biodiversity Area (CBA) which signifies high importance for biodiversity conservation. See 3.7 below for a definition of the purpose and implications of CBAs for development planning and environmental assessment.

### 3.5 VEGETATION

The vegetation on site is recognised as ‘North Sonderend Sandstone Fynbos’ (Ffs 13) by the Vegetation Map of South Africa (Mucina et al., 2006). The vegetation has been described more recently and at a larger scale as ‘McGregor Arid Fynbos’ by the C.A.P.E. Fine-Scale Planning Project – Integrated Vegetation Map for the Langeberg Municipality (Helme & Freshwater Consulting Group 2007).

About 500 m to the north, fynbos is replaced by renosterveld as the dominant vegetation type. The renosterveld in the valley below is defined as Breede Shale Renosterveld by the Vegetation Map of South Africa (2005) and Ribbokkop Thicket Renosterveld by the C.A.P.E. Fine-Scale Planning Project. This vegetation has not been affected by the activities that are subject to this investigation.

Rebelo et al. (2006, pp 113 to 114) provide the following description of North Sonderend Sandstone Fynbos:

> Vegetation is an open, tall, proteoid-leaved evergreen shrubland with a dense moderately tall, ericoid-leaved shrubland as understorey. This is mainly asteraceous fynbos on the western and lower slopes, but extensive proteoid and restioid fynbos dominate the middle slopes. Ericaceous fynbos is restricted to the highest peaks. This unit (in facies with extensive asteraceous fynbos—with emergent *Aloe ferox*) borders on succulent karoo shrublands at the lowest elevations and to the east. The deep sand habitat of the northern plateau, which runs along the length of the mountain, is a distinctive feature associated with many endemic species.

**Important Taxa:** (Cape thickets) Small Trees: *Acacia karroo*, *Cunonia capensis* T, *Metrosideros angustifolia* T, *Protea nitida*. Tall Shrubs: *Protea nerifolia* (d), *P. repens* (d), *Polygala fruticosa*,...

**Endemic Taxa:** Low Shrubs: Leucadendron burchellii, L. immoderatum, L. nervosum, Leucospermum harpagonatum, Serruria stellata, S. williamsii, Spatalla argentea.

North Sonderend Sandstone Fynbos is designated ‘Least Threatened’ by the 2009 draft list of threatened ecosystems (DEAT, 2009).

![Figure 8](image-url) *Figure 8: Extract from the Vegetation Map of South Africa (2006), showing the location of the development site (red circle).*
Figure 9: Extract from the C.A.P.E. Fine Scale Planning Project: Integrated Vegetation Map for the Langeberg Municipality (2007), showing the location of the development site (red circle).

Figure 10: Extract from the C.A.P.E. Fine-Scale Plan Critical Biodiversity Areas Map showing aquatic CBAs (none depicted in the map), terrestrial CBAs (green), ecological support areas (ESAs) (light blue), other natural areas (beige) and areas where no natural vegetation remain (brown) in relation to the development site (red circle).
This impact assessment takes the view that habitat or local land classes can serve as a defensible surrogate for biodiversity, and impacts on biodiversity pattern are consequently reflected and assessed as impacts on habitat (cf. Cowling and Heijnis, 2001).

Impacts on ecological processes (see below) also follow a surrogacy approach; particular processes (e.g. pollination or whole-patch fires) are expressed spatially, in terms at the geographic scale at which they need to operate (cf. Rouget et al., 2003; De Villiers et al., 2005).

3.6 ECOLOGICAL PROCESSES IN MIDLAND AND MOUNTAIN FYNBOS

The Fynbos Forum Ecosystem Guidelines for Environmental Assessment in the Western Cape (De Villiers et al., 2005) assign North Sonderend Sandstone Fynbos to ‘Midland and Mountain Fynbos Ecosystems’ (Helme et al, 2005).

The main ecological drivers in these ecosystems are fire (late summer, early autumn) and edaphic conditions, especially in terms of nutrient status, depth and the availability of water. Rockiness can also be an important determinant of community diversity.

Specialist pollinator relationships and fire-related responses are likely to be the natural processes that would be most affected by disturbance and habitat degradation at a scale of the disturbances in question, i.e. about 0.5 ha (see De Villiers et al, p. 81). It is however highly unlikely that the disturbance in question will significantly influence these natural processes in this context, if the latter is allowed to continue.

Fire return intervals would need to be determined by a fynbos ecologist. As a rule of thumb (De Villiers et al., 2005, p 22), at least 50% of non-sprouting Protea plants must have flowered three times before they are burned again. The maximum interval between fires should not exceed the active reproductive period of these plants. Fires should preferably be burnt in blocks not smaller than 100 ha, and ideally 200 to 250 ha.

Again this is important in a broader context and should be considered if one wants to manage midland and mountain fynbos correctly. In this case the Applicant is only planning to build a house and live there. Management actions applicable to this application are discussed in the Environmental Management Program.

3.7 THREATS TO MIDLAND AND MOUNTAIN FYNBOS

Woody invasive alien species such as pine and wattle represent a key threat in fynbos ecosystems (Helme, et al, 2005). Fynbos is particularly prone to the spread of invasive alien species after physical disturbance and unseasonal and too-frequent fires.
Appropriate fire and alien control regimes must be maintained, and development must be designed to avoid fragmentation and reduction of ecological corridors. Seeps and marshes should not be disturbed.

### 3.8 AQUATIC ECOSYSTEMS

Two non-perennial streams that broadly define the eastern and western flanks of the disturbed area rise from catchments south of the site and join together to form a single stream about 300 m down the slope.

The watercourse to the east has been excavated and dammed, whereas that to the west has not been affected by the activities in question. The latter watercourse may previously have been utilised for agricultural purposes as there is a cleared, grassed area adjacent to it several metres below the excavated bench that is subject to this application.

The affected watercourse was initially characterized as an ephemeral non-isolated sandstone fynbos seep (according to the C.A.P.E. fine-scale planning project’s assessment of aquatic ecosystems of the Upper Breede River Valley (Job et al., 2008)). The latter authors define seeps as a concave or convex area that is permanently or periodically saturated, usually on a slope, where groundwater or interflow meets the surface.

In response to comments made by CapeNature (refer to Appendix F) a freshwater specialist study was carried out, with a particular focus on impacts of the dam on the identified seepage area. This was carried out on 22 September 2011 based on an examination of soil morphology, vegetation and the direct presence of water (surface and sub-surface).

The field assessment concluded that the area downstream of the dam does not constitute a hillslope seepage wetland. It was confirmed to be an ephemeral channel of a second order drainage line in a valley bottom setting. There are, however, very localised microsites within the drainage line where wet season seepage occurs and/or water accumulates seasonally in localised depressions in the bedrock underlying the drainage line. The microsites appear to be maintained by a combination of lateral seepage of moisture from the adjacent hillslope and longitudinal seepage down the floor of the drainage line, which in turn supports a few generalist hydric species that are well adapted to colonizing seasonally saturated areas. The microsites are thus not considered to be of high ecological significance (refer to Freshwater Specialist Report attached in Appendix G).

The specialist confirmed that it is unlikely that the dam will significantly impact on the lateral seepage into these microsites, while longitudinal seepage is likely to be affected, although not completely eliminated in that water is currently seeping through the bottom of the dam wall.
Regarding the capturing of stormwater, the dam will alter flows, but given the lack of significant aquatic habitats downstream of the dam, the environmental impacts of the altered flows are not considered high.

These factors, together with the fact that the affected area does not fall within an Aquatic CBA, the impacts of the dam on downstream seepage/saturated areas are not considered to be of high significance from an environmental impact point of view, provided that appropriate management and mitigation measures are implemented (Kotze, 2011).

Refer to the Environmental Management Programme for measures on the rehabilitation and management of the area in question (Appendix H).

### 3.9 CRITICAL BIODIVERSITY AREAS AND ECOLOGICAL SUPPORT AREAS

The Critical Biodiversity Area (CBA) map that forms part of the *Biodiversity Sector Plan for the Witzenberg, Breede Valley and Langeberg Municipalities* (Maree and Vromans, 2010) depicts about a quarter of the Sandfontein property as a terrestrial Critical Biodiversity Area. The watercourses on the property are described as ‘Other Ecological Support Areas’.

CBA Maps are derived from systematic conservation planning methods (Margules and Pressey, 2000; Pence, 2008) and identify the most efficient network of sites that are required to ensure the continued persistence of:

- Biodiversity pattern (e.g. species, habitats, vegetation types and ecosystems);
- The ecological processes and disturbance regimes by which this biodiversity pattern is maintained (e.g. seasonal migration of sunbirds or fire in fynbos); and
- The services nature provides to society, such as supplying water, pollination in support of fruit production, and providing protection against floods.

CBA Maps depict spatially-explicit biodiversity categories that are linked to desired management objectives. The categories indicate the importance that is attached to a site owing to its contribution to meeting biodiversity objectives, and therefore serves as an explicit indication of a site’s contextual significance. The desired management objectives, in turn, provide the test for determining the appropriateness of a proposed development – development that is consistent with a site’s desired management objectives would be appropriate, whereas development that is not consistent with these objectives would probably not be appropriate, and an alternative should be explored.

This background to CBA maps will inform the assessment and evaluation, in Chapter 5, of impacts associated with the unauthorised activities in question.
3.11 TERRESTRIAL CRITICAL BIODIVERSITY AREA

The CBA within which about a quarter of Sandfontein is situated spans at least four broad vegetation groupings: alluvial fynbos towards the Boesmansrivier, sandstone fynbos in the Riviersonderend Mountains, renosterveld in the lowland valleys and thicket towards the Stormsvlei kloof.

The portion of the CBA that occurs on Sandfontein was selected in support of meeting vegetation type thresholds.

The management objectives for terrestrial CBAs are:

- Maintain natural land.
- Rehabilitate degraded areas to natural or near-natural state.
- Manage against further degradation.

In the circumstances, management of the affected vegetation should be guided by the objectives and principles that apply to midland and mountain fynbos ecosystems (cf. De Villiers et al, pp. 44 to 50). Both pattern and process considerations would apply at all hierarchical levels from at least the species to ecosystem scale.

3.12 OTHER ECOLOGICAL SUPPORT AREAS

Other Ecological Support Areas are supporting zones required to prevent degradation of Critical Biodiversity Areas, Critical Ecological Support Areas and protected areas.

Ecological functioning should be maintained.

The ‘bottomlines’ for managing wetlands include (Day and Job, 2005, pp. 68 to 73):

- Flow regimes must maintain the wetland at its present extent and habitat quality, as well as downstream ecosystems;
- Water quality must be controlled in relation to specific objectives (for example, not to decline to a lower management class);
- Hydrological connectivity must be preserved;
- Existing connectivity must be maintained at an appropriate scale; and
- Buffers should protect wetlands against specific identified threats.
3.13 SPECIES OF SPECIAL CONCERN

The Stormsvei Kloof, which links the N2 to Bonnievale via the R317, forms a key landscape corridor between the Renosterveld of the Breede valley and the Renosterveld of the Overberg (Maree and Vromans, 2010). It is situated about 7 km east of the subject property. The kloof supports a wide variety of micro-climates and habitats and as a result, many rare species. This special habitat is threatened by alien invasive vegetation, agriculture and the impact of the road through the kloof.

The development site falls within a large, continuous natural area of McGregor Arid Fynbos (classified within North Sonderend Sandstone Fynbos by Mucina and Rutherford, 2006) which occupies the lower sandstone slopes of the Riviersonderend Mountains. The whole area is relatively poorly botanised and the true range of many species is barely known.


3.14 SOCIO-ECONOMIC CHARACTERISTICS

The area in question is predominantly rural in character, with agriculture representing the most prevalent land use.

If the Department gives the go-ahead to continue with the development the local economy and unemployed workers will benefit from the project. Two permanent and five temporary workers have been employed on the farm up to date to conduct alien clearing and other farming activities. More employees will be required for the building of the house and farming operations on the adjacent farm. Note that building plans will be submitted to the Langeberg Municipality before construction commences.

Noteworthy socio-economic features in the vicinity include:

- The Sandfontein Ashton Small-scale Farmers’ Trust, a land reform project on an adjoining farm about 3 km to the east of the subject property;
- Access to a private dwelling in the mountains on Farm 232/1, about 1.5 km to the south of the subject property, is provided by means of a servitude road that crosses the site in question (Figure 1).
- A dam of some 6 ha in extent about 1 200 m to the north-west of the subject property (the watercourses that drain the subject property are intercepted by this dam);
- An Eskom 11 kV powerline that runs in an easterly direction in the valley north of the site;
- Fields and vineyards about 1 km to the north and north-west;
- Three or four farmsteads on the Boesmansrivier minor road, about 2 500 m to the north-west; and
- The Ashton-McGregor gravel road, about 3 400 m distant.

The scarring of the mountain side at the subject property is visible from the latter road, but visibility has been greatly reduced by the onset of the rainy season. Visibility will reduce even further once rehabilitation of the affected area commences. Refer to Figures 2 and 3, and Appendix D for photo montages.

The property itself, and its immediate surrounds, are undeveloped except for minor gravel roads and jeep tracks. There are no services in place and the immediate environment is in a natural to largely natural condition – with the exception, that is, of the disturbed areas subject to this application.

**Figure 11**: Annotated Google image (acquired in 2009) indicating the boundaries (red) of Sandfontein (Portion 2 of Farm 232) on which the activities took place, and the surrounding economic land uses.
4. ALTERNATIVES

One of the central principles of environmental management is that it must seek the best practicable option, i.e. the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as the short term.\(^{22}\) The primary mechanism for doing so is through the identification and examination of alternatives that provide a basis for choice among options available to the decision-maker (Preston \textit{et al.}, 1996, p 755).

In terms of the DEA&DP Guideline on Alternatives (2007), the term means “different means of meeting the general requirements of the activity” and can include location, activity, design or layout, technological and operational alternatives. The DEA&DP guideline emphasises that alternatives must be ‘feasible’ and ‘reasonable’, and the ‘feasibility’ or ‘reasonableness’ must be weighed up against:

- The general purpose, requirements and need of the activity;
- How the activity impacts on the affected environment; and
- How the activity impacts on the affected human community.

The \textit{New Oxford English Dictionary} (Pearsall (ed), 1998) defines ‘feasible’ as meaning “possible to do easily or conveniently” and ‘reasonable’ as, variously, “fair and sensible... based on good sense.... as much as it is appropriate or fair”, etc.

4.1 IDENTIFICATION OF ALTERNATIVES

Circumstances at the Sandfontein site would seem to suggest three alternative courses of action:

- The first one would be to do nothing and leave the site as it is (No-Go Alternative).

- The second would be to aim for the complete restoration of the disturbed area (Restoration Alternative).

- The third would be to combine limited development of the site with a rehabilitation program (Rehabilitation and Limited Development Alternative).

Each option is evaluated against the criteria of feasibility and reasonableness.

\(^{22}\) Cf. sections 1(1)(iii) and 2(4)(b) of the National Environmental Management Act 107 of 1998 as amended.
4.1.1 ALTERNATIVE 1: Do nothing, i.e. leave site as it is

**Feasibility**
This option is feasible but, due to the degradation that has occurred to the site in question, undesirable. It may also be unlawful.

**Reasonableness**
It would be contrary to the management objectives for Critical Biodiversity Areas not to prevent and remedy degradation of the site. It would similarly be in conflict with the duty of care to maintain the ‘status quo’. Failure to act would neither be fair, sensible nor ethically acceptable.

4.1.2 ALTERNATIVE 2: Aim for complete restoration

**Feasibility**
Rehabilitation with complete restoration of the site as its goal would be desirable and could be attempted, but it is viewed as unachievable. It is therefore not considered to be a feasible option. It is highly unlikely that the physical transformation of the watercourse, connecting track and excavated platform can be reversed to the extent that pre-disturbance habitat can be re-established and complete, natural re-vegetation is possible. The site is likely to be permanently scarred – ecologically and visually. The effects of this scarring can be minimised but not entirely erased by partial re-vegetation with local indigenous plant species and judicious camouflage of the damaged rock face. Complete restoration is, however, not a feasible option.

**Reasonableness**
This option is viewed as unreasonable because, on a balance of probabilities, it is unachievable. In that regard, the option is neither sensible nor appropriate. It would also be unfair to expect the applicant to pursue a goal that, for all practical purposes, is out of reach.

4.1.3 ALTERNATIVE 3: Combine limited development with rehabilitation of remaining disturbed areas

**Feasibility**
It will be quite feasible to allow limited development of the site while promoting the rehabilitation of disturbed areas. Such a course of action would recognise the desirability of preventing and remedying environmental degradation, while simultaneously acknowledging that complete ecological restoration of all the disturbed areas is not possible.

Mechanical excavation of the terrace and dam has probably resulted in completely irreversible transformation of the habitat that occurred at these sites. If so, this would from the out-set neutralise any prospects of restoring these sites to a pre-disturbance condition. Other areas,
though, such as the disturbed boundaries to the two excavated sites, the shoulder of the newly constructed jeep track and places where stone may have been dumped, could respond positively to re-vegetation.

The dam, if allowed to fill with water and the wall re-vegetated, would be an unnatural but relatively unobtrusive feature when compared to its current, highly visible and disturbed state. Likewise, the visual and aesthetic impacts of the terrace and particularly the freshly scarred cutting against the back slope could be effectively concealed with an appropriately designed and scaled building (see Figures 2 and 3, and Appendix D). The design of the latter would have to be guided by the largely pristine nature of the broader environment and the aesthetic qualities of the area (DEA&DP, 2009). Principles such as ‘touch the earth lightly’ and ‘design with nature’ would need to be applied to the design and construction of, for example, a dwelling on the terrace.

The physical scale and bulk of such a development, its profile in the landscape, and degree to which visual impacts can be absorbed by the use of natural or camouflaging materials are crucial questions that need to be addressed when contemplating development at the site. Overall, however, such a course of action is deemed the most desirable and the most feasible when measured against the environmental losses and gains that would be incurred by abandoning the site entirely, or attempting an imperfect and ultimately ineffectual ecological restoration programme.

Reasonableness
In the circumstances, where full ecological restoration is not feasible and the visual and aesthetic effects of scarring cannot be erased by re-vegetation, and doing nothing to mitigate or remedy environmental degradation is not an option, partial development with targeted restoration would seem to be most sensible alternative. It is obviously not the most desirable option, but preferable in comparison to the others. Partial development would mean rehabilitation (albeit in a limited degree) some natural habitat and ecological functionality to the disturbed areas and reducing much of the adverse aesthetic effect of developments to date. While the desirability of development at the site might be debatable, limited development would appear to be the most beneficial course of action from an environmental perspective.
5. IDENTIFICATION, ASSESSMENT AND EVALUATION OF IMPACTS ARISING FROM UNAUTHORISED ACTIVITIES ON PORTION 2 OF FARM 232

This section sets out to identify impacts on the natural and social environments that may have arisen as a result of the unauthorised excavation of a dam and clearing of vegetation at the Sandfontein site, to assess the environmental implications of such impacts, and to evaluate their significance against appropriate criteria.

Each suite of potential impacts is analysed with reference to specialised literature including the *Fynbos Forum Ecosystem Guidelines for Environmental Assessment in the Western Cape* (De Villiers *et al.*, 2005), *The Biodiversity Sector Plan for the Witzenberg, Breede Valley and Langeberg Municipalities* (Maree and Vromans, 2010) and the fine-scale planning guidelines for the aquatic ecosystems of the Upper Breede River valley (Job *et al.*, 2008).

This is followed by recommendations with respect to effective mechanisms to alternatively avoid, minimise or, where appropriate, remedy loss of biodiversity and disturbance to ecosystems. The treatment of mitigation measures only applies to Alternative 1 the *Status Quo* and Alternative 3, Rehabilitation and Limited Development Alternative (which is also the preferred option).

5.1 ASSESSMENT AND EVALUATION METHODOLOGY

5.1.1 THE ASSESSMENT METHOD

Three alternatives have been identified, namely:

- Alternative 1: Retention of the ‘status quo’ (‘do nothing’);
- Alternative 2: Restoration of the disturbed areas; and
- Alternative 3: Rehabilitation with limited development.

Each of these alternatives is assessed and evaluated in relation to,

- Impacts on indigenous vegetation (i.e. habitat, as a surrogate for biodiversity pattern)
- Impacts on fire regimes and pollination at a scale of <1 ha (i.e. biodiversity process)
- Impacts on the ephemeral watercourse, with respect to:
  o Hydrological regimes
  o Water quality
  o Erosion and sedimentation
  o Ecological connectivity and habitat quality
Impacts on biodiversity are separated into those impacts that may affect the composition, structure or functioning of biodiversity at the different scales of assessment, as distinct from impacts that may result in loss of biodiversity in Critical Biodiversity Areas.

The reason for the distinction is that loss of biodiversity or disturbance to ecosystems that have been selected as Critical Biodiversity Areas would:

- Compromise the achievement of national targets and thresholds for the selected features;
- Undermine the principle of efficiency by potentially increasing the extent of land that would be needed to achieve targets and thresholds were habitat to be lost in CBAs; and
- Run counter to the objectives that CBAs must be managed in a natural condition or, if not natural, restored to a natural or near-natural condition.

For non-CBAs designated as 'other natural vegetation', the loss of habitat would not subvert the achievement of biodiversity targets and thresholds, and would therefore not automatically be as significant as loss of habitat in CBAs. However, non-CBA status does not mean that the significance of loss of biodiversity would automatically be reduced. All that it means is that the contextual importance of a site is not linked to the achievement of national biodiversity conservation targets or thresholds.

Overall, environmental management and planning must deliberately seek to avoid further loss of biodiversity and disturbance to ecosystems. Where this is demonstrably not possible, or feasible or reasonable, residual impacts on biodiversity must be mitigated and where loss has occurred, it should be remedied through appropriate compensatory strategies.

5.1.2 THE EVALUATION METHOD

The method employed here was developed by the Ninham Shand Environmental Section, which is hereby acknowledged as the authors of this approach.

The potential impacts associated with each of the four alternatives will be evaluated in terms of spatial extent, magnitude and duration (Table 1), which provides a significance rating for each impact (Table 2). The probability of an impact occurring, and the confidence of that prediction, will be recorded (Tables 3 & 4 respectively).
The SIGNIFICANCE of an impact is derived by taking into account the temporal and spatial scales and magnitude. The means of arriving at the different significance ratings is explained in **Table 2**.

**Table 1: Assessment criteria for the evaluation of impacts**

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>CATEGORY</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extent or spatial influence</td>
<td>National</td>
<td>Loss of habitat in a Critical Biodiversity Area or threatened ecosystem</td>
</tr>
<tr>
<td>of impact</td>
<td>Regional</td>
<td>Grootrivier to R317 (i.e. radius of 7 to 12 km)</td>
</tr>
<tr>
<td></td>
<td>Local</td>
<td>Directly neighbouring properties</td>
</tr>
<tr>
<td></td>
<td>Site specific</td>
<td>The subject property</td>
</tr>
<tr>
<td>Magnitude of impact (at the</td>
<td>High</td>
<td>Natural and/or social functions and/or processes are severely &amp; irreplaceably altered (including irreversible loss of habitat in CBA or threatened ecosystem)</td>
</tr>
<tr>
<td>indicated spatial scale)</td>
<td>Medium</td>
<td>Natural and/or social functions and/or processes are notably altered, but reversible (including reversible loss of habitat in CBA or threatened ecosystem)</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Natural and/or social functions and/or processes are slightly altered.</td>
</tr>
<tr>
<td></td>
<td>Very Low</td>
<td>Natural and/or social functions and/or processes are negligibly altered.</td>
</tr>
<tr>
<td></td>
<td>Zero</td>
<td>Natural and/or social functions and/or processes remain unaltered.</td>
</tr>
<tr>
<td>Duration of impact</td>
<td>Short Term</td>
<td>0-1 year</td>
</tr>
<tr>
<td></td>
<td>Medium Term</td>
<td>1-5 years</td>
</tr>
<tr>
<td></td>
<td>Long Term</td>
<td>More than 5 years</td>
</tr>
</tbody>
</table>

**Table 2: Definition of significance ratings**

<table>
<thead>
<tr>
<th>SIGNIFICANCE RATINGS</th>
<th>LEVEL OF CRITERIA REQUIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>• High magnitude with a national or regional extent and long-term duration.</td>
</tr>
<tr>
<td></td>
<td>• High magnitude with either a regional extent and medium term duration or a local extent and long term duration.</td>
</tr>
<tr>
<td></td>
<td>• Medium magnitude with a national or regional extent and long-term duration.</td>
</tr>
</tbody>
</table>
Once the significance of an impact has been determined, the PROBABILITY of this impact occurring as well as the CONFIDENCE in the assessment of the impact, are estimated using the rating systems outlined in tables 3 and 4 respectively. It is important to note that the significance of an impact should always be considered in concert with the probability of that impact occurring.

Table 3: Definition of probability ratings

<table>
<thead>
<tr>
<th>PROBABILITY RATINGS</th>
<th>CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definite</td>
<td>Estimated greater than 95 % chance of the impact occurring.</td>
</tr>
<tr>
<td>Highly probable</td>
<td>Estimated 80 to 95 % chance of the impact occurring.</td>
</tr>
<tr>
<td>Probable</td>
<td>Estimated 20 to 80 % chance of the impact occurring.</td>
</tr>
<tr>
<td>Possible</td>
<td>Estimated 5 to 20 % chance of the impact occurring.</td>
</tr>
<tr>
<td>Unlikely</td>
<td>Estimated less than 5 % chance of the impact occurring.</td>
</tr>
</tbody>
</table>

Table 4: Definition of confidence ratings

<table>
<thead>
<tr>
<th>CONFIDENCE RATINGS</th>
<th>CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certain</td>
<td>Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.</td>
</tr>
<tr>
<td>Sure</td>
<td>Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.</td>
</tr>
</tbody>
</table>
A summary of the significance of the potential impacts is presented in Table 5.

### 5.2 ADDITIONAL IMPACTS RAISED DURING PUBLIC PARTICIPATION

The following additional impacts were identified during the public commenting period on the draft EIR:

- The Langeberg Municipality pointed out that the site in question falls within the Core 1 and Core 2 Spatial Planning Categories, as identified in the draft Langeberg Spatial Development Framework, which is essentially “no-development / no-go areas” that should remain undisturbed by human impact.

  Consideration must further be given to the precedent that will be set for other future development on the mountain slopes on adjoining farms, should the development in question be authorised.

  Refer to Appendix F for the relevant responses.

- The Zonderend Conservancy suggested that the area should not be further disturbed by taking rock from fynbos for building material. The Applicant agreed to make use of existing rock piles close-by if and when rock is needed for constructing the dwelling. Refer to the Comment and Response Report in Appendix F.

- In the comments on the draft EIR, CapeNature stated that “The transformation on an ecologically important seepage area is especially concerning and we suggest that comment/advice is sought from a freshwater specialist on rehabilitation measures and as how to maintain ecological functioning in the new dam.”

  The affected watercourse was initially characterized as an ephemeral non-isolated sandstone fynbos seep (according to the C.A.P.E. fine-scale planning project’s assessment of aquatic ecosystems of the Upper Breede River Valley (Job et al, 2008)) in the draft EIR.

  In response to comments made by CapeNature a freshwater specialist study was carried out, with a particular focus on impacts of the dam on the identified seepage area. The field assessment concluded that the area downstream of the dam does not constitute a hillslope seepage wetland. It was confirmed to be an ephemeral channel of a second order drainage line in a valley bottom setting with very localised microsite that appear to be maintained by
lateral and longitudinal seepage from adjacent hillslopes and the floor of the drainage line, respectively. Refer to Section 3.8 and Appendix G for more detail.

- Additional information (in the form of comments and identified impacts) obtained during the final 21 day commenting period will be included in the Final EIR for submission to the DEA&DP.

5.3 GAPS IN KNOWLEDGE AND UNCERTAINTY OF PREDICTIVE METHODS AND ASSUMPTIONS

- The EAPs were unable to view the site before the activities took place.

- A Dam Report was compiled by a civil engineer, appointed by the Applicant. The report includes aspects on catchment area, flood volumes, design of the spillway, etc. There is a certain level of error in the calculations as the hydrological stormwater model that was used is normally used in more urban environments. The calculations are, however, accepted due to the small size of the catchment (0.25km$^2$) and dam in question.

- The dam wall quality will be the responsibility of the landowner.

5.4 A NOTE ON ‘MITIGATION’ AND ‘RESTORATION’

Management interventions are defined and shaped by their intended objectives.

Here, ‘mitigation’ is understood to be guided by the objective of preventing further environmental degradation and rehabilitation of some of the original, pre-disturbance condition of the affected environment or ecosystem.

Mitigation can ‘soften’ some of the negative effects of a particular set of disturbances and, to some extent, restore an element of environmental amenity such as visual integrity or a use value such as grazing.

Mitigation may include keeping a site clear of alien vegetation. Full ecological recovery would not, however, be the objective.

‘Restoration’ is not treated as a strategy for mitigation, but is rather understood to constitute an objective and alternative in its own right. It would be tautologous to suggest that a restoration programme can be mitigated. ‘Restoration without mitigation’ is therefore not assessed.
Restoration is defined as management to return a damaged ecosystem to its pre-disturbance condition, both functionally and structurally. It is recognised, though, that complete restoration is unlikely (cf. Cairns, 1993, p 193).

5.5 IMPACT ASSESSMENT AND EVALUATION OF SIGNIFICANCE OF IMPACTS

5.5.1 IMPACTS ON INDIGENOUS VEGETATION

The affected vegetation type, North Sonderend Sandstone Fynbos, is Least Threatened and moderately protected (Rouget et al., 2005). According to the 2005 National Spatial Biodiversity Assessment (Rouget et al., 2005), the biodiversity target for North Sonderend Sandstone Fynbos is 30%. A total of 98% remains, of which 21% is protected.

In the absence of species or habitats of special concern, it would appear that this vegetation type can lose up to 53% of its remaining extent before ecological functioning is compromised at the ‘Endangered’ threshold (DEAT, 2009). This is clearly not justification for unmitigated destruction of this vegetation type or its habitat. Nonetheless, ecological degradation could be avoided or at least minimised by avoiding fragmentation of intact habitat and maintaining large, contiguous tracts of vegetation in a natural condition and linked across environmental gradients (e.g. edaphic interfaces or migration corridors). Overall, North Sonderend Sandstone Fynbos would be sufficiently resilient, under current circumstances, to absorb and tolerate the scale and intensity of perturbances that are associated with the unauthorised development at the subject property.

There would have to be active management of the land, specifically with regard to fire and alien control, and management interventions would need to be monitored with the view to informing practice. Overall, it is understood that the local Zonderend Conservancy and CapeNature would be responsible for planning and implementing a fire management plan that would span several properties, including the property in question.

For the purposes of this application, fire management would relate to preventing unscheduled fires, participating in a broader fire management strategy, and keeping the area clear of alien vegetation. The Applicant has already commenced with the clearing of alien vegetation (see Appendix D).

Proposed mitigation measures
A decision has to be taken as to whether the disturbed area should be rehabilitated to prevent further degradation of the site, or whether active restoration should be attempted for all the disturbed parts, or partial if a dwelling were to be permitted there. Rehabilitation could entail matters such as preventing erosion, controlling invasive alien species and filling in the excavated
area. Restoration, in turn, would be aimed at returning either the whole or part of the site to its pre-disturbance condition, with an emphasis on:

- Re-establishing the pre-disturbance vegetation community;
- Preventing further environmental degradation; and
- Managing the site and surrounds for fire and against invasive alien species.

**Assessment of impacts on habitat supporting North Sonderend Sandstone Fynbos**

The loss of vegetation at the site as a result of the unlawful land clearance is highly localised and, in the absence of any threats to plant species of special concern, or special habitats, viewed as of limited significance – without and with mitigation. North Sonderend Sandstone Fynbos is non-threatened and well represented in the surrounding landscape.

Although complete restoration to a pre-disturbance condition is viewed as unrealistic, effective steps can be taken to prevent further degradation, mitigate edge effects and buffer untransformed veld from the disturbed area. These questions are addressed in depth in the draft environmental management programme.

<table>
<thead>
<tr>
<th></th>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>‘Retain status quo’</td>
<td>‘Aim for restoration’</td>
<td>'Limited development and rehabilitation'</td>
</tr>
<tr>
<td>Extent</td>
<td>No mitigation</td>
<td>With mitigation</td>
<td>No mitigation</td>
</tr>
<tr>
<td>Magnitude</td>
<td>Medium</td>
<td>Medium</td>
<td>n/a</td>
</tr>
<tr>
<td>Duration</td>
<td>Long term</td>
<td>Medium term</td>
<td>Long term</td>
</tr>
<tr>
<td>Significance</td>
<td>Medium (-)</td>
<td>Medium (-)</td>
<td>Very low (-)</td>
</tr>
<tr>
<td>Probability of impact occurring</td>
<td>Definite</td>
<td>Highly probable</td>
<td>n/a</td>
</tr>
<tr>
<td>Confidence</td>
<td>Certain</td>
<td>Unsure</td>
<td>Certain</td>
</tr>
</tbody>
</table>

**5.5.2 IMPACTS ON SPATIAL SURROGATES OF ECOLOGICAL PROCESSES**

The total area of disturbance at the subject property is 0.574 ha. It is practically surrounded by intact indigenous vegetation in a pristine to near-natural condition.

The excavations in the watercourse and bulldozed track and terrace together form a roughly ‘L’-shaped area of cleared land that may pose an obstacle to the movement of a narrow front of fire through the landscape, or at the periphery of a fire front, but otherwise probably not.
The site could be a source of unplanned or undesirable fire, as well as introduction of alien plant species. These are factors that can be prevented and controlled through effective management.

The cleared track may inhibit the movement of pollinators such as long-tongued flies or butterflies, but this impact pales into insignificance when compared to the cumulative effects that the regional road network may have on pollinator dynamics in North Sonderend Sandstone Fynbos. The dam area and excavated terrace could present more of an obstacle to insect pollinators. However, such impacts would only have any significance if host plant species were endemic, highly localised habitat specialists – and, of course, more so if such species were also threatened. These circumstances do not seem to apply to the subject property.

Other pollinators, such as sunbirds or various types of rodent, are unlikely to be affected by the disturbed areas in question. Smaller mammals may, however, be restrained in their movement by the dam excavations. This would be a highly localised impact, though. Cleared areas would also increase the risk of exposure to predation.

**Proposed mitigation measures**
Owing to the relatively small area of disturbance, it is presumed that the success of re-instating ecological processes will be determined by the degree to which restoration objectives can be achieved practically. All scenarios suggest that ecological processes will be impacted, but less so if the restoration or partial development options are pursued.

**Impacts on ecological processes (fire regime & pollinators) affecting persistence of North Sonderend Sandstone Fynbos**

<table>
<thead>
<tr>
<th></th>
<th>Alternative 1 ‘Retain status quo’</th>
<th>Alternative 2 ‘Aim for restoration’</th>
<th>Alternative 3 ‘Limited development and restoration’</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No mitigation</td>
<td>With mitigation</td>
<td>No mitigation</td>
</tr>
<tr>
<td></td>
<td>Extent</td>
<td>Site specific</td>
<td>Site specific</td>
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<tr>
<td></td>
<td>Magnitude</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Duration</td>
<td>Long term</td>
<td>Long term</td>
</tr>
<tr>
<td></td>
<td>Significance</td>
<td>Low (-)</td>
<td>Very low (-)</td>
</tr>
<tr>
<td></td>
<td>Probability of impact occurring</td>
<td>Definite</td>
<td>Possible</td>
</tr>
<tr>
<td></td>
<td>Confidence</td>
<td>Certain</td>
<td>Sure</td>
</tr>
<tr>
<td></td>
<td>Probability of impact occurring</td>
<td>Highly probable</td>
<td>Possible</td>
</tr>
<tr>
<td></td>
<td>Confidence</td>
<td>Certain</td>
<td>Certain</td>
</tr>
</tbody>
</table>
5.5.3 IMPACTS ON THE EPHEMERAL WATERCOURSE

The watercourse in which the unlawful activities took place is classified as an ephemeral channel of a second order drainage line in a valley bottom setting. Localised microsites occur in the watercourse and appear to be maintained by both lateral seepage from adjacent hillslopes as well as longitudinal seepage down the drainage line. A few generalist hydric species occur in the wetter microsites, but which are not considered to be of high ecological importance.

Lateral seepage into the microsites is unlikely to be significantly affected by the upstream dam. Longitudinal seepage might be affected, but not completely eliminated as water is currently seeping through the bottom of the dam wall.

An additional hydrological effect of the dam is the capturing of stormwater flows. Given the lack of significant aquatic habitats downstream of the dam the environmental impacts of the altered flows are not expected to be high.

Potential impacts on the ephemeral watercourse at the Sandfontein site are assessed in terms of the following parameters:

- Hydrological regimes
- Water quality
- Erosion and sedimentation
- Ecological connectivity and habitat quality.

Impacts on the ephemeral watercourse: Changes to natural hydrology

The following changes may be predicted with respect to the hydrological functioning of the watercourse in question:

- Changes to the seasonal flow regime and availability of water downstream due to the capturing of stormwater flows (artificial impoundment);
- Longitudinal seepage feeding localized microsites in the watercourse might be affected, but not completely eliminated as water is currently seeping through the bottom of the dam wall;
- Accelerated run off and reduced infiltration in the excavated area.

Proposed mitigation measures

Mitigation should focus on clearing and monitoring alien vegetation as well as re-establishing the natural flow regime as far as possible, i.e. downstream of the disturbed area. This can be achieved by installing overflow pipes (spillway) together with energy breakers downstream of the dam wall.

See Dam Report (Appendix G).

<table>
<thead>
<tr>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘Retain status quo’</td>
<td>Aim for restoration</td>
<td>Limited development and restoration</td>
</tr>
</tbody>
</table>
**Impacts on the ephemeral watercourse: Changes in water quality**

Changes in water quality could be attributed to artificial nitrification through pollution by fertilisers (if these, theoretically, were to be used) or contamination by human effluent. There is no evidence to suggest that the latter type of contamination is likely to occur, and it is therefore not assessed.

More likely, though, would be changes to the proportion of total dissolved solids, siltiness and turbidity of the affected run-off as a result of erosion. The latter changes are assessed below.

**Impacts on the ephemeral watercourse: Erosion and sedimentation**

Denudation of vegetation in the riparian area and mechanical disturbance to the physical structure of the watercourse and hillslope channel will reduce infiltration and accelerate run-off which, in turn, would potentially contribute to scouring, erosion and sedimentation of the affected system. The overflow of water from the dam without proper energy breakers reducing the velocity will eventually cause scouring and erosion of the dam wall and water channel.

Environmental effects include differential deposition of transported materials (silt, sand, gravel, rocks etc.) in the downstream environment, modification of riparian habitats and potential increased siltation of dams downstream. Scouring would also result in physical modification to the substrate, alteration of flow regimes, and habitat degradation.

**Proposed mitigation measures**

Re-establishment of indigenous vegetation cover above the anticipated full supply level of the dam, clearance and monitoring of alien vegetation, prevention of scouring to the channel below the spillway and monitoring of water quality – especially for sedimentation – would comprise the main methods for preventing degradation of the aquatic environment downstream of the excavation.

<table>
<thead>
<tr>
<th>Extent</th>
<th>No mitigation</th>
<th>With mitigation</th>
<th>No mitigation</th>
<th>With mitigation</th>
<th>No mitigation</th>
<th>With mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnitude</td>
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<td>Local</td>
<td>n/a</td>
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<td>Regional</td>
<td>Site specific</td>
</tr>
<tr>
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<td>Medium term</td>
<td>n/a</td>
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<td>Long term</td>
<td>Medium term</td>
</tr>
<tr>
<td>Significance</td>
<td>High (-)</td>
<td>Medium (-)</td>
<td>n/a</td>
<td>Very Low (-)</td>
<td>High (-)</td>
<td>Low (-)</td>
</tr>
<tr>
<td>Probability of impact occurring</td>
<td>Highly probable</td>
<td>Highly probable</td>
<td>n/a</td>
<td>Probable</td>
<td>Highly probable</td>
<td>Probable</td>
</tr>
<tr>
<td>Confidence</td>
<td>Certain</td>
<td>Sure</td>
<td>Sure</td>
<td>Sure</td>
<td></td>
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</tr>
</tbody>
</table>

**Alternative 1**

'Retain status quo'

<table>
<thead>
<tr>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Retain status quo'</td>
<td>'Aim for restoration'</td>
<td>'Limited development and restoration'</td>
</tr>
<tr>
<td>No</td>
<td>No</td>
<td>No</td>
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<tr>
<td>With</td>
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</tbody>
</table>
Impacts on the ephemeral watercourse: Ecological connectivity and habitat quality

Ecological connectivity would be affected when organisms are prevented from occupying or negotiating ecotones between the bed and banks of watercourses or their core and buffer components. Changes to habitat quality would be reflected in changes to the functioning of the ephemeral watercourse, and the diversity and abundance of species or communities associated with these channels.

Proposed mitigation measures

Re-vegetation of the disturbed area around the excavated depression, combating invasive alien plants and prevention of erosion and other environmental degradation, would constitute the most feasible strategy for reducing the impact on ecological connectivity and habitat quality.
5.5.4 IMPACTS ON CRITICAL BIODIVERSITY AREAS

The goal of a network of CBAs is to conserve a representative proportion of biodiversity pattern and the ecological processes by which it needs to be maintained in the smallest possible area.

The integrity of CBAs and the degree to which they contribute to the maintenance of biodiversity thresholds and achievement of targets is therefore contingent upon preventing any loss or degradation of habitat in areas selected to this end. The principle of efficiency on which CBAs is based presupposes that any loss of habitat in a CBA will mean not being able to achieve targets in the remaining extent of CBAs, and therefore having to secure a significantly larger proportion of land than that represented by the most spatially efficient design of a conservation network.

Put differently, proportionally more habitats or features will have to be conserved – and therefore potentially denied to other, non-conservation land uses – if the most efficient, minimum set of habitats is destroyed through development. The loss of any habitat in CBAs is therefore viewed as highly undesirable, of national extent, and contrary to the primary management objective of CBAs, namely biodiversity conservation.

The magnitude and duration of impacts on biodiversity and CBAs would, however, have to be measured against the resilience of the affected environment and the irreplaceability of an affected feature or biodiversity surrogate.

Proposed mitigation measures

Restoration and management of restored areas in support of biodiversity conservation objectives would be the mitigation strategy of first choice with respect to CBAs. It has to be asked, however, how feasible such an objective would be. In the circumstances, full restoration of biodiversity pattern and process would seem to be unlikely with respect to those areas where excavations have struck bedrock and/or resulted in the wholesale displacement of topsoil. A dual approach to impact mitigation is recommended with respect to the management objectives of CBAs, i.e.:

- Restoration of vegetation surrounding the two main areas of excavation – the watercourse and terrace; and
- Active management to prevent degradation of the remaining disturbed areas, namely the disturbed channel environment of the watercourse, track and terrace.

It would be unreasonable to propose complete restoration of the site when the nature of physical disturbance is such that the objective of full ecological recovery could not practically be achieved.

<table>
<thead>
<tr>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>'Retain status quo'</td>
<td>Aim for restoration</td>
<td>Limited development and</td>
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</tbody>
</table>
5.5.5 IMPACTS ON OTHER ECOLOGICAL SUPPORT AREAS

Other Ecological Support Areas typically refer to tributaries of watercourses or rivers with CBA status. They must be managed in support of ecological processes.

Impacts on ecological processes in the context of terrestrial and aquatic biodiversity have been assessed and evaluated. See above.

5.5.6 IMPACTS ON THE SOCIO-ECONOMIC ENVIRONMENT: VISUAL IMPACTS

The assessment of potential visual impacts and evaluation of their significance is guided by the categories of issues provided by the DEA&DP guideline on involving visual specialists in EIA (Oberholzer, 2005).

The categories thus referred to are:

**Very high visual impact expected (or evident):** Potentially significant effect on wilderness quality or scenic resources; fundamental change in the visual character of the area; establishes a major precedent for development in the area.

**High visual impact expected (or evident):** Potential intrusion on protected landscapes or scenic resources; Noticeable change in visual character of the area; Establishes a new precedent for development in the area.

**Moderate visual impact expected (or evident):** Potentially some effect on protected landscapes or scenic resources; some change in the visual character of the area; introduces new development or adds to existing development in the area.
Minimal visual impact expected (or evident): Potentially low level of intrusion on landscapes or scenic resources; limited change in the visual character of the area; low-key development, similar in nature to existing development.

Little or no visual impact expected (or evident): Potentially little influence on scenic resources or visual character of the area; generally compatible with existing development in the area; possible scope for enhancement of the area.

‘Fundamental change’ means the visual impact dominates the view frame and experience of the receptor. ‘Noticeable change’ means that that the impact is clearly visible within the view frame and experience of the receptor. ‘Some change’ means that the visual impact is a recognisable feature within the view frame and experience of the receptor. ‘Limited change’ means that a visual impact is not particularly noticeable with the view frame and experience of the receptor. ‘Generally compatible’ means the visual impact is practically not visible, or blends in with the surroundings (Oberholzer 2005, p 12).

In the circumstances, the cleared terrace at the Sandfontein site is visible with some initial effort from the Boesmansrivier minor road and farmsteads, and the McGregor-Ashton road.

Using Oberholzer’s categories, the visual impact of the Sandfontein development were initially considered to be of ‘moderate’ negative significance during a site visit conducted in January 2011 (i.e. prior to the rainfall season and any mitigation). Visual impact has however noticeably reduced with the onset of the rainy season and it is expected that it will be further reduced to a ‘minimal’ visual impact which has introduced ‘some change’ to the integrity of the visual environment when rehabilitation commences and the construction of the dwelling is completed. See Figures 2 and 3 and Appendix D, respectively for a comparison of the initial and projected visual impact.

Proposed mitigation

Short of encasing the exposed rock and gravel face in a permanent camouflaged structure, or painting it a darker colour, there are few realistic options for mitigating the impact of this scar on the visual environment. Re-vegetation is not an option as the excavated surface would not provide any purchase for plants, and would be highly exposed to erosion and desiccation. A stepped structure of earth-filled, hollow concrete blocks could be contemplated. This would constitute rehabilitation, not restoration, and would require intensive management with little reward for reinstating biodiversity or ecological functioning.

Construction of a building at this site, using dun-coloured, fire-resistant materials would succeed in masking a significant portion of the visible scar. Areas that remain exposed could be rehabilitated through a combination of cement blocks, as described above, use of geotextiles and hydro-
mulching. Expert advice from a horticulturalist with experience in the civil engineering sector is advised.

<table>
<thead>
<tr>
<th>Alternative 1</th>
<th>Alternative 2</th>
<th>Alternative 3</th>
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</thead>
<tbody>
<tr>
<td>'Retain status quo'</td>
<td>'Aim for restoration'</td>
<td>'Limited development and restoration'</td>
</tr>
<tr>
<td>No mitigation</td>
<td>With mitigation</td>
<td>No mitigation</td>
</tr>
<tr>
<td>Extent</td>
<td>Regional</td>
<td>Regional</td>
</tr>
<tr>
<td>Magnitude</td>
<td>Medium</td>
<td>Low</td>
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<tr>
<td>Duration</td>
<td>Long term</td>
<td>Short term</td>
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<tr>
<td>Significance</td>
<td>High (-)</td>
<td>Medium (-)</td>
</tr>
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<td>Probability of impact occurring</td>
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<td>Highly probable</td>
</tr>
<tr>
<td>Confidence</td>
<td>Certain</td>
<td>Sure</td>
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</table>

5.6 SUMMARY OF IMPACT ASSESSMENT AND EVALUATION OF SIGNIFICANCE OF IMPACTS

Table 5: Summary of impact assessment and evaluation of significance of impacts

<table>
<thead>
<tr>
<th>Impact</th>
<th>Alternative 1: Retention of the ‘status quo’ ('do nothing')</th>
<th>Alternative 2: Restoration of the disturbed areas</th>
<th>Alternative 3: Limited development with restoration of the remaining disturbed areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indigenous vegetation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>− Loss of habitat</td>
<td>Med(-)</td>
<td>Med (-)</td>
<td>n/a</td>
</tr>
<tr>
<td>− Ecological processes</td>
<td>Low (-)</td>
<td>Low (-)</td>
<td>n/a</td>
</tr>
<tr>
<td>Hydrology (Seeps)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>− Hydrology</td>
<td>High (-)</td>
<td>Med (-)</td>
<td>n/a</td>
</tr>
<tr>
<td>− Water quality</td>
<td>Assessed under impacts on sedimentation and erosion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>− Erosion and sedimentation</td>
<td>High (-)</td>
<td>High (-)</td>
<td>n/a</td>
</tr>
<tr>
<td>− Connectivity &amp; habitat quality</td>
<td>High (-)</td>
<td>Low (-)</td>
<td>n/a</td>
</tr>
<tr>
<td>Critical Biodiversity Areas</td>
<td>High (-)</td>
<td>High (-)</td>
<td>n/a</td>
</tr>
<tr>
<td>Other Ecological Support Areas</td>
<td>Assessed under impacts on terrestrial ecological processes and impacts on connectivity and habitat quality with respect to seeps</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Socio-economic

<table>
<thead>
<tr>
<th>Visual environment</th>
<th>High (-)</th>
<th>Med (-)</th>
<th>n/a</th>
<th>V low (-)</th>
<th>Med (-)</th>
<th>Low(-)</th>
</tr>
</thead>
</table>
6. PROCESS FOLLOWED WITH RESPECT TO APPLICATION FOR RECTIFICATION OF UNLAWFUL COMMENCEMENT AND CONTINUATION OF ACTIVITIES

- BolandEnviro submitted the Section 24G Application Form on 24 January 2011.
- DEA&DP received the application for rectification of the unlawful commencement of activities and sent an Acknowledgement of Receipt on 3 February 2011.
- DEA&DP approved the application and advised to continue with the process on 28 March 2011. The Department issued the Reference Number E12/2/4/4-B1/3-1001/11 (Appendix E).
- The Public Participation Process was undertaken in May 2011, in compliance with the requirements of the NEMA EIA regulations that were promulgated in August 2010 (Appendix F).
- An engineer was appointed and compiled a Dam Report which includes aspects such as catchment area, flood volumes and proposed spillway design (Appendix G).
- A Botanical Specialist (BolandEnviro personnel) visited the site during January 2011. A second visit was made during May 2011 (during the growth season) to confirm findings made during the initial visit.
- A Freshwater Specialist conducted a site visit on 22 September 2011 with particular focus on impacts of the dam on the identified seepage area, which was thereafter confirmed to be an ephemeral channel of a second order drainage line in a valley bottom setting (Appendix G).

7. PUBLIC PARTICIPATION PROCESS

A detailed Public Participation Process (PPP) was followed in terms of the 2010 EIA Regulations. The following tasks have been completed up to date (Appendix F):

- The addresses of all adjacent landowners around Farm 232/2 (Sandfontein) were obtained from the Langeberg Municipality records office and entered into the Interested and Affected Party database.
- An advert describing the Section 24G application, unlawful commencement of listed activities, the PPP, and including an invitation to comment, was placed in English and Afrikaans in the local newspaper, the Breede River Gazette, on the 24th of May 2011.
- An A1 sized site notice, in English and Afrikaans, describing the Section 24G application as above, was erected at the site where unlawful activities took place for the duration of the commenting period.
- Notices, in English and Afrikaans, describing the Section 24G application as above, were sent to neighbours and relevant commenting authorities in the form of registered letters on the 24th of May 2011.
• A copy of the draft Environmental Impact Report was available for public review for a period of 40 days (24 May – 4 July 2011) at the Bonnievale Public Library (16 Van Zyl Street, Bonnievale), the BolandEnviro office (74 Stockenstroom Street, Worcester) and the website www.BolandEnviro.co.za project documents.

• All comments received during the public participation were captured and addressed in a Comments and Response Report included in Appendix F of this Report.

• The Final Environmental Impact Report and Environmental Management Programme were made available for review to registered Interested and Affected Parties (I&APs) and commenting authorities for a final 21 day commenting period on 10 October 2011 until 31 October 2011.

• Comments received during this period will be submitted to DEA&DP for consideration along with the Final Environmental Impact Report and Management Programme.

• Registered I&APs will be notified of the DEA&DP decision and Appeal Process.

8. COMMENTING PERIOD ON FINAL EIR

Please Note: All comments / suggestions must be submitted to BolandEnviro as well as to the Department of Environmental Affairs and Development Planning (DEA&DP), see addresses below. The closing date for comments is 31 October 2011.

Should you have any questions regarding this report, please contact Charl de Villiers or BolandEnviro at the contact numbers provided below.

Boland Environmental Consultants
Attention: Mr. Charl de Villiers
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Worcester, 6849
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Fax: 023 347 5336
Cell: 083 785 0776
Email: comment@Bolandenviro.co.za

Department of Environmental Affairs and Development Planning
Attention: Clement Arendse
Private Bag X9086,
Cape Town, 8000
Tel: 021 483 2799 / 5113
Fax: 021 483 3633
Email: Clarendse@pgwc.gov.za
9. REFERENCES


