



**MINING PERMIT FOR MARBLE (DIMENSION STONE), LIMESTONE,  
DIMENSION STONE (GENERAL) ON A PORTION OF PORTION 3  
AND THE REMAINING EXTENT OF THE FARM WELVERDIEND NO.  
511 MAGISTERIAL DISTRICT OF VANRHYNSDORP WESTERN CAPE  
PROVINCE**

Plant Species and Terrestrial Biodiversity Theme Compliance Statement

October 2021

Prepared for:



Prepared by:

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Today's Impact | Tomorrow's Legacy

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DOCUMENT CONTROL

**Quality and revision record**

*Quality approval*

	Capacity	Name	Signature	Date
<b>Author:</b>	Environmental Specialist (MSc Biological Sciences, UCT 2019)	Megan Smith		19/10/2021
<b>Reviewer 2</b>	CEO of Enviroworks, SACNASP Registered (400328/11)	Elbi Bredenkamp		19/10/2021

This report has been prepared in accordance with Enviroworks Quality Management System.

*Revision record*

Revision Number	Objective	Change	Date
1	Internal review	Formatting, grammar, content.	19/10/2021

**DISCLAIMER**

Even though every care is taken to ensure the accuracy of this report, environmental assessment studies are limited in scope, time, and budget. Discussions are to some extent made on reasonable and informed assumptions built on bona fide information sources, as well as deductive reasoning. Since environmental impact studies deal with dynamic natural systems additional information may come to light at a later stage during the impact assessment phase. The author does not accept responsibility for conclusions made in good faith based on own databases or on the information provided. Although the author exercised due care and diligence in rendering services and preparing documents, he accepts no liability, and the client, by receiving this document, indemnifies the author against all actions, claims, demands, losses, liabilities, costs, damages, and expenses arising from or in connection with services rendered, directly or indirectly by the authors and by the use of this document. This report should therefore be viewed and acted upon with these limitations in mind.

## 1. PROJECT DESCRIPTION

Enviroworks (Pty) Ltd has been appointed by Greenmined (Pty) Ltd to conduct a Botanical and Terrestrial Impact study for a proposed mine on Portion 3 of the Farm Welverdiend No. 511 magisterial district of Vanrhynsdorp, Western Cape province (Figure 1). The mine will be mining all forms of Limestone, Dimension stone and Marble.



*Figure 1: Locality map of the proposed development mine denoted by the red circle (Scale: 1:50000)*

The proposed mining footprint is approximately 4.9 ha over the above-mentioned property and the mining method will entail an open-pit quarry with diamond wire cutting, loading, and hauling of the mined material. The quarry is dug on a pit with face walls of sub-vertical inclination, benching is not required due to the shallow nature of the deposit. A system of ramps is to be excavated within the pit to provide access to all face wall sides. The angle of the pit face wall is determined carefully to prevent and minimize damage and danger from rock falls and/or safety hazards.

Waste and mineralisation on a scale of a few hundred to thousands of tons per day may be drilled and blasted to break off from the pit face in blocks. The material is then loaded and hauled to various stockpiles and/or waste dumps. Waste rock is hauled to a waste dump. Waste dumps can be piled at the surface of the active pit, or in previously mined pits. Mineralised material is stockpiled in a separate location. The land surface rights are owned by the applicant of this application area.





**Table 1: Content cross-reference checklist for the protocol for the specialist assessment and minimum report content requirements for environmental impacts on plant species as per GN R 1150, with corresponding section names in the report.**

Requirement	Section of this report
Contact details of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae;	Section 10 and 11
A signed statement of independence by the specialist;	Section 10 and 11
A statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;	Section 3
A description of the methodology used to undertake the site verification and impact assessment and site inspection, including equipment and modelling used, where relevant;	Section 3
Where required, proposed impact management actions and outcomes or any monitoring requirements for inclusion in the EMPr	Section 6
A description of the assumptions made and any uncertainties or gaps in knowledge or data	Section 9
The mean density of observations/ number of samples sites per unit area	Section 3
Any conditions to which the compliance statement is subjected	Section 8

**Table 2 Content cross-reference checklist for the protocol for the specialist assessment and minimum report content requirements for environmental impacts on terrestrial biodiversity as per GN R 43110, with corresponding section names in the report.**

Requirement	Section of this report
Contact details of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae;	Section 10 and 11
A signed statement of independence by the specialist;	Section 10 and 11
A statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment;	Section 3
A baseline profile description of biodiversity and ecosystems of the site	Section 5
A description of the methodology used to undertake the site verification and impact assessment and site inspection, including equipment and modelling used, where relevant;	Section 3
In the case of a linear activity, confirmation from the terrestrial biodiversity specialist that, in their opinion, based on the mitigation and remedial	N/A

Requirement	Section of this report
measures proposed, the land can be returned to the current state within two years of completion of the construction phase;	
Where required, proposed impact management actions and outcomes or any monitoring requirements for inclusion in the EMPr;	Section 6
A description of the assumptions made and any uncertainties or gaps in knowledge or data;	Section 9
Any conditions to which the compliance statement is subjected.	Section 8

### 3. SITE SENSITIVITY VERIFICATION AND METHODOLOGY

Prior to commencing with the specialist assessment, the current use of the land and the environmental sensitivity identified by the national web based environmental screening tool (screening tool) of the site under consideration were determined by using desktop analysis. The potential plant species that were likely to occur within the site and surrounding area, the vegetation type and any potential sensitive areas were determined as part of the desktop site sensitivity investigation. The site sensitivity was confirmed using a desktop analysis and was confirmed by a site visit.

- Environmental sensitivity was determined using desktop analysis:
  - The Department of Forestry, Fisheries, and Environment (DFFE) screening tool report for the development footprint
  - Satellite imagery (Google Earth, 2021)
  - Global Biodiversity Information Facility (GBIF)<sup>1</sup>
  - Western Cape Biodiversity Spatial Plan<sup>2</sup>
  - International Union for Conservation of Nature (IUCN)<sup>3</sup>
  - iNaturalist<sup>4</sup>
  - Plants of southern Africa <sup>5</sup>

A site sensitivity verification was undertaken using:

- an on -site inspection.
- desktop analysis using:

<sup>1</sup> "Global Biodiversity Information Facility," n.d., <https://www.gbif.org/>.

<sup>2</sup> R Pool-Stanvliet, A Duffell-Canham, and R Smart, *The Western Cape Biodiversity Spatial Plan Handbook*. (Stellenbosch: CapeNature., 2017).

<sup>3</sup> "IUCN 2020," The IUCN Red List of Threatened Species. Version 2019-3., accessed July 29, 2020, <https://www.iucnredlist.org>.

<sup>4</sup> "iNaturalist," n.d., <https://www.inaturalist.org>.

<sup>5</sup> SANBI, "Plants of Southern Africa," n.d., <http://posa.sanbi.org/>.



- Red List of South African Plants<sup>6</sup>
- Western Cape Biodiversity Spatial Plan<sup>7</sup>
- iNaturalist<sup>8</sup>
- Plants of southern Africa<sup>9</sup>
- Nature Conservation Ordinance (No. 19 of 1974)
- National Environmental Management Biodiversity Act, 2004 (Act 10 of 2004): Critically Endangered, Endangered, Vulnerable, and Protected Species List (2007, as amended)
- National Environmental Management: Biodiversity Act, 2004 (Act 10 Of 2004): Alien and Invasive Species Lists (2020)

The Alternative one development footprint was investigated on foot on 7 October 2021 and Alternative two was mostly investigated via a desktop analysis (as per the above listed tools, databases, and documents).

During the site inspection, photographs of the footprint and surroundings were taken for record purposes. A visual observation was made of the footprint and surrounding area, taking note of the land use, land cover and specifically the vegetation cover of the development footprint, and any evidence of the plant species of special concern. The site sensitivity, as identified by the DFFE Screening Tool, was then confirmed, or disputed using the above information.

Please note that observations of species are contingent on the season that the survey took place in. The site was surveyed during late spring, thus some species may have not been observed due to their seasonal patterns or life histories. To reduce the likelihood that any of the sensitive species could have been missed in the footprint, an additional botanical survey is recommended to be conducted in early spring (Autumn – early September).

#### 4. OBJECTIVES

- To confirm or dispute the environmental sensitivity as identified by the screening tool, such as new developments or infrastructure or the change in vegetation cover.
- Motivate with evidence (e.g., photographs) the verification of the environmental sensitivity.

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<sup>6</sup> N.A Nick and D Raimondo, "National Assessment: Red List of South African Plants Version 2020.1.," 2007.

<sup>7</sup> Pool-Stanvliet, Duffell-Canham, and Smart, *The Western Cape Biodiversity Spatial Plan Handbook*.

<sup>8</sup> "iNaturalist."

<sup>9</sup> SANBI, "Plants of Southern Africa."

## 5. RESULTS

### 5.1. Baseline profile description of biodiversity and ecosystems of the site

#### 5.1.1 General Vegetation description

Both proposed alternative development sites consist of Vanrhynsdorp Gannabosveld (Figure 3).

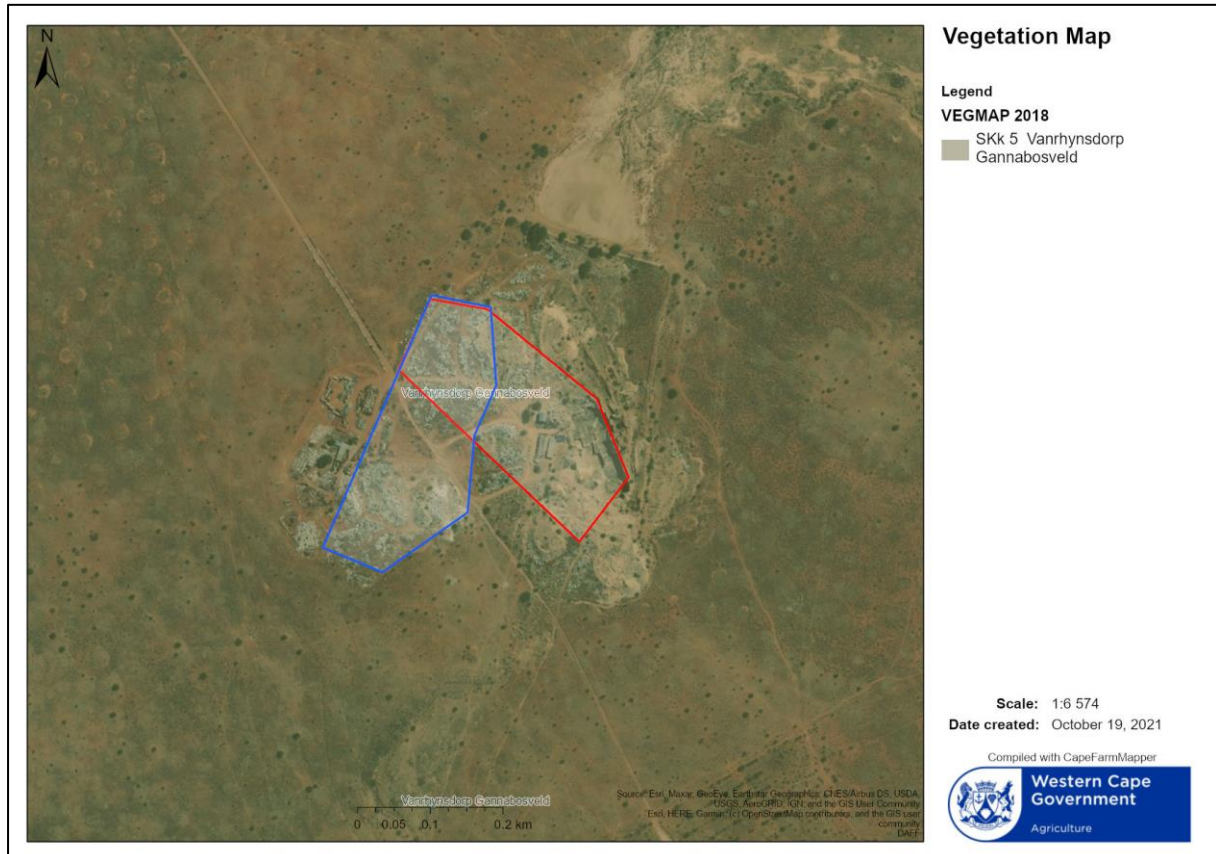


Figure 3: Vegetation types within the proposed development sites (Alternative one is demarcated in blue and Alternative two is demarcated in red).

Vanrhynsdorp Gannabosveld is a vegetation type part of the Succulent Karoo Biome. It is usually found on flat or slightly undulating landscapes mostly between Vredendal and Vanrhynsdorp and in Namaqualand. The vegetation type supports succulent shrubland dominated by species within the genera *Salsola*, *Drosanthemum*, *Ruschia* and a large variety of annual and geophyte flora. In disturbed areas, indicators such as short-lived Aizoaceae can be present with seasonal dominance of *Bromus pectinatus* and *Stipellula capensis* on shale plains.

Vanrhynsdorp Gannabosveld is endemic to South Africa and is classified as Least Concern<sup>10</sup>. However, none of the vegetation type is statutorily conserved. Consequently, the vegetation type is vulnerable to transformation

<sup>10</sup> South African National Biodiversity Institute (SANBI), *National Biodiversity Assessment 2018: The Status of South Africa's Ecosystems and Biodiversity, Synthesis Report* (Pretoria: South African National Biodiversity Institute, an entity of the Department of Environment, Forestry and Fisheries, 2019).

whereby 20% is already transformed into cultivated land, open cast gypsum mining and degraded by alien invasive species such as *Atriplex* sp. and *Bromus* sp.

### 5.1.2 Sensitive areas

Both proposed development footprints are located in Ecological Support Areas (ESAs). Alternative one is located in an ESA Category 1 (Terrestrial) and Alternative two is located in an ESA Category 2 (Terrestrial) and ESA Category 1 (Aquatic). The immediate surrounding area is located in an ESA Category 2 (Terrestrial), and an ESA Category 1 (Aquatic and Terrestrial) (Figure 4).

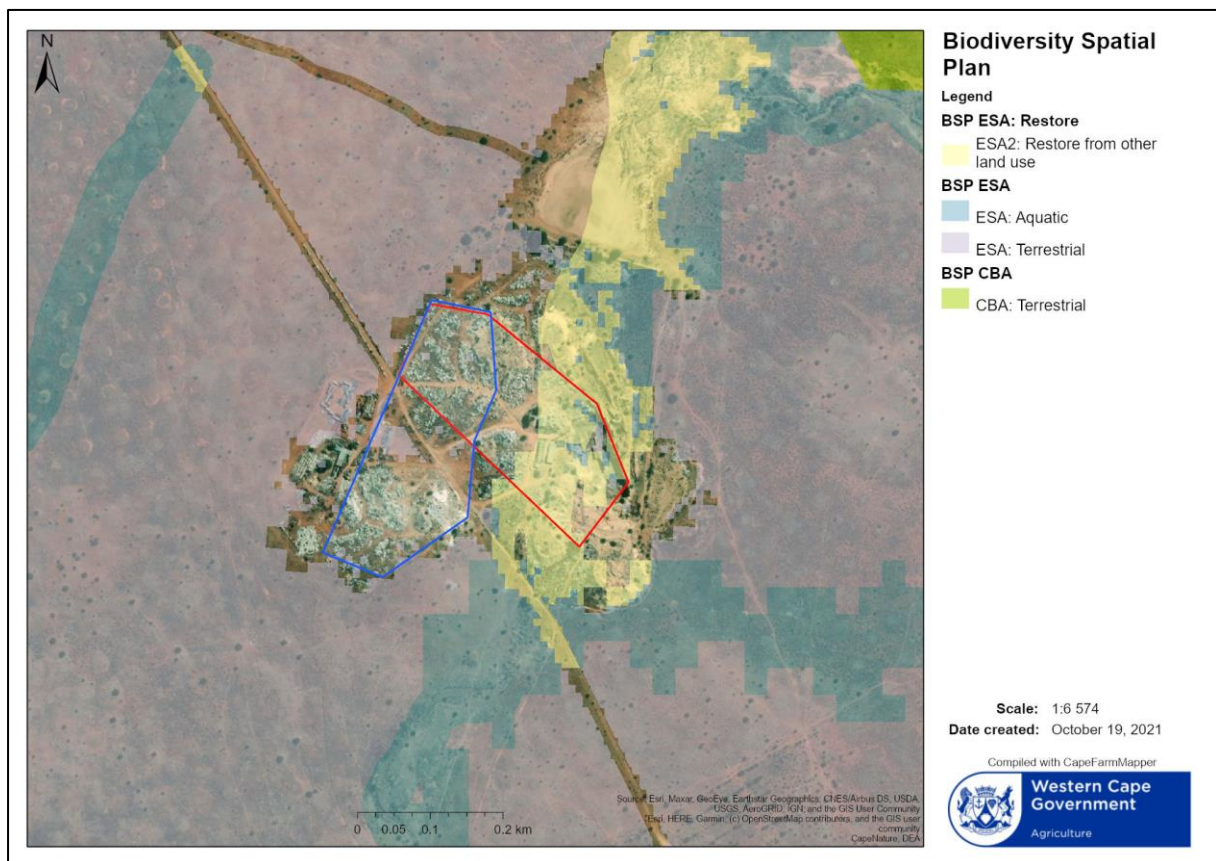


Figure 4: Sensitivity of the proposed development footprint ( Alternative one is demarcated in Blue and Alternative two is demarcated in red)

ESAs are areas that, while not essential for meeting biodiversity targets, still play an important role in supporting the functioning of protected areas and/or CBAs and are key for providing ecosystem services. ESAs must be maintained in at least a functional and often natural state, to maintain the purpose for which they were identified, but restricted habitat loss may be acceptable. ESAs that are still likely to be functional (or in a natural, near natural or moderately degraded state) are classified as Category 1 ESAs. ESAs that have been severely degraded or have no natural cover remaining and would require restoration are classified as Category 2 ESAs <sup>11</sup>

<sup>11</sup> Pool-Stanvliet, Duffell-Canham, and Smart, *The Western Cape Biodiversity Spatial Plan Handbook*.

Since the proposed development footprint is situated in sensitive areas identified by the Western Cape Biodiversity Spatial Plan<sup>12</sup>, the footprint is considered to hold conservation importance within these sensitive areas. However, not all these areas are in a natural or near-natural state. The state of these areas is discussed in Section 5.3. Nevertheless, care should be taken to avoid development in these sensitive areas to conserve their ecological importance.

## 5.2. Results of the screening tool report

The Screening Tool Report identified the project footprint and surrounding area as having a medium sensitivity in terms of the plant species theme (Figure 5 below) and very high sensitivity for the Terrestrial Biodiversity Theme (Figure 6).



Figure 5 Map of plant species theme sensitivity, as taken from the Screening Tool Report compiled for the project.

<sup>12</sup> Pool-Stanvliet, Duffell-Canham, and Smart.

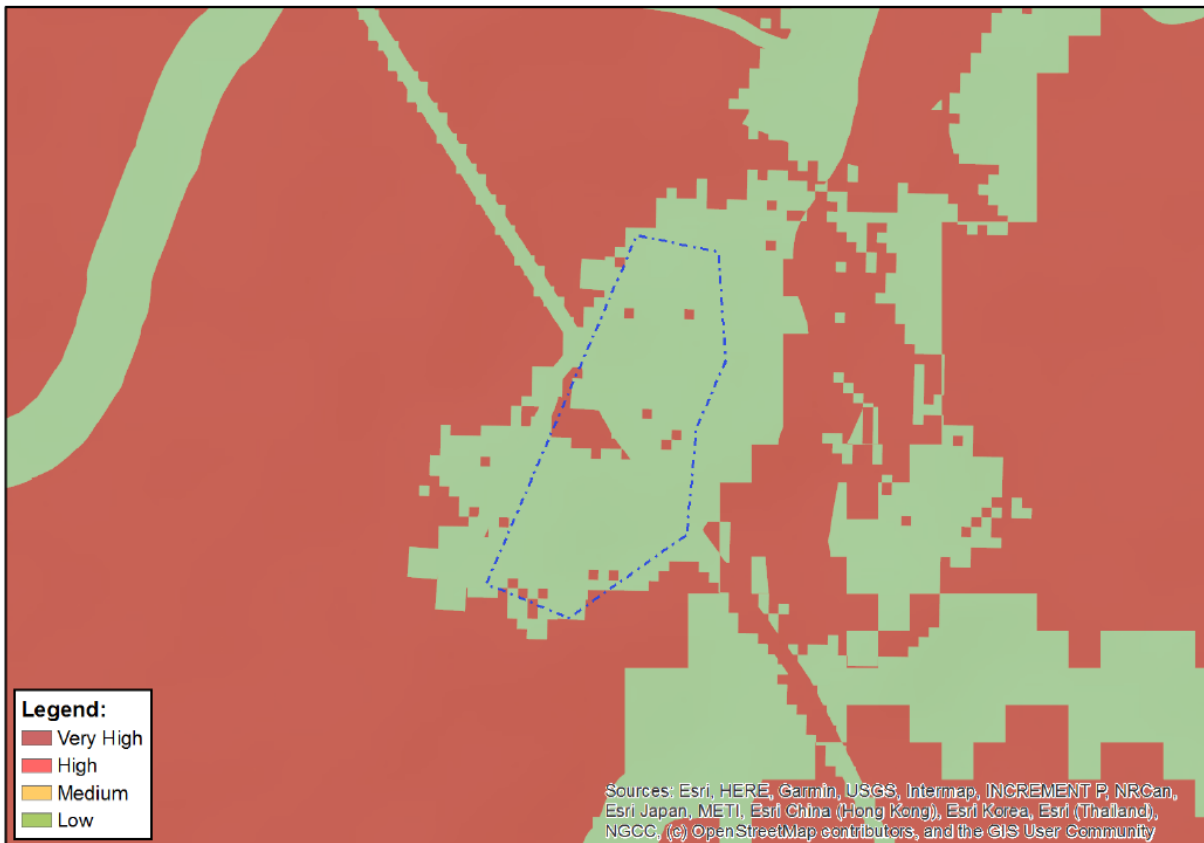


Figure 6 Map of terrestrial biodiversity theme sensitivity, as taken from the Screening Tool Report compiled for the project.

The Screening Tool Report further identifies what features were triggered as sensitive for the footprint and summarises the results in a table (see Table 3 below).



**Table 3 Sensitivity of sensitivity features, as identified by the Screening Tool Report generated for this project. Results from the desktop study was added for each sensitivity feature in additional columns.**

Sensitivity Features	Feature(s)	Red List Status <sup>13</sup>	Habitat preference <sup>14</sup>
Medium	<i>Aspalathus cuspidata</i>	Vulnerable	Only five locations are known. Species is restricted to sandy plains in Namaqualand Strandveld, Klaver Sandy Shrubland, Namaqualand Spinescent Grassland, Vanrhynsdorp Gannabosveld, and Namaqualand Sand Fynbos
Medium	Sensitive species 225	Vulnerable	Sandveld areas with deep, red Aeolian sands, on lower, loamy slopes, where it often occurs in dense vegetation
Medium	Sensitive species 392	Endangered	Arid fynbos, sandy flats and stony lower slope
Medium	<i>Romulea multisulcata</i>	Vulnerable	Only known from seven locations. Species is found seasonal pools in the Bokkeveld Mountains, Gifberg flats, and Namaqualand.
Medium	<i>Oxalis blastorrhiza</i>	Endangered	Found in alkaline sandy clay flats. Restricted to the area immediately north of Vanrhynsdorp.
Medium	<i>Oxalis salteri</i>	Rare	Found in damp sandy flats, 200-400 m, at the foot of the Gifberg and near Klaver.
Medium	Sensitive species 956	Critically Endangered	Sparse succulent karoo, clay soils on dry, rocky hills. Known from one location south of Vanrhynsdorp where it is being heavily impacted by overgrazing which is causing continuing decline in habitat quality.
Medium	Sensitive species 288	Rare	Arid clays or sandstone derived soils on flats.
Medium	<i>Oxalis dines</i>	Vulnerable	Seasonal pools and clay pans.

<sup>13</sup> Nick and Raimondo, "National Assessment: Red List of South African Plants Version 2020.1."

<sup>14</sup> Nick and Raimondo.

### 5.3. Site verification

During the site visit, both development footprint alternatives were verified to be an old quarry (not in use) with a workshop to the west. The majority of each footprint had either been completely transformed by the quarry or degraded by stockpiles of large marble stones. Only small corridors of vegetation remain between the stockpiles. Within these corridors, the vegetation is dominated by alien invasive species such *Prosopis glandulosa* (NEM:BA Category 1A), grass species such as *Stipellula capensis*, *Briza maxima*, and *Ornithogolum sp.* Other alien invasive species such *Atriplex lindleyi* (NEM:BA Category 1A) are also present on the footprints. This grassland type appearance of the vegetation may be a sign of the seasonal change in vegetation dominance in the landscape which is common for Vanrhynsdorp Gannabosveld. However, it is highly likely that this grassland appearance is rather a sign of degradation or disturbance. This is echoed by the high abundance of alien invasive species such as *Prosopis glandulosa* (NEM:BA Category 1A) and the presence of the annual succulent, *Mesembryanthemum nodiflorum*, a disturbance indicator.



Figure 7 Example of the vegetated corridors on the development footprints.

In terms of the areas of the footprints included in the Ecological Support Areas (ESAs), these areas have either been lost via mining or are severely degraded by stockpiles. There is one intact area on the footprint that is classified as an ESA and has not been mined (in the western area of Alternative one (refer to the demarcated area in Figure 8 below)). This area is degraded and consists of little indigenous vegetation cover and is infested



with *Prosopis glandulosa*. However, this area may still support at least some ecological processes which is evident by the presence of termite mounds (Figure 9). Therefore, the area may have some conservation value albeit very small given the degraded state of the ESA. However, given that the entire area surrounding the footprints is classified as an ESA, the loss of the intact ESA in the footprint is not expected to have significant cumulative conservation consequences. Therefore, the loss in ESA within the footprint is acceptable from a terrestrial biodiversity and botanical view.

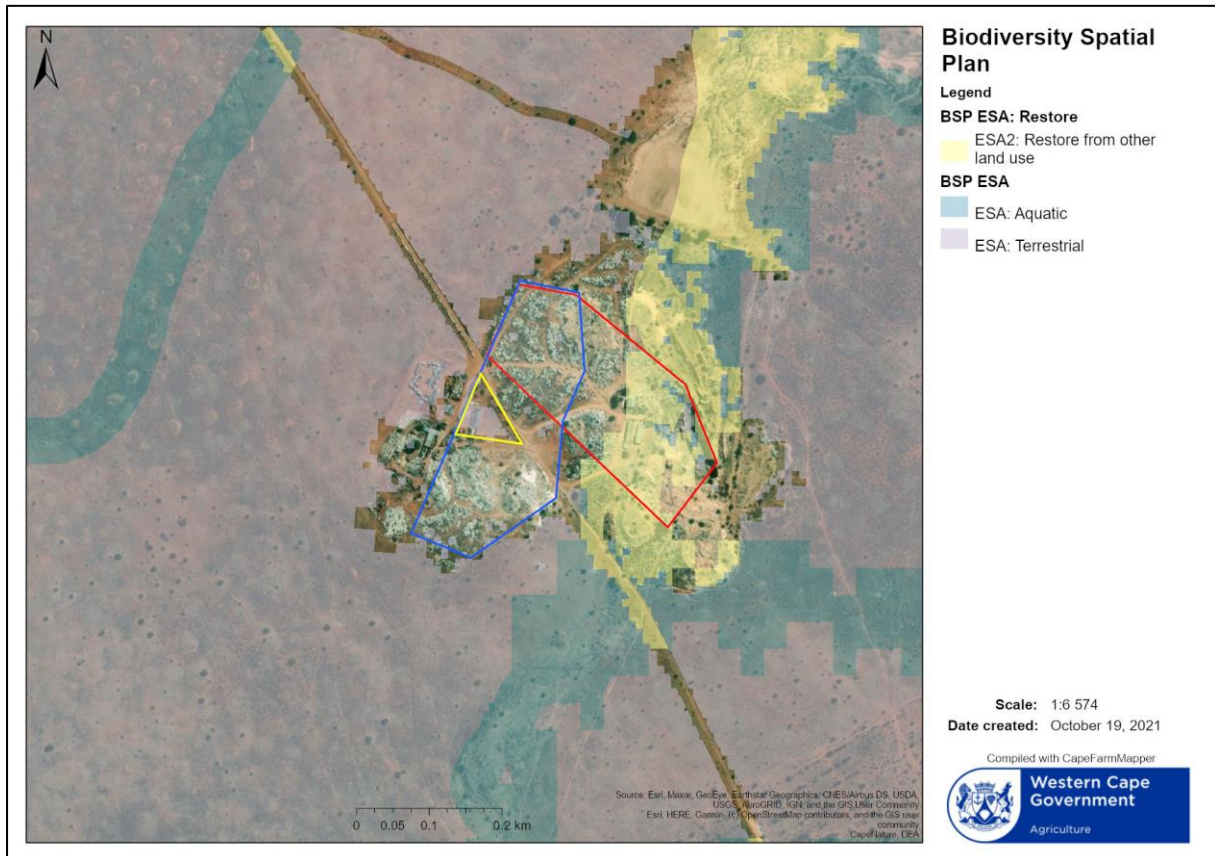


Figure 8 Demarcated Ecological Support Area (demarcated by the yellow triangle) in site alternative one.



*Figure 9 Visual representation of the vegetation inhabiting the Ecological Support Area in Alternative one.*

None of the species listed in Table 3 were observed during the site visit. Based on known locations from POSA, GBIF, Redlist of South African Plants and iNaturalist, the listed threatened species have also not previously been recorded on the site or direct surrounds. Based on the habitat preferences of the species (Table 3), it is unlikely that any identified threatened species may occur within the development footprint itself due to its disturbed and degraded nature. However, because the botanical survey was conducted in late spring, it is recommended that a site inspection be conducted during early spring (August – early September) to confirm that no threatened species are inhabiting the area.

Some provincially protected species (as per the Nature Conservation Ordinance (No. 19 of 1974) were located on the footprint (refer to Table 4 below). The individuals of these species are recommended to be removed and relocated to a suitable area outside of the footprint (in consultation with a Rehabilitation/Botanical Specialist). Prior to the relocation of the species, a plant removal permit will be required should the individuals be relocated to an area outside of the boundaries of land owned by the applicant of the mining permit. The provincially protected species are listed as Least Concern in the Red List of South African Plants<sup>15</sup>

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<sup>15</sup> Nick and Raimondo.

**Table 4 Provincially protected species as per the Nature Conservation Ordinance (No. 19 of 1974) that are found with the development footprints.**

Species name	Family	Conservation Status <sup>16</sup>
<i>Mesembryanthemum nodiflorum</i>	Aizoaceae	Least Concern

Based on the aforementioned, both Alternative one and two should be classified as **Low Sensitivity** for the Plant Species and Terrestrial Biodiversity Themes. Therefore, it is recommended that either Alternative one or two can be developed and used for mining purposes given that the impact management outcomes are adhered to (please see Section 6).

**However, should the development impinge on areas outside of the footprints into the Ecological Support Area or should any threatened species (as per the Red List of South African Plants) be located in the development footprint, the development site will be identified as having Medium to High sensitivity.** In this case, it is expected that a full Terrestrial and Botanical Impact Assessment accordance with the minimum requirements must be conducted.

#### 6. IMPACT MANAGEMENT OUTCOMES OR ANY MONITORING REQUIREMENTS FOR INCLUSION IN THE EMPR

- No open fires are allowed on site during the construction.
- Smoking must be restricted to designated smoking areas.
- No dumping of sewage or hazardous waste into a terrestrial or aquatic ecosystem.
- All mining activities must remain within the designated footprint.
- Development and access roads should be restricted to already disturbed areas as far as practically possible.
- It is recommended that an alien invasive species management plan be compiled for all phases of the mine to ensure that all alien invasive plant species are removed, and their spread is controlled.
- It is recommended that a rehabilitation plan be compiled for the mine to ensure that areas that have been disturbed by the mine must be rehabilitated after decommissioning.
- Vehicles used during the construction, operational, and decommissioning phase must be restricted to designated roads.
- An additional botanical survey must be conducted in early spring (autumn – early September) to ensure that there are no additional Species of Conservation Concern on site
- Species of Conservation Concern identified on the footprint must be relocated to suitable area outside of the footprint in consultation with a Rehabilitation/Botanical specialist.
- Should any Species of Conservation Concern be relocated outside of an area that the mining permit applicant does not own, a plant removal permit must be obtained first.

<sup>16</sup> Nick and Raimondo.



- All personnel, during all phases of the mining works, must be inducted to ensure that they are aware of the environmental sensitivities on the site.
- Topsoil must be retained and stockpiled for the purposes of rehabilitation.

## 7. CONCLUSION

It is anticipated that the proposed development (Alternative one and two) will have negligible impact on the biodiversity and botanical features identified by the screening tool as the development footprint is extensively disturbed and does not represent likely habitat for any plant species that may be threatened with extinction, as listed by the Screening Tool.

None of the plant species listed by the screening tool were directly observed on the footprint during the site visit. There is however one provincially protected species located on site (Table 4), but this species is not threatened in terms of the Red List of South African Plants<sup>17</sup>. Individuals of this species must be relocated effectively as per the recommendations in Section 6. Because the site inspection was conducted in late spring, some geophytic and annual species may not have been visually present during the site inspection. It is recommended that a botanical survey be conducted in early spring (August-early September) to confirm that no additional Species of Conservation Concern are found on site.

Some of the western portion of Alternative one may have some ecological value, albeit minimal, because it is located on a degraded Ecological Support Area (ESA). However, given that the entire area surrounding the proposed mining permit area is located in the ESA, the cumulative conservation loss of developing or mining in the ESA located in Site Alternative one is not expected to be significant.

Taking into consideration the sensitivity of the development footprint, sensitive features identified by the screening tool, the results from the baseline biodiversity and ecosystem of the site, which was verified by a site visit for Alternative one, it can be concluded that both site alternatives is of **low** sensitivity for the Plant Species and Terrestrial Biodiversity Theme. Provided that all the management outcomes are adhered to, this compliance statement is considered sufficient to meet the requirements for authorisation under the Plant Species and Terrestrial Theme Minimum requirements.

## 8. CONDITIONS TO WHICH THIS STATEMENT IS SUBJECTED

- This signed copy of the compliance statement must be read as an appendix to the Basic Assessment Report (BAR) for this project.
- This compliance statement is subject to the condition that the information supplied to the specialist regarding the project scope, design, layout, location or any other project specifications will not be significantly deviated from.

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<sup>17</sup> Nick and Raimondo.

- All mitigation measures and requirements as specified in this compliance statement, the BAR and EMPr will adhered to during all project phases.

#### 9. ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE

- All information provided by the applicant, EAP and design team to the environmental specialist was correct and valid at the time that it was provided.
- The results of the botanical survey reflect a specific time of year. The botanical survey was conducted during late spring when some of the geophytic and annual species may not be visually present.
- The initial study was undertaken as a desktop assessment and as such, the information gathered must be considered with caution, as inaccuracies and data capturing errors are often present within these databases; and,
- Global Positioning System (GPS) technology is inherently inaccurate and some inaccuracies due to the use of handheld GPS instrumentation may occur.

## 10. DETAILS OF THE SPECIALIST

<b>Name</b>	Megan Smith
<b>Contact Details</b>	076 965 8002
<b>Qualification</b>	M.Sc (Ecology) – University of Cape Town
<b>EAPASA registration</b>	2020/2855 (Cand. EAP)
<b>Field of expertise</b>	Botany & Ecology

### 10.1. Signed declaration of interest of the specialist

I Megan Smith, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that:

- In terms of the general requirement to be independent:
  - other than fair remuneration for work performed in terms of this application, have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity; or
  - am not independent, but another specialist (the “Review Specialist”) that meets the general requirements set out in Regulation 13 of the NEMA EIA Regulations has been appointed to review my work (Note: a declaration by the review specialist must be submitted);
- In terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- I have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared or to be prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations.




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Signature of the Specialist:

Date: 19/10/2021

## 10.2. Curriculum Vitae of specialist

### RELEVANT QUALIFICATIONS AND TRAINING

- MSc Biological Sciences (UCT): Specialising in Plant Ecology
- BSc Hons Botany (NMU)
- BSc Environmental Sciences (NMU)
- Scientific writing training led by Dr Pippin Anderson (August 2019)
- Fynbos plant identification training (July 2019)
- CDM calibration training by Renew Technologies (August 2020)
- ISO 14001:2015 Lead auditor training by SACAS (March 2021)
- Hydroponology and wetland delineation course led by WETrust and digital Soils Africa (September 2021)

### WORK EXPERIENCE

- March 2015 – September 2016: Research assistant determining sustainable cultivation practices of Honeybush (*Cyclopia* spp.) at NMU
- March 2019 – April 2020: Restoration Ecology and Conservation Planning intern at SANBI
- April 2020 – current: Environmental consultant and legal assistant at Enviroworks

### **Published popular Science article:**

- Smith, M., Rebelo, A.G. 2020. The Amazing Nature Race. Veld and Flora 106: 16-21.
- Smith, M., Rebelo, A., Rebelo, A.G. 2020. Passive restoration of Critically Endangered Cape Flats Sand Fynbos at lower Tokai Park section of Table Mountain National Park, Cape Town. ReStory
- Smith, M., Rebelo, A., Rebelo, A.G. 2020. Saving Critically Endangered Peninsula Granite Fynbos from extinction at Tokai Park, Cape Town. ReStory.
- Smith, M., Rebelo, A.G. 2020. iNaturalist: your portal into nature and becoming a citizen scientist. African Wildlife and Environment 75.

### BASIC ASSESSMENT

- The proposed development of a thirty-five metre (35m) telecommunication base station and associated infrastructure on Portion 42 of Farm 428, Plettenberg Bay, Western Cape Province, SBA Towers South Africa.
- The proposed development of a twenty-five metre (25m) telecommunication base station and associated infrastructure on Lorraine Farm, the Remainder of Farm 790, Phillipi Western Cape Province, SBA Towers South Africa.
- The proposed development of a desalination or reverse osmosis plant, Tormin Mine, Western Cape Province (in progress), Mineral Sands Resources

## PLANT SPECIES AND TERRESTRIAL BIODIVERSITY THEME COMPLIANCE STATEMENT: VAHNRYSNDORP MINE

- Proposed expansion of chicken houses from approximately 30 000 to 60 000 chickens, Bulhoek Farm, near Swartruggens, Northwest Province, Quantum Foods (in progress).
- Proposed development of a protea hotel within the Kruger National Park, Phalaborwa, Limpopo Province, South African National Parks (SANParks) (In progress).
- Proposed development of the Lendlovu Lodge, Addo Elephant Park, Eastern Cape Province, SANParks (in progress).
- Basic assessment for the proposed construction of The Klein Mooimaak Rest Camp and upgrade of the Langebaan Entrance Gate, West Coast National Park, Western Cape, SANParks (in progress)

### **ENVIRONMENTAL MANAGEMENT PLANS**

- The proposed development of a thirty-five metre (35m) telecommunication base station and associated infrastructure on Portion 42 of Farm 428, Plettenberg Bay, Western Cape Province, SBA Towers South Africa.
- The proposed development of a twenty-five metre (25m) telecommunication base station and associated infrastructure on Lorraine Farm, the Remainder of Farm 790, Phillipi Western Cape Province, SBA Towers South Africa.
- The proposed development of a desalination or reverse osmosis plant, Tormin Mine, Western Cape Province (in progress), Mineral Sands Resources
- Proposed expansion of chicken houses from approximately 30 000 to 60 000 chickens, Bulhoek Farm, near Swartruggens, Northwest Province, Quantum Foods (in progress).
- Proposed development of a protea hotel within the Kruger National Park, Phalaborwa, Limpopo Province, South African National Parks (SANParks) (In progress).
- Proposed development of the Lendlovu Lodge, Addo Elephant Park, Eastern Cape Province, SANParks (in progress).
- Registration of the bulk diesel storage and update to the EMPr for the proposed expansion of the Samrand Data Centre, African Data Centres (in progress).

### **BOTANICAL AND FAUNAL IMPACT STUDIES**

- Botanical Impact Assessment: Rezoning and the development of fifteen (15) resort units on Portion 12 of the Farm Riet Valley no. 452, Hessequa Local Municipality, Western Cape Province (Faunal Compliance Statement and Botanical Impact Assessment), Hessequa Municipality.
- Botanical survey for the proposed development of a six-point three kilometre (6.3km) long pipeline along Macassar Road, Macassar, Cape Town, Western Cape Province, BVi Consulting Engineers Western Cape.



## PLANT SPECIES AND TERRESTRIAL BIODIVERSITY THEME COMPLIANCE STATEMENT: VAHNRYNSDORP MINE

- Botanical and Faunal Compliance Statement; Proposed expansion of chicken houses from approximately 30 000 to 60 000 chickens, Bulhoek Farm, near Swartruggens, Northwest Province, Quantum Foods (in progress)
- Botanical and Terrestrial Biodiversity Impact Assessment: Proposed development of the Lendlovu Lodge, Addo Elephant Park, Eastern Cape Province, SANParks (in progress).
- Botanical Site Sensitivity Report and Species Identification: Almenkerk Mast (in progress)
- Protected tree and animal species survey, and compilation of an alien invasion management plan for Ramatlabama Poultry Farm, Mahikeng, Northwest Province, Supreme Poultry (in progress).

### **REHABILITATION PLANS**

- Protocols for restoring Critically Endangered Cape Flats Sand Fynbos within lower Tokai Park, Cape Town, South African National Biodiversity Institute)
- Proposed development of a six-point three kilometre (6.3km) long pipeline along Macassar Road, Macassar, Cape Town, Western Cape Province, BVi Consulting Engineers Western Cape.
- Rehabilitation implementation plan and consultation services for Tormin Mine, Western Cape Province, Mineral Sands Resources (in progress)
- Rehabilitation Method Statement for 132 KW and 33 KW transmission lines, transmission substation, cabling line trenches, and access roads on Roggeveld Wind Farm, Western Cape, Raubex Infra.
- Rehabilitation progress report :132 kv and 33 kv tranmission lines, transmission substation, cabling line trenches, and access roads on Roggeveld Wind Farm, Western Cape, Raubex Infra.

### **ENVIRONMENTAL CONTROL OFFICER (ECO) AND AUDITING**

- Environmental Control Officer: The proposed development of a backup energy centre including diesel storage and generators, on Erf 142504, Diep River, Cape Town, Western Cape Province, African Data Centres.
- Environmental Control Officer: The proposed construction of new and rehabilitation of existing non-motorised transport facilities in the Cape Town CBD, Western Cape Province, BVi Consulting Engineers Western Cape.
- Environmental Compliance Audit for Franki Africa Stock Yard, Durban, KwaZulu Natal Province, Franki Africa.
- The proposed development of a twenty-five metre (25m) telecommunication base station and associated infrastructure on Lorraine Farm, the Remainder of Farm 790, Phillipi Western Cape Province, SBA Towers South Africa
- Environmental Control Officer: The proposed maintenance of the Blue Stone Quarry Wall, Robben Island, Robben Island Musuem.

**MAINTENANCE MANAGEMENT PLANS**

- The proposed maintenance of the Blue Stone Quarry Wall, Robben Island, Robben Island Museum.

**ENVIRONMENTAL SCREENING**

- Proposed upgrading of the Durbanville Public Transport Interchange, Western Cape, BVi Consulting Engineers Western Cape.
- Proposed the upgrade on national road R40 section from Hazyview (km 0.0) to Maviljan (km 32.1), BVi Consulting Engineers Western Cape.

**ALIEN INVASIVE SPECIES MANAGEMENT PLANS**

- Invasive species monitoring, control and eradication plan, Garden Route District Municipality, Western Cape Province, Garden Route District Municipality.
- Rehabilitation implementation plan and consultation services for Tormin Mine, Western Cape Province, Mineral Sands Resources (in progress)
- Protected tree and animal species survey, and compilation of an alien invasion management plan for Ramatlabama Poultry Farm, Mahikeng, Northwest Province, Supreme Poultry (in progress).

**CLEAN DEVELOPMENT MECHANISM**

- Calibration and advisory services for the CDM Methane Burning Plant at the Coastal Park and Bellville South Landfill Sites, Promethium Carbon (in progress)

11. DETAILS OF THE REVIEW SPECIALIST

<b>Name</b>	Elbi Bredenkamp
<b>Contact Details</b>	082 562 4134
<b>Qualification</b>	M.Sc (Botany)
<b>Registrations</b>	SACNASP 400328/11
<b>Field of expertise</b>	Ecology/environmental Science

**11.1. Signed declaration of interest of the review specialist**

I Elbi Bredenkamp, as the appointed Review Specialist hereby declare/affirm that:

- I have reviewed all the work produced by the Specialist(s);
- I have reviewed the correctness of the specialist information provided as part of this Report;
- I meet all of the general requirements of specialists as set out in Regulation 13 of the NEMA EIA Regulations;
- I have disclosed to the applicant, the EAP, the review EAP (if applicable), the Specialist(s), the Department and I&APs, all material information that has or may have the potential to influence the decision of the Department or the objectivity of any Report, plan or document prepared as part of the application; and
- I am aware that a false declaration is an offence in terms of Regulation 48 of the NEMA EIA Regulations.



19/10/2021

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Signature of the Review Specialist:

Date:

11.2. Curriculum Vitae of review specialist



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 Block B2, Edison Square, c/o Century Avenue and Edison Way, Century City  
 Cell | 082 562 4134 | Tel 021 527 7084 | Fax 086 601 7507  
 elbi@enviroworks.co.za | www.enviroworks.co.za



**Gerbrecht Elizabeth (Elbi) Bredenkamp**

<b>Name &amp; Surname</b>	Gerbrecht Elizabeth (Elbi) Bredenkamp
<b>I.D Number</b>	6402130036082
<b>Nationality</b>	South African
<b>Home Language</b>	Afrikaans
<b>Proficiency in Other Languages</b>	English - Spoken = Excellent - Written = Excellent - Reading = Excellent South Sotho - Spoken = Fair
<b>Parent Firm</b>	King's Landing Trading 507 (PTY) LTD t/a Enviroworks
<b>Position</b>	Director
<b>Years' Experience</b>	23 years
<b>Educational Qualifications</b>	2012-2013 – Greenhouse Gas Verification Training of the JCM (Joint Credit Mechanism LRQA Japan Proposed by the Japanese Government) ISO 14054, ISO 14064, JCM (BOCM) Manuals, LRQA GHG Verification Procedures. 2012 – Systems & Greenhouse Gases ((GHG) Technical Assessor Course, SANAS (South African National Accreditation System- ISO 14065) (With distinction) 2010 – ISO 14064-1/2/3/4 - Carbon Action (UK) <ul style="list-style-type: none"> <li>• Measuring your Organisation's Carbon Footprint: ISO 14064-1: Essentials – GHG Inventories (50018728/50052908)</li> <li>• Reducing your Organizational Environmental Impact: ISO 14064-2 :Essentials – GHG Projects (50018741-50052911)</li> <li>• Carbon Emission Reduction Expert Course :ISO 14064-2 Expert – GHG Projects (50018731/50052909)</li> <li>• Greenhouse Gas Verification: Using ISO 14064 (50029594-50052913) Courses successfully completed in England &amp; Ireland on Carbon Footprint measuring and verification</li> </ul> 2000-2002 – <ul style="list-style-type: none"> <li>• Principles of EIA Review Course US EPA, in Pretoria, RSA</li> <li>• Conflict Management Durban, RSA</li> <li>• Environmental Law (with distinction) Aldo Leopoldt Institute, Pretoria, RSA</li> </ul>

	<p><b>1997-1999 –</b></p> <ul style="list-style-type: none"> <li>• Mineral Laws Administration and Environmental Management University of Pretoria, RSA</li> <li>• Principles of the Rehabilitation of Disturbed Areas University of the North-West, RSA</li> <li>• Environmental Impact Assessment University of the North-West</li> <li>• Environmental Management Systems (SABS/ISO 14001) University of the North-West, RSA</li> <li>• Environmental Policy and Management in Mining and Minerals University of Johannesburg, RSA</li> <li>• The Measurement of Biodiversity University of the Free State, RSA</li> <li>• Environmental Management Systems (SABS/ISO 14001) University of the North-West, RSA - 1997 – 1999</li> </ul> <ul style="list-style-type: none"> <li>• <b>1994</b> - M.Sc Botany (Cum Laude) - University of the Free State</li> <li>• <b>1987</b> - B.Sc Honours Botany - University of the Free State</li> <li>• <b>1986</b> - B.Sc - University of the Free State</li> </ul>
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**Professional Qualifications**

**Professional Associations**

- Registered Scientist with the South African Council for Natural Scientific Professions (SACNASP) (Pr.Sci.Nat. 400328/11)
- International Association of Impact Assessment South Africa (IAIAsa) (Member No 3893)
- International certified Carbon Verifier (auditor)
- SANAS accredited System & Green House Gas Technical Assessor
- Member and Certified Carbon Verifier with the Carbon Protocol of South Africa
- Accredited Consultancy Partner with the Carbon Disclosure Project- 2012
- Preferred supplier with the Financial Mail Green Business Guide-2012
- International Association for Impact Assessment South Africa (IAIAsa) – Branch Chair from 2011 -2013
- IAP2 Southern Africa (IAP2 SA) affiliate to the International Association for Public Participation (IAP2)
- Accredited Chartered Public Relations Practitioner (Member no:73740) with the Public Relations Institute of South Africa (CPRP PRISA)

**Special Awards**

- Prof. E M van Zinderen Bakker - Prize (Best M.Sc. - Dissertation) & Honours in academics
- Dean's Medal (Best Magister Student)
- S2A3 - GENCOR - Bronze Medal (Best M.Sc. Thesis in Dept. Botany and Genetics)
- Africa Growth Awards Overall Winner Services Sector- 2012
- SEDA Business Competition Overall Provincial Winner- 2012

**Publications**

- Die Suid-Afrikaanse Tydskrif vir Natuurwetenskap en Tegnologie: Jaargang 15, Maart 1996: *“Evidence that thermoinhibition and the alleviation thereof by oxygen plus kinetin in Great Lakes lettuce seed is related to mitochondrial function.”* ISSN 0254-3486



## Relevant Experience

Project	Location	Date	Industry	Duties & Responsibilities	Duration	Scheduling and Costing	Client and Regulatory Liaison
EASIGAS - Compilation of an Environmental Management Plan and Risk Assessment for the Pressure Testing of a One Million Litre LPG Cylinder within the Port of Port Elizabeth.	Port Elizabeth, Eastern Cape Province	2016	Petrochemical	Project Manager and Review EAP	2 months		✓
EASIGAS - Compilation of an Environmental Impact Assessment and EMP for the Proposed Development of 135 000 litre LPG Cylinder in East London	East London, Eastern Cape Province	2015	Petrochemical	Project Manager and EAP	8 months		✓
EASIGAS - Rooikraal Filling Station and Truck Stop: Compilation of an Environmental Impact Assessment and EMP for the Proposed Development of 90 000 litre LPG Cylinder in Bloemfontein.	Bloemfontein, Free State Province	2015	Petrochemical	Project Manager and EAP	8 Months		✓
De Jager Eiendomme - Compilation of an Environmental Impact Assessment and EMP for the Proposed Development of the Palmiet Filling Station and Truck Stop near Vrede.	Vrede, Free State Province	2015	Petrochemical	Project Manager and Review EAP	9 Months		✓
Eskom - Ecological source characterisation and identification, risk identification and assessment for the Source-Pathway Receptor Risk Assessment and options analysis for the expansion of the ash disposal facility at Matimba Power Station, Limpopo Province	Limpopo Province	2018	Electricity Generation	Project Manager and EAP	Months		✓
Eskom - Environmental Impact Assessment and EMP for the construction of the Cecilia Powerline and sub-station.	Centlec, Mangaung Province	2015	Electricity Generation	Project Manager and EAP	9 Months		✓
Eskom - Environmental Impact Assessment and EMP for the replacement of a 66/11kv substation and 15km overhead powerline near Swellendam	Western Cape Province	2012	Electricity Generation	Project Manager and EAP	13 Months		✓
Makespace Architects - Basic Assessment for the proposed development of a housing development.	Hartswater, Northern Cape Province	2018	Construction	EIA reviewer & Project Manger	11 months		✓
Bloemwater - Basic Assessment for the development of the Dewetsdorp Reservoir Augmentation.	Free State Province	2015 – 2016	Construction	EIA reviewer & Project Manger	1 year		✓
Sidala Energy Solutions - Full scoping and EIA for the development of a Hydroelectric Power Scheme (Lower Kruisvallei) on the Farm Kruisvallei 190 and Portion of the Farm Middelvallei 130.	Dihlabeng Local Municipality, Free State Province	2015 – 2016	Electricity Generation	Project Manager and Review EAP	2 years		✓

PLANT SPECIES AND TERRESTRIAL BIODIVERSITY THEME COMPLIANCE STATEMENT: VAHNRYSNDORP MINE

<b>Mangaung Metropolitan Municipality</b> - Environmental Impact Assessment for the proposed development of the 150 ha Cecilia Residential Development.	Bloemfontein, Free State Province	2014 – 2016	Construction	EIA reviewer & Project Manger	1.5 years		✓
<b>Sidala Energy Solutions</b> - Full scoping and EIA for the development of a Hydroelectric Power Scheme (Rooikat) on Portion 3 of the Farm Eskdale 204 and Portion 3 of the Farm Deelfontein 237.	Hope Town, Northern Cape	2014 - 2016	Electricity Generation	Project Manager and Review EAP	2 years		✓
<b>SANParks</b> - Environmental Authorisation for the upgrading of the sewerage purification plant in Golden Gate Highlands National Park.	Golden Gate Highlands National Park, Free State Province	2012	Waste Management	Project Manager and EAP	-	✓	✓
<b>V&amp;V Consulting</b> - Waste Management License Application, undertaking of a Waste Management License Application for the expansion of an existing sewage treatment facility.	Rosendal, Free State Province	2013	Waste Management	Project Manager and EAP	10 months	✓	✓
<b>Living Waters Properties</b> - Waste Management License Application, Waste Management License for the Boschpoort Residential Estate Waste Water Treatment Works.	Boschpoort, North West Province.	2012	Waste Management	Project Manager and EAP	1 year	✓	✓
<b>Department of Water and Sanitation</b> - Environmental Authorisation for the construction of the Klipplaatdrift Gauging weir- 16 km	Bothaville, Free State Province	2008	Construction	Project Manager and EAP	8 months	✓	✓
<b>SANParks</b> - Basic Assessment for the development of the Golden Gate National Park Cultural Village.	Golden Gate Highlands National Park, Free State Province	2008	Construction	Project Manager and EAP	1 year	✓	✓
<b>Department of Water and Sanitation</b> - Environmental Authorisation for the construction of the Sendelingsdrift gauging weir between South Africa and Namibia	Free State Province	2006 – 2008	Construction	Project Manager and EAP	2 years	✓	✓

## Other Recent Experience

<b>EAP Consulting (EIA/BA)</b>			
<b>Project</b>	<b>Industry/ Sector</b>	<b>Duties</b>	<b>Client and Regulatory Liaison</b>
SANParks - Proposed development of the Phalaborwa Wildlife Activity Hub, Kruger National Park, Limpopo Province. (2017 – 2019)	Construction	EIA reviewer & Project Manger	✓
BVi Engineering - Basic Assessment for the Design, Rehabilitation / Improvement, Routine Maintenance works of N220: Chissano to Chibuto and N/C Crz. N220 to N1, Mozambique. (2017)	Road Works	EAP	✓
SANRAL - Basic Assessment for the Routine Maintenance of National Route 2 Section 4 between Riviersonderend (Km 0.0) and Swellendam (Km 56.9), Western Cape Province. (2017)	Road Works	EIA reviewer & Project Manger	✓
SANParks - Basic Assessment for the Upgrade of Day Visitors Facilities, Kraalbaai, West Coast National Park, West Coast National Park, Western Cape Province. (2016 – 2017)	Construction	EIA reviewer & Project Manger	✓
Theewaterskloof Local Municipality - Proposed development of the Grabouw Cemetery on Erf 4833, Grabouw, Western Cape Province. (2016 – 2017)	Ecological	EIA reviewer & Project Manger	✓
Theewaterskloof Local Municipality - River Maintenance Management Plan for the Bath River, Caledon, Western Cape Province. (2016 – 2017)	Construction	EIA reviewer & Project Manger	✓
SANParks - Basic Assessment for the proposed development of the Agulhas Icon, Agulhas National Park, Agulhas, Western Cape Province. (2015 – 2016)	Construction	EAP	✓
Bloemwater - Basic Assessment for the development of the Dewetsdorp Reservoir Augmentation, Free State Province. (2015 – 2016)	Construction	EIA reviewer & Project Manger	✓
SANParks - Basic Assessment for the proposed development of the Golden Gate Dinosaur Interpretation Centre, Golden Gate Highlands National Park, Free State Province. (2013 – 2015)	Construction	EAP	✓
V&V Consulting - Waste Management License Application, undertaking of a Waste Management License Application for the expansion of an existing sewage treatment facility, Fouriesburg, Free State Province. (2013)	Waste Management	Project Manager & EAP	✓
Project Manager and EAP: NLD - National Long Haul Optic Fibre Infrastructure Network from Johannesburg to Cape Town, Cape Town/Johannesburg. (2010 – 2012)	Construction	Project Manager & EAP	✓
Department of Water and Sanitation - Environmental Authorisation for the construction of the Oranjedraai gauging weir- Orange River, Free State. (2008)	Construction	Project Manager & EAP	✓
SANParks - Basic Assessment for the proposed development of the Agulhas Lighthouse Precinct within the Agulhas National Park, Agulhas, Western Cape Province. 2006	Construction	Project Manager & EAP	✓
<b>Environmental Auditing</b>			
<b>Project</b>	<b>Industry/Sector</b>	<b>Duties</b>	<b>Client and Regulatory Liaison</b>
International Audit / Carbon Verification for the Japan, Ministry of Environment on Carletonville Mine Energy Efficiency project – South Africa: JCM Pilot Verification Audit for LRQA (Lloyd's Register Quality Assurance Limited, Yokohama, Japan, November 2012- February 2013, Carletonville, South Africa	Mining	Carbon Auditor	✓

PLANT SPECIES AND TERRESTRIAL BIODIVERSITY THEME COMPLIANCE STATEMENT: VAHNRYSNDORP MINE

International Environmental Audit for General Motors South Africa (GMSA) in conjunction with SHE Management Company, South Africa	Manufacturing	Environmental Auditor	✓
<b>Training</b>			
<b>Project</b>	<b>Industry/Sector</b>	<b>Duties</b>	<b>Student Training</b>
Executive Development Programme at the Business School of the University of the Free State: Give lectures on Environmental Megatrends: Yearly	Post Graduate Training	Lecturer	✓