Appendix H: Specialists Reports

Appendix H1: Aquatic Biodiversity Specialists Report

F.E.N. Consulting
Applying science to the real world

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Name: Christel du Preez
Date: Wednesday, 27 October 2021
Ref: FEN 20-2150

SLR Consulting
68 on Main, Old Main Road
Kloof, Durban
3640
Tel: 011 467 0945
Email: amothilal@slrconsulting.com

Attention: Ms. A. Mothilal

RE: AQUATIC ECOLOGICAL COMPLIANCE STATEMENT AS PART OF THE S24G RECTIFICATION PROCESS FOR THE HERMANUS SHELL RETAIL SERVICE STATION, HERMANUS, WESTERN CAPE.

1. INTRODUCTION AND BACKGROUND SETTING

Freshwater Ecological Network (FEN) Consulting (Pty) Ltd was appointed by SLR Consulting to prepare an aquatic/freshwater compliance statement as per the Department of Forestry, Fisheries and Environment (DFFE) Screening Tool as part of the Section 24G rectification process for the existing Hermanus Shell retail service station, located in Hermanus, Western Cape Province (hereafter referred to as the 'study area') (Figures A1 and A2 in **Appendix A**). The Hermanus Shell retail service station is located on Erf 26078 (total extent of 0.37 ha) within an urbanised setting, with Main Road located along the western boundary. Initial site operations commenced in 2002 without obtaining the relevant environmental authorisations. As such, a Section 24G rectification process is required for the unlawful commencement of listed activities in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989) (ECA) and the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).

A 500 m "zone of investigation" around the study area, in accordance with Government Notice (GN) 509 of 2016 as it relates to the National Water Act, 1998 (Act No. 36 of 1998), was used as a guide in which to assess possible sensitivities of the receiving freshwater environment. This area – i.e. the 500 m zone of investigation around the study area –will henceforth be referred to as the "investigation area".

This verification report will follow the requirements as stated in the procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of Sections 24(5)(A) and (H) and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).

The outcome of this site sensitivity verification assessment will present the recorded site assessment results so as to:

- Confirm or dispute the current use of the land and the environmental sensitivity as identified by the screening tool (DFFE, 2020), such as new/upgrading of developments or infrastructure, the changes to the watercourse Present Ecological State (PES) or status etc.; and
- Present a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity.

2. OUTCOMES OF THE APPLICATION OF THE DFFE SCREENING TOOL

The protocol for the assessment of freshwater and aquatic biodiversity prepared in support of the Department of Forestry, Fisheries and Environment (DFFE) (previously the Department of Environmental Affairs (DEA)) national web based environmental screening tool, provides the criteria for the assessment and reporting of impacts on aquatic/freshwater biodiversity for activities requiring Environmental Authorisation (EA). For the aquatic/freshwater biodiversity theme, the requirements are for sites which support various levels of biodiversity. The relevant aquatic/freshwater biodiversity theme in the national web based environmental screening tool has been provided by the South African National Biodiversity Institute (SANBI). Based on the sensitivity rating, a suitably qualified specialist must prepare the relevant report or opinion memorandum which is to be submitted as part of the EA application.

According to the guidelines, an applicant intending to undertake an activity on a site identified as being of “very high sensitivity” for an aquatic biodiversity theme must submit an Aquatic Biodiversity Impact Assessment or if the area is identified as being of “low sensitivity” then an Aquatic Biodiversity Compliance Statement must be compiled and submitted to the competent authority. It is noted, however, that during a site survey undertaken by a suitably qualified freshwater ecologist should the sensitivity be determined different from that assigned by the screening tool (i.e. that a high risk to the regional aquatic biodiversity or watercourses in the area is likely even though it is assigned as a “low” sensitivity, or if it is assigned a high sensitivity, however, the proposed develop risk are deemed low) then the relevant assessment approach must be followed based on the site survey results and not the DFFE screening tool allocation. According to the national web based environmental screening tool, the study area is located within an area of **very high aquatic/ freshwater biodiversity significance**.

3. DEFINITIONS AND LEGISLATIVE REQUIREMENTS

The legislation considered during this investigation included the following:

- The Constitution of the Republic of South Africa, 1996[1];
- The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA);
- The National Water Act, 1998 (Act No. 36 of 1998) (NWA); and
- Government Notice 509 (GN 509) as published in the Government Gazette 40229 of 2016 as it relates to the National Water Act, 1998 (Act No. 36 of 1998).

3.1 Definitions

The National Water Act, 1998 (Act No. 36 of 1998) is aimed at the protection of the country’s water resources, defined in the Act as “a watercourse, surface water, estuary or aquifer”. According to the National Water Act, 1998 (Act No. 36 of 1998) a watercourse means:

(a) a river or spring;

[1] Since 1996, the Constitution has been amended by seventeen amendments acts. The Constitution is formally entitled the ‘Constitution of the Republic of South Africa, 1996”. It was previously also numbered as if it were an Act of Parliament – Act No. 108 of 1996 – but since the passage of the Citation of Constitutional Laws Act, neither it nor the acts amending it are allocated act numbers.

(b) a natural channel in which water flows regularly or intermittently;
(c) a wetland, lake or dam into which, or from which, water flows; and
(d) any collection of water which the Minister may, by notice in the Gazette, declare a watercourse.

The Act further provides definitions of wetland and riparian habitats as follows:

Wetland habitat is "land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil."

Riparian habitat includes the physical structure and associated vegetation of the areas associated with a watercourse which are commonly characterized by alluvial soils, and which are inundated or flooded to an extent and with a frequency sufficient to support vegetation of species with a composition and physical structure distinct from those of adjacent area.

The watercourse delineation took place, as far as possible, according to the method presented in the "Updated manual for the identification and delineation of wetland and riparian resources" (DWAF, 2008). The foundation of the method is based on that watercourses have several distinguishing factors including the following:

- Landscape position;
- The presence of water at or near the ground surface;
- Distinctive hydromorphic soils; and
- Vegetation adapted to saturated soils.

During the site assessment, the presence of any watercourse characteristics as defined by DWAF (2008) and by the National Water Act, 1998 (Act No. 36 of 1998), were noted.

4. DESKTOP INVESTIGATION FINDINGS

A background study of relevant national, provincial and municipal datasets (such as the National Freshwater Ecosystem Priority Areas [NFEPA] 2011 database; the Department of Water and Sanitation Research Quality Information Services [DWS RQIS PES/EIS], 2014 database, the National Biodiversity Assessment (NBA) 2018 and the City of Cape Town Wetlands dataset (2017) was undertaken to aid in defining presence of any watercourses prior to the site survey of the study area (see Appendix B, Table 1) as well as the associated 500 m investigation area.

The results are summarised in the points below with the relevant maps presented in **Appendix B.**

- According to the NFEPA Database (2011), no wetlands are associated with the study and investigation area; and
- According to the NBA 2018: SAIIAE no wetlands or rivers are located within the study or investigation area.

5. SITE SURVEY RESULTS

A site investigation of the study area was undertaken on the 24th of October 2021, using visual assessment methods as well as digital satellite imagery. In addition, a bucket soil auger was used to verify soil characteristics that may indicate the presence, or lack of any potential wetland/riparian features within the study area.

Based on the outcome of the desktop database investigation, no natural watercourses are located within the study or investigation areas. This was also confirmed during the site investigation, as the study area has been completely developed into a retail fuel service station, with paving covering most of the study area (Figure 1). The only vegetation noted in the study area is confined to three landscaped ornamental

gardens along the eastern and western boundaries of the study area. These gardens host ornamental species such as *Aloe* species, *Agapanthus* species, *Ficus* shrubs, *Dymondia Margaretae* (Silver carpet), *Iris sibirica*, *Malva rotundifolia* and a variety of small succulents (Figure 1). No facultative vegetation species were identified in the study area.

Figure 1: Overview photographs of the study area (Top). Vegetation in the study area is confined to landscaped gardens along the eastern (bottom left) and western (bottom right) boundaries.

Upon investigation of the area surrounding the study area, using digital satellite imagery, no distinctive watercourses are located within close proximity to the study area (Figure 2). It is noted that the coastal edge and Atlantic Ocean is located in the southern portion of the investigation area. Marine areas do not enjoy protection under the National Water Act, 1998 (Act No. 36 of 1998) but are protected under the Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) (ICMA). Figure 2 also indicates the dense urbanisation of the area surrounding the study area.

Figure 2: Digital aerial photography showing the study area (red polygon) and associated investigation area (black polygon) within the larger landscape.

Since no watercourses are associated with the study area, nor are there any watercourses within 500 m of the study area, no listed activities as applicable to watercourses in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), or authorisation in terms of Sections 21(c) and (i) of the National Water Act, 1998 (Act No. 36 of 1998) will be required from the Department of Water and Sanitation (DWS). It is the responsibility of the Environmental Assessment Practitioner (EAP) to present the findings of this report to the relevant regulating authorities, with specific mention to DFFE and the applicability of the Integrated Coastal Management Act, 2008 (Act No. 24 of 2008) (ICMA), to ensure the correct environmental authorisation process (if and where applicable) going forward.

6. BUSINESS CASE, OPPORTUNITIES AND CONSTRAINTS APPLICABLE TO THE STUDY AREA

During the desktop as well as the field assessment, no natural watercourses were identified within the study area and associated 500 m investigation area. As a result, from a watercourse management perspective, impacts on the freshwater receiving environment from the construction of the Hermanus Shell retail service station would have been unlikely to impact upon any watercourse services or functions.

The study area is located in a Strategic Water Source Area as per the outcome of the screening tool (Appendix B), classifying the study area as being of 'very high' aquatic sensitivity. Based on the outcome of the site visit, in which no watercourses were identified within the study area or within 500 m thereof, it is the opinion of the freshwater ecologist, the study area can be considered of 'low' aquatic sensitivity from a freshwater resource management and conservation point of view. The study area is not subject to any applicable zones of regulations given the absence of any watercourses, however the EAP must consult with DFFE to determine the applicability of the Integrated Coastal Management Act, 2008 (Act No. 24 of 2008). Therefore, it is the opinion of the specialist that the construction of the service station did not have any impacts to any freshwater watercourses. This compliance statement must be submitted to the relevant competent authority for consideration as part of the Section 24G rectification process.

We trust that we have interpreted your requirements correctly. Please do not hesitate to contact us if there are any aspects of this memorandum that you would like to discuss.

Yours Faithfully,

C du Preez

Christel du Preez
Pr. Sci. Nat

Reviewed and signed off by K. Marais (SACNASP REG No. 117137/17)
Declaration of independence and CV included in Appendix C

7. REFERENCES

Department of Water Affairs and Forestry (DWAF). 2005. Final draft: A practical field procedure for identification and delineation of wetlands and Riparian areas.

Department of Water Affairs and Forestry (DWAF). 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. Report no. X. Stream Flow Reduction Activities, Department of Water Affairs and Forestry, Pretoria, South Africa.

Department of Water and Sanitation (DWS). 2014. A Desktop Assessment of the Present Ecological State, Ecological Importance and Ecological Sensitivity per Sub Quaternary Reaches for Secondary Catchments in South Africa. Secondary: C2 Compiled by RQIS-RDM: Online available: https://www.dwa.gov.za/iwqs/rhp/eco/peseismodel.aspx.

Nel, JL, 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. 2011. *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.

NFEPA: Driver, A., Nel, J.L., Snaddon, K., Murruy, K., Roux, D.J., Hill, L., Swartz, E.R., Manuel, J. and Funke, N. 2011. Implementation Manual for Freshwater Ecosystem Priority Areas. Water Research Commission. Report No. 1801/1/11. Online available: http://bgis.sanbi.org/nfepa/project.asp

Van Deventer, H., Smith-Adao, L., Collins, N.B., Grenfell, M., Grundling, A., Grundling, P-L., Impson, D., Job, N., Lötter, M., Ollis, D., Petersen, C., Scherman, P., Sieben, E., Snaddon, K., Tererai, F. & Van der Colff, D. 2019. *South African National Biodiversity Assessment 2018: Technical Report. Volume 2b: Inland Aquatic (Freshwater) Realm. CSIR report number CSIR/NRE/ECOS/IR/2019/0004/A. South African National Biodiversity Institute, Pretoria. http://hdl.handle.net/20.500.12050/6230*.

Van Deventer, H.; Smith-Adao, L.; Mbona, N.; Petersen, C.; Skowno, A.; Collins, N.B.; Grenfell, M.; Job, N.; Lötter, M.; Ollis, D.; Scherman, P.; Sieben, E.; Snaddon, K. 2018. *South African Inventory of Inland Aquatic Ecosystems. South African National Biodiversity Institute, Pretoria. Report Number: CSIR report number CSIR/NRE/ECOS/IR/2018/0001/A; SANBI report number http://hdl.handle.net/20.500.12050/5847*.

APPENDIX A – LOCALITY MAP

Figure A1: A digital satellite image depicting the study area and associated investigation area in relation to the surrounding area.

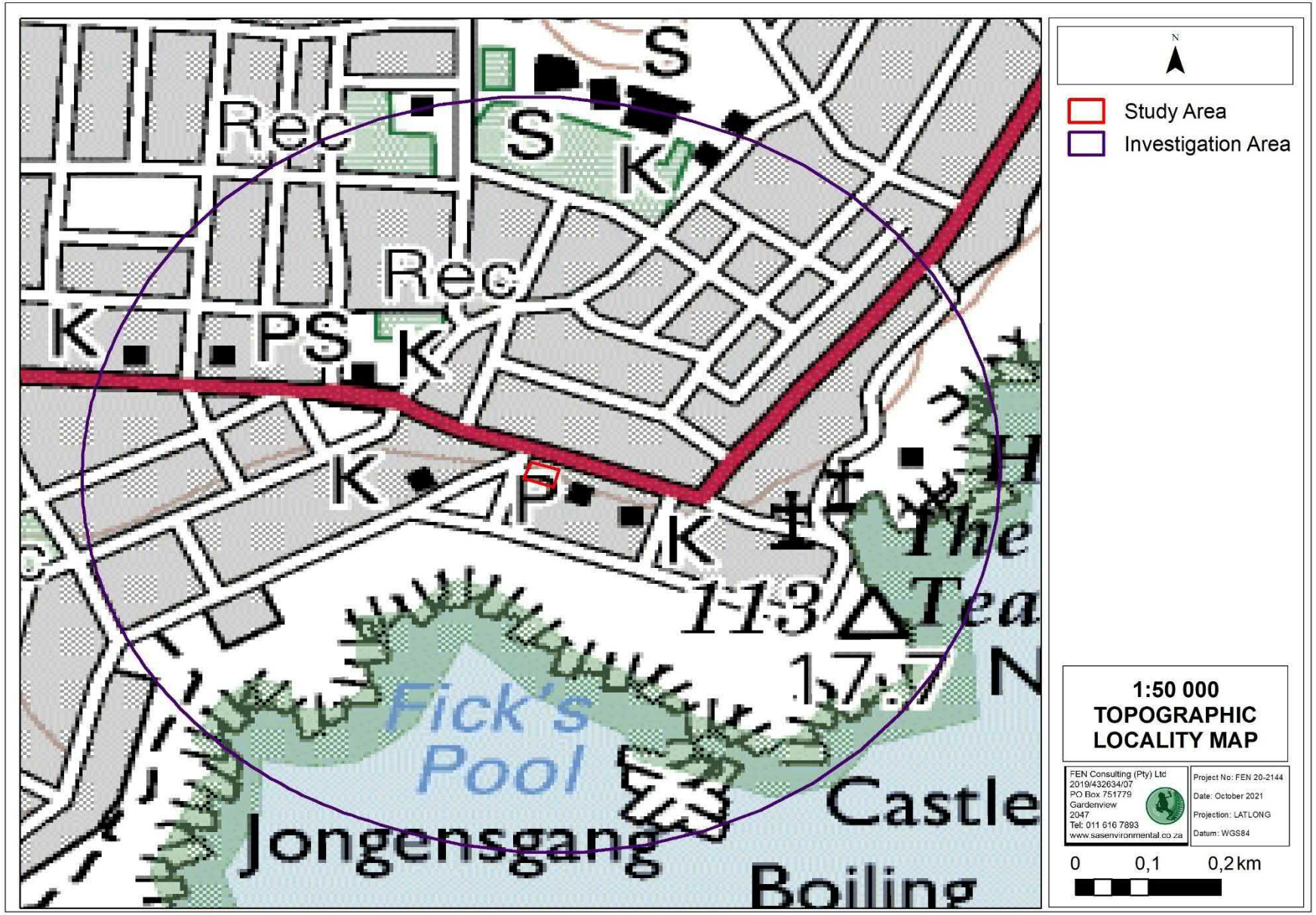


Figure A2: The study area and associated investigation area depicted on a 1:50 000 topographical map in relation to the surrounding area.

APPENDIX B – DESKTOP BACKGROUND INFORMATION

Table 1: Desktop data relating to the characteristics of the watercourses associated with the study and investigation areas.

Aquatic ecoregion and sub-regions in which the study area is located		Detail of the study area in terms of the National Freshwater Ecosystem Priority Area (NFEPA) (2011) database	
Ecoregion	Southern Coastal Belt	FEPACODE	The study area is located within an upstream sub-quaternary catchment considered of importance as a Fish Support Area (FSA) or Fish Corridor. This upstream sub-quaternary catchment is also identified as the most efficient set for rehabilitating to a Category A or B condition to meet under-achieved river targets (FEPA CODE = 2).
Catchment	Berg/Bot/Potberg		
Quaternary Catchment	G40H		
WMA	Breede		
subWMA	Overberg West		
Dominant characteristics of the Southern Coastal Belt Ecoregion Level II (22.05) (Kleynhans *et al.*, 2007)		NFEPA Wetlands	According to the NFEPA Database, no wetlands are associated with the study or investigation area.
Level II Code	22.05		
Dominant primary terrain morphology	Closed Hills, mountains with moderate and high relief	Wetland Vegetation Type	The study area is situated within the Southwest Sandstone Fynbos (Endangered) Wetland Vegetation Type. The threat status is provided by Mbona *et al.* (2015).
Dominant primary vegetation types	South and South West Coast Renosterveld; Central Mountain Renosterveld; Limestone fynbos; Mountain Fynbos; Dune Thicket; Patches Afromontane Forest	NFEPA River	As per the NFEPA database, no rivers are located within the study or investigation area.
Altitude (m a.m.s.l)	0-700; 700-1500 (limited)	**National Biodiversity Assessment (2018): South African Inventory of Inland Aquatic Ecosystems (SAIIAE) (National Wetland Map 5 is included in the NBA)**	
MAP (mm)	300 to 1000		
The coefficient of Variation (% of MAP)	<20 to 40	According to the NBA 2018: SAIIAE no wetlands or rivers are located within the study or investigation area.	
Rainfall concentration index	<15 to 50		
Rainfall seasonality	Winter to all year	**Importance of the study area according to the Western Cape Biodiversity Spatial Plan (2017) (Figure B1)**	
Mean annual temp. (°C)	10 to 20	According to the Western Cape Biodiversity Spatial Plan (2017), the study area does not intersect any areas considered of any biodiversity importance. Areas located south of the study area are classified as Critical Biodiversity Areas (CBAs) 2 (of terrestrial importance) and Ecological Support Areas (ESA) 1. CBAs are areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure. ESAs are areas that are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of Protected Areas (PAs) or CBAs and are often vital for delivering system services. A distinction is made between ESAs that are still likely to be functional (ESA 1) or areas that are severely degraded or have no natural cover remaining and therefore require restoration (ESA 2).	
Winter temperature (July)	4 – 20		
Summer temperature (Feb)	18 – 30		
Median annual simulated runoff (mm)	10 to >250		
National web based environmental screening tool (2020)			
The screening tool is intended for pre-screening of sensitivities in the landscape to be assessed within the EIA process. This assists with implementing the migration hierarchy by allowing developers to adjust their proposed development footprint to avoid sensitive areas.		The study area is located in an area considered of **very high aquatic biodiversity** sensitivity, due to it the study area being located in a strategic water source area.	

CBA = Critical Biodiversity Area; DWS = Department of Water and Sanitation; EI = Ecological Importance; ES = Ecological Sensitivity; EPL = Ecosystem Protection Level; ESA = Ecological Support Area; ETS = Ecosystem Threat Status; m.a.m.s.l = Metres Above Mean Sea Level; MAP = Mean Annual Precipitation; NBA = National Biodiversity Assessment; NFEPA = National Freshwater Ecosystem Priority Areas; PES = Present Ecological State; SAIIAE = South African Inventory of Inland Aquatic Ecosystems; WMA = Water Management Area

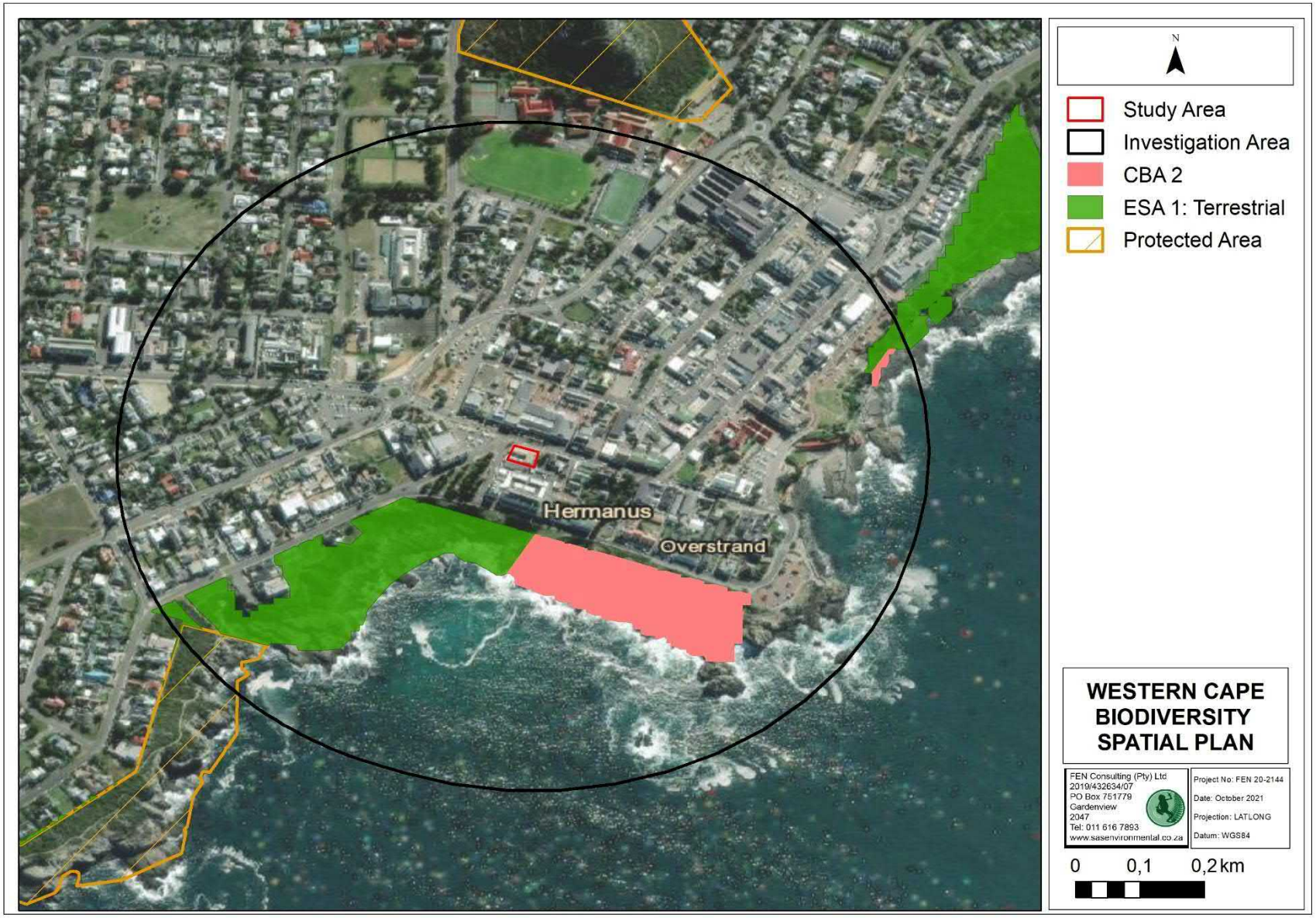


Figure B1: Areas of importance associated with the study and investigation areas as indicated by the Western Cape Biodiversity Spatial Plan (2017).

APPENDIX C - DECLARATION OF INDEPENDENCE

DETAILS, EXPERTISE AND CURRICULUM VITAE OF SPECIALISTS

1. (a) (i) Details of the specialist who prepared the report

Stephen van Staden MSc (Environmental Management) (University of Johannesburg)

Kim Marais BSc Hons (Zoology) (University of Witwatersrand)
Christel du Preez MSc Environmental Sciences (North West University)

1. (a). (ii) The expertise of that specialist to compile a specialist report including a curriculum vitae

Company of Specialist:	SAS Environmental Gorup of Companies		
Name / Contact person:	Christel du Preez		
Postal address:	221 Riverside Lofts, Tygerfalls Boulevard, Bellville,		
Postal code:	7539	Cell:	074 580 6823
Telephone:	011 616 7893	Fax:	086 724 3132
E-mail:	christel@sasenvgroup.co.za		
Qualifications	MSc Environmental Sciences (North West University)		
Registration / Associations	Registered Professional Scientist at South African Council for Natural Scientific Professions (SACNASP)		

1. (b) a declaration that the specialist is independent in a form as may be specified by the competent authority.

I, Stephen van Staden, declare that -

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the relevant legislation and any guidelines that have relevance to the proposed activity;
- I will comply with the applicable legislation;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct.

Signature of the Specialist

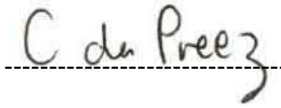
I, Kim Marais, declare that -

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the relevant legislation and any guidelines that have relevance to the proposed activity;
- I will comply with the applicable legislation;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct.

Signature of the Specialist

I, Christel du Preez, declare that -

- I act as the **independent specialist** in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the relevant legislation and any guidelines that have relevance to the proposed activity;
- I will comply with the applicable legislation;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct



SAS ENVIRONMENTAL GROUP OF COMPANIES – SPECIALIST CONSULTANT INFORMATION

CURRICULUM VITAE OF STEPHEN VAN STADEN

PERSONAL DETAILS

Position in Company	Group CEO, Water Resource Discipline Lead, Managing Member, Ecologist, Aquatic Ecologist
Joined SAS Environmental Group of Companies	2003 (year of establishment)

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Registered Professional Scientist at South African Council for Natural Scientific Professions (SACNASP)
Accredited River Health Practitioner by the South African River Health Program (RHP)
Member of the South African Soil Surveyors Association (SASSO) Member of the Gauteng Wetland Forum
Member of the Gauteng Wetland Forum
Member of International Association of Impact Assessors (IAIA) South Africa;
Member of the Land Rehabilitation Society of South Africa (LaRSSA)

EDUCATION

Qualifications

MSc Environmental Management (University of Johannesburg)	2003
BSc (Hons) Zoology (Aquatic Ecology) (University of Johannesburg)	2001
BSc (Zoology, Geography and Environmental Management) (University of Johannesburg)	2000

Short Courses

Integrated Water Resource Management, the National Water Act, and Water Use Authorisations, focusing on WULAs and IWWMPs	2017
Tools for Wetland Assessment (Rhodes University)	2017
Legal liability training course (Legricon Pty Ltd)	2018
Hazard identification and risk assessment training course (Legricon Pty Ltd)	2018
Wetland Management: Introduction and Delineation (WLID1502S) (University of the Free State)	2018
Hydropedology and Wetland Functioning (TerraSoil Science and Water Business Academy)	2018

AREAS OF WORK EXPERIENCE

South Africa – All Provinces
Southern Africa – Lesotho, Botswana, Mozambique, Zimbabwe Zambia

Eastern Africa – Tanzania Mauritius

West Africa – Ghana, Liberia, Angola, Guinea Bissau, Nigeria, Sierra Leona

Central Africa – Democratic Republic of the Congo

DEVELOPMENT SECTORS OF EXPERIENCE

1. Mining: Coal, chrome, Platinum Group Metals (PGMs), mineral sands, gold, phosphate, river sand, clay, fluorspar
2. Linear developments (energy transmission, telecommunication, pipelines, roads)
3. Minerals beneficiation
4. Renewable energy (Hydro, wind and solar)
5. Commercial development
6. Residential development
7. Agriculture
8. Industrial/chemical

KEY SPECIALIST DISCIPLINES

Legislative Requirements, Processes and Assessments

- Water Use Applications (Water Use Licence Applications / General Authorisations)
- Environmental and Water Use Audits
- Freshwater Resource Management and Monitoring as part of EMPR and WUL conditions

Freshwater Assessments

- Freshwater (wetland / riparian) Delineation and Assessment
- Freshwater Eco Service and Status Determination
- Rehabilitation Assessment / Planning
- Maintenance and Management Plans
- Plant Species and Landscape Plans
- Freshwater Offset Plans
- Hydropedological Assessment
- Pit Closure Analysis

Aquatic Ecological Assessment and Water Quality Studies

- Habitat Assessment Indices (IHAS, HRC, IHIA & RHAM)
- Aquatic Macro-Invertebrates (SASS5 & MIRAI)
- Fish Assemblage Integrity Index (FRAI)
- Fish Health Assessments
- Riparian Vegetation Integrity (VEGRAI)
- Toxicological Analysis
- Water quality Monitoring
- Screening Test
- Riverine Rehabilitation Plans

Biodiversity Assessments

- Floral Assessments
- Biodiversity Actions Plan (BAP)
- Biodiversity Management Plan (BMP)
- Alien and Invasive Control Plan (AICP)
- Ecological Scan
- Terrestrial Monitoring
- Biodiversity Offset Plan

Soil and Land Capability Assessment

- Soil and Land Capability Assessment
- Hydropedological Assessment

Visual Impact Assessment

- Visual Baseline and Impact Assessments
- Visual Impact Peer Review Assessments

SAS ENVIRONMENTAL GROUP OF COMPANIES – SPECIALIST CONSULTANT INFORMATION

CURRICULUM VITAE OF KIM MARAIS

PERSONAL DETAILS

Position in Company	Senior Scientist
	Water Resource Manager
Joined SAS Environmental Group of Companies	2015

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Professional member of the South African Council for Natural Scientific Professions (SACNASP – Reg No. 117137/17)
Member of the Western Cape Wetland Forum (WCWF)

EDUCATION

Qualifications

BSc (Hons) Zoology (University of the Witwatersrand)	2012
BSc (Zoology and Conservation) (University of the Witwatersrand)	2011

Short Courses

Aquatic and Wetland Plant Identification (Cripsis Environment)	2019
Tools for Wetland Assessment (Rhodes University)	2018
Certificate in Environmental Law for Environmental Managers (CEM)	2014
Certificate for Introduction to Environmental Management (CEM)	2013

AREAS OF WORK EXPERIENCE

South Africa – Gauteng, Mpumalanga, KwaZulu-Natal, Northern Cape, Eastern Cape,
Africa - Uganda

KEY SPECIALIST DISCIPLINES

Biodiversity Assessments

- Biodiversity Action Plans (BAP)
- Alien and Invasive Control Plans (AICP)
- Faunal Eco Scans
- Faunal Impact Assessments

Freshwater Assessments

- Desktop Freshwater Delineation
- Freshwater Verification Assessment
- Freshwater (wetland / riparian) Delineation and Assessment
- Freshwater Eco Service and Status Determination
- Rehabilitation Assessment / Planning
- Watercourse Maintenance and Management Plans
- Freshwater Offset Plan

Aquatic Ecological Assessment and Water Quality Studies

- Riparian Vegetation Integrity (VEGRAI)
- Water quality Monitoring
- Riverine Rehabilitation Plans

Legislative Requirements, Processes and Assessments

- Water Use Applications (Water Use Licence Applications / General Authorisations)
- Water Use Audits
- Freshwater Resource Management and Monitoring as part of EMPR and WUL conditions
- Public Participation processes

SAS ENVIRONMENTAL GROUP OF COMPANIES – SPECIALIST CONSULTANT INFORMATION

CURRICULUM VITAE OF CHRISTEL DU PREEZ

PERSONAL DETAILS

Position in Company	Senior Scientist (Watercourse ecology)
Joined SAS Environmental Group of Companies	2016

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Professional member of the South African Council for Natural Scientific Professions (SACNASP)
(SACNASP – Reg No. 120240/19)
Member of the Western Cape Wetland Forum (WCF)
Member of the Gauteng Wetland Forum (GWF)

EDUCATION

Qualifications

MSc Environmental Sciences (North West University)	2017
BSc Hons Environmental Sciences (North West University)	2012
BSc Environmental and Biological Sciences (North West University)	2011

Short Courses

Wetland and Aquatic plant Identification presented by Carin van Ginkel (Crispis Environmental)	2019
Wetland Management: Introduction and Delineation presented by the Centre of Environmental Management University of the Free State	2018
Tools for Wetland Assessment presented by Prof. F. Ellery and Rhodes University	2017
Basic Principles of ecological rehabilitation and mine closure presented by the Centre for Environmental Management North West University	2015

AREAS OF WORK EXPERIENCE

South Africa – Gauteng, Mpumalanga, Limpopo, Western Cape, Northern Cape, Eastern Cape

KEY SPECIALIST DISCIPLINES

Freshwater Assessments

- Desktop Freshwater Delineation
- Freshwater Verification Assessment
- Freshwater (wetland / riparian) Delineation and Assessment
- Freshwater Eco Service and Status Determination
- Rehabilitation Assessment / Planning
- Maintenance and Management Plans
- Plant species and Landscape Plan
- Freshwater Offset Plan

Appendix H2: Terrestrial Biodiversity Specialists Report

F.E.N. Consulting
Applying science to the real world

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Name: Christel du Preez
Chris Hooton
Date: Friday, 29 October 2021
Ref: FEN 20-2150

SLR Consulting
68 on Main, Old Main Road
Kloof, Durban
3640
Tel: 011 467 0945
Email: amothilal@slrconsulting.com

Attention: Ms. A. Mothilal

RE: TERRESTRIAL ECOLOGICAL COMPLIANCE STATEMENT AS PART OF THE S24G RECTIFICATION PROCESS FOR THE HERMANUS SHELL RETAIL SERVICE STATION, HERMANUS, WESTERN CAPE.

1. INTRODUCTION AND BACKGROUND SETTING

Freshwater Ecological Network (FEN) Consulting (Pty) Ltd was appointed by SLR Consulting to prepare a Terrestrial Biodiversity Verification and compliance statement as per the Department of Forestry, Fisheries and Environment (DFFE) Screening Tool as part of the Section 24G rectification process for the existing Hermanus Shell retail service station, located in Hermanus, Western Cape Province (hereafter referred to as the 'study area') (Figure A1 in **Appendix A**). The Hermanus Shell retail service station is located on Erf 596 and 6031 (total extent of 0.1 ha), on the corner of Main Road and Park Avenue, within an urbanised setting. Initial site operations commenced in 1999 without obtaining the relevant environmental authorisations. The site has subsequently undergone an upgrade and expansion without obtaining the relevant environmental authorisations. As such, a Section 24G rectification process is required for the unlawful commencement of listed activities in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989) (ECA) and the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).

This memorandum focuses on the possible presence of the Mute Winter Katydid (*Brinckiella aptera* (VU)) and Yellow-winged Agile Grasshopper (*Aneuryphymus montanus*) within the study area as listed in the DFFE Screening Tool (2020) (**Appendix B**), whilst also addressing the Very High sensitivity indicated for the Terrestrial Biodiversity theme and the Low Plant Species sensitivity theme. The memorandum will also address the Very High sensitivity indicated for the Terrestrial Biodiversity theme and the Low Plant Species sensitivity theme.

This verification report will follow the requirements as stated in the procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of Sections 24(5)(A) and (H) and 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).

The outcome of this site sensitivity verification assessment will present the recorded site assessment results so as to:

- Confirm or dispute the current use of the land and the environmental sensitivity as identified by the screening tool (DFFE, 2020), such as new/upgrading of developments or infrastructure, the change in vegetation cover or status etc.; and
- Present a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity.

2. OUTCOMES OF THE APPLICATION OF THE DFFE SCREENING TOOL

The protocol for the assessment of terrestrial (fauna and flora) biodiversity is prepared in support of the national web based environmental screening tool (DFFE, 2020) which provides the criteria and requirements for the assessment and reporting of impacts on terrestrial biodiversity for activities requiring Environmental Authorisation (EA). For terrestrial biodiversity, the requirements are for landscapes and/or sites which support various levels of threatened or unique biodiversity. The relevant faunal and floral biodiversity data stated within the national web based environmental screening tool (DFFE, 2020) has been provided by the South African National Biodiversity Institute (SANBI).

According to the screening tool applied to the study area, the area is of “Very High” terrestrial biodiversity combined sensitivity (Table 1 – **Appendix B**). The study area is considered “Medium” for combined Animal Species Theme Sensitivity as the study area is located within the known distribution areas of the following species: the Mute Winter Katydid (*Brinckiella aptera* (VU)) and Yellow-winged Agile Grasshopper (*Aneuryphymus montanus*). For the combined Plant Species sensitivity, the site is indicated as “Low” and no sensitive or threatened plant species have been indicated as occurring within the site. For this report, focus on the possible persistence of the above mentioned species within the study area will be addressed. The overall terrestrial sensitivity as indicated by the screening tool will also be addressed.

The applicant, intending to undertake an activity within the study area identified as being of “very high sensitivity” for terrestrial biodiversity on the national web based environmental screening tool must submit a Terrestrial Biodiversity Compliance Statement to the competent authority unless the initial site survey or findings by the specialist determine that a high risk to the regional terrestrial biodiversity in the area is likely, in which case a biodiversity assessment must be undertaken.

3. DEFINITIONS AND LEGISLATIVE REQUIREMENTS

The legislation considered during this investigation included the following:

- The Constitution of the Republic of South Africa, 1996[1]
- The National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA);
- The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA);
- Government Notice R598 Alien and Invasive Species Regulations as published in the Government Gazette 37885 dated 1 August 2014 as it relates to the National Environmental Management Biodiversity Act, 1998 (Act No.107 of 1998);
- The Conservation of Agricultural Resource Act, 1983 (Act No. 43 of 1983) (CARA); and

[1] Since 1996, the Constitution has been amended by seventeen amendments acts. The Constitution is formally entitled the ‘Constitution of the Republic of South Africa, 19996”. It was previously also numbered as if it were an Act of Parliament – Act No. 108 of 1996 – but since the passage of the Citation of Constitutional Laws Act, neither it nor the acts amending it are allocated act numbers.

- City of Cape Town. 2017 City of Cape Town Biodiversity Network [Vector] 2017. Available from the Biodiversity GIS website.

4. INVESTIGATION FINDINGS

A database review and desktop analyses was undertaken in terms of the study area whilst the surrounding landscape was also taken into consideration. The results of which are presented in Appendix B with the relevant maps. For ease of reference the results of the background assessment have been summarised in the points below:

- The National List of Threatened Ecosystems indicates that the study area is located in the Least Concern Overberg Sandstone Fynbos (FFs12) vegetation type; and
- The study area does not represent any areas of conservation importance (CBA/ESA or Other Natural Areas) by the Western Cape Biodiversity Spatial Plan (2017).

A field investigation to ground truth the desktop findings was undertaken on the 24th of October 2021. The broader area surrounding the study area was considered utilising digital satellite imagery prior to and after the field investigation. At the time of the survey, it was early summer, which in the Western Cape corresponds to reduced rainfall and a general reduction in faunal species activity.

The study area has been completely developed into a retail fuel service station, with paving covering most of the study area (Figures 1 and 2). The only vegetation noted in the study area is confined to three landscaped ornamental gardens along the eastern and western boundaries of the study area. These gardens host ornamental species such as *Aloe* species, *Agapanthus* species, *Ficus* shrubs, *Dymondia Margaretae* (Silver carpet), *Iris sibirica*, *Malva rotundifolia* and a variety of small succulents (Figure 2). The study area does not offer any habitat for faunal species due to the overall level of development and limited areas of vegetation available that may provide refuge for fauna (Figure 1 and 2).

Signs of fauna species were limited to those capable of surviving in human modified habitats. No evidence of mammals were identified. Avifaunal species were limited to common species that have adapted to high density urbanisation including species in the family Columbidae (pigeons and doves). These species likely forage over the larger urban area and are not solely reliant on the study area. Signs of reptiles and amphibians were absent, attributable to the unsuitable/lack of habitat. Invertebrates observed during the site assessment were common, ubiquitous species associated with urban areas, notably species of the Order Lepidoptera (Butterflies and moths) as well as the Orders Hemiptera (Bugs) and Diptera (Flies).

Figure 1: Overview photographs of the study area.

Figure 2: Vegetation in the study area are confined to landscaped gardens along the eastern (bottom left) and western (bottom right) boundaries.

Figure 3: Digital aerial photography showing the study area (red polygon) within the larger landscape which is absent of suitable corridors for faunal movement.

<u>Species of Conservation Concern identified by the DFFE screening tool (2020)</u>

The following paragraphs provide insight into the relevant faunal Species of Conservation Concern (SCC) as flagged by the DFFE screening tool (2020) and provides substantiated reasoning for whether these species may be associated with the study area or any nearby surroundings.

The **Mute Winter Katydid (*Brinckiella aptera* (VU))** is endemic to the Fynbos and Succulent Karoo biomes, both of which are notable biodiversity hotspots, naturally geographically restricted and under anthropogenic stress. This habitat type is predominantly utilised for livestock grazing, cultivation with annual crops, and urban development which may be detrimental to the host plants of the species. The genus of this species experienced an adaptive radiation in the region, with at least nine (9) species known in a relatively small geographic area. This species is not known to occur within any protected areas. It probably feeds on flowers and leaves of a very narrow range of host plants and occurs primarily on low, herbaceous shrubs. This species feeds and stridulates at night but can be found basking in the daytime on sunny days during the winter and early spring, from August until October, a time when very few insects are active.

The **Yellow-winged Agile Grasshopper (*Aneuryphymus montanus* (VU))** is also associated with fynbos vegetation, where it has been collected amongst partly burnt stands of evergreen Sclerophyll in rocky foothills. Considering the study area is located in a transformed area within a bioregion comprising renosterveld vegetation, the developed state of the site and the lack of suitable vegetation (habitat) available to support the species, it is unlikely that either of these species will occur within the study area. It is noted that the Fernkloof Nature Reserve is located approximately 1.3 km north of the study area, with these species potentially occurring there. It must, however, be noted that according to the iNaturalist database, there are currently no records for these species at this site.

Due to the transformation and habitat degradation of the study area, the findings of the site visit do not align with the findings reported in the national web based screening tool (DFFE, 2020). The study area comprises no vegetation that can be considered characteristic of the vegetation or landscape in which the Mute Winter Katydid (*Brinckiella aptera* (VU)) and Yellow-winged Agile Grasshopper (*Aneuryphymus montanus*) would occur.

5. BUSINESS CASE, OPPORTUNITIES AND CONSTRAINTS APPLICABLE TO THE STUDY AREA.

The study area occurs within an urban landscape, has been completely transformed from the reference vegetation state. The Fernkloof Nature Reserve, located approximately 1.3 km north of the study area, may offer potential habitat for the triggered species, however, as there is insufficient habitat in the study area and no forms of connecting corridors, species are unlikely to migrate/move from the local nature reserve to the study area.

Floral and faunal habitat is limited to trees and shrubs in the study area which does not mimic the features described for the reference vegetation type (Mucina and Rutherford, 2006. Very few, if any faunal species are anticipated to utilise the study area as a result of the aforementioned habitat transformation, notable for SCC. Thus, the faunal and floral composition of the study area is not anticipated to be of significant conservation value from a terrestrial biodiversity perspective and as such the impacts on the receiving environment from the construction and upgrades/expansion of the Hermanus Shell retail service station would have been very low and unlikely to impact upon any terrestrial ecosystem services, functions or species.

Therefore, it is the opinion of the specialists that the construction and subsequent upgrades/expansion of the Hermanus Shell retail service station posed no direct impact to any terrestrial features, from a biodiversity resource management point of view. No unique (including floral SCC) or undisturbed habitat with the necessary characteristics required to support the Mute Winter Katydid (*Brinckiella aptera* (VU)) and Yellow-winged Agile Grasshopper (*Aneuryphymus montanus*) or any other faunal SCC were observed in the study area. Thus, FEN Consulting does not support the Medium Animal Species theme or Very High Terrestrial Sensitivity theme for the study area. The **overall sensitivity for the study area is deemed to be low**, congruent with the current level of habitat therein.

We trust that we have interpreted your requirements correctly. Please do not hesitate to contact us if there are any aspects of this memorandum that you would like to discuss.

Yours Faithfully,

C du Preez

Christel du Preez
Pr. Sci. Nat

Reviewed and signed off by C. Hooton and K. Marais (SACNASP REG No. 117137/17)
Declaration of independence and CV included in Appendix C and D respectively

REFERENCES

City of Cape Town. 2017 City of Cape Town Biodiversity Network [Vector] 2017. Available from the Biodiversity GIS website,

IBA: Marnewick MD, Retief EF, Theron NT, Wright DR, Anderson TA. 2015. Important Bird and Biodiversity Areas of South Africa. Johannesburg: BirdLife South Africa. Online available: http://bgis.sanbi.org/IBA/project.asp

Mucina, L & Rutherford, MC. 2012. The vegetation of South Africa, Lesotho and Swaziland. SANBI Strelitzia 19, Pretoria.

NPAES: DEA and SANBI. 2009. National Protected Areas Expansion Strategy Resource Document. Online available: http://bgis.sanbi.org/protectedareas/NPAESinfo.asp

SAPAD: Department of Environmental Affairs. 2020. South Africa Protected Areas Database (SAPAD_OR_2020_Q3). Online available: [http://egis.environment.gov.za]

Threatened Ecosystems: National Environmental Management Biodiversity Act: National list of ecosystems that are threatened and in need of protection (G 34809, GoN 1002). 2011. Department of Environmental Affairs. Online available: http://bgis.sanbi.org/ecosystems/project.asp

APPENDIX A- LOCALITY MAP

Figure A1: The locality of the study area in relation to its surroundings.

APPENDIX B- BACKGROUND INFORMATION

Table 1: Summary of the conservation characteristics for the study area with a focus on terrestrial database sets.

CONSERVATION DETAILS PERTAINING TO THE STUDY AREA (VARIOUS DATABASES)		DETAILS OF THE STUDY AREA IN TERMS OF MUCINA & RUTHERFORD (2006, 2018, 2012)					
NATIONAL BIODIVERSITY ASSESSMENT (NBA): Ecosystem types are categorised as "not protected", "poorly protected", "moderately protected" and "well protected" based on the proportion of each ecosystem type that occurs within a protected area recognised in the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) (NEMPAA), and compared with the biodiversity target for that ecosystem type. The ecosystem protection level status is assigned using the following criteria: I. if an ecosystem type has more than 100% of its biodiversity target protected in a formal protected area either a or b, it is classified as well protected; II. when less than 100% of the biodiversity target is met in formal a or b protected areas it is classified it as moderately protected; III. if less than 50% of the biodiversity target is met, it is classified it as poorly protected; and IV. If less than 5% it is hardly protected.		**Biome**	The study area is situated within the **Fynbos Biome.**				
		Bioregion	The study area is located within the **Southwest Fynbos Bioregion**				
		Vegetation Type	The study area falls within the **Overberg Sandstone Fynbos (FFs12).**				
		Climate	MAP 250 – 1410 mm, peaking May to August. Mean daily maximum and minimum temperatures 26.2°C and 4.4°C for February and July, respectively. Frost incidence 7 – 10 days per year.				
			MAP* (mm)	**MAT* (°C)**	**MFD* (Days)**	**MAPE* (mm)**	**MASMS* (%)**
			585	15.5	3	1720	65
		Altitude (m)	20 – 1167 m				
NBA (2018): 1) **Ecosystem Protection Level** 2) **Ecosystem Threat Status**	NBA 2018 dataset: The study area falls within the **Overberg Sandstone Fynbos** which is considered of **Least Concern** ecosystem and is currently **Poorly Protected**.	**Distribution**	Western Cape Province				
		Conservation	Least Threatened. Target 30%. Only 6% statutorily conserved. About 6% transformed (cultivation). Alien *Pinus pinaster, Acacia cyclops, A. saligna, Hakea sericea, H. giggosa* and *Leptospermum laevigatum*, occur in places. Erosion very low to low.				
National Threatened Ecosystems (2011)	The study area currently falls within an ecosystem that is critically endangered. For Environmental Impact Assessments (EIAs), the 2011 National list of Threatened Ecosystems remains the trigger for a Basic Assessment in terms of Listing Notice 3 of the EIA Regulations published under the National Environmental Management Act, 1998 (Act No 107 of 1998) (NEMA).	**Geology & Soils**	Acidic lithosol soils derived from Ordovician sandstones of the Table Mountain Group (Cape Supergroup). Land types mainly Ic.				
		Vegetation & landscape features	Gentle to steep north facing slopes, highly dissected in a few places, with a midslope sandy plateau and extensive gentle lower slopes. Vegetation is an open, tall, proteoid-leaved evergreen shrubland with a dense moderately tall, ericoid-leaved shrubland as understory.				
IBA (2015) (Figure A2)	According to the IBA Dataset, the study area is located in the Cape Whale Coast IBA. This IBA has the following trigger species: Globally threatened species include African Black Oystercatcher (H*aematopus moquini)*, African Penguin (*Spheniscus demersus*) (948 breeding pairs; Crawford *et al*. 2012), Cape Cormorant (*Phalacrocorax capensis*), Bank Cormorant (*P. neglectus)*, Crowned Cormorant (*P. coronatus)* and Cape Gannet (*Morus capensis)*. Regionally threatened species are African Marsh Harrier (C*ircus ranivorus)*, Caspian Tern (*Sterna caspia*), Greater Flamingo (P*hoenicopterus roseus)* and Great White Pelican (*Pelecanus onocrotalus)*. Restricted-range and biome-restricted species that are common in the IBA include Cape Spurfowl (*Pternistis capensis)*, Cape Bulbul (*Pycnonotus capensis)*, Cape Sugarbird (*Promerops cafer)*, Orange-breasted Sunbird (*Anthobaphes violacea*). Species that meet the 1% or more congregatory population threshold are Caspian Tern (maximum 88 individuals; this and the following figures are from Harebottle 2012), Greater Flamingo (maximum 2 884 individuals), Great Crested Grebe (*Podiceps cristatus)* (maximum 356 individuals), Black-necked Grebe (*Podiceps nigricollis*) (maximum 199 individuals), Swift Tern (*Thalasseus bergii*) (maximum 704 individuals), Sandwich Tern (*T. sandvicensis*) (maximum 2 059 individuals), White-breasted Cormorant (*Phalacrocorax lucidus)* (maximum 247 individuals), Cape Shoveler (*Anas smithii*) (maximum 1 111 individuals), Yellow-billed Duck (A*nas undulata)* (maximum 2 500 individuals), Red-knobbed Coot (*Fulica cristata)* (maximum 15 352 individuals), Kelp Gull (*Larus dominicanus*) (maximum 867 individuals), Hartlaub's Gull (*Chroicocephalus hartlaubii)* (maximum 954 individuals) and Great White Pelican (maximum 524 individuals). Species that meet the 0.5% congregatory threshold are Black-winged Stilt (*Himantopus himantopus*) (maximum 125 individuals), Southern						

	Pochard (*Netta erythrophthalma)* (maximum 390 individuals), White-backed Duck (*Thalassornis leuconotus*) (maximum 134 individuals) and White-fronted Plover (*Charadrius marginatus*) (maximum 106 individuals).
SAPAD (2021, Q2); SACAD (2021, Q2); NPAES (2009). Figure A3	According to the South African Protected Areas Database (SAPAD, 2021), the Walker Bay Whale Sanctuary Marine Protected Area (MPA) and the Fernklof Nature Reserve is located within the 2 km buffer of the study area. The Hoek van de Berg Private Nature Reserve, Vogelgat Private Nature Reserve and the Maanshynkop Nature Reserve are is located in the 10 km buffer. The National Protected Areas Expansion Strategy (NPAES, 2009) indicates that the Fernkloof Local Nature Reserve is located in the 2 km buffer of the study area, with the Babilonstoring Nature Reserve, Maanschynkop Nature Reserve and the Walker Bay Nature Reserve in the 10 km buffer. A nature reserve is a declared area, or regarded as having been declared, in terms of section 23 of the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003) (NEMPAA), as a nature reserve. Alternatively, it is an area which before or after the commencement of this Act was or is declared or designated in terms of provincial legislation for a purpose for which that area could in terms of section 23 (2) of NEMPAA be declared as a nature reserve. According to the South African Conservation Area Database (SACAD, 2021) there is no conservation area located within 10 km of the study area.
WESTERN CAPE BIODIVERSITY SPATIAL PLAN (WCBSP, 2017)	
The study area does not fall within any areas considered of biodiversity importance.	
NATIONAL WEB BASED ENVIRONMENTAL SCREENING TOOL (2020)	
The screening tool is intended to allow for pre-screening of sensitivities in the landscape to be assessed within the EA process. this assists with implementing the mitigation hierarchy by allowing developers to adjust their proposed development footprint to avoid sensitive areas	
Terrestrial Theme	The Terrestrial Sensitivity for the entire study area is considered of Very High sensitivity. The triggered sensitivity features includes a Critically Endangered ecosystem.
Plant Species Theme	For the plant species theme, the study area is considered of **Low sensitivity**.
Animal Species Theme	For the animal species theme, the study area is considered of **Medium sensitivity**. Species identified by the EIA Screening tool include invertebrate species such as the invertebrates *Brinckiella aptera* (Mute Winter Katydid) and *Aneuryphymus montanus* (Yellow-winged Agile Grasshopper).

CBA = Critical Biodiversity Area; DWS = Department of Water and Sanitation; EI = Ecological Importance; ES = Ecological Sensitivity; EPL = Ecosystem Protection Level; ESA = Ecological Support Area; ETS = Ecosystem Threat Status; m.a.m.s.l = Metres Above Mean Sea Level; MAP = Mean Annual Precipitation; NBA = National Biodiversity Assessment; NFEPA = National Freshwater Ecosystem Priority Areas; PES = Present Ecological State; SAIIAE = South African Inventory of Inland Aquatic Ecosystems; WMA = Water Management Area

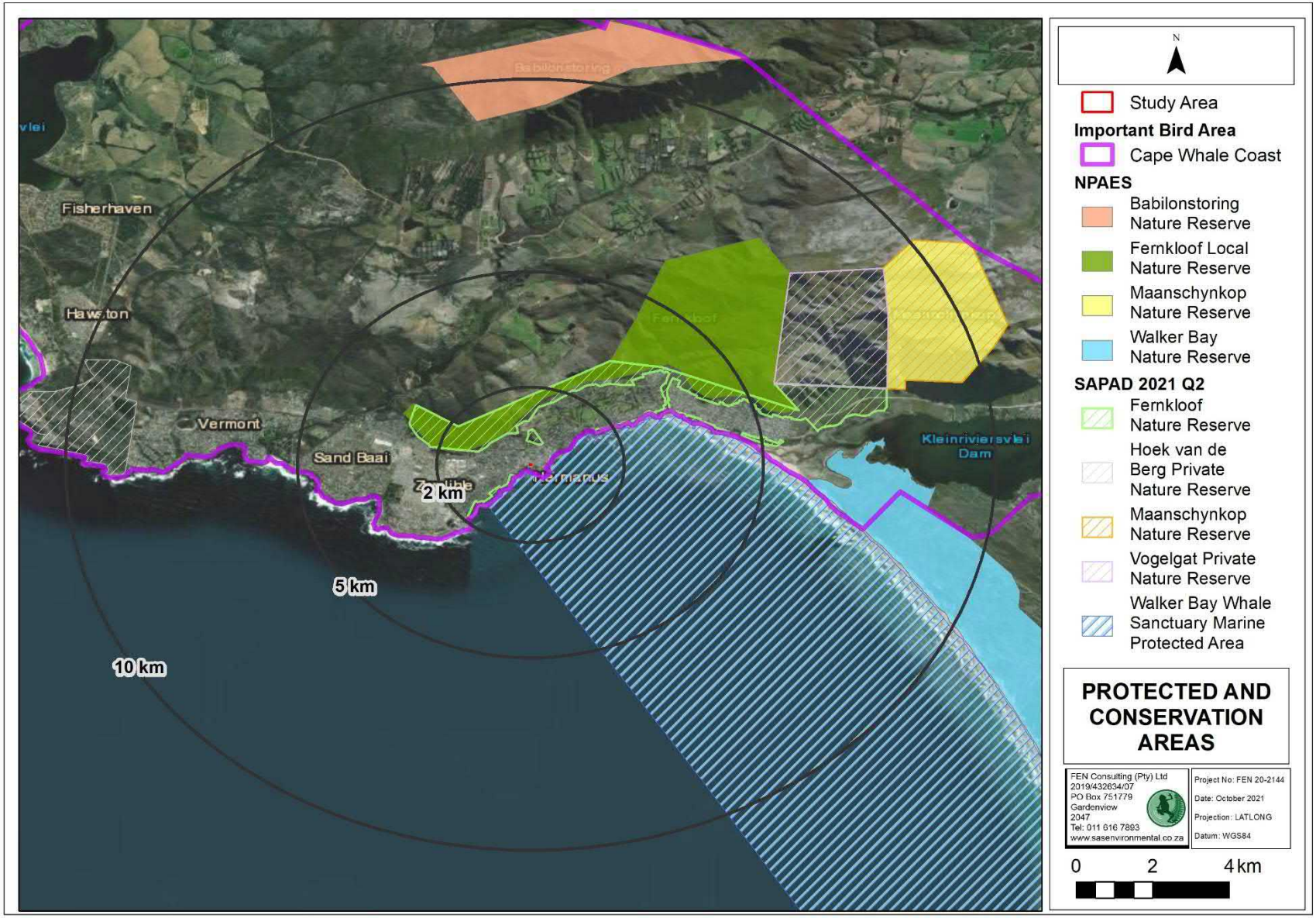


Figure A2: Important Bird Areas as per the IBA dataset (2015), protected areas as per the National Protected Areas Expansion Strategy (NPAES, 2009) dataset and the SAPAD (2020) dataset.

APPENDIX C- Declaration of Independence

1. (a) (i) Details of the specialist who prepared the report

Christel du Preez	MSc Environmental Sciences (North West University)
Chris Hooton	BTech Nature Conservation (Tshwane University of Technology)
Kim Marais	BSc (Hons) Zoology (Herpetology) (University of the Witwatersrand)

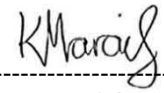
1. (a). (ii) The expertise of that specialist to compile a specialist report including a curriculum vitae

Company of Specialist:	FEN Consulting		
Name / Contact person:	Christel du Preez		
Postal address:	221 Riverside Lofts, Tygerfalls Boulevard, Bellville,		
Postal code:	7539	Cell:	074 580 6823
Telephone:	011 616 7893	Fax:	086 724 3132
E-mail:	christel@sasenvgroup.co.za		
Qualifications	MSc Environmental Sciences (North West University)		
Registration / Associations	Registered Professional Scientist at South African Council for Natural Scientific Professions (SACNASP)		

1. (b) a declaration that the specialist is independent in a form as may be specified by the competent authority

I, Kim Marais, declare that -

- I act as the **independent specialist (reviewer)** in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the relevant legislation and any guidelines that have relevance to the proposed activity;
- I will comply with the applicable legislation;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct



Signature of the Specialist

1. (b) a declaration that the specialist is independent in a form as may be specified by the competent authority

I, Christel du Preez, declare that -

- I act as the **independent specialist** in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the relevant legislation and any guidelines that have relevance to the proposed activity;
- I will comply with the applicable legislation;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct

C du Preez
---

1. (b) a declaration that the specialist is independent in a form as may be specified by the competent authority

I, Chris Hooten, declare that -

- I act as the **independent specialist** in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the relevant legislation and any guidelines that have relevance to the proposed activity;
- I will comply with the applicable legislation;
- I have not, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- All the particulars furnished by me in this form are true and correct

---

APPENDIX D- CV of specialist

SAS ENVIRONMENTAL GROUP OF COMPANIES – SPECIALIST CONSULTANT INFORMATION

CURRICULUM VITAE OF KIM MARAIS

PERSONAL DETAILS

Position in Company	Senior Scientist Water Resource Manager
Joined SAS Environmental Group of Companies	2015

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Professional member of the South African Council for Natural Scientific Professions (SACNASP – Reg No. 117137/17)
Member of the Western Cape Wetland Forum (WCWF)

EDUCATION

Qualifications

BSc (Hons) Zoology (University of the Witwatersrand)	2012
BSc (Zoology and Conservation) (University of the Witwatersrand)	2011

Short Courses

Aquatic and Wetland Plant Identification (Cripsis Environment)	2019
Tools for Wetland Assessment (Rhodes University)	2018
Certificate in Environmental Law for Environmental Managers (CEM)	2014
Certificate for Introduction to Environmental Management (CEM)	2013

KEY SPECIALIST DISCIPLINES

Biodiversity Assessments

- Biodiversity Action Plans (BAP)
- Alien and Invasive Control Plans (AICP)
- Faunal Eco Scans
- Faunal Impact Assessments

Freshwater Assessments

- Desktop Freshwater Delineation
- Freshwater Verification Assessment
- Freshwater (wetland / riparian) Delineation and Assessment
- Freshwater Eco Service and Status Determination
- Rehabilitation Assessment / Planning
- Watercourse Maintenance and Management Plans
- Freshwater Offset Plan

Aquatic Ecological Assessment and Water Quality Studies

- Riparian Vegetation Integrity (VEGRAI)
- Water quality Monitoring
- Riverine Rehabilitation Plans

Legislative Requirements, Processes and Assessments

- Water Use Applications (Water Use Licence Applications / General Authorisations)
- Water Use Audits
- Freshwater Resource Management and Monitoring as part of EMPR and WUL conditions
- Public Participation processes

SAS ENVIRONMENTAL GROUP OF COMPANIES – SPECIALIST CONSULTANT INFORMATION

CURRICULUM VITAE OF CHRISTOPHER HOOTON

PERSONAL DETAILS

Position in Company	Senior Scientist, Member
	Biodiversity Specialist
Joined SAS Environmental Group of Companies	2013

EDUCATION

Qualifications

BTech Nature Conservation (Tshwane University of Technology)	2013
National Diploma Nature Conservation (Tshwane University of Technology)	2008

AREAS OF WORK EXPERIENCE

South Africa – Gauteng, Mpumalanga, North West, Limpopo, KwaZulu-Natal, Eastern Cape, Western Cape, Northern Cape, Free State
Zimbabwe, Sierra Leone, Zambia

KEY SPECIALIST DISCIPLINES

Biodiversity Assessments

- Floral Assessments
- Faunal Assessments
- Biodiversity Actions Plan (BAP)
- Biodiversity Management Plan (BMP)
- Alien and Invasive Control Plan (AICP)
- Ecological Scan
- Protected Tree and Floral Marking and Reporting
- Biodiversity Offset Plan

Freshwater Assessments

- Freshwater Verification Assessment
- Freshwater (wetland / riparian) Delineation and Assessment
- Freshwater Eco Service and Status Determination
- Rehabilitation Assessment / Planning

SAS ENVIRONMENTAL GROUP OF COMPANIES – SPECIALIST CONSULTANT INFORMATION

CURRICULUM VITAE OF CHRISTEL DU PREEZ

PERSONAL DETAILS

Position in Company	Senior Scientist (Watercourse ecology)
Joined SAS Environmental Group of Companies	2016

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Professional member of the South African Council for Natural Scientific Professions (SACNASP) (SACNASP – Reg No. 120240/19)
Member of the Western Cape Wetland Forum (WCF)
Member of the Gauteng Wetland Forum (GWF)

EDUCATION

Qualifications

MSc Environmental Sciences (North West University)	2017
BSc Hons Environmental Sciences (North West University)	2012
BSc Environmental and Biological Sciences (North West University)	2011

Short Courses

Wetland and Aquatic plant Identification presented by Carin van Ginkel (Crispis Environmental)	2019
Wetland Management: Introduction and Delineation presented by the Centre of Environmental Management University of the Free State	2018
Tools for Wetland Assessment presented by Prof. F. Ellery and Rhodes University	2017
Basic Principles of ecological rehabilitation and mine closure presented by the Centre for Environmental Management North West University	2015

AREAS OF WORK EXPERIENCE

South Africa – Gauteng, Mpumalanga, Limpopo, Western Cape, Northern Cape, Eastern Cape

KEY SPECIALIST DISCIPLINES

Freshwater Assessments

- Desktop Freshwater Delineation
- Freshwater Verification Assessment
- Freshwater (wetland / riparian) Delineation and Assessment
- Freshwater Eco Service and Status Determination
- Rehabilitation Assessment / Planning
- Maintenance and Management Plans
- Plant species and Landscape Plan
- Freshwater Offset Plan

Appendix H3: Palaeontological Specialists Report

John Pether, M.Sc., Pr. Sci. Nat. (Earth Science), Ass. Prof. Herit. Practs.- W. Cape

Geological and Palaeontological Consultant

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27 October 2021

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SLR Project 720.19152.00039

SHELL HERMANUS AUTO STOP SECTION 24G RECTIFICATION

PALAEONTOLOGICAL IMPACT STATEMENT

The Shell fuel station at the corner of the Main Road and Park Avenue in Hermanus was constructed in 1999 without the required environmental authorizations. SLR have been appointed by Shell to conduct a Section 24G rectification process and have requested a statement on the nature of any palaeontological impact which may have occurred during construction of the site.

Geological Context

Hermanus is situated on a marine wave-cut platform formed on quartzitic sandstones of the **Peninsula Formation** of the lower **Table Mountain Group**, Cape Supergroup (Figure 1A). The Peninsula Fm. is of early Ordovician age (490-470 Ma) (Ma = Mega-annum – million years ago) and is mainly comprised of fluvial quartzitic sandstones and conglomerates which were deposited by numerous braiding river courses that wandered across vast alluvial plains, unrestricted by vegetated banks as land plants were only beginning to appear. Some intervals of minor, muddier, finer-grained interbeds reflect the impingement of shallow-marine or estuarine settings along the edge of the alluvial plains.

Hitherto only trace fossils have been recorded from the Peninsula Formation, mainly from the aforementioned marine-influenced, muddier interbeds (Broquet, 1990; Almond, 1998). The trace fossils include resting and feeding traces made by trilobites (*Cruziana*, *Rusophycus, Dimorphichnus*) and a variety of trackways made by trilobites, water scorpions (eurypterids) and other arthropods (*Diplichnites*, *Palmichnium, Petalichnus*). Several types of burrows loosely attributable to “worms” occur, such as “pipe rock”, a dense concentration of simple vertical burrows called *Skolithos* and a smaller form called *Trichichnus*, as well as a variety of horizontal burrows (*Planolites, Gordia*) and possible bivalve traces (*Pelecypodichnus*).

Anticipated Impact

The Peninsula Formation is rated HIGH/ORANGE on the SAHRIS Palaeomap (Figure 1B), but this is an overall rating not applicable everywhere. The trace fossil abundance in the Peninsula Formation is very meagre overall and the muddier beds in which they occur constitute only a minor portion, mainly in the lower part of the formation, *e.g.* ~1.5% (~8 m) of ~530 m total thickness forming Table Mountain (Broquet, 1990). Furthermore, in this southern location of the Cape Fold Belt the formation is deformed and faulted and the thinly-bedded, muddier units are likely to have been zones of shearing cleavage development. Outcrops of these intervals are expected to be preferentially eroded away where not beneath quartzite strata. In view of the small size of the site and given the overall rarity of the trace fossils in the Peninsula Fm., no significant impact on fossil heritage of the Peninsula Formation is expected to have occurred during the construction on the Shell site. Of course, very extensive exposures of the Peninsula Formation occur in the Cape Fold Mountains, while locally it is exposed along the seashore of the Hermanus area.

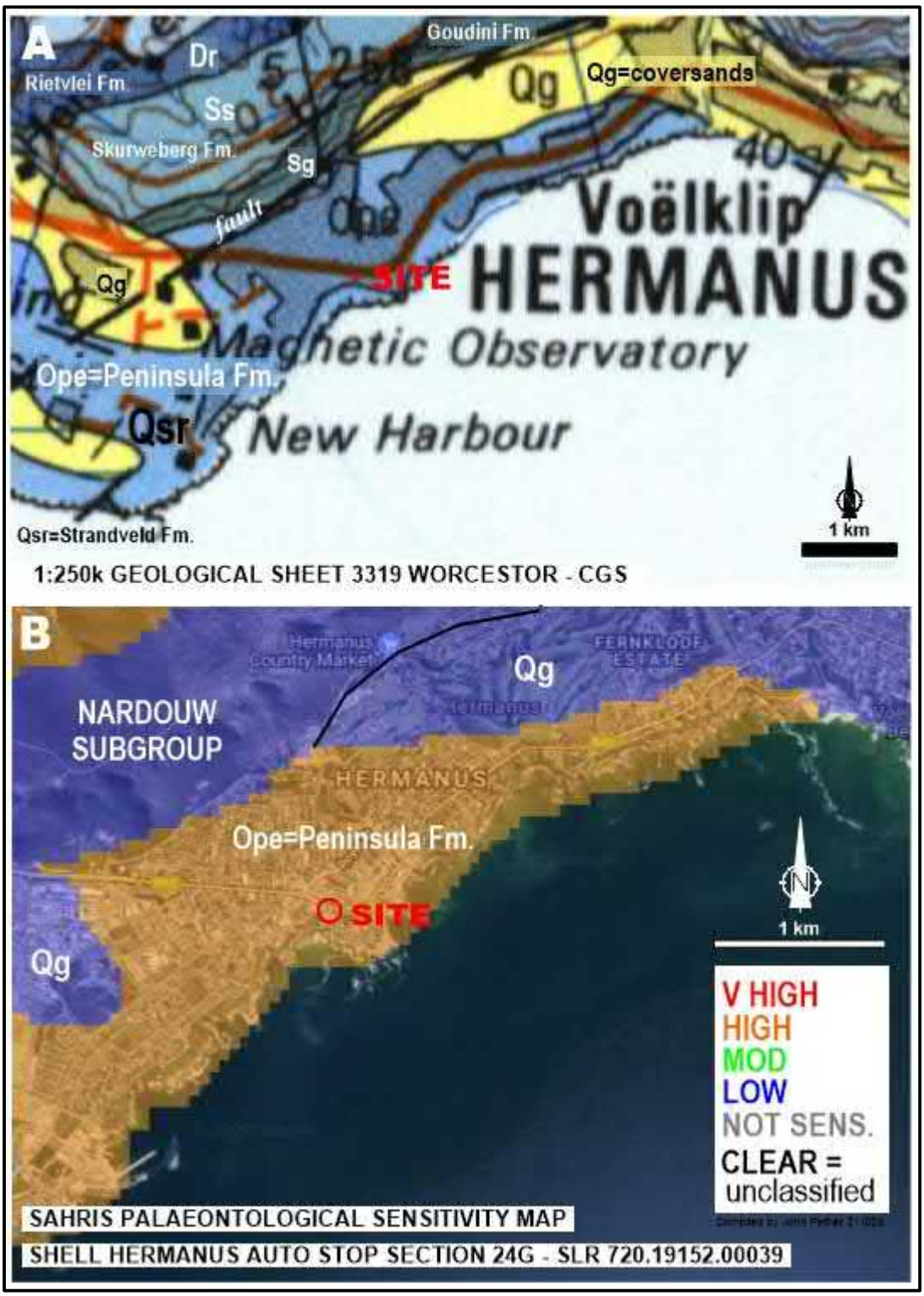

Figure 1. A – Surface geology of the Hermanus area. B – Palaeontological sensitivity ratings.

The marine wave-cut platform at 15-~30 m asl. is a composite feature formed during the periods of high sea levels associated with global warming during the mid-Miocene (~16 Ma), the early Pliocene (~5 Ma) and the late Pliocene (~3 Ma). When last occupied by the sea about ~3 Ma sea level reached a maximum of ~30 m asl. Boulder beaches at 30 m asl. are present at several localities on the mountainsides between Gordon's Bay and Hermanus. Shelly gravels and sands were deposited as sea level declined from the highstand, to become the lime-cemented conglomerates and sandstones of the marine **De Hoopvlei Formation** (Malan, 1991).

These fossiliferous beach and shoreface deposits could not have been very thick originally, given the elevation of the platform, and have evidently largely been eroded away, so that only residual gravels remain beneath the soils and coversands. These are unlikely to be the source of well-preserved fossil shells and bones, such material having been subjected to dissolving terrestrial groundwaters for the subsequent 3 million years. The construction of the Shell garage has therefore not had an impact on the fossil heritage of the De Hoopvlei Formation. Fossiliferous sections of the formation are common along the coast farther eastwards, mainly beneath thick aeolianite formations (Wankoe and Waenhuiskrans formations).

Conclusion

The construction of the Shell fuel station and facilities at the corner of the Main Road and Park Avenue in Hermanus is very unlikely to have had an impact on palaeontological heritage.

References

Almond, J.E. 1998. Trace fossils from the Cape Supergroup (Early Ordovician – Early Carboniferous) of South Africa. Journal of African Earth Sciences 27 (1A): 4-5.

Broquet, C.A.M. 1990. Trace fossils and ichno-sedimentary facies from the Lower Palaeozoic Peninsula Formation, Cape Peninsula, South Africa. Abstracts, Geocongress '90, Cape Town. Geological Society of South Africa. 64-67.

Malan, J.A. 1991. Lithostratigraphy of the De Hoopvlei Formation (Bredasdorp Group). S. Afr. Committee for Stratigraphy, Lithostratigraphic Series No. 4, Geological Survey S. Africa.

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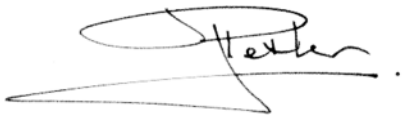

John Pether

1. SPECIALIST INFORMATION

Specialist Company Name:	Not applicable – Sole Proprietor - EME			
B-BBEE	Contribution level (indicate 1 to 8 or non-compliant)	4	Percentage Procurement recognition	100
Specialist name:	John Pether			
Specialist Qualifications:	M.Sc. (Distinction), Pr. Sci. Nat. (Earth Science)			
Professional affiliation/registration:	South African Council of Natural Scientific Professions, Earth Science, No. 400094/95. Association of Professional Heritage Practitioners (APHP), Western Cape. Accredited Member No. 48.			
Physical address:	P29 Imhoff Park, Wireless Road, Kommetjie, Cape Town, 7975.			
Postal address:	P. O. Box 48318, Kommetjie.			
Postal code:	7976	Cell:	083 744 6295	
Telephone:	(021) 7833023	Fax:	0866 890732	
E-mail:	jpether@iafrica.com			

2. DECLARATION BY THE SPECIALIST

I, John Pether, declare that –

- I act as the independent specialist in this application;
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;
- all the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Signature of the Specialist

Not applicable - Sole proprietor.

Name of Company:

11 November 2021

Date