



**Enviro-EAP**  
Environmental Consultants



## **AQUATIC BIODIVERSITY COMPLIANCE STATEMENT**

**PROPOSED SAND AND GRAVEL MINING PERMIT ON  
FARM DOORNFONTEIN RE/4/814, MALMESBURY WESTERN CAPE**



**Enviro-EAP**  
Environmental Consultants

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**AUGUST 2026**



## DECLARATION OF THE SPECIALIST

I **Nicolaas Willem Hanekom**, 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
- 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.

**Nicolaas Hanekom**

**Pri.Sci.Nat (Ecology) 400274/11**

**28 AUGUST 2026**

Signature of the EAP/ Specialist:

Date:

**Enviro-EAP (Pty) Ltd**

Name of company (if applicable):



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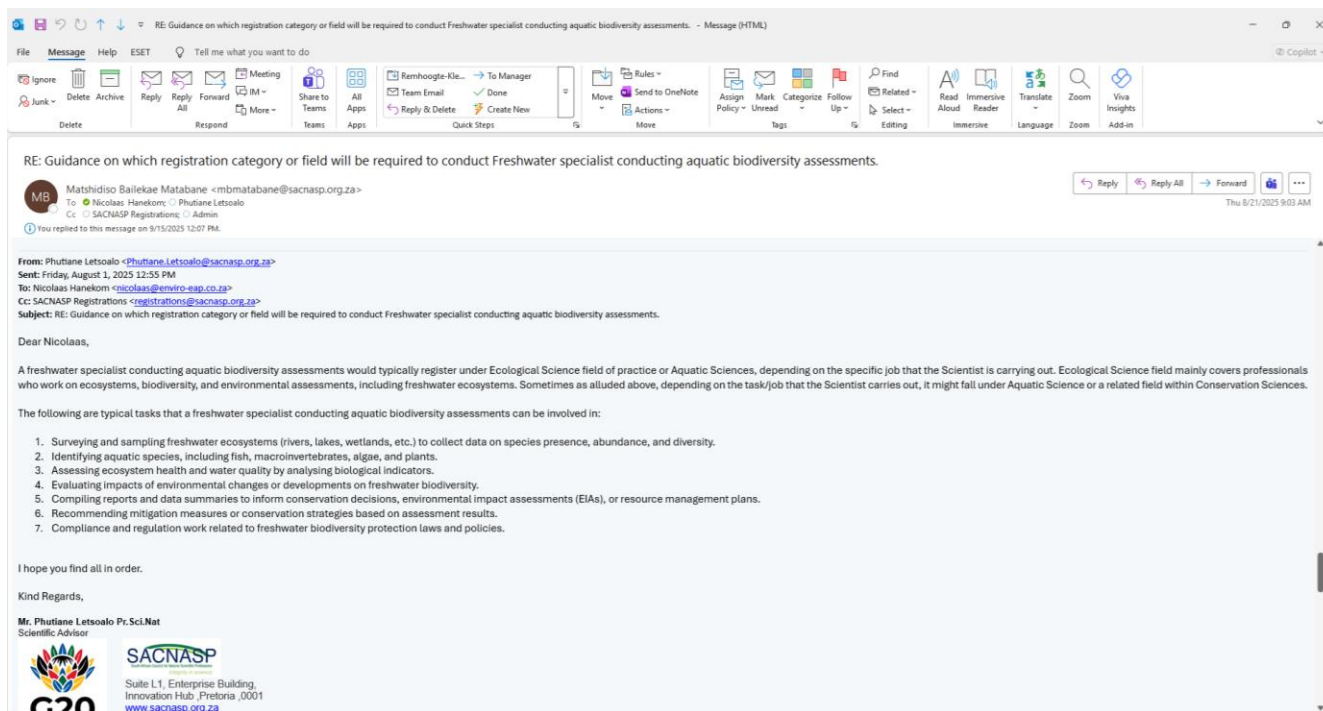
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## 1. INTRODUCTION

### 1.1. *Background & Competency*

Nicolaas Hanekom is a registered Professional Natural Scientist in the ecological science field with the South African Council for Natural Scientific Professions (“SACNASP”), Pri Sci Nat (Reg. No. 004415) Ecological Science (Pri.Sci.Nat); Aquatic Science & Conservation Science (Cand.Sci.Nat) and a qualified registered Environmental Assessment Practitioner (“EAP”) who holds a Masters Technologiae, Nature Conservation (“Vegetation Ecology and Biodiversity Assessment”) degree from the Cape Peninsula University of Technology (Refer to Appendix A, CV). Nicolaas Hanekom is suitably qualified SACNASP registered specialist.

SACNASP confirm that Ecological Field registration is appropriate registration for conducting freshwater ecology studies as per email below.



## 1.2. Conditions Relating to this Report

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information and knowledge of the area.

This report may not be altered or added to without the prior written consent of the author. This restraint also refers to electronic copies of this report which are supplied as sub portion of other reports, including main reports. Similarly, any recommendations, statements, or conclusions drawn from or based on this report must specifically refer to this report. If such comments form part of a main report for this investigation, the report must be included in its entirety as an appendix or separate section to the main report.

## 1.3. Terms of Reference

### Step 1: Site Sensitivity Verification Report

Prior to beginning the assessment, the current use of the land and the potential environmental sensitivity of the site as identified by the national web based environmental screening tool must be confirmed by undertaking an Initial Site Sensitivity Verification. The Initial Site Sensitivity Verification must be undertaken by an environmental assessment practitioner or a registered specialist with expertise in the relevant environmental theme being considered. The Initial Site



Sensitivity Verification must be undertaken through the use of:

- (a) a desk top analysis, using satellite imagery;
- (b) a preliminary on-site inspection to;
- (c) any other available and relevant information.

The outcome of the Initial Site Sensitivity Verification must be recorded in the form of a report that:

- (a) confirms or disputes the current use of the land and the environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, the change in vegetation cover or status etc.;
- (b) contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity; and
- (c) is submitted together with the relevant assessment report prepared in accordance with the requirements of the Environmental Impact Assessment Regulations.

The site sensitivity verification report was completed by the environmental assessment practitioner and was included in the Scoping and Environmental Impact Assessment reports.

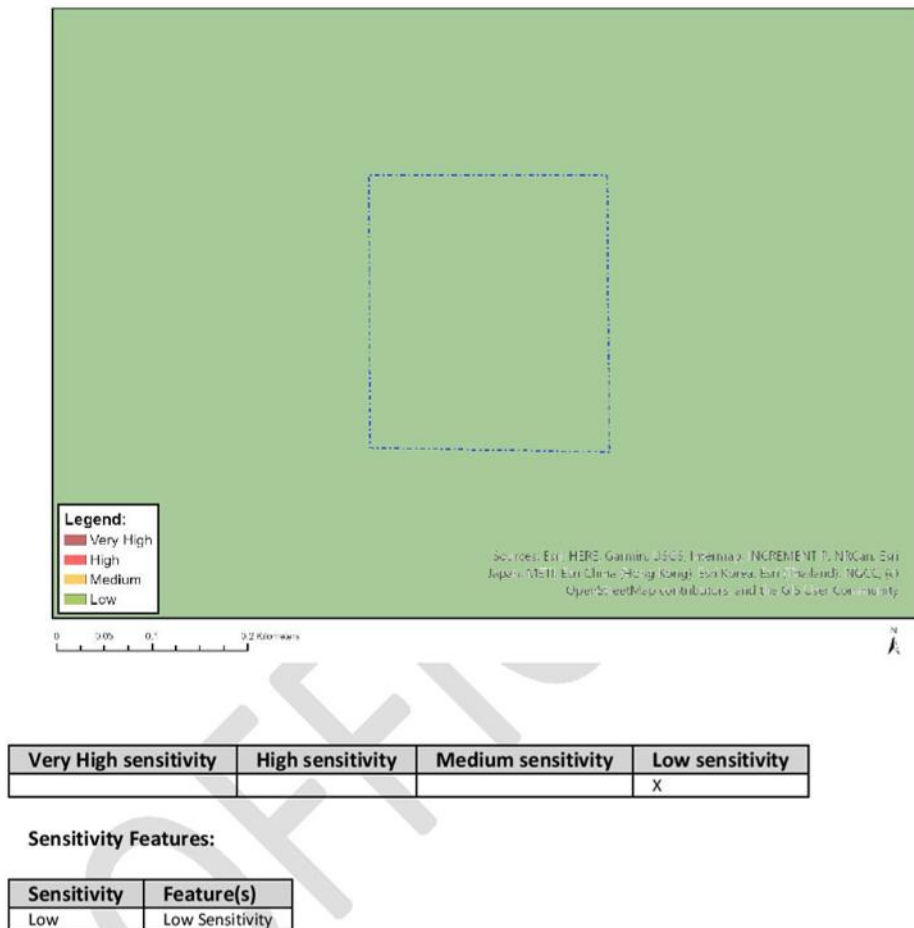
The outcome of the site sensitivity verification report concerning aquatic sensitivity of proposed development site and surrounds can be summarised as below:

*The Department of Environmental Affairs screening report from the national web based environmental screening tool reported a “Low sensitivity for aquatic theme” and the environmental assessment practitioner and aquatic specialist confirms and agrees with the low aquatic sensitivity of the site. Figure 1 depicts the aquatic sensitivity theme map produced by the DEA screening tool of the relevant development sites. The specialist agrees with the findings of the DEA Screening Report that the proposed mining areas falls within a low aquatic sensitivity and the following reasons are provided to support the Aquatic Impact Statement to be conducted:*

- *There are no mapped or existing NFEPA wetlands or watercourses on nor within close proximity/directly adjacent to the proposed mining activities area.*
- *Mining activities are proposed on annually cultivated agricultural land however to prevent any potential impacts on surface or groundwater resources an Aquatic Impact*

*Statement is proposed.*

## MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY



**Figure 1:** Aquatic sensitivity map generated by the national web based environmental screening tool for proposed mining areas on Farm Doornfontein RE/4/814.

## Step 2: Aquatic Impact Compliance Statement

This compliance/impact statement report the findings of the aquatic sensitivity verification and site survey that was conducted by Nicolaas Hanekom.

The compliance statement must:

- be applicable to the preferred site and proposed development footprint;
- confirm that the site is of “low” sensitivity for aquatic biodiversity; and
- indicate whether or not the proposed development will have an impact on the aquatic



features.

The aquatic biodiversity compliance statement, must contain, as a minimum, the following information:

- Contact details and curriculum vitae of the specialist including SACNASP registration number and field of expertise; - **Refer to cover page, section 1.1. and Appendix A of this report**
- A signed statement of independence by the specialist; **Refer to page 2 of this report**
- A statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment; **Refer to section 2.**
- a baseline profile description of biodiversity and ecosystems of the site; **Refer to section 2.**
- the methodology used to verify the sensitivities of the aquatic biodiversity features on the site including the equipment and modelling used where relevant; **Refer to section 3**
- in the case of a linear activity, confirmation from the aquatic biodiversity specialist that, in their opinion, based on the mitigation and remedial measures proposed, the land can be returned to the current state within two years of completion of the construction phase; **NA**
- where required, proposed impact management outcomes or any monitoring requirements for inclusion in the EMPr; **Refer to Section 4**
- a description of the assumptions made as well as any uncertainties or gaps in knowledge or data; and **Refer to Section 5**
- any conditions to which this statement is subjected. **Refer to Sections 4 and 6**

### **Step 3: Reporting**

A signed copy of the compliance statement must be appended to the Basic Assessment Report or Environmental Impact Assessment Report.

## **2. A STATEMENT ON THE DURATION, DATE AND SEASON OF THE SITE INSPECTION AND THE RELEVANCE OF THE SEASON TO THE OUTCOME OF THE ASSESSMENT AND BASELINE PROFILE DESCRIPTION OF BIODIVERSITY AND ECOSYSTEMS OF THE SITE**

The proposed property, Farm Doornfontein RE/4/814 size 200.82ha is located approximately ±7km to the south of Malmesbury, within the municipal jurisdiction of Swartland Municipality. The property can be accessed via Main Road 174 (R302).

The predominant land use in the surrounding area is agriculture and includes cultivated land used for grain production and vineyards. The property is used as an agricultural unit and is developed with infrastructure such as a farmhouse or labourer cottages.

The site of the proposed 5ha sand mine has significantly been impacted upon by agricultural activities. The nearest non-perennial watercourse is located approximately 230m to the west



of the proposed mine. A proposed dry-pit sand and gravel mine of 5ha is assessed in this report. The average depth of mine-able sand spread over the mine area (5ha) is  $\pm 30$  cm deep and the average depth of gravel,  $\pm 50$  cm. The mining operator will first remove the topsoil layer (250mm) from block 1 and stockpile it on the to be mined block 2. The mineable sand and gravel will then be removed from block 1 by a front-end loader and loaded onto tip-trucks. When all mineable sand and gravel is removed from block 1, the stockpiled topsoil on block 2 is removed and immediately placed on block 1, leaving 500mm topsoil above the gravel / clay layer. Removal of topsoil from block 2 commences and is stockpiled on block 3, where after mining on block 3 commence. Concurrent mining and rehabilitation will continue until the sand resource on the 6 mining blocks is removed. The mining process reduces the depth of the sand but, following the recommended rehabilitation measures, will leave a minimum of 500 mm of topsoil.

No new roads would have to be constructed to provide access to the proposed mining areas. The mine area is accessed directly off existing farm roads to remain as is throughout the mining process.

Site was visited by the specialist on 24 June and 24 August 2026 to confirm current land use, aquatic sensitivity of the site and potential aquatic impacts of proposed mining activities. Seeing that all proposed mining activities are located on completely transformed annually cultivated agricultural land with no sensitive aquatic features i.e. drainage lines or wetlands the survey can be conducted any time of the year.

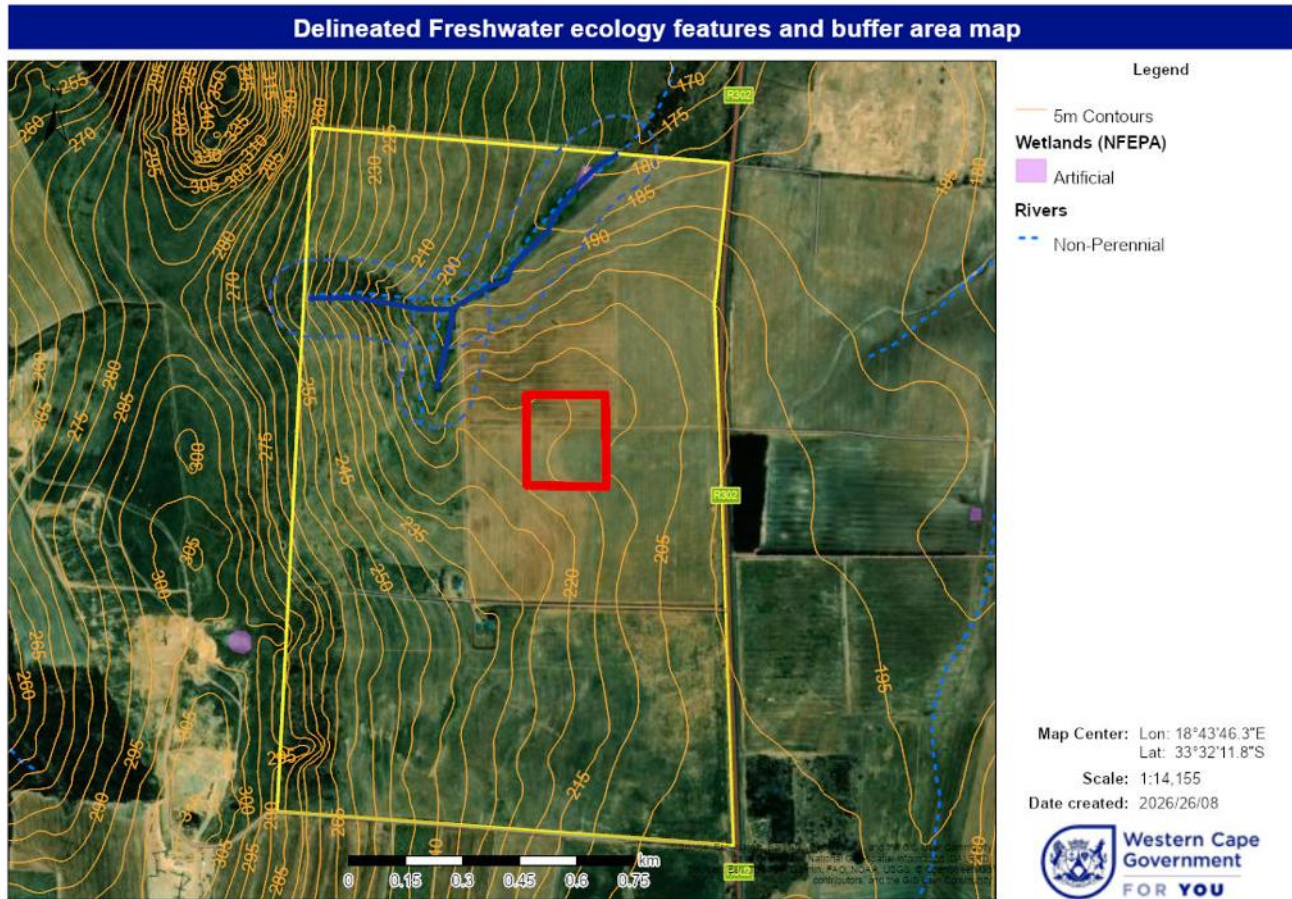
It was observed that the proposed mining activities areas falls within agricultural land currently being used for annual crop cultivation and livestock grazing. The specialist agrees with the Low Aquatic Sensitivity rating given to the proposed mining areas by the DEA Screening Tool in terms of the current land use.

The proposed mining expansion areas does not fall within any mapped non-perennial drainage lines nor within any mapped NFEPA wetland areas. The nearest watercourse is a non-perennial river and its catchment was mapped originating in the north-western corner approximately 230m west of the northwest corner of the proposed mine area. No natural aquatic features were observed on the site during the time of the survey, and the site consist of cultivated lands. The non-perennial river has a very poor Present Ecological State as a result of the farming and ploughing activities.

Due to the general  $>10$ m depth groundwater table average and low yields in the region groundwater is mainly an unused resource in the region. The proposed mining activities at a depth of 2.5m deep is therefore not expected to have any significant detrimental impacts on the geohydrological dynamics and/or groundwater quality/table of the site.



**Fig 2:** Locality of proposed 5ha mining area on Farm Doornfontein RE/4/814, Malmesbury in the Western Cape.



**Fig 3:** NFEPA Map and Water Course map- Proposed 5ha area (red) on Farm Doornfontein RE/4/814 as assessed, as well as regulated 100m buffer zone from non-perennial water course (blue dotted polydon).



**Photograph 1:** View of proposed mining area in cultivated agricultural land.



**Photograph 2:** View of higher lying non-perennial watercourse and catchment from proposed mining area.



**Photograph 3:** Downstream view of non-perennial watercourse catchment.

### **3. A DESCRIPTION OF THE METHODOLOGY USED TO UNDERTAKE THE SITE SURVEY AND PREPARE THE COMPLIANCE STATEMENT, INCLUDING EQUIPMENT AND MODELLING USED WHERE RELEVANT**

A literature review and desktop analysis were undertaken prior to the field investigation, utilizing various sources including the South African National Biodiversity Institute (SANBI) data and other relevant sources as available on Cape Farm Mapper. Recent and historical aerial imagery of the site was reviewed in order to identify points for investigation during the field survey. Utilising the above information, a field investigation was undertaken whereby:

- Sites of geomorphological or topographic variance (if present) were identified and subjected to an evaluation of species present within transects established across the selected site.
- Aquatic fauna and flora species were identified and collated (if present).
- Additional random sample points were selected from similar aquatic sites surrounding the proposed impacted areas for comparative purposes (if present).

The assessments entailed both a literature review of the region, as well as on site evaluations, during which specific primary data was collected and evaluated. In addition, the identification of key ecological features was undertaken allowing for the interpretation of the prevailing habitat form and associated processes.

All data collected in the field and during the literature review was evaluated and interpreted in order to provide an understanding of the nature of the prevailing environment at a landscape and habitat level. In addition, specific evaluation of data relating to habitat form and structure

was undertaken, aiding in the identification of bio-physical anomalies within the prevailing environment. Such variance may be considered to be indicative of differing habitat forms, which under consideration, may be of higher order ecological value in relation of the prevailing environment.

The study area was surveyed on foot, and all aquatic fauna and flora species and habitats recorded if present on the proposed development site and immediate surrounds. Various transects were conducted to cover the area. Particular attention was paid to potential fauna and flora Species of Conservation Concern and presence of freshwater ecological features that represent wetlands and aquatic biodiversity areas that could have been present. Site photographs were taken.

Two site assessments were conducted in middle of the winter in the ideal season. A literature review and desktop analysis were undertaken prior to the field investigation, utilizing various sources including the South African National Biodiversity Institute (SANBI) data and other relevant sources. Recent and historical aerial imagery of the site was reviewed in order to identify points for investigation during the field survey. Utilising the above information, a field investigation was undertaken whereby freshwater ecological features were identified, mapped and delineated. During the site assessment the proposed site and its immediate surrounds was searched for signs of natural drainage, soil saturation (redoximorphic signatures in the soil) and aquatic habitat (primarily in the form of the presence of hydrophytic vegetation).

#### **4. WHERE REQUIRED, PROPOSED IMPACT MANAGEMENT ACTIONS AND OUTCOMES OR ANY MONITORING REQUIREMENTS FOR INCLUSION IN THE EMPR**

Mining can have both direct and indirect impacts on aquatic features of the site and surrounds. Direct impacts are those that pollute or transform groundwater or surface water resources. Indirect impacts are those that may overtime lead to degradation or transformation of aquatic features such as erosion.

The proposed mining activities can have the following potential impacts on aquatic features of the site and surrounds:

- Erosion
- Groundwater pollution
- Increased sediment loads
- Surface water resources pollution
- Transformation and degradation

The following impact management measures must be implemented and included in the EMPr, and should they be implemented the proposed mining expansion activities should not have any significant negative impacts on any aquatic features present on the site or surrounds:

- Visually inspect mining area boundaries, exposed surfaces, overburden and top soil stockpiles for signs of erosion.
- If erosion channels are discovered the mine must determine the cause of erosion and implement erosion rectification and prevention measures to rehabilitate eroded areas and prevent future erosion.
- Rehabilitate and reinstate engineered constructed contours as soon as a phase is complete.

- Undertake mining activities only in identified and specifically demarcated areas as proposed and in phases. Rehabilitating/filling excavations as soon as possible to prevent accumulation of stormwater.
- Implement erosion and storm water runoff management measures as according to EMP requirements to prevent (or if prevention is not possible limit) any erosion from occurring on the mining activity areas and surrounds; and any storm water runoff from the mining areas and topsoil and overburden storage areas.
- Minimize sediment load in the water by stripping a maximum of 10 meters ahead of the mining face and only moving the material once it needs to be processed or onto the intended topsoil stockpiles on the edge of all current and future mining areas. Monitor for erosion. Should erosion be present, undertake mitigation measures to rectify and prevent further erosion.
- Use existing access roads and all roads need to be maintained as is and monitored. Visible signs of possible erosion must be immediately rehabilitated.
- All storm water falling outside the mine property must be diverted around the mine.
- No drainage line or wetland areas edges may be disturbed or impacted upon by the proposed activities.
- If any groundwater is reached during the proposed mining activities on site, mining of that area must immediately be ceased, the Environmental Control Officer must be informed and the area must be rehabilitated to prevent any potential detrimental impact on the groundwater resource.
- All measures should be put in place to ensure proper post-mining rehabilitation of affected areas, to as close to the original condition as possible.
- No pollution of surface water or ground water resources may occur due to activities on the property. Oil spillages from vehicles on site must be controlled to prevent pollution of water resources.

## **5. A DESCRIPTION OF THE ASSUMPTIONS MADE AND ANY UNCERTAINTIES OR GAPS IN KNOWLEDGE OR DATA**

The site visit was carried out on 24 June and 24 August 2026. The timing of the survey is regarded as optimal in terms of accurately assessing the freshwater ecological features of the site and delineating thereof. Aquatic habitat in the greater area (i.e. beyond the site boundary and inside the buffer area) was identified based on the available online databases, viz-a-viz the National Wetlands Map Version 5 (CSIR, 2018), the NFEPA wetlands database (Nel et. al., 2011) and the NGI Rivers database (available on Cape Farm Mapper, 2026) and, where possible on visual analysis. Where aquatic habitat is confirmed within the confines of the site boundary, this has been delineated by means of a hand-held Garmin Geographical Positioning System (GPS) as follows:

- For wetlands, the outer edge of the wetland seasonal zone has been delineated; and
- For rivers, the channel has been delineated as well as the outer edge of the riparian zone (if present) has been delineated.

In determining the current extent of wetlands and riparian zones the methods used were limited to the upper 50cm of soil in accordance with the Updated Manual for Identification and Delineation of Wetland and Riparian Areas (Department of Water Affairs and Forestry - DWAF,

2008) and the Application of the DWAF (2008) Method to Wetland Soils of Western Cape (Job et. al. 2009).

The study area is considered a relatively straightforward case as the site is cultivated lands and the non-perennial river could easily be mapped and delineated.

No assumptions were made, and the author is confident that there were no uncertainties or gaps in knowledge or data in order to make an informed recommendation. A follow-up survey is not considered essential for decision-making.

## **6. THE MEAN DENSITY OF OBSERVATIONS/ NUMBER OF SAMPLES SITES PER UNIT AREA**

Surveys were focused on the mine site and regulated buffer area which was surveyed on foot, and all freshwater ecological features that represent wetlands and aquatic biodiversity areas that could have been present were mapped. Various photographs were taken.

No freshwater features were observed or recorded within the proposed mining area or its immediate/adjacent surroundings.

## **7. ANY CONDITIONS TO WHICH THE COMPLIANCE STATEMENT IS SUBJECTED**

It was concluded that should the proposed mitigation measures as listed under point 4 above be implemented that the overall significance of the impacts on aquatic sensitivity of the site will be of overall low negative significance. All of the mitigation and monitoring measures as listed under point 4 above must be included as part of the Environmental Management Programme conditions to be adhered to before, during and after the proposed mining activities.

Accordingly, this assessment concludes that the proposed development will not pose any risk to the watercourse or any other aquatic biodiversity and therefore does not comprise any Section 21 c and i water uses and therefore no Water Use Authorisation in terms of the NWA is required. It also concludes that there are no triggers for environmental authorisation in terms of the NEMA EIA Regulations (2104, as amended) due to the presence of aquatic biodiversity.

This report meets the requirement of an Aquatic Biodiversity Compliance Statement insofar as it confirms the LOW sensitivity of the site from an Aquatic Biodiversity perspective and presents the methods that were used in determining the sensitivity, including ground truthing by a suitably qualified SACNASP registered specialist and recommendation of any measures to avoid impacts relating to aquatic biodiversity.

## **8. REFERENCES**

Council for Scientific and Industrial Research (CSIR). 2018. National Wetland Map 5 and Confidence Map [Vector] 2018. Available from: SANBI BGIS <https://www.sanbi.org/link/bgis-biodiversity-gis/>

Department of Water Affairs and Forestry. 2008. Updated Manual for the Identification and Delineation of Wetlands and Riparian Areas, prepared by M. Rountree, A. L. Batchelor, J.

MacKenzie and D. Hoare. Stream Flow Reduction Activities, Department of Water Affairs and Forestry, Pretoria, South Africa.

Job, N. 2009. Application of the Department of Water Affairs and Forestry (DWAF) wetland delineation method to wetland soils of the Western Cape.

Nel, J.L., Driver, A., Strydom W.F., Maherry, A., Petersen, C., Hill, L., Roux, D.J., Nienaber, S., Van Deventer, H., Swartz, E. & Smith-Adao, L.B. 2011a. Atlas of Freshwater Ecosystem Priority Areas in South Africa: Maps to support sustainable development of water resources. Water Research Commission Report No. TT 500/11, Water Research Commission, Pretoria, RSA.

NGI Rivers Database 2025 (available from: Cape Farm Mapper, 2026. <https://gis.elsenburg.com/apps/cfm/>)

Macfarlane, D.M. and Bredin, I.P. 2017. Buffer zone guidelines for rivers, wetlands and estuaries. Part 1: Technical Manual. WRC Report No. TT 715-1-17, Water Research Commission, Pretoria.

WCBSP, 2023 ((available from: Cape Farm Mapper, 2025. <https://gis.elsenburg.com/apps/cfm/>)

## **APPENDIX A SPECIALIST CV**

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### **CURRICULUM VITAE – NICOLAAS WILLEM HANEKOM**

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**Profession:** Environmental Scientist and Environmental Assessment Practitioner

**Date of Birth:** 01/02/1967

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### **BIOGRAPHICAL SKETCH**

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Nicolaas Hanekom is a qualified Environmental Assessment Practitioner ("EAP") who holds a Masters Technologiae, Nature Conservation ("Vegetation Ecology and Biodiversity Assessment") degree from the Cape Peninsula University of Technology. Nicolaas is certified in terms of section 20(3)(a) of the Natural Scientific Professions Act, 2003 (Act 27 of 2003), as

a Professional Natural Scientist (Ecological Science) Registration Number: 4008274/11. He further qualified in Environmental Management Systems ISO 14001:2004, at the Centre for Environmental Management, North-West University, as well as Environmental Management Systems ISO 14001:2004 Audit: Internal Auditors Course to ISO 19011:2003 level, from the Centre for Environmental Management, North-West University qualifying him to execute audits to ISO/SANS environmental compliance and EMS standards.

He has also completed the suite of Greener Governance courses with certificates in;

- An Overview of Environmental Management at the Local Government Level, Centre for Environmental Management, North-West University;
- Greener Governance for Local Authorities, Centre for Environmental Management, North-West University;
- Tools for Integrated Environmental Management and Governance, Centre for Environmental Management, North-West University.

He further attended and obtained a certificate on Integrated Protected Area Planning at the Centre for Environmental Development, University of Kwa Zulu Natal and a certificate in Project Management (Theory and Practical), through CS Holdings. Nicolaas has lectured in two subjects at the Cape Peninsula University of Technology. He has 26 years of environmental planning experience, working for Free State and Western Cape departments of environmental affairs, where he reviewed and commented on development (EIA) applications, in the West Coast Region.

He has, as practising EAP been responsible for many environmental impact assessments and EIA applications, waste license and atmospheric emission license applications.

#### **ABBREVIATED CURRICULUM VITAE OF FRESHWATER SPECIALIST**

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Name:</b>                    | Nicolaas Willem Hanekom (Pri.Sci.Nat)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Profession:</b>              | Ecological Scientist                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Nationality:</b>             | South African                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Years experience</b>         | 26 Years                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Academic Qualifications</b>  | <ul style="list-style-type: none"> <li>• National Diploma, Nature Conservation (Cape Technikon)</li> <li>• B. Tech Degree in Nature Conservation (Cape Technikon)</li> <li>• M.Tech in Nature Conservation (Cape Peninsula University of Technology)</li> <li>• Completed various Environmental Management Courses</li> <li>• Qualified Environmental Management System ISO 14001: 2004 Audit: Internal Auditor Course Based on ISO 19011:2002 (Centre for Environmental Management North West University)</li> </ul> |
| <b>Areas of specialisation:</b> | <ul style="list-style-type: none"> <li>• Ecosystem (terrestrial and aquatic) monitoring and assessments</li> <li>• Design of monitoring programmes for ecosystems (terrestrial and aquatic)</li> <li>• Environmental Impact Assessments</li> <li>• River classification and environmental water requirements</li> <li>• Wetlands Delineation</li> </ul>                                                                                                                                                               |

|                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                            | <ul style="list-style-type: none"> <li>• River and Wetlands management</li> <li>• Water Use Authorization Applications</li> <li>• Water quality management</li> <li>• River Health Assessments</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Countries of Work Experience:</b>                       | South Africa (Northern Cape, Western Cape, Free State, Mpumalanga, Gauteng)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Employment Record</b>                                   | <ul style="list-style-type: none"> <li>• Student at Bontebok National Park (1992)</li> <li>• Assistant Reserve Manager at Gariep Dam Nature Reserve, Free State (1993 - 1998)</li> <li>• Reserve Manager, Conservation Services Manager for Western Cape Nature Conservation Board (1998 - 2006)</li> <li>• External Lecturer at Cape Peninsula University of Technology (2003 - 2005)</li> <li>• Director: Environmental Management at Cape Lowlands Environmental Services (2006 – 2010)</li> <li>• Director, Environmental Management and lead Environmental Impact Assessment Practitioner at Eco Impact (Pty) Ltd (2010 – to date)</li> </ul>                                                                                                                                                                |
| <b>Professional membership, accreditations and courses</b> | <ul style="list-style-type: none"> <li>• South African Council for Natural Scientists Professions Pri.Sci.Nat (Ecological Science)</li> <li>• Riparian vegetation identification and health assessment. Internal Western Cape Nature Conservation short course presented by Dr C Boucher (Stellenbosch University) in 2000.</li> <li>• SASS5 Aquatic Biomonitoring Training Course. 2 to 5 September 2013. Ground Truth Water and Environmental Engineering consultancy in partnership with the Department of Water Affairs.</li> <li>• Workshop on “Section 21(c) and (i) Water Use Training: Understanding Watercourses and Managing Impacts to their Characteristics”. 10 May 2017. Presented by Dr Wietsche Roets of the Department of Water and Sanitation (Sub-Directorate: Instream Water Use).</li> </ul> |
| <b>Summary of experience</b>                               | <p>1992: South African National Parks. Student at Bontebok National Park with management and monitoring actions related to the Breede River.</p> <p>1993 -1998: Free State Nature Conservation. Ecological management and monitoring actions related to the Gariep Dam, Orange and Caledon Rivers.</p> <p>1998 -2006: CapeNature. Ecological management and monitoring actions related to the Berg River Estuary, Verlorenvlei, Lamberts bay's Jackalsvlei, Wadriest Soutpanne, Oliphant's River mouth, Rocherpan Nature Reserve, etc. Review and assessment of EIA applications, inclusive of Freshwater ecology. Did some site visits with Department of Water Affairs and Forestry (Hester Lyons) to confirm the presence of aquatic ecological features during EIA water use registration applications.</p>   |

|                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                            | 2006 to date: Cape Lowland Environmental Services and Eco Impact Legal Consultant. Ecological (Freshwater and aquatic) Specialist input, assessment, monitoring and reports.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Publications and assessment reports</b> | <p>Just to name a few. Was involved in many Ecological Assessments, monitoring and inputs in EIA applications.</p> <ul style="list-style-type: none"> <li>• Elandskloof Farm 475 Citrusdal Biodiversity Baseline Survey. August 2010. This Biodiversity Assessment Covering Terrestrial and Aquatic Aspects to Inform Decisions Regarding The Proposed Elandskloof Weir Flood Damage Project On Farm 475, In The Citrusdal Area.</li> <li>• Cape Solar Energy Electricity Generation Facility. Farm 187/3 &amp; 187/13 Kenhardt. Biodiversity And Ecological Baseline Survey. January 2011. (Included Terrestrial and aquatic ecological assessments and water use authorization applications)</li> <li>• Prieska Photovoltaic Power Generation Project. Prieska Commonage Northern Cape. Biodiversity And Ecological Baseline Survey. July 2011. (Included Terrestrial and aquatic ecological assessments and water use authorization applications)</li> <li>• Witteklip Erf 123 Extension, Vredenburg. Biodiversity Baseline Survey. Updated - October 2012 (Included Terrestrial and aquatic ecological assessments and water use authorization applications)</li> <li>• Baseline Biodiversity Survey And Wetland Delineation for ECCA Holdings: Cape Bentonite Mine on Erf 1412 Near Heidelberg. Prepared for: Shangoni Management Services Pry (Ltd). October 2014.</li> <li>• Freshwater Impact Assessment Laingsburg Flood Damage Repairs &amp; Storm Water Infrastructure. 18 February 2016.</li> <li>• Ecological Assessment for Swartland Municipality - Upgrades To Voortrekker/Bokomo Road And Voortrekker/Rozenburg Road Intersections and Upgrade to the Diep River Bridge, Malmesbury on A Portion Of Erf 327, Malmesbury (Road) Erf 1530, Diep River Bridge Crossing, and Erf 1528, Property South of Diep River where Road Widening and Turning Circle Will Be Constructed. March 2016. (Freshwater Ecology Inputs and Water Use Registration)</li> <li>• Freshwater Impact Assessment. McGregor Bridge, Robertson Bridge and Willem Nels River Maintenance Management Plan. 24 June 2016. (Freshwater Ecology assessment and input as well as Water Use Registration)</li> <li>• Water Use Authorization Application Risk Matrix. Orange Grove Trust Vegetation Clearing and Agricultural Development on Portion 4 of Farm Glen Heatlie No 316, Worcester. 12 June 2017. (Freshwater ecological inputs in EIA process and Water Use Registration).</li> <li>• Water Use Authorization Application Risk Matrix Prepared For: Witzenberg Municipality Sand Mine Farm 1 Prince Alfred</li> </ul> |

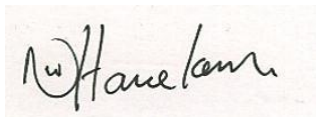
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|  | <p>Hamlet. 28 March 2017. (Freshwater ecological inputs in EIA process and Water Use Registration).</p> <ul style="list-style-type: none"> <li>• Proposed Hartmanshoop Agri Vegetation Clearing Project and Irrigation on Erf 686, Laingsburg. 12 August 2017. (Freshwater ecological inputs in Water Use Registration).</li> <li>• County Fair: Hocrast Abattoir And Rendering Facility Waste Water Treatment Works “CF Hocrast WWTW” Mosselbank River Second Quarter 2018 Biomonitoring Report. June 2018. (Done quarterly biomonitoring for the last three years).</li> </ul> |
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## CERTIFICATION

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I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe my qualifications, my experience, and me.



Nicolaas Hanekom Pri Sci Nat (Ecology).  
Registration number 004415



**herewith certifies that**  
**Nicolaas Willem Hanekom**  
Registration Number: 004415  
**is a registered scientist**

in terms of section 20(3) of the Natural Scientific Professions Act, 2003  
(Act 27 of 2003)  
in the following field(s) of practice (Schedule 1 of the Act)

Ecological Science (Professional Natural Scientist)  
Aquatic Science (Candidate Natural Scientist)  
Conservation Science (Candidate Natural Scientist)  
Zoological Science (Candidate Natural Scientist)

Effective **27 July 2011** Expires **31 March 2026**



Chairperson

Chief Executive Officer



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