

TERRESTRIAL PLANT SPECIES COMPLIANCE STATEMENT

PROPOSED EXPANSION OF BENTONITE AND ZEOLITE MINING ACTIVITIES ON ERF RE/1412 AND ERF 3264 (PREVIOUSLY ERF 1412), HEIDELBERG - WESTERN CAPE



Prepared by: Nicolaas Hanekom
Pri.Sci.Nat (Ecology) 400274/11
Contact details: Telephone: 0769636450
or email: nicolaas@enviro-eap.co.za

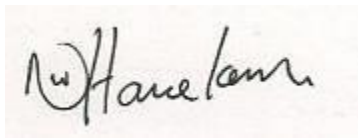
May 2025

DECLARATION OF THE SPECIALIST

Note: Duplicate this section where there is more than one 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

Signature of the EAP/ Specialist:

30 May 2025

Date:

Enviro-EAP (Pty) Ltd

Name of company (if applicable):

TABLE OF CONTENTS

DECLARATION OF THE SPECIALIST	2
1. INTRODUCTION	3
1.1. <i>Background & Competency</i>	3
1.2. <i>Conditions Relating to this Report</i>	3
1.3. <i>Terms of Reference</i>	4
2. BASELINE PROFILE DESCRIPTION OF BIODIVERSITY AND ECOSYSTEMS, INCLUDING A STATEMENT ON THE DURATION, DATE AND SEASON OF THE SITE INSPECTION AND THE RELEVANCE OF THE SEASON TO THE OUTCOME OF THE ASSESSMENT	7
3. A DESCRIPTION OF THE METHODOLOGY USED TO UNDERTAKE THE SITE SURVEY AND PREPARE THE COMPLIANCE STATEMENT, INCLUDING EQUIPMENT AND MODELLING USED WHERE RELEVANT	15
4. WHERE REQUIRED, PROPOSED IMPACT MANAGEMENT ACTIONS AND OUTCOMES OR ANY MONITORING REQUIREMENTS FOR INCLUSION IN THE EMPR .	16
5. A DESCRIPTION OF THE ASSUMPTIONS MADE AND ANY UNCERTAINTIES OR GAPS IN KNOWLEDGE OR DATA	19
6. THE MEAN DENSITY OF OBSERVATIONS/ NUMBER OF SAMPLES SITES PER UNIT AREA	19
7. ANY CONDITIONS TO WHICH THE COMPLIANCE STATEMENT IS SUBJECTED ...	19
8. REFERENCES	19
APPENDIX A SPECIALIST CV	19

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”), (Ecology field) 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.

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:

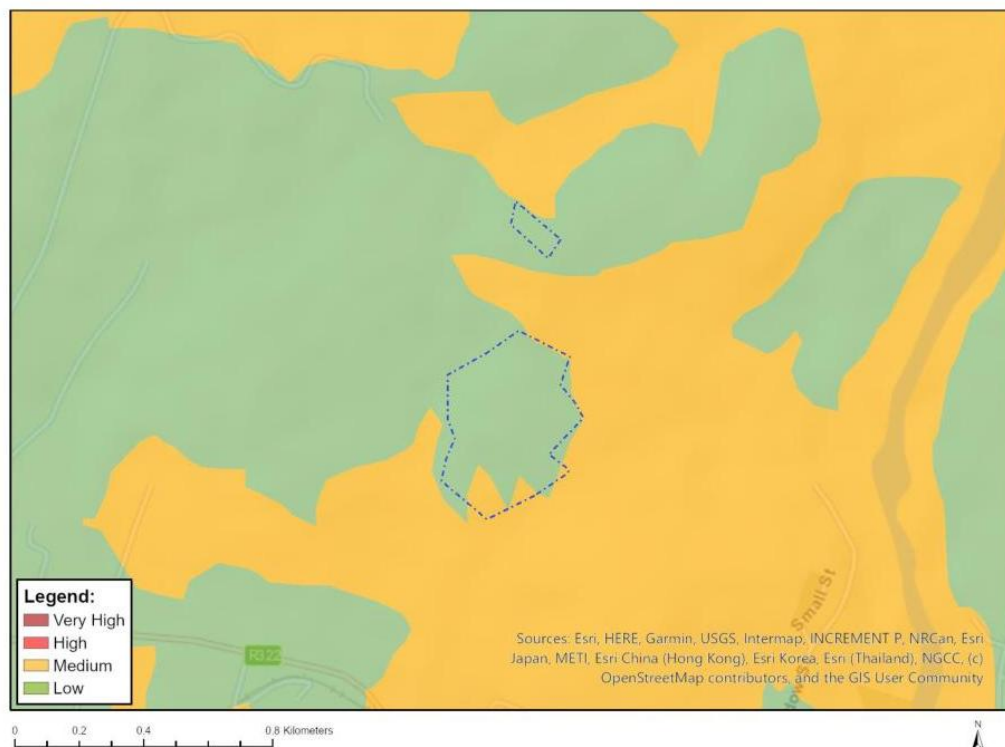
- (a) confirms or disputes the current use of the land and the environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, the change in vegetation cover or status etc.;
- (b) contains a motivation and evidence (e.g. photographs) of either the verified or 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 plant 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 "Medium sensitivity for plant species theme". Figure 1 depicts the property on which mining activities area proposed which mainly falls within Low Plant Species Sensitivity areas (refer to figure 1 below). During the site verification inspections, it was found that all proposed mining activities are on annually cultivated agricultural land with no indigenous vegetation species recorded on the proposed mining areas, except for one individual Milkwood tree (protected tree) which were recorded within close proximity to one of the proposed mining expansion areas within the cultivated lands. Due to remaining indigenous remnants throughout the property which may be impacted upon by the proposed mining activities a Medium to Low Plant Sensitivity is recommended for the proposed development and a Terrestrial Plant Compliance Statement was therefore proposed to be provided.

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at eiadatarequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	<i>Aspalathus campestris</i>
Medium	<i>Aspalathus grobleri</i>
Medium	<i>Aspalathus millefolia</i>
Medium	<i>Aspalathus steudeliana</i>
Medium	<i>Aspalathus zeyheri</i>
Medium	<i>Otholobium bowieanum</i>
Medium	<i>Otholobium pungens</i>
Medium	<i>Lotononis viborgioides</i>
Medium	<i>Leucadendron coriaceum</i>
Medium	<i>Selago ramosissima</i>
Medium	<i>Hesperantha muirii</i>
Medium	<i>Freesia fergusoniae</i>

Medium	Sensitive species 157
Medium	Sensitive species 700
Medium	Sensitive species 802
Medium	Sensitive species 499
Medium	<i>Oxalis duriuscula</i>
Medium	<i>Hermannia lavandulifolia</i>
Medium	Sensitive species 439
Medium	Sensitive species 1142
Medium	Sensitive species 339
Medium	<i>Duvalia elegans</i>
Medium	<i>Cynanchum zeyheri</i>
Medium	Sensitive species 96
Medium	<i>Gnidia ericoides</i>
Medium	<i>Chrysocoma flava</i>
Medium	<i>Stoebe rugulosa</i>
Medium	<i>Relhania garnotii</i>
Medium	<i>Acmadenia macropetala</i>
Medium	Sensitive species 692
Medium	Sensitive species 980
Medium	<i>Phyllica elimensis</i>
Medium	Sensitive species 822
Medium	<i>Drosanthemum lavisii</i>
Medium	<i>Drosanthemum micans</i>
Medium	<i>Drosanthemum striatum</i>
Medium	<i>Romulea jugicola</i>
Medium	Sensitive species 521
Medium	Sensitive species 142
Medium	<i>Elegia squamosa</i>
Medium	<i>Diosma passerinoides</i>
Medium	<i>Agathosma microcarpa</i>

Figure 1: Plant sensitivity map generated by the national web based environmental screening tool for proposed mining expansion areas on Erf RE/1412 and Erf 3264, indicating location and plant sensitivity of the proposed mining expansion areas.

Step 2: Terrestrial Plant Species Compliance Statement

This compliance statement reports on the findings of the terrestrial plant sensitivity verification and site survey that was conducted by Nicolaas Hanekom.

The compliance statement must:

- be applicable to the study area;
- confirm that the study area is of “low” sensitivity for terrestrial plant species; and
- indicate whether or not the proposed development will have any impact on SCC.

The terrestrial plant compliance statement, must contain, as a minimum, the following information:

- contact details and relevant experience as well as the SACNASP registration number of the specialist preparing the compliance statement including a curriculum vitae; **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 description of the methodology used to undertake the site survey and prepare the compliance statement, including equipment and modelling used where relevant; **Refer to section 3**
- where required, proposed impact management actions and outcomes or any

monitoring requirements for inclusion in the EMP; **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**
- the mean density of observations/ number of samples sites per unit area; **Refer to Section 6**
- any conditions to which the compliance statement is subjected. **Refer to Sections 4 and 7**

Step 3: Reporting

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

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

Imerys Refractory Minerals South Africa (Pty) Ltd t/a Cape Bentonite Mine is an existing Bentonite and Zeolite mining company operating under an existing mining right on Erf RE/1412 and Erf 3264 (previously Erf 1412) Ref: WC30/5/1/2/2/10076MR.

A total of 16.63ha (Phase 1 -15) has already been mined and rehabilitated under the current mining right and is part of annually cultivated agricultural land. Authorised mining right areas remaining and additional quarries proposed:

Authorised quarry mined and currently under rehabilitation:

- Quarry/phase 20 – 1ha

Authorised quarries still to be mined:

- Quarry/phase 16 – 1ha
- Quarry/phase 17 – 0.3ha
- Quarry/phase 18 – 0.34ha
- Quarry/phase 19 – 0.32ha
- Quarry/phase 21 – 0.73

Additional quarries proposed:

- Quarry/phase 22 – 1.49ha
- Quarry/phase 23 – 1.24ha
- Quarry/phase 24 – 0.7ha
- Quarry/phase 25 – 0.78ha

Total mining right activities area: 20ha

(includes all activities associated with the proposed bentonite mining such as any explorations required, site establishment, demarcations, excavations, any vehicular movements, access and internal roads, topsoil and overburden storage, implementation of rehabilitation measures etc.)

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.

The site was visited by the specialist on 23 May 2025 to confirm current land use, plant sensitivity of the site and potential plant species impacts of proposed mining expansion activities. Seeing that all proposed mining expansion activities are located on completely transformed annually cultivated agricultural land with no sensitive terrestrial or aquatic habitat features i.e. wetlands or indigenous vegetation areas the survey can be conducted any time of the year.

Conservation value and sensitivity (terms which are often used interchangeably in ecological assessments) of habitats are a product of species diversity, plant community composition, rarity of habitat, degree of habitat degradation, rarity of species, ecological viability and connectivity, vulnerability to impacts, and reversibility of threats (which in this case generally refers to the rehabilitation potential of the habitat; high sensitivity habitats having low rehabilitation potential). Sensitive environmental features that were identified on the property include natural and near natural indigenous vegetation remnants which exists throughout the property and consists mainly of Critically Endangered - Eastern Ruens Shale Renosterveld also identified as Terrestrial Critical Biodiversity Areas ("CBA") as according to the Fine Scale Planning ("FSP") for Hessequa. The primary reason for selection of these areas as terrestrial and/or aquatic CBAs and/or ESAs is that it helps meet the national conservation target for threatened vegetation types, and ancillary reasons are that it offers opportunities for continuation of ecological connectivity especially related to the hydrological connectivity of the drainage lines. These areas also potentially provide habitats for indigenous animal species of which may also include plant SCC.

It was observed that the proposed mining expansion activities areas falls within agricultural land currently being used for annual crop cultivation and livestock grazing (sheep and cattle). The only plant SCC recorded within the cultivated agricultural lands within close proximity to the mining activities areas was milkwood trees (*Sideroxylon inerme*) which is not endangered but is a Protected Tree species. One individual *Sideroxylon inerme* (Milkwood) tree was recorded within the cultivated agricultural land within close proximity to where mining expansion activities Phases 22-24 are proposed, this tree must be demarcated and may not be impacted upon by any mining activities.

Although no other plant SCC were recorded within the proposed mining areas on the property it is most likely that plant SCC's occur within the un-ploughed "klowe"/gorges with relatively intact remaining indigenous vegetation areas as part of Critically Endangered - Eastern Ruens Shale Renosterveld. With implementation of proper no-go area buffers and stormwater management measures it is not expected that the mining activities will have any significant detrimental impacts on the indigenous vegetation remnants adjacent to the proposed mining areas.

The proposed mining expansion areas are not located on any mapped terrestrial CBA or ESA areas. Some of the access roads to be used crosses terrestrial CBAs, but these are existing farm roads which will remain and used as is during the proposed mining activities and maintained as per current farming practices.



Figure 2: Locality of Heidelberg in the Western Cape.

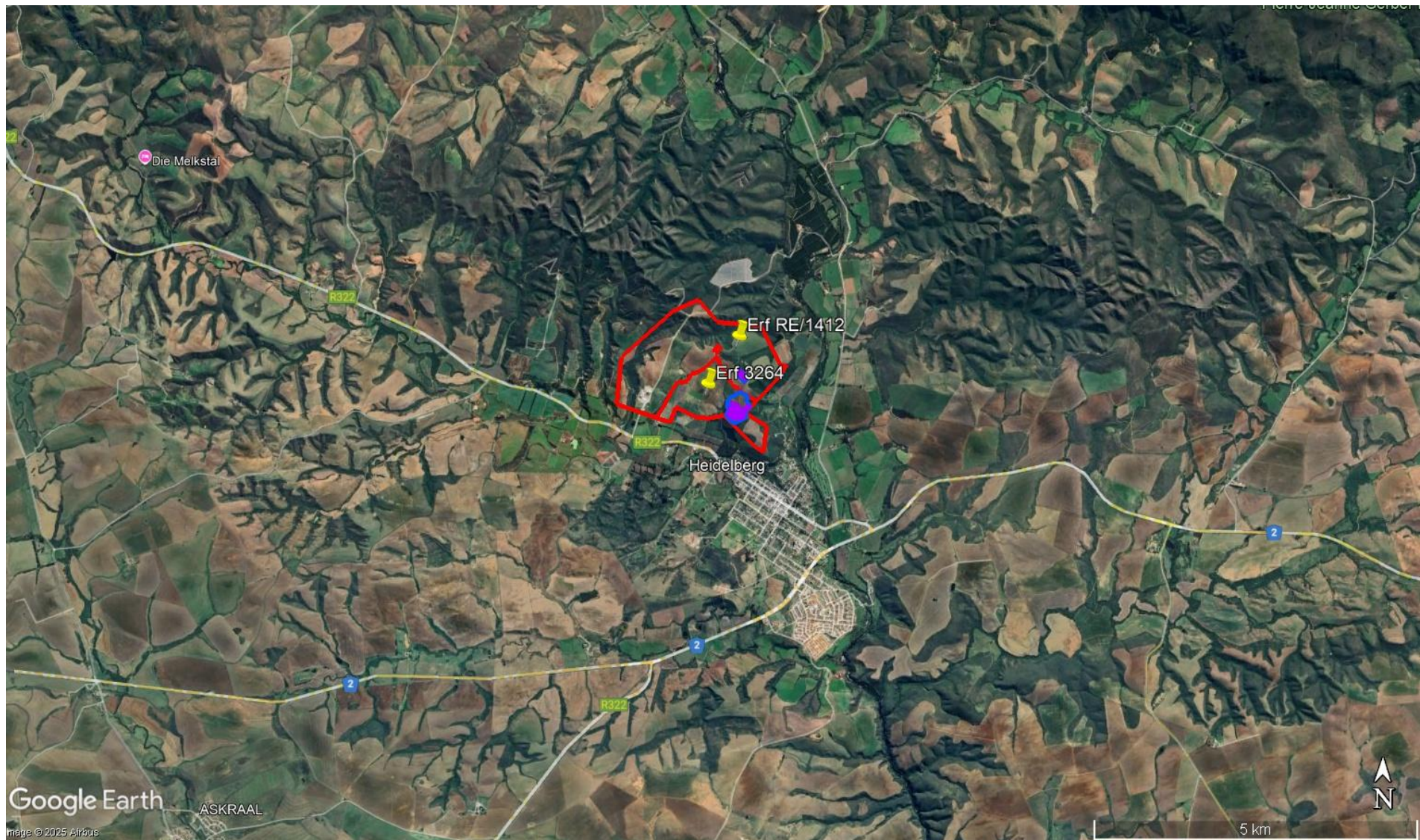


Figure 3: Locality of Erven RE/1412 and 3264 near Heidelberg in the Western Cape.
GPS co-ordinate for proposed expansion sites - $34^{\circ} 04' 20.43''\text{S } 20^{\circ} 57' 02.44''\text{E}$
 $34^{\circ} 04' 38.29''\text{S } 20^{\circ} 56' 59.79''\text{E}$

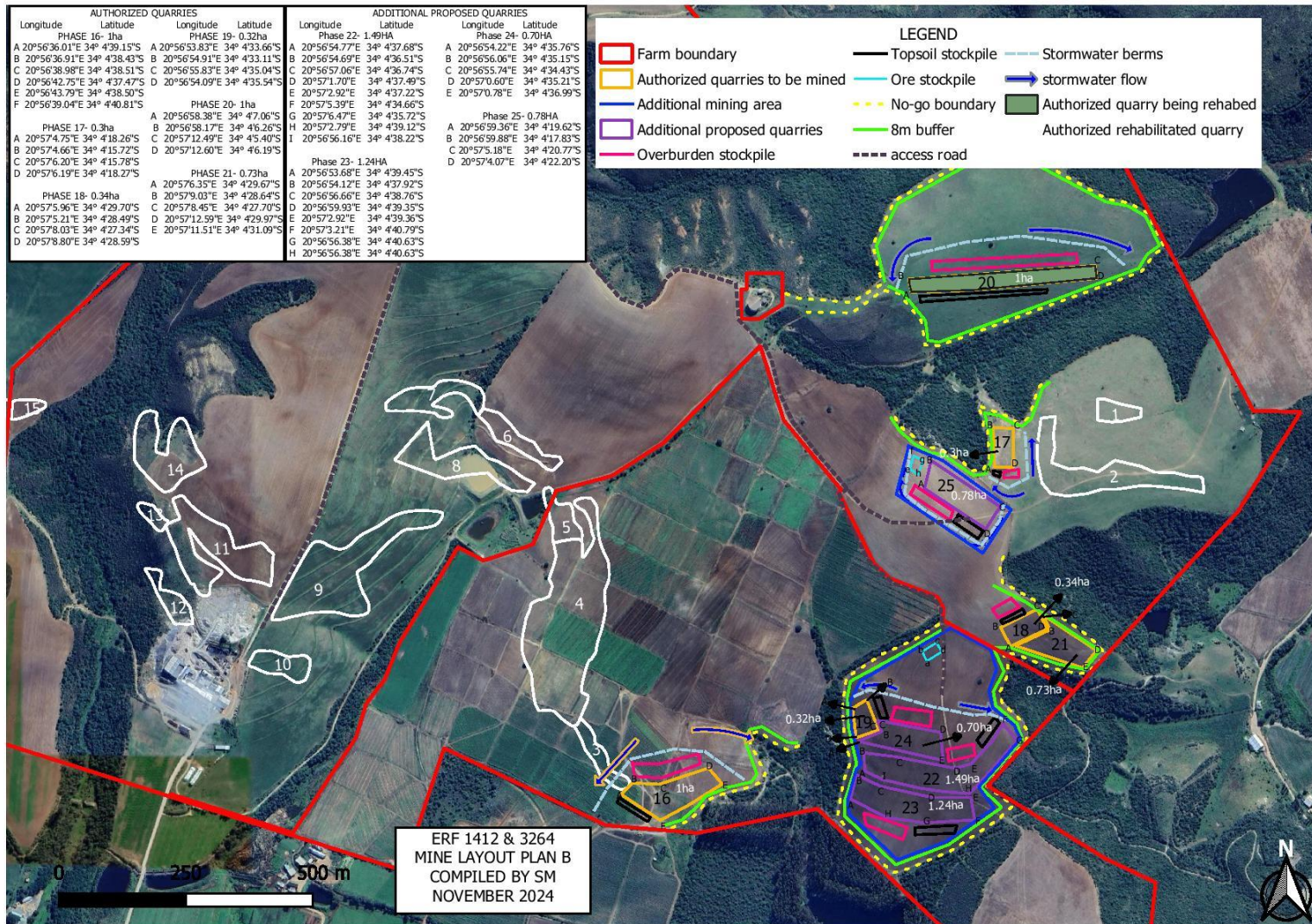


Figure 4: Proposed mining layout map for Erven RE/1412 and 3264 (previously Erf 1412) indicating approved mining right areas and proposed additional quarries.

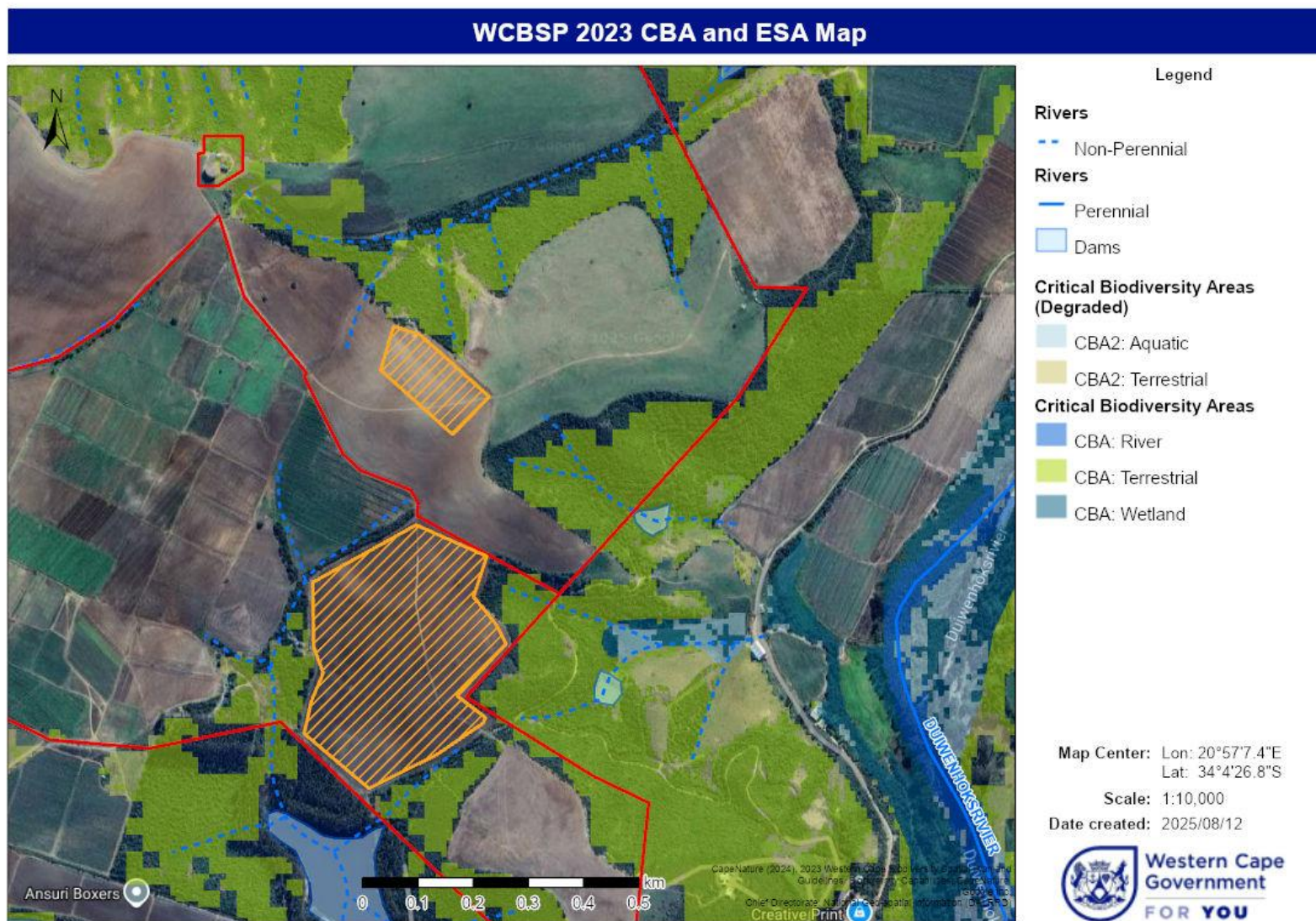


Figure 5: 2023 WCBSP land use map indicating mapped terrestrial and aquatic Critical Biodiversity Areas (“CBA”) and Ecological Support Areas (“ESA”) as according to Fine Scale Planning (“FSP”) for Hessequa in relation to the proposed mining activities additional areas (demarcated in orange) as assessed for Erven RE/1412 and 3264 near Heidelberg in the Western Cape.

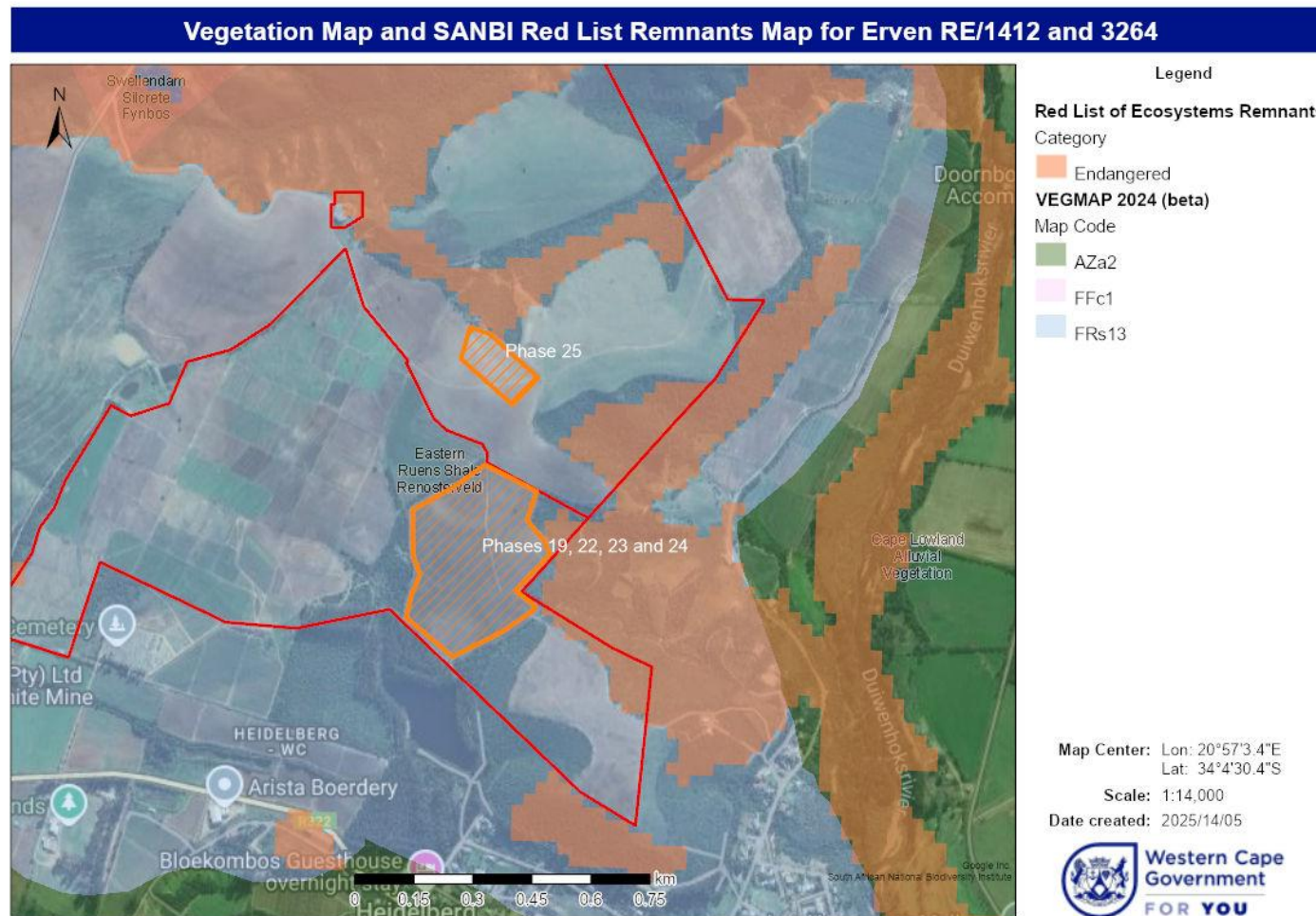


Figure 6: Vegetation map in relation to the proposed mining activities additional areas (demarcated in orange) as assessed for Erven RE/1412 and 3264 near Heidelberg in the Western Cape.



Photo 1: Phase 25 additional quarry areas proposed within transformed cultivated land of Erf RE/1412



Photo 2: Phases 22-24 additional quarry areas proposed within transformed cultivated land of Erf 3264.



Photo 3: Phases 22-24 additional quarry areas proposed within transformed cultivated land of Erf 3264.



Photo 4: Phases 22-24 additional quarry areas proposed within transformed cultivated land of Erf 3264.

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. 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:

- Where present sites of geomorphological or topographic variance were identified and

subjected to an evaluation of species present within transects established across the selected site.

- Where present indigenous species were identified and collated.
- Additional random sample points were selected from other similar sites (if present) surrounding the proposed impacted areas for comparative purposes.

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 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 indigenous plant species recorded if present on the proposed development site. Indigenous plants species within the immediate surrounds were not recorded, but the overall state and coverage of the remaining indigenous vegetation remnants were noted. Various transects were conducted to cover the area. Particular attention was paid to the presence of potential flora Species of Conservation Concern on the proposed mining activities areas. Site photographs were taken.

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 plant species of the development sites and surrounds. Direct impacts are those that destroys indigenous plant species. Indirect impacts are those that may overtime lead to degradation or transformation of indigenous plant species habitats such as erosion and alien vegetation encroachment.

The proposed mining activities can have the following potential impacts on indigenous plant species of the site and surrounds:

- Destruction/removal of indigenous vegetation due to clearance and erosion.
- Degradation of adjacent indigenous vegetation areas due to alien vegetation encroachment.

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 indigenous plant species on the site or surrounds:

- Where no existing gravel roads exists as buffer areas an 8m buffer area as measured from the edge of the indigenous vegetation surrounding the non-perennial drainage lines on site must be demarcated and kept throughout mining operational phase. The proposed buffer areas may only be used as roads and no other activities associated with the proposed mining of the site may occur within the buffer areas. Demarcation method to be approved by an Environmental Control Officer (ECO). No disturbance should be allowed within the drainage lines and remaining indigenous vegetation areas. This includes no dumping of fill, no roads, and all forms of temporary disturbance. No excavation or stockpiling is allowed within the buffer areas. Should

any evidence be observed that the mining activities are impacting negatively on any indigenous vegetation areas (and drainage lines) the ECO must recommend mitigation measures to be implemented to prevent further degradation and rectify impacts.

- The individual milkwood trees that were recorded within the cultivated areas must be demarcated within a 5m buffer radius before any mining activities occurs within a 50m range of the trees and must remain demarcated throughout the applicable mining area's operational and rehabilitation phases. Demarcation can be removed when implementation of the applicable mining area's rehabilitation measures has been completed.
- Alien invasive and weed vegetation monitoring and removal must be undertaken annually during mining and for at least a year after mining activities have ceased on disturbed areas or until the landowner starts with the annual cultivation activities on the affected land. This must be done by the applicant, landowner or their appointed contractor, using CapeNature approved methodology depending on the contract agreement that the applicant has with the landowner. All invasive alien species as listed by the Conservation of Agricultural Resources Act (CARA) must be removed during these surveys. Declared weeds and aliens must be removed before annual seeding.
- Remove and conserve topsoil layer and overburden material for rehabilitation after mining activities have ceased. Topsoil and overburden materials must be stored separately adjacent to the mining areas on cultivated land with effective storm water runoff and erosion prevention measures to be implemented in order to protect the materials for rehabilitation.
- Implement erosion and storm water runoff management measures as according to EMP and stormwater management plan 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.
- As the excavation of the quarry advances the stored overburden material must be replaced to backfill the excavations. The backfilled area must then be contoured according to existing surrounding contours of the cultivated land to prevent erosion. After contouring has been completed the stored topsoil material must be spread over the backfilled area. Only use topsoil as derived and conserved from the proposed mining area to be rehabilitated after mining activities have ceased on the property. The topsoil must not be compacted after spreading to allow the disturbed area to be restored. The site must be monitored regularly (at least 6 monthly and after heavy rains) and all signs of erosion immediately rectified and alien vegetation removed to prevent potential siltation, erosion and alien encroachment of natural areas and drainage lines.
- No disturbance should be allowed within the remaining indigenous vegetation areas. This includes no dumping of fill, no roads, and all forms of temporary disturbance. No natural vegetation areas edges may be cleared or impacted upon by the proposed mining activities and no mining machinery may enter any indigenous vegetation areas outside of existing access roads to be used.
- The project implementation process should be subject to standard Environmental Management Programme (EMP) prescripts and conditions and only proceed under supervision of a competent and diligent Environmental Control Officer, both during the operational/excavation and rehabilitation phases.

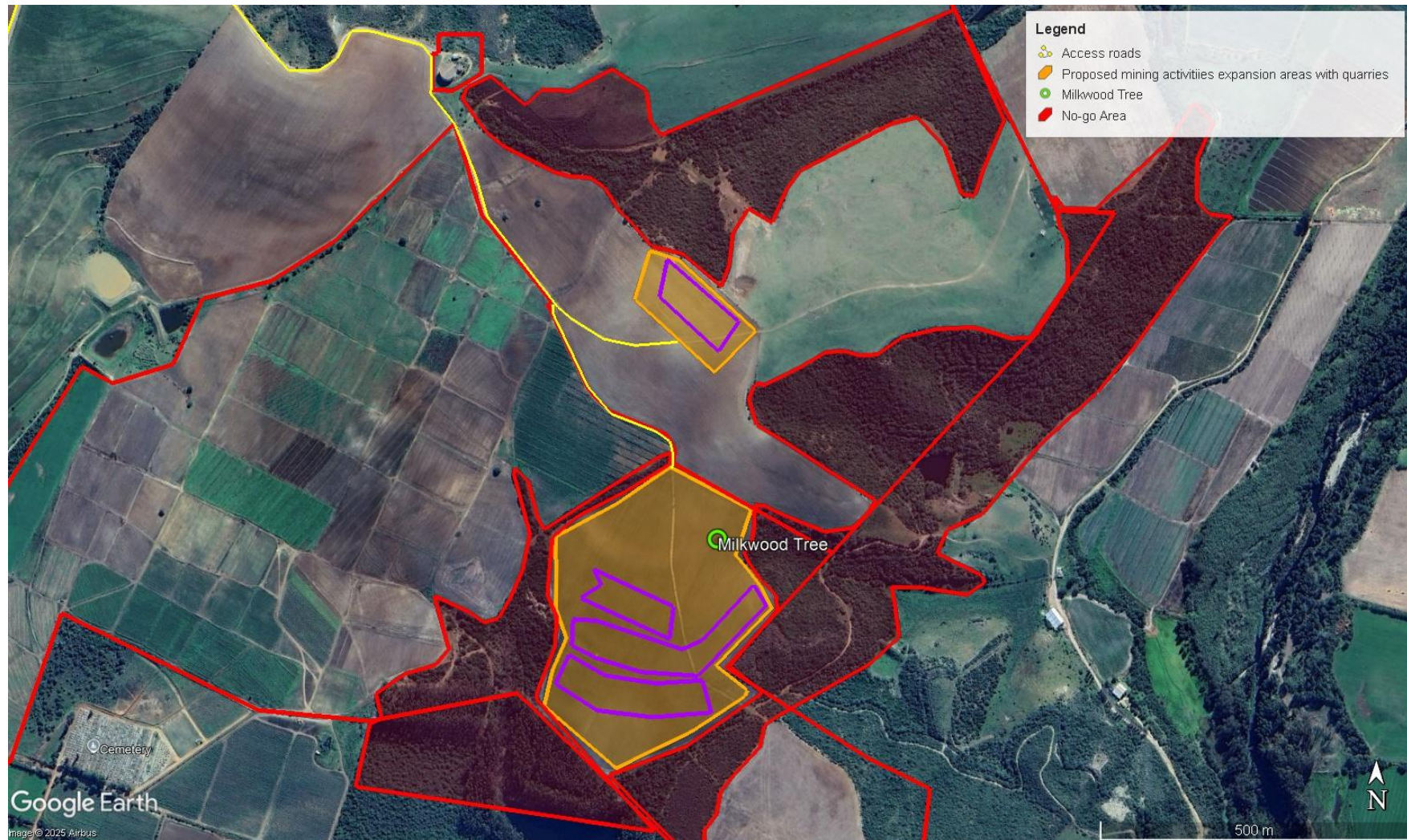


Figure 7: Proposed mining expansion activities areas (orange) on annually cultivated land and no-go areas (as outlined in red) on Erf 1412 and Erf 3264. The green circle in the cultivated land of the proposed mining activities expansion area is the individual Milkwood tree which may not be impacted upon.

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

The timing of the survey is regarded as optimal in terms of accurately assessing the terrestrial plant species presence on the site. An accurate idea of the priority indigenous habitat areas and sensitive ecological features was gained by inspecting the proposed development sites and surrounds and recording distribution and/or presence of indigenous vegetation habitats (if present), and confidence in the accuracy of the findings is very high. The overall confidence in the completeness and accuracy of the terrestrial plant species findings is considered to be very good. A follow-up survey is not considered essential for decision-making.

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

Standard methods of evaluation were used. A hand-held Garmin ® GPSMap 64s was used to record 'sample' waypoints and the 'sample track'. At the 'sample waypoints' specific details of the surrounding vegetation and features of habitat were recorded (if present), and photographs taken to support the general observations made on the site. Sampling was focused so as to obtain the best overall understanding of landscape and biodiversity conditions of the specific proposed mining expansion areas, access roads and immediate surrounds.

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 plant sensitivity of the site and surrounds 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.

8. REFERENCES

Turner, A.A. (ed.) 2017. Western Cape Province State of Biodiversity. CapeNature Scientific Services, Stellenbosch

Mucina, L. and M. Rutherford. *Eds.* 2012 update. Vegetation map of South Africa, Lesotho, and Swaziland. *Strelitzia* 19. South African National Biodiversity Institute, Pretoria.

APPENDIX A SPECIALIST CV

CURRICULUM VITAE – NICOLAAS WILLEM HANEKOM

Profession: Environmental Scientist and Environmental Assessment Practitioner

Date of Birth: 01/02/1967

BIOGRAPHICAL SKETCH

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.

He has also been involved in the implementation of several environmental management systems. He has engaged successfully with various clients as set out below.

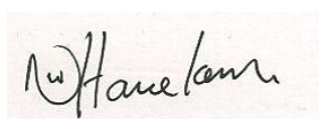
Areas of specialisation:	• Ecosystem (terrestrial and aquatic) monitoring and assessments • Design of monitoring programmes for ecosystems (terrestrial and aquatic) • Environmental Impact Assessments • River classification and environmental water requirements • Wetlands Delineation • River and Wetlands management • Water Use Authorization Applications • Water quality management • River Health Assessments
Countries of	South Africa (Northern Cape, Western Cape, Free State, Mpumalanga,

Work Experience:	Gauteng)
Employment Record	• Student at Bontebok National Park (1992) • Assistant Reserve Manager at Gariep Dam Nature Reserve, Free State (1993 - 1998) • Reserve Manager, Conservation Services Manager for Western Cape Nature Conservation Board (1998 - 2006) • External Lecturer at Cape Peninsula University of Technology (2003 - 2005) • Director: Environmental Management at Cape Lowlands Environmental Services (2006 – 2010) • Director, Environmental Management and lead Environmental Impact Assessment Practitioner at Eco Impact (Pty) Ltd (2010 – to August 2019) • Director, Environmental Management and lead Environmental Impact Assessment Practitioner at Enviro-EAP (Pty) Ltd (September 2019 – to date)
Professional membership, accreditations and courses	• South African Council for Natural Scientists Professions Pri.Sci.Nat (Ecological Science) • Riparian vegetation identification and health assessment. Internal Western Cape Nature Conservation short course presented by Dr C Boucher (Stellenbosch University) in 2000. • 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. • 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).
Summary of experience	1992: South African National Parks. Student at Bontebok National Park with management and monitoring actions related to the Breede River. 1993 -1998: Free State Nature Conservation. Ecological management and monitoring actions related to the Gariep Dam, Orange and Caledon Rivers. 1998 -2006: CapeNature. Ecological management and monitoring actions related to the Berg River Estuary, Verlorenvlei, Lamberts bay's Jackalsvlei, Wadriht 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. 2006 to date: Cape Lowland Environmental Services, Eco Impact Legal Consultant and Enviro-EAP. Ecological (Freshwater and aquatic) Specialist input, assessment, monitoring and reports.
Publications and assessment reports	Just to name a few. Was involved in many Ecological Assessments, monitoring and inputs in EIA applications. • 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. • Cape Solar Energy Electricity Generation Facility. Farm 187/3 & 187/13 Kenhardt. Biodiversity And Ecological Baseline Survey. January 2011. (Included Terrestrial and aquatic ecological

	assessments and water use authorization applications) • 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) • Witteklip Erf 123 Extension, Vredenburg. Biodiversity Baseline Survey. Updated - October 2012 (Included Terrestrial and aquatic ecological assessments and water use authorization applications) • Baseline Biodiversity Survey And Wetland Delineation for ECCA Holdings: Cape Bentonite Mine on Erf 1412 Near Heidelberg. Prepared for: Shangani Management Services Pry (Ltd). October 2014. • Freshwater Impact Assessment Laingsburg Flood Damage Repairs & Storm Water Infrastructure. 18 February 2016. • 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) • 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) • 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). • Water Use Authorization Application Risk Matrix Prepared For: Witzenberg Municipality Sand Mine Farm 1 Prince Alfred Hamlet. 28 March 2017. (Freshwater ecological inputs in EIA process and Water Use Registration). • Proposed Hartmanshoop Agri Vegetation Clearing Project and Irrigation on Erf 686, Laingsburg. 12 August 2017. (Freshwater ecological inputs in Water Use Registration). • County Fair: Hocraft Abattoir And Rendering Facility Waste Water Treatment Works "CF Hocraft WWTW" Mosselbank River Second Quarter 2018 Biomonitoring Report. June 2018. (Done quarterly biomonitoring for the last three years).
--	--

CERTIFICATION

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 400274/11