
DRAFT SECTION 24G
REPORT FOR DAM
CONSTRUCTION ON
PORTION 1 OF THE
FARM UITVLUGT
NO.194, HUMANSDORP

PREPARED FOR

SHIMNAHILLS SAFARIS CC

29 OCTOBER 2026



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This report has been prepared exclusively for **Shimbahills Safaris CC** and for submission to the Competent Authority. It may not be used for any other purpose without written consent.

APPLICATION FORM FOR THE REGULARISATION OF UNLAWFUL COMMENCEMENT OR CONTINUATION OF A LISTED ACTIVITY OR WASTE MANAGEMENT ACTIVITY IN TERMS OF SECTION 24G OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998), AS AMENDED

OB Number
ED Number
File Reference Number:
NEAS Reference Number:
Date Received:

(For official use only)

PROJECT TITLE

Dam Construction on Ptn 1 of Farm Uitvlugt 194, Humansdorp, Eastern Cape

Kindly note that:

1. This application form must be completed for all applications in terms of S24G of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.
2. It is the responsibility of the Applicant / Environmental Assessment Practitioner (EAP) to ascertain whether subsequent versions of the application form have been published or produced by the relevant competent authority.
3. This application form is structured as follows:

PART 1

Section A: Application Information
Section B: Activity Information
Section C: Proposed Public Participation Process
Section D: Appendices

PART 2

Section A: Directive
Section B: Deferral
Section C: Quantum of the fine

PART 3

Section A: Declaration by applicant.
Section B: Declaration by EAP

4. An independent EAP must be appointed to complete Part 2 Section C.1 of the application form on behalf of the applicant. The applicant or the appointed EAP must complete Part 1 and the remainder of Part 2. Both the EAP and Applicant must complete and sign the applicable declarations in Part 3.

5. The required information must be typed within the spaces provided. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. The space provided extends as each space is filled with typing. A legible font type and size must be used when completing the form. The font size should not be smaller than 10pt (e.g. Arial 10).
6. The use of "*not applicable*" in the application form must be done with circumspection.
7. No faxed or e-mailed applications will be accepted unless agreed to with the Department where circumstances prevent the submission of physical documents. This application form must be submitted by hand or mailed to the relevant competent authority.
8. Unless protected by law, all information contained in and attached to this application form may become public information on receipt by the competent authority. Upon request, any interested and affected party must be provided with the information contained in and attached to this application form.
9. This application form constitutes the initiation of the S24G application process.

Kindly note further that:

10. Section 24G of the NEMA, without affecting any criminal liability of a person who has acted in contravention of the above, makes provision for that person to submit an application to the relevant MEC/Minister, which, if successful, will enable that person lawfully to continue with the listed activity and/or legalise an otherwise unlawful structure.
11. Before the Minister/MEC may take a decision in respect of the application, the applicant is required to pay an appropriate administrative fine, determined by the competent authority, which fine may not exceed five million Rand (R 5 000 000.00) per listed activity unlawfully commenced or per application where the activities are interrelated.
12. It is the responsibility of the applicant to familiarise himself/herself/itself with all the possible consequences associated with the submission of this application including, but not limited to, the following:
 - This application (including a positive decision in respect hereof) in no way affects any criminal liability that the applicant may have incurred in respect of the activities which were commenced, undertaken and/or conducted unlawfully as listed in paragraph 1 above, and in respect of which this application relates.
 - The processing of this application may be deferred pending the outcome of criminal proceedings, should criminal proceedings be instituted against the applicant in respect of the abovementioned activities; or where criminal proceedings are pending against the applicant in respect of a similar contravention of section 24F of NEMA or section 20(b) of NEM:WA.
 - Before the competent authority may take a decision on the application, an administrative fine determined by the competent authority must be paid, in full, by the applicant.
 - That neither the submission of this application, nor the payment of the administrative fine implies that authorisation will be issued for the continuation of an activity/activities that commenced, undertaken and/or conducted unlawfully. This decision will depend on the merits of the application itself.
13. Activities which result in detrimental impacts to the environment are considered in a serious light by the competent authority and accordingly applicants must understand that by lodging an application for the continuation of an activity/ activities that commenced/ was undertaken or conducted unlawfully does not necessarily imply that the activity will be authorised. In terms of the NEMA the Minister/MEC may either refuse to issue an environmental authorisation/waste management licence; conditionally authorise the activity or direct you, the applicant, to provide further information or take further steps prior to making a decision.

DEPARTMENTAL DETAILS

Applications must be submitted to the Department of Economic Development Environmental Affairs and Tourism Regional Office in the applicable district where the activity, the subject of the application took place. The addresses for the Regional Offices are:

Region	Postal	Physical
Alfred Nzo	Regional Manager: Environmental Affairs	Regional Manager: Environmental Affairs

	Department of Economic Development Environmental Affairs and Tourism Alfred Nzo Region P/Bag X3513 Kokstad 4700	Department of Economic Development Environmental Affairs and Tourism 206 Magistrates Street Old College of Education Maluti
Amathole	Regional Manager: Environmental Affairs Department of Economic Development Environmental Affairs and Tourism Amathole Region P/Bag X9060 East London 5200	Regional Manager: Environmental Affairs Department of Economic Development Environmental Affairs and Tourism Alderwood House Palm Square Business Park Bonza Bay Road Beacon Bay 5241
Chris Hani	Regional Manager: Environmental Affairs Department of Economic Development Environmental Affairs and Tourism Chris Hani Region P/Bag X9636 Queenstown 5320	Regional Manager: Environmental Affairs Department of Economic Development Environmental Affairs and Tourism Komani Office Park Block E Komani Hospital Queenstown 5320
Joe Gqabi	Regional Manager: Environmental Affairs Department of Economic Development Environmental Affairs and Tourism Joe Gqabi Region P/Bag X1016 Aliwal North 9750	Regional Manager: Environmental Affairs Department of Economic Development Environmental Affairs and Tourism Old Library Building 27 Queens Terrace Aliwal North 9751
OR Tambo	Regional Manager: Environmental Affairs Department of Economic Development Environmental Affairs and Tourism OR Tambo Region P/Bag X5029 Mthatha 5099	Regional Manager: Environmental Affairs Department of Economic Development Environmental Affairs and Tourism 5 Floor Botha Sigcau Building Corner Owen and Leeds Street Mthatha 5099
Sarah Baartman	Regional Manager: Environmental Affairs Department of Economic Development Environmental Affairs and Tourism Sarah Baartman P/Bag X5001 Greenachers 6057	Regional Manager: Environmental Affairs Department of Economic Development Environmental Affairs and Tourism Corner Athol Fugard Terrace and Castle Hill Lane Central Port Elizabeth 6001

PART 1 – SECTION A: APPLICATION INFORMATION**1. PROJECT DESCRIPTION**

Please provide a detailed description of the project / activities undertaken

Project Description:

Shimbahills Safaris cc own a farm, namely the Remainder of Portion 1 of the Farm Uitvlugt 194 (also known as Hol Rivier Noord 194), within the Kouga Local Municipality (KLM) is located in the Sarah Baartman District in the province of the Eastern Cape, South Africa. The farm is located within Ward 1 in Kouga Local Municipality. The nearest town is Humansdorp that is situated approximately 23,65 km southeast of the farm.

The Uitvlugt dams are located within the Kouga Local Municipality, Eastern Cape, and falls within the Fish to Keiskamma Water Management Area (WMA) (now the Mzimvubu-Tsitsikamma WMA) (DWS, 2023), the Southern Folded Mountains Ecoregion, and within the L90A quaternary catchment. There are two dams present on the site (**Figure 1**). The dams are fed by a tributary of the Hol River and the dams are used for water supply to farm animals.



Figure 1: Photo of the dam.

The dams are located within the Cape Supergroup geology area. The mountains of the Cape Fold Belt are composed of rocks belonging to the Cape Supergroup, which is more extensive than the Fold Belt. The Supergroup is divided into several distinct Groups. The western and southern extents of the Supergroup have been folded into a series of longitudinal mountain ranges, by the collision of the Falkland Plateau into what would later become South Africa. However, the entire suite in this region slopes downwards towards the north and east, so that the oldest rocks are exposed in the south and west, while the youngest members of the

Supergroup are exposed in the north, where the entire Cape Supergroup dives beneath the Karoo rocks. The Cape Supergroup extends eastwards beyond the Fold Belt into the Eastern Cape and northern KwaZulu-Natal, where no folding took place.

There are no downstream developments from the dams. The site is not located within any SWSAs for surface water or groundwater. The project area of influence (PAOI) overlaps with an ecological support area (ESA 1). According to the SAIIE dataset, the PAOI does not overlap with any endangered watercourses, but it drains towards the 'Endangered' Hol River, indicating that impacts within the regulated area could potentially result in degradation of the downstream system. According to the National Freshwater Ecosystem Priority Area (NFEPA) dataset, the PAOI does not intersect with any NFEPA river although it does intersect a non-priority wetland and drains towards an NFEPA River (Hol River) which is also classified as a Priority wetland.

The dams are located in a catchment that is approximately 2.9km² in area and the mean annual precipitation is 650mm.

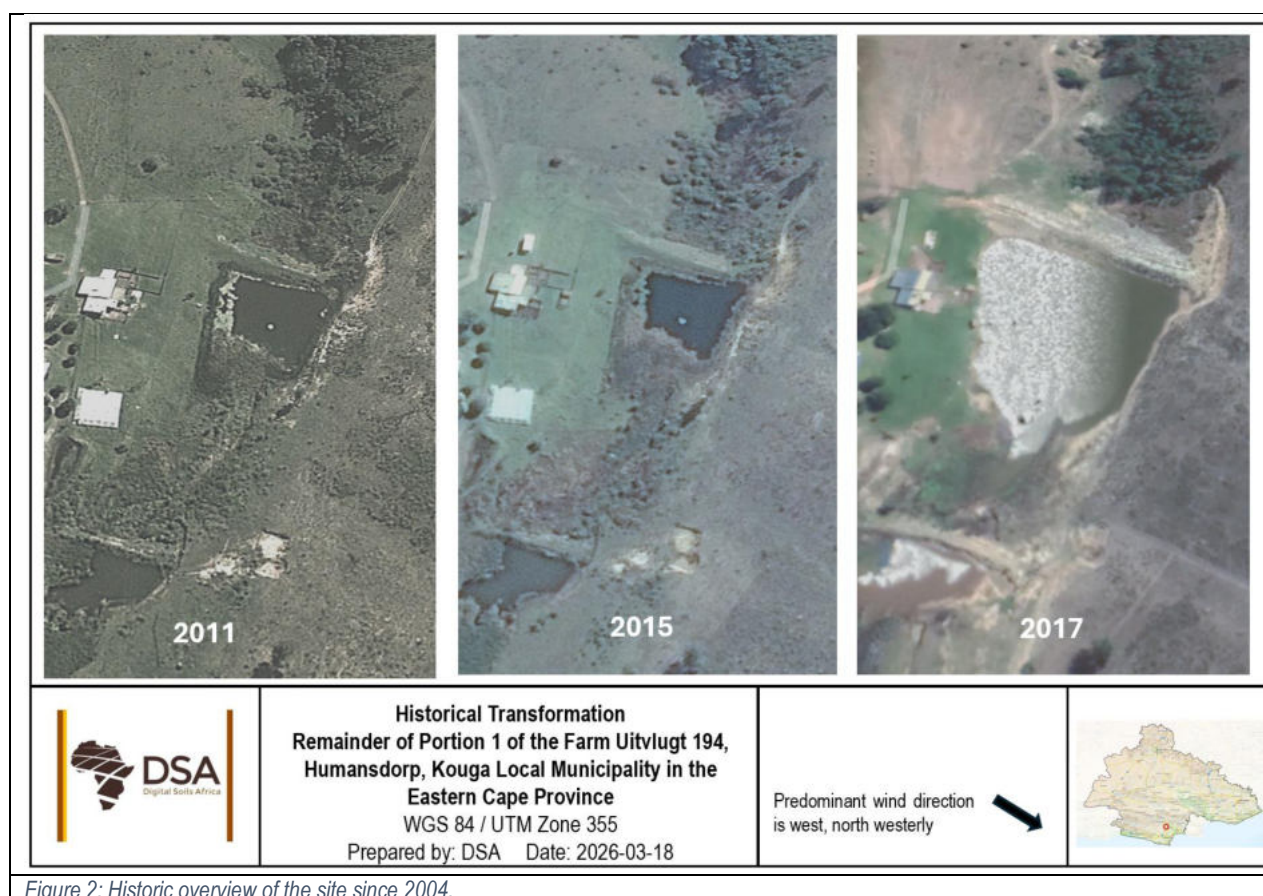


Figure 2: Historic overview of the site since 2004.

History of development: Previous land use on Portion 1 of Farm Uitvlugt 194

The farm is located within an agricultural area. The BOTTOM DAM was built in the 1990's and dam was used for stock watering and domestic supply whereby it was enlarged in 2016 (Figure 2). The TOP DAM was built between 2000 and 2010 and then enlarged in 2016. At the time of the dam wall extension was constructed, EIA Regulations GNR 983 of 4 December 2014, Activity 12 listed the development of (iv) dams, where the dam, including infrastructure and water surface area, exceeds 100m² in size. The two dams combined surface area was increased to 0.7ha or 7000m² – were in place and therefore exceeding the threshold in the regulation. No further heightening is anticipated for the two dams.

The bottom dam wall was extended with earth fill with a wall height of 3m with a crest length of 100m and 4m wide. The storage capacity of the bottom dam is 13 800m³ and covers a surface area of 0.7ha when full. The spillway of the dam consists of an open channel that is 60m in length. The bottom dam wall consists of dense clay material with semi-pervious slopes.

The retrospective environmental impact assessment can be viewed in Annexure M of this document.

2. APPLICANT PROFILE INDEX

Cross out the appropriate box "X".

2.1	The applicant is an individual		NO
2.2	The applicant is a company	YES	
2.3	The applicant is a government department, state-owned enterprise or municipality		NO
2.4	Other (specify) Trust		NO
2.5	There is more than one individual / company responsible for the unlawful commencement of listed activities / listed waste management activities.		NO

Name of Project applicant:	Shimbahills Safaris cc		
RSA Identity number:			
Contact person:	Mr. Louis Francois van der Walt		
Position in company	Member		
Registered Name of Company/ Closed Corporation / Trust	Shimbahills Safaris cc		
Trading name (if any):			
Registration number	Reg no: 1986/022165/23)		
Postal address:	129 Montmedy Road		
	Theescombe	Postal code:	6070
Telephone:	082 564 6691	Cell:	082 564 6691
E-mail:	louis@dphplanthire.co.za	Fax:	

Please Note: In instances where there is more than one individual / company responsible for the unlawful commencement of listed activities / waste management activities, please attach a list of with all contact details as Annexure A.

Environmental Assessment Practitioner (EAP):	Digital Soils Africa (Pty) Ltd		
Contact person:	Natalie Sharp		
Postal address:	1 Kemsley Street		
	Richmond Hill	Postal code:	6000
Telephone:	067 622 5687	Cell:	082 414 0472
E-mail:	natalie@dsafrica.co.za	Fax:	()
EAP Qualifications	B.Sc; B.Sc (Hons); Masters in Environmental Management (see Section 3: Part B)		
EAP Registrations/Associations	Pri.Sci.Nat (Reg no. 123443) Reg. EAP (EAPASA) Member of IAIA (1300697)		

Name of Landowner(s):	Shimbahills Safaris cc		
Contact person(s):	Mr. Louis Francois van der Walt		
Postal address:	129 Montmedy Road		
	Theescombe	Postal code:	6070
Telephone:	082 564 6691	Cell:	082 564 6691
E-mail:	louis@dphplanthire.co.za	Fax:	

Please Note: In instances where there is more than one landowner, please attach a list of landowners with their contact details as Annexure B.					
Owners consent:		Letters of consent from all landowners where the transgressor/s is not the landowner, or a detailed explanation by the applicant explaining why such letters of consent are not furnished must be attached to the application form as Annexure C. n/a			
Municipality in whose area of jurisdiction the activity falls:		Kouga Local Municipality			
Contact person:		Charl du Plessis Joezay Reed is the office administrator			
Postal address:		P O Box 26			
		Humansdorp		Postal code:	6300
Telephone		042 200 2200		Cell:	062 286 2604
E-mail:		jreed@kouga.gov.za		Fax:	()
Please Note: In instances where there is more than one Municipality involved, please attach a list of Municipalities with their contact details as Annexure D					
Property location:		Remainder of Portion 1 of the Farm Uitvlugt 194, Rd of Humansdorp			
Farm/Erf name & number (incl. portion):		Remainder of Portion 1 of the Farm Uitvlugt 194			
SG21 Digit code:		C034 0000 00000 194 00001			
Co-ordinates:		Latitude (S):		Longitude (E):	
		33°	52'	34.5"	24° 35' 35.9"
Please Note: Where there is more than one property involved (e.g. linear activities), attach a list of property descriptions as Annexure E. Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates must be in degrees, minutes and seconds. The minutes must be given to at least three decimals to ensure adequate accuracy. The EAP is required to contact the relevant competent authority with regards to the projection that must be used.					
Street address:		Remainder of Portion 1 of the Farm Uitvlugt 194, Rd of Humansdorp			
Magisterial District or Town:		Sarah Baartman District Municipality			
Please Note: In instances where there is more than one town or district involved, please attach a list of towns or districts as well as complete physical address information for the entire area as Annexure F.					
Closest City/Town:		Humansdorp		Distance	28.8Km
Zoning of Property:		Agriculture			
Please Note: In instances where there is more than one zoning, please attach a map clearly indicating the zoning of the different portions as Annexure G.					
Was a rezoning application required?					NO
Was a consent use application required?					NO
Please Note: Where planning approvals have been granted please attach the relevant approvals as Annexure H.					

3. APPLICATION HISTORY

(Cross out the appropriate box "☒" and provide a description where required).

Has any national, provincial or local authority considered any development / waste management applications on the property previously?	☒	No
If so, please give a brief description of the type and/or nature of the application/s: (In instances where there were more than one application, please provide a complete list below of these applications)		
No applications to national or provincial authorities has been made for a change in land use.		
Which authority considered the application(s):		
N/A		
Has any one of the previous application/s on the property been approved or rejected? If so provide a list of the successful and unsuccessful application/s and the reasons for decision/s.	☒	No
Provide detail on the period of validity of decision(s) and expiry dates of the above applications / licences etc.		

I hereby apply in terms of Section 24G of the National Environmental Management Act (Act no 107 of 1998 as amended) for the regularisation of the unlawful commencement or continuation of the listed activity(ies) in Section B of the application form:

Applicant (Full names) __ Louis Francois van der Walt __

Signature: _____

Place: __ Gqeberha __

Date: _____

EAP (Full names) _ Natalie Sharp _____

Signature: 

Place: _ Gqeberha _____

Date: __ 6 July 2026 _____

PART 1 - SECTION B: ACTIVITY INFORMATION

1. ACTIVITIES APPLIED FOR:

Applicants and EAPS are strongly advised to discuss the merits of a combined application (*if deemed applicable*) with the relevant competent authority prior to the completion of this application form and submission thereof.

The relevant competent authority will use its discretion in deciding to allow the submission of a single application for more than one NEMA section 24F(1) and / or NEM:WA section 20(b) contravention on one site.

All potential listed activities / waste management activities associated with the site must be indicated below. Only those activities for which the applicant applies will be considered.

3. APPLICATION HISTORY

(Cross out the appropriate box "X" and provide a description where required).

Has any national, provincial or local authority considered any development / waste management applications on the property previously?	☐	No
If so, please give a brief description of the type and/or nature of the application/s: (In instances where there were more than one application, please provide a complete list below of these applications)		
No applications to national or provincial authorities has been made for a change in land use.		
Which authority considered the application(s):		
N/A		
Has any one of the previous application/s on the property been approved or rejected? If so provide a list of the successful and unsuccessful application/s and the reasons for decision/s.	☐	No
Provide detail on the period of validity of decision(s) and expiry dates of the above applications / licences etc.		

I hereby apply in terms of Section 24G of the National Environmental Management Act (Act no 107 of 1998 as amended) for the regularisation of the unlawful commencement or continuation of the listed activity(ies) in Section B of the application form:

Applicant (Full names) Louis Francois van der Walt

Signature: JF van der Walt

Place: Gqeberha

Date: 15/10/2026

EAP (Full names) Natalie Sharp

Signature: N Sharp

Place: Gqeberha

Date: 6 July 2026

PART 1 - SECTION B: ACTIVITY INFORMATION

1. ACTIVITIES APPLIED FOR:

Applicants and EAPS are strongly advised to discuss the merits of a combined application (*if deemed applicable*) with the relevant competent authority prior to the completion of this application form and submission thereof.

The relevant competent authority will use its discretion in deciding to allow the submission of a single application for more than one NEMA section 24F(1) and / or NEM:WA section 20(b) contravention on one site.

All potential listed activities / waste management activities associated with the site must be indicated below. Only those activities for which the applicant applies will be considered.

The onus is on the applicant to ensure that all the applicable listed activities are included in the application.

Listed activities applied for. Identify the relevant listed activities applied for below:

ECA EIA Contraventions : Between 08 September 1997 end of day 09 May 2002	
Activities unlawfully commenced with on or after 08 September 1997 and before end 09 May 2002: EIA Regulations promulgated in terms of the ECA, Act No 73 of 1989, as amended	
Listed Activity(ies)	Details of Activity(ies)

ECA EIA Contraventions : Between 10 May 2002 and before end of day 02 July 2006	
Activities unlawfully commenced with on or after 10 May 2002 and before end 02 July 2006: EIA Regulations promulgated in terms of the ECA, Act No 73 of 1989, as amended	
Listed Activity(ies)	Details of Activity(ies)

NEMA EIA Contraventions : Between 03 July 2006 and before end of day 01 August 2010	
Activities unlawfully commenced with in terms of the EIA Regulations promulgated in terms of the NEMA, Act No 107 of 1998, as amended on or after 03 July 2006 and before end of day 01 August 2010	
Government Notice No. R386 Activity No(s):	Details of Activity(ies) requiring Basic Assessment

NEMA EIA Contraventions : On or after 02 August 2010 until 7 December 2014	
Activities unlawfully commenced with in terms of the EIA Regulations promulgated in terms of the NEMA, Act No 107 of 1998, as amended on or after 02 August 2010 until 7 December 2014	
Government Notice No. R544 Activity No(s):	Details of Activity(ies) requiring Basic Assessment
Government Notice No. R545 Activity No(s):	Details of Activity(ies) requiring a Scoping Report and EIA
Government Notice No. R546 Activity No(s):	Details of Activity(ies) requiring S&EIR

NEMA EIA Contraventions : On or after 8 December 2014 up to 6 April 2017

Activities unlawfully commenced with in terms of the EIA Regulations promulgated in terms of the NEMA, Act No 107 of 1998, as amended on or after 8 December 2014 **to 7 April 2017**

Government Notice No. R983 Activity No(s):	Details of Activity(ies) requiring Basic Assessment
12 (iv)	The development of (iv) dams, where the dam, including infrastructure and water surface area, exceeds 100m ² in size. The dams' surface area was increased to 0.7ha or 7000m ² – therefore exceeding the threshold.
Government Notice No. R984 Activity No(s):	Details of Activity(ies) requiring a Scoping Report
Government Notice No. R985 Activity No(s):	Details of Activity(ies) requiring Environmental Impact Assessment Report

NEMA EIA Contraventions : On or after 7 April 2017

Activities unlawfully commenced with in terms of the EIA Regulations promulgated in terms of the NEMA, Act No 107 of 1998, as amended on or after **7 April 2017**

Government Notice No. R327 Activity No(s):	Details of Activity(ies) requiring Basic Assessment
Government Notice No. R325 Activity No(s):	Details of Activity(ies) requiring a Scoping Report
Government Notice No. R324 Activity No(s):	Details of Activity(ies) requiring Environmental Impact Assessment Report

Waste Management Activities Contraventions: On or after 3 July 2007 up to end of day 28 November 2013

Activities unlawfully commenced with in terms of GNR 718 of 3 July 2009 published under the National Environmental Management Waste Act 59 of 2008

Listed Activity(ies)	Details of Activity(ies)

Waste Management Activities Contraventions : On or after 29 November 2013

Activities unlawfully commenced with in terms of GNR 921 of 29 November 2013 published under the National Environmental Management Waste Act 59 of 2008	
Listed Activity(ies)	Details of Activity(ies)

2. **ACTIVITY DESCRIPTION**

(Cross out the appropriate box "☒ " and provide a description where required).

(a) Is/was the project a new development or an upgrade of an existing development.	☒	Upgrade ☒
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(b) Clearly describe the activity and associated infrastructure commenced with, indicating what has been completed, what still has to be completed and applicable commencement dates.

(c) Provide details of all components of the activity and attach diagrams (e.g. architectural drawings or perspectives, engineering drawings, process flow charts etc.).		
Buildings	☒	NO
Provide brief description:		
N/A		
Infrastructure (e.g. roads, power and water supply/ storage)	☒	NO
Provide brief description:		
N/A		
Processing activities (e.g. manufacturing, storage, distribution)	☒	NO
Provide brief description:		
N/A		
Storage facilities for raw materials and products (e.g. volume and substances to be stored)		
Provide brief description	YES	☒
The bottom dam wall was extended with earth fill with a wall height of 3m with a crest length of 100m and 4m wide. The storage capacity of the bottom dam is 13 800m ³ and covers a surface area of 0.7ha when full. The spillway of the dam consists of an open channel that is 60m in length. The bottom dam wall consists of dense clay material with semi-pervious slopes.		
Storage and treatment facilities for solid waste and effluent generated by the project	☒	No
Provide brief description		
N/A		
Other activities (e.g. water abstraction activities, crop planting activities)	☒	No
Provide brief description		
N/A		

3. **ACTIVITY NEED AND DESIRABILITY**

Describe the need and desirability of the activity:
Agricultural areas around Humansdorp face persistent water reliability challenges due to the region's high climatic variability, frequent drought cycles, and limited surface-water availability. Livestock farmers in particular are vulnerable to these fluctuations, as consistent access to clean water is essential for animal health, productivity, and welfare. The existing water supply system—largely dependent on rainfall-fed streams, small farm reservoirs, and groundwater—has become increasingly unreliable. Seasonal rivers often experience reduced or zero flow during dry periods, while boreholes in parts of the Humansdorp region are constrained by low yields, variable groundwater quality, and the risk of over-abstraction. These constraints

make it difficult for farmers to maintain adequate daily water volumes for cattle, sheep, and dairy operations, which are significant contributors to the local agricultural economy.

The upgrade of the two dams provides a strategic and sustainable solution by capturing runoff during wetter periods and storing it for use during dry months. The dams enhance water security, reduce dependence on groundwater sources, and allow the farmer to maintain stable livestock operations even during drought. The dams also support broader climate-resilience objectives by improving on-farm water management, reducing pressure on regional water supply schemes, and enabling more predictable agricultural production.

Overall, the upgrade of the two dams in the Humansdorp agricultural landscape is driven by the need to ensure reliable, long-term water availability for livestock, safeguard agricultural productivity, and strengthen resilience to ongoing climatic and hydrological pressures.

Indicate the benefits that the activity has/had for society in general and also indicate what benefits the activity has/had for the local communities where it is located:

The local dams on Uitvlugt Farm provide several strategic and operational advantages, particularly given the Humansdorp region's highly variable rainfall and recurring drought conditions.

The farm dams ensure the following:

- Ensure continuous access to clean water throughout the year;
- Reduce dependence on boreholes with low or fluctuating yields;
- Capture and store runoff during wet periods;
- More predictable livestock watering schedules;
- Avoid livestock losses during dry periods;
- Strengthen long-term agricultural viability and economic stability.

4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical spatial size of the activity as well as associated infrastructure (footprints):	0
Indicate the area that has been transformed / cleared to allow for the activity as well as associated infrastructure	7000m ²
Total area (sum of the footprint area and transformed area)	7000m ²

5. SITE ACCESS

Was there an existing access road?	YES	
If no, what was the distance over which the new access road was built?		m
Describe the type of access road constructed: [indicate the position of the access road on the site plan]		
The farm Uitvlugt 194, can be accessed from a dirt road coming of the R62 main road.		

6. SITE PHOTOGRAPHS

Colour photographs of the site and its surroundings (taken of the site and from the site), both before (if available) and after the activity commenced, with a description of each photograph must be attached to this application. The vantage points from which the photographs were taken must be indicated on the site plan, or locality plan as applicable. If available, please also provide past and recent aerial photographs. It should be supplemented with additional photographs of relevant features on the site. Date of photographs must be included. Photographs must be attached under Annexure L to this form.

7. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

Please list all legislation, policies and/or guidelines that were or are relevant to this activity.

LEGISLATION	ADMINISTERING AUTHORITY	TYPE	DATE
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		Permit/ license/ authorization/comment	(if already obtained):
National Environmental Management Act (NEMA; Act No. 107 of 1998)	DEDEAT Eastern Cape	24G Environmental Authorisation	In Process
National Environmental Management: Biodiversity Act	DEDEAT Eastern Cape	No threatened or protected species occur on the site.	To be done, if required
National Environmental Management: Protected Areas Act	DEDEAT Eastern Cape	The site is not located within 5km from a nature reserves.	To be done, if required
National Heritage Resources Act (No 25 of 1999)	Eastern Cape Heritage Resources Authority	Provides for the protection of Heritage resources.	To be done, if required
Alien and Invasive Species Regulations, 1 August 2014	DEDEAT Eastern Cape	The Regulations categorise the listed invasive species, list restrictive activities about the release and spread of invasive species, provide a national framework to monitor, control and eradicate invasive species, regulate permits, provide risk assessment framework, and list compliance and enforcement regulations.	To be done, if required
The National Forest Act No. 84 of 1998 (NFA) & List of Protected Tree Species under the National Forest Act, 1998 (Act No. 84 of 1998)	Department of Environment, Forestry and Fisheries	No protected tree species occur on the site.	To be done, if required
The Eastern Cape Biodiversity Conservation Plan (ECBCP)	DEA & DEDEAT Eastern Cape	The Bioregional Plan provides the spatial plan that shows terrestrial and aquatic features in the Eastern Cape that are critical for conserving biodiversity and maintaining ecosystem functioning. The project area of influence (PAOI) overlaps with an ecological support area (ESA1).	To be done, if required
Eastern Cape the Provincial Nature Conservation Ordinance of 1974 (PNCO)	DEA & DEDEAT Eastern Cape	The Provincial Nature Conservation Ordinance (PNCO) protects the endangered and protected flora outside of protected areas. Species classified as Schedule 3 are endangered species. Species classified as Schedule 4 are protected species. A permit is required for the removal or destruction of species on the PNCO list. No species were identified by the Freshwater ecologist.	To be done, if required

POLICY/ GUIDELINES	ADMINISTERING AUTHORITY
Draft National Guideline for Consideration of Climate Change Implications in Applications for Environmental Authorisations	DEA

8. WASTE QUANTITIES (WHERE THE ACTIVITY IS A LISTED WASTE MANAGEMENT ACTIVITY)

Indicate or specify types of waste and list the estimated quantities (expected to be) managed daily (should you need more columns, you are advised to add more)

Hazardous waste	Non-hazardous waste	Total waste handled (tonnes per day)
n/a	n/a	n/a

Source of information supplied in the table above Mark with an "X"

Determined from volumes

Determined with weighbridge/scale

Estimated

n/a
n/a
± 0m ²

Recovery, Reuse, Recycling, treatment and disposal quantities:

Indicate the applicable waste types and quantities expected to be disposed of and salvaged annually:

TYPES OF WASTE	MAIN SOURCE (NAME OF COMPANY)	QUANTITIES		ON-SITE RECOVERY REUSE RECYCLING TREATMENT OR DISPOSAL	OFFSITE RECOVERY REUSE RECYCLING TREATMENT OR DISPOSAL	OFFSITE DISPOSAL
		TONS/MONTH	M ³ /MONTH	method & location	method location and contractor details	
		n/a	m ³	n/a	n/a	± m ³

9. GENERAL (WHERE THE ACTIVITY IS A LISTED WASTE MANAGEMENT ACTIVITY)

Prevailing wind direction Westerly

November – April	n/a
May - October	n/a

The size of population to be served by the facility

	Mark with "X"	Comment
0-499		
500-9,999		
10,000-199,999		
200,000 upwards		

PART 1 - SECTION C: PROPOSED PUBLIC PARTICIPATION

1. PUBLIC PARTICIPATION PROCESS

The person conducting the public participation process must fulfil the requirements outlined in Chapter 6 of the 2014 NEMA EIA Regulations as amended in April 2017 and must take into account any applicable guidelines published in terms of Section 24J of NEMA, as well as any other guidance provided by the Department.

Please highlight the appropriate box below to indicate the public participation process that has been or is proposed to be undertaken, including exemptions that have been/will be applied for: (Note that in the event that exemptions are to be applied for, please note that the Exemption Regulations are to be complied with and the Department is to be consulted in order to determine the process and order of events).

1. In terms of regulation 41 of the EIA Regulations, 2014 -			
(a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of -			
(i) the site where the activity to which the application relates is or is to be undertaken; and	~~YES~~	EXEMPTION	
(ii) any alternative site – there is no alternative site	YES	EXEMPTION	
(b) giving written notice, in any manner provided for in section 47D of the NEMA, to –			
(i) the occupiers of the site and, if the applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;	YES	EXEMPTION	~~N/A~~
(ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;	~~YES~~	EXEMPTION	
(iii) the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;	~~YES~~	EXEMPTION	
(iv) the municipality (Local and District Municipality) which has jurisdiction in the area;	~~YES~~	EXEMPTION	
(v) any organ of state having jurisdiction in respect of any aspect of the activity; and	~~YES~~	EXEMPTION	
(vi) any other party as required by the Department;	YES	EXEMPTION	~~N/A~~
(c) placing an advertisement in -			
(i) one local newspaper; or	~~YES~~	EXEMPTION	
(ii) any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;	YES	EXEMPTION	~~N/A~~
(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken	YES	EXEMPTION	~~N/A~~

(e) using reasonable alternative methods, as agreed to by the Department, in those instances where a person is desirous of but unable to participate in the process due to— (i) illiteracy; (ii) disability; or (iii) any other disadvantage.	YES	EXEMPTION	~~N/A~~
If you have indicated that “EXEMPTION” applies to any of the above, then a separate Application for Exemption must be submitted.			
2. The NEM: AQA and NEM:WA requires that a notice must be placed in at least two newspapers. n/a			
If applicable, have/will an advertisement be placed in at least two newspapers?	YES	NO	
If “NO”, then an application for exemption from the requirement must be applied for.			

Note: It is no longer possible to obtain permission to deviate from the requirements to give notice to potential interested and affected parties. Unless exemption has been granted from a particular requirement, the requirement must be met. If an application for exemption is refused, the requirement in question must be met.

2. PUBLIC PARTICIPATION UNDERTAKEN PRIOR TO THE SUBMISSION OF THIS APPLICATION

Where public participation in terms of Regulations 40(3) and 41 was undertaken prior to submission of this application, please provide a summary of the steps followed to date. • A 30-day Public Participation Process took place for notifying the general public with an advertisement in the local newspaper (the Kouga Express) and a notice board that was erected at the site on 16 July 2026. The time to register as an IA&P is between 16 July – 17 August 2026 (considering Regulations 3(2) NEMA 2014 as amended 2017). The Public Participation Process consisted of: ○ One notice board, placed at the boundary of the site, at a location that is conspicuous to and accessible by the public at the boundary of the site on 16 July 2026. This provides time for potential I&AP's to register and details to access a draft document from Digital Soils Africa's website for comment, should they wish to comment. ○ An advertisement in the Kouga Express was placed on 16 July 2026 to provide potential I&AP's to register/comment. This provides time for potential I&AP's to register and details to access a draft document for comment, should they wish to comment. • A written notice (which consisted of a Background Information Document and cover letter) was sent via email to the municipal councillor of Ward 1 (which is the ward in which the site is situated) of the Kouga Municipality, and the organs of the state that have jurisdiction in respect of any activity and the neighbours to the site on 16 July 2026. A 30-day comment period has been provided and will end on 17 August 2026. As this is a draft document submitted concurrently with the commencement of the public participation process, including the newspaper advertisement and site notice, photographic proof of the site notice and the newspaper tearsheet are not yet available. These supporting documents will be included in the Final Section 24G Report.
--

Cover letter and BID

29 October 2026

Dear Interested and Affected Party

SECTION 24G APPLICATION IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998, FOR DAM CONSTRUCTION ON PORTION 1 OF FARM UITVLUGHT NO. 194, HUMANSDORP. APPLICANT: SHIMBAHILLS SAFARIS CC

Shimbahills Safaris CC appointed Digital Soils Africa (Pty) Ltd (DSA) to conduct the necessary environmental impact assessment and public participation for the above-mentioned project.

In terms of Section 41 of NEMA Regulations, you have been identified as an Interested and Affected Party and are invited to participate in the pre-application public participation process. All written comments will be responded to and forwarded to the relevant departments, in the form of a Public Participation Report.

The purpose of this letter and attached document is therefore to:

- Inform you of the locality of the proposed environmental authorization application.
- Allow you the opportunity to raise concerns or comments in respect of the proposed project detailed in the attached Background Information Document.

Public Participation Process

Attached, please find the Background Information Document (BID). The purpose of the BID is to provide you with *basic* information regarding the proposed project and provide the opportunity to register as interested and affected parties and grant you the opportunity to raise any comments you might have on the proposed project.

You are invited to register as an I&AP and/or submit any comments, concerns or representations regarding the proposed development in writing. Please note that registration as an I&AP is not a prerequisite for submitting comments. Registration requests and comments should be submitted, in writing, to the Environmental Assessment Practitioner (EAP) **on or before 30 November 2026 at 17:00**.

Should you wish to remain informed of subsequent stages of the environmental assessment process, you are encouraged to register as an I&AP. If no comments are received from you by the closing date, it will be assumed that you have no comments to submit.

Way Forward

- The Draft Section 24G Report and required specialist reports will be subjected to review by all registered I&AP's and relative governmental departments, following the time frames as stipulated in Section 3 (1) & (8) of the NEMA regulations (30 days).

-
- The documents will be made available on the DSA website, www.dsafrica.co.za. Please follow the link to Environmental, Documents and choose the *Uitvlug* link.
 - All comments received and responses written will be captured in the Public Participation Report and submitted to the Department of Economic Development and Environmental Affairs (DEDEAT).
 - All required documents will be submitted to the relevant department for decision making.
 - If the applications are found acceptable, the relevant department will either issue or reject the Environmental Authorisation.
 - As an I&AP's, you will be notified of the final decision of the relevant departments.

Please note that all information received will form part of the public record and may be made available to the public. By submitting comments, you consent to the inclusion of your personal information in public participation records, in accordance with POPIA. Correspondence throughout the remainder of the environmental process, including notification of the Section 24G Report will be distributed to registered I&APs only.

Yours sincerely



Natalie Sharp

Pri.Sci.Nat (Reg nr. 123443)
Reg. EAP (EAPASA)(2020/230)
Member of IAIAAs (7237)

BACKGROUND INFORMATION
REGARDING SECTION 24G
APPLICATION FOR DAM
CONSTRUCTION ON PORTION
1 OF THE FARM UITVLUGT
NO.194, HUMANSDORP

PREPARED FOR

SHIMNAHILLS SAFARIS CC

29 OCTOBER 2026



DSA
Digital Soils Africa



+27 82 414 0472



www.dsafrica.co.za



natalie@dsafrica.co.za



Walmer

Port Elizabeth

Directors:

Dr Darren Bouwer

Prof Johan Van Tol

Prof George Van Zijl

PURPOSE OF THIS DOCUMENT

The purpose of this document is to provide all I&AP's with information about the intent of The Shimnahlills Safaqr's CC to apply for a Section 24G for the construction of a dam on Portion 1 of the Farm Uitvlugt No. 194, Humansdorp.

As an identified I&AP, you are invited to register and comment on any aspect related to the proposed development between 29 October 2026 – 30 November 2026.

BRIEF PROJECT DESCRIPTION

The site is situated on the Remainder of Portion 1 of the Farm Uitvlugt 194 (also known as Hol Rivier Noord 194), within the Kouga Local Municipality (KLM) is located in the Sarah Baartman District in the province of the Eastern Cape, South Africa (33° 52' 36.22" S; 24° 35' 35.54" E). The farm is located within Ward 1 in Kouga Local Municipality. The nearest town is Humansdorp that is situated approximately 23,65 km southeast of the farm.

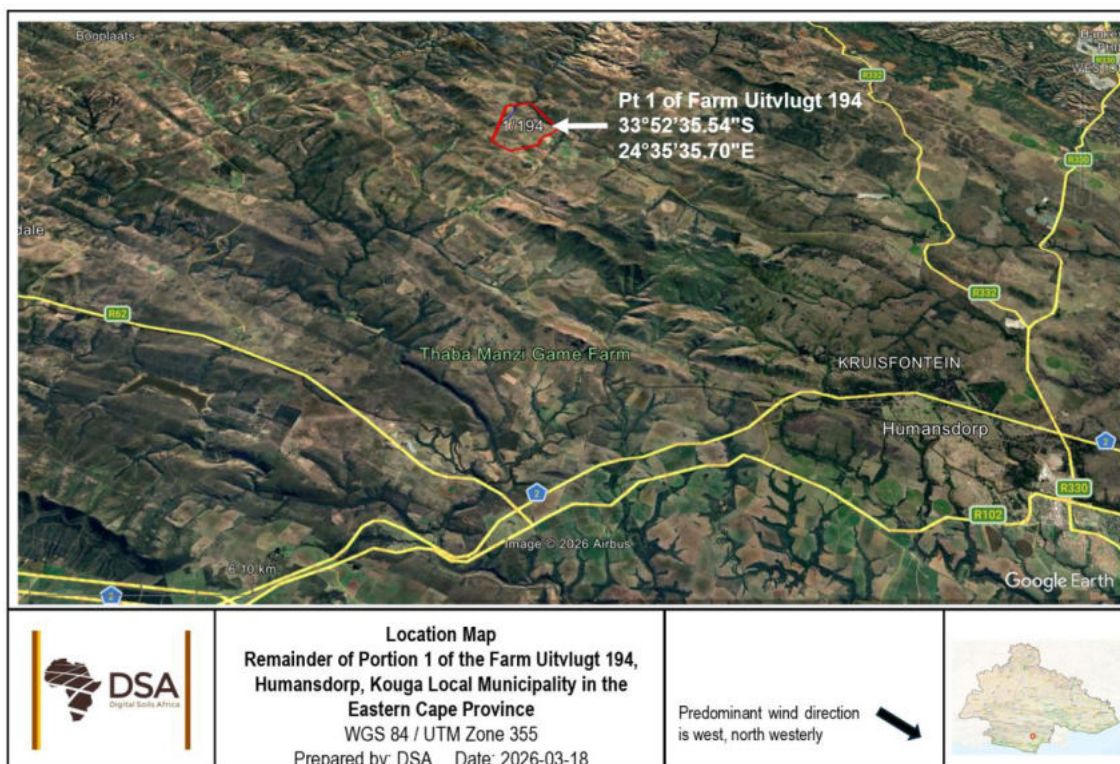


Figure 1: Site location.

Digital Soils Africa (Pty) LTD (DSA) was tasked by Shimnabills Safaris CC to conduct environmental investigations and complete the Section 24G report.

Shimnabills Safaris CC has submitted an application in terms of Section 24G of the National Environmental Management Act (NEMA) to regularise the unlawful upgrading of two existing farm dams on the Remainder of Portion 1 of Farm Uitvlugt 194, approximately 24 km north-west of Humansdorp within the Kouga Local Municipality, Eastern Cape. The dams are located on a tributary of the Hol River and are used to provide water for livestock on the agricultural property.

The two dams were originally constructed during the 1990s and early 2000s and were subsequently enlarged in 2016 to improve on-farm water storage. The enlargement increased the combined water surface area of the dams to approximately 0.7 hectares (7,000 m²), thereby triggering a listed activity under the 2014 NEMA Environmental Impact Assessment Regulations. Environmental authorisation was not obtained prior to the commencement of these works, necessitating the submission of a Section 24G application to rectify the non-compliance. No further enlargement or modification of the dams is proposed as part of this application.

POTENTIAL ENVIRONMENTAL ISSUES

Below is a summary of the potential impacts that could have occurred at the site and does not include the full discussion on how these impacts have been allocated. For the discussion and method of deriving the impacts, please refer to the draft Section 24G document on the DSA website.

The environmental assessment undertaken as part of the Section 24G application identified several environmental aspects associated with the historical enlargement of the existing farm dams. As the works have already been completed, the assessment focuses on the ongoing operational and residual impacts of the dams.

The retrospective Environmental Impact Assessment concludes that the most significant environmental issue relates to freshwater ecology and hydrological alteration resulting from the historical enlargement of the dams. These impacts are assessed as Moderate because the dams are permanent infrastructure that has altered the local aquatic environment.

With implementation of the recommended mitigation and management measures, many impacts can be reduced to Low significance, although some Moderate residual impacts associated with permanent alteration of the watercourse will remain. No impacts were identified as being of High significance.

Environmental Impact	Significance	Summary
Freshwater biodiversity and aquatic ecosystems	Moderate (Most Significant Impact)	The enlarged dams have permanently altered local hydrology and portions of the riparian environment. Operational impacts are Moderate before mitigation, with some reducing to Low after mitigation. Moderate residual impacts remain due to permanent changes to flow patterns, riparian habitat and aquatic ecological functioning.
Hydrological processes	Moderate	The enlarged dams intercept and store runoff, resulting in changes to natural flow patterns and water storage within the catchment. Appropriate management is required to minimise downstream impacts.
Riparian habitat and vegetation	Low to Moderate	The dam enlargement disturbed portions of the riparian zone. Given the relatively limited disturbance, rehabilitation and ongoing management are expected to keep impacts at a low to moderate significance.
Soil erosion and sedimentation	Low	Localised erosion and sediment movement may occur if embankments are not properly maintained. Erosion control and rehabilitation measures reduce this risk to a low significance.
Water quality	Low	There is potential for localised water quality impacts from sedimentation and agricultural runoff. Good stormwater and agricultural management practices are expected to minimise these impacts.

PUBLIC PARTICIPATION

In terms of the NEMA, public participation forms an integral part of the environmental assessment process. The public participation process provides people who may be affected by the proposed development with an opportunity to provide comments and raise issues of concern about the project or make suggestions that may result in enhanced benefits for the project.

Comments and issues raised during the public participation process will be captured, evaluated, and included in a Public Participation Report. These issues will be addressed and included in the final Section 24G document, which will be submitted to the Department of Economic Development and Environmental Affairs (DEDEAT).

You are invited to register as an I&AP and/or submit any comments, concerns or representations regarding the proposed development in writing to the following email: natalie@dsafrica.co.za. Please note that registration as an I&AP is not a prerequisite for submitting comments. Registration requests and comments should be submitted, in writing, to the Environmental Assessment Practitioner (EAP) **on or before 30 November 2026 at 17:00**.

Alternatively, a copy of the Draft Section 24G document is also available on the DSA website at www.dsafrica.co.za for a full assessment of impacts. Please follow the link to Environmental, Documents, and choose the Uitvlucht link.

If you have any other questions or inquiries, please do not hesitate to contact the office at 082 414 0472. If no comments are received from you, it will then be regarded that you do not have any comments.

3. **LIST OF THE STATE DEPARTMENTS CONSULTED/TO BE CONSULTED**

Provide a list of all the State departments that will be/have been consulted, including the name and contact details of the relevant official.
Kouga Local Municipality P O Box 21 Jeffreys Bay 6330 Attention: Municipal Manager Charl du Plessis Joezay Reed is the office administrator Email: jreed@kouga.gov.za Tel: 042 200 2200 Environmental Officer: Nomvelo Siwela Email: nsiwela@kouga.gov.za
Kouga Municipality Ward 1 Councillor Cllr. Nozuko Ntshota 073 759 8802 nntshota@kouga.gov.za
Sarah Baartman District Municipality Contact Division: Infrastructure and Planning Tel: 041 508 7099 / 041 508 7111 Email: cmabindla@sbdm.co.za Address: P O Box 318 32 Govern Mbeki Avenue (Standard Bank Building) Port Elizabeth 6000
Department of Water and Sanitation (Environmental assessment) Ntombiyamayirha Mpumela and Sonke Ngxeba Tel: 041 501 0717 073 742 6767 Email: MpumelaN@dws.gov.za or NgxebaS@dws.gov.za Private Bag X6041; Port Elizabeth; 6000
Department of Agriculture, Land Reform and Rural Development 9 Arundel Crescent, Stirling, East London 5200 G. P. Dumse Email: GcinileD@nda.gov.za.
Eastern Cape Parks and Tourism P O Box 11235 Southernwood East London 5213 Ms. Lodeka Jilimane (Environmental Planner) Email: Lodeka.Jilimane@ecpta.co.za Tel: 043 705 4400
Department of Environment, Forestry and Fisheries (DEFF) Port Elizabeth 54 Paterson Road North End

6000
Mr. Zinzile Mtotywa
Tel: 063 750 4427 (official) 041 407 4052
Email: zmtotywa@dffe.gov.za

Department of Economic Development, Environmental Affairs and Tourism
Control Environmental Officer :Environmental Compliance and Enforcement
Privaqte Bag X5001
Greenacres
Gqeberha
6057
Mr. Vuyo Maqutu
Tel: 041 508 5840 / 079 503 1762
Email: Vuyo.Maqutu@dedea.gov.za

Note: A State department consulted in terms of Section 24O(2) of NEMA and Regulations 3(4) and 43(2) must within 30 days from the date of the Department's request for comment, submit such comment in writing to the Department. The applicant/EAP is therefore required to inform this Department in writing when the Basic Assessment Report / Scoping Report / Environmental Impact Assessment Report or any other information / report as directed by the Department is submitted to the relevant State Departments. Upon receipt of this confirmation, this Department will in accordance with Section 24O (2) & (3) of the NEMA (as amended), inform the relevant State Departments of the commencement date of the 30 day commenting period.

PART 1 – SECTION D: ANNEXURES TO PART 1

The following annexures must be attached where appropriate:

Appendix	Cross out ("X") the box if Annexures attached
Annexure A: list of individuals or companies where there is more than one transgressor.	n/a
Annexure B: List of landowners in the event that there is more than one landowner.	n/a
Annexure C: Landowners' consent where the transgressor is not the landowner.	n/a
Annexure D: List of municipalities where the activities span more than one municipality	Only the Kouga Local Municipality is applicable
Annexure E: List of properties where there are more than one property involved.	Only one property is applicable
Annexure F: List of magisterial districts or towns if more than one is affected.	Only the Sarah Baartman DM is applicable
Annexure G: Map depicting the zonings of various portions in the event where there is more than one zoning.	The whole property is zoned as Agricultural
Annexure H: List of all planning approvals where such have been granted	n/a
Annexure I Location map	X
Annexure J: Site plan(s)	X
Annexure K: Photographs	X
Annexure L: Permit(s) / license(s) from any other organ of state including service letters from the municipality	n/a
Annexure M: Any Other (describe) Environmental Impact Assessment and Operational Environmental Management Plan	X

PART 2

PART 2 – SECTION A: DIRECTIVE

Section 24G(1) of the National Environmental Management Act, 1998 (Act 107 of 1998) ("NEMA") provides that on application by a person who has commenced with a listed or specified activity without an environmental authorisation in contravention of section 24F(1);

or a person who has commenced, undertaken or conducted a waste management activity without a waste management licence in terms of section 20(b) of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) ("NEM:WA") the Minister, Minister responsible for mineral resources or MEC concerned (or the official to which this power has been delegated), as the case may be, may direct the applicant to-

i	immediately cease the activity pending a decision on the application submitted in terms of this subsection
ii	investigate, evaluate and assess the impact of the activity on the environment
iii	remedy any adverse effects of the activity on the environment
iv	cease, modify or control any act, activity, process or omission causing pollution or environmental degradation
v	contain or prevent the movement of pollution or degradation of the environment
vi	eliminate any source of pollution or degradation
vii	compile a report containing-
	aa a description of the need and desirability of the activity
	bb an assessment of the nature, extent, duration and significance of the consequences for or impacts on the environment of the activity, including the cumulative effects and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity
	cc a description of mitigation measures undertaken or to be undertaken in respect of the consequences for or impacts on the environment of the activity
	dd a description of the public participation process followed during the course of compiling the report, including all comments received from interested and affected parties and an indication of how the issues raised have been addressed
	ee an environmental management programme
viii	provide such other information or undertake such further studies as the Minister, Minister responsible for mineral resources or MEC, as the case may be, may deem necessary.

You are hereby provided with an opportunity to make representations on any or all of the abovementioned instructions, including where you are of the opinion that any of these instructions are not relevant for the purposes of your application, setting out the reasons for your assertion. Kindly note further that, after taking your representations into account, a final directive may be issued.

The farm is located within an agricultural area. Both dams were built with the aim to secure water for stock (one was built in 1990 and the other between 2000 and 2010). Due to the region's high climatic variability, frequent drought cycles, and limited surface-water availability. The farmer identified the risk and vulnerability to these fluctuations. The only feasible option on the land owned was to increase the existing dams on the farms to ensure and secure clean water for the animals. This provided a necessary long-term water provision plan for the animals.

The dams do not impact on downstream users and the freshwater specialist noted that the operation phase of the project poses "Moderate" pre-mitigation risks to the freshwater ecosystems, which can change to "Low" post-mitigation risks for some impacts.

It is recommended that the site be investigated by officials and that the attached Environmental Impact Assessment, the Environmental Management Plan and all the support specialist reports be reviewed before a decision is made by the Department.

PART 2 - SECTION B: DEFERRAL

Section 24G(7) of the NEMA provides that if at any stage after the submission of an application it comes to the attention of the Minister, the Minister responsible for mineral resources or the MEC, that the applicant is under criminal investigation for the contravention of, or

failure to comply with, section 24F(1) of the NEMA or section 20(b) of the NEM:WA, the Minister, Minister responsible for mineral resources or MEC may defer a decision to issue an environmental authorisation until such time as the investigation is concluded and-

- (a) the National Prosecuting Authority has decided not to institute prosecution in respect of such contravention or failure;
- (b) the applicant concerned is acquitted or found not guilty after prosecution in respect of which such contravention or failure has been instituted; or
- (c) the applicant concerned has been convicted by a court of law of an offence in respect of such contravention or failure and the applicant has in respect of the conviction exhausted all the recognised legal proceedings pertaining to appeal or review.

Kindly answer the following questions:

Are you, the applicant, being investigated for the contravention of section 24F(1) of the NEMA in respect of a matter that <u>is not subject to this application</u> and in any province in the Republic?		NO	
If yes provide details of the offence being investigated and authority conducting the investigation. If uncertain provide details of the activity or activities in relation to which you suspect you may be under investigation.			
Are you, the applicant, being investigated for the contravention of section 20(b) of the NEMWA in respect of a matter that is <u>not subject to this application</u> and in any province in the Republic?		NO	
If yes provide details of the offence being investigated and authority conducting the investigation. If uncertain provide details of the activity or activities in relation to which you suspect you may be under investigation.			
Are you, the applicant, being investigated for an offence in terms of section 24F(1) of the NEMA or section 20(b) of the NEMWA <u>in terms of which this application directly relates</u> ?		NO	
If yes provide details of the offence being investigated and authority conducting the investigation. If uncertain provide details of the activity or activities in relation to which you suspect you may be under investigation.			

If you have answered yes to any of the above questions, you are hereby provided with an opportunity to make representations as to why the Minister, Minister responsible for mineral resources or MEC, as the case may be, should not defer the application as he or she is entitled to do under section 24G(7).

PART 2 - SECTION C: QUANTUM OF THE SECTION 24G FINE

(Note that the information contained in this section can be preliminary information that is to be updated once the necessary assessments as directed by the Department has been completed)

Section 24G(4) of the NEMA makes it mandatory for an applicant to pay an administrative fine as determined by the competent authority before the Minister, Minister responsible for mineral resource or MEC may take a decision on whether or not to grant *ex post facto* environmental authorisation or a waste management licence as the case may be. The quantum of this fine may not exceed R5 million.

Having regard to the factors listed below, you are hereby afforded with an opportunity to make representations in respect of the quantum of the fine and as to why the competent authority should not issue a maximum fine of R5 million.

Please note that Part 1 of this section must be completed by an independent environmental assessment practitioner after conducting the necessary specialist studies.

Please also include in your representations whether or not the activities applied for in this application (if more than 1) are in your view interrelated and provide reasons therefor.

PART 2 – SECTION C.1: THE IMPACTS OR POTENTIAL IMPACTS OF THE ACTIVITY/ACTIVITIES

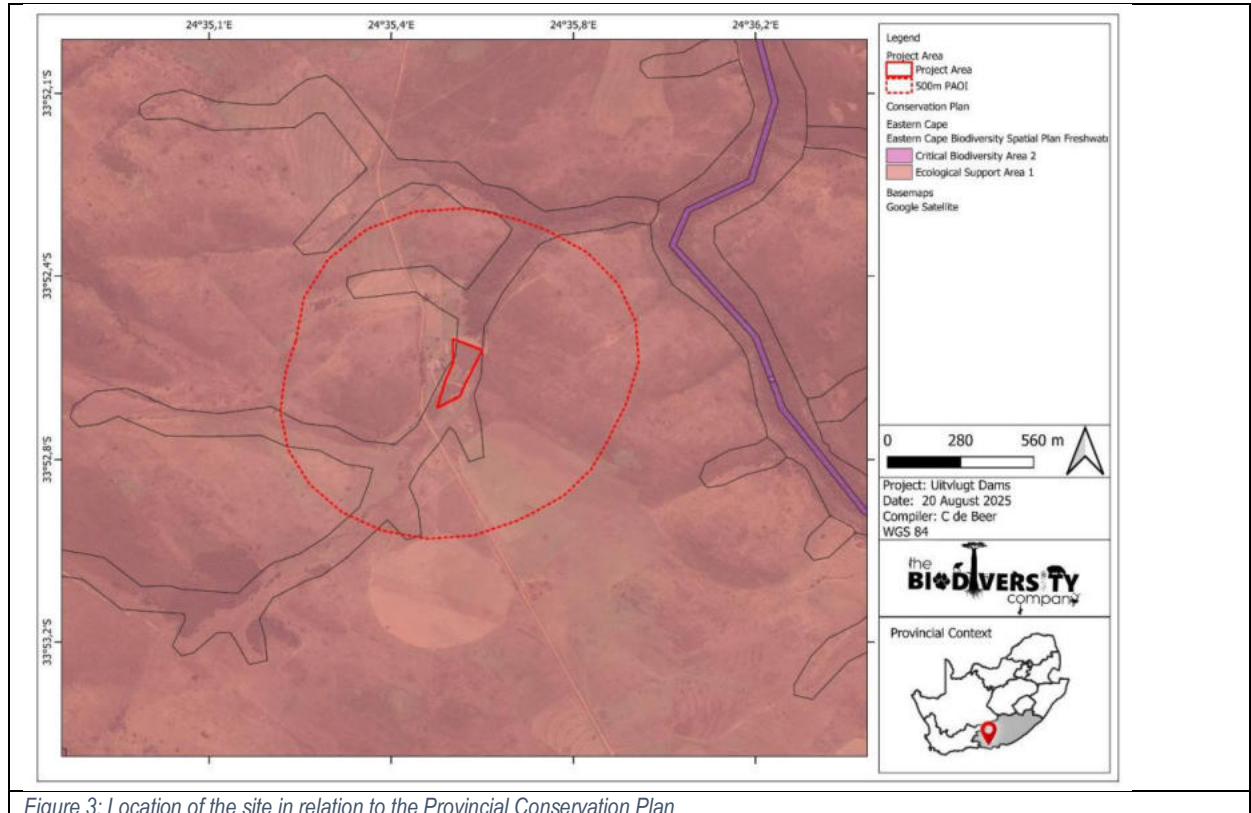
Index	Socio Economic Impact	Place an “x” in the appropriate box
	Description of variable	
	The activity is not giving, has not given and will not give rise to any negative socio-economic impacts	X
	The activity is giving, has given, or could give rise to negative socio-economic impacts, but highly localised	
	The activity is giving, has given, or could give rise to significant negative socio-economic and regionalized impacts	
	The activity is resulting, has resulted or could result in wide-scale socio-economic impacts.	
Motivation: Because the enlargement is not a new disturbance, there is no new socio-economic risks—only the need to manage existing conditions. This eliminates the typical construction-phase impacts (noise, dust, disruption, safety risks, temporary loss of access) that usually drive socio-economic concerns. The PAOI contains no settlements, no community infrastructure, and no heritage sites. There is no displacement, no loss of land for community use, and no impact on public access, meaning no negative socio-economic consequences for surrounding communities.		

Index	Biodiversity Impact	Place an “x” in the appropriate box																											
	Description of variable																												
	The activity is not giving, has not given and will not give rise to any impacts on biodiversity	X																											
	The activity is not giving, has not given and could give rise to localised biodiversity impacts																												
	The activity is not giving, has not given and could give rise to significant biodiversity impacts																												
	The activity is, has or is likely to permanently / irreversibly transform/ destroy a recognised biodiversity ‘hot-spot’ or threaten the existence of a species or sub-species.																												
Motivation: The Freshwater Ecology Impact Assessment noted that both dams (top & bottom) were enlarged almost a decade ago. The activity is not new and no new clearing, excavation or disturbance will take place. Biodiversity (freshwater ecology) was assessed via desktop information (Table 1) and a site visit conducted on the 9th July 2025. A summary of the key information sources and their relevance to the site specific dams are listed below. <i>Table 1: Summary of the relevance of the proposed project to ecologically important datasets</i> <table border="1"> <thead> <tr> <th>Desktop Information</th><th>Relevance</th><th>Comments</th></tr> </thead> <tbody> <tr> <td>Environmental Screening Tool</td><td>Yes</td><td>The entire PAOI overlaps an area of very high aquatic biodiversity sensitivity due to the presence of Ecological Support Areas.</td></tr> <tr> <td>Strategic Water Source Areas</td><td>No</td><td>The PAOI is not located within any SWSAs for groundwater or surface water.</td></tr> <tr> <td>Conservation Plan</td><td>Yes</td><td>The PAOI does overlap with ESA1.</td></tr> <tr> <td>National Biodiversity Assessment (NBA)</td><td>No</td><td>The PAOI does not overlap with any NBA wetlands/rivers, but it drains towards and NBA river (Hol River).</td></tr> <tr> <td>Aquatic Ecosystem Threat Status</td><td>No</td><td>The PAOI does not overlap with any endangered watercourses, but it drains towards the ‘Endangered’ Hol River.</td></tr> <tr> <td>Aquatic Ecosystem Protection Level</td><td>No</td><td>The project does not intersect any protected watercourses.</td></tr> <tr> <td>National Freshwater Ecosystem Priority Areas (NFEPA)</td><td>No</td><td>The PAOI does not intersect with any NFEPA river or Priority wetlands, but it drains towards the Hol River which is classified as a NFEPA river and a Priority wetland.</td></tr> <tr> <td>Protected Areas</td><td>No</td><td>The PAOI does not overlap any Protected Areas.</td></tr> </tbody> </table>			Desktop Information	Relevance	Comments	Environmental Screening Tool	Yes	The entire PAOI overlaps an area of very high aquatic biodiversity sensitivity due to the presence of Ecological Support Areas.	Strategic Water Source Areas	No	The PAOI is not located within any SWSAs for groundwater or surface water.	Conservation Plan	Yes	The PAOI does overlap with ESA1.	National Biodiversity Assessment (NBA)	No	The PAOI does not overlap with any NBA wetlands/rivers, but it drains towards and NBA river (Hol River).	Aquatic Ecosystem Threat Status	No	The PAOI does not overlap with any endangered watercourses, but it drains towards the ‘Endangered’ Hol River.	Aquatic Ecosystem Protection Level	No	The project does not intersect any protected watercourses.	National Freshwater Ecosystem Priority Areas (NFEPA)	No	The PAOI does not intersect with any NFEPA river or Priority wetlands, but it drains towards the Hol River which is classified as a NFEPA river and a Priority wetland.	Protected Areas	No	The PAOI does not overlap any Protected Areas.
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National Biodiversity Assessment (NBA)	No	The PAOI does not overlap with any NBA wetlands/rivers, but it drains towards and NBA river (Hol River).																											
Aquatic Ecosystem Threat Status	No	The PAOI does not overlap with any endangered watercourses, but it drains towards the ‘Endangered’ Hol River.																											
Aquatic Ecosystem Protection Level	No	The project does not intersect any protected watercourses.																											
National Freshwater Ecosystem Priority Areas (NFEPA)	No	The PAOI does not intersect with any NFEPA river or Priority wetlands, but it drains towards the Hol River which is classified as a NFEPA river and a Priority wetland.																											
Protected Areas	No	The PAOI does not overlap any Protected Areas.																											

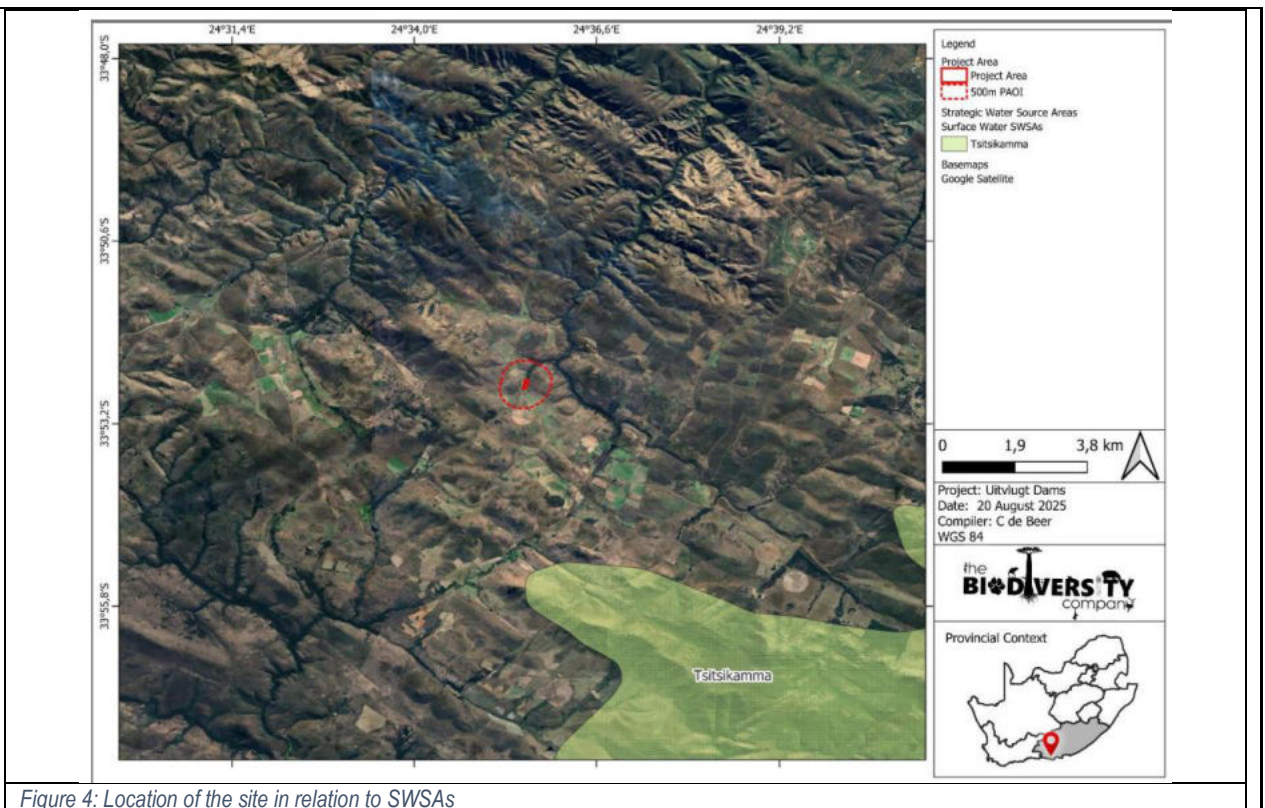
Site Specific Assessment

The dams are located within one for the reaches draining towards the Hol River. The instream and riparian habitat of the Hol River reach was rated as Seriously Modified (class E), indicating a large loss of natural habitat, biota, and basic ecosystem function. Anthropogenic activities within the local area and catchment that have largely contributed to the deteriorated state of the system include instream impoundments leading to inundation, flow modifications, channel modifications and exotic vegetation encroachment. This combination of impacts has resulted in habitat loss, encroachment of alien vegetation into the riparian habitat, flow modification, deterioration of water quality, and impacts to instream and riparian integrity.

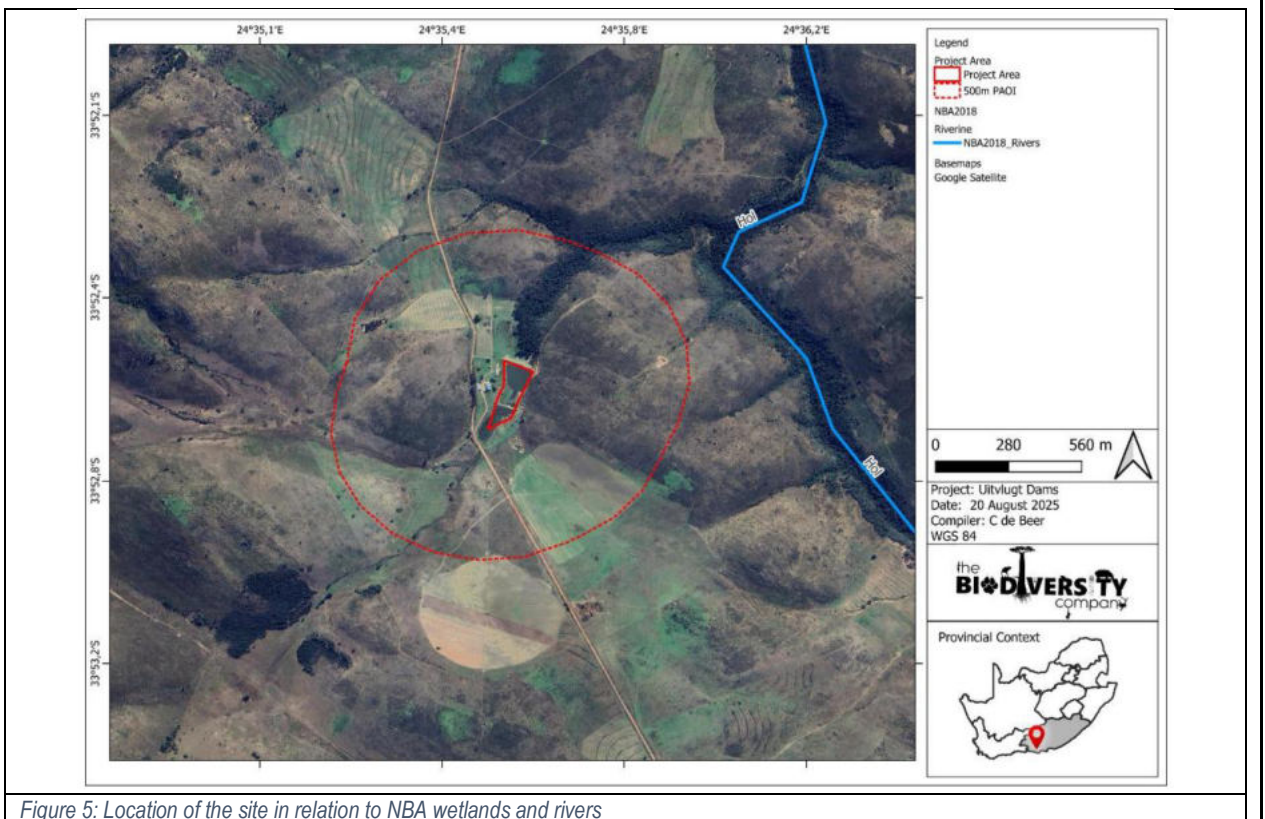
The National Web-Based Environmental Screening Tool has characterised the aquatic biodiversity sensitivity theme of the majority of the PAOI as “Very High” due to the presence of Ecological Support Areas. Ecological Support Areas (ESAs) are areas that are not essential for meeting biodiversity representation targets but play an important role in supporting the ecological functioning of ecosystems as well as adjacent Critical Biodiversity Areas, and/or in delivering ecosystem services that support socioeconomic development (SANBI, 2017) (Figure 3).



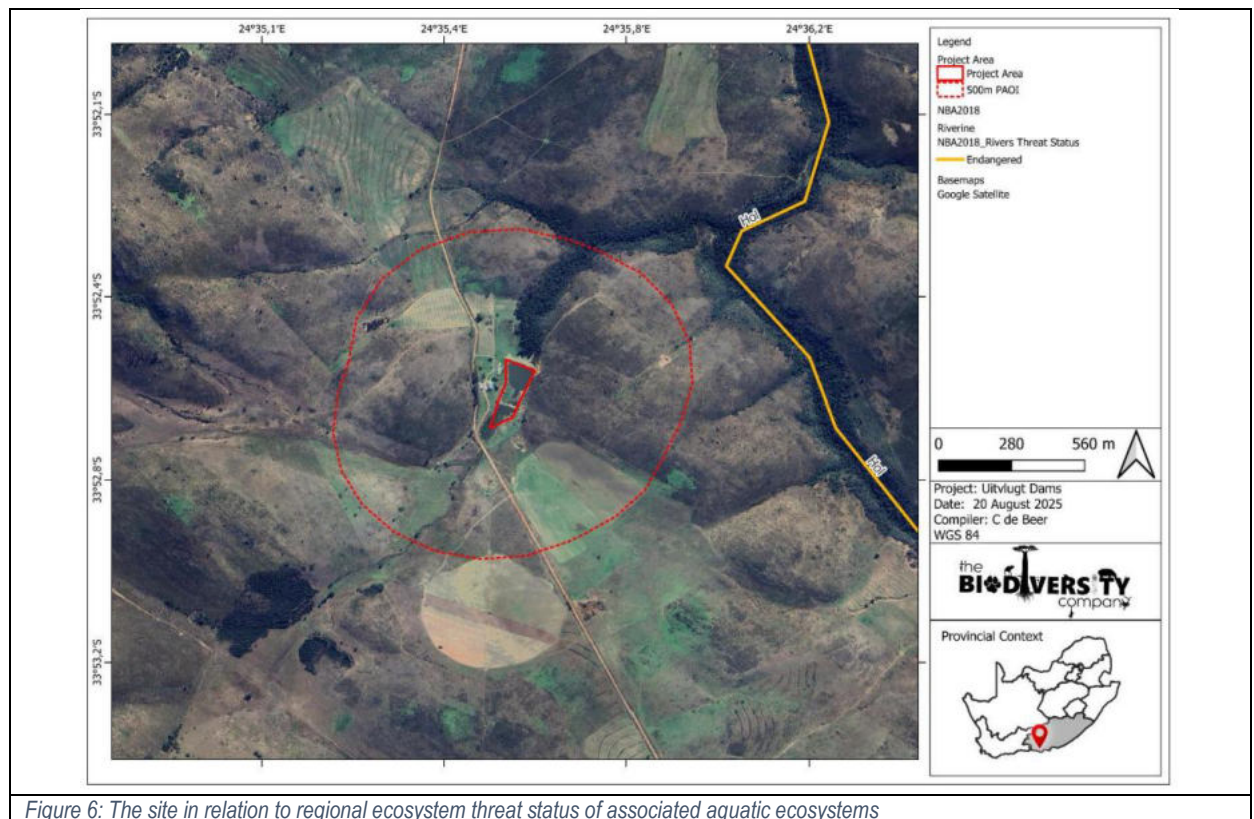
According to the Strategic Water Source Areas (SWSAs) of South Africa, Lesotho and Swaziland, the project area is not located within any SWSAs for surface water or groundwater (Figure 4).



According to the NBA (**Figure 5**) the PAOI does not overlap with any NBA wetlands/rivers, but it should be acknowledged that PAOI drains towards the Hol River which is classified as an NBA river.

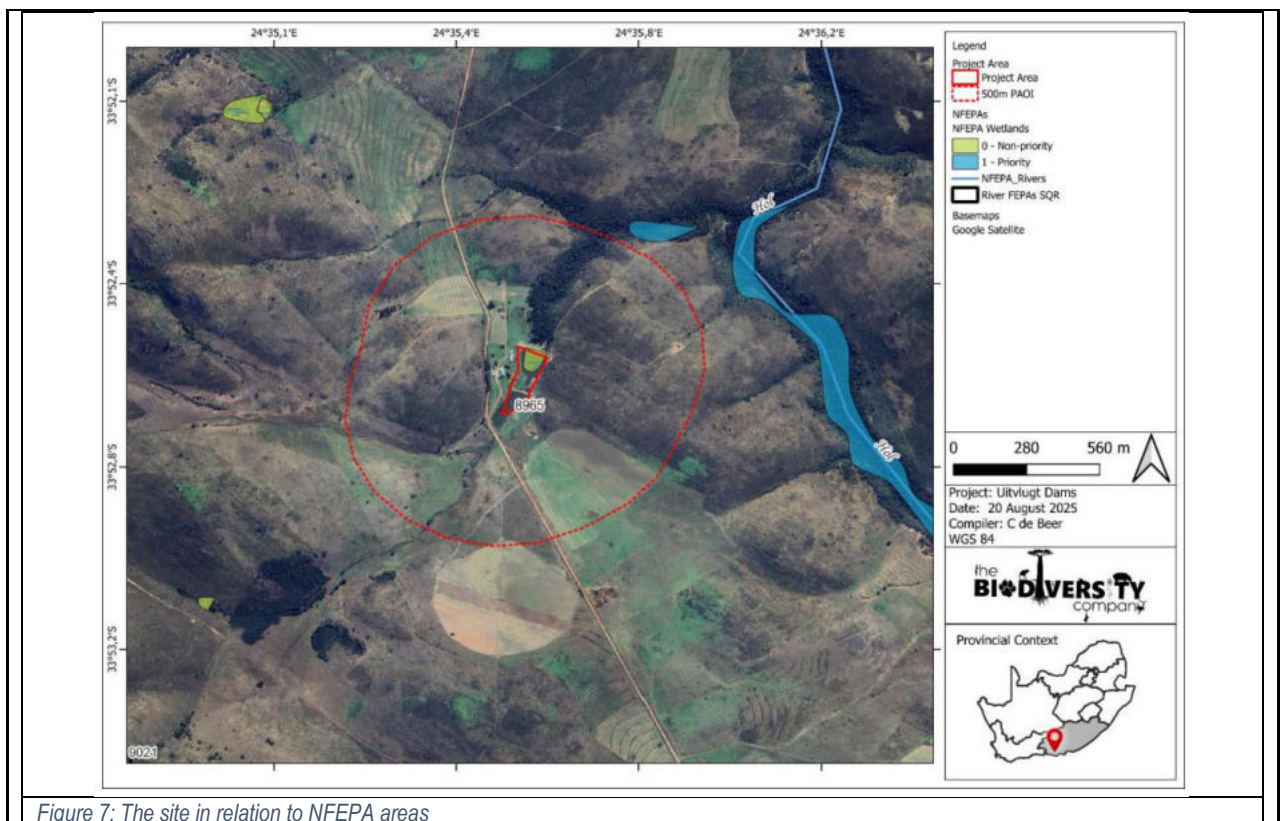


According to the SAIIE dataset, the PAOI does not overlap with any endangered watercourses (**Figure 6**), but it drains towards the 'Endangered' Hol River, indicating that impacts within the regulated area could potentially result in degradation of the downstream system.

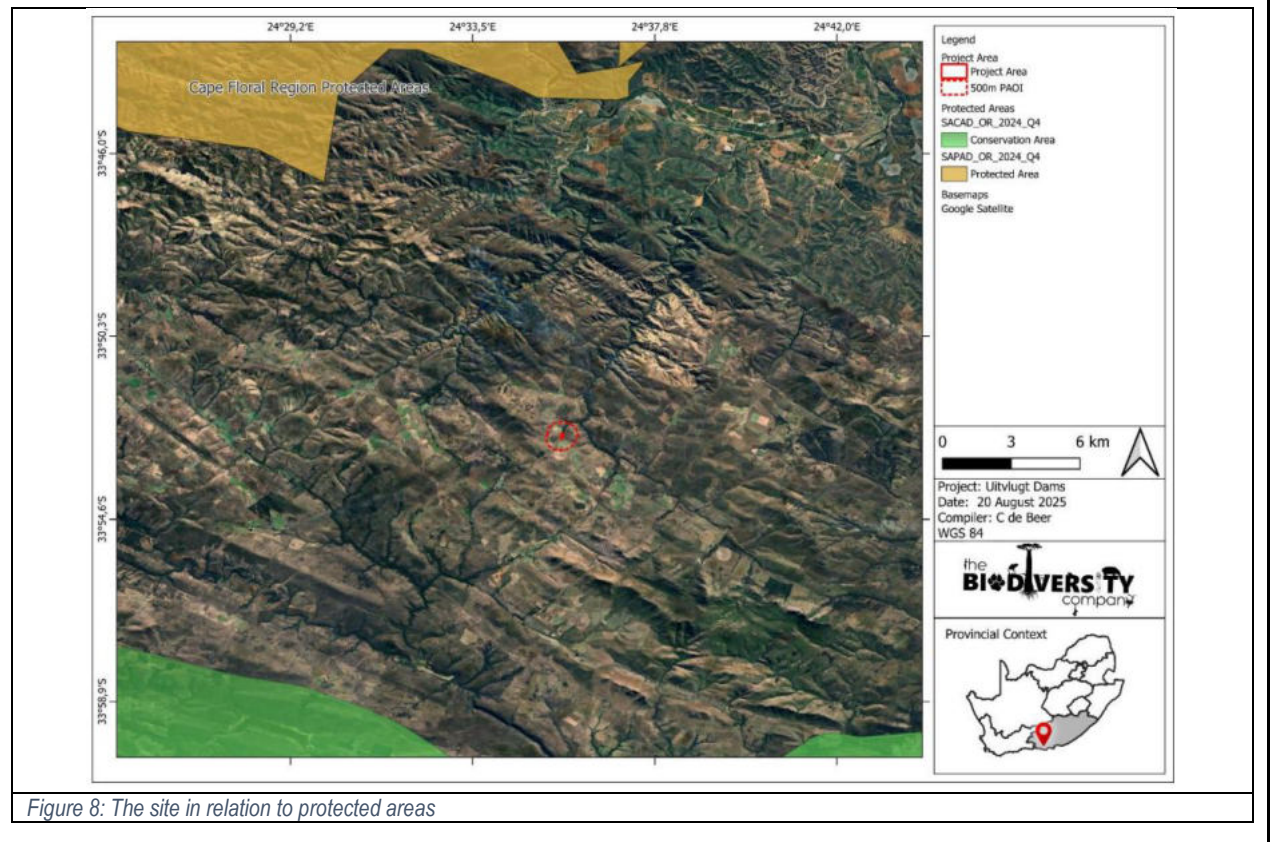


The project area was superimposed on the aquatic ecosystem protection level map to assess the protection status of aquatic ecosystems associated with the development (**Figure 6**). According to the SAIIE dataset, the PAOI does not overlap with any protected watercourses.

According to the NFEPA dataset (**Figure 7**), the PAOI does not intersect with any NFEPA river although it does intersect a Non-priority wetland and drains towards an NFEPA River (Hol River) which is also classified as a Priority wetland. Conserving the water quality, riverine and wetland habitat and associated ecological functioning within the project area and associated catchments, will aid in the protection of aquatic species occurring within the entire catchment and water quality for the aquatic and terrestrial biota downstream of the project area. The catchments in which human activities occur need to be managed to maintain water quality and prevent further degradation of local and downstream watercourses in order to contribute to national biodiversity goals and support the sustainable use of watercourses.



According to the protected area spatial datasets from SAPAD (2024) and SACAD (2024), the PAOI does not overlap with any protected area (**Figure 8**).



No aquatic macroinvertebrates or fish could be sampled in the Sites U1 and U2 as they did not have adequate surface water. Consequently, the SASS5 protocol could not be applied, and the macroinvertebrate community was not assessed at these sites at the time of the survey. Although fish could not be sampled during the survey due to dry conditions, it is still important to consider the expected species list as these species can potentially occur in the system. It is anticipated that up to 14 fish species could occur.

Broader Surrounding Area Assessment

The project area falls within the Fish to Keiskamma Water Management Area (WMA) (now the Mzimvubu-Tsitsikamma WMA) (DWS, 2023), the Southern Folded Mountains Ecoregion, and within the L90A quaternary catchment. The PAOI falls within L90A-08965 SQR associated with the Hol River. The Present Ecological Status (PES) of the area in which the site is located is regarded as Moderately Modified (Category C).

In terms of the Habitat Integrity (HI), the condition of the watercourse and associated aquatic biodiversity are largely dependent on the condition and degree of modification of the surrounding catchment. The more intact and natural the catchment is, the greater the watercourse condition and ecosystem functioning, and the more services there will be with an associated high aquatic and terrestrial biodiversity presence. An altered catchment compromises the watercourse condition, ecosystem functioning, and services offered, with deleterious effects depending on the degree and type of catchment modification. According to the IHI results, the instream and riparian habitat of the Hol River reach was rated as Seriously Modified (class E), indicating a large loss of natural habitat, biota, and basic ecosystem function. Anthropogenic activities within the local area and catchment that have largely contributed to the deteriorated state of the system include instream impoundments leading to inundation, flow modifications, channel modifications and exotic vegetation encroachment. This combination of impacts has resulted in habitat loss, encroachment of alien vegetation into the riparian habitat, flow modification, deterioration of water quality, and impacts to instream and riparian integrity.

Overall PAOI Sensitivity & Buffer Zone Requirements

As the project area and proposed activities are located in close proximity to a natural stream Hol River tributary, the Ecological Importance (EI) sensitivity was therefore be regarded as “High” and Ecological Sensitivity (ES) was rated as “High” ().

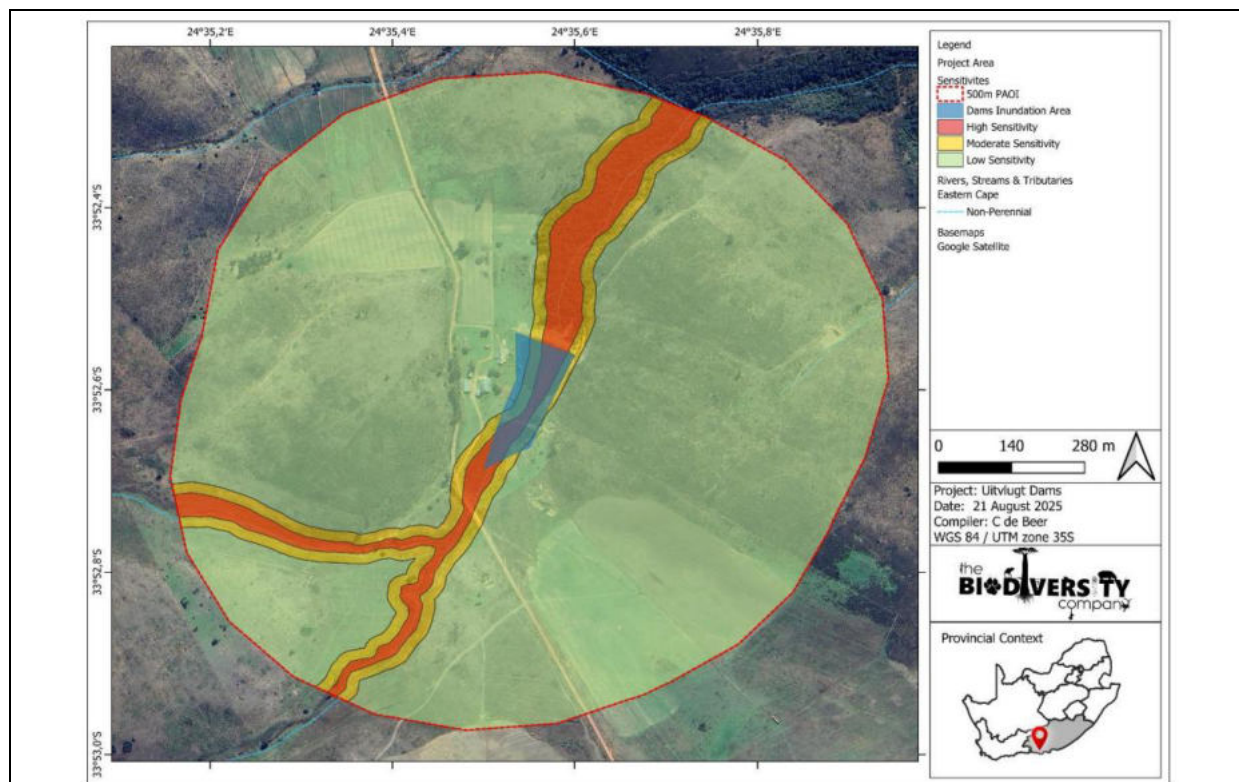


Figure 9: Aquatic delineated sensitivity for the PAOI

The buffer requirements for the watercourses were calculated using the Site-Based Tool: Determination of buffer zone requirements (Macfarlane et al., 2014). The recommended buffer zone for the Hol River tributary was calculated to be 20 m

(Figure 10). These buffer areas serve as No-go zones for unauthorised activities. The site development plan should therefore be created accordingly. Ensuring buffers are intact increases the resilience of a watercourse to future disturbances.

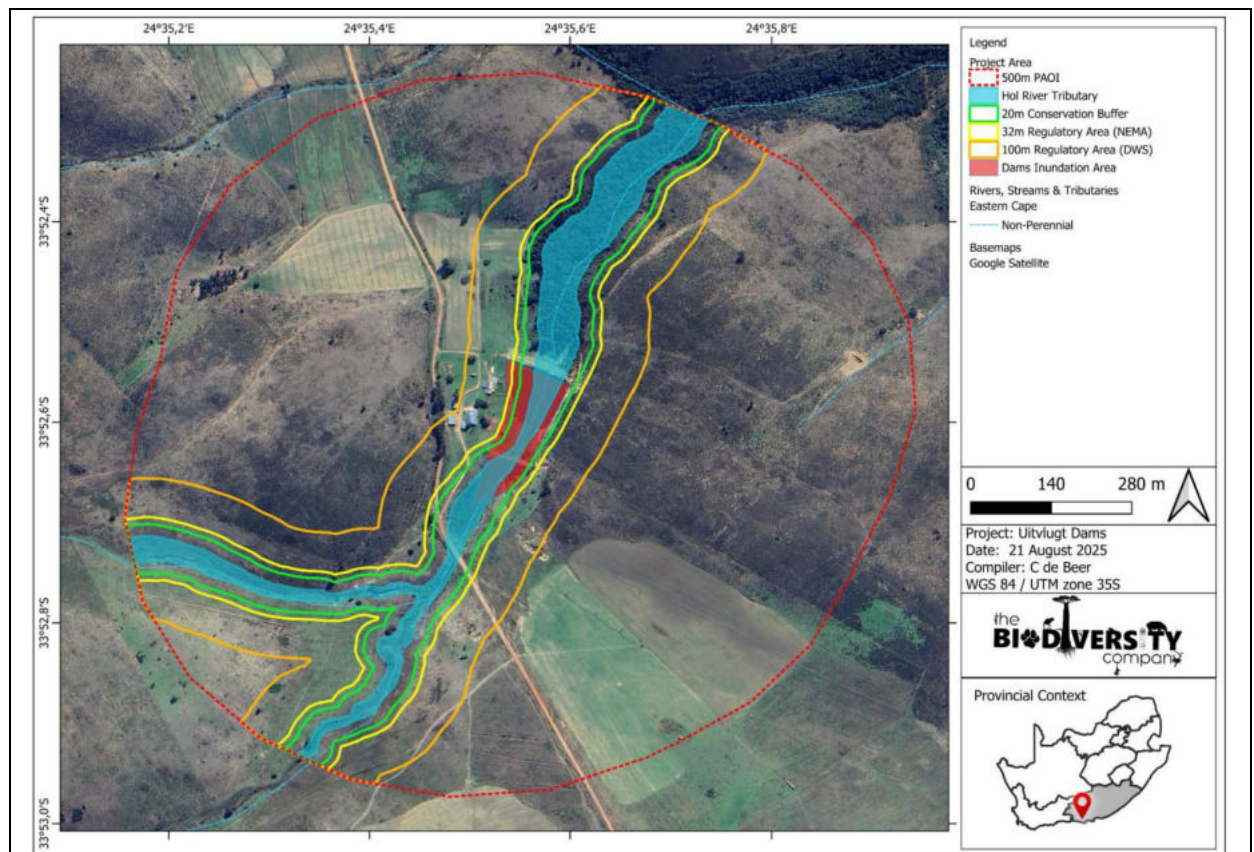


Figure 10: Riparian areas, regulated areas and conservation buffers for the proposed PAOI

Index	Sense of Place Impact and / or Heritage Impact	Place an "x" in the appropriate box
	Description of variable	
	The activity is in keeping with the surrounding environment and / or does not negatively impact on the affected area's sense of place and /or heritage	X
	The activity is not in keeping with the surrounding environment and will have a localised impact on the affected area's sense of place and/or heritage	
	The activity is not in keeping with the surrounding environment and will have a significant impact on the affected area's sense of place and/ or heritage	
	The activity is completely out of keeping with the surrounding environment and will have a significant impact on the affected area's sense of place and/ or heritage	
	Motivation: The dams are located within an agricultural area. The dams support the land use activities associated with a stock farm whereby access to water is regarded as an important asset for keeping animals. The dams do not impact on the sense of place.	

Index	Pollution Impact	Place an "x" in the appropriate box
	Description of variable	
	The activity is not giving, has not given and will not give rise to any pollution	X
	The activity is giving, has given or could give rise to pollution with low impacts.	

The activity is giving, has given or could give rise to pollution with moderate impacts.	
The activity is giving, has given or could give rise to pollution with high impacts.	
The activity is giving, has given or could give rise to pollution with major impacts.	
Motivation: The dams are fed by a tributary of the Hol River and they do not or will give rise to pollution.	

PART 2 – SECTION C.2.: COMPLIANCE HISTORY AND KNOWLEDGE OF THE APPLICANT

Index	Previous administrative action (i.e. administrative enforcement notices) issued to the applicant in respect of a contravention of section 24F(1) of the National Environmental Management Act and/or section 20(b) of the National Environmental Management Waste Act	Place an “x” in the appropriate box
Description of variable		
	Administrative action was previously taken against the applicant in respect of the abovementioned provisions.	
	No previous administrative action was taken against the applicant but previous administrative action was taken against a firm(s) on whose board one or more of the applicant's directors sit or sat at the relevant time when the administrative action was taken.	
	Administrative action was not previously taken against the applicant in respect of the abovementioned provisions.	X
Explanation of all previous administrative action taken in respect of the above:		

Index	Previous Convictions in terms of section 24F(1) of the National Environmental Management Act and/or section 20(b) of the National Environmental Management Waste Act	Place an “x” in the appropriate box
Description of variable		
	The applicant was previously convicted in terms of either or both of the abovementioned provisions.	
	No previous convictions have been secured against the applicant but a conviction has been secured against a firm(s) on whose board one or more of the applicant's directors sit or sat; or a conviction was secured against a director of the applicant in his or her personal capacity.	
	The applicant has not previously been convicted in terms of either or both of the abovementioned provisions.	X
Explanation of all previous convictions in respect of the above:		

Index	Number of section 24G applications previously submitted by the applicant	Place an “x” in the appropriate box
Description of variable		
	Previous applications in terms of section 24G of NEMA were submitted by the applicant.	n/a
	No previous applications have been submitted by the applicant but a previous application(s) have been submitted by a firm(s) on whose board one or more of the applicant's directors sit or sat at the relevant time.	n/a
	No previous applications have been submitted by the applicant but the applicant sat on the board of a firm that previously submitted an application.	n/a
Explanation in respect of all previous applications submitted in terms of section 24G:		

PART 2 – SECTION C.3: APPLICANT'S PERSONAL CIRCUMSTANCES

Index	Applicant's legal persona	Place an "x" in the appropriate box
	Description of variable	
	The applicant is a natural person.	
	The applicant is a firm.	X
	Describe the firm: Shimbahills Safaris cc	

Index	Any other relevant information that the applicant would like to be considered.
	Motivate and explain fully:

NOTE: An explanation as to why the applicant did not obtain an environmental authorisation and/or waste management licence must be attached to this application.

The Applicant did not obtain environmental authorization for upgrading the existing two dams, due to ignorance of the environmental laws at the time.

An application was submitted to the Department of Water & Sanitation for a Water Use License and the applicant became aware of the trespass when the Department requested a copy of the environmental authorisation for the upgrading of the dams.

To therefore rectify the mistake this application is submitted without the DEDEAT issuing a notice of intent.

PART 3 - DECLARATIONS

PART 3 – SECTION A: DECLARATION OF THE APPLICANT

1. The Applicant

I, _____ do hereby make oath and say that I –

- a. Am the applicant in this application / duly authorised by the applicant to complete and submit this application.
- b. The information contained in Part 1 and Part 2 of this application form (including annexures thereto) is within my own personal knowledge and is true.
- c. Appointed the environmental assessment practitioner as indicated under **A1** above to act as the independent environmental assessment practitioner for this application.
- d. Undertake to provide the environmental assessment practitioner and the competent authority with access to all information at my disposal that is relevant to the application.
- e. Am responsible for complying with the directive or conditions of any environmental authorisation issued by the competent authority.
- f. Understand that I will be required to pay an administration fine in terms of S24G(4) of the Act and that a decision in this regard will only be forthcoming after payment of such a fine and deferral (where applicable); and
- g. Hereby indemnify, the government of the Republic, the competent authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which the applicant or environmental assessment practitioner is responsible in terms of the Act.

Signature of the applicant:

Name of company:

Date:

Signature of the Commissioner of Oaths:

Date:

Designation:

Official stamp (below):

NOTE: Unless protected by law, all information contained in and attached to this application form may become public information on receipt by the competent authority. Upon request, any interested and affected party must be provided with the information contained in and attached to this application form.

PART 3 - DECLARATIONS

PART 3 - SECTION A: DECLARATION OF THE APPLICANT

1. The Applicant

I, Louis Francois vd Walt do hereby make oath and say that I -

- Am the applicant in this application / duly authorised by the applicant to complete and submit this application.
- The information contained in Part 1 and Part 2 of this application form (including annexures thereto) is within my own personal knowledge and is true.
- Appointed the environmental assessment practitioner as indicated under **A1** above to act as the independent environmental assessment practitioner for this application.
- Undertake to provide the environmental assessment practitioner and the competent authority with access to all information at my disposal that is relevant to the application.
- Am responsible for complying with the directive or conditions of any environmental authorisation issued by the competent authority.
- Understand that I will be required to pay an administration fine in terms of S24G(4) of the Act and that a decision in this regard will only be forthcoming after payment of such a fine and deferral (where applicable); and
- Hereby indemnify, the government of the Republic, the competent authority and all its officers, agents and employees, from any liability arising out of the content of any report, any procedure or any action for which the applicant or environmental assessment practitioner is responsible in terms of the Act.

Louis Francois vd Walt
Signature of the applicant:

Name of company:

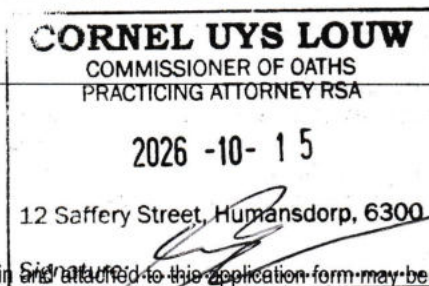
15/10/2026
Date:

[Signature]
Signature of the Commissioner of Oaths:

15/10/2026
Date:

Attorney
Designation:

Official stamp (below):



NOTE: Unless protected by law, all information contained in and attached to this application form may become public information on receipt by the competent authority. Upon request, any interested and affected party must be provided with the information contained in and attached to this application form.

PART 3 – SECTION B: DECLARATION OF THE EAP

2. The Independent Environmental Assessment Practitioner

I, Natalie Sharp do hereby make oath and say that I –

- a. act as the independent environmental assessment practitioner in this application;
- b. do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the S24G of the National Environmental Management Act, read together with the relevant Environmental Impact Assessment Regulations;
- c. do not have, and will not have, a vested interest in the proposed activity proceeding;
- d. have no, and will not engage in, conflicting interests in the undertaking of the activity;
- e. undertake to disclose to the competent authority any material information that has, or may have, the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the S24G of the National Environmental Management Act, read together with the Environmental Impact Assessment Regulations, 2006;
- f. will ensure that all documents contain all relevant facts in respect of the application and that all documentation is timeously distributed or made available to interested and affected parties. I will ensure that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced for this application;
- g. will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- h. will keep a register of all interested and affected parties that participated in a public participation process; and
- i. will provide the competent authority with access to all information at my disposal regarding the application, whether or not such information is favourable to the applicant.

Signature of the environmental assessment practitioner:

Digital Soils Africa (Pty) Ltd

Name of company:

Date:

Signature of the Commissioner of Oaths:

Date:

Designation:

Official stamp (below)

PART 3 – SECTION B: DECLARATION OF THE EAP

2. The Independent Environmental Assessment Practitioner

I, Natalie Sharp do hereby make oath and say that I –

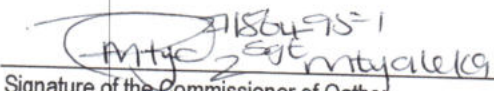
- a. act as the independent environmental assessment practitioner in this application;
- b. do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the S24G of the National Environmental Management Act, read together with the relevant Environmental Impact Assessment Regulations;
- c. do not have, and will not have, a vested interest in the proposed activity proceeding;
- d. have no, and will not engage in, conflicting interests in the undertaking of the activity;
- e. undertake to disclose to the competent authority any material information that has, or may have, the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the S24G of the National Environmental Management Act, read together with the Environmental Impact Assessment Regulations, 2006;
- f. will ensure that all documents contain all relevant facts in respect of the application and that all documentation is timeously distributed or made available to interested and affected parties. I will ensure that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced for this application;
- g. will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;
- h. will keep a register of all interested and affected parties that participated in a public participation process; and
- i. will provide the competent authority with access to all information at my disposal regarding the application, whether or not such information is favourable to the applicant.


Signature of the environmental assessment practitioner:

Digital Soils Africa (Pty) Ltd

Name of company:

27/10/2026
Date:


Signature of the Commissioner of Oaths:

2026-10-27
Date:

Sgt
Designation:

Official stamp (below)



**Environmental Assessment
Practitioners Association
of South Africa**



Registration No. 2020/230

Herewith certifies that

NATALIA SHARP

is registered as an

Environmental Assessment Practitioner

**Registered in accordance with the prescribed criteria of Regulation 15. (1)
of the Section 24H Registration Authority Regulations
(Regulation No. 849, Gazette No. 40154 of 22 July 2016, of the
National Environmental Management Act (NEMA), Act No. 107 of 1998, as amended).**

Effective: 01 April 2026

Expires: 31 March 2027

Chairperson

Registrar





herewith certifies that

Natalia Sharp

Registration Number: 123443

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)

Environmental Science (Professional Natural Scientist)

Effective **13 November 2019**

Expires **31 March 2027**



President of Council

Chief Executive Officer



ANNEXURE A: LIST OF INDIVIDUALS OR COMPANIES WHERE THERE IS MORE THAN ONE TRANSGRESSOR:

N/A

ANNEXURE B: LIST OF LANDOWNERS IN THE EVENT THAT THERE IS MORE THAN ONE LANDOWNER

N/A as the Applicant is the landowner.

List of SGID of the properties under application:

C034 0000 00000 194 00001

ANNEXURE C: LANDOWNERS' CONSENT WHERE THE TRANSGRESSOR IS NOT THE LANDOWNER

n/a

ANNEXURE D: LIST OF MUNICIPALITIES WHERE THE ACTIVITIES SPAN MORE THAN ONE MUNICIPALITY

Only the Kouga Local Municipality is applicable.

ANNEXURE E: LIST OF PROPERTIES WHERE THERE IS MORE THAN ONE PROPERTY INVOLVED.

Only Remainder of Portion 1 of the Farm Uitvlucht 194, Humansdorp is involved.

See attached **Title Deed**

A. VIR AKTEBESORGER SE GEBRUIK/FOR CONVEYANCER'S USE:			
(a) Gelyktydigers met ander registrasiekantore/deeltitels: Simults with other registries/sectional titles:			
Kode Code	Firma/Firm	Eiendom/Property	Kantoor/Office
1			
2			
3			
4			

**(b) Kliënt afskrifte van aktes permanent in Aktekantoor geliasseer:
Clients copies of deed filed permanently in Deeds Office:**

Aard en nommer van akte Nature and number of deed	Kode Code	Parawe van ondersoekers Initials of examiners

(c). Notas/Notes:

BLACKBOOK
 -17-09
 BE

VANDERSPUY
133
043 642 1392

Registrasie Versoek deur:
Registration requested by:
DATUM:
DATE:

133

VANDERSPUY
043 051 8000

Adriaan Groenewald Inc
12 Saffery Street
Humansdorp
6300

Prepared by me

Fee Endorsement		
	Amount	Office Fee
Purchase Price/Value	R 7 175 000,00	R 3092,00
Mortgage Capital Amt.	R	R
ALL OTHER REGISTRATIONS		R
Reason For Exemption	Category Exemption.....	Exempt i.t.o Sect/Reg Act/Proc

[Signature]
CONVEYANCER
ADRIAAN GROENEWALD
(LPCM NUMBER 81456)

DEED OF TRANSFER T 21303/2024

BE IT HEREBY MADE KNOWN THAT

ANELISA GQULU
(LPCM 97030)

appeared before me, EASTERN CAPE DEEDS REGISTRY: QONCE, the said
appearer being duly authorised thereto by a Power of Attorney granted to him/her by

JJ POTGIETER BOERDERY PROPRIETARY LIMITED
Registration number 2016/365680/07

which said Power of Attorney was signed at Humansdorp on 7 November 2024

And the appearer declared that his/her said principal had, on 18 September 2024, truly and legally sold by Private Treaty, and that he/she, the said Appearer, in his/her capacity aforesaid, did, by virtue of these presents, cede and transfer to and on behalf of:

SHIMBA HILLS SAFARIS CLOSE CORPORATION
Registration Number 1986/022165/23

or its Successors in Title or assigns, in full and free property

1. **PORTION 2 (ANNEX KLEIN PLAATS) OF THE FARM KLEIN HOEK
NUMBER 195, SITUATED IN THE DIVISION OF HUMANSDORP,
PROVINCE OF THE EASTERN CAPE**

**IN EXTENT 79,6160 (SEVENTY NINE COMMA SIX ONE SIX ZERO)
Hectares**

FIRST TRANSFERRED by Deed of Partition Transfer Number T763/1912CTN with Diagram relating thereto and held by Deed of Transfer Number T13235/2018

SUBJECT to the conditions referred to in Deed of Partition Transfer Number T763/1912CTN, save insofar as these may since have lapsed or been cancelled.

2. **REMAINDER OF PORTION 1 OF THE FARM UITVLUGT NUMBER 194,
SITUATED IN THE DIVISION OF HUMANSDORP, PROVINCE OF THE
EASTERN CAPE**

**IN EXTENT 467,1711 (FOUR HUNDRED AND SIXTY SEVEN COMMA ONE
SEVEN ONE ONE) Hectares**

FIRST TRANSFERRED by Deed of Transfer Number T 196/1857CTN with Diagram relating thereto and held by Deed of Transfer Number T13235/2018

SUBJECT to the conditions referred to in Deed of Partition Transfer Number T3289/1895CTN and Deed of Transfer Number T6426/1895CTN, save insofar as these may since have lapsed or been cancelled.

3. **PORTION 8 (PORTION OF PORTION 6) OF THE FARM UITVLUGT
NUMBER 194, SITUATED IN THE DIVISION OF HUMANSDORP,
PROVINCE OF THE EASTERN CAPE**

**IN EXTENT 66,1000 (SIXTY SIX COMMA ONE ZERO ZERO ZERO)
Hectares**

FIRST TRANSFERRED by Deed of Transfer Number T7029/1900CTN with Diagram relating thereto and held by Deed of Transfer Number T13235/2018.

SUBJECT to the conditions referred to in Deed of Transfer Number T7029/1900CTN, save insofar as these may since have lapsed or been cancelled.

WHEREFORE the said Appearer, renouncing all rights and title which the said

JJ POTGIETER BOERDERY PROPRIETARY LIMITED
Registration number 2016/365680/07

heretofore had to the premises, did in consequence also acknowledge it to be entirely dispossessed of, and disentitled to the same, and that by virtue of these presents, the said

SHIMBA HILLS SAFARIS CLOSE CORPORATION
Registration Number 1986/022165/23

or its Successors in Title or assigns, now is and henceforth shall be entitled thereto, conformably to local custom, the State, however reserving its rights, and finally acknowledging the purchase price to be the sum of R7 175 000,00 (SEVEN MILLION ONE HUNDRED AND SEVENTY FIVE THOUSAND RAND) excluding VAT in the sum of R0,00 (NIL RAND), total consideration paid by the transferee to the transferor being the amount of R7 175 000,00 (SEVEN MILLION ONE HUNDRED AND SEVENTY FIVE THOUSAND RAND).

IN WITNESS WHEREOF, I the said Registrar, together with the Appearer, have subscribed to these presents, and have caused the Seal of Office to be affixed thereto.

THUS DONE and EXECUTED at the Office of the EASTERN CAPE DEEDS
REGISTRY: QONCE on 2024-12-10

In my presence

REGISTRAR OF DEEDS

133

VANDERSPUY
043 051 8000

Adriaan Groenewald Inc
12 Saffery Street
Humansdorp
6300

Prepared by me

1-9-9
(1) (2)

CONVEYANCER
ADRIAAN GROENEWALD
(LPCM NUMBER 81456)

POWER OF ATTORNEY TO PASS TRANSFER

I, the undersigned

JACOBUS JOHANNES POTGIETER
duly authorised hereto by a resolution of the Directors of
JJ POTGIETER BOERDERY PROPRIETARY LIMITED
Registration Number 2016/365680/07

do hereby nominate and appoint

**JOHN VAN BRED A LOUW (79658) AND/OR FUAD DE VRIES (87288) AND/OR
LESTER ELEAZAR KLUE (86488) AND/OR TASLEEMA RINQUEST (94904)
AND/OR ANELISA GQULU (97030)**

with power of substitution to be my true and lawful Attorney and Agent in my name,
place and stead to appear at the Office of the REGISTRAR OF DEEDS: Eastern
Cape at QONCE or any other competent official in the Republic of South Africa and
then and there to act as my Attorney and Agent and to pass transfer to:

SHIMBA HILLS SAFARIS CLOSE CORPORATION
Registration Number 1986/022165/23

the properties described as:

1. **PORTION 2 (ANNEX KLEIN PLAATS) OF THE FARM KLEIN HOEK
NUMBER 195, SITUATED IN THE DIVISION OF HUMANSDORP,
PROVINCE OF THE EASTERN CAPE**

**IN EXTENT 79,6160 (SEVENTY NINE COMMA SIX ONE SIX ZERO)
Hectares**

HELD BY Deed of Transfer Number T13235/2018

2. REMAINDER OF PORTION 1 OF THE FARM UITVLUGT NUMBER 194, SITUATED IN THE DIVISION OF HUMANSDORP, PROVINCE OF THE EASTERN CAPE

IN EXTENT 467,1711 (FOUR HUNDRED AND SIXTY SEVEN COMMA ONE SEVEN ONE ONE) Hectares

HELD BY Deed of Transfer Number T13235/2018

3. PORTION 8 (PORTION OF PORTION 6) OF THE FARM UITVLUGT NUMBER 194, SITUATED IN THE DIVISION OF HUMANSDORP, PROVINCE OF THE EASTERN CAPE

IN EXTENT 66,1000 (SIXTY SIX COMMA ONE ZERO ZERO ZERO) Hectares

HELD BY Deed of Transfer Number T13235/2018

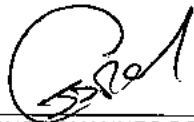
the said properties having been sold by me on 18 September 2024, to the said transferee/s for the sum of R7 175 000,00 (Seven Million One Hundred and Seventy Five Thousand Rand) excluding VAT in the sum of R0,00 (NIL RAND), total consideration paid by the transferee to the transferor being the amount of R7 175 000,00 (SEVEN MILLION ONE HUNDRED AND SEVENTY FIVE THOUSAND RAND)

and further cede and transfer the said properties in full and free property to the said Transferee; to renounce all right, title and interest which the Transferor heretofore had in and to the said properties, and generally, for effecting the purposes aforesaid, to do or cause to be done whatsoever shall be requisite, as fully and effectually, to all intents and purposes, as the Transferor might or could do if personally present and acting therein; hereby ratifying, allowing and confirming all and whatsoever the said Agent/s shall lawfully do or cause to be done in the premises by virtue of these presents.

Signed at Humansdorp on 7 November 2024
in the presence of the undersigned witnesses.

AS WITNESSES :

1. 
2. 


JACOBUS JOHANNES POTGIETER
On behalf of JJ POTGIETER
BOERDERY PTY LTD

133 SARS

2ms

Transfer Duty

TDREP

Declaration

Reference Details

Transfer Duty Reference Number: TDE05FE041

VA Details

043 Details Seller / Transferor / Time Share Company

Surname / Registered Name	JJ POTGIETER BOERDERY PTY LTD	Full Name	JJ POTGIETER BOERDERY PTY LTD
Company / CC / Trust Reg No.	201638588007	Marital Status	

Details of Purchaser / Transferee

Full Name	SHIMBA HILLS SAFARIS CLOSE CORPORATION	Surname / Registered Name	SHIMBA HILLS SAFARIS CLOSE CORPORATION
Company / CC / Trust Reg No.	198602216523	Marital Notes If applicable	

Details of the Property

Date of Transaction/Acquisition (CCYYMMDD)	2024-09-18	Total Fair Value	R 7175000.00	Total Consideration	R 7175000.00
--	------------	------------------	--------------	---------------------	--------------

Calculation of Duty and Penalty / Interest

Transfer Duty / Payable on Natural Person	R 0.00
---	--------

Property Description

- 1 PUKHUN 2 (ANNEX KLEIN PLAATS) OF THE FARM KLEIN HOEK NUMBER 195, SITUATED IN THE DIVISION OF HUMANSDORP, PROVINCE OF THE EASTERN CAPE IN EXTENT 79.6150 (SEVENTY NINE COMMA SIX ONE SIX ZERO) Hectares
- 2 REMAINDER OF PORTION 1 OF THE FARM UITVLUGT NUMBER 194, SITUATED IN THE DIVISION OF HUMANSDORP, PROVINCE OF THE EASTERN CAPE IN EXTENT 467.1711 (FOUR HUNDRED AND SIXTY SEVEN COMMA ONE SEVEN ONE ONE) Hectares
- 3 PORTION 8 (PORTION OF PORTION 6) OF THE FARM UITVLUGT NUMBER 194, SITUATED IN THE DIVISION OF HUMANSDORP, PROVINCE OF THE EASTERN CAPE IN EXTENT 66.1000 (SIXTY SIX COMMA ONE ZERO ZERO ZERO) Hectares

Exemption Certificate

Exemption Certificate Details

Transfer Duty Reference No.	TDE05FE041	Exempt in terms of Section 9 of the Transfer Duty Act	Other
Exemptions allowed by another Act	Section 9(15)		

Declaration by Conveyancer / Attorney

I certify that this is a true copy of the transfer duty declaration / receipt / exemption certificate drawn from the SARS eFiling site, which will be retained by me for 5 years from the date of registration of transfer.

XXXX XXXX XXXX XXXX
XXXX XXXX XXXX XXXX

Please ensure you sign over the 2 lines of 'X's above

Date (CCYYMMDD)	20241126	For enquiries go to www.sars.gov.za or call 0800 00 SARS (7277)
-----------------	----------	--

Aduma Gwena

133

8 REEF STREET
PRIVATE BAG X011
VANDERSIJPE
KAREEDOUW
043 051 8000
6400

Tel: (042) 288 7200/0303
Fax: (042) 288 0797
Email: koukamma@koukamma.gov.za
Website: www.koukammamunicipality.gov.za



Koukamma Local Municipality

MUNICIPALITY CLEARANCE CERTIFICATE

IT IS HEREWITH CERTIFIED THAT ALL RATES CLEARANCE CERTIFICATES ARE
ISSUED IN TERMS OF SECTION 118 OF LOCAL GOVERNMENT MUNICIPAL SYSTEMS
ACT 32 OF 2000.

PROPERTY DESCRIPTION: PORTION 2 (ANNEX KLEIN PLAATS) OF THE FARM KLEIN
HOEK NUMBER 195

TITLE DESCRIPTION: IN THE KOUKAMMA LOCAL MUNICIPALITY, DIVISION OF
HUMANSDORP ROAD, EASTERN CAPE PROVINCE

IN EXTENT: 79, 6160 (SEVENTY-NINE COMMA SIX ONE SIX ZERO)
HECTARES

HELD BY Deed of Transfer Number T13235/2018


MUNICIPAL MANAGER

Koukamma Municipality - Clearance Certificate
Issued in terms of Section 118 of the
LOCAL GOVERNMENT MUNICIPAL SYSTEMS ACT 32 OF 2000.
Authority is hereby granted for the registration of property presented herein.
The authority is valid until date:

14 FEB 2025


For Koukamma Municipality

Koukamma Municipality
Finance Department
Kareedouw

19 NOV 2024

Private Bag X011
Kareedouw
6400

133

VANDERSPUY

043 251 8000



KOUGA

local municipality

Good Governance through Service Excellence

KOUGA LOCAL MUNICIPALITY

CERTIFICATE IN TERMS OF SECTION 118 OF THE LOCAL GOVERNMENT: MUNICIPAL SYSTEMS ACT, 2000 (ACT No. 32 OF 2000)
(AS PRESCRIBED IN TERMS OF SECTION 120 OF ACT No. 32 OF 2000)

ISSUED BY KOUGA LOCAL MUNICIPALITY

In terms of section 118 of the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000), it is hereby certified that all amounts that became due to Kouga Local Municipality in connection with the undermentioned property situated within that municipality for municipal service fees, surcharges on fees, property rates and other municipal taxes, levies and duties during the two years preceding the date of application for this certificate, have been fully paid.

DESCRIPTION OF PROPERTY (see definition of property in section 1 of Act 32 of 2000)

21 Digit Code (or Municipal Reference Number): 6300

Erven: 194

Portion: Remainder of 1

Extension: UITVLUGT

Zoning:

Registration division / Administrative District: HUMANSDORP

Suburb:

Town:

Sectional Title unit number:

Exclusive use area and number as referred to on the registered plan:

Real right:

Scheme registration number:

Sectional Title Scheme Name:

Registered owner: JU POTGIETER BOERDERY PTY LTD (2016/365680/07)

Name and Identity/ Registration Number of all purchaser/s: SHIMBA HILLS SAFARIS CLOSE CORPORATION (1986/022165/23)

This Certificate is valid until: 12/01/2025

Given under my hand at JEFFREYS BAY on 13/11/2024

Digitally signed by Kouga Local Municipality

Signee: Raymond Brown

Sign date: 13/11/2024 04:04:51.403 PM

Expiration date: 06/04/2026 11:16:46 AM

MUNICIPAL MANAGER
Kouga Local Municipality

Date issued: 13/11/2024

Authorised Officer: Raymond Brown

Certificate By Conveyancer

I Raymond Brown (full name and surname) hereby certify that this is a print-out of a data message in respect of the original clearance certificate electronically issued by the Kouga Local Municipality.

Conveyancer

Date

20 November 2024

21 Digit Code (or Municipal Reference Number): 6300

Certificate number: 12955571

Page 1 of 1

RatTsh9C-0927-660C-n064-80436a7e609b

133

VANDERSPUY



KOUGA

local municipality
Good Governance through Service Excellence

KOUGA LOCAL MUNICIPALITY

CERTIFICATE 2008 IN TERMS OF SECTION 118 OF THE LOCAL GOVERNMENT: MUNICIPAL SYSTEMS ACT, 2000 (ACT No. 32 OF 2000)
(AS PRESCRIBED IN TERMS OF SECTION 120 OF ACT No. 32 OF 2000)

ISSUED BY KOUGA LOCAL MUNICIPALITY

In terms of section 118 of the Local Government: Municipal Systems Act, 2000 (Act No. 32 of 2000), it is hereby certified that all amounts that became due to Kouga Local Municipality in connection with the undermentioned property situated within that municipality for municipal service fees, surcharges on fees, property rates and other municipal taxes, levies and duties during the two years preceding the date of application for this certificate, have been fully paid.

DESCRIPTION OF PROPERTY (see definition of property in section 1 of Act 32 of 2000)

21 Digit Code (or Municipal Reference Number): 6300
Erven: 194
Portion: 8 (PORTION OF PORTION 6)
Extension: UITVLUGT
Zoning:
Registration division / Administrative District: HUMANSDORP
Suburb:
Town:
Sectional Title unit number:
Exclusive use area and number as referred to on the registered plan:
Real right:
Scheme registration number:
Sectional Title Scheme Name:
Registered owner: JJ POTGIETER BOERDERY PTY LTD (2016/365680/07)
Name and Identity/ Registration Number of all purchaser/s: SHIMBA HILLS SAFARIS CLOSE CORPORATION (1986/022165/23)

This Certificate is valid until: 12/01/2025
Given under my hand at JEFFREYS BAY on 13/11/2024

Digitally signed by Kouga Local Municipality
Signee: Raymond Brown
Sign date: 13/11/2024 04:04:03.429 PM
Expiration date: 06/04/2026 11:16:46 AM



MUNICIPAL MANAGER
Kouga Local Municipality

Date issued: 13/11/2024

Authorised Officer: Raymond Brown

Certificate By Conveyancer:
I, Raymond Brown (full name and surname) hereby certify that this is a print-out of a data message in respect of the original clearance certificate electronically issued by the Kouga Local Municipality.

Conveyancer

Date

21 Digit Code (or Municipal Reference Number): 6300

Certificate number: 12955561

Page 1 of 1

497aefcf-cf52-40a2-b8a1-16f88cde06a3

FB mg

PROD DEEDS REGISTRATION SYSTEM - KING WILLIAMS TOWN
PREPARED BY : DRS87822 - MBELEKANE GOOBISA

DATE : 28241283 TIME : 11:18:40.2 PAGE : 1

TRACK NUMBER : 78888742798

BLACK-BOOKING ENQUIRY ON NAME - JJ POTGIETER BOERDERY PTY LTD
ID NUMBER - 281636568887
BIRTH DATE - 8
MARITAL STATUS -
MAIDEN NAME -
TYPE OF PERSON - COMPANY

PERSON HAS NO CONTRACTS/INTERLOCKS

** PLEASE NOTE : THE INFORMATION APPEARING ON THIS PRINTOUT IS FURNISHED FOR PURPOSES OF INFORMATION ONLY.
FOR MORE DETAILED INFORMATION, PLEASE REFER TO THE REGISTERED SOURCE DOCUMENTS.

** END OF REPORT **



Ans Q

PROPERTY DETAILS PRINT FOR PORTION 2
FARM NO 195
REG DIV HILMANSDORP RD

TRACK NUMBER 76868742798

PROVINCE EASTERN CAPE
PREV DESCRIPTION ANNEX KLEIN PLAATS
DIAGRAM DEED NO T763/1912
EXTENT 79:63168 H
CLEARANCE DIAS DC
FARM NAME KLEIN HOEK

NO INTERDICTIONS

DOCUMENTS
B667/2019
CONVERTED FROM CTN
FARM HU 195/2

BC
HOLDER/S SHARE
FIRSTSTRAND BANK LTD

AMOUNT
R2000000.00

O/P/A SCAN/MICRO REF
20190301110654

MMDD
0205
0309

OWNER DETAILS

FULL NAME & SHARE
JJ POTGIETER BOERDERY PTY LTD

PURCH DATE AMOUNT/REASON O/P/A-IDENTITY
201636568897

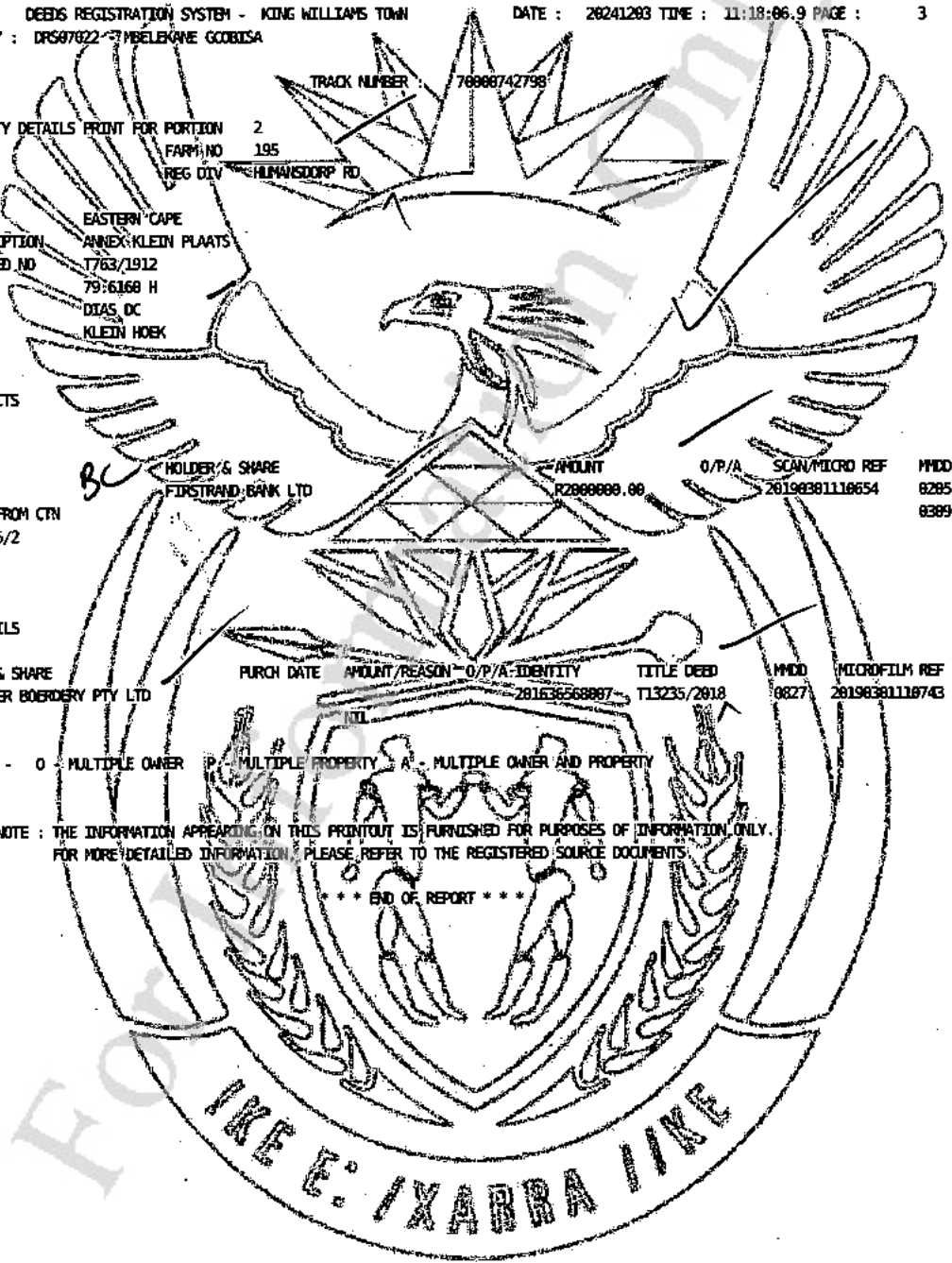
TITLE DEED
T13235/2018

MMDD MICROFILM REF
0827 20190301110743

* O/P/A - 0 - MULTIPLE OWNER P - MULTIPLE PROPERTY A - MULTIPLE OWNER AND PROPERTY

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*** END OF REPORT ***



8 MS

A

PROD DEEDS REGISTRATION SYSTEM - KING WILLIAMS TOWN
PREPARED BY : DRS07022 - MBELEKANE GOOBISA

DATE : 20241203 TIME : 11:18:06.8 PAGE : 1

TRACK NUMBER : 78889742798

PROPERTY DETAILS PRINT FOR PORTION 1 (R/E)
FARM NO 194
REG DIV HUMANSDORP RD

PROVINCE EASTERN CAPE
PREV DESCRIPTION T196/6/1857
DIAGRAM DEED NO 467.1711 H
EXTENT
CLEARANCE DIAS-DC
FARM NAME LUTVULIGT

NO INTERDIRICTS

DOCUMENTS
B667/2019
CONVERTED FROM CTN
FARM HU 194/1

HOLDER & SHARE
FIRSTSTRAND BANK LTD

AMOUNT
R2000000.00

O/P/A

SCAN/MICRO REF
20190301110654

MDD
0205
0309

OWNER DETAILS

FULL NAME & SHARE
JJ POTGIETER BOERDERY PTY LTD

PURCH-DATE	AMOUNT/REASON	O/P/A-IDENTITY
		201636568807
NIL		

TITLE DEED
T13235/2018

MDD
0027
20190301110743

* O/P/A - 0 - MULTIPLE OWNER P - MULTIPLE PROPERTY A - MULTIPLE OWNER AND PROPERTY

** PLEASE NOTE : THE INFORMATION APPEARING ON THIS PRINTOUT IS FURNISHED FOR PURPOSES OF INFORMATION ONLY.
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*** END OF REPORT ***

IK E: /XARRA /IK E

9MS A

PROD DEEDS REGISTRATION SYSTEM - KING WILLIAMS TOWN
PREPARED BY : DRS07822 - IMBELEKANE GOBISA

DATE : 20241203 TIME : 11:18:06.9 PAGE : 2

PROPERTY DETAILS PRINT FOR PORTION 8
FARM NO 194
REG DIV HUMANSDORP RD
TRACK NUMBER 78000742798

PROVINCE EASTERN CAPE
PREV DESCRIPTION PTN OF 6
DIAGRAM DEED NO T7029/1900
EXTENT 66:1000 H
CLEARANCE OZAS DC
FARM NAME LUTVUJUT

NO INTERDICTS

DOCUMENTS
B667/2019
CONVERTED FROM CTN
FARM HJ 194/8

HOLDER & SHARE
FIRSTSTRAND-BANK LTD

AMOUNT
R2000000.00

O/P/A SCAN/MICRO REF
20190301110654

MHDD
8285
8389

OWNER DETAILS

FULL NAME & SHARE
J1 POTGIETER BOERDERY PTY LTD

PURCH DATE AMOUNT/REASON O/P/A-IDENTITY TITLE DEED
201635568897 T13235/2018

MHDD MICROFILM REF
8827 20190301110743

* O/P/A - 0 - MULTIPLE OWNER P - MULTIPLE PROPERTY A - MULTIPLE OWNER AND PROPERTY

** PLEASE NOTE : THE INFORMATION APPEARING ON THIS PRINTOUT IS FURNISHED FOR PURPOSES OF INFORMATION ONLY.
FOR MORE DETAILED INFORMATION, PLEASE REFER TO THE REGISTERED SOURCE DOCUMENTS.

*** END OF REPORT ***

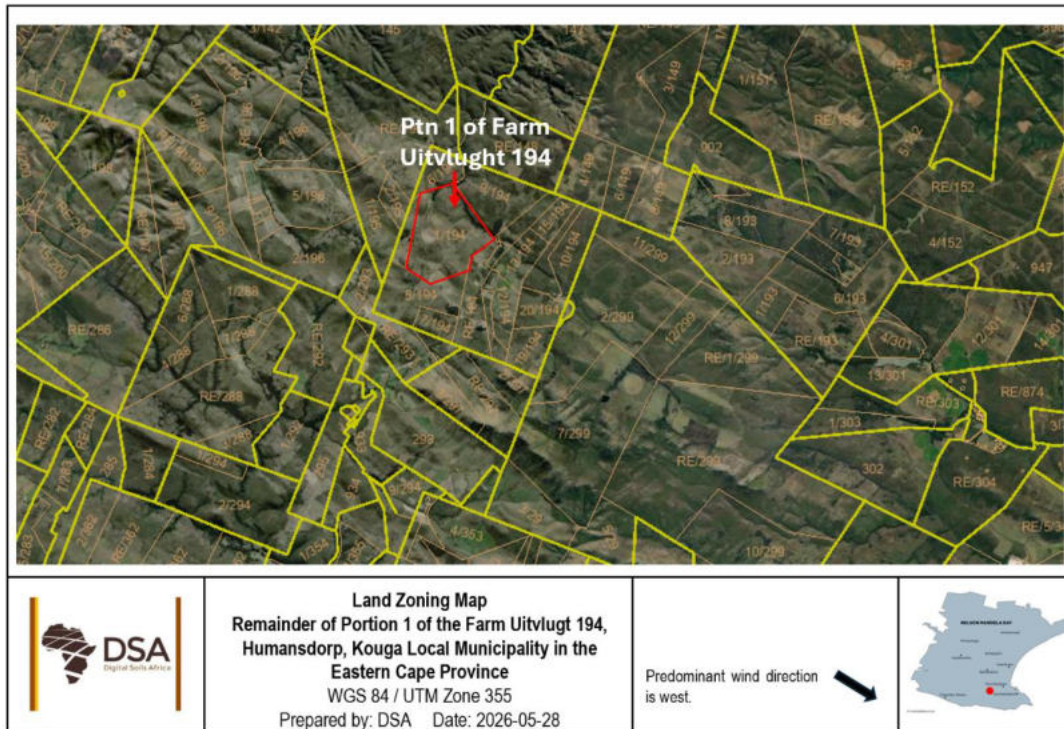
IKHE: /XARRA /IKE

ANNEXURE F: LIST OF MAGISTERIAL DISTRICTS OR TOWNS IF MORE THAN ONE IS AFFECTED.

Only Sarah Baartman District Municipality is applicable.

ANNEXURE G: MAP DEPICTING THE ZONINGS OF VARIOUS PORTIONS IN THE EVENT WHERE THERE IS MORE THAN ONE ZONING

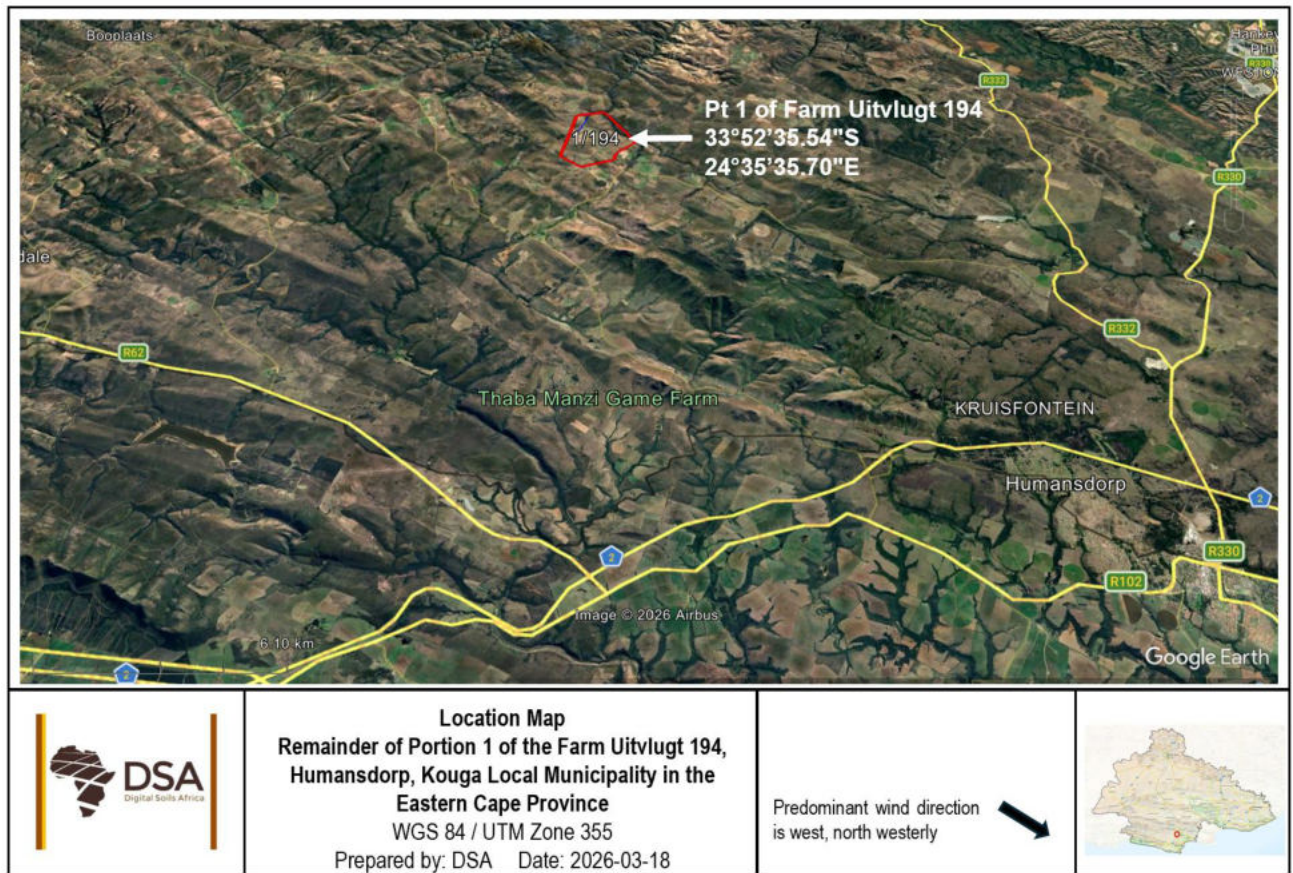
The land is zoned Agricultural



ANNEXURE H: LIST OF ALL THE PLANNING APPROVALS WHERE SUCH HAVE BEEN GRANTED

N/A

ANNEXURE I: LOCATION MAP



ANNEXURE J: SITE PLAN

Not Applicable

ANNEXURE K: PHOTOGRAPHS

The photos below have been taken from the site.



Figure 11: View from the farmhouse.





Figure 12: View of the extended weir.



Figure 13: View of the upstream dam and overflow.



Figure 14: View of the surrounding vegetation in the area.

ANNEXURE L: PERMITS / LICENSES FROM ANY OTHER ORGAN OF STATE INCLUDING SERVICE LETTERS FROM THE MUNICIPALITY



(F)
VAK.33

DEPARTMENT: WATER AFFAIRS AND FORESTRY
DEPARTEMENT: WATERWESE EN BOSBOU
DIVISION: GOVERNMENT WATER SCHEMES
AFDELING: STAATSWATERSKEMAS
Private Bag / Privaat Sak X 313
PRETORIA
0001

FAX MESSAGE / FAKS BOODSKAP

DATE: 2004-08-23

TO / AAN:	SKEMABESTUURDER: VAN DER KLOOF
ATTENTION / AANDAG:	MNR. S.J. MONTSHIWA
FAX / FAKS:	(053) 664 0003
FROM	A.Engelbrecht
TEL:	(012) 336-8421
FAX / FAKS:	(012) 336-6594 / (012) 336-8949
ROOM / KAMER:	Sedibeng 628 A
PAGES / BLADSYE:	9

MESSAGE / BOODSKAP

Hierby aangeheg is die art.25(2)-goedkeuring en getekende lisensies ten opsigte van die verdeling van watergebruik tussen Restant Gedeelte 14 (eienaar: Erasmus Kindertrust) en Gedeelte 28 van Kraaibosch 15 (eienaar: Breekwater Boerdery Bk). U verwysing is 112/3/8 FL/M gedateer 2004-07-07. Geliewe die betrokkenes dienooreenkomstig skriftelik in kennis te stel.

Groetnis

A.Engelbrecht

DEPARTEMENT VAN WATERWESE EN BOSBOU
DEPARTMENT OF WATER AFFAIRS AND FORESTRY

DW66GEEL.DOT/ae/10088180/p1s1

NAVRAE
ENQUIRIES

A. Engelbrecht



336-8421

VERWYSING
REFERENCE

B31/3/77/12/2B vol. 4

MANAGER: WATER USE

ORANGE RIVER (VAN DER KLOOF) GOVERNMENT WATER CONTROL AREA:

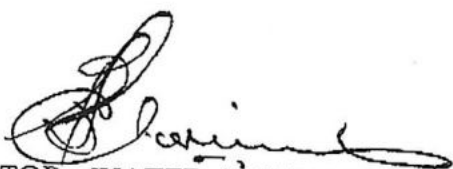
- A. APPLICATION FOR THE SUBDIVISION OF AN EXISTING LAWFUL WATER USE FROM REMAINDER PORTION 14 OF KRAAIBOSCH 15 TO PORTION 28 OF KRAAIBOSCH 15; IN TERMS OF SECTION 25(2) OF THE NATIONAL WATER ACT, 1998: ERASMUS KINDERTRUST AND BREEKWATER BOERDERY CC
- B. APPLICATION FOR THE ISSUANCE OF LICENCES FOR THE USE OF THE DIVIDED WATER USE ON PORTION 28 OF KRAAIBOSCH 15 FOR IRRIGATION PURPOSE IN TERMS OF SECTION 41 OF THE NATIONAL WATER ACT, 1998
 1. Erasmus Kindertrust is the registered owner of Remainder Portion 14 of Kraaibosch 15 with 112,0 ha maximum scheduled water (2,0 ha basic river water and 110,0 ha section 63(2B) purchased water).
 2. Two portions of the mentioned property were sold in separate agreements between Mr T. Erasmus of Erasmus Kindertrust and Mr L.K. Straszacker of Breckwater Boerdery CC, as follows:
 - 2.1 On 19 April 1996, a portion of approximately 80 ha in extent was sold, with 60,0 ha water (folio 4E). The mentioned portion was registered as Portion 26, with 79,3166 ha in extent; and
 - 2.2 On 1 March 1999, a portion of approximately 34 ha in extent was sold, with 30,0 ha water (folio 4H). The mentioned portion was registered as Portion 27, with 33,8962 ha in extent.

Portions 26 and 27 of Kraaibosch 15 was consolidated and registered as Portion 28, the property of Breckwater Boerdery CC (folio 4K). Accordingly the subdivision of the mentioned scheduled water, is as follows:

Property	Extent (ha)	Scheduled water (ha)						
		Maximum			Purchased			Basic River
		Before subdivision	Division	After subdivision	Before subdivision	Division	After subdivision	
Remainder Portion 14 of Kraaibosch 15	391,2295	112,0	- 90,0	22,0	110,0	- 90,0	20,0	2,0
Portion 28 of Kraaibosch 15	113,2128	0,0	+ 90,0	90,0	0,0	+ 90,0	90,0	0,0

3. In terms of section 32 of the National Water Act, 1998 an existing lawful water use means a water use -
 - (a) which has taken place at any time during a period of two years immediately before the date of commencement of this Act; or
 - (b) which has been declared an existing lawful water use under section 33 and which was authorised by or under any law, which was in force immediately before the date of commencement of this Act.
4. The above-mentioned water use is lawfully scheduled in terms of section 63(7A) of the previous Water Act of 1956. The subdivision as indicated in paragraph 2, has already been annually paid for and can therefore be declared as an existing lawful water use in terms of sections 32(1)(b)(i) and 33 of the National Water Act, 1998 (folios 4).
5. If you are in agreement with the abovementioned, it will be appreciated if you will approve:
 - (a) the subdivision of 112,0 ha existing lawful water use, as set out in paragraph 2, in terms of section 25 of the National Water Act, 1998; and
 - (b) the issuance of two separate licences for the use of 90,0 ha section 63(2B) purchased existing lawful water use on Portion 28 of Kraaibosch 15 and 22,0 ha maximum on Remainder Portion 14 of Kraaibosch 15, in terms of section 41 of the National Water Act, 1998.

The List of Taxable Land will be amended accordingly.



DIRECTOR: WATER ABSTRACTION AND INSTREAM USE

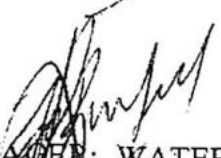
DATE: 2004/08/19.

SUBDIVISION OF 90,0 ha EXISTING LAWFUL WATER USE TO PORTION 28 OF KRAAIBOSCH 15

APPROVED/NOT APPROVED

LICENCE

SIGNED/NOT SIGNED



MANAGER: WATER USE

DATE: 20/08/2004



DEPARTMENT: WATER AFFAIRS AND FORESTRY

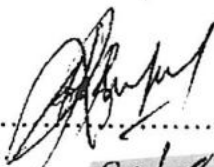
Private Bag X313, Pretoria, 0001
Sedibeng Building, 188 Schoeman Street, Pretoria
Tel: (012) 336-7500, Fax: (012) 323-4472 / (012) 326-2715

Licence.do/AE/10088180/p1s2

LICENCE NO. B31/3/77/12/2B vol. 4, folio 5A

I, **Cornelius Ruiters**, in my capacity as Manager: Water Use in the Department of Water Affairs and Forestry, acting in terms of the powers delegated to me by the Minister of Water Affairs and Forestry, hereby authorise the following water use in respect of the licence issued hereunder, subject to the conditions set in the licence for the water use.

Signature


Date 20/08/2004

LICENCE

1. Water User

The water user authorised in terms of this licence is:

Licensee : Erasmus Kindertrust

Postal address : P.O. Box 53, Petrusville 8770

2. Water Uses

This licence is issued for the taking of water from a water resource as defined in section 21(a) of the National Water Act, 1998 (Act 36 of 1998) (herein after referred to as the Act) for irrigation purposes on the property mentioned in paragraph 3 and is subject to the conditions set in paragraph 5 of this licence.

3. (a) The properties on which water is to be stored and utilised:

Remainder Portion 14 of Kraaibosch 15 in extent of 391,2295 ha

(b) Allocated Water:

22,0 ha @ 11 000 m³/ha/annum = 242 000 m³/annum

Viva water pure and clean! • Viva forests rich and green!

(c) **Water Resource**

Orange River

4.(a) **Licence Period**

This licence is valid for a period of twenty (20 years) from the date of issuance.

(b) **Review Period**

As provided by section 49 of the National Water Act, 1998, this licence is subject to a review period of five (5) years. Upon review of this licence the quantity of water allocated in terms of this licence or any other condition of the licence, other than the licence period may be amended if -

- it is necessary or desirable to prevent deterioration or further deterioration of the quality of the water resource;
- there is insufficient water in the water resource to accommodate all authorised water uses after allowing for international obligations and the reserve, the latter of which consists of the amount and quality of water necessary to satisfy basic human needs and to protect aquatic ecosystems; or
- it is necessary or desirable to accommodate demands brought about by changes in socio-economic circumstances and it is in the public interest to meet those demands.

5. **CONDITIONS**

- 5.1 The responsibility for complying with the provisions of the licence is vested in the licensee and may not be ceded to any other person or body.
- 5.2 The licence is subject to sections 43, 45 and 54 of the Act.
- 5.3 In terms of section 151 of the Act, any contravention of or failure to comply with a condition of this licence, constitutes an offence.
- 5.4 In terms of section 124 of the Act, the Minister and any person authorised by him in writing may at any time enter upon the premises of the licensee to perform the functions contemplated in sections 125(1), (2) and (3) of the said Act.
- 5.5 The licence shall not be construed as exempting the licensee from compliance with the provisions of the Health Act, 1997 (Act 63 of 1977), the Environment Conservation Act, 1989 (Act 73 of 1989) or any other applicable Act, Ordinance, Regulation or By-law.

- 5.6 Any incident that causes or may cause water pollution must immediately be reported to the Regional Director or his representative.
- 5.7 The licensee shall immediately inform the Regional Director of any change in his name, address and/or premises and legal status.
- 5.8 The licence authorises the licensee to abstract a maximum quantity of water as indicated in paragraph 3 of this licence.
- 5.9 The availability of the allocated quantity of water and the quality thereof is not guaranteed. The right is reserved, if a general water shortage is experienced in the area, to implement such curtailments or restrictions on the impoundment, storage, abstraction, supply or use of public water as may be deemed necessary under the circumstances.
- 5.10 Due to possible over-allocation of water in this water resource, when compulsory licensing is required in future in terms of Chapter 4 of the National Water Act, 1998, this licence may be subject to a reduction of the allocated volume in order to comply with the requirements of the Act.
- 5.11 The licensee is not entitled to any stored water supplies which the State or an irrigation board, water board or water user association may at any time create by means of storage dams and water shall not be specially released from a Government water work to supplement the supply when there is insufficient water available in the river, except in those cases where the water stored in a Government dam was taken into account in determining abstraction rights.
- 5.12 The maximum rate at which water may be abstracted from the said resource, shall never exceed the prevailing abstraction rate as set by the Minister of Water Affairs and Forestry.
- 5.13 The Government reserves the right to construct storage works at any time in any stream and to store all surplus water reaching such works and to control the allocation of such water.
- 5.14 A charge for the abstraction and use of the water may be imposed by the responsible authority in terms of the Act.
- 5.15 This licence and the amendment of this licence are also subject to all the applicable procedural requirements and other applicable provisions of the Act, as amended from time to time.

A handwritten signature in black ink, appearing to be 'M. A. U.', located in the bottom right corner of the page.

DAM SAFETY OFFICE
PRIVATE BAG X313, PRETORIA, 0001

REGISTRATION OF AN EXISTING DAM

*Only applicable if the maximum wall height of the dam exceeds 5 meters
and the gross storage capacity is more than 50 000 cubic metres*

1. PARTICULARS OF DAM OWNER

1.1. Name of dam owner

SHAMBA HILLS SAFARI'S

1.2. Id No, Company, CC number, etc.

7401225232084

1.3. Owner's postal address

129 Mont Mede Street

QGEBERHA

Postal Code

6001

1.4. Owner's residential address

129 MONT MEDE STREET

QGEBERHA

Postal Code

6001

1.5. Tel/Cell no of dam owner

0825646691

1.6. E-mail address of dam owner

louis@dphplanthire.co.za

1.7. Name and postal address of person in control of the dam *(if applicable)*

LOUIS VAN DER WALT

129 MONT MEDE STREET,
QGEBERHA

Postal Code

6001

1.8. Tel/cell no of person in control of the dam

0825646691

1.9. E-mail address of dam owner

louis@dphplanthire.co.za

2. PROPERTY ON WHICH THE DAM IS OR WILL BE STUATED AND LOCALITY

2.1. Property description as per title deed

REMAINDER OF PORTION 1 OF THE FARM UITVLUGT 194, RD OF HUMANSDORP

2.2. Province

EASTERN CAPE

2.3. Magisterial district

SARAH BAARTMAN DISTRICT MUNICIPALITY

2.4. Nearest city/town

HUMANSDORP

2.5. Distance to nearest city or town

23.65km

2.6. Direction from nearest city or town

NORTH WEST

2.7. Position of the centre of the dam wall to an accuracy of 1 second

Latitude	33°	52'	34.5''	Longitude	24°	35'	35.9''
----------	-----	-----	--------	-----------	-----	-----	--------

2.8. Title deed number

T

3. GENERAL INFORMATION

3.1. Name of dam

SHAMBA HILLS SAFARI DAM

3.2. Name of watercourse or source

TRIBUTARY TO HOL RIVER

3.3. For clean water dams, give the purpose of the dam (mark all applicable purposes with X)

domestic supply		irrigation		industrial use	
Stock watering	X	Fisheries		Other (specify below)	
Describe "other"					

3.4. For wastewater dams, give the purpose of the dam (mark all applicable purposes with X)

pollution control		wastewater disposal		industrial residue	
mine residue		oxidation/evaporation		other (specify below)	

Describe "other"	
------------------	--

3.5. Date of completion of the dam

UNKOWN

3.6. Name of designer or consultant (*if available*)

UNKNOWN

3.7. E-mail of designer or consultant (*if available*)

--

3.8. Name of contractor (*if available*)

--

4. PARTICULARS OF DAM AND BASIN

(*For enlargement or alteration of an existing dam, particulars must be for the completed structure*)

4.1. Type of dam (*mark applicable type with X – mark more than one for composite dams*)

earth fill	X	rock fill		gravity	
buttress		arch		multi-arch	
earth "service" reservoir		reinforced concrete "service" reservoir			
mine residue deposit*		industrial residue deposit*			

** This also means any structure generally termed a "tailings or slimes dam"*

other (<i>specify</i>)		
--------------------------	--	--

4.2. Maximum wall height

3

*** Note! Wall height is the vertical difference between the lowest downstream ground elevation on the outside of the dam wall and the non-overspill crest level or the general top level of the dam wall*

4.3. Crest length of wall

100m

4.4. Gross storage capacity

13 800m ³

4.5. Area of water surface at full supply level

0.7ha

4.6. Type of spillway (*mark applicable type with X-mark more than one if necessary*)

Free fall (straight drop)		Ogee (overflow)		Chute (lined)	
Stepped		Open channel	X	Side channel	
Conduit		By-wash		Shaft	
Culvert		Labyrinth		Chute (baffled, etc.)	
Morning glory		Siphon		Cascade	
Drop inlet		Other (describe)			

5. DECLARATION BY APPLICANT

I declare that the information given by me for the classification of the above dam is true and correct.



Signature: _____

Date: 15/10/2025

NB! Include or attach a clear copy of a general plan of the dam or a photograph to supplement the required information







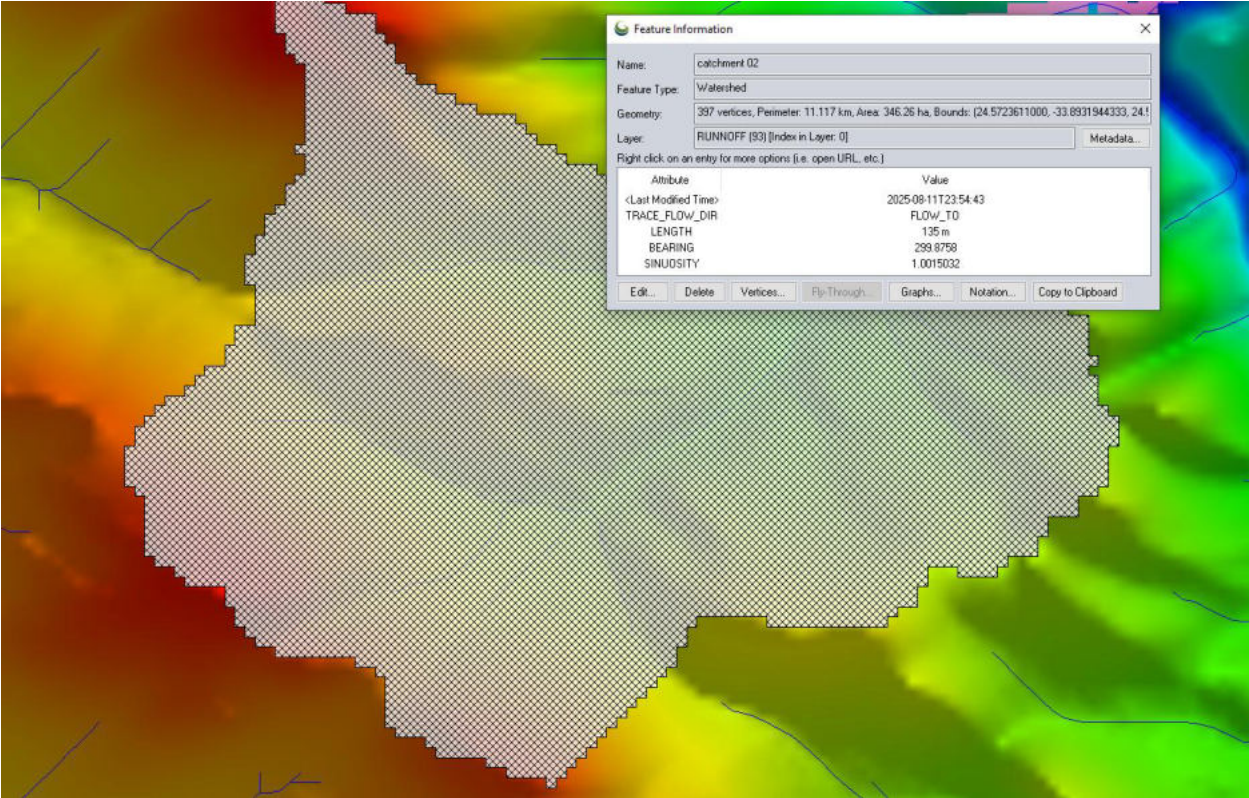
11/3/25, 3:17 PM

South Africa Topographic Map



GPS
43.90462
S 33° 54' 28.7" E 24° 37' 13.92"
24.62056
S 33° 54' 16.62" E 24° 37' 13.92"

27.15 m = 8.1 cm 1 cm =



ANNEXURE M: ANY OTHER:**Environmental Impact Assessment in retrospect**

Impacts has been assessed according to the criteria listed below:

Criteria	Description	
Spatial Extent	Whether the impact will occur on a scale limited to the immediate site of the proposed activity, local area and immediate communities and settlements, sub-regional (municipal), regional (provincial), or national scale	None/Insignificant (N) Site Specific (SS) Local (Loc) Sub-Regional (SR) Regional (R)
Duration	Whether the period of the impact will be short term (0-5 years), medium term (5-15 years), long term (> 15 years) or permanent where natural processes or mitigation processes cannot eliminate the impacts.	None (N) Short Term (ST) Medium Term (MT) Long Term (LT) Permanent (P)
Intensity	Whether the size of the impact is low, medium, high, or negligible.	None (N) Very Low (VL) Low (L) Low-Medium (LM) Medium (M) Medium-High (MH) High (H) Very High (VH)
Probability	The probability of the impact occurring as either unlikely, probable, likely or definite.	None (N) Unlikely (Un) Probable (Pr) Likely (Lik) Definite (Def)
Significance	The total level of impact.	Insignificant Very Low Low Low-Moderate Moderate Moderate-High High Very High

These criteria are evaluated in terms of

- *Significance (Insignificant-low-moderate-high)*
- *Status (positive-negative-neutral)*
- *Confidence (based on academic information, specialist knowledge, site evaluations, applicants approach)*

Cumulative Impact: None, Very Low, Low, Low-Medium, Medium, Medium-High, High, Very High

Once the impacts are identified and predicted, the identification and consideration of mitigation measures by implementing the use of a 'mitigation hierarchy', which is a framework for managing the risks and potential negative impacts of development projects when considering the potential environmental, socio-economic, and

heritage impacts, is implemented. Preventative measures are considered first and remediation measures are considered last. Offsets are a last resort consideration for possible remediation measures.

After concluding the possible mitigation measures, the significance of the impact on a local, regional or global level is evaluated. The evaluation of the significance of impacts distinguishes between the impact rating before mitigation (significance before) is implemented/considered and the significance rating after (significance after) the recommended mitigation measures are considered.

The significance of the impact on the parameters of the affected environment is rated as:

Low Significance	The project will not cause any major adverse or beneficial changes to the biophysical, social, or economic environment. Impacts experienced will abate almost immediately after cessation of activities and the biophysical, social or economic system should recover and return more or less to the natural state. No expensive mitigating measures will be needed to address any of these impacts. Ecological functions will continue undisturbed and no complaints from Interested and Affected Parties (I&APs) are anticipated. No rare and endangered species or sensitive areas exist in the area.
Moderate Significance	The project will induce moderate short to medium term changes to the biophysical, social, or economic environment. The impact would be induced outside the development area and also possibly on a sub-regional level. Over the medium term the impacts could fade away but the implementation of mitigation measures is normally required to eliminate these impacts. The impacts would be experienced for some time after cessation of activities but would not affect the biophysical, social, or economic environment severely. With mitigation, the biophysical, social, or economic system should recover but the return to the natural state would be very slow and in some instances may not be achieved. I&APs might express some concerns and complaints may be received on an <i>ad hoc</i> basis. Rare and endangered species or sensitive areas may exist in the area and could be marginally affected.
High Significance	The project will induce extensive long-term changes to the biophysical, social, or economic environment. The impact would be induced outside the development area and also possibly on a regional to national level. The possibility of secondary impacts arising from the project is high. Over the long term the impacts could fade away but the implementation of expensive mitigation measures is normally required to eliminate or mitigate these impacts. These impacts would be experienced after cessation of activities and could affect the biophysical, social, or economic environment severely. With mitigation, the biophysical, social, or economic system could recover but the return to the natural state would normally not be achieved. Ecological functions will be permanently disturbed and major complaints from Interested and Affected Parties (I&APs) could be expected. Rare and endangered species or sensitive areas existing in the area might be critically affected.

Due to the nature of this project, there will not be a closure phase or decommissioning phase, as the dams are deemed as permanent infrastructure. For this reason, no decommissioning impacts will be identified or discussed.

M1: Potential impact on freshwater biodiversity

Current Impacts on the Freshwater Biodiversity

The assessed watercourse exhibits impacts on both the catchment and local scale. These impacts result from present and historical land use relating to transport infrastructure development and agricultural practices in proximity to watercourses which have transformed their habitats and altered their natural hydrological regime as well as species composition. The list below refers to the present-day local impacts associated with the assessed freshwater areas:

- Instream impoundments
- Water abstraction.
- Settlements and roads.
- Agricultural activities.
- Grazing and trampling of natural vegetation by livestock in aquatic and riparian areas.
- Encroachment of alien vegetation into the riparian habitat.
- Erosion induced by altered hydrodynamics due to hardened surfaces and instream impoundments

The freshwater ecology of the project area is considered moderately sensitive to disturbance from a hydrological, biological and conservational perspective. This includes the Hol River tributary. Development within these sensitive areas will lead to modifications to the present ecological state and therefore ecosystem degradation.

The Risk/Impact Assessment considered the direct and indirect impacts of the activity on the freshwater systems associated with the project area.

Table 2: Summative results of the DWS Risk Assessment Matrix compiled by Prasheen

Phase	Activity	Impact	Risk Rating
OPERATIONAL	Uitvlugt Dams in Operation	Loss of natural vegetation/riparian habitat	M
		Increased erosion from exposed surfaces	L
		Alteration of hydro-dynamics and reduced dispersal/ migration of fauna	M
		Increase in sediment inputs & turbidity and associated smothering and loss of instream habitat.	M
		Loss of aquatic biota	L

(L) Low Risk

(M) Moderate Risk

It is anticipated that operation phase of the project poses “Moderate” pre-mitigation risks to the freshwater ecosystems, which can change to “Low” post-mitigation risks for some impacts. This will be possible subject to effective mitigation that addresses stormwater management, erosion and sedimentation prevention, rehabilitation of disturbed areas, the prevention of detrimental run-off from hard surfaces into delineated watercourses and their associated buffers. Even with mitigation there are still moderate impacts from the proposed activities due to the permanent alterations to the riparian area, banks and hydrology from the instream impoundments and furthermore the alteration to flow patterns and velocities from these impoundments, ultimately causing a loss of aquatic biota. A decommissioning phase for the proposed development was not considered due to the longevity of proposed activity.

Unplanned Events

The planned activities will have known impacts as discussed above; however, unplanned events may

occur on any project and may have potential impacts which will need mitigation and management. **Table 3** is a summary of the findings from a watercourse ecology perspective.

Table 3: Unplanned Events, Risks and their Management Measures

Unplanned Event	Potential Impact	Mitigation
Dam wall burst	Erosion/ inundation and habitat loss (the water is considered 'clean' and therefore no water quality risks are anticipated)	Highly unlikely as the Dam is not an instream impoundment. The spillway should be designed to cater for excess water volumes to prevent dam burst.
Uncontrolled erosion	Sedimentation of downstream watercourse	Erosion control measures must be put in place. These should be adaptive to onsite conditions.

The presence of two dams on Uitvlugt Farm along a tributary of the Hol Rivier provides significant positive operational and resilience benefits in terms of socio-economic impacts. Environmental impacts were assessed and found to be “Medium” to “Low” impacts onto the Hol Rivier. Together, the dams enhance the farm’s water security by capturing seasonal runoff and stabilising supply for livestock and limited agricultural use, reducing pressure on groundwater resources and improving drought resilience in an area prone to variable rainfall. Their placement within an already transformed agricultural landscape means they do not alter natural river functioning, as the tributary to the Hol Rivier in this section is non-perennial and experiences intermittent flow. The dams support more reliable grazing management, reduce the need for emergency water abstraction, and contribute to the long-term sustainability of farming operations. Ecologically, the dams are confined to previously disturbed areas and do not affect sensitive habitats or downstream users, while socio-economically they strengthen agricultural productivity without displacing land uses or affecting neighbouring properties. Overall, the two dams function as low-impact, high-benefit water infrastructure that supports the viability and resilience of Uitvlugt Farm. A summary of the impacts of the dams is listed in **Table 4**.

Table 4: List of impacts associated with the dams

Phase	Activity	Impact	Potentially affected watercourses		Overall Intensity (max = 10)	Spatial scale (max = 5)	Duration (max = 5)		Severity (max = 20)	Importance rating (max = 5)		Consequence (max = 100)		Likelihood (Probability) of impact		Significance (max = 100)	Risk Rating
			Name/s														
OPERATIONAL	Uitvlugt Dams in Operation	Loss of natural vegetation/riparian habitat	Hol River Tributary		4	1	4		9	4		36		100%		36	M
		Noise pollution	Hol River Tributary		2	1	2		5	4		20		100%		20	L
		Increased erosion from exposed surfaces	Hol River Tributary		6	1	2		9	4		36		80%		28.8	L
		Alteration of hydro-dynamics and reduced dispersal/migration of fauna	Hol River Tributary		8	2	4		14	4		56		60%		33.6	M
		Increase in sediment inputs & turbidity and associated smothering and loss of instream habitat.	Hol River Tributary		8	2	4		14	4		56		60%		33.6	M
		Loss of aquatic biota	Hol River Tributary		6	2	3		11	4		44		40%		17.6	L
	Farm Dams	Erosion and sedimentation from potential dam bursting	Farm Dams		6	2	4		12	2		24		80%		19.2	L
		Water security for livestock	Farm Dams		-8	2	4		-14	4		-56		80%		-44.8	+
		Reducing pressure on groundwater resources	Farm Dams		-8	2	4		-14	4		-56		80%		-44.8	+

M2: Operational Environmental Management Plan



ANNEXURE M2

ENVIRONMENTAL MANAGEMENT PLAN

For the

Application for Environmental Authorisation for the
construction of two dams Dam Construction on Ptn 1 of
Farm Uitvlucht 194, Humansdorp, Kouga Local
Municipality, Eastern Cape

Prepared for

SHIMBAHILLS SAFARIS CC



DSA
Digital Soils Africa



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1 Kemsley Street

Port Elizabeth

Directors:
Prof Pieter le Roux
Dr George van Zijl
Dr Darren Bouwer
Dr Johan van Tol

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1. BACKGROUND

Digital Soils Africa (Pty) LTD (DSA) was tasked by Shimbahills Safaris cc, hereinafter referred to as the Applicant, to conduct environmental investigations and complete the 24G environmental application for the construction of two dams on Ptn 1 of Farm Uitvlugt 194.

The Uitvlugt dams are located within the Fish to Keiskamma Water Management Area (WMA) (now the Mzimvubu-Tsitsikamma WMA) (DWS, 2023), the Southern Folded Mountains Ecoregion, and within the L90A quaternary catchment. There are two dams present on the site. The dams are fed by a tributary of the Hol River and the dams are used for water supply to farm animals.

DSA was appointed by the Applicant as the independent environmental assessment practitioner (EAP) to undertake the Section 24 G Application.

DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER

Environmental Assessment Practitioner (EAP): Natalia Sharp

Postal address: 1 Kemsley Road; Richmond Hill, Port Elizabeth, 6001

Telephone: 067 622 5687

Cell Phone: 082 414 0472

Email: natalie@dsafrica.co.za

EAP qualifications: B.Sc (Botany and Zoology) (UFS); B.Sc. (Hons) Limnology (UFS); Masters in Environmental Management: Evaluation of Phytoplankton as an indicator in a biomonitoring program, with special reference to the Modder River.

EAP Registrations/Associations: SACNASP (123443) & EAPASA (2020/230)

Natalie Sharp is the project manager and senior Environmental Assessment Practitioner leading this project and is registered as an Environmental Assessment Practitioner (EAP) with the Certification Board for Environmental Assessment Practitioners of South Africa (EAPSA) (Registration Number: 2020/230) and as a Professional Natural Scientist (Pri.Sci.Nat) with the South African Council for Natural Scientific Professions (SACNASP) (Registration Number: 123443) (see Appendix A for detailed CV and qualifications). Natalie Sharp has worked in the environmental industry for over seventeen years.

SUMMARY OF THE CV

NATALIA SHARP

Personal Details

Date of birth: 12 August 1979
Nationality: South African
Identity number: 790812 000 7080
Gender: Female
Languages: English / Afrikaans

Qualifications:

BSc (2000) UFS – Zoology and Botany
BSc Honors (2001) UFS - Limnology
Masters in Environmental Management (2003) UFS - Evaluation of Phytoplankton as an indicator in a biomonitoring program, with special reference to the Modder River.
During the 2 years associated with the Centre for Environmental Management intense training was provided for equipping Natalia Sharp with adequate knowledge in terms of biomonitoring water systems and scientific report writing for research done by her through the Centre. Various scientific contributions were made during these few years which included formal reports to Bloem Water and seminars providing management principles for polluted water bodies, thus providing her with additional regulatory and environmental skills.

Experience

(Seventeen years' experience in environmental law and environmental management)

During the 5 years associated with the DME, now changed to the Department of Mineral Resources (DMR), vast knowledge was gained in terms mine environmental management, the development, rehabilitation and closure of mining and prospecting areas. Environmental Management Programmes, Environmental Performance Assessment Reports, and Closure Reports were scrutinized continually. Therefore, adequate expertise was gained to assist the applicants with relevant environmental and mining advice and providing her with adequate knowledge to evaluate environmental impacts relating to mining.

During the 11 years associated with SES (Stellenryck Environmental Solutions), Natalia Sharp has obtained immense understanding in completing environmental impact assessments, not only associated with mining projects, but also for a wide variety of different developing projects such as Light Industrial developments, Road upgrade projects, bush clearing for agricultural developments, and applications for exemptions, and so forth. She has excellent

Previous Employment

experience in writing environmental reports, which ranges from Scoping Reports, Environmental Management Plans, Environmental Awareness Plans, Mining Work Programs, Closure Plans, Risk Assessments, Performance Evaluations on projects, and Plan of Study reports. She has also been involved in performing biomonitoring on river systems associated with some of the projects, completing it by obtaining all the data and writing the Biomonitoring Report for the relevant Department. This is mainly attributed to her Limnology background and she is competently able to add value to this field in her current position.

Centre for Environmental Management University of the Free State: Lab Assistant [2001 – 2003]
Mine Environmental Management [2003-2005] at the Department of Mineral Resources: Environmental Officer
Mine Environmental Management [2005-2008] at the Department of Mineral Resources: Senior Environmental Officer
Stellenryck Environmental Solutions: Senior Environmental Practitioner [2008-2019]
Digital Soils Africa Pty Ltd: Senior Environmental Practitioner [currently]

Digital Soils Africa Pty Ltd (DSA) is an independent environmental consulting firm that is also soil specialists, focussing on all soil solutions in the agricultural and environmental fields. The specialists are SACNASP registered and recognized leaders in their fields of study.

The soil specialist services provided include soil surveys, soil erosion mitigation, fertilization management, soil and land capability studies, and wetland delineation amongst others, while the fields of specialization are hydropedology and digital soil mapping. Together the directors have 25 years of experience.

Prof. Johan van Tol is currently the national leading researcher on hydropedology. He is a Y1 NRF rated researcher, who boasts 34 peer reviewed scientific publications and has put his research to work in more than 30 consultancy reports. He is also a SACNASP registered scientist.

Dr. George van Zijl is Africa's foremost Digital Soil Mapper. For his PhD he developed a DSM protocol for use in southern Africa, and has subsequently improved the methodology to include machine learning such as shown in the mapping of Ntabelanga catchment and City of Joburg Hydropedological mapping. He has served on the scientific committee for international

DSM conferences. George has conducted more than 60 consultancy projects and is a SACNASP registered scientist.

Dr. Darren Bouwer boasts 11 years of experience as a soil scientist. His PhD incorporated chemical measurements into hydropedological assessments, which improves flow path determination. He has also completed a post-doctorate at Ghent University, Belgium, where he specifically worked on hydropedological modelling. Darren is a SACNASP registered scientist and has completed more than 45 consultancy reports.

PURPOSE OF THE DOCUMENT

This document serves as a programme to manage the environmental impacts during the pre-construction, construction, and operational phases of the proposed development. This document will provide mitigation measures to prevent, reduce, avoid, or rehabilitate and mitigation measures must be implemented during all phases of the development. The objective will be to limit the negative impacts and increase positive impacts.

The Environmental Management Plan (EMP) will also:

- Provide applicable legislative framework;
- Provide management objectives, and actions to achieve such objectives;
- List roles and responsibilities;
- Provide record-keeping methods, auditing or review, and report writing;

SITE LOCALITY

Shimbahills Safaris cc own a farm, namely the Remainder of Portion 1 of the Farm Uitvlugt 194 (also known as Hol Rivier Noord 194), within the Kouga Local Municipality (KLM) is located in the Sarah Baartman District in the province of the Eastern Cape, South Africa. The farm is located within Ward 1 in Kouga Local Municipality. The nearest town is Humansdorp that is situated approximately 23,65 km southeast of the farm.

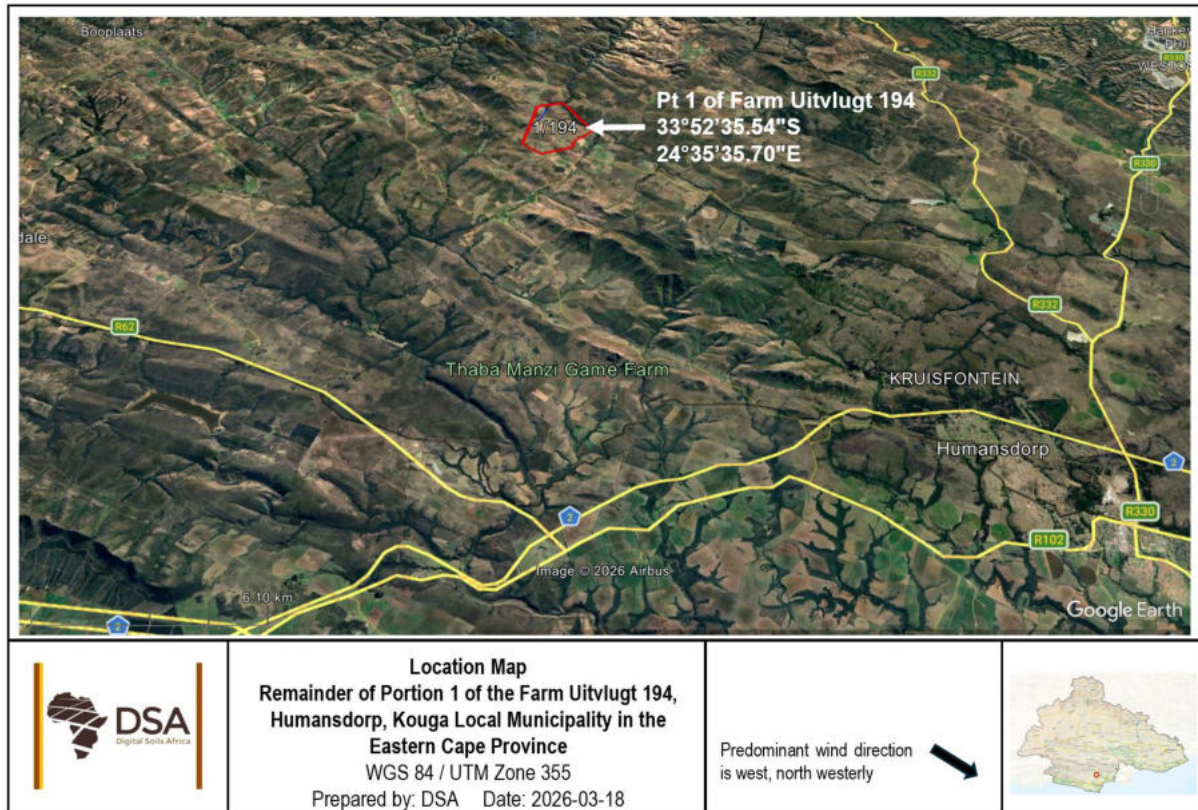


FIGURE 1: SITE LOCATION: SITE IS INDICATED AS THE RED POLYGON

The 21 digit Surveyor General code:

C034 0000 00000 194 00001

The property belongs to Shimbahills Safaris cc.

DESCRIPTION OF THE PROPOSED LISTED ACTIVITIES

Act. No.	Listings	Describe the portion of the proposed project to which the applicable listed activity relates.	Coordinates of listed activities (centre point coordinates of the listed activity location)
12 (iv)	Government Notice No. R983 - The development of (iv) dams, where the dam, including infrastructure and water surface area, exceeds 100m ² in size.	The dams, surface area was increased to 0.7ha or 7000m ² – therefore exceeding the threshold.	33°52'34.5"S 24°35'35.9"E

Thus, the purpose of this EMPR is to provide mitigation measures for the operation of the dams.

LEGISLATIVE REVIEW

ENVIRONMENTAL ASSESSMENTS UNDERTAKEN FOR THE DEVELOPMENT

In terms of the National Environmental Management Act 107 of 1998 (“NEMA”), environmental authorization must be obtained before any person can conduct activities that cause damage to the environment. The intention of environmental legislation is to regulate the interaction of human life with the natural environment. The purpose of environmental legislation is to protect and preserve the environment for current and future generations. The following Acts and Regulations apply to the proposed project:

LEGISLATION

- Section 24 of the **Constitution of the Republic of South Africa Act (No 108 of 1996)** states that everyone has the right:
 - to an environment that is not harmful to their health or well-being;

(iii) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation; and secure ecologically sustainable development and use of natural resources, while promoting justifiable economic and social development.

2. The **National Environmental Management Act (Act No 107 of 1998)**. NEMA is based on the concept of sustainable development and the objective is to provide for cooperative environmental governance, by providing the legal framework for environmental planning and development.

NEMA has basic principles that state:

- That all the principles throughout the Republic apply to the actions of all organs of state that may significantly affect the environment;
- Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.
- Development must be socially, environmentally and economically sustainable.
- Sustainable development requires consideration of all relevant factors.
- Environmental management must be integrated, acknowledging that all elements of the environment are linked and interrelated, and it must take into account the effects of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option.
- There should be equal access to environmental resources, benefits and services to meet basic human needs and the Government should promote public participation when making decisions about the environment;
- Decisions must be taken openly and transparently and there must be access to information;
- Communities must be given environmental education;
- Workers have the right to refuse to do work that is harmful to their health or the environment;
- The role of youth and women in environmental management must be recognized;
- The person or company who pollutes the environment must pay to clean it up;
- The environment is held in trust by the state for the benefit of all South Africans; and

- The utmost caution should be taken when permission for new developments is granted.

3. The **Environmental Impact Assessment Regulations**: 324, 325, 326 & 327 of 7 April 2017. The purpose of these Regulations is to regulate the procedure and criteria as contemplated in Chapter 5 of the Act relating to the preparation, evaluation, submission, processing, and consideration of, and decision on, applications for environmental authorizations for the commencements of listed activities, subjected to environmental impact assessment, to avoid or mitigate detrimental impacts on the environment, and to optimize positive environmental impacts, and for matters pertaining thereto.

Duty of Care

Chapter 7 of the NEMA prescribed a general 'duty of care' and the requirement to remediate environmental damage. Section 28(1) of NEMA states:

Every person who causes, has caused, or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or insofar as such harm to the environment is authorized by law or cannot reasonably be avoided or stopped, to minimize and rectify such pollution or degradation of the environment.

The Duty of Care can, inter alia, be enforced through directives issued by the competent authority.

In terms of 2014 NEMA EIA Regulations, as amended, the activities listed in the above Table is triggered by this proposed development, thereby requiring an EA from the Department of Economic Development, Environmental Affairs and Tourism (DEDEAT).

4. The **National Water Act (No. 36 of 1998)**. The major objectives of the National Water Act are to:
- Aid in providing basic human needs;
 - Meet the growing demand for water sustainably;
 - Ensure equal access to water and use of water resources
 - Protect the quality of water of natural resources;
 - Foster social and economic development; and
 - Conserve aquatic and related ecosystems.

The property naturally slopes longitudinally from North to South with lesser crossfall from West to East across the site. The lowest point of the property is located in South-East corner adjacent to existing natural water course.

All stormwater currently flows overland towards the above-mentioned existing watercourse and there is currently no formal stormwater management system on site.

5. The **National Environmental Management: Biodiversity Act:**

The act provides the framework for: i) the management and conservation of biological diversity within the Republic and the components of such biological diversity; ii) the use of indigenous biological resources in a sustainable manner; and iii) the fair and equitable sharing among stakeholders of benefits arising from bioprospecting involving indigenous biological resources.

The act also provides for co-operative governance in biodiversity management and by establishing a South African National Biodiversity Institute, the objectives of the Act can be achieved.

Three Regulations are applicable: 1) Threatened and Endangered Ecosystems, 2) ToPs (2008) (Threatened or Protected species), and 3) AIS (Alien and Invasive Species).

6. The **National Environmental Management: Protected Areas Act:**

The Protected Areas Act provides for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. It provides for the establishment of a national register of all national, provincial and local protected areas and the management of those areas. The Act also provides for the governance and functions of South African National Parks and matters in connection therewith.

7. **National Environmental Management Waste Act, 2008 (act 59 of 2008):**

The purpose of the Act is to regulate waste management to protect the health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for:

- Securing ecologically sustainable developments;
- Provide for institutional arrangements and planning matters;
- National norms and standards for regulating the management of waste by all spheres of government;
- To provide for specific waste management measures;

- To provide for the licensing and control of waste management activities;
- To provide for the remediation of contaminated land;
- To provide for the national waste information system;
- To provide for compliance and enforcement.

8. Eastern Cape the Provincial Nature Conservation Ordinance of 1974 (PNCO)

The Provincial Nature Conservation Ordinance (PNCO) protects the endangered and protected flora outside of protected areas. Species classified as Schedule 3 are endangered species. Species classified as schedule 4 are protected species. A permit is required for the removal or destruction of species on the PNCO list.

9. The National Heritage Resources Act (No 25 of 1999):

The basic objectives of the National Heritage Resources Act are to set norms and maintain essential national standards and general principles for the governing and management of heritage resources in the Republic and to protect heritage resources of national significance.

The South African Heritage Resources Agency (SAHRA) has been established to coordinate and promote the management of heritage resources at the national level.

According to Section 38 of the National Heritage Resources Act, (no. 25 of 1999) the size if the dams falls within the threshold (development of a site exceeding 5000m²) of notifying the responsible heritage resources authority.

10. Occupational Health and Safety Act (No 85 of 1993):

The act provides for the health and safety of persons at work and the health and safety of persons in connection with the use of machinery, the protection of persons other than persons at work, against hazards to health and safety arising out of or in connection with the activities of persons at work. The EMPs should provide measures to ensure that the objectives of the Act are met on this site.

11. Spatial Planning and Land Use Management Act (No. 16 of 2013):

The Act provides a framework for spatial planning and land use management in South Africa. It further provides the framework to:

- Specify the relationship between spatial planning and the land use management system and other kinds of planning;
- Provide for inclusive, developmental, equitable and efficient spatial planning in the different spheres of government;
- Provide a framework for the monitoring, coordination and review of the spatial planning and land use management system;
- Provide a framework for policies, principles, norms and standards for spatial development planning and land use management;
- Address past spatial and regulatory imbalances;
- Promote greater consistency and uniformity in the application procedures and decision-making by authorities responsible for land use decisions and development applications;
- Provide for the establishment, functions and operations of Municipal Planning Tribunals;
- Provide for the facilitation and enforcement of land use and development measures;

12. Alien and Invasive Species Regulations, 1 August 2014

Regulations regarding alien and invasive species.

MOTIVATION FOR THE NEED AND DESIRABILITY FOR THE PROPOSED DEVELOPMENT

Agricultural areas around Humansdorp face persistent water reliability challenges due to the region's high climatic variability, frequent drought cycles, and limited surface-water availability. Livestock farmers in particular are vulnerable to these fluctuations, as consistent access to clean water is essential for animal health, productivity, and welfare.

The existing water supply system—largely dependent on rainfall-fed streams, small farm reservoirs, and groundwater—has become increasingly unreliable. Seasonal rivers often experience reduced or zero flow during dry periods, while boreholes in parts of the Humansdorp region are constrained by low yields, variable groundwater quality, and the risk of over-abstraction. These constraints make it difficult for

farmers to maintain adequate daily water volumes for cattle, sheep, and dairy operations, which are significant contributors to the local agricultural economy.

The upgrade of the two dams provides a strategic and sustainable solution by capturing runoff during wetter periods and storing it for use during dry months. The dams enhance water security, reduce dependence on groundwater sources, and allow the farmer to maintain stable livestock operations even during drought. The dams also support broader climate-resilience objectives by improving on-farm water management, reducing pressure on regional water supply schemes, and enabling more predictable agricultural production.

PROJECT DESCRIPTION

Shimbahills Safaris cc own a farm, namely the Remainder of Portion 1 of the Farm Uitvlugt 194 (also known as Hol Rivier Noord 194), within the Kouga Local Municipality (KLM) is located in the Sarah Baartman District in the province of the Eastern Cape, South Africa (**Figure 2**). The farm is located within Ward 4 in Kouga Local Municipality and within 3324DC. The nearest town is Humansdorp that is situated approximately 23,65 km southeast of the farm.

The Uitvlugt dams are located within the Kouga Local Municipality, Eastern Cape, and falls within the Fish to Keiskamma Water Management Area (WMA) (now the Mzimvubu-Tsitsikamma WMA) (DWS, 2023), the Southern Folded Mountains Ecoregion, and within the L90A quaternary catchment.

One dam was built in the 1990's and dam was used for stock watering and domestic supply whereby it was enlarged in 2016. The other dam was built between 2000 and 2010 and then enlarged in 2016.

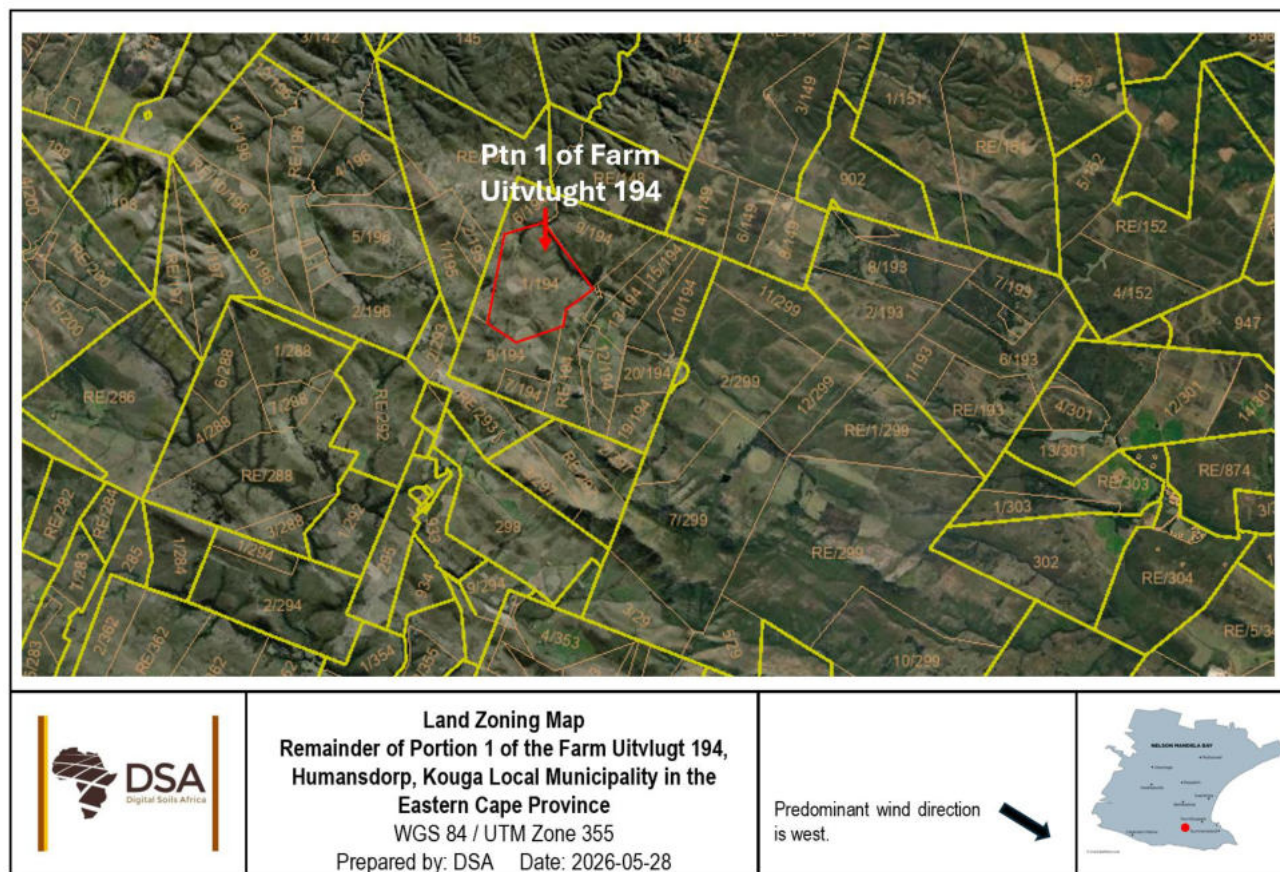


FIGURE 2: THE RED POLYGON REPRESENTS THE SITE.

In terms of environmental sensitivity and the Strategic Water Source Areas (SWSAs) of South Africa, Lesotho and Swaziland, the project area is not located within any SWSAs for surface water or groundwater. The PAOI does not overlap with any NBA wetlands/rivers, but it should be acknowledged that PAOI drains towards the Hol River which is classified as an NBA river.

Ownership

The proposed site is owned by the Shimbahills Safaris cc.

Zoning

The farm is located within the rural area of Humansdorp and is zoned as agricultural.

METHOD STATEMENT & ACTIVITY SPECIFIC MANAGEMENT PLAN

The Method Statements set out the materials, labour, and method that the contractor proposes using to carry out an activity, identified by the Environmental Officer and/or Project Manager. The Method

Statements contain sufficient detail such that the Environmental Officer and Project Manager (or Farm Manager) can assess whether the Contractor's proposal is following the requirements of the Environmental Management Plan. The contractor must sign each Method Statement along with the Environmental Officer and Project Manager to formalize the approved Method Statement. Method Statements and/or Management Plans must be submitted by the Contractor to the Project Manager and Environmental Officer for approval before the commencement of the activity.

The Method Statements for this project, as a minimum, must include:

- Soil Management and Erosion;
- Stormwater control;
- Flora & Fauna Management;
- Water Quality & Aquatic Health;

Method Statements must address the following aspects:

- What – a brief description of the work to be undertaken;
- How – a detailed description of the process of work, methods and materials;
- Where – a description of the location of the work (if applicable); and
- When – the sequencing of actions with commencement and completion date estimates.

The Environmental Officer and/or Applicant must monitor the implementation of the Method Statements and activity-specific management plans during the operation phase of the project.

PRE-CONSTRUCTION PHASE MANAGEMENT

The dams have already been constructed and no pre-construction management can be implemented.

CONSTRUCTION PHASE MANAGEMENT

The overall goal for the construction phase should be to manage the activities associated with the construction of the site in such a way that:

- The receiving environment is protected from degradation and harm;
- There is timeous detection of, and responses to, environmental change due to monitoring;
- The activity complies with all relevant legislation, permits, and authorizations.

The Applicant, is responsible for ongoing management of the site. All measures and conditions described in this EMP, the Environmental Authorisation, and any other relevant documents/legislation, should be strictly adhered to during the operational phase.

Project activities in the Construction phase may have included:

- Animal search and rescue;
- Environmental awareness training;
- Site clearing;
- Stormwater control mechanisms;
- Construction of berm.

OPERATION PHASE MANAGEMENT

The overall goal for the operational phase is to manage the activities associated with the operation and maintenance of the dams in such a way that:

- The disturbed areas are rehabilitated;
- Alien weeds are managed effectively;
- Management of open space/park areas is kept in good condition;
- The activity complies with all relevant legislation, permits, and authorizations;

Also from a development point of view, the overall goal would be to:

- Conduct routine maintenance inspections;
- Remove any new alien invasive species;

ORGANIZATIONAL REQUIREMENTS

The Applicant should be familiar with the requirements of the EMP and should execute all maintenance activities in an environmentally responsible manner.

This overview offers a perspective of the proposed organization of the EMP and the recommended responsibilities of key members of the project team. The ultimate responsibility and public accountability for the EMP and general environmental management reside with the Applicant.

The workers will be responsible for implementing the instructions from the site manager, and it is recommended that the site manager appoints a responsible worker to report back on a daily/weekly/monthly basis, ensuring compliance with the conditions of the EMP. If needed, provide a basic level of environmental training to the responsible worker/s.

If needed, an independent and external Environmental Control Officer (ECO) can be appointed by the Applicant to assist and advise on the implementation of the EMP and to conduct environmental audits no less than once every five (5) years unless otherwise instructed by the DEDEAT.

ROLES AND RESPONSIBILITIES

AUTHORITIES

The issuing of the necessary permits and authorizations is the responsibility of the authorities, in this case, DEDEAT. The authorities will also ensure that the Applicant complies with the conditions of the Environmental Authorisation and other permits/licenses/approvals.

Authorities are entitled to perform site inspections to ensure compliance with the conditions and in the case of non-compliance, the authorities may provide instructions to ensure an action plan with corrective measures is carried out or to cease with the project especially in the case of long-term non-compliance.

APPLICANT

The Applicant has the responsibility for environmental management of the site. The EMP becomes legally binding to the Applicant and everyone acting on behalf of the Applicant during the construction and operation activities.

In summary, the Applicant is responsible for:

- Reviewing the environmental monitoring programme in the EMP or as recommended by the ECO;
- Ensuring that the required environmental audits are undertaken on a timely basis and that the results of the audits are communicated to all personnel that are responsible;
- Implementing an environmental monitoring programme approved by the authorities and providing such results to the authorities;
- Conducting regular site inspections and monitoring to ensure compliance with the EMP;

-
- Advising on actions to be taken in the event of incidents or public complaints;
 - Keeping a complaint register on-site/on the property.

RESPONSIBLE CONTRACTOR

It is the responsibility of the Contractor to ensure that there is compliance with the environmental specifications contained in the 24G, EMP and instructions from the Department. This implies that the Contractor must familiarise themselves with the documentation and understand the restrictions and conditions. If any infringements are noted, the ECO and Applicant must be notified before further action is taken.

The Contractor will also be responsible for the workforce on-site and could appoint a suitable site manager who must report to the Contractor.

SUB-CONTRACTORS

Sub-contractors must operate under the supervision of the Contractor and are liable for issues associated with their actions.

ENVIRONMENTAL CONTROL OFFICER

An Environmental Control Officer (ECO) can be appointed by the Applicant to advise and assist where necessary and to monitor the implementation of the EMP, as an external function. The ECO must have previous experience in environmental management and compliance monitoring.

The ECO should conduct an independent evaluation of compliance with the EMP, but is not responsible for enforcing the conditions of the EMP.

Specific responsibilities include:

- Undertake environmental site audits as determined by the responsible authority;
- Recommend environmentally appropriate solutions to environmental problems;
- Recommend additional environmental management measures, if applicable;

- To assist in environmental training for the staff;
- Help raise awareness for environmental sensitive issues and help foster an appropriate environmental attitude towards the environment;
- Respond to non-compliance and provide corrective actions and procedures;
- Assist the Applicant if liaising with authorities is required.

MITIGATION MEASURES & MONITORING

The following maintenance and mitigation measures are recommended for implementation by the Applicant for the construction phase and the duration of the operational phase.

**Please note that this section will be amended and completed when all comment has been received from Commenting Authorities and interested and affected parties.*

MANAGEMENT OBJECTIVES

ECOLOGICALLY SENSITIVE & FLORA MANAGEMENT

Objective:

- To minimize damage to the aquatic ecology.
- To control and prevent alien vegetation growth.

Actions / Management Measures:

The following can be done to mitigate the impacts on the floral species:

Pre-Construction & Construction Phase:

- The specialist report indicated that all waste that was generated during the construction phase must be managed.
- Areas disturbed by the construction activity must be monitored for alien invasive plants and where observed, these plants must be removed. The following is suggested:
 - An effort be made to keep the site clear from alien vegetation and that the areas that are denuded during construction be re-vegetated with indigenous grass.

- It must be made an offence for any staff to take/ bring any plant species into/out of any portion of the project area. No plant species whether indigenous or exotic must be brought into/taken from the project area, to prevent the spread of exotic or invasive species or the illegal collection of plants.
- A fire management plan must be complied with, and implemented, to restrict the impact fire would have on the surrounding areas.

Alien control:

Alien species must be controlled and managed. Herewith is the management plan (excessive use of herbicides is not recommended, but rather a manual extraction) for select species should they occur on the site:

To control *Acacia longifolia*:

Mechanical eradication is the best control method. Young trees can be pulled up by hand while immature trees can be dug or hoed out. Older trees should be cut as low as possible and the bark must then be stripped into the soil.

Older trees can also be ring-barked. Once the trees have been cut, the branches can be stacked and burnt when the wood is dry. However, since the residential area is too close and the fire risk high, it is rather recommended that wood be removed from the property.

Follow-up work must always be done after clearance, to uproot all young seedlings.

To control *Acacia saligna*:

Control of *Acacia saligna* (Port Jackson) is difficult because the plant coppices after being cut down or burnt and new seedlings can continue germinating from the soil seed bank for many years. Thus the best control is a combination of mechanical, chemical and biological methods.

Biological control of Port Jackson has to date relied mainly on the gall rust fungus *Uromycladium tepperianum*, introduced from Australia. The fungal spores are dispersed by wind and rain, and when germinating on a Port Jackson plant they send thin filaments into the plant to extract nutrients from the cells. Eventually, the fungus causes galls to develop on the branches and foliage of the Port Jackson plant.

These are the spore-producing structures of the fungus, and they further drain the host plant of nutrients that would normally be used for growth and reproduction. A severe infestation of the gall rust fungus will kill the host tree by predisposing it to other stress factors, such as drought stress.

Another biological control is the seed weevil *Melanterius compactus* which has recently been introduced as an additional biocontrol agent for Port Jackson. The *Melanterius compactus* is mainly used to control Rooikrans. The adult beetles feed on the flowers and develop seeds of Rooikrans and Port Jackson. The female beetles then chew small holes through the walls of developing pods and lay their eggs singly on young seeds, so that the larvae will have a ready food supply after they hatch. The larvae burrow into and feed on the seed tissue, destroying the developing seeds in the process. After about six weeks they chew their way out of the pods and drop to the ground, where they pupate in the soil until they emerge as adult beetles six to eight weeks later (December-March). The beetles spend the remainder of the year overwintering under bark, becoming active in spring to begin the cycle again. By destroying the viability of seeds, seed weevils not only reduce the rate of spread of *Acacia cyclops* (Rooikrans) and other invasive acacias but also limit regeneration from the soil seed bank after mechanical and chemical clearing. Rooikrans is one of the few species that can be effectively controlled using mechanical methods alone – since the plant does not coppice, it is not necessary to treat the stumps of felled Rooikrans with herbicides.

Mechanical control will involve hand-pulling the seeding plants. Immature plants should either be ring-barked, dug out, or the stems should be cut as near as possible to the ground. The bark on the remaining stem stub must be peeled off into the ground, once the stem has been cut. Mechanical eradication is an effective method of control as long as the stems of older plants are severed as low as possible, thereby ensuring that no buds will re-sprout.

Chemical control involves the stems to be cut as low as practical, where herbicides are applied in diesel or water as recommended for the herbicide. Applications in diesel should be to the whole stump and exposed roots and in water to the cut area as recommended on the label of the herbicide.

To control *Eucalyptus* sp:

Eucalyptus sp. (Blue Gum) is a vigorous resprouter, so felled trees will coppice unless the stump is treated or the entire plant is removed:

The best methods for removing gums include:

- Uproot young gum trees with a basal stem less than 45mm in diameter;

- Ringbark large trees by removing a ring of bark 25cm wide. Peel the bark to just below ground level. Dead trees fall over. Remove them before they are dangerous;
- Knock off any coppices that appear on stumps before they shoot;
- Avoid the use of herbicides wherever possible;
- Note that biological control is not an option for gum trees, due to their importance to bees. (South Africa's honey bees are under threat. They face diminishing habitat and forage resources, attack by the *Varroa* mite pest and American Foulbrood disease, pollution from pesticides, and stress from being worked hard to provide a pollination service. For honey bee populations to withstand these stresses, a healthy diet is critical for a fully-functioning immune system.)

To control *Lantana camara*:

Lantana can be controlled either manually or chemically. It will resprout after being cut, thus it is very important that the whole plant must be uprooted, if it is going to be cleared manually or mechanically:

- Seedlings/juvenile shrubs of up to 1m tall can be uprooted by hand-pulling, while the top growth of the larger plants must be cut to expose the base plants, before uprooting the plant by pulling on the remaining stump. Bulldozers and cables and winches attached to tractors can be used for uprooting plants if they prove to be stubborn.
- *Lantana* can also be controlled chemically and there are three application techniques available for chemical control. These are soil, stump and foliar application.
- Considering the soil properties, soil application would however not be recommended as it is also non-selective and will kill other plant species, especially trees and shrubs.
- Stump-applied herbicide treatments are recommended where the *Lantana* plants are generally too large (greater than 2m tall) for foliar application of herbicides. The herbicide is applied to freshly cut stump surfaces, on the bark and exposed roots.
- Foliar treatment is limited by the density of the infestation and the height of the plants which can be sprayed. Taller plants and plants in dense thickets, such as the study area, must be slashed near ground level and left to regrow. The coppice (regrowth) must then be sprayed when the alien is 0.5-1m tall. It is also very important to choose the right herbicide and any herbicide that is a non-selective herbicide must be avoided.
- It is essential that the label attached to the herbicide container be carefully read and understood before applying the chemicals.

To control *Leptospermum laevigatum*:

Leptospermum laevigatum is commonly known as the Australian myrtle. It is a highly invasive species, being classified as a Category 1b invasive species, according to NEMBA classifications and occurs mostly in the Western and Eastern Cape Provinces of South Africa. The plant can propagate quickly post-fire, which contributes to its invasive ability. The fruits, containing the seeds, are not released from the tree until after the tree dies, usually as a result of felling or fire.

Mechanical control is, currently, probably the most effective form of control against Australian myrtle. If plants are removed within their first three years, the invasive potential of populations can be drastically reduced, because seeds are only produced in the plant's second or third year. Furthermore, seeds are not very long-lived within the soil because they do not have enough nutrient supplies. Controlled burning of infested areas is also an option for control of the spread of this weed, however considering the quick post-fire propagation and the high risk of fire for this area, it is not recommended as a control method.

Two species of insects have been introduced into South Africa in an attempt to use biological control to hamper the spread of the Australian myrtle. The first of these, a bud-galling midge, *Dasineura strobili*, was inadvertently introduced in the 1980's and, initially, had promising prospects as a biocontrol agent. However, there is presumed to be much parasitism and predation of the midge, reducing its efficacy as a control agent. The second potential biocontrol species is a leaf-mining moth, *Aristaea thalassias*, introduced in 1996. This species only attacks young leaves and causes leaf-abscission, having relatively negligible impacts on the survival and growth of mature *L. laevigatum* trees. It is hoped that investigations into a third potential biocontrol agent, in the form of a gall-inducing scale insect, *Callococcus leptospermi*, will yield good results in terms of negative impacts on Australian myrtle in its native range, with the hopes that this species may be imported into South Africa for release, within the next few years.

To control *Opuntia monacantha* spp:

Opuntia species can form thick, homogenous impenetrable stands that invade savanna, grassland and karoo biomes. Being able to survive in arid to moist environments, they can replace indigenous habitats and severely deplete natural biodiversity and pose a serious threat to the biomes of South Africa.

Animals disperse seeds widely and vegetative propagation has made this species difficult to eradicate through mechanical and chemical means. In fact, mechanical eradication has been proven to be mostly unsuccessful and could even contribute to the further spreading of *Opuntia* species if care is not taken. Chemical methods have been used to control *Opuntia* species but are more successful on isolated stands.

Two stem-injected chemicals are registered for use as herbicides against *Opuntia* species and more specifically the prickly pear, in South Africa. Monosodium methanearsonate (MSMA) and glyphosate can

be injected into the stems of the plants as concentrated solutions. If chemical control is going to be used, it is very important to read the herbicide label carefully and follow the directions.

Biological control is a more economical and environmentally-friendly option than the chemical method. Various species of biocontrol agents for prickly pear are present in South Africa. Host-specific cochineal species include *Cochineal* species, *Dactylopius opuntiae*, the cactus moth, *Cactoblastis cactorum*, and a stem boring weevil, *Metamasius spinolae*. Together, these insects are keeping prickly pear populations at relatively low levels.



CONTROL OF PRICKLY PEAR

by H.G. ZIMMERMANN
Weeds Research Subdivision
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(Replaces B.1.1/1982)

The spiny prickly pear (*Opuntia ficus-indica*) can become a troublesome weed in some parts of the Republic. In some cases chemical control is the appropriate method to control infestations.

Chemical control

Monosodium methanearsonate (MSMA) and glyphosate are currently registered for the control of prickly pear. Both these herbicides must be injected into the stems of plants as concentrated solutions.

The Department of Agriculture and Water Supply assists farmers who wish to control the weed by supplying them with MSMA (720 g/l) concentrate at a subsidised price. Before application the MSMA is diluted with an equal volume of water, i.e. 1 part MSMA and 1 part water. This solution is then injected into holes which are punched in the main stems of prickly pear plants.

The recommended rate for glyphosate is 1 part glyphosate (359 g/l) in 2 parts water. The use of glyphosate for prickly pear control is,

however, not subsidised by the Department of Agriculture and Water Supply.

Method of stem application

Any sharp metal plunger can be used to make the necessary holes in the prickly pear stems as illustrated in Fig. 1.

The MSMA solution is then injected into these holes. The holes must be at an angle and big enough to hold 2 ml of the solution; too small holes will cause spillage. An ordinary, inexpensive sheep-dose applicator with a rucksack reservoir is ideal for application (Fig. 2).

A rucksack spray pump can also be used provided the nozzle is replaced with a thin pipe with a small orifice which fits into the hole. To avoid spillage, the herbicide should be transferred into the hole by gravitation flow.

The number of injections needed to kill a plant will depend on its size, as illustrated in Fig. 3. Small trees with 15 to 50 leaf pads will require one (= 2 ml



FIG. 1 - A sharp metal plunger is used to make holes in prickly pear stems



FIG. 2 - Sheep dose applicators are ideal to inject the herbicide into the holes

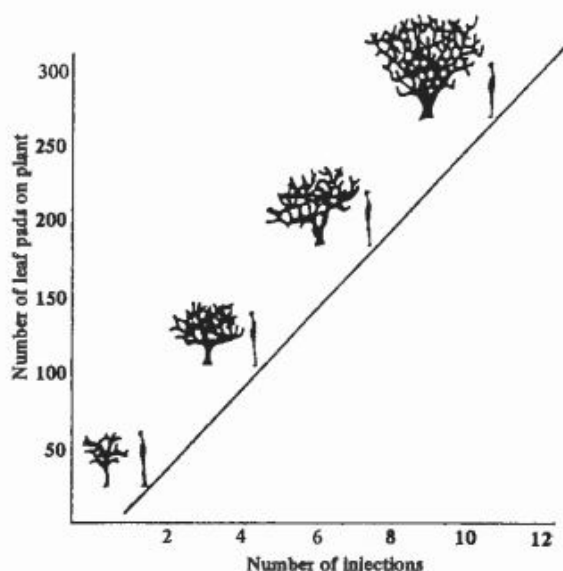


FIG. 3 - The number of injections necessary to kill prickly pear plants of various sizes



FIG. 4 - Injecting terminal leaf pads of prickly pear

solution) or two (≈ 4 ml solution) injections to kill them, while large plants with about 250 leaf pads will require approximately 10 injections (≈ 20 ml solution).

It is important that the injections are spaced evenly over the entire surface area of the lower stem or stems. Only the main stem and, if necessary, the primary branches should be treated. Where the injections are placed too high, the plants may break apart and scatter their leaf pads over a large area and these may then root and grow.

Where the main stems of plants are totally inaccessible, the injections may be administered to some terminal leaf pads (Fig. 4).

Treat one leaf pad on each of the main branches of the plants. This method will not kill the entire plant, but will cause abscission of most of the leaf pads, eventually exposing the main stem. These plants can then be treated according to the normal, recommended stem injection method, as described above.

First symptoms become visible a few weeks after the plants have been injected, when the terminal leaf pads turn brown and start falling off. Treated plants may take from 2 to 8 months to die, depending on their size.

Farmers who wish to control prickly pear with MSMA should contact their nearest agricultural

extension officer or weed inspector for details on the subsidy scheme available to them.

Precautions

MSMA is corrosive on metals and all application equipment should therefore be dismantled and thoroughly rinsed in clean water after use. Although MSMA has a relatively low mammalian toxicity, it can nevertheless be harmful, or even fatal, to animals if swallowed. Keep all MSMA containers closed and out of the reach of children and animals. It is also advisable to withdraw all stock from treated areas for a period of 3 months. Fruit from treated plants may not be consumed.

Biological control

The prickly pear moth *Cactoblastis cactorum* together with the cochineal *Dactylopius opuntiae* remain very efficient enemies of, mainly, small prickly pear plants (14 leaf pads and less). Once plants have outgrown the 14 leaf pad size the insects find it increasingly difficult to destroy the plants. Chemical control should therefore be concentrated on plants of this size, and larger, leaving smaller plants to the insects.

To control *Schinus terebinthifolius*:

S. terebinthifolius is native to South America and is a highly invasive species that has proved to be a serious weed in South Africa.

Mechanical Control:

Hand pulling and removal of juveniles may be useful in the early stages of invasion, however, it is important to remove all portions of the root to prevent resprouting. Bulldozers are sometimes necessary.

Chemical control:

S. terebinthifolius has been effectively controlled with a variety of chemicals and methods even when established, such as foliar applications of imazapyr, foliar and cut surface applications of triclopyr, dicamba and glyphosate, and basal bark applications of triclopyr. An additional advantage to chemical control over mechanical treatments is that plants are killed slowly which allows other plants to respond to increasing light and moisture availability over a couple of weeks, and dead stems can even be left to aid the natural regeneration of native plants.

It is recommended to combine the use of cutting and herbicides, to control resprouting from stumps.

To control *Solanum sisymbriifolium*

This is a shrub or small tree to 3 m high, with scattered prickles on stems, leaves and petioles; differs from other *Solanum* species by its coarse reddish-brown hairs on stems, under the surface of leaves and calyx; leaf margin is wavy, to deeply lobed. Flowers are white and ripe berries are orange-yellow. Largely confined to the former Transkei of the Eastern Cape where it has been used as a hedge plant. Invades grassland, savanna, forest margins, plantations, riverbanks and disturbed sites.

This species reproduces mainly by seed, which is most commonly dispersed by birds and other animals that eat the mature fruit. They may also be spread by water and in mud or contaminated soil.

This group of invaders includes species that cause major problems and losses in the forestry and agricultural industries and are a threat to the natural biodiversity in South Africa.

For control, small infestations and individual plants can be hand-pulled. Care should be taken when handling this plant due to the large, sharp thorns along the stems and branches.

Established plants are easy to treat, but the legacy they leave with the seed is the problem. Large plants can be felled and a herbicidal spray applied to the cut stump surface to kill the stump and root system. For smaller plants, a foliar application of the herbicide is sufficient.

Strictly follow the specific instructions and dosages on the label of each herbicide product. Always contact a reliable chemical advisor before using any chemicals to ensure the correct dosage and specifications on the label are adhered to.

To control *Acacia mearnsii*

Biological control agents cannot be used on Black Wattle (*Acacia mearnsii*) due to its extensive cultivation as a commercial plantation species, especially in KwaZulu Natal. Alternative control methods are mechanical or chemical.

Mechanical control techniques include:

- Ring-barking (usually up to chest height) where the bark is completely stripped away from the tree;
- Felling of old trees which do not coppice and subsequent die.
- The eradication of seedlings.

Mature trees can be killed by a combination of felling and burning. The branches of the felled trees are stacked around the stumps. When the branches are sufficiently dry, fire is set to the stack (in accordance with fire regulations). Fire stimulates the germination of numerous wattle seeds present in the soil and this results in dense 'carpets' of wattle seedlings. These seedlings may be suppressed by sowing a suitable grass species (e.g. *Eragrostis curvula*) immediately after the ashes have cooled. This will reduce the infestation of the area by other undesirable species, produce valuable grazing, and minimise the danger of soil erosion. Subsequent rains will promote the germination of wattle seeds. These seedlings should be hoed out manually. Follow-up spot spray treatments with a suitable herbicide selective to broad-leaf species is necessary to eliminate the remaining seedlings.

Currently, the major control method for *Acacia mearnsii* in South Africa is by chemical means. Always follow the guide to the use of herbicides. The herbicide Garlon 4 (triclopyr butoxy ethyl ester 480 g/l EC) is registered in South Africa for foliar treatment of black wattle by knapsack or tractor-mounted boom sprayer only. These are the most commonly used methods for controlling massive seedling regeneration after initial clearing or fire.

All forms of control should be followed by revegetation with suitable desirable species.

General alien control of other species

- Juvenile alien trees will be pulled and removed to a registered landfill site.
- Any poisonous alien plants (if any) must be removed to a registered waste facility and may not be given to workers or the community.
- Once the area has been developed and open/park spaces vegetated, a continuous alien control programme will be implemented by pulling any seedlings on a quarterly or annual basis. Specific

attention will be directed to those plants listed above. No tree/plant will be left until it reaches seed-bearing age.

- All juvenile alien plants will be pulled and removed from the site.
- Mechanical control will involve hand-pulling seeding plants. Immature plants should either be ring-barked, dugout, or the stems should be cut as near as possible to the ground. The bark on the remaining stem stub must be peeled off into the ground, once the stem has been cut.
- Chemical control involves the stems to be cut as low as practical, where after herbicides are applied in diesel or water as recommended for the herbicide. Applications in diesel should be to the whole stump and exposed roots and in water to the cut area as recommended on the label of the herbicide.
- There will also be no interference with any biological control and the insects must be left to continue to invade alien trees.
- Herbicides may be used with high caution.
- No tree will be left until it reaches seed-bearing age.

Monitoring Responsibility:

- The Applicant, the Contractor, or ECO or representative site manager must check for alien invasive vegetation and remove thereof as the development progress.
- The Applicant should embark on contractual agreements with new property owners to establish native plants of the Algoa Sandstone Fynbos species in gardens.
- The Applicant, the Contractor, or ECO or representative site manager must ensure that native plants of the Algoa Sandstone Fynbos species are established along the streets/open space areas on the property.
- The Contractor is responsible for the behaviour of his staff with specific reference to environmental management until the construction is completed.

FIRES

Objective:

- Prevent the loss of life (humans, fauna, or flora) within the site and surrounding area.
- No site fires are to be caused by construction activities and workers.
- Approved emergency response procedures, where relevant.

Actions / Management Measures:

- All measures to prevent fires must be included in the operation of the Business (1) type developments and related project activities.
- A fire emergency plan must be developed and known to all workers on site.
- Veldt fires will be prevented by not allowing fires and restricting smoking only to designated areas at the site. The Applicant will take full responsibility for any financial losses which prove to be the result of negligence in this regard.
- No cooking fires will be allowed during the construction of infrastructure or buildings. Once a site is operational, proper amenities in kitchen areas should be provided for staff.
- No burning of waste will be allowed at the site.
- Fire-fighting equipment will be available on-site and all workers will be conversant with the related protocol.
- Employees should be trained in fire safety and there should be fire marshals.
- Local fire station numbers should be known or easily accessibly to all staff.
- The prescribed fire safety precautions in terms of the Occupational Health and Safety Act must be adhered to during the construction and operational phase.
- The following signs must be installed at any sites where there is a potentially high risk of flames/explosion:
 - No smoking, no naked open flame, no cellphones.
 - Signs must be placed in conspicuous places and management must manage staff to adhere to the safety principles.
- Install fire extinguishers at every building once operational.
- Clearly mark fire points and fire assembly areas.
- Fire drills should be conducted at least once a year and testing and servicing of fire-fighting equipment and appliances must be conducted regularly.
- Conduct a fire audit once a year, to ensure fire-fighting equipment is still functional and the emergency response plan is still appropriate.
- Formulate and bring to the notice of all workers and clients fire safety policy and rules.
- Access to a fire hydrant system must be constructed throughout the site.
- Establish and clearly mark the fire exits and escape routes.
- Ensure that the designs provide fire exits from all the working areas.
- The exits shall open outwards and shall remain open during working hours.
- Assess the potential hazard of fire and the sensitivity of the environment.
- The documented protocol must be followed to inform the responsible person(s) and landowner/adjacent landowner (s) accordingly.
- All trained workforce must be commanded to beat fire with appropriate available appliances.
- Use a water cart and available hoses and fire extinguishers to contain the fire.

- Use the loader to create a firebreak ahead or around the fire.
- Open uncontrolled fires will be forbidden at the site.
- The Contractor shall comply with all safety requirements enforced; these include emergency evacuation procedures, fire preventative measures, etc.
- The Contractor shall supply firefighting equipment in proportion to the fire risk presented by the type of construction and other on-site activities and materials used on site. This equipment shall be kept in good operating order. This particularly applies to welding activities, etc.
- The Contractor is to provide designated safe smoking areas.
- The Contractor or ECO must ensure that fuel, lubricants, transmission, and hydraulic fluids shall only be stored in the designated areas that comply with the OHS Act.
- The Contractor or ECO must ensure that there is compliance with the National Veld and Forest Fire Act (No. 101 of 1998).
- The Contractor or ECO must ensure proper emergency response procedures are in place for dealing with fires.
- The Contractor, ECO or representative site manager must ensure that the burning of waste is not permitted.
- The Contractor, ECO or representative site manager must ensure suitable precautions will be taken (e.g. suitable fire extinguishers, water bowsers, welding curtains) when working with welding or grinding equipment.
- The Contractor, ECO or representative site manager must ensure that all fire control mechanisms (firefighting equipment) will be routinely inspected by a qualified investigator for efficacy thereof and be approved by local fire services.
- All staff on site will be made aware of general fire prevention and control methods, and the name of the responsible person to alert to the presence of a fire.
- No fires are allowed on site.
- The Contractor, ECO and fire officer must ensure that:
 - “No-smoking” signs are placed in areas used for the storage of oil and fuel.
 - Basic fire fighting equipment shall be readily available on site.
 - Employees shall be made aware of the procedures in the event of a fire.

Monitoring Responsibility

Those responsibilities listed above, and:

- The Applicant must appoint a fire officer before commencement with construction.
- The fire officer must inspect and ensure that firefighting equipment onsite is functional and in working condition monthly.

- The Applicant is responsible for supplying firefighting equipment before construction commences.

DECOMMISSIONING PHASE

A decommissioning Phase for the EMP is not included in this management plan, since the vegetation can be re-established and the EMP is a living document and would need to be amended and adopted as the year's progress. This is normally the function of an Environmental Audit, which should take place once every 5 years, at least.

ENVIRONMENTAL TRAINING

The goal of an environmental training or environmental awareness plan is to prescribe how the Applicant intends to inform all of their employees of all the possible environmental risks resulting from their particular line/function of work within the structures of the organization. This plan will also prescribe how the identified risks will be dealt with to avoid pollution and environmental degradation.

All personnel associated with the project must understand the purpose and benefits of the EMP.

The appropriate training must occur as part of an induction program and should include:

ENVIRONMENTAL MANAGEMENT INTRODUCTION TO ALL PERSONNEL:

General environmental information session/s to ensure that employees at each relevant function and level receive environmental information and are aware of the environmental management objectives.

It is also the responsibility of the Applicant and representative site manager to conduct basic training with less literate employees describing the listed environmental impacts and the mitigation measures to be followed more practically. The Applicant may choose to employ an independent consultant (ECO) to conduct such training. Such training is best done in the employee's home language, onsite as it is more useful and visual. As a minimum the Basic Environmental Awareness Plan must address the following:

- The need for training
- General discussion on what is the environment
- Why must the environment be protected
- Types of environmental impacts

- Mitigation measures and Basic Rules to comply with
- Fines and Penalties
- Questions and Answers

JOB-SPECIFIC TRAINING

Employees whose function of work can cause significant environmental impacts must be trained, educated, and afforded the experience to ensure that their tasks are performed to the best of their ability to minimize environmental degradation on the site.

The spinoff of Environmental training will produce a group of people being equipped and enriched with the knowledge to implement the main principles that were taught to them, outside of the workplace as well. It will enable them to put into practice their knowledge at home or other workplaces, should they one day leave the site.

The Applicant/ECO/representative site manager is responsible to provide training annually (or more regularly if the need should arise) to employees on:

- The importance of compliance with the objectives of the EMP and procedures to achieve the objectives of the EMP.
- Identifying the significant environmental impacts: actual or potential impacts and how employees' activities might influence the impacts.
- Benefits for an improved personal performance about environmental awareness.
- Their roles and responsibilities in achieving compliance with the objectives of the EMP and procedures to achieve the objectives of the EMP, including emergency preparedness and response requirements.
- The potential consequences of departure from specified operating procedures.

In terms of job-specific training, the Applicant, ECO, representative site manager and Contractor must identify relevant personnel and training courses for employees performing tasks, which can cause significant environmental impacts. They must become competent based on appropriate education, training, and/or experience.

Comprehension training must include:

- Emergency preparedness and response, including an incident report.
- Soil stability and erosion control.
- Stormwater management.

-
- Water conservation and water quality protection.
 - Fire evacuations and risk control.
 - Poaching.
 - Faunal incidences – prevention of disturbance to fauna, reporting any faunal mortalities.
 - Alien vegetation identification and control.
 - Waste management.
 - Ability to recognize archaeological and palaeontological artefacts.
 - Incentives and rewards for good environmental practice.

This list is not intended to be exclusive or exhaustive.

After training needs have been identified, it is the responsibility of the Applicant, representative site manager and ECO to ensure that employees attend the relevant identified training and attendance must be documented. The Applicant must decide on the appropriate time to conduct environmental training.

As an incentive to motivate employees, progress in compliance with the training programme can be recorded and evaluated to nominate and elect the best candidate who has improved personal performance regarding environmental awareness. Such an employee may be rewarded at the discretion of the Applicant. This can be done through the following method:

- By Management through task observation;
- During internal and external audits, when the effectiveness of the EMP is evaluated;
- Own initiatives that are taken by employees to improve the environment.

The Environmental Awareness Plan must apply to the specific task and the level of understanding of the employee. Open communication between the employees and the ECO, the Contractor, the representative site manager and the Applicant must be established and in the event of an environmental emergency, the Applicant, representative site manager and ECO must have process steps in place to ensure that the situation is contained and the correct procedure is followed to ensure that pollution and degradation do not occur.

Mitigation measures listed in this document must be used as a guideline to conduct such training and to establish the rules for operation. After such training, each employee may receive a certificate of completion of the training. The Applicant, representative site manager or ECO may also have a checklist available onsite to ensure that employees are constantly aware of the mitigation measures.

DESCRIPTIONS OF SOLUTIONS TO RISKS

The following risks have been identified:

- Soil stability and erosion after heavy rains.
- Unauthorized clearing of vegetation.
- Fire risk.
- Alien vegetation infestation.
- Waste management.
- Dust control.
- Safety and security management.

The following procedures must be brought to the attention of all staff and suitable material/equipment provided to deal with them.

MANAGEMENT DURING THE OPERATIONAL PHASE & DECOMMISSIONING

Nr.	Objectives	Mitigation Measures	Target/Standard	Indicator	Frequency	Responsibility	Operational Phase
1. Post-construction and rehabilitation							
1.1 Aspect: Finishing of site after construction							
1.1.1 Restoration of the surrounding land							
Ensure successful rehabilitation and operation of the infrastructure installation							
	All temporary facilities and waste materials must be removed.	Clean site policy	Site to be inspected.	Continuous	ECO or Farm Manager	✓	
	Locally occurring indigenous grasses must be used during rehabilitation.	Successful rehabilitation of areas disturbed during construction	Site to be inspected.	Continuous	ECO or Farm Manager	✓	
	Natural vegetation should be retained wherever possible	Successful rehabilitation of areas disturbed during construction	Site to be inspected.	Continuous	ECO or Farm Manager	✓	
2. Dam Mitigation Measures							
2.1 Aspect: Aquatic Ecology Preservation							
2.1.1 Erosion & Stormwater Control							
	All spillways must be regularly monitored and maintained/revegetated.	Invasive vegetation control	Site to be inspected.	Continuous	ECO or Farm Manager	✓	

Nr.	Objectives	Mitigation Measures	Target/Standard	Indicator	Frequency	Responsibility	Operational Phase
1. Post-construction and rehabilitation							
	Stormwater mitigation must attempt to reduce erosion and sedimentation of the water preventing erosion of the receiving environment. It is preferable that run-off velocities be reduced with energy dissipaters and flows discharged into the local watercourses. <i>(Aquatic Specialist)</i>	Erosion control	Site to be inspected.	Continuous	ECO or Farm Manager	✓	
	Revegetating/rehabilitation of eroded areas along the existing dam in the project area. <i>(Aquatic Specialist)</i>	Erosion control	Site to be inspected.	Continuous	ECO or Farm Manager	✓	
	Erosion prevention and sediment control measures must be implemented. Temporary and permanent erosion control methods may include silt fences, interceptor ditches, seeding and sodding, riprap of exposed embankments, and mulching. <i>(Aquatic Specialist)</i>	Erosion control	Site to be inspected.	Continuous	ECO or Farm Manager	✓	
	Siltation of dams must be monitored to avoid decreasing the capacity of the dams. Silt traps and fences must be placed in the preferential flow paths to prevent sedimentation of the watercourse, these should be monitored and serviced regularly. <i>(Aquatic Specialist)</i>	Siltation control	Site to be inspected.	Continuous	ECO or Farm Manager	✓	
	An Alien Invasive Vegetation Plan must be implemented and management according to the prescribed methods noted in this document. <i>(Aquatic Specialist)</i>	Invasive vegetation control	Site to be inspected.	Continuous	ECO or Farm Manager	✓	

REHABILITATION PLAN FOR THE FARM DAMS

PURPOSE OF THE REHABILITATION PLAN

The purpose of this plan is to ensure that the dam and its surrounding environment are stabilised, restored, and managed in a way that prevents erosion, protects water quality, maintains ecological functioning, and ensures long-term structural integrity. The plan applies to both construction and operational phases of dam enlargement or maintenance

REHABILITATION OBJECTIVES

The following is the objectives of the Rehabilitation Plan:

- Stabilise all disturbed areas to prevent erosion and sedimentation into the Hol Rivier.
- Restore vegetation cover using locally indigenous species.
- Protect water quality by preventing runoff contamination.
- Reinstate natural drainage patterns where possible.
- Ensure safe, long-term functioning of the dam embankments and spillway.
- Prevent the establishment of invasive alien plants.

REHABILITATION MEASURES

In the event that the dams will be decommissioned the following measures will need to be implemented:

EARTHWORKS STABILISATION

- Shape and smooth all exposed embankments to stable slopes (typically 1:2.5 or gentler).
- Compact soil layers to engineering specifications to prevent slumping.
- Install contour berms or drainage channels to direct runoff away from unstable areas.
- Reinforce spillway and outlet structures with rock rip-rap or gabions where necessary.

EROSION CONTROL

- Apply biodegradable erosion-control blankets (e.g., jute, hessian, coir mats) on steep or vulnerable slopes.

- Install silt fences or sediment traps downstream until vegetation is established.
- Place rock armouring on high-flow zones, including spillway edges and toe of embankments.

VEGETATION REHABILITATION

- Re-vegetate disturbed areas immediately after construction using locally indigenous grasses and shrubs such as:
 - *Themeda triandra* (Red Grass)
 - *Eragrostis curvula* (Weeping Lovegrass)
 - *Cynodon dactylon* (Kweek)
- Hydroseeding may be used on large embankments.
- Plant stabilising shrubs along the dam perimeter (e.g., *Searsia* species) to reduce erosion.
- Avoid planting trees on the embankment itself to prevent root penetration and structural weakening.

ALIEN INVASIVE VEGETATION CONTROL

- Remove all alien species manually or chemically.
- Conduct follow-up clearing every 3–6 months for the first two years.
- Dispose of biomass away from watercourses to prevent re-sprouting.

WATER QUALITY PROTECTION

- Prevent fuel, oil, cement, and waste contamination during construction/demolishing activities.
- Establish a 10–20 m vegetated buffer zone around the dam to filter runoff.
- Monitor turbidity and sedimentation during and after construction.
- Ensure livestock access points are controlled to prevent bank erosion.

DRAINAGE & HYDROLOGICAL REHABILITATION

- Reinstate natural drainage lines leading into the dam.
- Ensure spillway capacity matches design flood requirements.
- Maintain freeboard and remove debris that may obstruct flow.
- Prevent channel incision downstream by installing energy-dissipation structures if needed.

MONITORING & MAINTENANCE

MONITORING SCHEDULE

The following schedule is recommended:

- Weekly during construction.
- Monthly for the first 6 months after rehabilitation.
- Quarterly for the next 2 years.
- Annually thereafter.

MONITORING INDICATORS

The following indicators can be used to track the rehabilitation success rate:

- Vegetation cover percentage (target: >80% within 12 months).
- Absence of active erosion or gully formation.
- Stability of embankments and spillway.
- Water clarity and absence of excessive sedimentation.
- Alien plant regrowth levels.

RESPONSIBILITIES

The landowner or farm manager must oversee implementation and maintenance of the rehabilitation process. The ECO must conduct inspections and report on compliance. The appointed contractor must implement the requirements of this plan and the EMPr.

COMPLETION CRITERIA

Rehabilitation is considered successful when:

- All disturbed areas are vegetated and stable.
- No erosion or sedimentation is occurring.
- Alien plants are controlled.
- Dam infrastructure is functioning safely and as designed.

- Water quality remains within acceptable agricultural standards.

M3: Aquatic Biodiversity Assessment



FRESHWATER ECOLOGY IMPACT ASSESSMENT FOR UITVLUGT DAMS

**Kouga Local Municipality and Cacadu District
Municipality, Eastern Cape Province, South Africa**

13/05/2026

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Report Name	FRESHWATER ECOLOGY IMPACT ASSESSMENT FOR UITVLUGT DAMS	
Specialist Theme	Aquatic Biodiversity Theme	
Project Reference	Uitvlugt Dams Project, EC	
Report Version/Date	13/05/2026	
Environmental Assessment Practitioner/Client		
Fieldwork	Charles de Beer (SACNASP 168416)	
Report Writer	Charles de Beer (SACNASP 168416)	
Reviewer	Prasheen Singh (SACNASP 116822)	
Report Update (May 2026)	Prasheen Singh (SACNASP 116822)	
Declaration	The Biodiversity Company and its associates operate as independent consultants under the auspice of the South African Council for Natural Scientific Professions. We declare that we have no affiliation with or vested financial interests in the proponent, other than for work performed under the Environmental Impact Assessment Regulations, 2017. We have no conflicting interests in the undertaking of this activity and have no interests in secondary developments resulting from the authorisation of this project. We have no vested interest in the project, other than to provide a professional service within the constraints of the project (timing, time and budget) based on the principles of science.	

Abbreviations

Abbreviation	Definition
ASPT	Average Score per Recorded Taxon
CBA	Critical Biodiversity Area
DO	Dissolved Oxygen
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EI	Ecological Importance
EIA	Environmental Impact Assessment
EIS	Ecological Importance and Sensitivity
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
EN	Endangered
ESA	Ecological Support Area
ETS	Ecosystem threat status
GIS	Geographic Information Systems
ha	Hectare
IHI	Index of Habitat Integrity
IUCN	International Union for Conservation of Nature
LC	Least Concerned
MASL	Meters Above Sea Level
NEMA	The National Environmental Management Act
NFEPA (FEPA)	National Freshwater Ecosystem Priority Areas
NT	Near Threatened
NWA	National Water Act
NWBEST	National Web-Based Environmental Screening Tool
PAOI	Project Area Of Influence
PES	Present Ecological State
RQO's	Resource Quality Objectives
SAIIAE	South African Inventory of Inland Aquatic Ecosystems
SANBI	South African National Biodiversity Institute
SASS5	South African Scoring System version 5
SCC	Species of Conservation Concern
SDP	Site Development Plan
SQR	Sub Quaternary Reach
TBC	The Biodiversity Company
TWQR	Target Water Quality Range
VU	Vulnerable
WMA	Water Management Area

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1 Introduction

1.1 Background

The Biodiversity Company was appointed by Groenewalds Attorneys to conduct a Freshwater Ecology Impact Assessment for the Uitvlugt Dams project, which will henceforth be referred to as the project area. The project area is located within the Gouka Local Municipality, Eastern Cape, South Africa (Figure 1-1).

The need for this report is also based on an indication from the DWS that the instream dams fall within the regulated areas of watercourses. This will be investigated in this report. In order to achieve this a single aquatic survey was conducted on the 09th of July 2025, which constituted a dry season/low flow survey. A 500 m area has been demarcated for the project to facilitate the identification of watercourses within the regulatory zone. This area is referred to as the project area of influence (PAOI) (Figure 1-1).

This report addresses Section 40 of the NWA and any legal requirements pertaining to the National Environmental Management Act (Act 107 of 1998), as amended (NEMA), the reporting requirements adopted the approach in accordance with the amendments to the Environmental Impact Assessment Regulations (2014) (amended by GNR 326, 7 April 2017 and GNR. 517, 11 June 2021) of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA). The approach has taken cognisance of the recently published Government Notices (GN) 320 (20 March 2020) and GN 1150 (30 October 2020) in terms of NEMA, dated 20 March and 30 October 2020: "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, when applying for Environmental Authorisation" (Reporting Criteria).

This assessment has been completed in accordance with the requirements of the published General Notice (GN) 4167 by the Department of Water and Sanitation (DWS) (previously GN 509 of 2016 and GN 3139 of 2023). The said notice was published in the Government Gazette (no. 49833) under Section 39 of the National Water Act (Act no. 36 of 1998) in December 2023, for a Water Use Licence (WUL) in terms of Section 21(c) & (i) water uses. The GN 4167 process provides an allowance to apply for a WUL for Section 21(c) & (i) under a General Authorisation (GA), as opposed to a full Water Use Licence Application (WULA). A water use (or potential) qualifies for a GA under GN 4167 when the proposed water use/activity is subjected to analysis using the DWS Risk Assessment Matrix (RAM), provided the identified risks are all considered low risk and the applicant is listed under Appendix D1 or Appendix D2 of the same notice. This assessment will implement the RAM and provide a specialist opinion on the appropriate water use authorisation.

The purpose of the specialist assessment is to provide relevant input into the EA process and provide a report for the activities associated with the project. This report, after taking into consideration the findings and recommendations provided by the specialist herein, should inform and guide the Environmental Assessment Practitioner (EAP) and regulatory authorities, enabling informed decision-making with regard to the ecological viability of the proposed development and related activities.

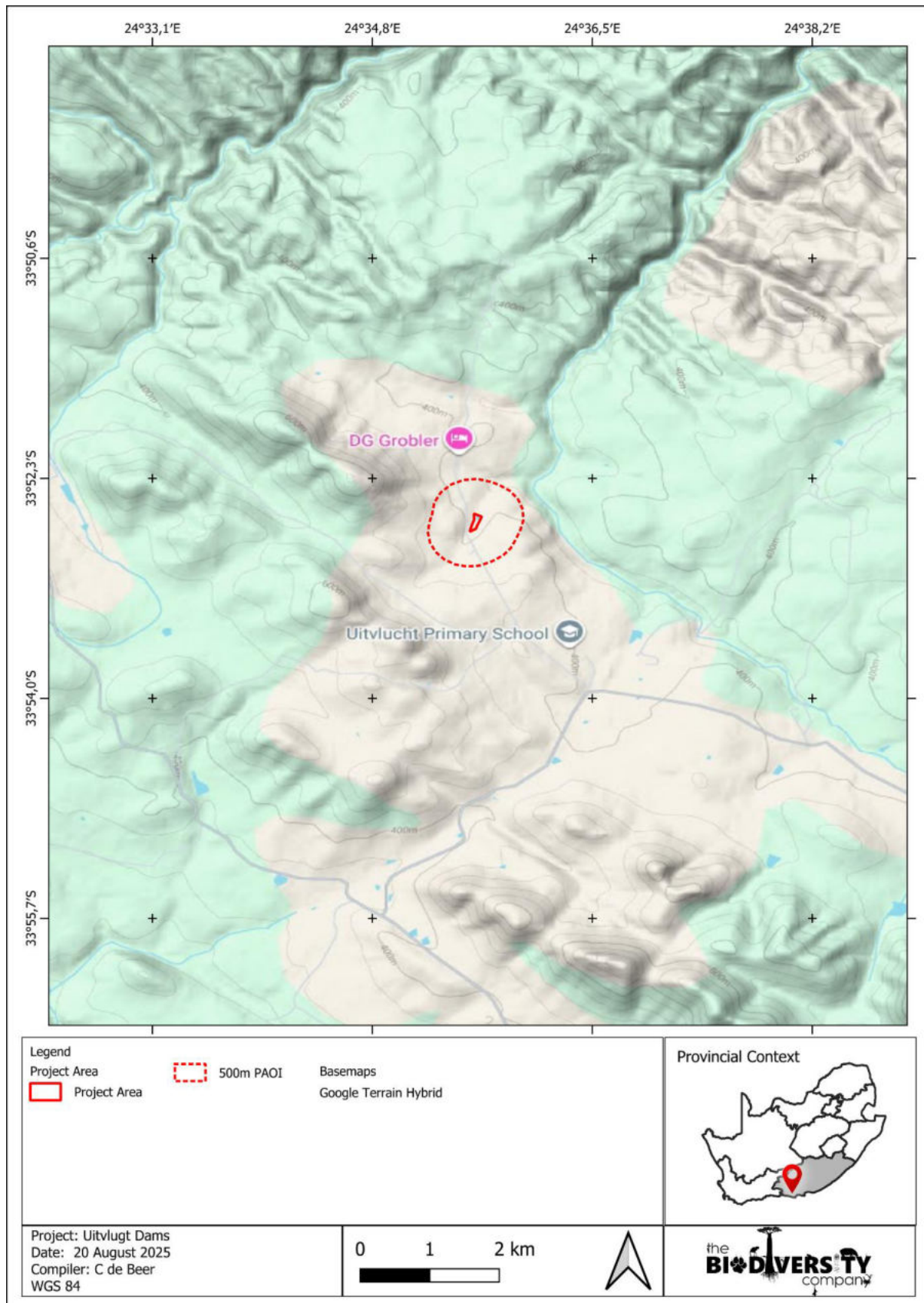


Figure 1-1 Location of the project area and PAOI

2 Terms of Reference

The following tasks were completed in fulfilment of the terms of reference for this assessment:

- A desktop assessment of local, provincial and nationally relevant datasets;
- GIS processing to preliminary identify water accumulation areas;
- The delineation of water resources in accordance with the DWAF (2005) guidelines, whereby the outer watercourse edges (as defined in the NWA) will be defined;
- A functional and integrity assessment of the water resources, whereby the Present Ecological Status (PES), Ecological Importance (EI) and Ecological Sensitivity (ES) is determined;
- The Recommended Management Objective (RMO), based on watercourse PESEIS, the Recommended Ecological Category (REC) and the Best Attainable Status (BES) that can be achieved;
- Provide project specific mitigation measures for the protection of the water resources; and
- The “Preliminary Guideline for the Determination of Buffer Zones for Rivers, Wetlands and Estuaries” (Macfarlane, *et al.*, 2014) will be used to determine the appropriate buffer zone for the proposed activity, if deemed applicable to the operation of the dairy.

3 Knowledge Gaps

The following aspects were considered as limitations:

- It is assumed that the client has provided the specialist with all available relevant and accurate data and information surrounding the project at the time of writing, including the extent of the project area provided to the specialist;
- The specialist was not provided with an architectural plan or any engineering drawings with regard to the planned development activities and, as such, the potential impacts arising from these activities may only be assumed based on previous experience;
- All datasets accessed and utilised for this assessment are considered to be representative of the most recent and suitable data for the intended purposes;
- The assessment area was based on the footprint areas as provided by the client, and any alterations to the area and/or missing GIS information pertaining to the assessment area would have affected the area surveyed and hence the results of this assessment;
- A single-season survey was conducted for the respective study, which would constitute a dry season/low flow survey. Thus, temporal trends were not investigated, and it must be acknowledged that ecological processes are dynamic and complex, with certain aspects thereof potentially being overlooked;
- Site U1 and U2 were both dry during survey, therefore no *in-situ* results were recorded;
- Due to dry conditions at site, the South African Scoring System (SASS5) macroinvertebrate species, fish assessment in which the Present Ecological Status (PES) of this tributary could not be completed. Therefore, 2014 Present Ecological Status, Ecological Importance (EI) and Ecological Sensitivity (ES) database was used to provide a list of aquatic biota species expected at the most proximate data collection point; and
- The GPS used for water resource delineations is inherently accurate to five meters, particularly in forested areas as relevant to this project. Therefore, the delineation plotted digitally may be offset by a maximum of five meters to either side. However, the delineations are deemed sufficiently accurate to adequately protect the freshwater resource.

4 Study Area

The Uitvlugt dams are located within the Gouka Local Municipality, Eastern Cape, and falls within the Fish to Keiskamma Water Management Area (WMA) (now the Mzimvubu-Tsitsikamma WMA) (DWS, 2023), the Southern Folded Mountains Ecoregion, and within the L90A quaternary catchment (Figure 10-9).

4.1 Project Description

According to the Scope of work (provided by Groenewalds), the two Uitvlugt dams located within the Kouga Local municipality, Eastern Cape, were already enlarged in 2016. The BOTTOM DAM was built in the 1990's and enlarged in 2016 whereas the TOP DAM was built between 2000 – 2010 and also enlarged in 2016. No further heightening is anticipated for the two dams. More details will be included if/when provided.

The two Uitvlugt dams area before and after the raising of the dam walls, as well as the approximate inundation area are presented in Figure 4-1 below.

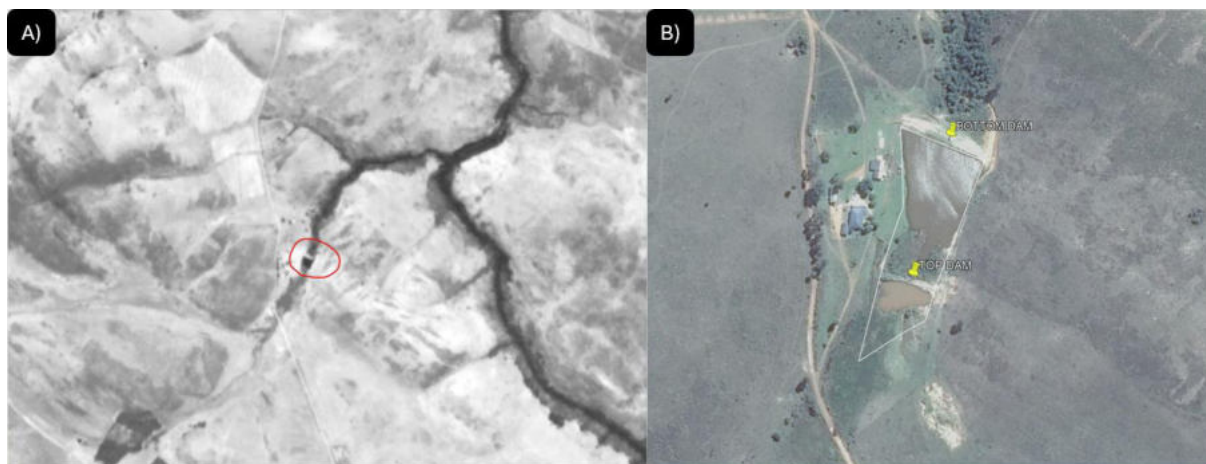


Figure 4-1 **A) Uitvlugt dams area before dam wall raising (2000); B) Enlarged Uitvlugt Dams and approximate inundation area (2016) (Google imagery provided by Groenewalds)**

5 Expertise of the Specialist

Charles de Beer

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Profile Summary

Aquatic Ecologist at The Biodiversity Company.

Specialist experience in various projects including Estuarine Health Assessments, Freshwater Ecological Assessments, Ecological Impact Assessments and Biomonitoring.

Specialist expertise includes Environmental Management, Aquatic Ecology and Water Quality.

Areas of Interest

Aquatic Ecology

Aquatic Ecosystem Health

Ecosystem Rehabilitation

Estuarine Health

Habitat and Biodiversity Conservation

Sustainable Development

Environmental Management

Water Quality

Key Experience

- Aquatic Impacts and Risk Assessments
- Water resource baseline monitoring and impact assessments
- The use of biological indicators such as fish, macroinvertebrates and diatoms
- Aquatic Ecological Assessments
- Biomonitoring Programmes
- Ecological Flow Requirements
- Ecological Impact Assessment
- Basic Assessments

International Experience

Botswana
Lesotho
Mozambique
Namibia
South Africa
Zimbabwe

Nationality

South African

Languages

Afrikaans – Proficient

English – Proficient

Qualifications

- National Senior Certificate (Oakdale Agricultural High School, 2019)
- BSc in Biological Science with Zoology and Botany (North-West University, 2022)
- BSc Honours in Environmental Science with Aquatic Ecosystem Health (North-West University, 2023)

Prasheen Singh

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Profile Summary

Prasheen Singh is a SACNASP registered Professional Scientist in the field of Aquatic Science.

He is an Aquatic Ecologist and Water Quality Specialist whose 12 years' experience comprises numerous Aquatic Scientific Studies, Peer Reviews, Research, and served as a SANAS accredited Technical Signatory at an Ecotoxicology Laboratory. He is also a Steering Committee Member for the Water Research Commission

Prasheen attained his MSc in Aquatic Health at the University of Johannesburg, and completed training courses for wetlands, river eco-status monitoring, hydropedology, and ecosystem restoration.

He has working experience throughout South Africa, specialising in water quality studies, aquatic biomonitoring, compliance audits, rehabilitation plans, monitoring plans and risk assessments. Prasheen is experienced in project management and strives to achieve and maintain scientific excellence in all specialist work.

Areas of Interest

Terrestrial and Aquatic Biodiversity.

Ecosystem Restoration, Protection and Conservation.

Environmental Awareness.

Key Experience

- Freshwater Ecological Studies
- SASS5 Macroinvertebrate Assessments, IHAS & MIRAI
- FRAI & Fish Population Structure Assessments
- Instream and Riparian Integrity Assessments
- Aquatic Impact and Risk Assessments
- DWS Risk Assessments
- Environmental Impact Assessments
- Surface water Quality
- Groundwater Quality
- Wastewater Quality
- SANS241 Drinking Water Quality
- Compliance Monitoring
- Water Use License Audits
- Aquatic Resources Rehabilitation Plans
- Aquatic Resources Monitoring Programs
- Ecotoxicity Testing
- GIS and Sensitivity Mapping (ArcGIS, QGIS)
- IFC Performance Standard 6 Reporting

Geographic Experience

Gauteng, Mpumalanga, Eastern Cape, Western Cape, Northern Cape, North West Province, Free State Province, Limpopo, KwaZulu-Natal
Angola

Nationality

South African

Languages

English – Proficient

Afrikaans – Basic

Qualifications

- MSc (University of Johannesburg) – Aquatic Health (*Cum Laude*).
- BSc Honours (University of Johannesburg) – Biodiversity and Conservation
- BSc (University of Johannesburg) – Life and Environmental Sciences
- Pr. Sci. Nat. (116822) – Aquatic Science
- SASS 5 (2017-2024) – Department of Water Affairs and Sanitation River Health Programme
- River Ecstatus Monitoring Programme Training
- Wetland Management: Introduction and Delineation - University of Free State
- Official DWS Section 21(c) and (i) Water Use Authorisation Training Course – Department of Water and Sanitation
- Hydropedology and Wetland Functioning – Water Business Academy
- Ecosystem Restoration (Part 1 and 2) – Learning for Nature

6 Aim and Objectives

To identify, delineate, classify, and evaluate the ecological condition and management needs of water resources within the study area to inform compliant, risk-averse planning and mitigation for the proposed activity. The following objectives apply:

- Compile a desktop synthesis of local, provincial, and national datasets to characterise baseline hydrology, wetlands, and regulatory context.
- Use GIS analyses to preliminarily identify potential water accumulation areas and candidate watercourses/wetlands for field verification.
- Delineate water resources and outer watercourse edges in accordance with the DWAF (2005) guidelines, consistent with the National Water Act.
- Assess ecosystem function and integrity by determining Present Ecological Status (PES), Ecological Importance (EI), and Ecological Sensitivity (ES) for identified water resources.
- Derive the Recommended Management Objective (RMO) informed by PESEIS outcomes and specify the Recommended Ecological Category (REC) and Best Attainable Status (BES).
- Recommend project-specific mitigation measures to avoid, minimise, and manage impacts, including construction and operational controls and monitoring indicators.
- Determine appropriate buffer zones using the “Preliminary Guideline for the Determination of Buffer Zones for Rivers, Wetlands and Estuaries” (Macfarlane *et al.*, 2014), where applicable to the proposed dairy operation.

7 Legislation

7.1 Key Legislative Requirements

The legislation, policies and guidelines listed below in Table 7-1 apply to the current project. The list below, although extensive, may not be complete and other legislation, policies and guidelines may apply in addition to those listed below. Although NEMA and its affiliate acts (NEMBA, NEMWA) and assessment protocols have been listed, this report only satisfies Section 40 of the NWA, as per DWS’ request, in which an Aquatic Impact Assessment and Wetland Delineation Report must be submitted as part of the Water Use License Application process.

Table 7-1 A list of key legislative requirements

Region	Legislation / Guideline	Comment
National	NEMA	Environmental Impact Assessment Regulations. 2014 (GNR 326, 7 April 2017), Appendix 6 requirements
	The National Environmental Management: Biodiversity Act (Act No. 10 of 2004) (NEMBA), Threatened or Protected Species Regulations	The protection of species and ecosystems that warrant protection
	Assessment Protocol (March 2020)	The minimum criteria for reporting.
	Assessment Protocol (October 2020)	Protocol for the specialist assessment and minimum report content requirements.
	NEMWA	The regulation of waste management to protect the environment.
	NWA	The regulation of water use.
	GN4167	General Authorisations in terms of Section 39 of the NWA for water uses defined in Section 21 (c) or Section 21 (i)
	GN 1003 of GG 43726 of 18 Sept 2020	The regulation and management of alien invasive species.
	Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) (CARA)	To provide for control over the utilisation of the natural agricultural resources, including the vegetation and the combating of weeds and invader plants.

Provincial	Eastern Cape Environmental Bill (Provincial Notice 205 of 2019, Government Gazette No. 4273)	To rationalize, consolidate and reform the law regulating environmental management and to provide for the harmonization of provincial legislation with national legislation regulating protected areas, biodiversity, waste management and air quality; and to provide for matters connected therewith.
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7.2 National Water Act (NWA, 1998)

The DWS is the custodian of South Africa's watercourses and therefore assumes public trusteeship of water resources, which includes watercourses, surface water, estuaries, or aquifers. The National Water Act (Act No. 36 of 1998) (NWA) allows for the protection of watercourses, which includes:

- The maintenance of the quality of the watercourse to the extent that the watercourses may be used in an ecologically sustainable way.
- The prevention of the degradation of the watercourse.
- The rehabilitation of the watercourse.

A watercourse means:

- A river or spring.
- A natural channel in which water flows regularly or intermittently.
- A wetland, lake or dam into which, or from which, water flows.
- Any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse, and a reference to a watercourse includes, where relevant, its bed and banks.

The NWA recognises that the entire ecosystem and not just the water itself, and any given watercourse constitutes the resource and as such needs to be conserved. No activity may therefore take place within a watercourse unless it is authorised by the DWS. Any area within a wetland or riparian zone is therefore excluded from development unless authorisation is obtained from the DWS in terms of Section 21 (c) and (i).

7.3 National Environmental Management Act (NEMA, 1998)

The National Environmental Management Act (NEMA) (Act 107 of 1998) and the associated Regulations as amended in April 2017, state that prior to any development taking place within a wetland or riparian area, an environmental authorisation process needs to be followed. This could follow either the Basic Assessment Report (BAR) process or the Environmental Impact Assessment (EIA) process depending on the scale of the impact.

7.4 Legislative Framework

In line with the protocol for the specialist assessment and minimum report content requirements for environmental impacts on freshwater biodiversity, as per Government Notice 320 published in terms of NEMA, dated 20 March 2020: "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, when applying for Environmental Authorisation" – the following has been assumed:

- An applicant intending to undertake an activity identified in the scope of this protocol on a site identified on the screening tool as being of:
 - "very high sensitivity" for aquatic biodiversity, must submit an Aquatic Biodiversity Specialist Assessment.

An Aquatic / Freshwater Biodiversity Specialist Assessment Report must contain the information as presented in Table 7-2 below.

Table 7-2 ***Aquatic Biodiversity Specialist Assessment information requirements as per the relevant protocol, including the location of the information within this report***

Information to be Included (as per GN 320, 20 March 2020)	Report Section
The assessment must be prepared by a specialist registered with the South African Council for Natural Scientific Professionals (SACNASP) with expertise in the field of aquatic sciences	16.1
Contact details of the specialist, their SACNASP registration number, their field of expertise and a curriculum vitae	5
A signed statement of independence by the specialist(s)	16.1
The assessment must be undertaken on the preferred site and within the proposed development footprint	11.1
A baseline description of the aquatic biodiversity and ecosystems on the site, including: aquatic ecosystem types; presence of aquatic species, and composition of aquatic species communities, their habitat, distribution and movement patterns.	10.1.10
The threat status of the ecosystem and species as identified by the screening tool	11.7.1
An indication of the national and provincial priority status of the aquatic ecosystem, including a description of the criteria for the given status (i.e. if the site includes a wetland or a river freshwater ecosystem priority area or sub-catchment, a strategic water source area, a priority estuary, whether or not they are free-flowing rivers, wetland clusters, a critical biodiversity or ecologically sensitivity area)	10.1
A description of the ecological importance and sensitivity of the aquatic ecosystem including:	
(a) the description (spatially, if possible) of the ecosystem processes that operate in relation to the aquatic ecosystems on and immediately adjacent to the site (e.g., movement of surface and subsurface water, recharge, discharge, sediment transport, etc.); and	10.1.9 and 11.6
(b) the historic ecological condition (reference) as well as the present ecological state of rivers (in-stream, riparian and floodplain habitat), wetlands and/or estuaries in terms of possible changes to the channel and flow regime (surface and groundwater)	
The assessment must identify alternative development footprints within the preferred site which would be of a "low" sensitivity as identified by the screening tool and verified through the site sensitivity verification and which were not considered appropriate	NA – site is already developed
Related to impacts, a detailed assessment of the potential impacts of the proposed development on the following aspects must be undertaken to answer the following questions:	
Is the proposed development consistent with maintaining the priority aquatic ecosystem in its current state and according to the stated goal?	
Is the proposed development consistent with maintaining the resource quality objectives for the aquatic ecosystems present?	
How will the proposed development impact on fixed and dynamic ecological processes that operate within or across the site? This must include:	12.3
(a) impacts on hydrological functioning at a landscape level and across the site which can arise from changes to flood regimes (e.g. suppression of floods, loss of flood attenuation capacity, unseasonal flooding or destruction of floodplain processes);	
(b) will the proposed development change the sediment regime of the aquatic ecosystem and its sub-catchment (e.g. sand movement, meandering river mouth or estuary, flooding or sedimentation patterns);	
(c) what will the extent of the modification in relation to the overall aquatic ecosystem be (e.g. at the source, upstream or downstream portion, in the temporary / seasonal / permanent zone of a wetland, in the riparian zone or within the channel of a watercourse, etc.); and	
(d) to what extent will the risks associated with water use and related activities change.	
How will the proposed development impact on the functioning of the aquatic feature? This must include:	
(a) base flows (e.g., too little or too much water in terms of characteristics and requirements of the system);	12.3
(b) quantity of water including change in the hydrological regime or hydroperiod of the aquatic ecosystem (e.g., seasonal to temporary or permanent; impact of over-abstraction or instream or offstream impoundment of a wetland or river);	
(c) change in the hydrogeomorphic typing of the aquatic ecosystem (e.g., change from an unchanneled valley-bottom wetland to a channelled valley-bottom wetland);	
(d) quality of water (e.g., due to increased sediment load, contamination by chemical and/or organic effluent, and/or eutrophication);	

(e) fragmentation (e.g., road or pipeline crossing a wetland) and loss of ecological connectivity (lateral and longitudinal); and	
(f) the loss or degradation of all or part of any unique or important features associated with or within the aquatic ecosystem (e.g., waterfalls, springs, oxbow lakes, meandering or braided channels, peat soils, etc.)	
How will the proposed development impact on key ecosystems regulating and supporting services especially:	
(a) flood attenuation;	
(b) streamflow regulation;	
(c) sediment trapping;	
(d) phosphate assimilation;	12.3
(e) nitrate assimilation;	
(f) toxicant assimilation;	
(g) erosion control; and	
(h) carbon storage?	
How will the proposed development impact community composition (numbers and density of species) and integrity (condition, viability, predator-prey ratios, dispersal rates, etc.) of the faunal and vegetation communities inhabiting the site?	-
A statement on the duration, date and season of the site inspection and the relevance of the season to the outcome of the assessment	9.1
The methodology used to undertake the site inspection and the specialist assessment, including equipment and modelling used, where relevant	8
A description of the assumptions made, any uncertainties or gaps in knowledge or data	3
The location of areas not suitable for development, which are to be avoided during construction and operation, where relevant	11.7
Additional environmental impacts expected from the proposed development	-
Any direct, indirect and cumulative impacts of the proposed development on-site	12
The degree to which impacts and risks can be mitigated	12
The degree to which the impacts and risks can be reversed	12
The degree to which the impacts and risks can cause loss of irreplaceable resources	12
A suitable construction and operational buffer for the aquatic ecosystem, using the accepted methodologies	8.3.2
Proposed impact management actions and impact management outcomes for inclusion in the Environmental Management Programme (EMPr)	12.6
A motivation must be provided if there were development footprints identified as having a "low" aquatic biodiversity sensitivity and that were not considered appropriate	-
A substantiated statement, based on the findings of the specialist assessment, regarding the acceptability or not of the proposed development and if the proposed development should receive approval or not; and	14.2
Any conditions to which this statement is subjected	14.2

8 Methodology

8.1 Desktop Dataset Assessment

The desktop assessment was undertaken using Geographic Information System (GIS) to access, view and overlay the latest available related datasets with the project area. The information represented within the datasets was used to develop the relevant digital maps used to identify potentially environmentally sensitive areas. These datasets and their respective dates of publishing are provided below:

The following information sources were considered for the desktop assessment;

- Aerial imagery (Google Earth Pro);
- The inland water dataset;
- Topographical river line data;
- Present Ecological State (PES), Ecological Importance (EI) and Ecological Sensitivity (ES) per Sub Quaternary Reaches (SQR) for Secondary Catchments in South Africa (DWS, 2014);
- The National Freshwater Ecosystem Priority Areas (NFEPA) (Nel *et al.*, 2011);
- Provincial Conservation Plans;
- South African Inventory of Inland Aquatic Ecosystems (SAIIAE) (Van Deventer *et al.*, 2019);
- National Biodiversity Assessment (NBA) (Van Deventer *et al.*, 2019);
- The SANBI National Wetland Map 5 (Van Deventer *et al.*, 2019); and
- Contour data (5 m).

8.1.1 Desktop Dataset Assessment

The desktop assessment was undertaken using Geographic Information System (GIS) to access, view and overlay the latest available related datasets with the project area. The information represented within the datasets was used to develop the relevant digital maps used to identify potentially environmentally sensitive areas. These datasets and their respective dates of publishing are provided below:

8.1.2 Topographical River Lines and Inland Water Areas

Topographical Inland Water Areas and River Lines for South Africa are based on the topographic maps dated 1994 as per the National Geo-spatial Information. These datasets are used in this report to provide insight into potential wetland areas and serve to highlight the location and extent of rivers, drainage features, dams, wetlands, reservoirs, and other relevant inland waterbodies.

8.1.3 Ecologically Important Landscape Features

The datasets listed below were incorporated to establish the relation between the project and ecologically important or sensitive freshwater entities. Emphasis was placed on the following spatial datasets:

- South African Inventory of Inland Aquatic Ecosystems (SAIIAE), NBA 2018 Rivers and Wetlands (Van Deventer *et al.*, 2019).
- National Freshwater Priority Areas (Nel *et al.*, 2011).
- Strategic Water Source Areas, 2021 (Lötter & Le Maitre, 2021).
- Provincial Conservation Plans.

8.1.4 The South African Inventory of Inland Aquatic Ecosystems

The South African Inventory of Inland Aquatic Ecosystems (SAIIAE) was established during the 2018 NBA, the SAIIAE is a collection of spatial data layers that represent the extent of river and inland wetland ecosystem types as well as the pressures on these systems. The same two headline indicators, and their associated categorisations, are applied as with the terrestrial ecosystem NBA, namely Ecosystem Threat Status and Ecosystem Protection Level. The Ecosystem Threat Status of river and wetland ecosystem types are based on the extent to which each ecosystem type has been altered from its natural condition.

8.1.5 National Freshwater Ecosystem Priority Areas, Rivers and Wetlands

To better conserve aquatic ecosystems, South Africa has categorised its inland aquatic systems according to set ecological criteria (i.e., ecosystem representation, water yield, connectivity, unique features, and threatened taxa) to identify Freshwater Ecosystem Priority Areas (FEPAs). The FEPAs are intended to be conservation support tools, and it is envisioned that they will guide the effective implementation of measures to achieve the National Environment Management: Biodiversity Act's biodiversity conservation goals (Nel *et al.*, 2011).

8.1.6 Buffer Requirements

The "Preliminary Guideline for the Determination of Buffer Zones for Rivers, Wetlands and Estuaries" (Macfarlane *et al.*, 2014) was used to determine the appropriate buffer zone for the proposed activity.

8.1.7 Site Sensitivity Verification

The baseline aquatic / freshwater sensitivity of the project area was obtained using the National Web-based Environmental Screening Tool (Regulation 16(1)(v) of the Environmental Impact Assessment Regulations 2014, as amended). The allocated sensitivities for each of the relevant themes are either disputed or validated for the assessed areas based on the specialist-assigned Ecological Importance and Sensitivity of the different systems (where applicable), with consideration being given to the presence of observed or likely sensitive fauna and flora.

8.2 Water Quality

Water quality was measured *in-situ* using a handheld calibrated multi-parameter water quality meter. The constituents considered that were measured included: pH, electrical conductivity ($\mu\text{S}/\text{cm}$), water temperature ($^{\circ}\text{C}$) and Dissolved Oxygen (DO) in mg/l .

8.3 Habitat Assessments

Habitat availability and diversity are major attributes of the biota found in a specific ecosystem, and thus knowledge of the quality of habitats is important in an overall assessment of ecosystem health. Habitat assessment can be defined as the evaluation of the structure of the surrounding physical habitat that influences the quality of the watercourse and the condition of the resident aquatic community (Barbour *et al.*, 1996). Both the quality and quantity of available habitat affect the structure and composition of resident biological communities (USEPA, 1998). Habitat quality and availability play a critical role in the occurrence of aquatic biota. For this reason, habitat evaluation is conducted simultaneously with biological evaluations to facilitate the interpretation of results.

8.3.1 Index of Habitat Integrity

The Index of Habitat Integrity (IHI) model was used to assess the integrity of the habitats from a riparian and instream perspective as described in Kleynhans (1996) v2. The habitat integrity of a river refers to the maintenance of a balanced composition of physico-chemical and habitat characteristics on a temporal and spatial scale which are comparable to the characteristics of natural habitats of the region (Kleynhans, 1996).

This model compares current conditions with reference conditions that are expected to have been present. Specification of the reference condition follows an impact-based approach where the intensity and extent of anthropogenic changes are used to interpret the impact on the habitat integrity of the system. To accomplish this, information on abiotic changes that can potentially influence river habitat integrity is obtained from surveys or available data sources. These changes are all related and interpreted in terms of modification of the drivers of the system, namely hydrology, geomorphology and physicochemical conditions and how these changes would impact the natural riverine habitats.

The criteria and ratings utilised in the assessment of habitat integrity in the current study are presented in Table 8-1 and Table 8-2 respectively. The spatial framework for each IHI was 5 km upstream and downstream of the respective sampling points within the watercourse(s).

Table 8-1 **Criteria used in the assessment of habitat integrity (Kleynhans, 1996)**

Criterion	Relevance
Water abstraction	Direct impact on habitat type, abundance and size. Also implicated in flow, bed, channel and water quality characteristics. Riparian vegetation may be influenced by a decrease in the supply of water.
Flow modification	Consequence of abstraction or regulation by impoundments. Changes in temporal and spatial characteristics of flow can have an impact on habitat attributes such as an increase in the duration of low flow season, resulting in low availability of certain habitat types or water at the start of the breeding, flowering or growing season.
Bed modification	Regarded as the result of increased input of sediment from the catchment or a decrease in the ability of the river to transport sediment (Gordon <i>et al.</i> , 1993). Indirect indications of sedimentation are stream bank and catchment erosion. Purposeful alteration of the stream bed, e.g. the removal of rapids for navigation (Hilden & Rapport, 1993) is also included.
Channel modification	may be the result of a change in flow, which may alter channel characteristics causing a change in marginal instream and riparian habitat. Purposeful channel modification to improve drainage is also included.
Phys-chem modification	Originates from point and diffuse point sources. Measured directly or agricultural activities, human settlements and industrial activities may indicate the likelihood of modification. Aggravated by a decrease in the volume of water during low or no flow conditions.
Inundation	Destruction of riffle, rapid and riparian zone habitat. Obstruction to the movement of aquatic fauna and influences water quality and the movement of sediments (Gordon <i>et al.</i> , 1992).
Alien macrophytes	Alteration of habitat by obstruction of flow and may influence water quality. Dependent upon the species involved and scale of infestation.
Introduced aquatic fauna	The disturbance of the stream bottom during feeding may influence the water quality and increase turbidity. Dependent upon the species involved and their abundance.
Rubbish dumping	A direct anthropogenic impact which may alter habitat structurally. Also a general indication of the misuse and mismanagement of the river.
Vegetation removal	Impairment of the buffer the vegetation forms to the movement of sediment and other catchment runoff products into the river (Gordon <i>et al.</i> , 1992). Refers to physical removal for farming, firewood and overgrazing.
Exotic vegetation	Excludes natural vegetation due to vigorous growth, causing bank instability and decreasing the buffering function of the riparian zone. Allochthonous organic matter input will also be changed. Riparian zone habitat diversity is also reduced.
Bank erosion	Decrease in bank stability will cause sedimentation and possible collapse of the riverbank resulting in a loss or modification of both instream and riparian habitats. Increased erosion can be the result of natural vegetation removal, overgrazing or exotic vegetation encroachment.

Table 8-2 **Descriptions used for the Ratings of the Various Habitat Criteria**

Impact Category	Description	Impact Score
None	No discernible impact or the modification is located in such a way that it has no impact on habitat quality, diversity, size and variability.	0

Impact Category	Description	Impact Score
Small	The modification is limited to very few localities and the impact on habitat quality, diversity, size and variability are also very small.	1-5
Moderate	The modifications are present at a small number of localities and the impact on habitat quality, diversity, size and variability are also limited.	6-10
Large	The modification is generally present with a clearly detrimental impact on habitat quality, diversity, size and variability. Large areas are, however, not influenced.	11-15
Serious	The modification is frequently present and the habitat quality, diversity, size and variability in almost the whole of the defined area are affected. Only small areas are not influenced.	16-20
Critical	The modification is present overall with a high intensity. The habitat quality, diversity, size and variability in almost the whole of the defined section are influenced detrimentally.	21-25

The habitat integrity assessment takes into account the riparian zone and the instream channel of the river. Assessments are made separately for both aspects, but data for the riparian zone are primarily interpreted in terms of the potential impact on the instream component (Table 8-3). The relative weighting of criteria remains the same as for the assessment of habitat integrity (DWS, 1999).

Table 8-3 *Criteria and weights used for the assessment of habitat integrity and habitat integrity (from Kleynhans, 1996)*

Instream Criteria	Weight	Riparian Zone Criteria	Weight
Water abstraction	14	Vegetation removal	13
Flow modification	13	Exotic vegetation	12
Bed modification	13	Bank erosion	14
Channel modification	13	Channel modification	12
Phys-chem modification	14	Water abstraction	13
Inundation	10	Inundation	11
Alien macrophytes	9	Flow modification	12
Introduced aquatic fauna	8	Phys-chem	13
Rubbish dumping	6		
Total	100	Total	100

The negative weights are added for the instream and riparian facets respectively and the total additional negative weight subtracted from the provisionally determined integrity to arrive at a final habitat integrity estimate. The eventual total scores for the instream and riparian zone components are then used to place the habitat integrity in a specific habitat integrity category (DWS, 1999). These categories are indicated in Table 8-4.

Table 8-4 *Index of habitat integrity categories (From Kleynhans, 1996)*

Category	Description	Score (% of Total)
A	Unmodified, natural.	90-100
B	Largely natural with few modifications. A small change in natural habitats and biota may have taken place but the ecosystem functions are essentially unchanged.	80-90
C	Moderately modified. A loss and change of natural habitat and biota have occurred but the basic ecosystem functions are still predominantly unchanged.	60-79
D	Largely modified. A large loss of natural habitat, biota and basic ecosystem functions has occurred.	40-59
E	The loss of natural habitat, biota and basic ecosystem functions is extensive.	20-39
F	Modifications have reached a critical level and the lotic system has been modified completely with an almost complete loss of natural habitat and biota. In the worst	0

Category	Description	Score (% of Total)
	instances the basic ecosystem functions have been destroyed and the changes are irreversible.	

8.3.2 Watercourse Delineation

The watercourse delineation was completed according to DWAF (2005). Typical riparian cross-sections and structures are provided in Figure 8-1. Indicators such as topography and vegetation were the primary indicators used to define the riparian zone. Elevation data obtained from topography spatial data was also utilised to support the infield assessment.

Macfarlane *et al.* (2009), and Macfarlane and Bredin (2017) were consulted to determine the appropriate watercourse buffer zones associated with the watercourse and the proposed activities. According to the buffer guidelines the maximum required buffer should be applied to a system (Macfarlane, et al., 2014).

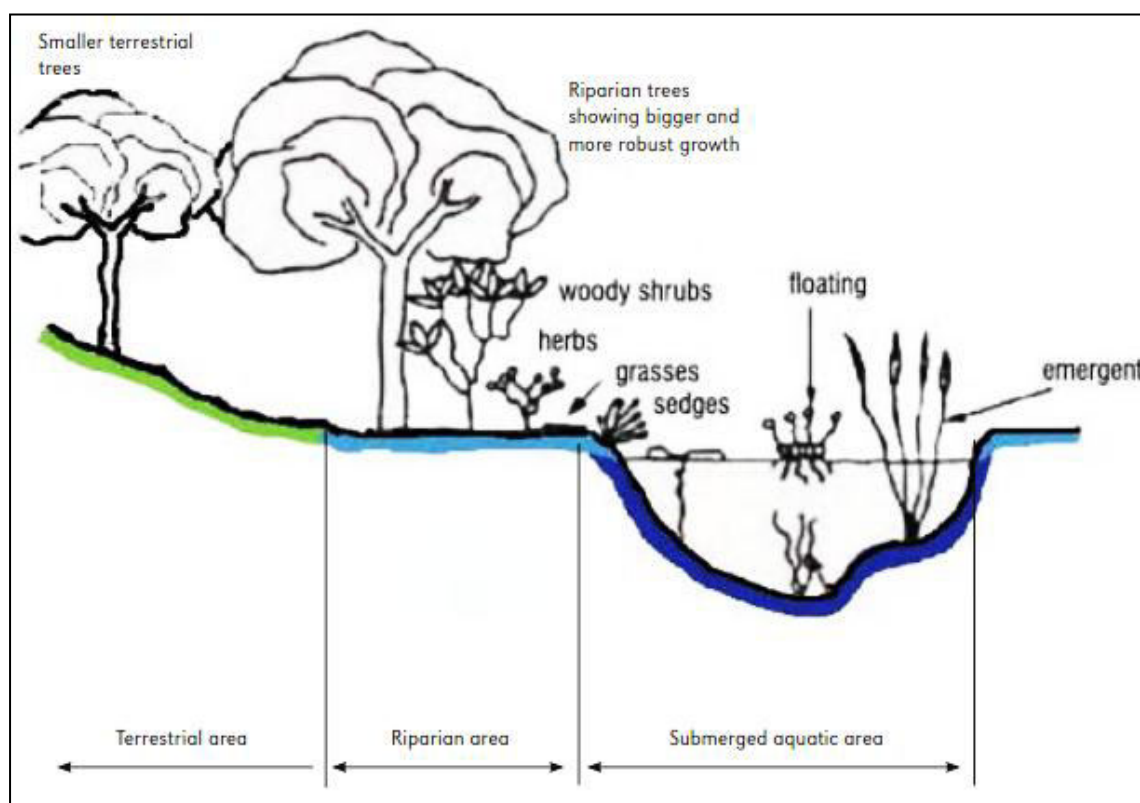


Figure 8-1 Riparian Habitat Delineations (DWAF, 2005)

8.4 Aquatic Macroinvertebrate Assessment

Macroinvertebrate assemblages are good indicators of localised conditions because many benthic macroinvertebrates have limited migration patterns or a sessile mode of life. They are particularly well-suited for assessing site-specific impacts (upstream and downstream studies) (Barbour *et al.*, 1999). Benthic macroinvertebrate assemblages are made up of species that constitute a broad range of trophic levels and pollution tolerances, thus providing strong information for interpreting cumulative effects (Barbour *et al.*, 1999). The assessment and monitoring of benthic macroinvertebrate communities form an integral part of the monitoring of the health of an aquatic ecosystem.

8.4.1 South African Scoring System

The South African Scoring System version 5 (SASS5) is the current index being used to assess the status of riverine macroinvertebrates in South Africa. According to Dickens and Graham (2002), the

index is based on the presence of aquatic invertebrate families and the perceived sensitivity to water quality changes of these families. Different families exhibit different sensitivities to pollution, these sensitivities range from highly tolerant families (e.g. Chironomidae) to highly sensitive families (e.g. Perlidae). SASS results are expressed both as an index score (SASS score) and the Average Score Per recorded Taxon (ASPT value).

Sampled invertebrates were identified using the “Aquatic Invertebrates of South African Rivers” Illustrations book, by Gerber and Gabriel (2002). Identification of organisms was made at the family level (Thirion *et al.*, 1995; Dickens and Graham, 2002; Gerber and Gabriel, 2002, Fry, 2022).

Reference conditions reflect the best conditions that can be expected in rivers and streams within a specific area and reflect natural variation over time. These reference conditions are used as a benchmark against which field data can be compared. All SASS5 and ASPT scores are compared with the SASS5 Data Interpretation Guidelines (Dallas, 2007). This method seeks to develop biological bands depicting the various ecological states and is derived from data contained within the Rivers Database and supplemented with other data not yet in the database. Ecological categories for the project area are based on biological banding presented in Table 8-5.

Table 8-5 *Biological Bands / Ecological categories for interpreting SASS data (adapted from Dallas, 2007)*

Class	Ecological Category	Description
A	Natural	Unimpaired. High diversity of taxa with numerous sensitive taxa.
B	Largely natural	Slightly impaired. High diversity of taxa, but with fewer sensitive taxa.
C	Moderately modified	Moderately impaired. Moderate diversity of taxa.
D	Largely modified	Considerably impaired. Mostly tolerant taxa present.
E/F	Seriously Modified	Severely impaired. Only tolerant taxa present.

8.4.2 Macroinvertebrate Response Assessment Index

The Macroinvertebrate Response Assessment Index (MIRAI) was used to provide a habitat-based cause-and-effect foundation to interpret the deviation of the aquatic invertebrate community from the calculated reference conditions for the SQR. This does not preclude the calculation of SASS5 scores if required (Thirion, 2007). Aquatic macroinvertebrate assemblages and communities offer a good understanding of the flow regime, water quality and instream habitat in a river. In addition, they form an essential component of the riverine ecosystem. Macroinvertebrates are important processors of transported organic matter in aquatic systems, perform vital functions in purifying the water and furthermore provide a food source for aquatic and terrestrial biota. Aquatic macroinvertebrate assemblages are guided by the physical-chemical tolerance of the individuals in the population to an array of environmental influences. The distribution pattern resulting from habitat selection by a given aquatic macroinvertebrate species reflects the optimal overlap between habit (mode of existence) and physical environmental conditions such as habitat and flows. Hence, the frequently intermittent distribution of aquatic macroinvertebrate populations is an outcome of the complex interaction among habitat characteristics, behavioural patterns, and the accessibility to food resources.

The major components of a stream system that determine productivity for aquatic organisms include:

- Flow regime,
- Physical habitat structure (e.g., channel form and substrate distribution);
- Water quality (e.g., temperature, dissolved oxygen); and
- Energy inputs from the watershed in the form of allochthonous and instream inputs.

According to Thirion (2007, 2016), the determination of aquatic macroinvertebrate ecological class / ecological category (EC) is done by integrating the ecological requirements of the invertebrate taxa in a community or assemblage and their response to modified habitat conditions. These are based on:

- An interpretation of the environmental requirements, preferences and intolerances of macroinvertebrate taxa constituting the natural assemblage in a particular river delineation, and their responses to changes in habitat conditions as brought about by changes in driver components.

According to Thirion (2007), two (2) methods can be used for determining the taxa expected to occur under natural (reference) conditions:

- A minimally-impacted site in the same Level II Ecoregion and geomorphological zone with similar habitat can be used as a reference site, and information from this reference site can be used to compile a reference list of taxa for the area under consideration; and
- In the absence of a suitable reference site, information from similar sites in different rivers, as well as any historical information available, can be used to compile a derived reference list of taxa expected under reference conditions. A thorough knowledge of the area under consideration is essential in order to compile a suitable referenced list. The occurrence of taxa in a different river, within the same ecoregional context, can be used to derive reference conditions in the river delineation being considered.

8.5 Fish Community Assessment

Fish species information can be used to develop the Fish Response Assessment Index (FRAI), which gives an indication of the PES of the river based on the fish assemblage structures observed. Ideally, fish would be captured through electroshocking techniques. Approximately, 50 m up and 50 m downstream of each sampling point would be assessed by sampling representative habitat. All fish would be identified in the field and released at the point of capture. Fish species would be identified using the guide Freshwater Fishes of Southern Africa (Skelton, 2001; 2016; and 2024). The identified fish species would be compared to those expected to be present for the quaternary catchment. The expected fish species list was developed from a literature survey and included sources such as DWS (2014), (Kleynhans *et al.*, 2007) and Skelton (2001; 2016; and 2024). Fish have different sensitivities or levels of tolerance to various aspects that they are subjected to within the aquatic environment. These tolerance levels are rated with a sensitivity score as presented in Table 8-6. These tolerance levels are scored to show each fish species' sensitivity to flow and physicochemical modifications.

Table 8-6 Intolerance rating and sensitivity of fish species.

Sensitivity Score	Tolerance/Sensitivity Level
0-1	Highly tolerant = Very low sensitivity
1-2	Tolerant = Low sensitivity
2-3	Moderately tolerant = Moderate sensitivity
3-4	Moderately intolerant = High sensitivity
4-5	Intolerant = Very high sensitivity

8.5.1 Fish Response Assessment Index

The information gained using the Fish Response Assessment Index (FRAI) gives an indication of the PES of the river based on the fish assemblage structures observed (Kleynhans, 2007). According to Kleynhans (2007), "the FRAI is an assessment index based on the environmental intolerances and

preferences of the reference fish assemblage and the response of the constituent species of the assemblage to particular groups of environmental determinants or drivers” as illustrated in Figure 8-2.

The expected fish species list was developed from a literature survey and included sources such as DWS RQOS PESEIS database (2014), Kleynhans *et al.* (2007) and previous studies conducted within the catchment (Lombard, 2016), spatial data from both the Global Biodiversity Information Facility (GBIF) and the Freshwater Biodiversity Information System (FBIS), as well as specialist knowledge of the catchment. The FRAI Frequency of Occurrence (FROC) ratings are calculated based on the habitat present at the sites. The Catch per unit effort (CPUE) is a common metric used in fisheries studies to assess the efficiency of fishing gear and the abundance of targeted species. Based on Hilborn and Walters (1992), the formula for CPUE is: $CPUE = \text{Total Catch} / \text{Total Effort}$. The CPUE was presented per site.

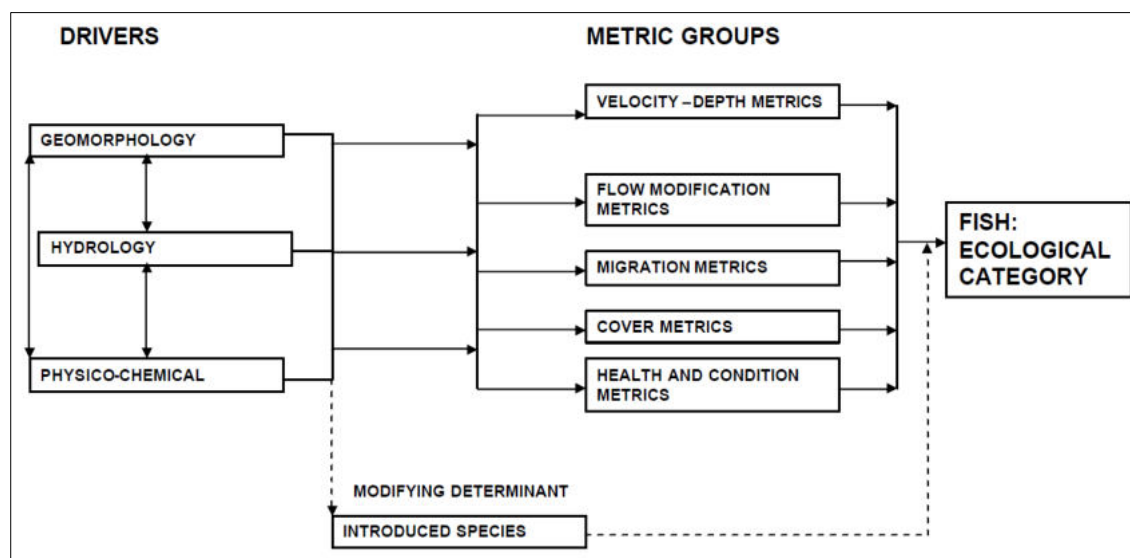


Figure 8-2 The relationship between drivers and fish metric groups (Kleynhans, 2007)

8.6 Present Ecological Status

Ecological classification refers to the determination and categorisation of the integrity of the various selected biophysical attributes of ecosystems compared to the natural or close to natural reference conditions (Kleynhans and Louw, 2007) (Table 8-7). For this study ecological classifications have been determined for biophysical attributes for the associated water course. This was completed using the river Ecoclassification manual by Kleynhans and Louw (2007). The areas considered in the PES assessment are outlined in the description of the project area section. The combined categories were assessed to determine the reach-based PES.

Table 8-7 Present Ecological State (PES) Categories.

Category	Descriptions (Modifications)	Descriptions (Taxa)
A	Natural	
	Unmodified, natural.	Unimpaired. High diversity of taxa with numerous sensitive taxa.
B	Largely Natural	
	Largely natural with few modifications. A small change in natural habitats and biota may have taken place but the ecosystem functions are essentially unchanged.	Slightly impaired. High diversity of taxa, but with fewer sensitive taxa.
C	Moderately Modified	

	A loss and change of natural habitat and biota have occurred but the basic ecosystem functions are still predominantly unchanged.	Moderately impaired. Moderate diversity of taxa.
D	Largely Modified	
	A large loss of natural habitat, biota and basic ecosystem functions has occurred.	Considerably impaired. Mostly tolerant taxa present.
E	Seriously Modified	
	The loss of natural habitat, biota and basic ecosystem functions is extensive.	Severely impaired. Only tolerant taxa present.
F	Critically Modified	
	Modifications have reached a critical level and the lotic system has been modified completely with an almost complete loss of natural habitat and biota. In the worst instances the basic ecosystem functions have been destroyed and the changes are irreversible.	Severely impaired. Only tolerant taxa present.

8.7 Risk and Impact Assessment

The Department of Water and Sanitation (DWS) risk matrix assesses impacts in terms of consequence and likelihood. The significance of the impact is rated according to the classes presented in Table 8-8.

Table 8-8 Significance ratings matrix

Rating	Class	Management Description
1 – 29	(L) Low Risk OR (+) Positive (+ +) Highly positive	Acceptable as is or with proposed mitigation measures. Impact to watercourses and resource quality small and easily mitigated, or positive.
30 – 60	(M) Moderate Risk	Risk and impact on watercourses are notable and require mitigation measures on a higher level, which costs more and require specialist input. License required.
61 – 100	(H) High Risk	Watercourse(s) impacts by the activity are such that they impose a long-term threat on a large scale and lowering of the Reserve. License required.

9 Fieldwork

9.1 Freshwater Biodiversity Field Assessment

In line with the minimum requirements for aquatic biodiversity surveys a single field survey for the project area was undertaken on the 09th of July 2025 (Winter) to identify the presence and condition of watercourse(s) and to delineate their spatial extents. Site surveys are recommended to take place during a seasonal period where the probability of detecting seasonally limited freshwater features such as facultative or obligate vegetation or episodic and ephemeral flows are highest (typically in June – August for the Eastern Cape). Thus, the site conditions at the time of the assessment were ideal for the purposes of this study.

The survey constituted a dry season/low flow assessment. After consulting the desktop data and visiting the site, it was noted that no wetlands were indicated by the desktop data nor found within the 500 m PAOI. Therefore, efforts were afforded to a riverine assessment rather than a wetland assessment for this project.

10 Desktop Analysis

10.1 Desktop Dataset Assessment - Ecologically Important Landscape Features

The following spatial features describe the general area and associated freshwater resources (ecologically important landscape features). This assessment is based on spatial data that are provided by various sources such as the provincial environmental authority and the South African National Biodiversity Institute (SANBI). The desktop analysis and their relevance to this project are summarised in Table 10-1.

Table 10-1 Summary of the relevance of the proposed project to ecologically important landscape features

Desktop Information Considered	Relevance	Reasoning	Section
Environmental Screening Tool	Yes	The entire PAOI overlaps an area of very high aquatic biodiversity sensitivity	10.1.1
Strategic Water Source Areas	No	The PAOI is not located within any SWSAs for groundwater or surface water.	10.1.2
Conservation Plan	Yes	The PAOI does overlap with ESA1	10.1.3
National Biodiversity Assessment (NBA)	No	The PAOI does not overlap with any NBA wetlands/rivers, but it drains towards and NBA river (Hol River)	10.1.4
Aquatic Ecosystem Threat Status	No	The PAOI does not overlap with any endangered watercourses, but it drains towards the 'Endangered' Hol River	10.1.5
Aquatic Ecosystem Protection Level	No	The project does not intersect any protected watercourses.	10.1.6
National Freshwater Ecosystem Priority Areas (NFEPA)	No	The PAOI does not intersects with any NFEPA river or Priority wetlands, but it drains towards the Hol River which is classified as a NFEPA river and a Priority wetland.	10.1.7
Protected Areas	No	The PAOI does not overlap any Protected Areas.	10.1.8

10.1.1 National Web-Based Environmental Screening Tool

The National Web-Based Environmental Screening Tool (Regulation 16(1)(v) of the Environmental Impact Assessment Regulations 2014, as amended) was developed by the Department of Forestry, Fisheries and The Environment (DFFE) under the directorship of the National Environmental Management Act (Act 107 of 1998) (NEMA).

The screening tool was run to gauge for aquatic biodiversity sensitivities, which is to be treated as a primer for subsequent desktop spatial information that will be discussed further on in this section.

The National Web-Based Environmental Screening Tool has characterised the aquatic biodiversity sensitivity theme of the majority of the PAOI as **“Very High”** (Figure 11-3) due to the following reason:

- The presence of Ecological Support Areas;



Figure 10-1 Aquatic Biodiversity Theme Sensitivity for the Project Area (left image) and PAOI (right image)

10.1.2 Strategic Water Source Areas

Strategic Water Source Areas (SWSAs) are areas that supply a disproportionate amount of mean annual runoff to a geographical region of interest. The areas supplying $\geq 50\%$ of South Africa's water supply (which were represented by areas with a mean annual runoff of ≥ 135 mm/year) represent national Strategic Water Source Areas (SANBI, 2013). According to Le Maitre (2018), "SWSAs are defined as areas of land that either: (a) supply a disproportionate (i.e. relatively large) quantity of mean annual surface water runoff in relation to their size and so are considered nationally important, or (b) have high groundwater recharge and where the groundwater forms a nationally important resource; or (c) areas that meet both criteria (a) and (b). They include transboundary Water Source Areas that extend into Lesotho and Swaziland. According to Lötter and Le Maitre (2021), the 2018 SWSAs data set for surface water was identified based on a generalised 1.7 x 1.7 km resolution Mean Annual Runoff dataset, while the 2021 data set was delineated at a finer resolution of 90 x 90 m. The purpose of the update was to refine the spatial resolution such that SWSAs can be reliably integrated into a range of catchment- and local-level planning, management, and regulatory processes.

According to the SWSAs of South Africa, Lesotho and Swaziland, the project area is not located within any SWSAs for surface water or groundwater (Figure 10-2).

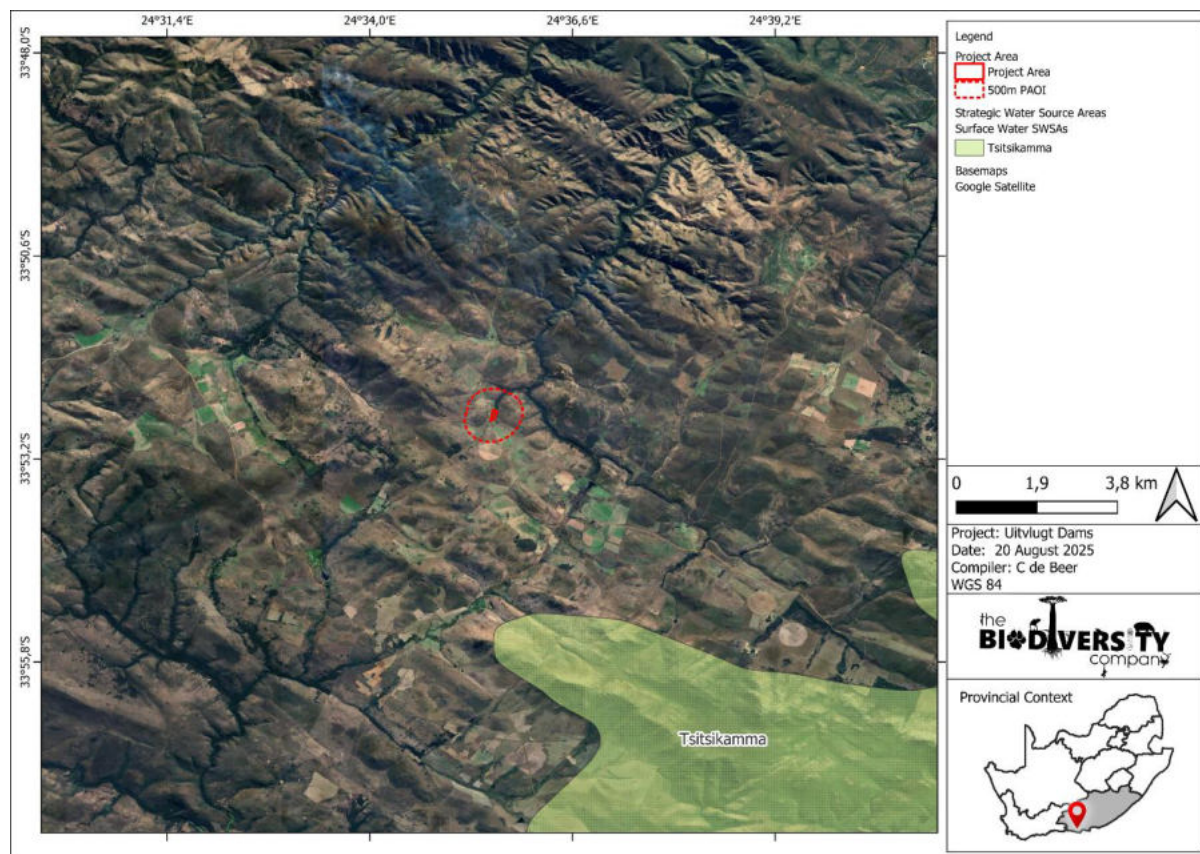


Figure 10-2 Map illustrating the SWSAs in relation to the PAOI

10.1.3 Conservation Plan

The Eastern Cape Biodiversity Spatial Plan Freshwater Critical Biodiversity Areas (2022), classifies areas within the province on the basis of their contribution to reaching the conservation targets within the province. These areas are classified as Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs).

CBAs are terrestrial and aquatic areas of the landscape that need to be maintained in a natural or near-natural state to ensure the continued existence and functioning of species and ecosystems and the

delivery of ecosystem services. CBAs are areas of high biodiversity value and need to be kept in a natural state, with no further loss of habitat or species (SANBI, 2017). Thus, if these areas are not maintained in a natural or near natural state then biodiversity targets cannot be met. Maintaining an area in a natural state can include a variety of biodiversity compatible land uses and resource uses (SANBI, 2017).

Ecological Support Areas (ESAs) are areas that are not essential for meeting biodiversity representation targets but play an important role in supporting the ecological functioning of ecosystems as well as adjacent Critical Biodiversity Areas, and/or in delivering ecosystem services that support socio-economic development (SANBI, 2017).

The PAOI does overlap with ESA1 (Figure 10-3).

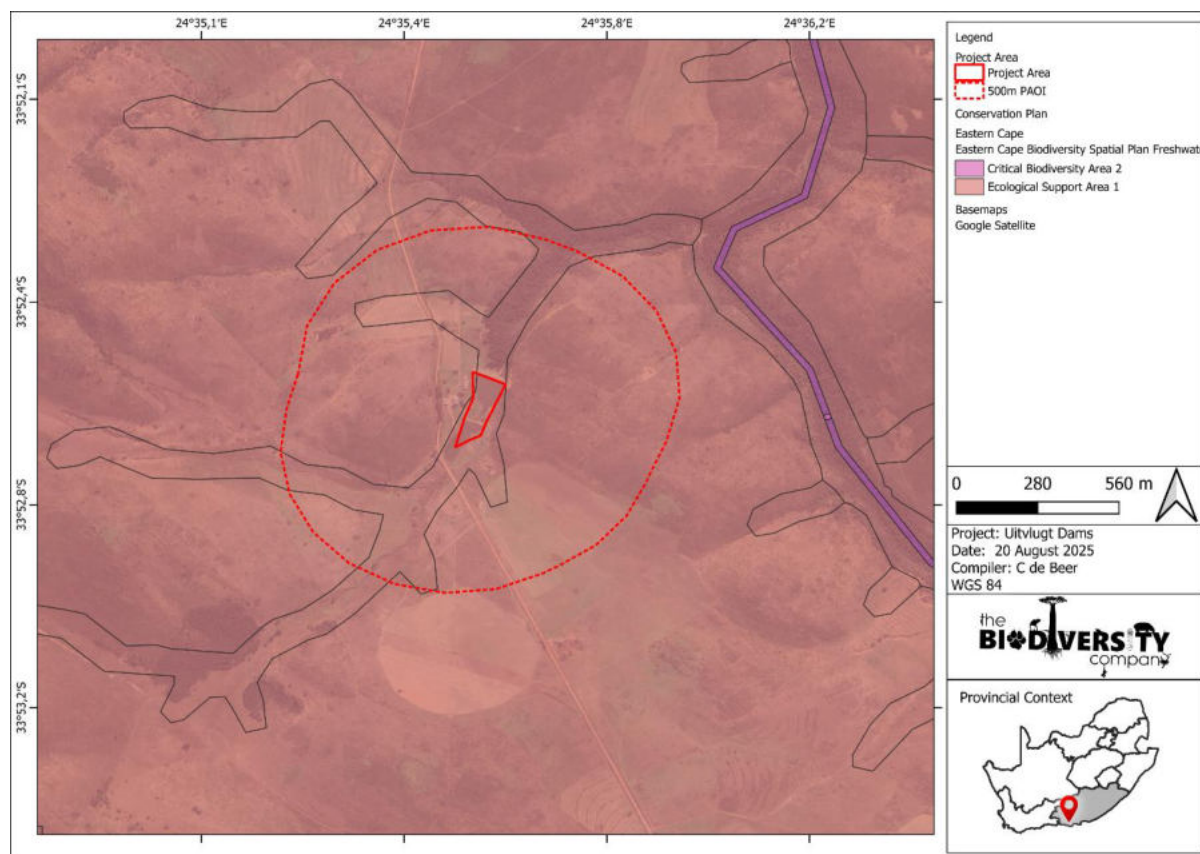


Figure 10-3 The PAOI superimposed on the Provincial Conservation Plan

10.1.4 The National Biodiversity Assessment

The National Biodiversity Assessment (NBA) was completed as a collaboration between the SANBI, the DEA and other stakeholders, including scientists and biodiversity management experts throughout the country over a three-year period (Van Deventer *et al.*, 2019). The purpose of the NBA is to assess the state of South Africa's biodiversity to understand trends over time and inform policy and decision-making across a range of sectors (Van Deventer *et al.*, 2019).

This spatial dataset is part of the South African Inventory of Inland Aquatic Ecosystems (SAIIAE) which was released as part of the NBA (2018). National Wetland Map 5 includes inland wetlands and estuaries, associated with river line data and many other data sets within the South African Inventory of Inland Aquatic Ecosystems (SAIIAE) (2018).

According to the NBA (Figure 10-4) the PAOI does not overlap with any NBA wetlands/ivers, but it should be acknowledged that PAOI drains towards the Hol River which is classified as an NBA river.

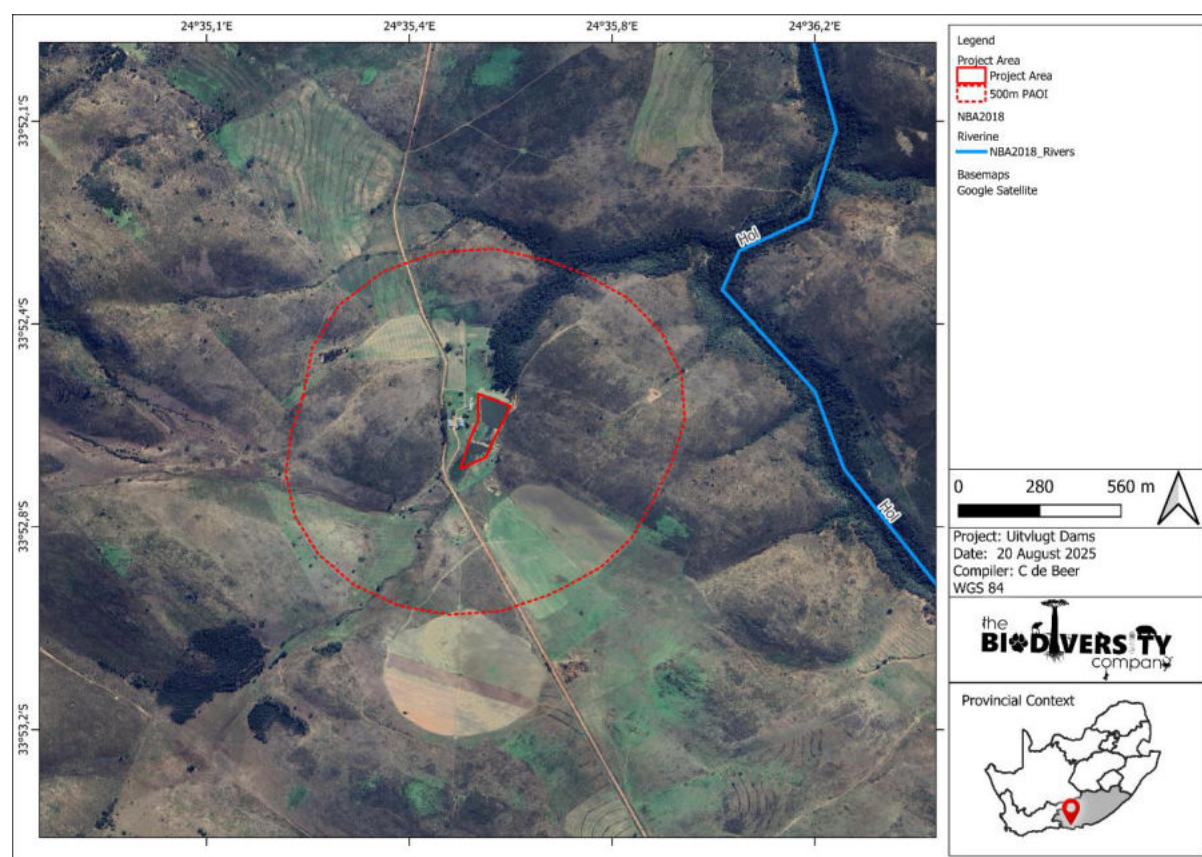


Figure 10-4 Illustration of NBA wetlands and/or rivers within the PAOI (NBA, 2018)

10.1.5 Aquatic Ecosystem Threat Status

The South African Inventory of Inland Aquatic Ecosystems (SAIIAE) was released with the NBA in 2018. The Ecosystem threat status of river and wetland ecosystem outlines the degree to which the ecosystems are still intact or alternatively losing vital aspects of their structure, function and composition, on which their ability to provide ecosystem services ultimately depends (Van Deventer *et al.*, 2019). Ecosystem types are categorised as Critically Endangered (CR), Endangered (EN), Vulnerable (VU) or Least Threatened (LT), based on the proportion of each ecosystem type that remains in a good ecological condition (Van Deventer *et al.*, 2019). The Ecosystem Threat Status (ETS) of each river assessed was based on the extent to which the system had been modified from its natural condition (SANBI, 2017).

According to the SAIIAE dataset, the PAOI does not overlap with any endangered watercourses (Figure 10-5), but it drains towards the 'Endangered' Hol River, indicating that impacts within the regulated area could potentially result in degradation of the downstream system.

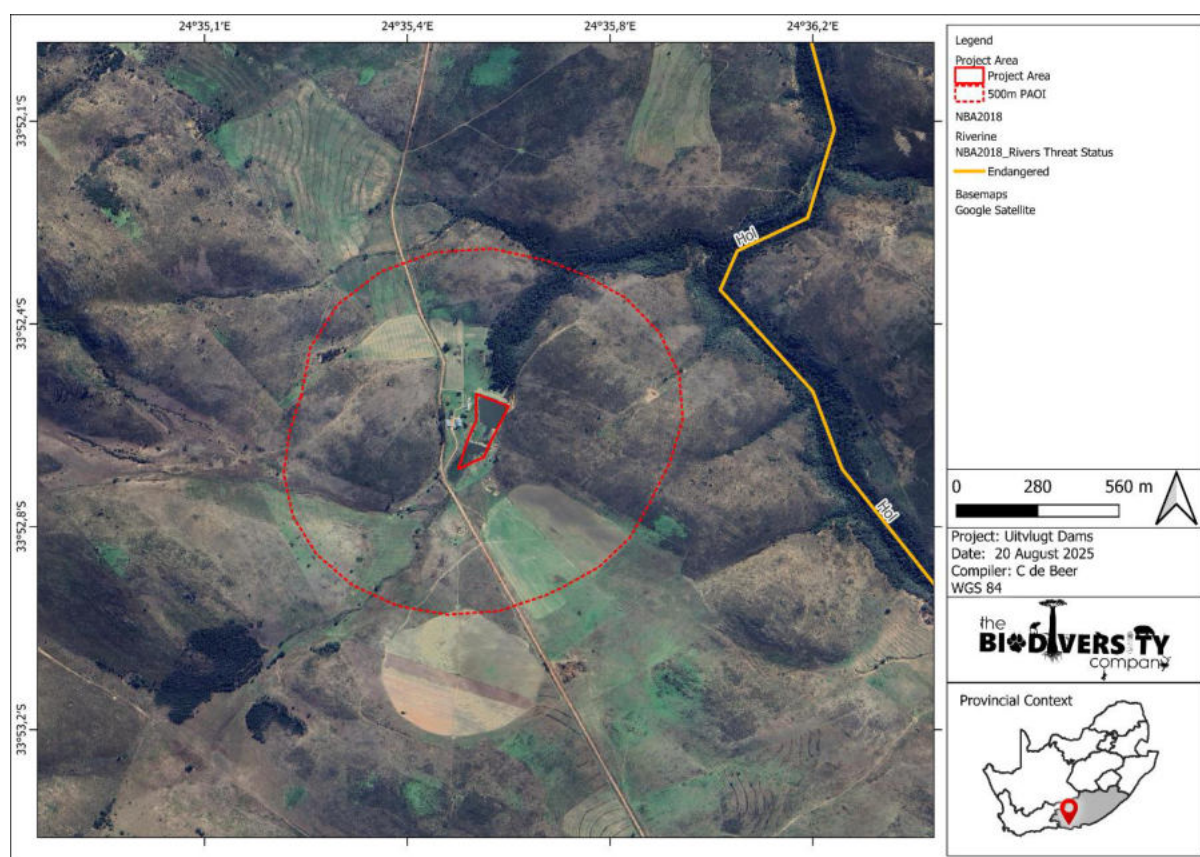


Figure 10-5 The project area showing the regional ecosystem threat status of the associated aquatic ecosystems (NBA, 2018)

10.1.6 Aquatic Ecosystem Protection Level

Ecosystem protection level tells us whether ecosystems are adequately protected or under-protected. Ecosystem types are categorised as not protected, poorly protected, moderately protected or well protected, based on the proportion of each ecosystem type that occurs within a protected area recognised in the Protected Areas Act (Van Deventer et al., 2019). The Ecosystem Protection Level (EPL) of each river assessed was based on the extent (expressed as a percentage) to which the system has their biodiversity target located within protected areas and are in a natural or near-natural ecological condition. Rivers in protected areas need to be in good condition (A or B ecological category) to be considered as protected. Well protected rivers have 100% of their extent located within protected areas, while moderately protected and poorly protected river ecosystem types have at least 50% and 5% of their biodiversity target in protected areas, respectively. Not protected rivers are characterised by less than 5% (SANBI, 2022).

The project area was superimposed on the aquatic ecosystem protection level map to assess the protection status of aquatic ecosystems associated with the development (Figure 10-6). According to the SAIIE dataset, the PAOI does not overlap with any protected watercourses.

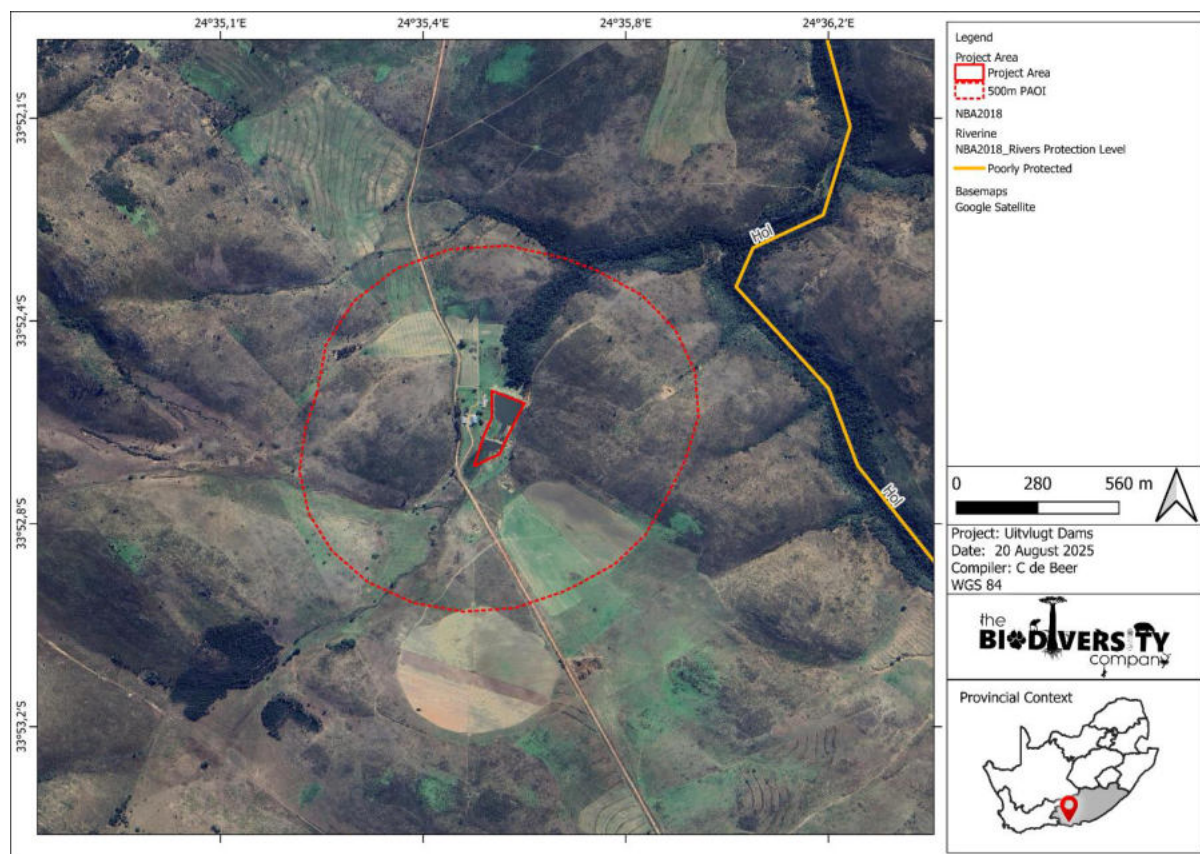


Figure 10-6 The project area showing the regional level of protection of aquatic ecosystems (NBA, 2018)

10.1.7 National Freshwater Ecosystem Priority Area Status

The National Freshwater Ecosystem Priority Areas (NFEPA) database forms part of a comprehensive approach to the sustainable and equitable development of South Africa's scarce water resources. This database provides guidance on how many rivers, wetlands and estuaries, and which ones, should remain in a natural or near-natural condition to support the water resource protection goals of the National Water Act (Act 36 of 1998). This directly applies to the National Water Act, which feeds into Catchment Management Strategies, water resource classification, reserve determination, and the setting and monitoring of resource quality objectives (Nel *et al.*, 2011). The NFEPA's are intended to be conservation support tools and envisioned to guide the effective implementation of measures to achieve the National Environment Management Biodiversity Act's biodiversity goals (NEM: BA) (Act 10 of 2004), informing both the listing of threatened freshwater ecosystems and the process of bioregional planning provided for by this Act (Nel *et al.*, 2011).

According to the NFEPA dataset (Figure 10-7), the PAOI does not intersect with any NFEPA river although it does intersect a Non-priority wetland and drains towards an NFEPA River (Hol River) which is also classified as a Priority wetland. Conserving the water quality, riverine and wetland habitat and associated ecological functioning within the project area and associated catchments, will aid in the protection of aquatic species occurring within the entire catchment and water quality for the aquatic and terrestrial biota downstream of the project area. The catchments in which human activities occur need to be managed to maintain water quality and prevent further degradation of local and downstream watercourses in order to contribute to national biodiversity goals and support the sustainable use of watercourses.

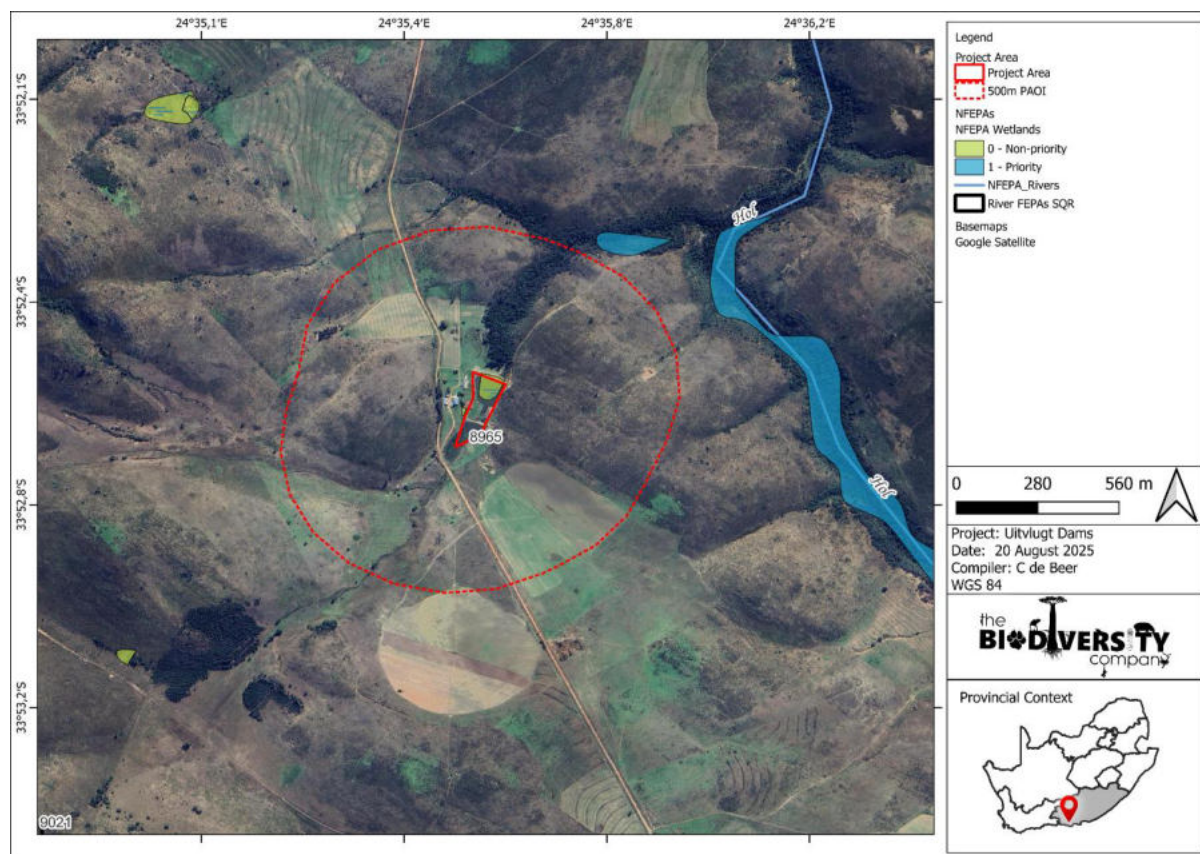


Figure 10-7 NFEPA map for the PAOI (Nel et al., 2011)

10.1.8 Protected Areas

The Department of Environmental Affairs maintains a spatial database of Protected Areas and Conservation Areas. The Protected Areas and Conservation Areas (PACA) Database scheme is used for classifying protected areas (South Africa Protected Areas Database-SAPAD) and conservation areas (South Africa Conservation Areas Database-SACAD) into types and sub-types in South Africa. The definition of protected areas used in these documents follows the definition of a protected area as defined in the National Environmental Management: Protected Areas Act, (Act 57 of 2003). Chapter 2 of the National Environmental Management: Protected Areas Act, 2003 sets out the “System of Protected Areas”, which consists of the following kinds of protected areas: Special nature reserves, National parks, Nature reserves, Protected environments (1-4 declared in terms of the National Environmental Management: Protected Areas Act, 2003), World heritage sites declared in terms of the World Heritage Convention Act, Marine protected areas declared in terms of the Marine Living Resources Act, Specially protected forest areas, forest nature reserves, and forest wilderness areas declared in terms of the National Forests Act, 1998 (Act No. 84 of 1998), and Mountain catchment areas declared in terms of the Mountain Catchment Areas Act, 1970 (Act No. 63 of 1970). The types of conservation areas that are currently included in the database include: Biosphere reserves, Ramsar sites, Stewardship agreements (other than nature reserves and protected environments), Botanical gardens, Transfrontier conservation areas, Transfrontier parks, Military conservation areas, and Conservancies.

According to the protected area spatial datasets from SAPAD (2024) and SACAD (2024), the PAOI does not overlap with any protected areas (Figure 10-8).

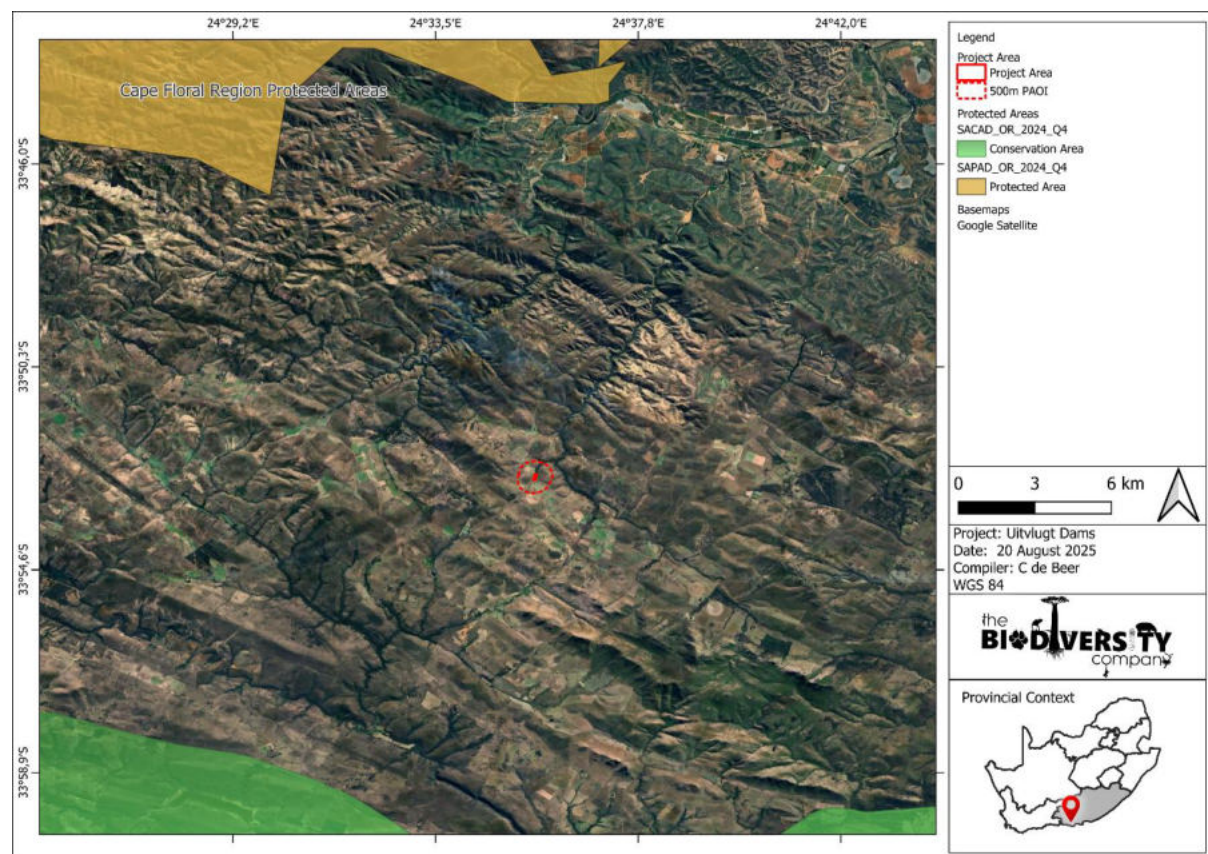


Figure 10-8 The project area in relation to the Protected Areas

10.1.9 Freshwater Ecology

The project area falls within the Fish to Keiskamma Water Management Area (WMA) (now the Mzimvubu-Tsitsikamma WMA) (DWS, 2023), the Southern Folded Mountains Ecoregion, and within the L90A quaternary catchment (Figure 10-9). Desktop information for the Sub-Quaternary Reaches (SQRs) associated with the PAOI was obtained from the DWS (2014). The PAOI falls within L90A-08965 SQR associated with the Hol River. The Present Ecological State (PES), Ecological Importance (EI), and Ecological Sensitivity (ES) for the SQRs are summarised in Table 10-2. The SQR impacts and activities include farm crossings, commercial forestry, roads, agricultural activities, weirs, off-channel dams and exotic vegetation infestations (*A. mearnsii*).

Table 10-2 PES of systems and the SQR associated with the project (DWS, 2014)

Component/SQR	L90A-08965 SQR (Hol River)
Present Ecological Status	Moderately Modified (category C)
Ecological Importance (EI)	High
Ecological Sensitivity (ES)	High

PES – Present Ecological State | REC – Recommended Ecological Category | TEC – Target Ecological Category

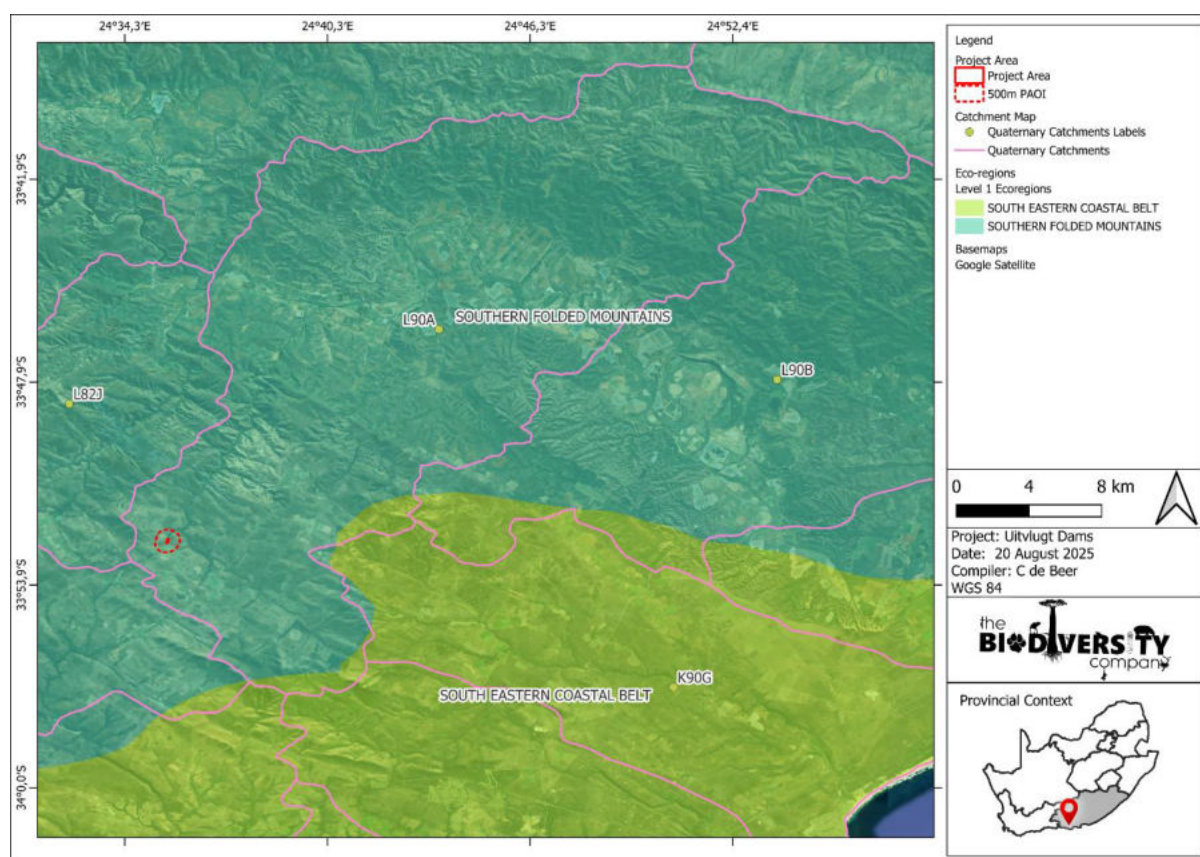


Figure 10-9 Hydrological aspects associated with the project area

10.1.10 Resource Quality Objectives

The NWA sets out to ensure that water resources are used, managed and controlled in such a way that they benefit all users. To achieve this, the Act has prescribed a series of measures such as Resource Quality Objectives (RQOs) to ensure comprehensive protection of water resources so that they can be used sustainably (DWA, 2011b). Results from the riverine assessment are ideally compared to the Resource Quality Objectives (RQOs) for the WMA and at a finer level for specific catchments (where available). RQOs provide numerical and/or descriptive statements about the biological, chemical, and physical attributes that characterise a resource for the level of protection defined by its class. “Resource Quality Objectives might describe, among other things, the quantity, pattern and timing of instream flow; water quality; the character and condition of riparian habitat, and the characteristics and condition of the aquatic biota”. The PAOI falls within the he PAOI falls within the Mzimvubu-Tsitsikamma WMA (previously the Fish to Tsitsikamma WMA) which was considered for this assessment (DWS, 2023b). RQOs were not available for the water quality for this WMA at the time of this study.

11 Survey Results

11.1 Investigation Sites

A single low flow survey was conducted on the 09th of July 2025. Sampling points (Figure 11-1) were selected for the study to assess the current state of the associated watercourses and identify potential risks that may result from the project. Only watercourses at an appreciable level of risk in relation to the proposed project and related activities were considered for assessment. Site investigations were conducted on systems presenting adequate surface water to conduct biological assessments. Photographs and Global Positioning System (GPS) coordinates pertaining to the sites are presented in Figure 11-1 and Table 11-1.

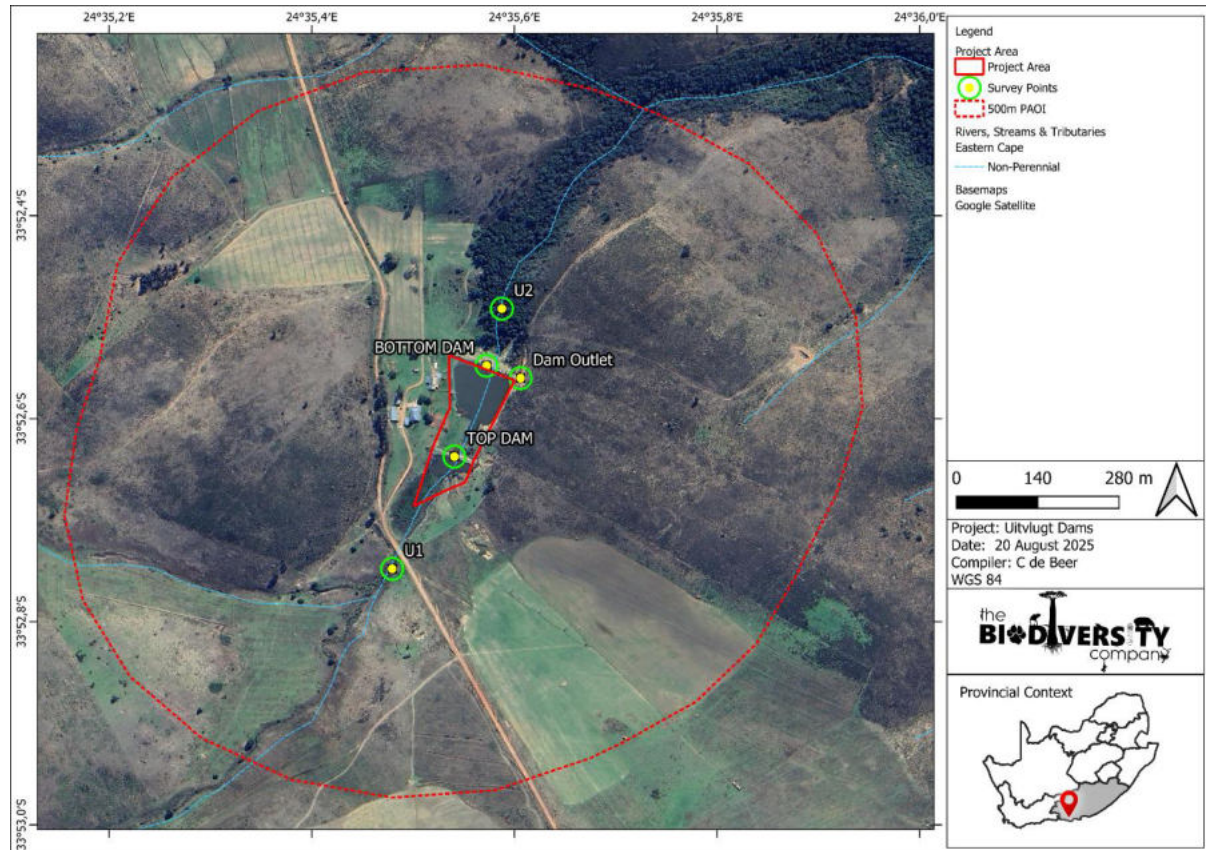
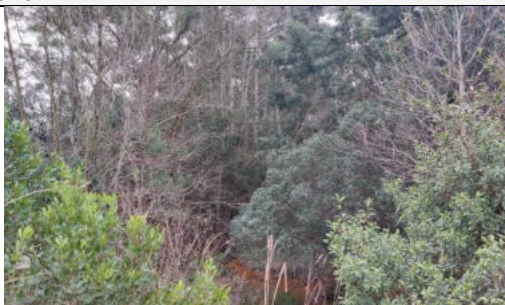


Figure 11-1 Locality map of the sampling sites within the PAOI

Table 11-1 Photos and coordinates for the sites sampled (July 2025)

Site	Upstream View	Downstream View
Hol River Tributary		
U1		
GPS	33°52'46.09"S 24°35'30.75"E	
U2		
GPS	33°52'31.64"S 24°35'36.86"E	
Dams		
Top Dam		
GPS	33°52'39.86"S 24°35'34.22"E	
Bottom Dam		
GPS	33°52'34.80"S 24°35'36.01"E	

11.2 Water Quality

The *in-situ* results are important to assist in the interpretation of biological results due to the direct influence water quality has on aquatic life forms. Site U1 and U2 were both dry during survey, therefore no *in-situ* results were recorded.

11.3 Index of Habitat Integrity

The condition of the watercourse and associated aquatic biodiversity are largely dependent on the condition and degree of modification of the surrounding catchment. The more intact and natural the catchment is, the greater the watercourse condition and ecosystem functioning, and the more services there will be with an associated high aquatic and terrestrial biodiversity presence. An altered catchment compromises the watercourse condition, ecosystem functioning, and services offered, with deleterious effects depending on the degree and type of catchment modification. The more modified catchment will ultimately have a low ecological value watercourse offering limited services with an absence of key services such as phytoremediation (cleaning of water by vegetation) with the cumulative loss of its original biodiversity with only the most tolerant biota remaining in the most negatively modified catchments. The IHI was completed for the assessed Hol River tributary within the project area.

The results for the instream and riparian Index of Habitat Integrity (IHI) assessment for the associated river reaches are presented in Table 11-2. IHI was conducted to determine the PES of the system. According to the IHI results, the instream and riparian habitat of the Hol River reach was rated as Seriously Modified (class E), indicating a large loss of natural habitat, biota, and basic ecosystem function. Anthropogenic activities within the local area and catchment that have largely contributed to the deteriorated state of the system include instream impoundments leading to inundation, flow modifications, channel modifications and exotic vegetation encroachment. This combination of impacts has resulted in habitat loss, encroachment of alien vegetation into the riparian habitat, flow modification, deterioration of water quality, and impacts to instream and riparian integrity.

Table 11-2 Results for the Instream Habitat Integrity assessment for the associated reaches (July 2025)

Instream Criteria	Hol River tributary
Water abstraction	8
Flow modification	18
Bed modification	18
Channel modification	18
Phys-chem modification	5
Inundation	20
Alien macrophytes	1
Introduced aquatic fauna	1
Rubbish dumping	0
Instream Habitat Integrity Score	37
Instream Habitat Integrity Category	E
Riparian Criteria	
Vegetation removal	10

Exotic vegetation	12
Bank erosion	5
Channel modification	18
Water abstraction	8
Inundation	20
Flow modification	18
Phys-chem	5
Riparian Zone Integrity Score	22
Riparian Zone Integrity Category	E

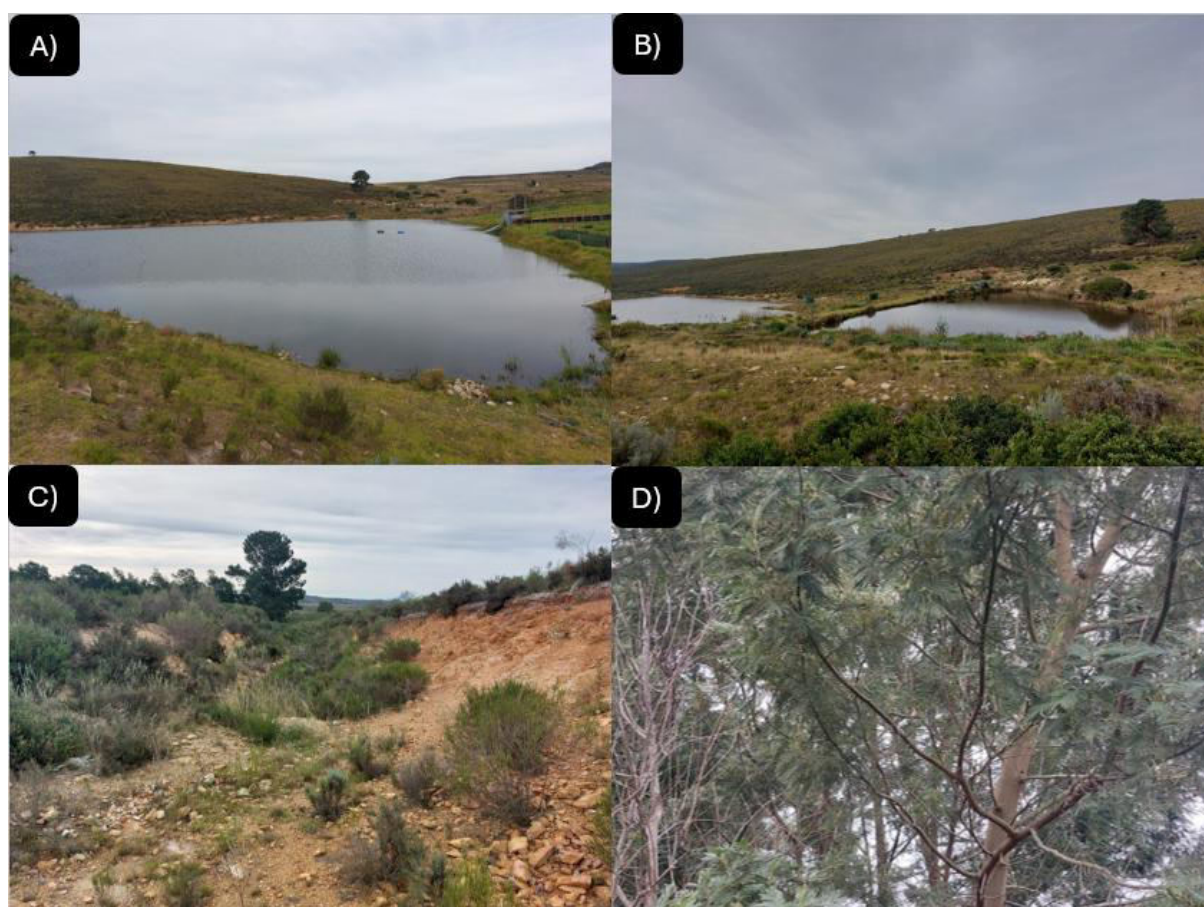


Figure 11-2 *Impacts observed within the PAOI (March 2024): A & B) Instream impoundments; C) Bank erosion; D) Exotic vegetation.*

11.4 Aquatic Macroinvertebrates

Sites U1 and U2 did not have adequate surface water. Consequently, the SASS5 protocol could not be applied, and the macroinvertebrate community was not assessed at these sites at the time of the survey.

11.5 Fish Community Structure

An expected fish species list was composed for the system based on habitat preferences and distribution, this list along with the observed species are presented in Table 11-4. The expected fish species list was developed from a literature survey and included sources such as DWS (2014), Kleynhans *et al.* (2007) and Skelton (2001; 2016). 14 indigenous fish species were expected to occur in the Hol River system. It is noted that one (1) Endangered (EN) fish species WAS expected within the study area (*Pseudobarbus afer*), and two (2) South African Vulnerable (VU) species are expected within the system (*Oreochromis mossambicus* and *Pseudobarbus asper*). Sites U1 and U2 did not have adequate surface water. Consequently, the fishing protocols could not be applied, and the fish community was not assessed at these sites at the time of the survey.

Fish species have different sensitivities to physiochemical and flow modification (Table 11-3) and therefore this was considered for the expected fish species assemblage. This indicated that the average expected assemblage is moderately tolerant to changes in flow and physiochemical modification. The average results for the observed community indicated that the community were tolerant to changes in flow and physiochemical modifications. Although fish could not be sampled during the survey due to dry conditions, it is still important to consider the expected species list as these species can potentially occur in the system.

Table 11-3 Intolerance rating and sensitivity of fish species

Sensitivity Score	Tolerance/Sensitivity Level
0-1	Highly tolerant = Very low sensitivity
1-2	Tolerant = Low sensitivity
2-3	Moderately tolerant = Moderate sensitivity
3-4	Moderately intolerant = High sensitivity
4-5	Intolerant = Very high sensitivity

Table 11-4 Summary of the expected fish species and sensitivity for the project area (July 2025)

Species	Common name	Sensitivity - Flow	Sensitivity – Phys-Chem	IUCN Status* (IUCN, 2025)
<i>Anguilla marmorata</i> (C)	Giant Mottled Eel/Marbled Eel	2.80	2.50	LC
<i>Anguilla mossambica</i> (C)	Longfin Eel	2.80	2.50	LC
<i>*Enteromius anoplus</i>	Chubbyhead barb	2.30	2.60	LC
<i>Enteromius pallidus</i>	Goldie Barb	2.80	3.30	LC
<i>Gilchristella aestuaria</i>	Estuarine Round Herring	1.50	3.00	LC
<i>Glossogobius callidus</i>	River Goby	1.50	2.30	LC
<i>Labeo umbratus</i>	Moggel	2.70	1.60	LC
<i>Monodactylus falciformis</i>	Cape Moony	3.00	2.00	LC
<i>Myxus capensis</i> (C)	Freshwater Mullet	3.50	3.00	LC
<i>Mugil cephalus</i> (C)	Flathead Mullet	2.80	2.50	LC
<i>Oreochromis mossambicus</i>	Mozambique tilapia	0.90	1.30	VU
<i>Pseudobarbus afer</i>	Eastern Cape Redfin	4.00	3.50	EN
<i>Pseudobarbus asper</i>	Smallscale Redfin	5.00	3.00	VU
<i>Sandelia capensi</i>	Cape Kurper	2.00	2.00	DD

EN – Endangered; VU: Vulnerable; LC - Least Concern; DD – Data Deficient

(C) Catadromous fish are born at sea, spends most of its life in freshwater, returns to sea to spawn;

*The distribution and classification of *Enteromius anoplus* are currently being revised.

11.6 Present Ecological Status

The PES assessment for the sampled watercourse is based on the collective data collected during the July 2025 survey and the results are provided in Table 11-5. The PES assessment indicated that the Hol River Tributary was in a class E 'Seriously Modified' state, therefore noncompliant with the REC of class C (Moderately Modified). It should be noted that the PES results represent a single survey conducted during the July 2025. Therefore, these results should be interpreted accordingly.

Table 11-5 Present Ecological Status of the Hol River tributary reach

Aspect Assessed	Hol River tributary
NON-ECOSTATUS INDICES	
Instream Habitat Integrity	E
Riparian Habitat Integrity	E
Present Ecological State	E
DWS Ecostatus (DWS, 2014)	C

11.7 Site Sensitivity Verification

11.7.1 Ecological Sensitivity

The following is deduced from the National Web-based Environmental Screening Tool (Regulation 16(1)(v) of the Environmental Impact Assessment Regulations 2014, as amended) and the current assessment:

- The National Web-Based Environmental Screening Tool has characterised the aquatic theme sensitivity of the project area and the PAOI as "Very High" (Figure 11-3).
- As the project area and proposed activities are located in close proximity to a natural stream Hol River tributary, the sensitivity should therefore be regarded as "High" (Figure 11-4). This, on account of the "High" EIS calculated for this SQR (Table 11-6), expected presence of sensitive aquatic macroinvertebrates and the possible presence of one (1) South African species that is rated as "Endangered" and two (2) South African fish species that are rated as "Vulnerable" by the IUCN (2025).

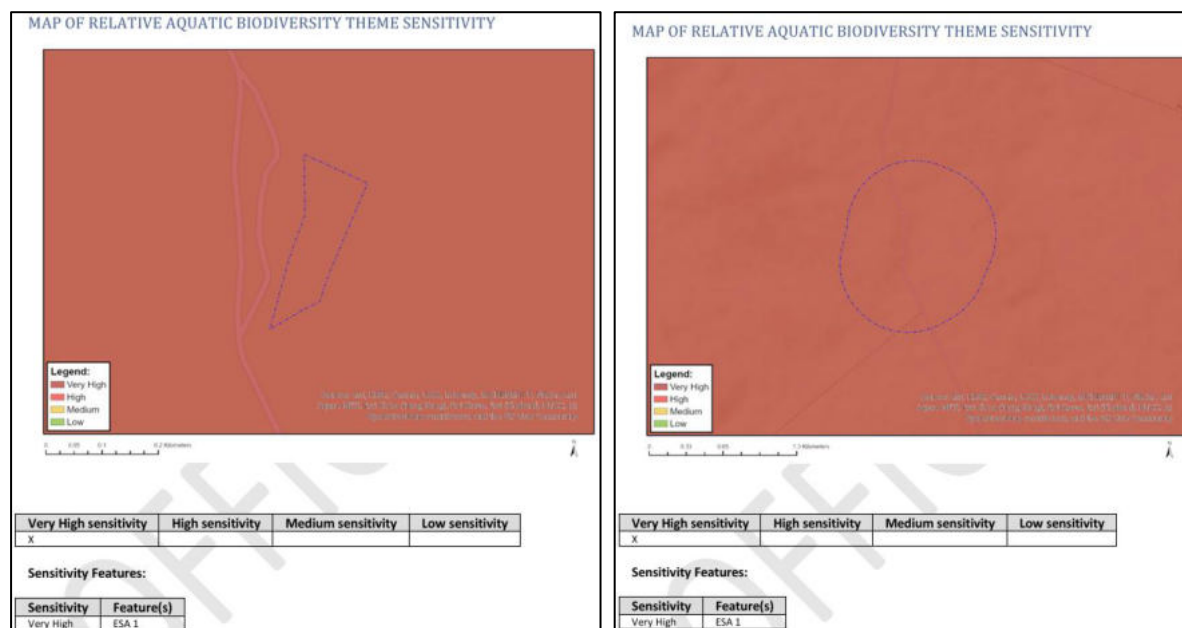


Figure 11-3 Aquatic Biodiversity Theme Sensitivity for the Project Area (left image) and PAOI (right image)

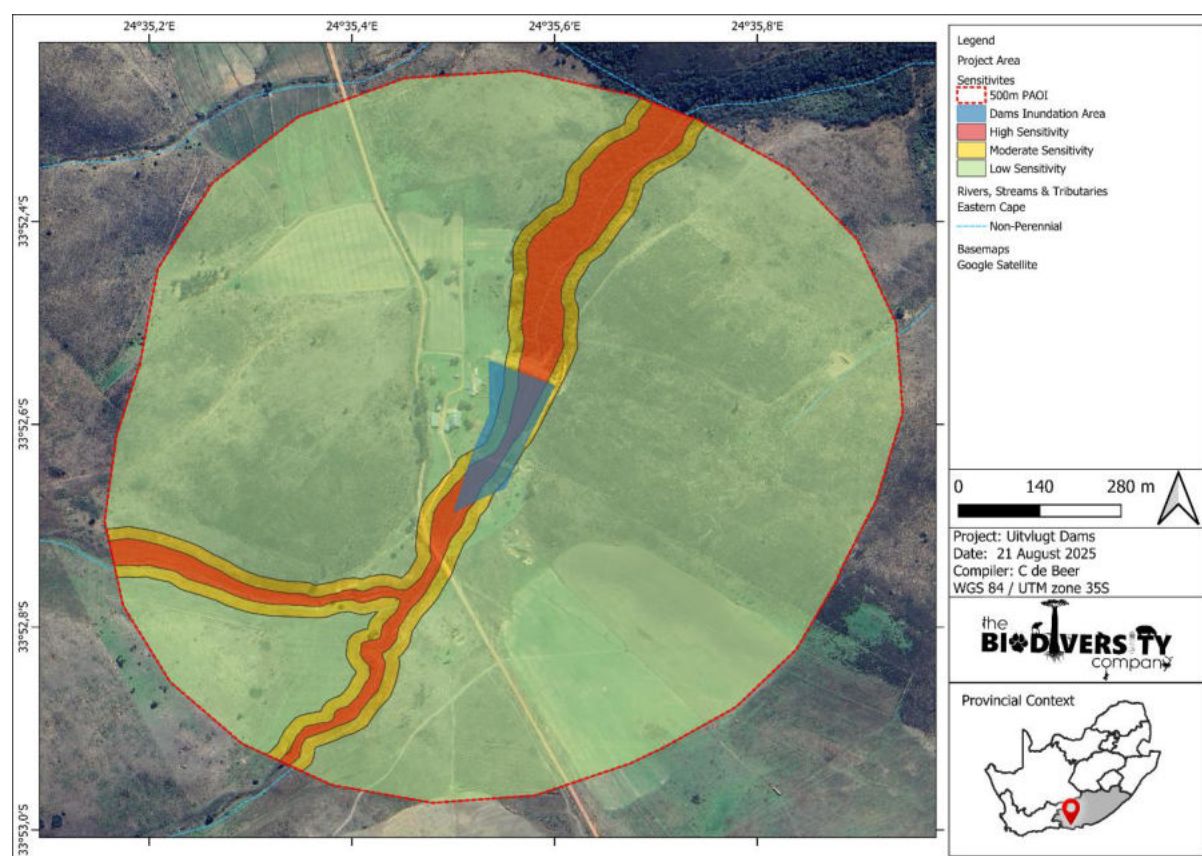


Figure 11-4 Aquatic delineated sensitivity for the PAOI

Table 11-6 Ecological Importance and Sensitivity of the associated rivers (Kleynhans, 1999)

EIS Criteria	Hol River Tributary
Biological Determinants	Rating
Rare and Endangered Biota	4

Unique Biota	4
Intolerant Biota	2
Species Richness	2
Habitat Determinant (Ecological Importance)	Rating
Diversity of aquatic habitat features	1
Refuge value of habitat	2
Sensitivity of Habitat to flow related changes	2
Sensitivity to flow related water quality changes	2
Migration route or corridor for instream and riparian biota	3
National Parks, wilderness areas, Nature reserves, Natural Areas, Heritage sites	2
Median Interpretation	2.5
Ecological Importance and Sensitivity	High
Desktop Ecological Importance (EI) (DWS, 2014)	EI – High
Desktop Ecological Sensitivity (ES) (DWS, 2014)	ES – High

11.8 Riparian Delineations, Buffer Requirements and Regulated Areas

The riparian areas along the assessed watercourses were delineated according to DWAF (2005), 5 m contour data, the SAIIE dataset (NBA National Wetland Map, 2018), and the latest Google Earth aerial imagery (2024) as well as a site visit and are presented in Figure 11-5. According to the buffer guidelines, the maximum required buffer should be applied to a system (Macfarlane, *et al.*, 2014). Riparian areas have high conservation value and can be considered the most important part of a watershed for a wide range of values and resources. They provide important habitat for a large volume of wildlife and often forage for domestic animals. The vegetation they contain is an important part of the water balance for the hydrological cycle through evapotranspiration. They are crucial for riverbank stability and in preventing erosion within the channel (Elmore and Beschta, 1987). The implementation of a buffer zone ensures the ecological requirements needed to maintain both the ecosystem functioning and services offered by the watercourses are maintained. Additionally, the watercourses potentially influenced by the project have sensitivity to further disturbance, requiring protection from the project activities. Therefore, they are considered as high priority areas and should be avoided at all costs.

The buffer requirements for the watercourses were calculated using the Site-Based Tool: Determination of buffer zone requirements (Macfarlane *et al.*, 2014). The recommended buffer zone for the Hol River tributary was calculated to be **20 m** (Figure 11-5). These buffer areas serve as **No-go** zones for unauthorised activities. The site development plan should therefore be created accordingly. Ensuring buffers are intact increases the resilience of a watercourse to future disturbances.

11.8.1 Regulation Zones

Table 11-7 presents the legislated zones of regulation that would be applicable to the PAOI. In accordance with General Notice (GN) 4167 of 2023 as it relates to the NWA (1998), a regulated area of a watercourse for Section 21 (c) and 21 (i) of the NWA, 1998 means the outer edge of the 1 in 100 year flood or where no flood line has been determined it means **100 m** from the edge of a watercourse or a 500 m radius from the delineated boundary (extent) of any wetland or pan. Listed activities in terms of the NEMA (1998), (Act 107 of 1998) EIA Regulations as amended in April 2017 must be taken into consideration if any infrastructure is to be placed within the applicable zone of regulation, which in this case is a **32 m** zone of regulation. The proposed activities traverse the Hol River tributary, and therefore the project falls within the NEMA Act 107 and DWS GN 4167 regulated zones. The regulated areas have been applied to the delineations within the PAOI and presented in (Figure 11-5).

Table 11-7 The legislated zones of regulation

Regulatory authorisation required	Zone of applicability
Water Use License Application in terms of the National Water Act, 1998 (Act No. 36 of 1998). Department of Water and Sanitation (DWS) GN 4167 as published in the Government Gazette 49833 of 2023. GN 509 as published in the Government Gazette 40229 of 2016. Department of Water and Sanitation (DWS)	Government Notice 4167 as published in the Government Gazette 49833 of 08 December 2023 as it relates to the National Water Act, 1998 (Act No.36 of 1998) as amended. In accordance with GN4167, a regulated area of a watercourse in terms of water uses as listed in Section 21(c) and 21(i) is defined as: - the outer edge of the 1 in 100-year flood line or delineated riparian habitat, whichever is the greatest distance, measured from the middle of the watercourse of a river, spring, natural channel, lake, or dam; - in the absence of a determined 1 in 100-year flood line or riparian area the area within 100 m distance from the edge of a watercourse where the edge of the watercourse (excluding flood plains) is the first identifiable annual bank fill flood bench; or - In respect of a wetland, a 500 m radius around the delineated boundary (extent) of any wetland, including pans.
Listed activities in terms of the National Environmental	Activities of Listing Notice 1 (GN 983) of the National Environmental Management Act, 1998 (Act No.107 of 1998) EIA regulations, 2014 (as amended): Activity 12:

Management Act, 1998 (Act No. 107 of 1998) EIA Regulations (2014), as amended. Department of Environmental Affairs and Development Planning (DEA&DP)	The development of— (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or (j) infrastructure or structures with a physical footprint of 100 square metres or more, where such development occurs: a) within a watercourse; b) in front of a development setback; or c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse. Excluding – ...(dd) where such development occurs within an urban area... Activity 19: The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from (i) a watercourse; (ii) the seashore; or (iii) the littoral active zone, an estuary or a distance of 100 metres inland of the high-water mark of the sea or estuary, whichever distance is the greater— but excluding where such infilling, depositing, dredging, excavation, removal or moving— (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies; (d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies. <u>Activities of Listing Notice 3 (GN 985) of the National Environmental Management Act, 1998 (Act No.107 of 1998) EIA regulations, 2014 (as amended)</u> Activity 14 <i>The development of—</i> (xii) <i>infrastructure or structures with a physical footprint of 10 square metres or more;</i> <i>where such development occurs—</i> (a) <i>within a watercourse;</i> (b) <i>in front of a development setback; or</i> (c) <i>if no development setback has been adopted, within 32 metres of a watercourse,</i>
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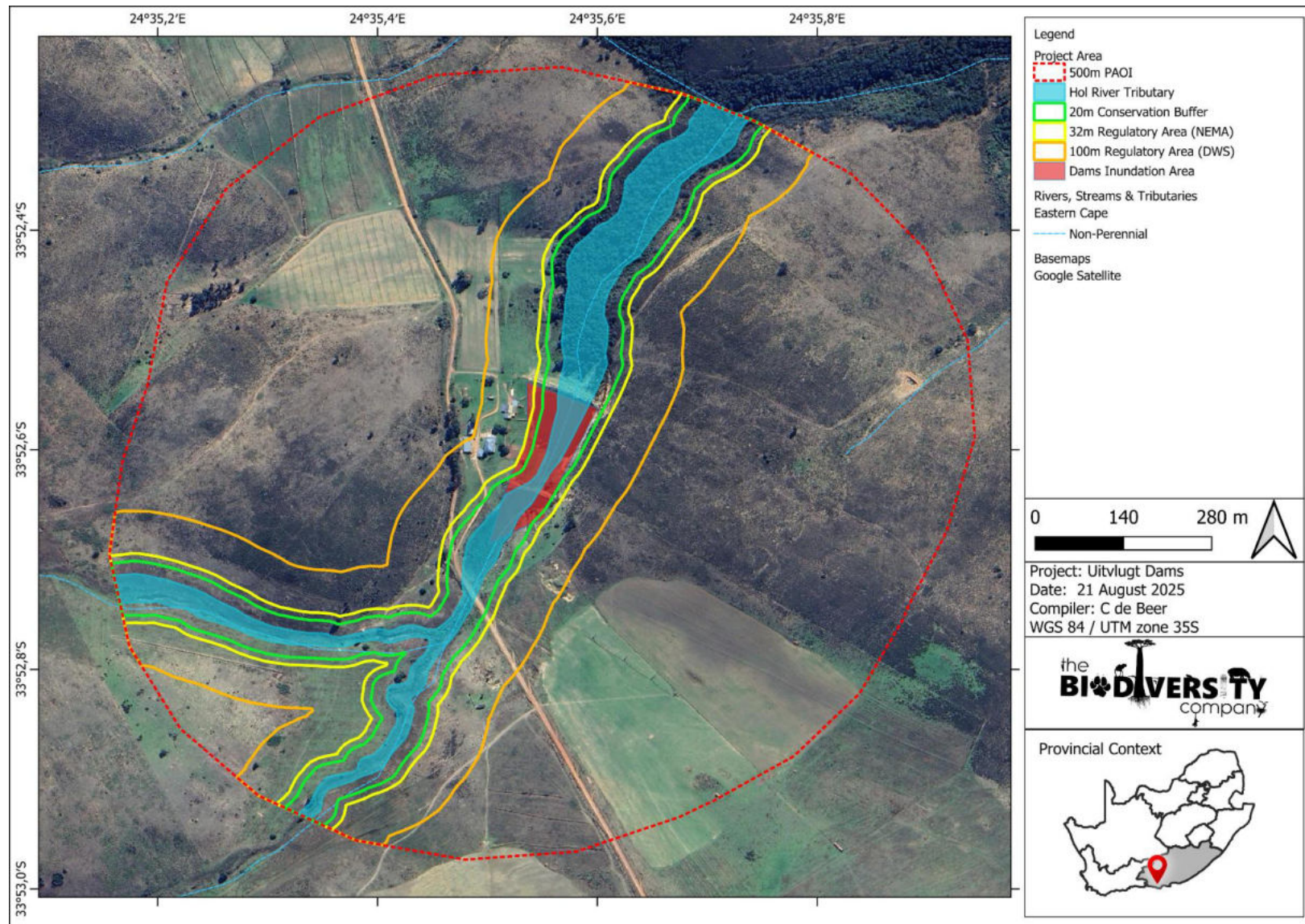


Figure 11-5 Riparian areas, regulated areas and conservation buffers for the proposed PAOI

12 Risk and Impact Assessment

12.1 Current Impacts on Freshwater Biodiversity

The assessed watercourse exhibits impacts on both the catchment and local scale. These impacts result from present and historical land use relating to transport infrastructure development and agricultural practices in proximity to watercourses which have transformed their habitats and altered their natural hydrological regime as well as species composition. The list below refers to the present-day local impacts associated with the assessed freshwater areas:

- Instream impoundments
- Water abstraction.
- Settlements and roads.
- Agricultural activities.
- Grazing and trampling of natural vegetation by livestock in aquatic and riparian areas.
- Encroachment of alien vegetation into the riparian habitat.
- Erosion induced by altered hydrodynamics due to hardened surfaces and instream impoundments.

12.2 Alternatives Considered

Alternative sites are not feasible as the instream dams are already fully operational, making it impractical to consider alternative locations. As a result, any mitigation or management efforts would need to focus on optimizing the current practices within the existing setup, rather than seeking alternative sites.

12.3 Loss of Irreplaceable Resources

The freshwater ecology of the project area is considered moderately sensitive to disturbance from a hydrological, biological and conservational perspective. This includes the Hol River tributary. Development within these sensitive areas will lead to modifications to the present ecological state and therefore ecosystem degradation.

12.4 Quantitative Risk and Impact Assessment

The Risk/Impact Assessment considered the direct and indirect impacts of the activity on the freshwater systems associated with the project area. The mitigation hierarchy as discussed by the Department of Environmental Affairs (2013) will be considered for this component of the assessment (Figure 12-1). In accordance with the mitigation hierarchy, the preferred mitigatory measure is to avoid impacts by considering options in the project location, setting, scale, layout, technology, and phasing to avoid impacts. For this assessment, the specialist was provided with the location of the proposed activity and the study focussed on the watercourses within and close to the project area. Mitigation measures should be implemented to negate potential impacts on the watercourses associated with the project area.

A single risk assessment was compiled for the project, which relates to the instream impoundments and associated activities post-mitigation. The DWS Risk Assessment Matrix (GN 4167) was applied to identify and evaluate both the potential risks and impacts associated with the proposed activities. In the specialist's opinion, the outcomes of this assessment are adequate to inform an application for Environmental Authorisation (EA). This applies to all proposed activities of Section 21 (c) and (i).

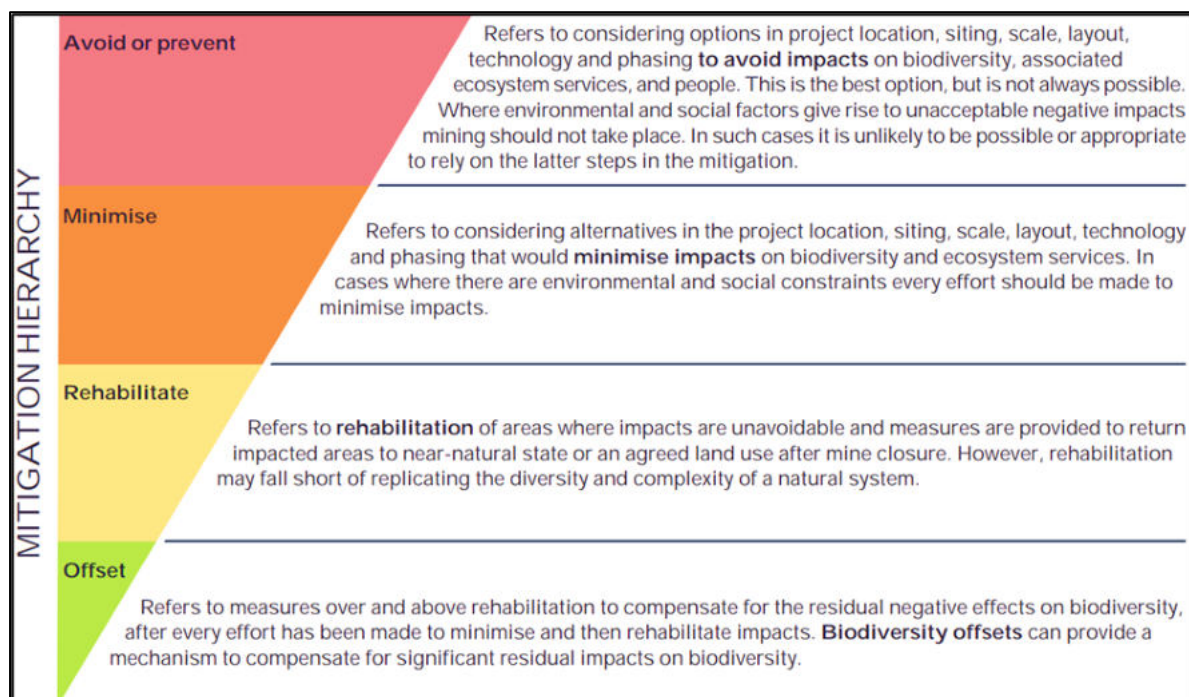


Figure 12-1 The mitigation hierarchy as described by the DEA (2013)

12.4.1 Potential Anticipated Impacts

Table 12-1 illustrates the DWS risk ratings associated with the instream impoundments. The potential direct and indirect impacts are expected to threaten the integrity of sensitive receptors during the project activities if unmitigated. The post-mitigation significance ratings have been calculated considering various parameters for watercourses within the DWS zone of regulation only. The summative results are presented in the subsequent table. Kindly refer to the corresponding DWS Risk Assessment Matrix in excel format for the full assessment. **The construction phase was not assessed as the instream dams already exist and are operational phase.**

Table 12-1 Summative results of the DWS Risk Assessment Matrix compiled by Prasheen Singh (Pr. Sci. Nat. 116822)

Phase	Activity	Impact	Risk Rating
OPERATIONAL	Uitvlugt Dams in Operation	Loss of natural vegetation/riparian habitat	M
		Increased erosion from exposed surfaces	L
		Alteration of hydro-dynamics and reduced dispersal/ migration of fauna	M
		Increase in sediment inputs & turbidity and associated smothering and loss of instream habitat.	M
		Loss of aquatic biota	L

(L) Low Risk

(M) Moderate Risk

Anthropogenic activities drive habitat destruction, causing displacement of aquatic and terrestrial fauna and flora. Land clearing for development/agriculture (all inclusive) destroys local wildlife habitat and can lead to the loss of local breeding grounds, nesting sites, and wildlife movement corridors as well as impacting rivers, streams and drainage lines and their associated riparian area, or other locally important features.

It is anticipated that operation phase of the project poses “Moderate” pre-mitigation risks to the freshwater ecosystems, which can change to “Low” post-mitigation risks for some impacts. This will be possible subject to effective mitigation that addresses stormwater management, erosion and sedimentation prevention, rehabilitation of disturbed areas, the prevention of detrimental run-off from hard surfaces into delineated watercourses and their associated buffers. Even with mitigation there are still moderate impacts from the proposed activities due to the permanent alterations to the riparian area, banks and hydrology from the instream impoundments and furthermore the alteration to flow patterns and velocities from these impoundments, ultimately causing a loss of aquatic biota.

A decommissioning phase for the proposed development was not considered due to the longevity of proposed activity.

12.5 Unplanned Events

The planned activities will have known impacts as discussed above; however, unplanned events may occur on any project and may have potential impacts which will need mitigation and management. Table 12-2 is a summary of the findings from a watercourse ecology perspective. Please note not all potential unplanned events may be captured herein and this must therefore be managed throughout all phases of the project.

Table 12-2 Unplanned Events, Risks and their Management Measures

Unplanned Event	Potential Impact	Mitigation
Dam wall burst	Erosion/ inundation and habitat loss (the water is considered ‘clean’ and therefore no water quality risks are anticipated)	Highly unlikely as the Dam is not an instream impoundment. The spillway should be designed to cater for excess water volumes to prevent and dam burst.
Uncontrolled erosion	Sedimentation of downstream watercourse	Erosion control measures must be put in place. These should be adaptive to onsite conditions.

12.6 Mitigation Measures

Mitigation measures should aim to avoid or reduce potential negative impacts to air, water, land, ecology and humans, or to introduce positive aspects to the development/activity. The focus of mitigation measures should be to reduce the significance of potential impacts associated with the crossing infrastructure, and thereby to:

- Prevent the unnecessary destruction of, and fragmentation, of the vegetation community (including the riparian area);
- Prevent the loss of the faunal community (including potentially occurring species of conservation concern) associated with these vegetation communities; and
- Limiting the construction area to the defined project areas and only impacting those areas where it is unavoidable to do so otherwise.

Considering the expected impacts from the project activities, the following mitigation measures have been proposed to lower the intensity of the impacts on the ecological integrity of the associated watercourses. The focus of mitigation measures should be to reduce the significance of potential environmental impacts.

12.6.1 Dam Mitigation Measures

The following mitigation actions are applicable to the Uitvlugt Dams:

- All spillways must be regularly monitored and maintained/revegetated.

- Stormwater mitigation measures should be implemented during the construction phase of the Dam. These measures must attempt to reduce erosion and sedimentation of the water preventing erosion of the receiving environment. It is preferable that run-off velocities be reduced with energy dissipaters and flows discharged into the local watercourses.
- Siltation of dams must be monitored to avoid decreasing the capacity of the dams.
- Silt traps and fences must be placed in the preferential flow paths to prevent sedimentation of the watercourse, these should be monitored and serviced regularly.
- Revegetating/rehabilitation of eroded areas along the existing dam in the project area.
- Landscape and re-vegetate all cleared areas as soon as possible to limit flow path creation and erosion potential.
- The use of heavy machinery during rehabilitation with the installation of silt traps and the vegetation of the banks should be restricted to where needed and access routes outlined for these vehicles. The project must focus on responsible stormwater management during construction and operation.

Install sedimentation/erosion protection measures prior to construction in the form of several rows of sand bags, silt traps and/ or fences, this is particularly important in the access roads leading to any drainage channel

12.6.2 Fish Migration

The risk assessment indicates that there will be a loss of connectivity between areas up- and downstream of the dam wall. In order to facilitate the movement of fish species, a fish ladder (fishway) is recommended. Detailed fishway designs should implement the established protocols found in the Water Research Commission (WRC) report No 1270/2/04 and WRC report No 1310/1/05. Essentially, four types of fishways should be considered namely: Pool and weir, vertical-slot, pool and slot, and natural by-pass channels. Considering this literature, the following fishway concepts should be adhered to in the preferred option:

- Due to the presence of SCC and migratory taxa within the greater project area, the project must implement a fish by-pass structure to cater for fish migration year round. Provided the topography and site conditions are conducive, the bypass channel–rock ramp fishway combination tends to be the preferred alternative (O'Brien et al. 2019);
 - The fishway should have water passing through it during both high flows and low flows (base flows) to encourage fish to make use of the fishway no matter the flow levels;
- The fishway should cater for both rheophilic (fish with a preference for fast moving water) and limnophilic (slow moving water) fish species. This can be achieved through having several different flow velocity areas across the fishway;
- It is recommended that a rough stone surface be cast into the fishway channel floor to cater for climbing and crawling species;
- Rocks used for the fishway should have flat sides with rounded edges (typical of quarried rock) rather than rounded rocks, as they provide a variety of water velocity and depths that are easy for fish to navigate;

- Rocky material (aggregate) should be placed with a cascade pattern creating numerous step-like riffles but should also incorporate a large variety of rock sizes placed at random to create a diversity of hydraulic conditions (microhabitats) within the cascade. This will create a natural fishway for fish movement without the elevated costs of constructing fish-ladders;
 - The larger rock material needs to be concreted in place to prevent them from washing away during high flows;
- As presented in Figure 12-2, pools or depressions of varying sizes and depths should be created at random throughout the length and width of the fishway and should be placed behind large rocks to create lower velocity resting areas (eddies) for fish. The more pools and large rock boulders incorporated in the design, the more successful the fishway will be;

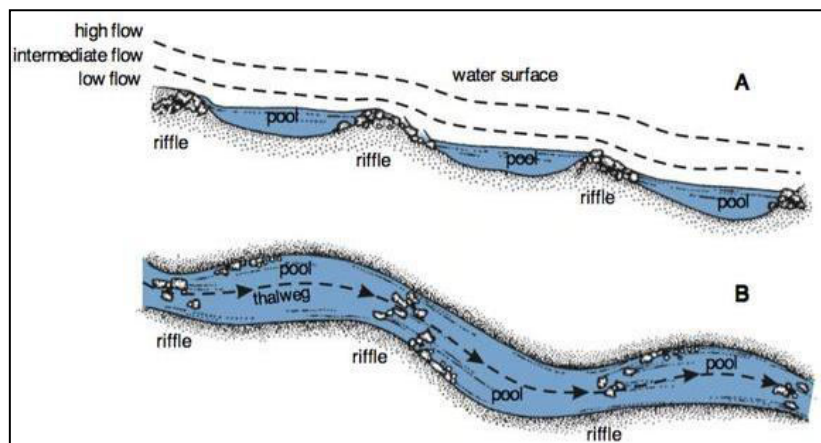


Figure 12-2 *Diagram illustrating a step like rock ramp type of cascade*

- Additional guidelines for fishway design (if and where applicable) include:
 - Channel slope (gradients) – between 1/8 and 1/10 is recommended for South African fish;
 - Fishway entrance – furthest point upstream that the fish can penetrate, usually in a suitable pool (low turbulence with sufficient depth) located near the base of the dam wall;
 - Fishway exit – located in a quiet area above the dam wall, sheltered, with a low velocity to prevent fish from being swept downstream and to afford protection from predators;
 - The invert level of the exit (i.e. water inflow) should be lower than that of the dam wall overflow to ensure the low flows are directed down the fishway;
 - Depth of pool:
 - Small fish (20 to 200 mm in length): at least 300 mm deep to reduce predation and limit turbulence;
 - Larger fish (>200 mm): at least 500 mm, can be deeper to reduce turbulence, if necessary;
 - Length of pool – at least 2.5 times the length of the largest fish catered for;

- Drop height between pools/rock levels – maximum of 100 mm to cater for small fish.
- The downstream entrance to the by-pass fishway structure must be designed with ecological insights to ensure adequate attraction flows and swimming capabilities of the relevant fish species throughout their migratory seasons and diversity of flows are catered for to ensure the success of the structure;
- A mix of small to large aggregate outsourced or from the project area (if available) should be used for energy dissipation in key areas immediately downstream of fishway discharge area to reduce the likelihood of scouring the watercourse bed and sedimentation of the catchment. It is preferable that larger aggregate be used to avoid flows removing material from key areas;
- The by-pass fishway structure can be constructed on either the left or the right bank of the river, on the bank which has a more gentle gradient would be more conducive to the success of the structure;
- This fish by-pass structure must cater for passage of weaker swimmers while preventing bed scour through the use of roughened bed and banks. An example of a fish by-pass structure can be viewed at this link <https://www.youtube.com/watch?v=uEUHhiek-RI>; and
- Ideally a quarter or more of the water flowing past the dam wall structure should traverse the dam wall via the fish by-pass structure to ensure the fish can use this structure for both upstream and downstream migration year round.

12.6.3 Erosion & Sedimentation

The following erosion specific mitigation measures are provided:

- Practice good soil management across the PAOI;
- All removed soil and material must not be stockpiled within the system. Stockpiling should take place outside of the water resources. All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds;
- Install sandbags around soil stockpiles to prevent soils washing into the system;
- Make sure that the soil is backfilled and compacted to appropriate geotechnical specifications for the project area.
- Signs of erosion must be addressed immediately to prevent further erosion of the upgraded infrastructure;
- Temporary and permanent erosion control methods may include silt fences, flotation silt curtains, retention basins, detention ponds, interceptor ditches, seeding and sodding, riprap of exposed embankments, erosion mats, and mulching;
- Any exposed earth should be rehabilitated promptly by planting suitable vegetation (vigorous indigenous grasses) to protect the exposed soil; and
- Landscape and re-vegetate all cleared areas as soon as possible to limit erosion potential.
- Stem any headcut/ erosion gully as it occurs by bulldozing, filling, re-contouring to gentler gradients and re-vegetating; and
- The rehabilitation of watercourse banks should take place as an offset to altered land use with associated negative ecological impacts. Key areas where erosion has occurred should be

rehabilitated through bank reprofiling to gentler gradients and the revegetation of the reworked banks.

12.6.4 Alien Vegetation Establishment

The following alien vegetation establishment specific mitigation measures are provided:

- Quarterly vegetation rehabilitation surveys need to be conducted of the vegetation within the project footprint; and
- An alien invasive plant management plan needs to be compiled and implemented prior to construction to control and prevent the spread of invasive aliens.

12.6.5 General mitigation measures

The following general mitigation measures are provided:

- The aquatic and riparian areas outside of the specific project site area must be avoided where possible;
- Have action plans on site in the event of spills, leaks and other impacts to the aquatic systems;
- All removed soil and material must not be stockpiled within the system. Stockpiling should take place away from the watercourse and buffer area. All stockpiles must be protected from erosion, stored on flat areas where run-off will be minimised, and be surrounded by bunds;
- Any exposed earth should be rehabilitated promptly by planting suitable vegetation (vigorous indigenous grasses) to protect the exposed soil;
- All waste generated on-site during construction must be adequately managed. Separation and recycling of different waste materials should be supported; and
- An alien invasive plant management plan needs to be compiled and implemented post construction to control current invaded areas and prevent the growth of AIPs on cleared areas. Alien vegetation must not be allowed to encroach onto the sites and must be continually removed during construction. Construction must not promote further alien plant disturbances in the surrounding area.
- Erosion prevention and sediment control measures must be implemented. Temporary and permanent erosion control methods may include silt fences, interceptor ditches, seeding and sodding, riprap of exposed embankments, and mulching.
- Rehabilitation of the riparian area, bed and banks must be budgeted for and should be incorporated into the project life cycle and must be completed as soon as construction is completed. Rehabilitation must be done following an approved Rehabilitation Plan and in consultation with a suitably qualified SACNASP professional.
- Areas exposed to erosion must be protected through the use of sandbags, berms and efficient construction processes i.e., limiting the extent (footprint) and duration period that areas are exposed.
- All alterations or hardened surfaces associated with such structures or works are structurally stable, do not induce sedimentation, erosion or flooding, do not cause a detrimental change in the quantity, velocity, pattern, timing, water level and assurance of flow in a watercourse, do not cause a detrimental change in the quality of water in the watercourse, do not cause a detrimental change in the stability or geomorphological structure of the watercourse; and does not create nuisance condition, or health or safety hazards.
- Measures must be implemented at alterations (including at existing structures or activities) to 1) prevent detrimental changes to the breeding, nesting or feeding patterns of aquatic biota,

including migratory species (if present), 2) allow for the free up and downstream movement of aquatic biota, including migratory species (if present), and 3) prevent a decline in the composition and diversity of the indigenous and endemic aquatic biota.

13 Recommendations

The following recommendations have been made to ensure the conservation of the aquatic resources;

- An alien invasive plant management plan needs to be implemented and conducted regularly to control current invaded riparian areas and prevent the growth of invasives on cleared areas. This will assist in improving the biotic integrity and ecosystem functioning of the delineated watercourses.
- Rehabilitation must be done following an approved Rehabilitation Plan and in consultation with a suitably qualified SACNASP professional.

14 Conclusion

The National Web-Based Environmental Screening Tool has characterised the aquatic theme sensitivity of the project area and the PAOI as “Very High”. Furthermore, the EIS for this SQR was rated as “High” as the presence of sensitive aquatic biota are expected within the assessed reach and the possible presence of sensitive aquatic macroinvertebrates and the possible presence of one (1) South African species that is rated as “Endangered” and two (2) South African fish species that are rated as “Vulnerable” by the IUCN (2025). At the desktop level, the ecological integrity (PES) of the associated Hol River tributary reach is classified as class C (Moderately Modified), with a High Ecological Importance (EI) and High Ecological Sensitivity (ES). The PES assessment indicated that the non-perennial Hol River tributary was in a ‘Seriously Modified’ state, deteriorated from the DWS (2014) PES of ‘Moderately Modified’.

Buffer zones have been assigned to the watercourses within the PAOI, these buffer zones are designated as No-go zones for any development, disturbance, equipment/machinery, waste dumping, and laydown yards unless authorized. A minimum buffer zone strip of **20 meters** for the Hol River tributary is recommended. The integrity of these buffers enhances the resilience of watercourses to future disturbances. Development plans activities should be crafted accordingly to ensure compliance with these buffer requirements.

14.1 Risk and Impact Statement

It is anticipated that operation phase of the project poses “Moderate” pre-mitigation risks to the freshwater ecosystems, which can change to “Low” post-mitigation risks for some impacts. This will be possible subject to effective mitigation that addresses stormwater management, erosion and sedimentation prevention, rehabilitation of disturbed areas, the prevention of detrimental run-off from hard surfaces into delineated watercourses and their associated buffers. Even with mitigation there are still moderate impacts from the proposed activities due to the permanent alterations to the riparian area, banks and hydrology from the instream impoundments and furthermore the alteration to flow patterns and velocities from these impoundments, ultimately causing a loss of aquatic biota.

14.2 Specialist Opinion

Considering the assessment findings, it is the opinion of the specialist that the project may be considered for authorisation, on condition that all prescribed mitigation measures are implemented. The activities listed in Table 14-1 will require a full water use license application and all mitigation measures and recommendations in this report must be strictly adhered to.

Table 14-1 *Summative results of the unlawful activities and the assessed risk / impacts to freshwater resources within the PAOI.*

Unlawful Activities	Requires Authorization (Yes/No)	Reason / Comments	Risk / Impacts
Uitvlugt Dams	Yes	The Uitvlugt Dams are in-stream dams and therefore located within the Regulated Area.	As these are instream dams, current Moderate impacts can be reduced to Low with application of prescribed mitigation measures. Other current Moderate impacts will remain Moderate with application of prescribed mitigation measures.

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16 Appendices

16.1 Appendix A: – Specialist Declaration of Independence

DECLARATION

I, Charles de Beer, declare that:

- I act as the independent specialist in this application;
- I am aware of the procedures and requirements 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 (NEMA), 1998, as amended, when applying for environmental authorisation which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. “the Protocols”) and in Government Notice No. 1150 of 30 October 2020.
- 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 and is punishable in terms of the NEMA Act.



Charles de Beer

Aquatic Ecologist

The Biodiversity Company

13/05/2026

DECLARATION

I, Prasheen Singh, declare that:

- I act as the independent specialist in this application;
- I am aware of the procedures and requirements 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 (NEMA), 1998, as amended, when applying for environmental authorisation which were promulgated in Government Notice No. 320 of 20 March 2020 (i.e. "the Protocols") and in Government Notice No. 1150 of 30 October 2020.
- 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 and is punishable in terms of the NEMA Act.



Prasheen Singh

Aquatic Ecologist

The Biodiversity Company

13/05/2026

16.3 Appendix B: – SASS5 Accreditation



- End of Report -