



Enviro-EAP
Environmental Consultants



AQUATIC BIODIVERSITY COMPLIANCE STATEMENT

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



Enviro-EAP
Environmental Consultants

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

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. Background & Competency	3
1.2. Conditions Relating to this Report	3
1.3. Terms of Reference	4
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	6
3. A DESCRIPTION OF THE METHODOLOGY USED TO UNDERTAKE THE SITE SURVEY AND PREPARE THE COMPLIANCE STATEMENT, INCLUDING EQUIPMENT AND MODELLING USED WHERE RELEVANT	14
4. WHERE REQUIRED, PROPOSED IMPACT MANAGEMENT ACTIONS AND OUTCOMES OR ANY MONITORING REQUIREMENTS FOR INCLUSION IN THE EMPR	14
5. A DESCRIPTION OF THE ASSUMPTIONS MADE AND ANY UNCERTAINTIES OR GAPS IN KNOWLEDGE OR DATA	16
6. THE MEAN DENSITY OF OBSERVATIONS/ NUMBER OF SAMPLES SITES PER UNIT AREA	16
7. ANY CONDITIONS TO WHICH THE COMPLIANCE STATEMENT IS SUBJECTED	16
8. REFERENCES	16
APPENDIX A	17
SPECIALIST CV	17

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 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:

- *Aquatic features of the property is limited to secondary non-perennial drainage lines and man-made dams as found in the gorges/”klowe” of the property too steep to plough for cultivation, only flowing during heavy rains. Mining activities are proposed on annually cultivated agricultural land however adjacent non-perennial drainage lines may be impacted upon by the proposed development therefore an Aquatic Impact Statement*



is proposed.

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
			X

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity

Figure 1: Aquatic 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 aquatic sensitivity of the proposed two mining expansion areas.

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 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**
- 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

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, aquatic sensitivity of the site and potential aquatic 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 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 expansion activities areas falls within agricultural land currently being used for annual crop cultivation and livestock grazing (sheep and cattle). The specialist agrees with the Low Aquatic Sensitivity rating given to the proposed mining expansion areas by the DEA Screening Tool in terms of the current land use.



Several non-perennial secondary drainage lines are located throughout the property due to the undulating nature of the topography. Most of the drainage lines with their associated wetland characteristics are in a moderate to good condition as they are located within the “klowe” too steep to plough and surrounded by indigenous vegetation remnants which also remains because the areas are too steep to plough for cultivation. The proposed mining expansion areas does not fall within any mapped non-perennial drainage lines nor within any mapped NFEPA wetland areas.

Mining activities have already been taking place on the property for many years and the water table has never been reached and is therefore lower than the proposed maximum depth of 30m. The actual depths of the groundwater table on the relevant properties are unknown as no active boreholes occur on the proposed mining areas, or on nearby properties or surrounds. Due to the general >30m depth groundwater table average and low yields in the Heidelberg/Riversdale region groundwater is an unused resource in the region and according to the Water Research Commission, the probability of drilling an successful borehole according to accessibility is less than 40% while, such a borehole will only have a 10-20% chance of delivering 2L/s. The proposed mining activities 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 Heidelberg in the Western Cape.

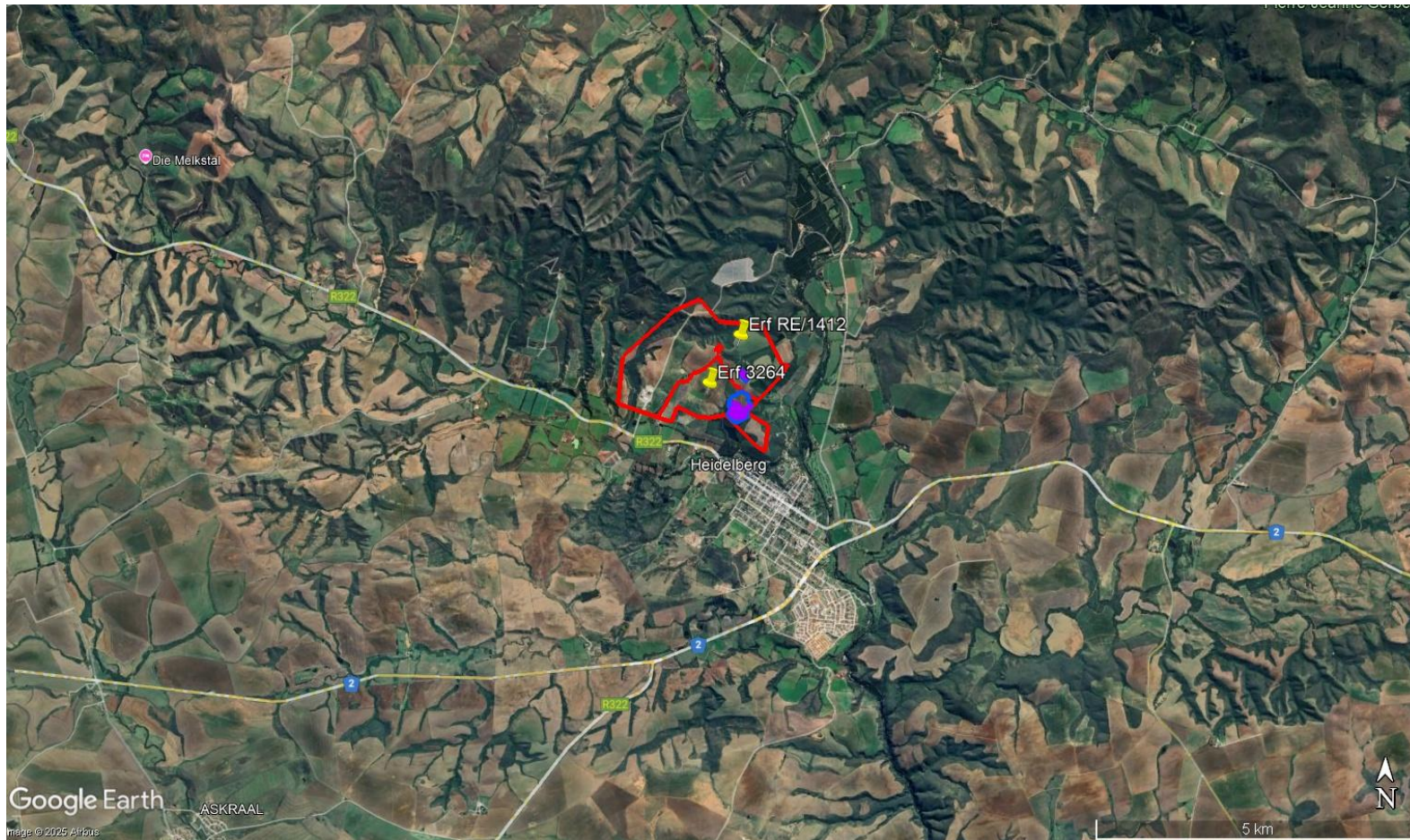


Fig 3: Locality of Erven RE/1412 and 3264 near Heidelberg in the Western Cape.

GPS co-ordinate for proposed expansion sites - 34° 04' 20.43"S 20° 57' 02.44"E

34° 04' 38.29"S 20° 56' 59.79"E

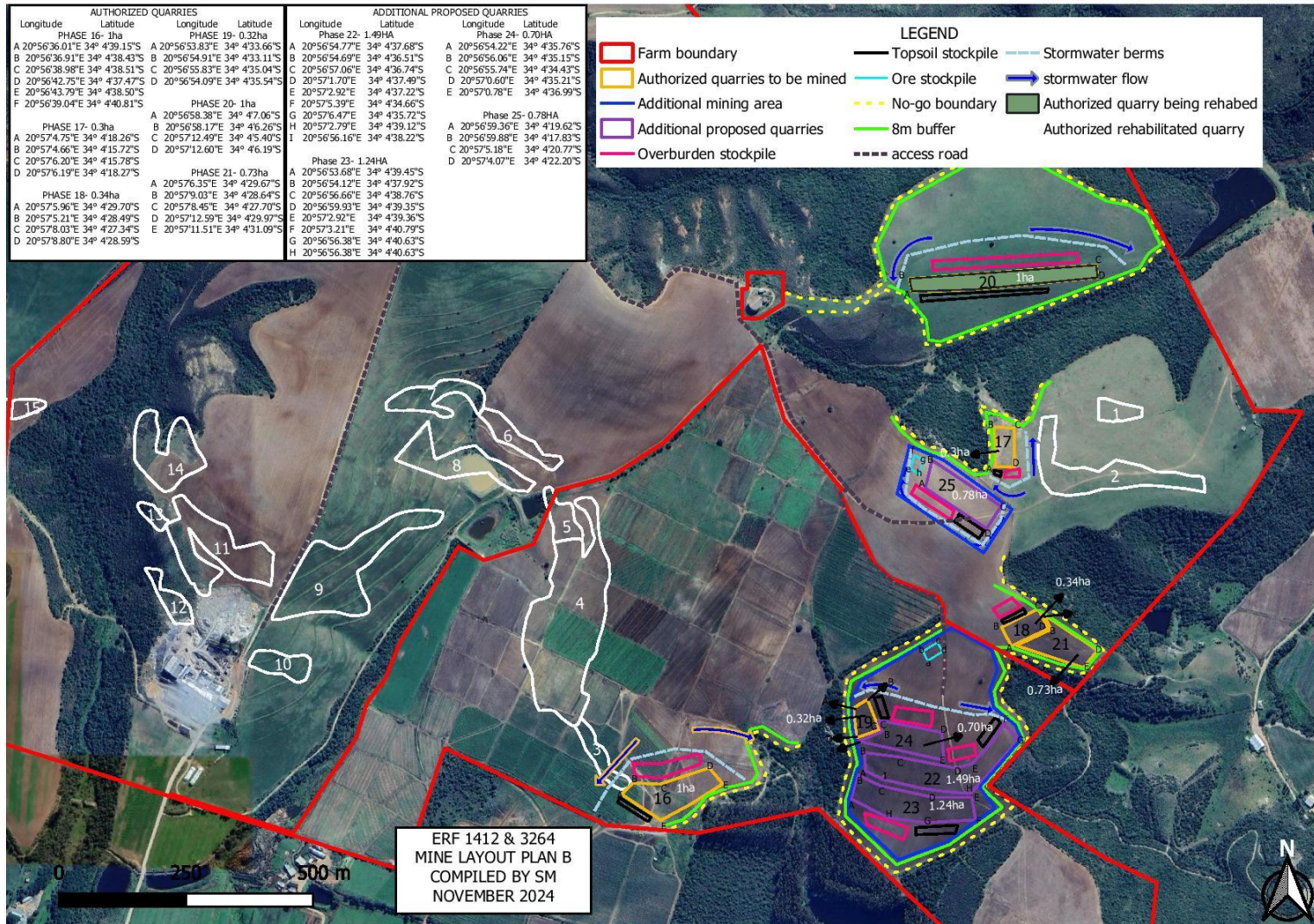


Fig 4: Proposed mining layout map for Erven RE/1412 and 3264 (previously Erf 1412) indicating approved mining right areas and proposed additional quarries.

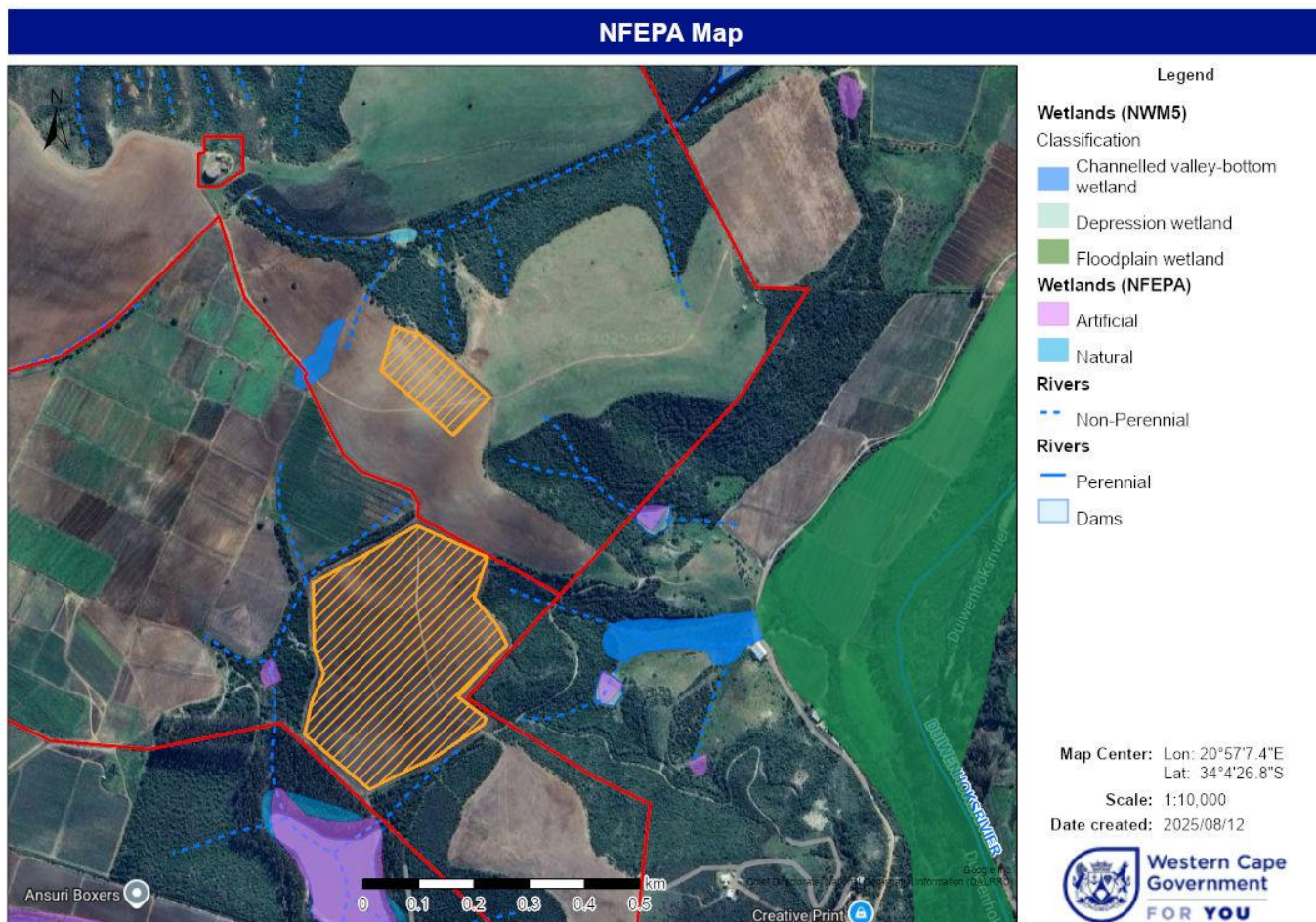


Fig 5: NFEPA Map - Proposed mining activities expansion areas boundaries (orange) on for Erven RE/1412 and 3264 (previously Erf 1412) as assessed.



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 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.

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.
- 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).
- 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

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

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 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.

8. REFERENCES

Driver, Nel, Snaddon, Murray, Roux, Hill (2011). Implementation Manual for Freshwater Ecosystem Priority Areas. Draft Report for the Water Research Commission.

DWAF, 2009. Rapid Habitat Assessment Model Manual. Report no RDM/ Nat/00/CON/0707. Authors: D Louw & CJ Kleynhans Submitted by Water for Africa.

KEMPER, N. 1999: Intermediate habitat integrity assessment for use in the rapid and intermediate assessments. IWR Environmental.

Kleynhans C.J., Thirion C. and Moolman J. 2005. *A Level 1 Ecoregion Classification System for South Africa, Lesotho and Swaziland*. Report No. N/0000/00/REQ0104. Resource Quality Services, Department of Water Affairs and Forestry, Pretoria

Kleynhans CJ, Louw MD. 2007. Module A: EcoClassification and EcoStatus determination in River EcoClassification: Manual for EcoStatus Determination (version 2). Joint Water Research Commission and Department of Water Affairs and Forestry report. WRC Report No.

Kleynhans CJ, Mackenzie J, Louw MD. 2007. Module F: Riparian Vegetation Response Assessment Index in River Eco Classification: Manual for EcoStatus Determination (version 2). Joint Water Research Commission and DWA and Forestry report.

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.

ABBREVIATED CURRICULUM VITAE OF FRESHWATER SPECIALIST

Name:	Nicolaas Willem Hanekom (Pri.Sci.Nat)
Profession:	Ecological Scientist
Nationality:	South African
Years experience	26 Years
Academic Qualifications	• National Diploma, Nature Conservation (Cape Technikon) • B. Tech Degree in Nature Conservation (Cape Technikon) • M.Tech in Nature Conservation (Cape Peninsula University of Technology) • Completed various Environmental Management Courses • Qualified Environmental Management System ISO 14001: 2004 Audit: Internal Auditor Course Based on ISO 19011:2002 (Centre for Environmental Management North West University)
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 Work Experience:	South Africa (Northern Cape, Western Cape, Free State, Mpumalanga, Gauteng)
Employment Record	• Student at Bontebok National Park (1992)

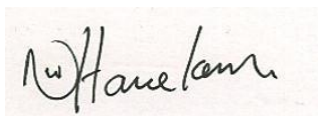
	• Assistant Reserve Manager at Gariep Dam Nature Reserve, Free State (1993 - 1998) • Reserve Manager, Conservation Services Manager for Western Cape Nature Conservation Board (1998 - 2006) • External Lecturer at Cape Peninsula University of Technology (2003 - 2005) • Director: Environmental Management at Cape Lowlands Environmental Services (2006 – 2010) • Director, Environmental Management and lead Environmental Impact Assessment Practitioner at Eco Impact (Pty) Ltd (2010 – to 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 and Eco Impact Legal Consultant. 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: Shangoni 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
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	Second Quarter 2018 Biomonitoring Report. June 2018. (Done quarterly biomonitoring for the last three years).
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CERTIFICATION

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

A handwritten signature in black ink, appearing to read 'N. Hanekom', is written on a light-colored, slightly textured background.

Nicolaas Hanekom Pri Sci Nat (Ecology).
Registration number 400274/11



herewith certifies that
Nicolaas Willem Hanekom
Registration Number: 400274/11
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)

Effective **27 July 2011**

Expires **31 March 2022**



A handwritten signature in black ink, appearing to read 'Batha'.

Chairperson

A handwritten signature in black ink, appearing to read 'R. J. van der Merwe'.

Chief Executive Officer



To verify this certificate scan this code