



DRAFT S24G ASSESSMENT REPORT

**MOSPLAAS FARM – RECTIFICATION OF THE CLEARING OF
LAND AND THE CONSTRUCTION OF
ORCHARDS/VINEYARDS AND ASSOCIATED
INFRASTRUCTURE ON ERF 2255, 2149, 1740, 2125
KAKAMAS SOUTH SETTLEMENT, NORTHERN CAPE
PROVINCE**

DENC REF: S24G05/01/2020

March 2020



DOCUMENT NAME:

Mosplaas Farm – Rectification of the clearing of land and the construction of orchards/vineyards and associated infrastructure on Erf 2255, 2149, 1740, 2125 Kakamas South Settlement, Northern Cape Province

PROJECT NUMBER:

N/A

DATE:

15 March 2021

REPORT STATUS:

DRAFT ASSESSMENT
REPORT

CARRIED OUT BY:

GroenbergEnviro (Pty) Ltd

COMMISSIONED BY:

Mosplaas Sitrus (Pty) Ltd

AUTHOR(S):

Elanie Kühn

CLIENT CONTACT DETAILS:

Mr. P. Karsten
P.O. Box 53, Kanoneiland, 8806
Email: zeldavd@karsten.co.za
Tel: 054 431 7000

SYNOPSIS:

See Below

PREPARED BY:

GroenbergEnviro (Pty) Ltd

**QUALITY CONTROL**

Revision	Date	Author	Technical Review	Report Review
00	March 2021	E. Kühn	E. Kühn	H. Badenhorst
01				
02				

CONTACT INFORMATION

Please contact the undermentioned should you require further information.



GroenbergEnviro (Pty) Ltd	
Address:	Wellington Klein Opperhorst Wellington 7654 PO Box 1058 Wellington, 7654
	Fax: +27 86 476 7139
Website	www.groenbergenviro.co.za
Contact Person	Elanie Kühn I have 14 years' experience in project management and report writing. I have a BSc degree and also gained my Honours Degree in Environmental Management from the North West University in Potchefstroom. My focus in GroenbergEnviro is primarily on Environmental Impact Assessments and Water Use License Applications.
	
Contact number	+27 76 584 0822
Cell number	+27 76 584 0822
Fax Number	+27 86 476 7139
Email	elanie@groenbergenviro.co.za

TABLE OF CONTENTS

CONTACT INFORMATION	3
PART 1	9
SECTION A: APPLICATION INFORMATION	9
1. APPLICANT PROFILE INDEX	9
2. APPLICATION HISTORY	12
SECTION B: ACTIVITY INFORMATION	14
1. ACTIVITIES APPLIED FOR:	14
2. ACTIVITY DESCRIPTION	16
3. ACTIVITY NEED AND DESIRABILITY	26
4. PHYSICAL SIZE OF THE ACTIVITY	27
5. SITE ACCESS	28
6. SITE PHOTOGRAPHS	28
7. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES	29
8. WASTE QUANTITIES (WHERE THE ACTIVITY IS A LISTED WASTE MANAGEMENT ACTIVITY)	29
9. GENERAL (WHERE THE ACTIVITY IS A LISTED WASTE MANAGEMENT ACTIVITY)	30
SECTION C: DESCRIPTION OF RECEIVING ENVIRONMENT	31
1. GRADIENT OF THE SITE	31
2. LOCATION IN THE LANDSCAPE	31
3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE	31
4. SURFACE WATER	31
5. VEGETATION AND GROUNDWATER	32
6. THE GEOLOGICAL FORMATIONS UNDERLYING THE SITE	37
7. LAND USE CHARACTER OF SURROUNDING AREA (PRE-COMMENCEMENT)	38
8. REGIONAL PLANNING CONTEXT	38
9. SOCIO-ECONOMIC CONTEXT	39
10. CULTURAL/HISTORICAL FEATURES	41
SECTION D: PRELIMINARY IMPACT ASSESSMENT	43
1. WASTE, EFFLUENT AND EMISSION MANAGEMENT	43
2. WATER USE	44
3. POWER SUPPLY	46
4. ENERGY EFFICIENCY	46
5. NOISE IMPACTS	47
6. VISUAL IMPACTS	48
7. SOCIO-ECONOMIC IMPLICATIONS OF THE ACTIVITY	48
8. PRELIMINARY IMPACT ASSESSMENT	48
SECTION E: LANDFILL PARAMETERS (WHERE APPLICATION RELATES TO A WASTE MANAGEMENT ACTIVITY)	58
1. THE METHOD OF DISPOSAL OF WASTE:	58
2. THE DIMENSIONS OF THE DISPOSAL SITE IN METRES	58
3. THE TOTAL VOLUME AVAILABLE FOR THE DISPOSAL OF WASTE ON THE SITE:	58
4. THE TOTAL VOLUME ALREADY USED FOR WASTE DISPOSAL:	58
5. THE SALVAGE METHOD	58
6. FATAL FLAWS FOR THE SITE:	58
7. LOCATION AND DEPTH OF GROUND WATER MONITORING BOREHOLES:	59
8. LOCATION AND DEPTH OF LANDFILL GAS MONITORING TEST PIT:	60
SECTION F: PROPOSED PUBLIC PARTICIPATION	61
7.1. PUBLIC PARTICIPATION PROCESS	61
7.2. PUBLIC PARTICIPATION UNDERTAKEN PRIOR TO THE SUBMISSION OF THE NOTICE OF INTENT	62
7.3. LIST OF STATE DEPARTMENTS CONSULTED/TO BE CONSULTED	63
SECTION G: ALTERNATIVES	65
SECTION H: APPENDICES	67

PART 2	68
PART 3	75
SECTION I: DECLARATIONS	75
I1: DECLARATIONS OF THE EAP	75
I2: DECLARATIONS OF THE APPLICANT	76
APPENDIX A: LOCALITY MAP	79
APPENDIX B: SITE PLANS	80
ALTERNATIVE 1: PREFERRED ALTERNATIVE	80
APPENDIX C: CONSENT USE	81
APPENDIX D1: HISTORICAL PHOTOGRAPHIC IMAGE	82
APPENDIX D2: SITE PHOTOGRAPHS	85
APPENDIX D3: CBA 2 AND ESA LOCATED ON REMAINDER OF KAKAMAS SOUTH SETTLEMENT 2125, 2255, 2149 AND 1740	87
APPENDIX E1: IRRIGATION RIGHTS FROM KAKAMAS WATER USERS ASSOCIATION	88
APPENDIX E2: CONFIRMATION REPORTS	89
APPENDIX F: PUBLIC PARTICIPATION PROCESS	102
APPENDIX F2.1: I&AP DATABASE.....	102
APPENDIX F2.2: ADVERTISEMENT.....	104
<i>Appendix F2.2.1: Pre-application advert</i>	104
<i>Appendix F2.2.2: Advertisement</i>	105
APPENDIX F2.3: NOTICE BOARDS	106
APPENDIX F2.4: PROOF OF NOTICES SENT.....	107
APPENDIX F2.5: NOTICES SENT.....	108
<i>Appendix F2.5.1: Notices</i>	108
APPENDIX F2.6: COMMENTS RECEIVED.....	109
<i>Appendix F2.6.1 Comments from DENC</i>	109
<i>Appendix F2.6.2 Comments received</i>	110
APPENDIX F2.7: COMMENTS AND RESPONSES SHEET	111
APPENDIX H1: ATTENDANCE REGISTER OF MEETING HELD	112
APPENDIX H2: ENVIRONMENTAL MANAGEMENT PROGRAMME	113
APPENDIX H3: WATER USE LICENSE APPLICATION	209
APPENDIX H4: BOTANICAL ASSESSMENT	272
APPENDIX H5: ARCHAEOLOGICAL IMPACT ASSESSMENT	286
APPENDIX H6: PALEONTOLOGICAL IMPACT ASSESSMENT	301

TABLE OF FIGURES

Figure 1: Locality map of Kakamas, South Settlement No. 2149, 1740, 2125, 2255	16
Figure 2: Unlawfully cleared vegetation indicated in purple.	17
Figure 3: Farm 2255, 124ha orchards / vineyards (Google 2006)	18
Figure 4: Farm 2255, 124ha orchards / vineyards (Google 2010)	18
Figure 5: Farm 2125, Block 1, 2 and 3 (Google 2006).....	19
Figure 6: Farm 2125, Block 1, 2 and 3 (Google 2010).....	19
Figure 7: Farm 2419 and 1740 (Google 2006)	20
Figure 8: Farm 2419 and 1740 (Google 2010)	20
Figure 9: Final development layout	21
Figure 10: Access to the farm	22
Figure 11: Ephemeral streams/drainage areas.....	23
Figure 12: Dam 1 location.....	24

Figure 13: Dam 2 location	25
Figure 14: Pipeline and extraction point on canal	26
Figure 15: Winegrowing areas of South Africa	27
Figure 16: Access to farms	28
Figure 17: Non-Perennial Streams	32
Figure 18: <i>Portion of the Vegetation Map of South Africa, Swaziland and Lesotho (SANBI 2018) with Mosplaas overlaid.</i>	33
Figure 19: Uncultivated Bushmanland Arid Grassland outside the Mosplaas boundary to the west of the farm.....	34
Figure 20: Uncultivated Bushmanland Arid Grassland with <i>Senegalia mellifera</i> subsp. <i>detinens</i> (black thorn) prominent shrubby trees. Very little rock is exposed.....	35
Figure 21: Lower Gariiep Broken Veld found on rocky substrates.....	35
Figure 22: Portion of the Critical Biodiversity Areas map for the Northern Cape Province as it pertains to Mosplaas	36
Figure 23: Ephemeral streams/drainage areas.....	45
Figure 24: Preferred alternative layout	65



the denc

Department:
Environment & Nature Conservation
NORTHERN CAPE PROVINCE
REPUBLIC OF SOUTH AFRICA

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

2016

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: Description of Receiving Environment
- Section D: Preliminary Impact Assessment
- Section E: Landfill Parameters
- Section F: Proposed Public Participation Process
- Section G: Alternatives
- Section H: Appendices

PART 2

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

PART 3

- Section A: Declarations
 - Annexures

4. An independent EAP must be appointed to complete Part 1 as well as Part 2 Section C Part I of the application form on behalf of the applicant. The applicant must complete the remainder of Part 2 (i.e. excluding Section C part I. Both the EAP and Applicant must sign Part 3.
5. The declaration of independence must be completed by the independent EAP and submitted with the application.
6. 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).
7. The use of “not applicable” in the application form must be done with circumspection.
8. No faxed or e-mailed applications will be accepted. This application form must be submitted by hand or mailed to the relevant competent authority.

9. 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.

10. This application form constitutes the initiation of the S24G application process.

Kindly note further that:

11. 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.

12. 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.

13. 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.

14. 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

Department of Environment and Nature Conservation
Compliance and Enforcement
90 Long Street
Private Bag X6102
Kimberley
8300

Tel. 053-807 7300
Fax: 053-807 7328

PART 1

SECTION A: APPLICATION INFORMATION

1. APPLICANT PROFILE INDEX

Cross out the appropriate box "☒".

1.1	The applicant is an individual	YES	NO
1.2	The applicant is a company	YES	NO
1.3	The applicant is a state-owned enterprise or municipality	YES	NO
1.4	Other (specify)	YES	NO
1.5	There is more than one individual/company responsible for the unlawful commencement of listed activities/listed waste management activities.	YES	NO

Name of Project applicant:	Mosplaas Citrus (Pty) Ltd												
RSA Identity number:	4	8	0	8	2	8	5	0	5	4	0	8	8
Contact person:	Petrus Abraham Karsten Belia Karsten												
Position in company	CEO & Shareholder												
Registered Name of Company/ Closed Corporation	Mosplaas Citrus (Pty) Ltd												
Trading name (if any):	Mosplaas Citrus (Pty) Ltd												
Registration number	1999/004948/07												
Postal address:	P.O. Box 53												
	Kanoneiland						Postal code:	8806					
Telephone:	(054) 431 7000						Cell:	+27(0)827817527					
E-mail:	zeldavd@karsten.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 to the back of this page.													

Environmental Assessment Practitioner (EAP):	GroenbergEnviro (Pty) Ltd												
Contact person:	Elanie Kuhn												
Postal address:	PO Box 1058												
	Wellington						Postal code:	8870					
Telephone:	(021) 873 7228						Cell:	(076) 584 0822					
E-mail:	elaniem@groenbergenviro.co.za						Fax:	(086) 4767139					
EAP Qualifications	Elanie Kuhn – 14 years’ experience, environmental management, report writing, project management.												
EAP Registrations/Associations	Elanie Kühn - IAIA												

Name of Landowner(s):	Same as applicant.					
Contact person(s):						
Postal address:						
			Postal code:			
Telephone:			Cell:			
E-mail:			Fax:			
Please Note: In instances where there is more than one landowner, please attach a list of landowners with their contact details to the back of this page. THE CONSENT USE IS INCLUDED IN APPENDIX C.						
Municipality in whose area of jurisdiction the activity falls:	Kai! Garib Municipality					
Contact person:	Municipal Manager					
Postal address:	Private Bag X6					
	Kakamas		Postal code:	8870		
Telephone:	(054) 461 6700		Cell:			
E-mail:			Fax:	(054) 461 6300		
Please Note: In instances where there is more than one Municipality involved, please attach a list of Municipalities with their contact details to the back of this page.						
Project title:	Mosplaas - S24G Rectification of agricultural developments and the further agricultural developments and infrastructure on Kakamas South Settlement No. 2255, 2149, 2125 and 1740.					
Property location:	Mosplaas - Kakamas					
Farm/Erf name & number (incl. portion):	Agricultural development – Kakamas South Settlement No. Erf 2255, 2419, 2125 and 1740 Dam 1 – Erf 2125 Dam 2 – Erf 2255					
SG21 Digit code:	C036000700002255000000 C036000700002149000000 C036000700002125000000 C0360007000017400000000					
Co-ordinates:	Latitude (S):			Longitude (E):		
Cultivation areas:	28°	47'	52.27"	20°	38'	16.09"
Erf 2255: Block 1	28°	48'	25.63"	20°	38'	24.22"
	28°	48'	50.69"	20°	39'	25.99"
	28°	48'	03.65"	20°	39'	03.36"
Erf 2149	28°	48'	07.30"	20°	39'	38.76"
	28°	48'	22.13"	20°	39'	42.74"
	28°	48'	22.40"	20°	40'	03.79"
	28°	48'	07.84"	20°	39'	56.97"
Erf 1740	28°	48'	22.74"	20°	39'	25.47"
	28°	48'	25.97"	20°	40'	07.17"
	28°	48'	52.41"	20°	40'	04.00"
	28°	48'	47.57"	20°	39'	28.69"
Erf 2125: Block 1	28°	48'	23.51"	20°	40'	06.86"
	28°	48'	24.15"	20°	40'	33.47"
	28°	48'	54.45"	20°	40'	34.65"
	28°	48'	34.26"	20°	40'	11.10"
Block 2	28°	48'	52.29"	20°	39'	52.82"
	28°	49'	09.69"	20°	39'	33.15"

	28°	49'	24.13"	20°	40'	09.55"
	28°	48'	51.21"	20°	40'	21.85"
Block 3	28°	49'	11.16"	20°	35'	28.21"
	28°	49'	22.23"	20°	39'	19.16"
	28°	49'	38.04"	20°	39'	56.71"
	28°	49'	31.06"	20°	39'	57.85"
Block 4	28°	48'	07.84"	20°	40'	02.01"
	28°	48'	42.36"	20°	40'	24.60"
	28°	47'	49.69"	20°	40'	57.00"
	28°	48'	21.54"	20°	40'	39.78"
	28°	48'	22.15"	20°	40'	06.56"
Dam 1:	28°	48'	25.73"	20°	40'	21.18"
Dam 2	28°	48'	02.05"	20°	38'	56.38"

Please Note:

Where a large number of properties are involved (e.g. linear activities), attach a list of property descriptions to the back of this page.

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:	Kai! Garib Municipality
Magisterial District or Town:	Augrabies

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 to the back of this page.

Closest City/Town:	Kakamas	Distance	±4.5 km
Zoning of Property:	Agricultural Zone 1		

Please Note: In instances where there is more than one zoning, please attach a map clearly indicating the zoning of the different portions.

Was a rezoning application required?	YES	NO
Was a consent use application required?	YES	NO

Please Note: Where planning approvals have been granted please attach the relevant approvals.

Owner's consent:	Not applicable to this application.
------------------	-------------------------------------

2. 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?	Yes	NO
If so, please give a brief description of the type and/or nature of the application/s: (In instances where there was more than one application, please attach a list of these applications)		

Which authority considered the application(s):		
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.	Yes	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) _____ Signature:

Place: _____ Date: _____

EAP (Full names) Elanie Kühn _____ Signature: _____

Place: Wellington _____ Date: _____

SECTION B: ACTIVITY INFORMATION

1. ACTIVITIES APPLIED FOR:

Separate applications are required for one site where more than one listed activity has commenced and where these unlawfully commenced activities constitute offences in terms of different EIA regulations and/or the listed waste management activities.

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)
Activity 1(i): The construction, erection or upgrading of - canals and channels, including structures causing disturbances to the flow of water in a riverbed, and water transfer schemes between water catchments and impoundments.	For the construction of agricultural areas across streams. Specifically, for Block 4 on Kakamas South Settlement No. 2125 for the development of 72ha.

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
1(m) The construction of facilities or infrastructure, including associated structures or infrastructure, for - any purpose in the one in ten year flood line of a river or stream, or within 32 metres from the bank of a river or stream where the flood line is unknown, excluding purposes associated with existing residential use, but including – (i) canals; (ii) channels; (iii) bridges;	For the construction of a dam within 32m from an existing stream.

(iv) dams; and (v) weirs;	
4. The dredging, excavation, infilling, removal or moving of soil, sand or rock exceeding 5 cubic metres from a river, tidal lagoon, tidal river, lake, in-stream dam, floodplain or wetland.	For the construction of various agricultural areas across small streams.
Government Notice No. R325 Appendix 2 (Listing notice 2) Activity No(s):	Details of Activity(ies) requiring a Scoping Report
Government Notice No. R327 Appendix 3 (Listing notice 3) 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)
Not Applicable	

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)
Not Applicable	

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.	New – agricultural development.	Upgrade
--	--	---------

(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.

Locality:

The property (Mosplaas Farm) on which the construction of the agricultural development (orchards/vineyards) and associated infrastructure took place, is situated on the Kakamas South Settlement (KSS) No. 2255, 2149, 1710 and 2152.

The farm is situated approximately 10 km south-east of Kakamas along the R359, in the Northern Cape (see **Figure 1**). The affected site lies south of the Orange River and is currently zoned Agriculture Zone I. Small ephemeral streams cross the entire site. The owner of the farm is Mosplaas Sitrus (Pty) Ltd, who has appointed GroenbergEnviro (Pty) Ltd as the independent environmental consultant to conduct the required environmental authorisation process.

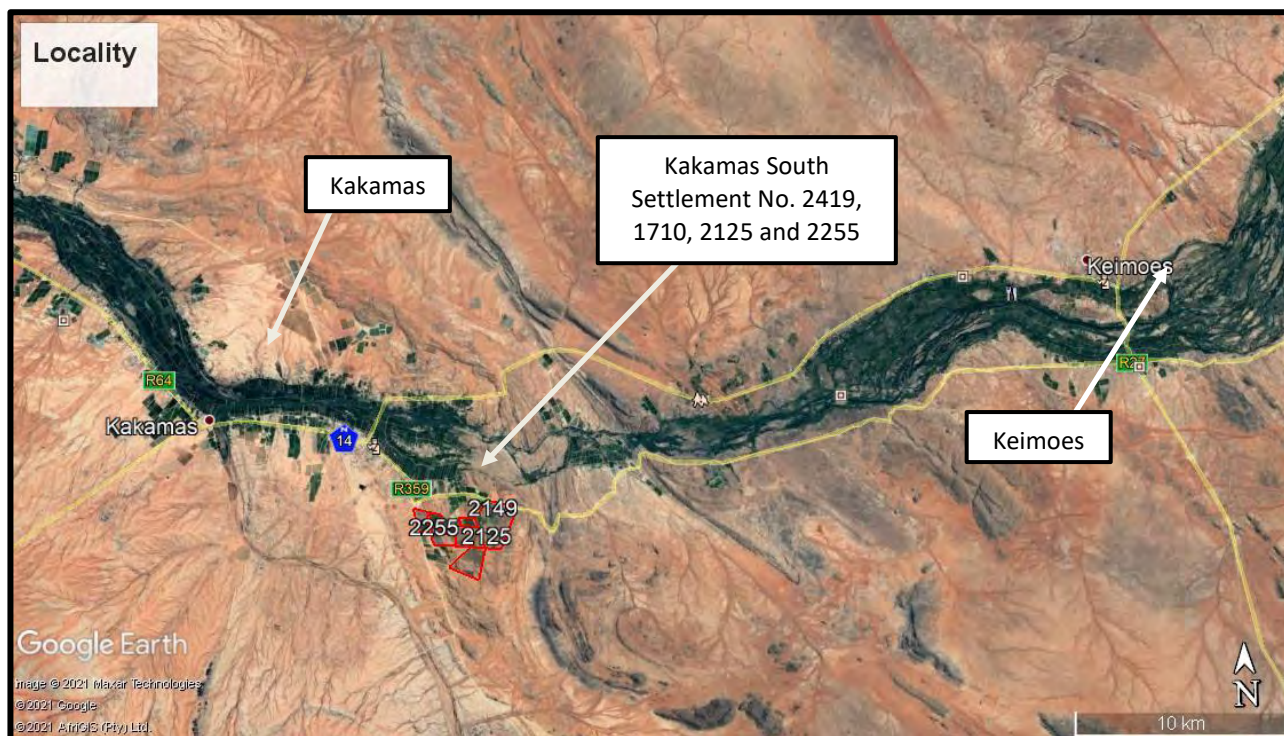


Figure 1: Locality map of Kakamas, South Settlement No. 2149, 1740, 2125, 2255

Project Description:

The agricultural development triggered a section 24G process due to the unlawful clearing within 32m of a stream without prior authorisation.

During the period from 1997 to 2016 various developments have taken place on the farm, of which most are the agricultural developments of vineyards and orchards. The agricultural development consisted of various listed activities that triggered the ECA 1997 up until the NEMA 2016, outlined below accordingly.

Also refer to the Historical Google Earth images attached in **Appendix D1: Historical Photographic Image** and **Figures 2 to 9**.

NEMA Application:

(The affected areas are outlined below as per the areas that were developed and the associated timeframe to each given with the NEMA listed activities).

1. 1997-1999 Development:

- Construction took place during 1998 for the infrastructure development of the orchards/vineyards on Block 4 (KSS 2125) of approximately (72ha), as shown in Error! Reference source not found. as the purple area.
- The construction took place over small ephemeral streams without prior authorisation.

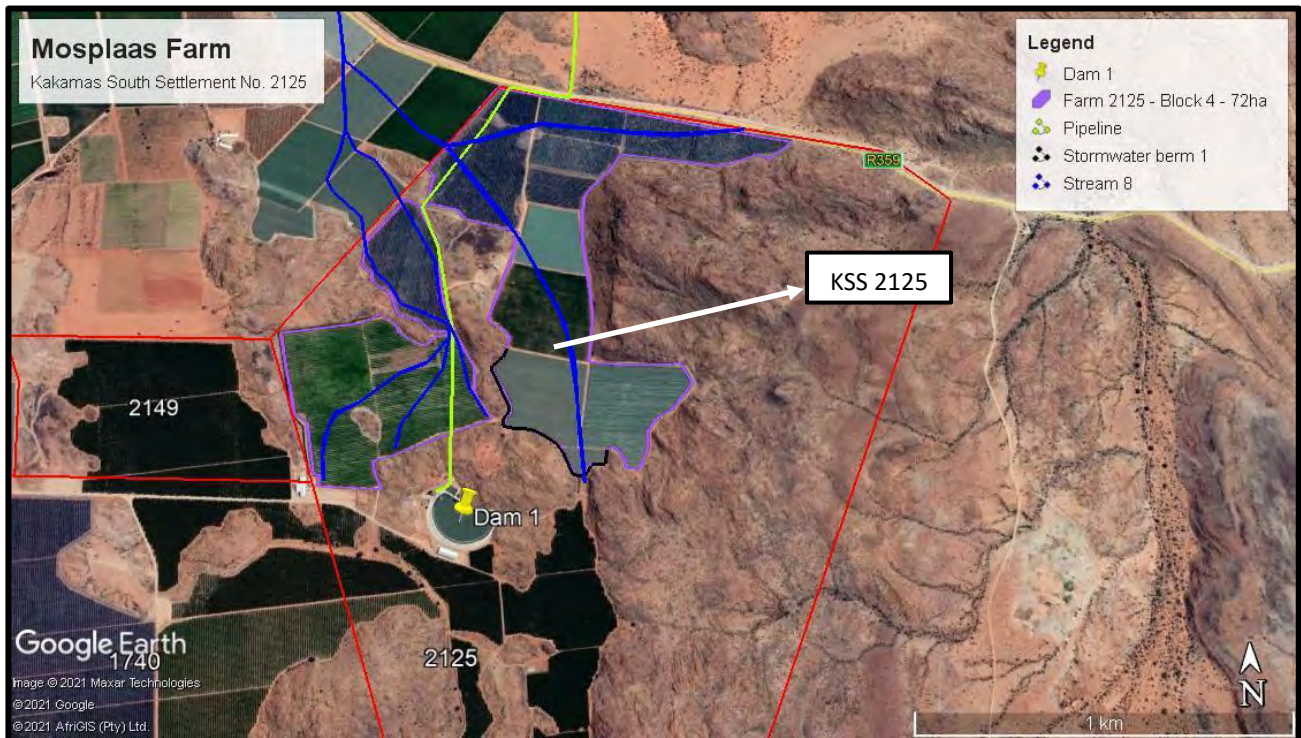


Figure 2: Unlawfully cleared vegetation indicated in purple.

2. 2006-2010 Development

- Construction of orchards/vineyards across small streams on the following properties:
 - KSS 2255 – 124ha, see **Figure 3** and **Figure 4**;
 - KSS 2125 – Block 2 – 70.2ha (orange), Block 3 – 19ha (white) and Block 1– 22ha (turquoise blocks), see **Figure 5** and **Figure 6**;
 - KSS 1740 – 80ha, see pink areas in **Figure 7** and **Figure 8**;
 - KSS 2419 – 23ha, see yellow areas in **Figure 7** and **Figure 8**.
- The construction of a dam (Dam 1) with a volume of 42 000m³, and a wall height of 4.95m on KSS 2125. It is noted that the dam in itself did not trigger an activities, however, it triggered NEMA as the dam was constructed within 32m from a small stream, see **Figure 5** and **Figure 6**;
- The construction of a dam (Dam 2) with a volume of 1 900m³ on KSS 2125. The dam did not activate an activity due to the small size. However, the dam runs across small streams, see **Figure 3** and **Figure 4**.



Figure 3: Farm 2255, 124ha orchards / vineyards (Google 2006)



Figure 4: Farm 2255, 124ha orchards / vineyards (Google 2010)

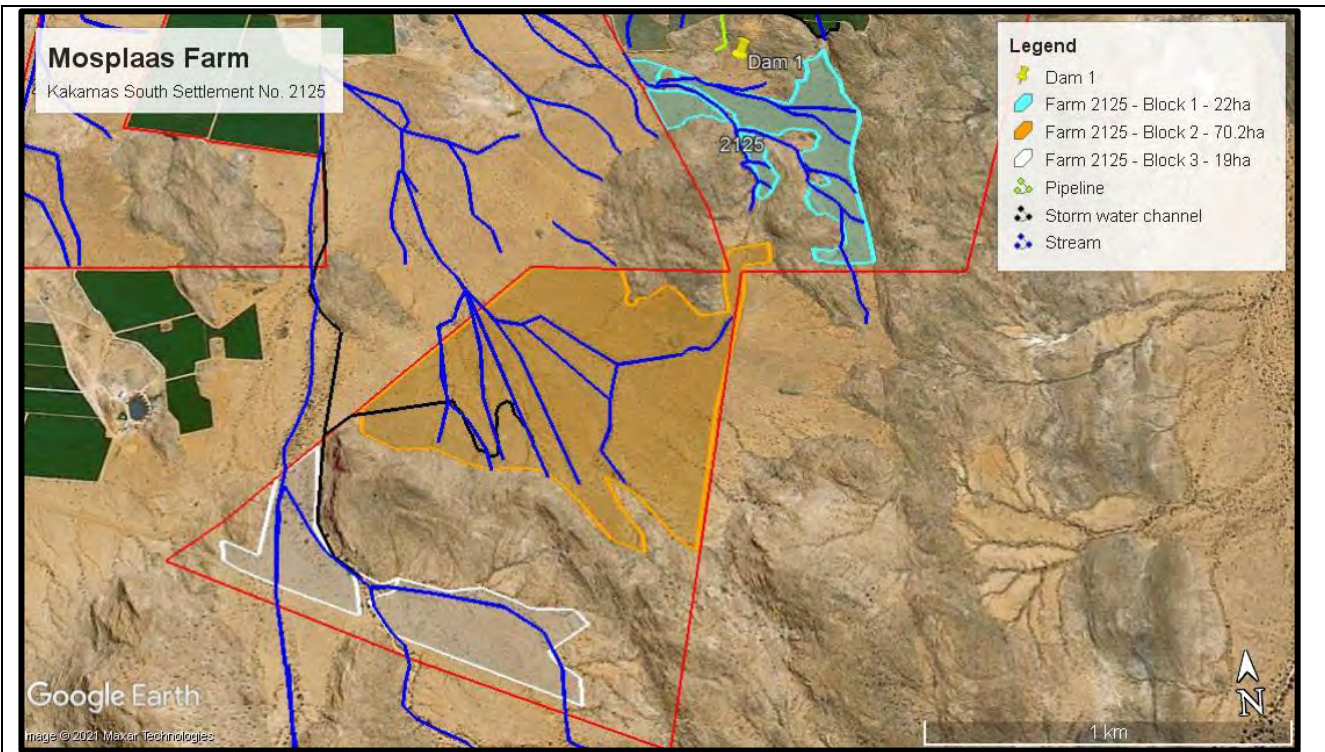


Figure 5: Farm 2125, Block 1, 2 and 3 (Google 2006)

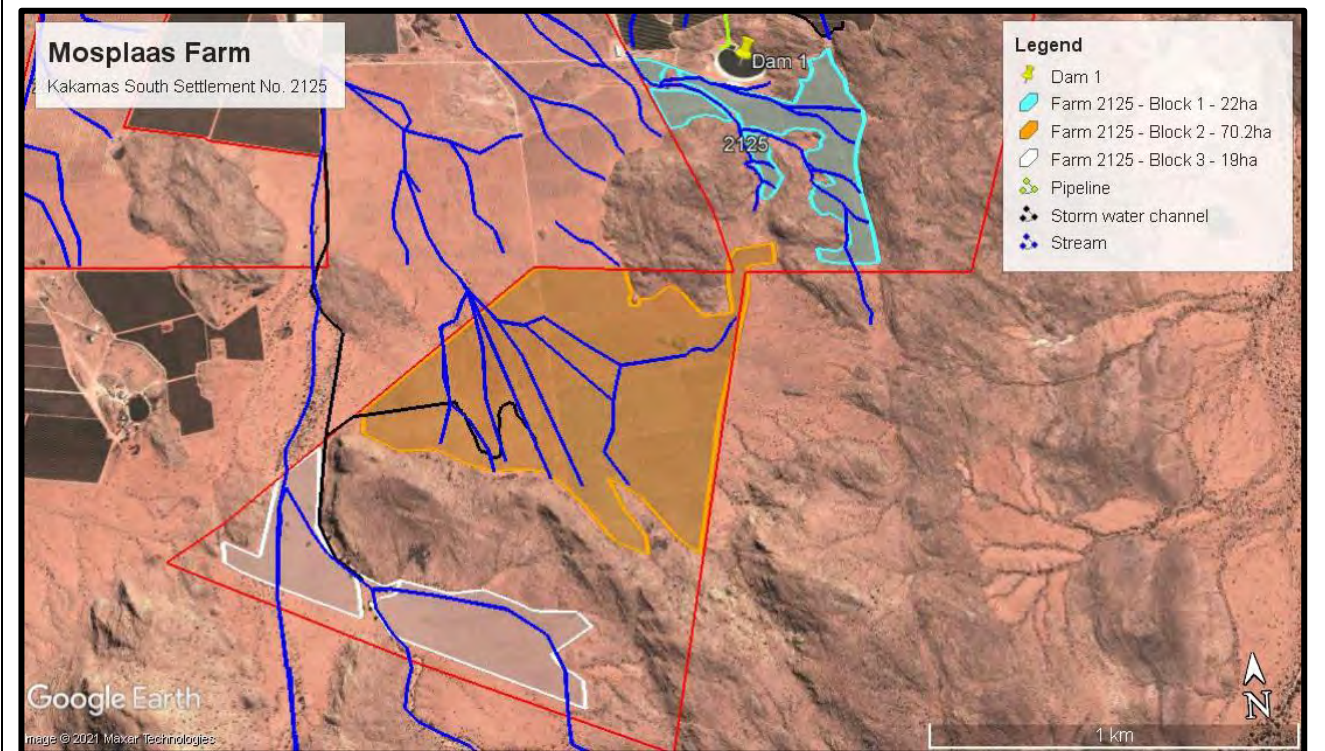


Figure 6: Farm 2125, Block 1, 2 and 3 (Google 2010)

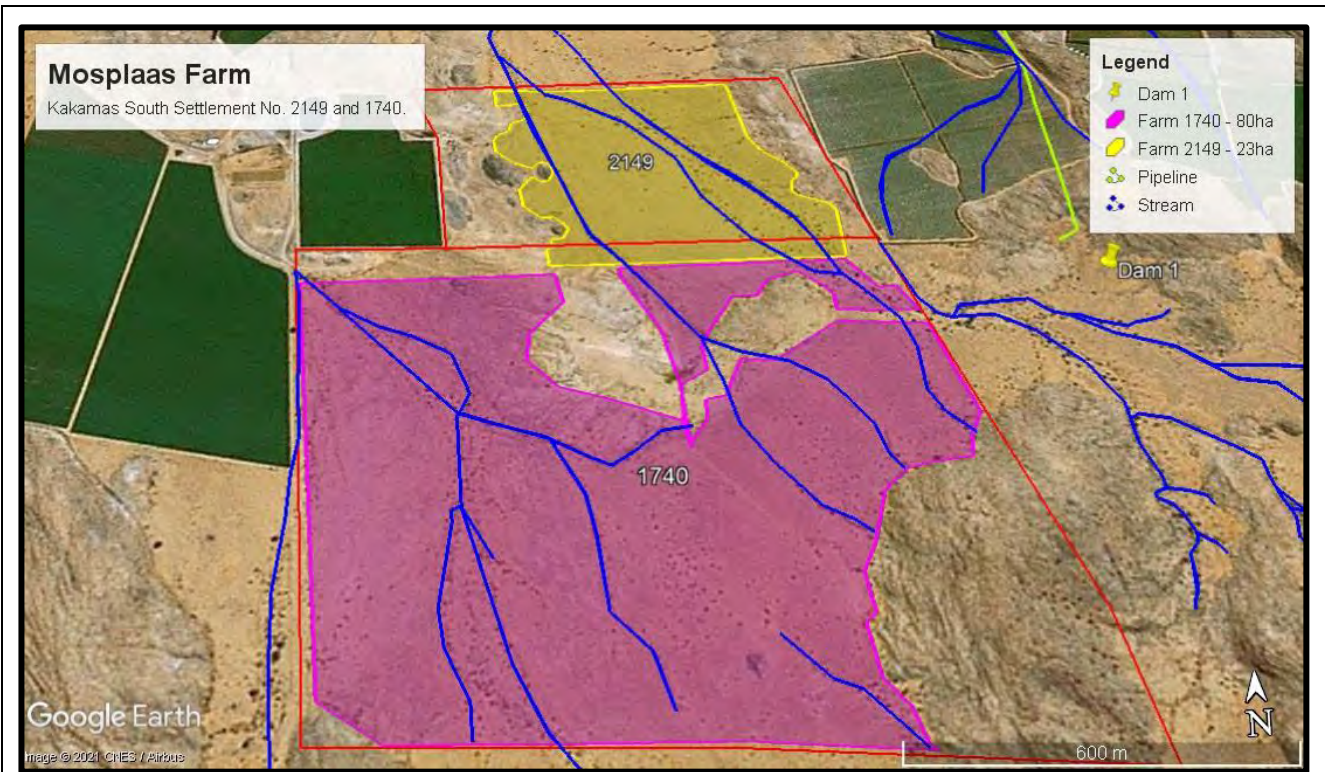


Figure 7: Farm 2419 and 1740 (Google 2006)

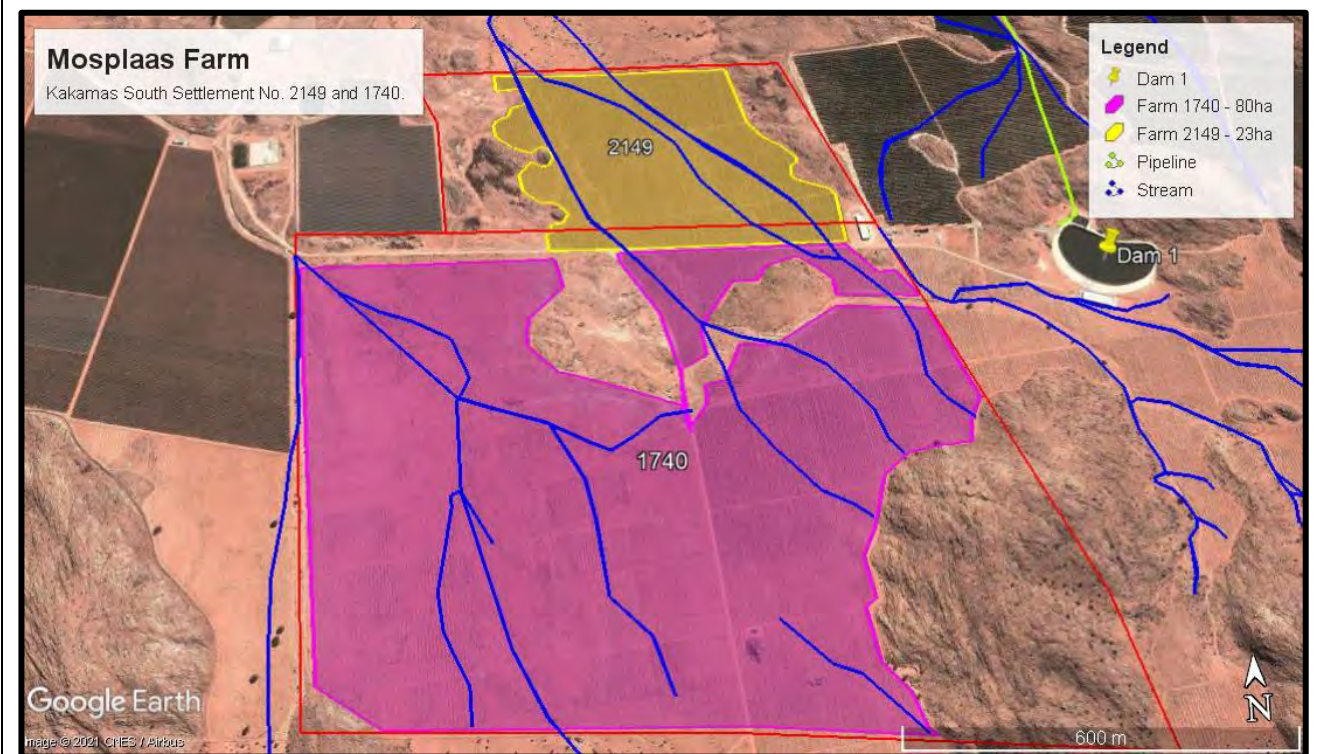


Figure 8: Farm 2419 and 1740 (Google 2010)

Please see **Figure 9** below for the final development areas outlined.

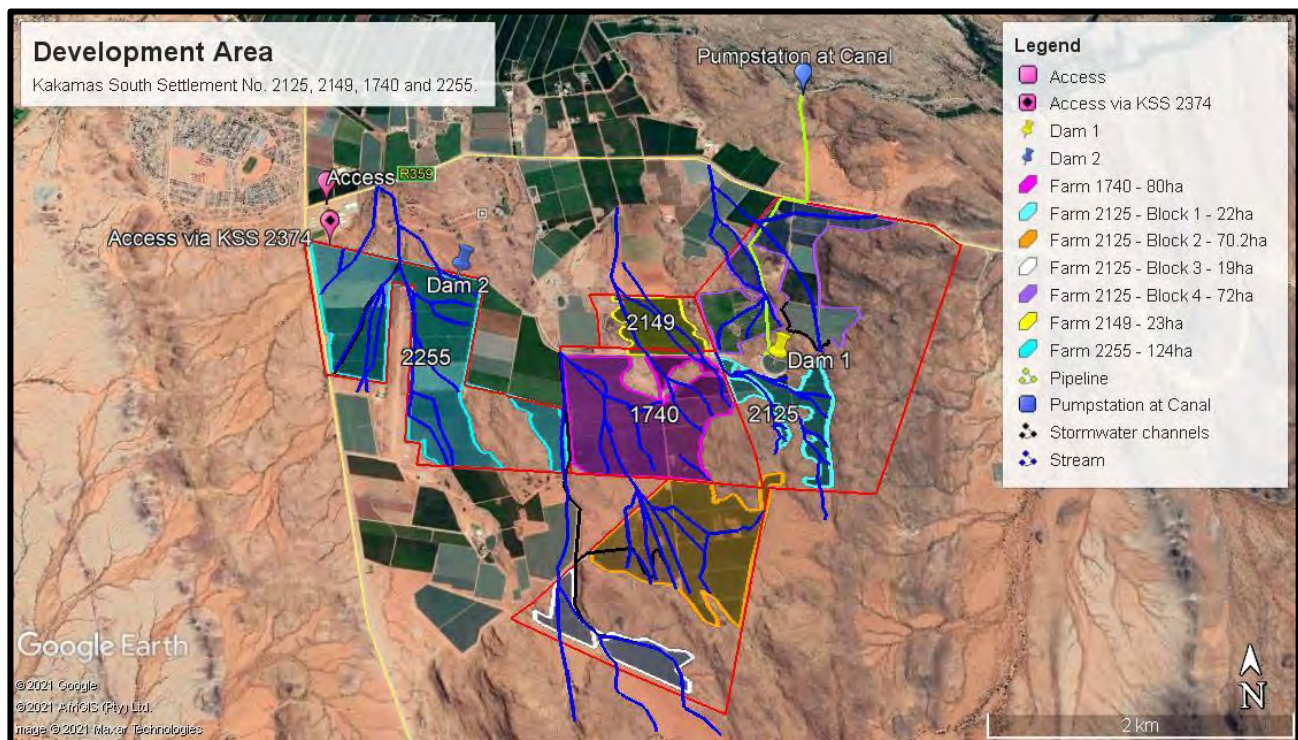


Figure 9: Final development layout

(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	YES	NO
-----------	------------	-----------

Provide brief description:

An existing pump house was renovated, this did not trigger any new activities.

Infrastructure (e.g., roads, power and water supply/ storage)	YES	NO
---	------------	-----------

Provide brief description:

Roads:

Access to the farm is gained via a gravel road that intersects with the R359 (see **Figure 10**). The internal farm roads are not surfaced and consist of in-situ compacted earth with no formal storm water management structures in place for the stream crossings. This is due to the low rainfall characteristic of the area negating the need to provide formal storm water control.



Figure 10: Access to the farm

Pipelines:

The pipelines that come from a canal was constructed prior to 1997, therefore no listed activities applicable, see **Figure 14**.

Water:

Application for a license in terms of the National Water Act, 1998 is made by the developer, Mosplaas Citrus PTY Ltd, for the following water usages:

Table 1: Applying for the following Water Uses.

(a) taking of water	For the re-allocation of water between two properties, to ensure the water allocation is distributed according to development areas per property.
(b)	Registration of a small dam. Dam 2 is a small balancing dam, with a capacity of 1 900m ³ .
(c) impeding or diverting flow of water in a watercourse	For the construction of agricultural areas across ephemeral streams/natural drainage areas.
(i) altering the bed, banks, course or characteristics of a watercourse	For the construction of agricultural areas across ephemeral streams/natural drainage areas.

The Water Use License Application for Section 21(c), and (i) of the National Water Act, is for the streams that were diverted and crossed, as part of the illegal establishment of orchards/vineyards. The establishment of the orchards/vineyards on Kakamas South Settlement 2255, 2125, 2149 and 1740 took place across small sections of the unnamed ephemeral streams that is located on-site.

Mosplaas Farm falls within the Quaternary Catchment Region D73F. The agricultural development had an impact on drainage streams that can be regarded as non-perennial watercourses that would have naturally flow during heavy rain pours.

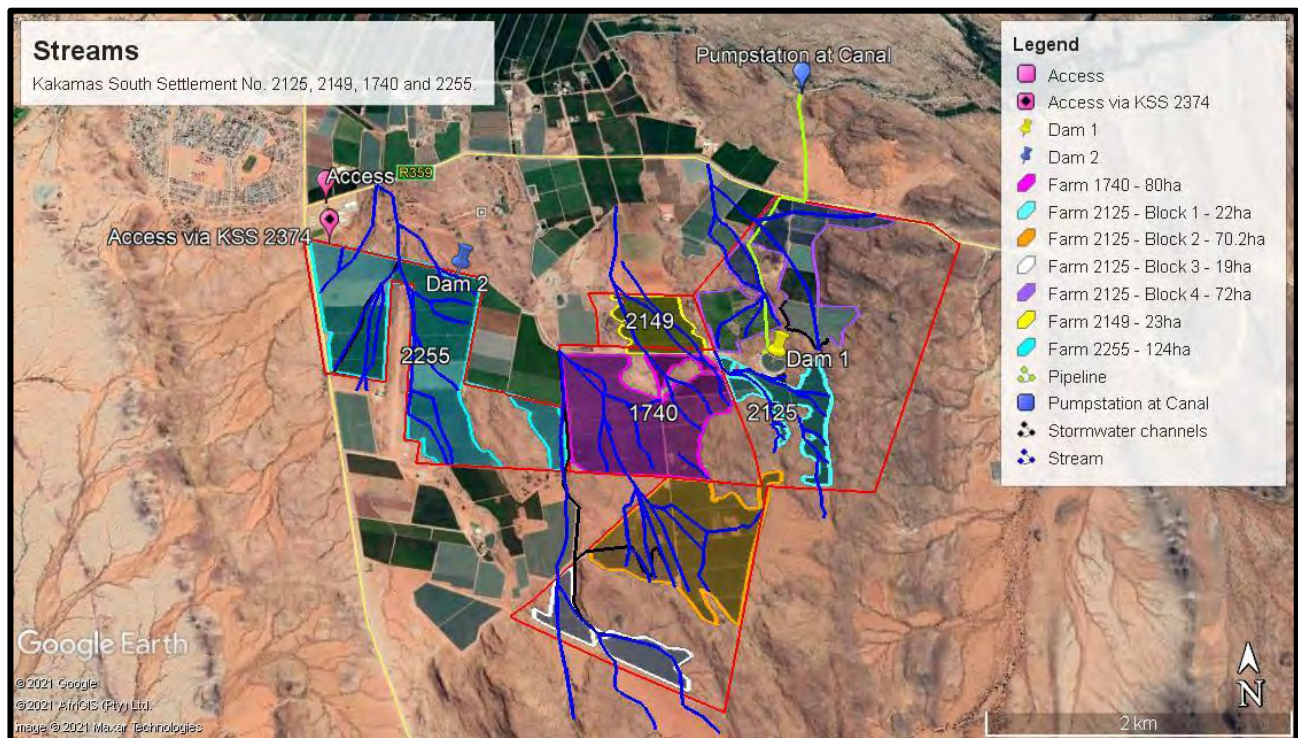


Figure 11: Ephemeral streams/drainage areas

The final part of the application is for a Section 21 (a) to rectify the water allocations on the various properties within Mosplaas Farm with regards to the actual hectares planted as outlined below in Table 2.

Table 2: Properties, Owners, Water Rights and Plough Certificate

Property description	Property area (ha)	Vineyards and orchards (ha)	Area disturbed for the developed (ha)	Existing Irrigation m ³ (ha x 15 000)	Water allocations as per WARMS Certificates	Donor and receiving (m ³)	TOTAL Water rights
Erf 1740 Kakamas South Settlement	116,3878	80	80	1 200 000	99,3 (1 489 500)		1 489 500
Erf 2149 Kakamas South Settlement	31,8114	22,72	23	345 000	20 (300 000)	Receiving property 3ha (45 000)	345 000
Erf 2255 Kakamas South Settlement	159,4888	123,67	124	1 860 000	54 (795 000)	Receiving property 70ha (1 050 000)	1 860 000
Erf 2125 Kakamas South Settlement	449,9997	96,75	183.2	2 748 000	268,2 (4 023 000)	Donor property 195.2 (70 + 3) =73(1 095 000)	2 928 000
TOTAL			410.2ha		441.5ha		6 622 500

As shown above water will have to be moved from Erf 2125 to Erf 2255 and Erf 2149 to allow the correct water allocations per property.

There are two dams on the farms. Dam 1 has an existing License (14/D53J/B/1649). Dam 2 is a small balancing dam, with a capacity of 1 900m³.

Electricity:

There are existing electricity connections available for the farms.

Processing activities (e.g. manufacturing, storage, distribution)	YES	NO
---	-----	----

Provide brief description:

Dam 1:

The existing dam on Farm 2125 has a storage capacity of 42 000m³, with a wall height of 4.95m. The dam has an existing Water Use License (14/D53J/B/1649). Therefore, no further water uses approvals required.



Figure 12: Dam 1 location

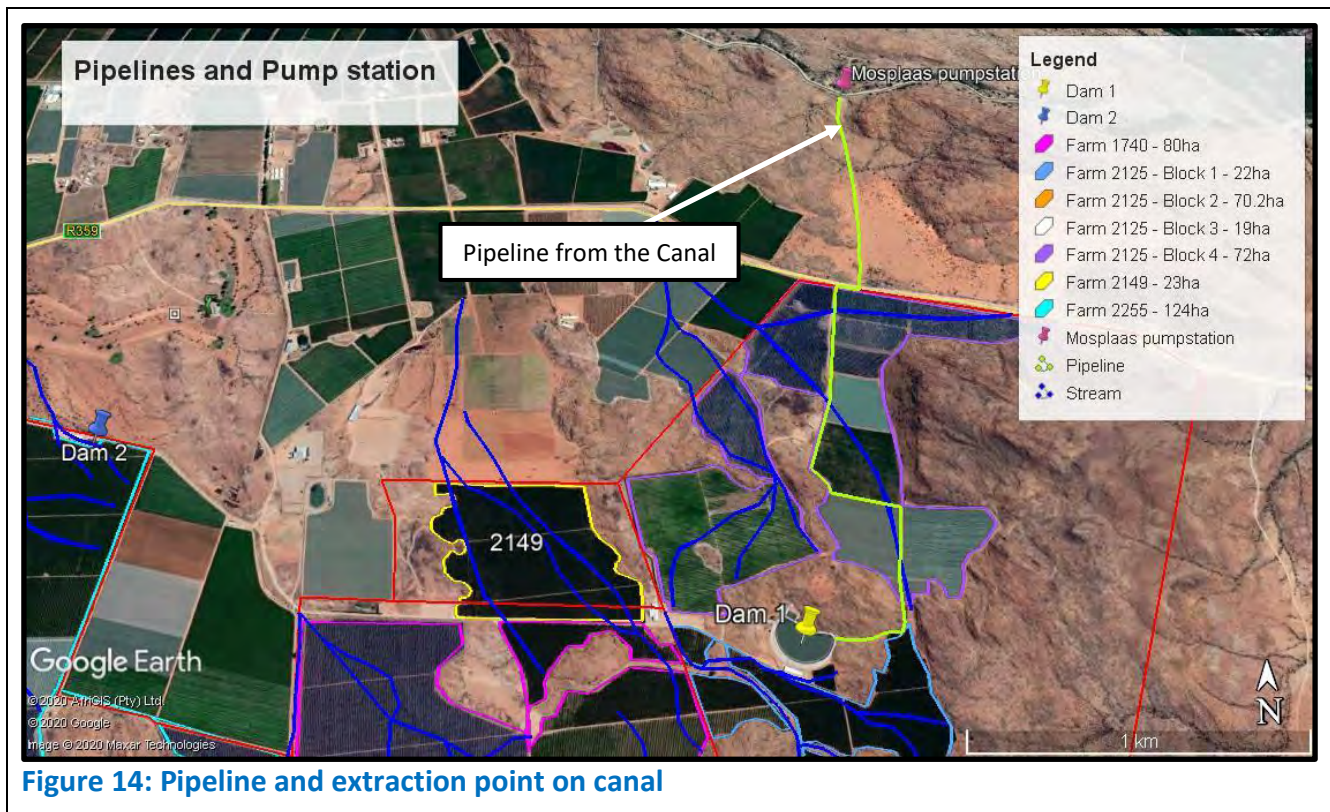
Dam 2:

The existing dam has a capacity of 1 900m³, with a wall height of 2m and is 800m² in size. This dam does not need a water use license due to the size of the dam, only the registration of the dam is necessary. However, this dam was constructed across a stream as part of the development of the agricultural area on Kakamas South Settlement No. 2255. For this reason, it would then require a (c) and (i).



Figure 13: Dam 2 location

Storage facilities for raw materials and products (e.g., volume and substances to be stored)		
Provide brief description	YES	NO
Not applicable.		
Storage and treatment facilities for solid waste and effluent generated by the project		
Provide brief description	YES	NO
Not applicable.		
Other activities (e.g., water abstraction activities, crop planting activities)		
Provide brief description	YES	NO
<p><u>Crop Planting:</u> Table grapes are cultivated as indicated in the project area. See Figure 9.</p> <p><u>Water abstraction:</u> There is an existing pump station at the Canal, see the design below in Figure 14.</p>		



3. ACTIVITY NEED AND DESIRABILITY

Describe the need and desirability of the activity:

According to the report prepared by DAFF (2012), South African table grape exports totalled 2 708 767 metric tons. Europe is the most important market. Most table grapes were exported to the Netherlands (40%), followed by Great Britain (21%), Belgium (7,4%), Germany (5,5%), Hong Kong (3,1%) and other African countries (0,3%). During the summer season, India, Chile, South Africa and Israel are the major competing countries for the table grape market.

Major production areas in South Africa

The Hex River Valley is the country's main table grape production area. More than half of all table grape exports come from this district, which also has the longest harvesting period in the country. The Northern Cape is a very dry province, so most of the grapes in this province are cultivated in the Orange River region and they are harvested very early, in time for the Christmas festive season overseas.

The project area is located within the Lower Orange River wine region (refer to **Figure 15** below).

Kakamas South Settlement No. 2125, 2255, 2149 and 1740 contributes to the production of table grapes that are harvested early for the export market. By doing this, the region gains a highly competitive advantage in the global market.

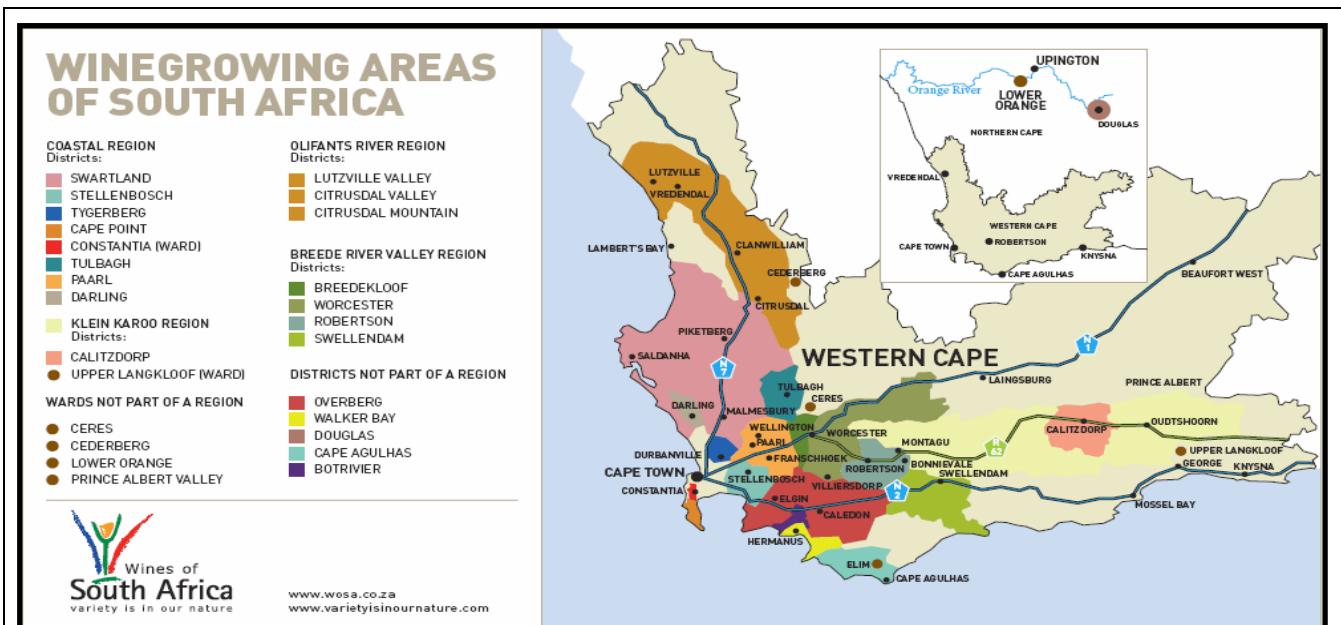


Figure 15: Winegrowing areas of South Africa

Ref: <http://www.wosa.co.za>

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 cultivation of table grapes created short-term employment during the construction phase, and long-term employment during the operational phase. The grower (Mosplaas Sitrus (Pty) Ltd) has to employ a large number of workers to harvest the grapes by hand and to sort them during harvest time, and there is a team to ensure the maintenance of the orchards/vineyards during the course of the year.

Local employment has a positive economic spin-off for the local economy and results in community upliftment by employees being able to provide for basic needs such as housing and the education of their children.

The export of grapes contributes to the national gross domestic product (GDP).

4. PHYSICAL SIZE OF THE ACTIVITY

<p>Indicate the physical spatial size of the activity as well as associated infrastructure (footprints):</p>	<p>Farm 2125 – Block 1-22ha, Block 2 – 70.2ha, Block 3 – 19ha, Block 4 - 72ha Farm 1740 – 80ha Farm 2419 – 23ha Farm 2255 – 124ha Total: 410.2ha</p>
<p>Indicate the area that has been transformed / cleared to allow for the activity as well as associated infrastructure.</p>	<p>Farm 2125 – Block 1-22ha, Block 2 – 70.2ha, Block 3 – 19ha, Block 4 - 72ha Farm 1740 – 80ha Farm 2419 – 23ha Farm 2255 – 124ha Total: 410.2ha</p>

Total area (sum of the footprint area and transformed area)	Farm 2125 – Block 1-22ha, Block 2 – 70.2ha, Block 3 – 19ha, Block 4 - 72ha Farm 1740 – 80ha Farm 2419 – 23ha Farm 2255 – 124ha Total: 410.2ha
---	--

5. SITE ACCESS

Was there an existing access road?	YES	NO
If no, what was the distance over which the new access road was built?	<i>m</i>	
Describe the type of access road constructed: [indicate the position of the access road on the site plan.		

The access road is an existing road as shown below in the Google Earth photograph below (refer to **Figure 16**) and is just under 4 metres wide.



Figure 16: Access to farms

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 Appendix D to this form.

Historical Aerial photographs are provided in **Appendix D1**.

Site photographs included in **Appendix D2**.

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 Permit/ license/ authorization/comment	DATE (if already obtained):
National Environmental Management Act	Department Environment and Nature Conservation (DENC)	Authorisation	In progress
National Heritage Resources Act	SAHRA	Comment.	In progress
National Water Act	Department of Water and Sanitation	Water Use Licence	In progress
Conservation of Agricultural Resources Act	Department of Agriculture	Plough Certificate for Water Use Licence; Comment on EIA.	In progress
National Forests Act (NFA) (Act 84 of 1998)	Department of Environment, Forestry and Fisheries	DEFF Permit	Will be finalised after the Environmental Authorisation.
National Veld and Forest Fires Act (Act 101 of 1998)	Department of Environment, Forestry and Fisheries	DEFF Permit	Will be finalised after the Environmental Authorisation.
Northern Cape Nature Conservation Act (NCNCA)	DENC	DENC Permit	Will be finalised after the Environmental Authorisation.

POLICY/ GUIDELINES	ADMINISTERING AUTHORITY
Guidelines published in terms of NEMA Regulations	Department of Environmental Affairs
Guidelines published in terms of the National Water Act	Department of Water and Sanitation

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

THIS SECTION IS NOT APPLICABLE

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)

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

Determined from volumes
Determined with weighbridge/scale
Estimated

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	

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

THIS SECTION IS NOT APPLICABLE

Prevailing wind direction (e.g. NWW)

November – April	
May - October	

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		

SECTION C: DESCRIPTION OF RECEIVING ENVIRONMENT

SITE/AREA DESCRIPTION

For linear activities (pipelines etc) as well as activities that cover very large sites, it may be necessary to complete copies of this Section for each part of the site that has a significantly different environment. In such cases please complete copies of Section C and indicate the area which is covered by each copy No. on the Site Plan.

Section C Copy No. (e.g. 1, 2, or 3):

1. GRADIENT OF THE SITE

Indicate the general gradient of the site(s) (cross out the appropriate box).

Flat	Flatter than 1:10	1:10 – 1:5	Steeper than 1:5
------	--------------------------	-------------------	------------------

2. LOCATION IN THE LANDSCAPE

Indicate the landform(s) that best describes the site (cross out (“☒”) the appropriate box (es)).

Ridgeline	Plateau	Side slope of hill/mountain	Closed valley	Open valley	Plain	Undulating plain/low hills	Dune	Sea-front	Other
-----------	---------	-----------------------------	---------------	-------------	--------------	-----------------------------------	------	-----------	-------

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

Is the site(s) located on or near any of the following [cross out (“☒”) the appropriate boxes]?

Shallow water table (less than 1.5m deep)	YES	NO	UNSURE
Seasonally wet soils (often close to water bodies)	YES	NO	UNSURE
Unstable rocky slopes or steep slopes with loose soil	YES	NO	UNSURE
Dispersive soils (soils that dissolve in water)	YES	NO	UNSURE
Soils with high clay content	YES	NO	UNSURE
Any other unstable soil or geological feature	YES	NO	UNSURE
An area sensitive to erosion	YES	NO	UNSURE
Specialist input may be requested by the Department. Information in respect of the above will often be available at the planning Sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used.			

4. SURFACE WATER

Indicate the surface water present on and or adjacent to the site and alternative sites (cross out (“☒”) the appropriate boxes)?

Perennial River	YES	NO	UNSURE
Non-Perennial River (mainly drainage areas and a small stream)	YES	NO	UNSURE
Permanent Wetland	YES	NO	UNSURE
Seasonal Wetland	YES	NO	UNSURE
Artificial Wetland	YES	NO	UNSURE
Estuarine/Lagoonal wetland	YES	NO	UNSURE

The following summary was taken from the Botanical Assessment Report, included in **Appendix H4: Botanical Assessment:**

“The areas cultivated with orchards/ vineyards at Mosplaas are mainly in areas that were originally vegetated with Bushmanland Arid Grassland. The exception is Erf 2125 Block 4 where, according to the mapping, Lower Gariep Broken Veld was cleared. However, the latter area was not included in this investigation.”

The areas of Bushmanland Arid Grassland were generally not sensitive. However, reference to **Figure 18** shows that all the areas investigated except for Erf 2125, Blocks 2 & 3 had seasonal watercourses (seasonal streams) or washes prior to cultivation. All these washes have now been disturbed by diversion or simply removal of the vegetation. This will no doubt have a negative impact in the short to long term since no water would be dispersed in these areas to recharge the aquifer.

The negative impact on the season streams is also considered to be Low Negative in terms of cumulative impacts.”

It is noted, however, that these drainage systems are classified as ephemeral courses, as it may only flow sporadically after rainfall, see **Figure 17**. These watercourses are not considered to be seasonal rivers/streams that will regularly contain water in a seasonal pattern.

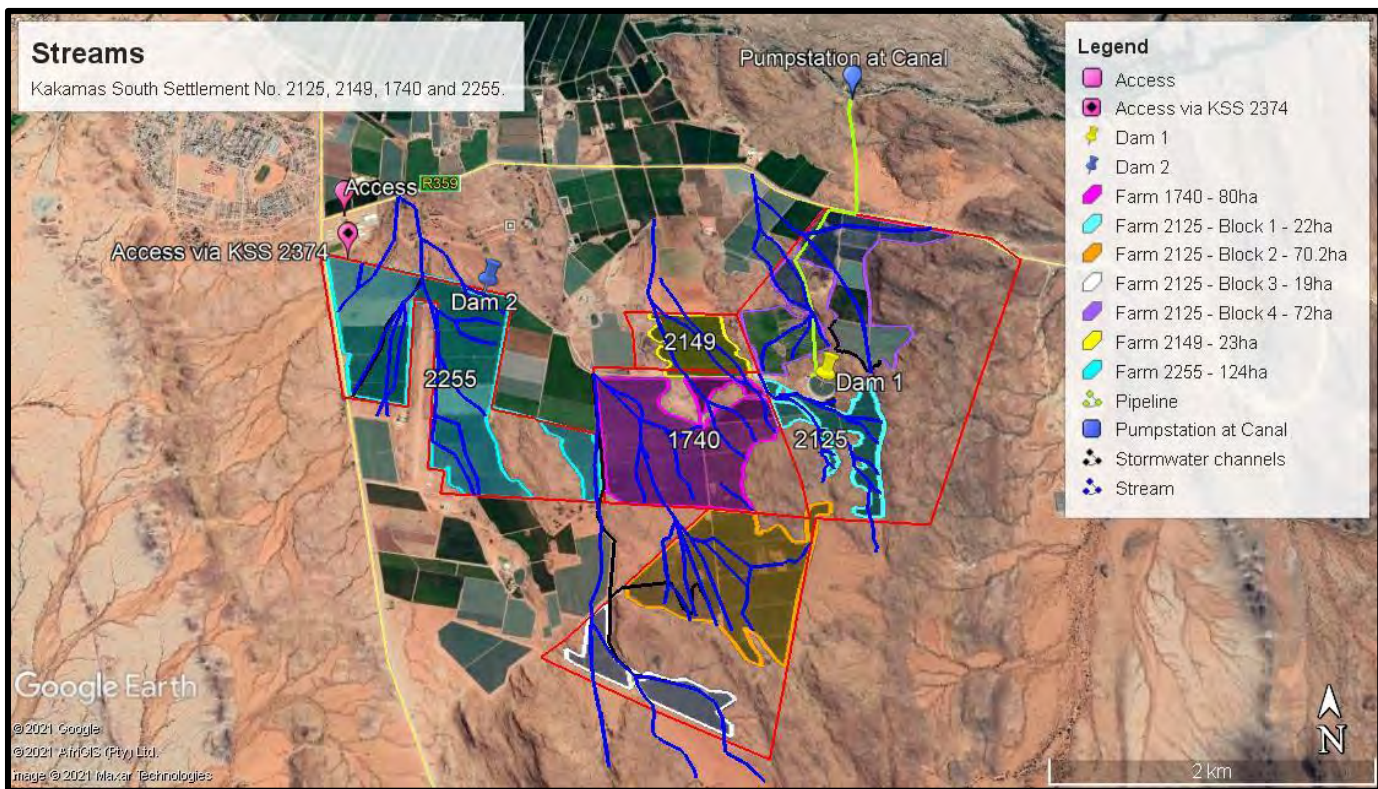


Figure 17: Non-Perennial Streams

5. VEGETATION AND GROUNDWATER

5.1 VEGETATION / GROUNDCOVER (PRE-COMMENCEMENT)

Cross out (“~~☒~~”) the block or describe (where required) the vegetation types / groundcover present on the site before commencement of the activity.

Indigenous Vegetation – good condition	Indigenous Vegetation with scattered aliens	Indigenous Vegetation with heavy alien infestation
Describe the vegetation type above: N/A	Describe the vegetation type above: Bushmanland Arid Grassland	Describe the vegetation type above: N/A
Provide ecosystem status for above: N/A	Provide ecosystem status for above: Two types of vegetation: 1. Lower Gariep Broken Veld and 2. Kalahari Karroid Shrubland is listed as vegetation types of Least Concern (National vegetation types from Vegetation map	Provide Ecosystem status for above: N/A

	for South Africa, Lesotho and Swaziland (SANBI 2018).	
Indigenous Vegetation in an ecological corridor or along a soil boundary / interface	Veld dominated by alien species.	Distinctive soil conditions (e.g., Sand over shale, quartz patches, limestone, alluvial deposits, termitaria etc.) — describe:
Bare soil	Building or other structure	Sport field
Other (describe below)	Cultivated land	Paved surface

The following summary was taken from the Botanical Assessment Report, included in **Appendix H4: Botanical Assessment:**

“The two vegetation types found at Mosplaas, according to Mucina et al. (2006) are Bushmanland Arid Grassland (Figure 18).

The areas under cultivation in the respective historical vegetation types are as follows:

- Erf 2125 Block 1 – 20ha: Lower Gariep Broken Veld.
- Erf 2125 Block 2 – 70.2ha: Lower Gariep Broken Veld, 47.6 ha; Bushmanland Arid Grassland, 22.6 ha.
- Erf 2125 Block 3 – 19ha: Lower Gariep Broken Veld.
- Erf 2125 Block 4 – 72ha: Lower Gariep Broken Veld.
- Erf 1740 – 80ha: Lower Gariep Broken Veld, 6.7ha; Bushmanland Arid Grassland, 73.3 ha.
- Erf 2149 – 43ha: Lower Gariep Broken Veld 0.48ha; Bushmanland Arid Grassland, 42.52ha.
- Erf 2255 – 124ha: Bushmanland Arid Grassland.

It is noted that Dam 1 is located in an area that was Lower Gariep Broken Veld and Dam 2 is located in an area that was Bushmanland Arid Grassland (Figure 19, Figure 20 and Figure 21).

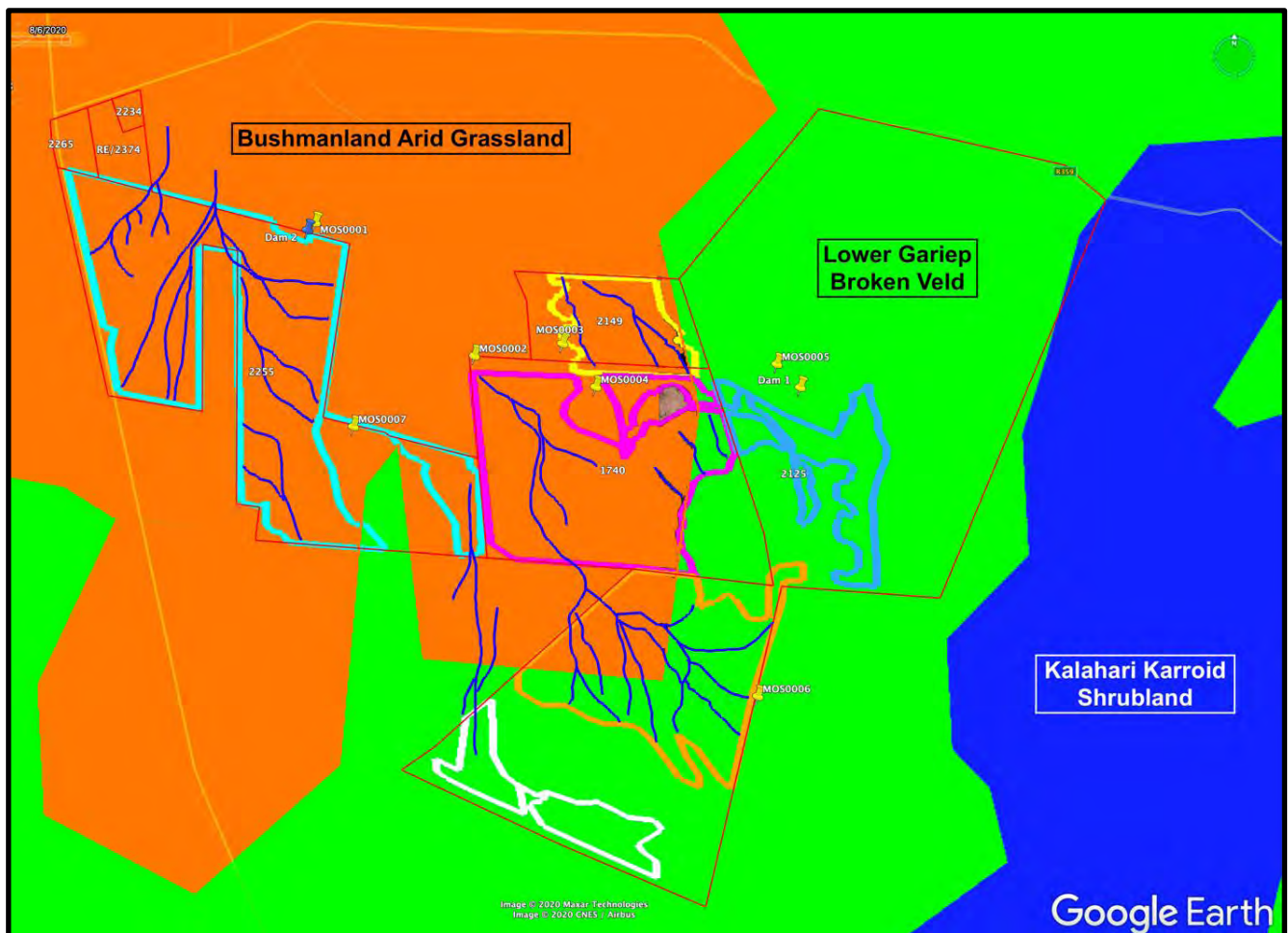


Figure 18: Portion of the Vegetation Map of South Africa, Swaziland and Lesotho (SANBI 2018) with Mosplaas overlaid.

Erf 2149 (yellow boundary); Erf 1740 (pink boundary); Erf 2255 (light blue-green boundary); Erf 2125 Block 1 (light blue boundary); Block 2 (orange boundary); Block 3 (white boundary). Block 4 is indicated but does not form part of this investigation. Note the dark blue lines denoting seasonal watercourses. The sample waypoints are shown with yellow pins and the dams with blue pins.



Figure 19: Uncultivated Bushmanland Arid Grassland outside the Mosplaas boundary to the west of the farm



Figure 20: Uncultivated Bushmanland Arid Grassland with *Senegalia mellifera* subsp. *detinens* (black thorn) prominent shrubby trees. Very little rock is exposed



Figure 21: Lower Gariep Broken Veld found on rocky substrates

It is shown in Figure 18 that the areas of high biodiversity sensitivity (that also reflect the vegetation sensitivity i.e. high) are outside the cultivated areas for this application. The cultivated areas have low

biodiversity sensitivity. This outcome agrees with the Critical Biodiversity Areas map for the Northern Cape Province (Figure 22) that indicates that the CBA1 areas are the areas that are not cultivated (and consist mostly of Lower Gariep Broken Veld), the CBA2 classification applies only to the south-eastern part of Erf 2125. The CBA map designates the classification of 'Other Natural Areas' to most of the uncultivated land in the western half of Mosplaas."

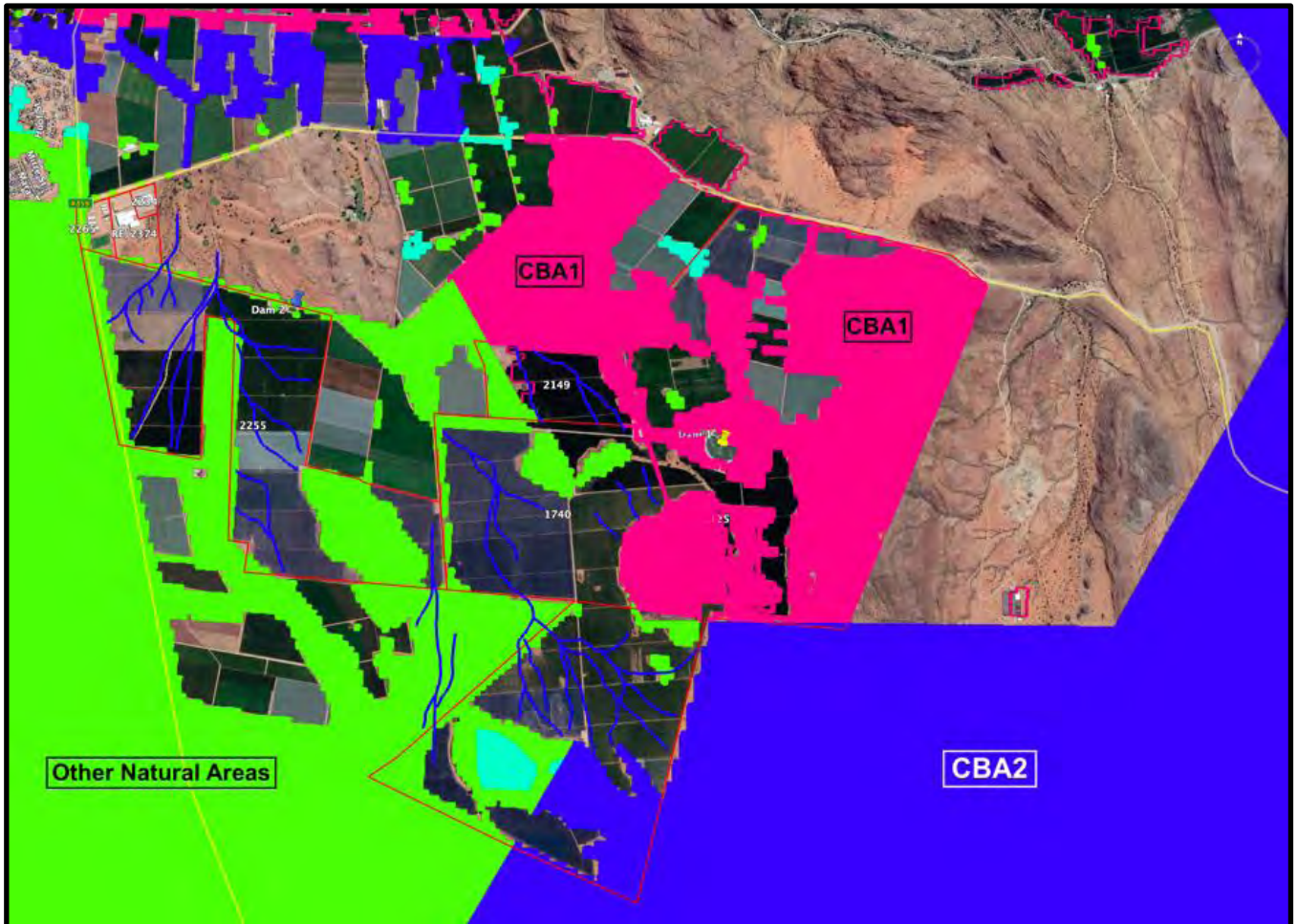


Figure 22: Portion of the Critical Biodiversity Areas map for the Northern Cape Province as it pertains to Mosplaas.

5.2. VEGETATION / GROUNDCOVER (POST-COMMENCEMENT)

Cross out ("X") the block or describe (where required) the vegetation types / groundcover present on the site after commencement of the activity.

Indigenous Vegetation - good condition	Indigenous Vegetation with scattered aliens	Indigenous Vegetation with heavy alien infestation	
Describe the vegetation type above:	Describe the vegetation type above:	Describe the vegetation type above:	
Provide ecosystem status for above:	Provide ecosystem status for above:	Provide Ecosystem status for above:	
Indigenous Vegetation in an ecological corridor or along a soil boundary / interface	Veld dominated by alien species.	Distinctive soil conditions (e.g., Sand over shale, quartz patches, limestone, alluvial deposits, termitaria etc.) describe	
Bare soil	Building or other structure (dam)	Sport field	

Other (describe below) Pipelines towards cultivated areas.	Cultivated land	Paved surface
<p>Please note: The Department may request specialist input/studies depending on the nature of the vegetation type / groundcover and impact(s) of the activity/ies. To assist with the identification of the <u>vegetation type</u> and <u>ecosystem status</u> consult http://bgis.sanbi.org or BGIShelp@sanbi.org. Information is also available on compact disc (CD) from the Biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time and it is the applicant/ EAP's responsibility to ensure that the latest version is used.</p>		

5.3 VEGETATION / GROUNDCOVER MANAGEMENT

Describe any mitigation/management measures that were adopted and the adequacy of these:

The following summary was taken from the Botanical Assessment Report, included in **Appendix H4: Botanical Assessment:**

"The areas cultivated with orchards / vineyards at Mosplaas are mainly in areas that were originally vegetated with Bushmanland Arid Grassland. The exception is Erf 2125 Block 4 where, according to the mapping, Lower Gariep Broken Veld was cleared. However, the latter area was not included in this investigation.

*The areas of Bushmanland Arid Grassland were generally not sensitive. However, reference to **Figure 18** shows that all the areas investigated except for Erf 2125, Blocks 2 & 3 had seasonal watercourses (seasonal streams) or washes prior to cultivation. All these washes have now been disturbed by diversion or simply removal of the vegetation. This will no doubt have a negative impact in the short to long term since no water would be dispersed in these areas to recharge the aquifer.*

Given the above, and that Bushmanland Arid Grassland is a very widespread vegetation type and is not threatened in any way at a broad scale, the impact of the clearing of natural vegetation and the agricultural development is considered to be Medium to Low Negative at a local scale.

Dam 2 is located in an area that formerly supported Bushmanland Arid Grassland and since the surface area of the dam is small, it would have had negligible negative impact beyond that of the adjacent fruit orchards.

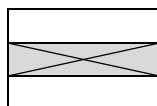
Dam 1 is located in an area historically mapped as Lower Gariep Broken Veld and it falls within an area mapped as CBA1. The dam is located on a flat, not rocky, area that was probably transitional between Lower Gariep Broken Veld and Bushmanland Arid Grassland. Therefore, the impact of the dam is considered to be Medium Negative at a local scale, but Low Negative at a broad scale.

The cumulative impact of the loss of Bushmanland Arid Grassland at Mosplaas is rated as being Low to Very Low Negative due to the extensive occurrence of this habitat type. The negative impact on the season streams is also considered to be Low Negative in terms of cumulative impacts.

Very little Lower Gariep Broken Veld (and CBA1 areas) has been disturbed by the farming operation. Consequently, the negative cumulative impacts are very low."

6. THE GEOLOGICAL FORMATIONS UNDERLYING THE SITE

GRANITE
SHALE
SANDSTONE



QUARTZITE
DOLOMITE
DOLERITE



OTHER: *Mudstone and Dwyka tillites.*

7. LAND USE CHARACTER OF SURROUNDING AREA (PRE-COMMENCEMENT)

Cross out (“☒”) the block that reflects the past land uses and/or prominent features that occur/red within +/- 500m radius of the site and neighbouring properties if these are located beyond 500m of the site. Please note: The Department may request specialist input/studies depending on the nature of the land use character of the area and impact(s) of the activity/ies.

Untransformed area	Low density residential	Medium density residential	High density residential	Informal residential
Retail	Commercial & warehousing	Light industrial	Medium industrial	Heavy industrial
Power station	Office/consulting room	Military or police base/station/compound	Casino/entertainment complex	Tourism & Hospitality facility
Open cast mine	Underground mine	Spoil heap or slimes dam	Quarry, sand or borrow pit	Dam or reservoir
Hospital/medical centre	School	Tertiary education facility	Church	Old age home
Sewage treatment plant	Train station or shunting yard	Railway line	Major road (4 lanes or more)	Airport
Harbour	Sport facilities	Golf course	Polo fields	Filling station
Landfill or waste treatment site	Plantation	Agriculture	River, stream or wetland	Nature conservation area
Mountain, koppie or ridge	Museum	Historical building	Graveyard	Archaeological site
Other land uses (describe):				

8. REGIONAL PLANNING CONTEXT

Is/was the activity permitted in terms of the property’s existing land use rights? Please explain.

Yes, Kakamas South Settlement No. 2125, 2439, 2255 and 1740 is zoned for Agriculture use.			
Is/was the activity in line with the following?			
Provincial Spatial Development Framework (PSDF)	YES	NO	Please explain
Kakamas South Settlement No. 2125, 2439, 2255 and 1740 is zoned for Agricultural use.			
Urban edge/Edge of Built environment for the area	YES	NO	Please explain
The agricultural activities have taken place outside the urban edge/urban area on land zoned for agricultural use.			
Integrated Development Plan (IDP) of the Local Municipality	YES	NO	Please explain
Kakamas South Settlement No. 2125, 2439, 2255 and 1740 is zoned for Agricultural use.			
Spatial Development Framework of the Local Municipality	YES	NO	Please explain
Kakamas South Settlement No. 2125, 2439, 2255 and 1740 is zoned for Agricultural use.			
Approved Structure Plan of the Municipality	YES	NO	Please explain
Kakamas South Settlement No. 2125, 2439, 2255 and 1740 is zoned for Agricultural use.			
Any other Plans	YES	NO	Please explain

9. SOCIO-ECONOMIC CONTEXT

9.1 SOCIO-ECONOMIC CONTEXT (PRE-COMMENCEMENT)

Describe the pre-commencement social and economic characteristics of the community in order to provide baseline information.

The following information was extracted from the Integrated Development Plan (IDP) of 2020/2021 for the Kai! Garib Municipality and summarises the agricultural sector at the time:

“The agricultural sector is still the main economic sector making the biggest contribution to the economy of Kai! Garib. The Agriculture sector is also a major employer in the Municipality in terms of all formal employment. It is also the sector with the largest potential for economic growth. The commercial farmers farm especially with grapes for export, raisins and wine, while citrus types of fruit are also becoming more prevalent in the area.

There are three wine cellars in the area at Keimoes, Kakamas and Kanoneiland. High-quality table wine is produced at these wine cellars, as well as quality grape juice. Several permanent jobs are created through these wine cellars. Two major raisin export companies (Fruit da Sud & Red Sun Raisin) are also established in Kai! Garib Area.

Lucerne, cotton, corn, and nuts are cultivated under irrigation from the Orange River.

The emerging farmers focus more on small stock farming. The Kenhardt area is known for small stock farming, especially dorper sheep. Abattoirs are available at Kenhardt and Kakamas.

Major constraints for agricultural development include poor quality of access roads to and from farms, farming skills amongst the youth and finance for emerging farmers.

Opportunities in the agricultural sector include the expansion of the production of lucerne and citrus, as well as the possible establishment of ostrich farming. Another sector that shows potential within the sector is agritourism, which has not been investigated or explored as yet.

The municipality embarked on a process to become an active facilitator of local economic development when it established a local economic development (LED) strategy with assistance from the Department of Economic Development and Tourism.”

9.2 SOCIO-ECONOMIC CONTEXT (POST-COMMENCEMENT)

Describe the post-commencement social and economic characteristics of the community in order to determine any change.

The following information was extracted from the IDP of 2020/2021 and summarises the agricultural sector currently:

“The agricultural sector is still the main economic sector making the biggest contribution to the economy of Kai! Garib. The agricultural sector is also a major employer in the municipal area in terms of all formal employment.

There are three wine cellars in the area at Keimoes, Kakamas and Kanoneiland. High-quality table grapes are produced at these cellars, as well as quality grape juice. Several permanent jobs are created through these wine cellars. Two major raisin export companies (Fruit da Sud & Red Sun Raisin) are also established in Kai! Garib area.

Lucerne, cotton, corn, and nuts are cultivated under irrigation from the Orange River.

The emerging farmers focus more on small stock farming. The Kenhardt area is more known for small stock farming, especially the dorper sheep. Abattoirs are available in Kenhardt and Kakamas.

Major constraints for agricultural development include poor quality of access roads to and from farms, farming skills amongst the youth and finance for emerging farmers.

Opportunities in the agricultural sector include the expansion of the production of lucerne and citrus, as well as the possible establishment of ostrich farming. Another sector that shows potential within the sector is agritourism.”

Conclusion:

The economy of Kai Garib LM is small in size and is dominated by agriculture and agro-industry which has substantial linkages with other sectors such as trade, transport, logistics, construction and financial services. The agricultural sector is highly dependent on the availability of water from the Orange River, and the management of such a source is therefore an important factor in future economic growth. Economic diversification is therefore required, and promising opportunity lies in the field of power generation using the area’s natural resources, renewable energy sources such as the sun, wind and water.”

Karsten Group Empowerment within the company:

The Karsten Group strive to remain the front runners of the industry through continued focus on the competitive edge, diversification, strategic management and optimal use of water and other resources.

The Karsten Group firmly believes in the empowerment of its employees; not only by means of financial and land ownership, and senior management positions but also through promotion, wider responsibilities given to people on the lowest possible level and a sense of ownership for what you do in any position you might occupy.

The Karsten Group provides seasonal and permanent employment for a large community of people in South Africa’s poorest regions. All workers share in benefits such as training and development programmes which are offered in association with various institutions, development programmes and projects are directed towards all workers and their families, including seasonal workers, irrespective of their worker status. Fringe benefits, apart from the provident fund scheme, apply equally to all workers, and people are paid according to their job grading and not their employment status.

Training and career planning are initiated for each permanent worker, ensuring that workers have a clear vision of their future and are able to plan their future in the company. Vacancies are always advertised internally, and continuous training and development is done to ensure that workers are equipped with the basic skills for the next level for which they might qualify.

Social and other benefits are offered to the large community of people working within the group, including preschool care, bursary and study schemes for children of workers, health care and housing for both permanent staff and temporary workers. Community involvement projects facilitated includes special gardening programmes at schools in the region; crèche facilities on all farms with pre-school children; women’s clubs; adult literacy classes; computer training; sports facilities; social skills training workshops to enhance family and social life; leadership training; low interest student loans to parents; housing for employees staying on farms; a comprehensive healthcare plan through clinics on the various farms; recreation facilities and transport that allows staff to attend sport and other social activities; and spiritual counselling.

The importance of balance between career and social development are continuously emphasised and strives to spend ample resources to facilitate and develop both.

Relationships with workers are built in order to create trust and security. This applies especially to seasonal workers and is executed in practice through new developments with different fruit, different regions and different seasons in order to ensure longer working periods for seasonal workers who are in need of prolonged contracts to supply them with a more stable source of income.

The importance on ensuring that the basic needs of the people who work for them are met, with specific focus on clean water, decent housing, medical services and bonuses for top performers.

The training department plays a major role in achieving productivity and sound human relations by ensuring that a full-scale training programme takes place throughout the year.

Learnerships are an important part of the programme to aid workers in getting a formal national qualification combined with their practical skills.

The HIV/AIDS programme has been running for more than ten years. The main focus is to educate people about the dangers of this disease and how to prevent it. Peer group leaders are trained regularly and are supported by a full-time co-ordinator, health workers and production managers. Counselling, vitamins, and medication are provided to workers to improve their quality of life.

10. CULTURAL/HISTORICAL FEATURES

Were there any signs or evidence (unearthed during construction) of culturally or historically significant elements including archaeological or palaeontological sites, on or in close proximity to the site?		YES	NO
		UNCERTAIN	
If YES, explain:			
If uncertain, the Department may request that specialist input be provided to establish whether such possibilities occurred on or close to the site.			
Briefly explain the findings of the specialist if one was already appointed:	<p>The following summary from the Archaeological Assessment included in Appendix H5: Archaeological Impact Assessment:</p> <p><u>Findings:</u> <i>No archaeological resources were recorded in the 410ha footprint area of the unauthorised development. The extensive agricultural development constitutes a highly transformed and modified landscape. However, one banded ironstone MSA flake and a utilized cortex flake/chunk (S28° 49.382' E20° 39.737') were recorded in the rocky hills overlooking Erf 2125/Block 9.</i></p> <p><u>Built environment:</u> <i>No old buildings, structures, features or equipment were recorded on the farm.</i></p> <p><u>Graves:</u> <i>No graves were encountered during the site assessment.</i></p> <p><u>Impacts:</u> <i>In the case of the illegal agricultural development on the farm Mosplaas in Kakamas, it is expected that impacts on pre-colonial archaeological heritage are likely to have been low.</i></p> <p><u>Conclusion:</u> <i>Cultivation of illegal citrus orchards on the Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement) has completely transformed the receiving environment.</i></p> <p><i>The literature survey indicates that it is unlikely that significant archaeological resources were impacted by the development.</i></p> <p><i>The impact significance of the unauthorised development archaeological heritage is therefore, assessed as low. With regard to an illegal agricultural development on the Farm Mossop (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement), no further archaeological mitigation is required."</i></p> <p>The following summary from the Paleontological Assessment included in Appendix H6: Paleontological Impact Assessment:</p>		

	<p><i>“The overall palaeontological impact significance of the agricultural developments on Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement) is considered to be LOW because:</i></p> <ul style="list-style-type: none"> <i>• Most of the study area is underlain by unfossiliferous igneous or metamorphic basement rocks (granite-gneisses etc.) or mantled by superficial sediments of low palaeontological sensitivity.</i> <i>• Much of the area is already highly disturbed.</i> <p><i>It is therefore recommended that, pending the discovery of significant new fossils on site, exemption from further specialist palaeontological studies and mitigation be granted for this development.</i></p> <p><i>Should any substantial fossil remain (e.g., vertebrate bones and teeth, shells, calcretised burrows) be encountered during excavation, however, these should be reported to SAHRA for possible mitigation by a professional palaeontologist (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za). A tabulated Chance Fossil Finds Procedure is appended to this report.</i></p> <p><i>Please note that:</i></p> <ul style="list-style-type: none"> <i>• All South African fossil heritage is protected by law (South African Heritage Resources Act, 1999) and fossils cannot be collected, damaged or disturbed without a permit from SAHRA or the relevant Provincial Heritage Resources Agency.</i> <i>• The palaeontologist concerned with potential mitigation work will need a valid fossil collection permit from SAHRA (Northern Cape) and any material collected would have to be curated in an approved depository (e.g., museum or university collection).</i> <i>• All palaeontological specialist work should conform to international best practice for palaeontological fieldwork and the study (e.g., data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies developed by HWC (2016) and SAHRA (2013).”</i> 	
Were any buildings or structures older than 60 years affected in any way?	YES	NO
Was it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO
If yes, please submit or, make sure that the applicant or a specialist submit the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application.		

SECTION D: PRELIMINARY IMPACT ASSESSMENT

Please note, the impacts identified below refer to general impacts commonly associated with development activities. The list below is not exhaustive and may need to be supplemented. Where required, please append the information on any additional impacts to this application.

1. WASTE, EFFLUENT AND EMISSION MANAGEMENT

(a) Solid waste management

Did/does the activity produce any general waste (e.g., domestic-, commercial-, certain industrial waste, including building rubble also known as solid waste) during the construction phase <u>and/or</u> the operational phase?	YES	NO
If yes, briefly describe what type of waste was produced (i.e., green waste, building rubble, etc.) in which phase.		
For the unlawful clearing, a small amount of construction waste related to orchards/vineyards would have been generated, during operation waste is limited to that created by the farmworkers. The agricultural development’s waste will be as follows:		
<u>Construction phase:</u>		
A small amount of construction-related waste associated with orchards/vineyards would have been generated, such as cement bags, paint tins, etc.		
<u>Operational phase:</u>		
Operational waste will be limited to broken materials associated with the farming activities, and with solid waste associated with food eaten by the farmworkers.		
What quantity was/is produced during the construction period?	±10m ³	
What was/is the estimated quantity that will be produced per month during the operational phase?	Negligible	

Did/does the activity produce any <u>hazardous</u> waste (e.g., chemical, medical waste, infectious, nuclear etc.) during the construction and/or the operational phase?	YES	NO
If yes, briefly describe what type of waste was produced (i.e., infectious waste, medical waste, etc.) in which phase.		
What quantity was/is produced during the construction period?	m ³	
What was/is the estimated quantity that will be produced per month during the operational phase?	m ³	

Where and how was/is waste treated / disposed of (describe each waste stream)?		
Very little solid waste is produced by farm workers and general farming activities. General solid waste collection and disposal is taken to the Municipal dump site.		
Has the municipality or relevant authority confirmed that sufficient capacity exists for treating / disposing of the solid waste to be generated by this activity(ies)? If yes, provide written confirmation from municipality or relevant authority	YES	NO
Does/did the activity produce solid waste that was/will be treated and/or disposed of at another facility other than into a municipal waste stream?	YES	NO
If yes, did/has this facility confirmed that sufficient capacity exists for treating / disposing of the solid waste to be generated by this activity(ies)? Provide written confirmation from the facility and provide the following particulars of the facility:	YES	NO
Did/does the facility have an operating license? (If yes, please attach a copy of the license.)	YES	NO
Facility name:		
Contact person:		
Postal address:		
	Postal code:	
Telephone:	Cell:	
E-mail:	Fax:	

(b) Effluent

Did/does the activity produce sewage and or any other effluent?	YES	NO
What was/is the estimated quantity produced per month?		
Was/is the effluent treated and/or disposed of in a municipal system?	YES	NO
If Yes, did/has the Municipality or relevant authority confirmed that sufficient unallocated capacity exists for treating/disposing of the sewage or any other effluent generated by this activity(ies)? Provide written confirmation from the Municipality or relevant authority.		
Not applicable.		
Was/is any effluent produced be treated and/or disposed of onsite?	YES	NO
If yes, briefly describe the nature of the effluent and how it was/will be disposed of:		
Did/does the activity produce effluent that was/will be treated and/or disposed of at another facility?	YES	NO
If yes, did/has this facility confirmed that sufficient capacity exists(ed) for treating / disposing of the liquid effluent generated by this activity(ies)? Provide written confirmation from the facility and provide the following particulars of the facility:	YES	NO
Does the facility have an operating license? (If yes, please attach a copy of the license.)	YES	NO
Facility name:		
Contact person:		
Postal address:		
	Postal code:	
Telephone:	Cell:	
E-mail:	Fax:	

Describe the measures that was/will be taken to ensure the optimal reuse or recycling of wastewater, if any:

(c) Emissions into the atmosphere

Did/does the activity produce emissions that will be disposed of into the atmosphere?	YES	NO
If yes, did/does it require approval in terms of relevant legislation? If yes, attach a copy to this application	YES	NO
Describe the emissions in terms of type and concentration and how it was/will be treated/mitigated:		
Not applicable.		

(d) Describe any mitigation/management measures that were adopted and the adequacy of these:

Not applicable.

2. WATER USE

(a) Please indicate the source(s) of water for the activity by crossing out ("X") the appropriate box(es)

Municipal	Water Board – Kakamas WUA	Groundwater	River, Stream, Dam or Lake	Other	The activity did/does not use water
----------------------	----------------------------------	------------------------	-----------------------------------	------------------	--

If water was/is extracted from a groundwater source, river, stream, dam, lake or any other natural feature, please indicate the volume that was/is extracted per month:	
---	--

Please provide proof of assurance of water supply, e.g., letter of confirmation from Municipality/water user associations, yield of borehole etc. Application for a license in terms of the National Water Act, 1998 is made by the developer, Mosplaas Sitrus PTY Ltd, for the following water usages:
--

Table 3: Applying for the following Water Uses.

(a) taking of water	For the re-allocation of water between two properties, to ensure the water allocation is distributed according to development areas per property.
(b)	Registration of a small dam. Dam 2 is a small balancing dam, with a capacity of 1 900m ³ .
(c) impeding or diverting flow of water in a watercourse	For the construction of agricultural areas across ephemeral streams/natural drainage areas.
(i) altering the bed, banks, course or characteristics of a watercourse	For the construction of agricultural areas across ephemeral streams/natural drainage areas.

The Water Use License Application for Section 21(c), and (i) of the National Water Act, is for the streams that were diverted and crossed, as part of the illegal establishment of orchards/vineyards. The establishment of the orchards/vineyards on Kakamas South Settlement 2255, 2125, 2149 and 1740 took place across small sections of the unnamed ephemeral streams that is located on-site. Mosplaas Farm falls within the Quaternary Catchment Region D73F. The agricultural development had an impact on drainage streams that can be regarded as non-perennial watercourses that would have naturally flow during heavy rain pours.

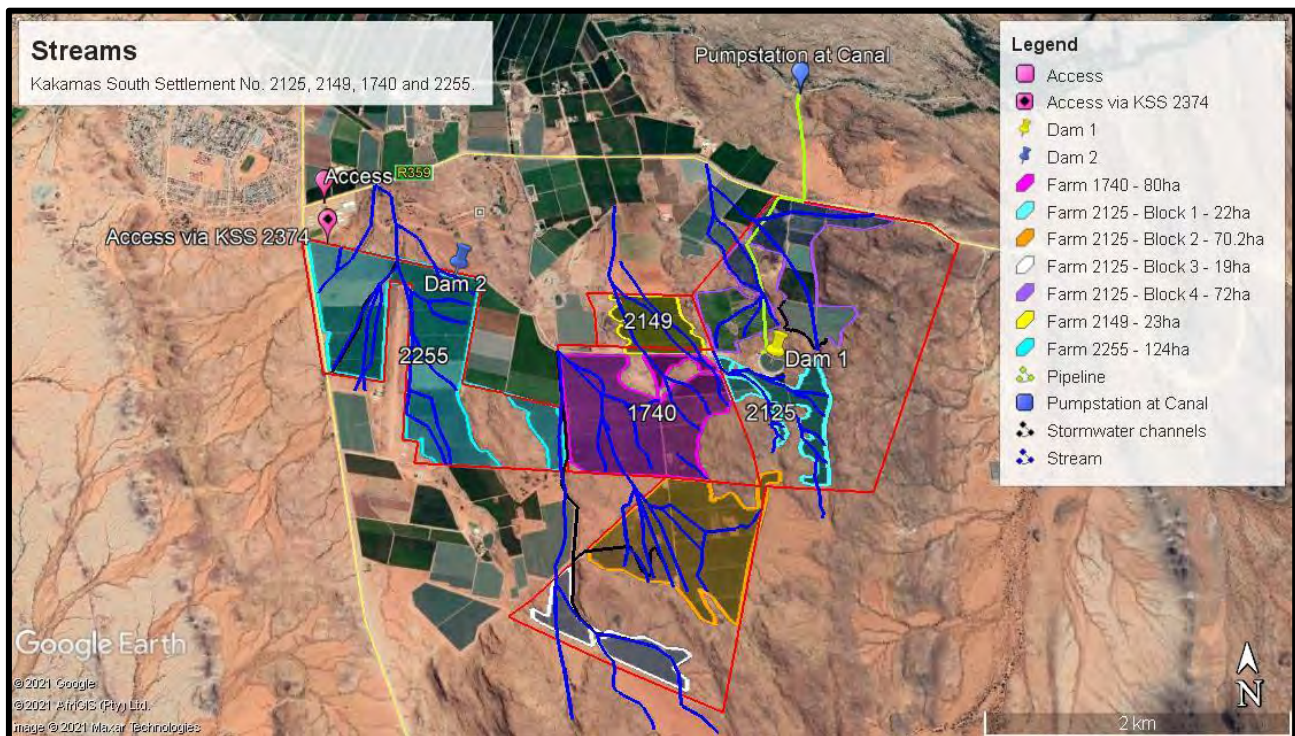


Figure 23: Ephemeral streams/drainage areas

The final part of the application is for a Section 21 (a) to rectify the water allocations on the various properties within Mosplaas Farm with regards to the actual hectares planted as outlined below in Table 4.

Table 4: Properties, Owners, Water Rights and Plough Certificate

Property description	Property area (ha)	Vineyards and orchards (ha)	Area disturbed for the developed (ha)	Existing Irrigation m ³ (ha x 15 000)	Water allocations as per WARMS Certificates	Donor and receiving (m ³)	TOTAL Water rights
Erf 1740 Kakamas South Settlement	116,3878	80	80	1 200 000	99,3 (1 489 500)		1 489 500
Erf 2149 Kakamas South Settlement	31,8114	22,72	23	345 000	20 (300 000)	Receiving property 3ha (45 000)	345 000
Erf 2255 Kakamas South Settlement	159,4888	123,67	124	1 860 000	54 (795 000)	Receiving property 70ha (1 050 000)	1 860 000
Erf 2125 Kakamas South Settlement	449,9997	96,75	183.2	2 748 000	268,2 (4 023 000)	Donor property 195.2 (70 + 3) =73(1 095 000)	2 928 000
TOTAL			410.2ha		441.5ha		6 622 500

As shown above water will have to be moved from Erf 2125 to Erf 2255 and Erf 2149 to allow the correct water allocations per property.

There are two dams on the farms. Dam 1 has an existing License (14/D53J/B/1649). Dam 2 is a small balancing dam, with a capacity of 1 900m³.

Did/does the activity require a water use permit/license from DWAF? If yes, attach a copy to this application	YES	NO
If yes, please submit the necessary application to Department of Water Affairs and Forestry and attach proof thereof to this application.		

(b) Describe any mitigation/management measures that were adopted and the adequacy of these:

The pumps that pump water to the vineyards are selected to provide optimum irrigation at minimum demand possible, where water use is managed by applying drip irrigation. This is seen as a good agricultural practice.

3. POWER SUPPLY

(a) Please indicate the source of power supply e.g., municipality/Eskom/renewable energy source.

Power is supplied through an Eskom connection, on Kakamas South Settlement No. 2435 and 387.

Has the Municipality or relevant service provider confirmed that sufficient electricity capacity (i.e., generation, supply and transmission) exist for activity (ies)? There is sufficient Eskom power supply on Kakamas South Settlement No. 2435 and 387. If yes, provide written confirmation from Municipality or relevant service provider.	YES	NO
--	-----	----

If power supply was/is not available, where was/is it sourced from?
Generators are used when power outages occur.

(b) Describe any mitigation/management measures that were adopted and the adequacy of these:

The pumps utilised are selected based on their optimum delivery at minimum demand, and there are no other types of pumps available for this type of irrigation.

4. ENERGY EFFICIENCY

(a) Describe the design measures, if any, that have been taken to ensure that the activity is energy efficient:

The pumps utilised on site are selected based on their optimum delivery to vineyards at minimum water demand, there are no other types of pumps available that are as efficient for this type of irrigation.

(b) Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:

Drip irrigation utilises less energy (and water) than spray irrigation.

5. NOISE IMPACTS

(a) Did/does the activity result in any noise impacts?

YES

NO

If yes, please describe and indicate the measures implemented to mitigate and manage these impacts?

Please note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential noise impact(s) of the activity/ies.

6. VISUAL IMPACTS

(a) Did/does the activity result in any visual impacts?	YES	NO
If yes, please describe and indicate the measures implemented to mitigate and manage these impacts?		
Mosplaas Farm is situated close to an existing road; however, it is also similar in appearance with the surrounding developments. As such visual impacts are anticipated to be low.		
(b) Did/does the activity result in potential lighting impacts at night?	YES	NO
If yes, please describe and indicate the measures implemented to mitigate and manage these impacts?		
No, this is an agricultural development.		
(c) Were/are there any alternatives available to address this impact?	YES	NO
If yes, please describe these alternatives?		
Not applicable.		

Please note: The Department may request specialist input/studies depending on the nature of the land use character of the area and potential visual impact(s) of the activity/ies.

7. SOCIO-ECONOMIC IMPLICATIONS OF THE ACTIVITY

(a) What was/is the expected capital value of the activity on completion?	R15 000 000
(b) What was/is the expected yearly income or contribution to the economy that will be generated by or as a result of the activity?	R55 000 000
(c) Did/does the activity contribute to service infrastructure?	YES NO
(d) How many permanent new employment opportunities were created?	58 permanent workers and 400 seasonal from Sept to March, when in full production.
(e) What was/is the expected current value of the employment opportunities to date?	R3 984 935
(f) What percentage of this accrued to previously disadvantaged individuals?	95%

How was(is) this (to be) ensured and monitored (please explain):
As far as is possible, by selecting contractors using local labour.

8. PRELIMINARY IMPACT ASSESSMENT

Briefly describe the impacts (as appropriate), significance rating of impacts and significance rating of impacts after mitigation. This must include an assessment of the significance of all impacts. Please note: This is a preliminary impact statement. The Department may request specialist input/studies depending on the type and nature of the impact(s) of the activity/ies.

Possible Impacts	Significance rating of impacts after mitigation (Low, Medium, Medium-High, High, Very High):
Loss of indigenous vegetation	Medium to Low negative
Loss of non-perennial drainage lines	Medium negative
Visual	Low negative
Noise	Low negative
Cultural	Low negative
Employment creation	High positive
Production of table grapes for export market	High positive

Refer to the preliminary impact rating tables below.

Preliminary impacts that resulted from the construction phase:

Impacts on geographical and physical aspects:	
Nature of impact:	The two vegetation types found at Mosplaas, according to Mucina et al. (2006) are Bushmanland Arid Grassland and Broken Gariep Broken Veld.
Extent and duration of impact:	Local extent and long-term duration
Probability of occurrence:	High
Degree to which the impact can be reversed:	Low
Degree to which the impact may cause irreplaceable loss of resources:	Low
Cumulative impact prior to mitigation:	<p><i>“Bushmanland Aris Grassland is a very widespread vegetation type and is not threatened in any way at a broad scale, the impact of the clearing of natural vegetation and the agricultural development is considered to be Medium to Low Negative at a local scale.</i></p> <p><i>Dam 2 is located in an area that formerly supported Bushmanland Arid Grassland and since the surface area of the dam is small, it would have had negligible negative impact beyond that of the adjacent fruit orchards.</i></p> <p><i>Dam 1 is located in an area historically mapped as Lower Gariep Broken Veld and it falls within an area mapped as CBA1. The dam is located on a flat, not rocky, area that was probably transitional between Lower Gariep Broken Veld and Bushmanland Arid Grassland. Therefore, the impact of the dam is considered to be Medium Negative at a local scale, but Low Negative at a broad scale.</i></p> <p><i>The cumulative impact of the loss of Bushmanland Arid Grassland at Mosplaas is rated as being Low to Very Low Negative due to the extensive occurrence of this habitat type. The negative impact on the season streams is also considered to be Low Negative in terms of cumulative impacts.”</i></p>
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium to Low Negative
Degree to which the impact can be mitigated:	Medium
Proposed mitigation:	No mitigation is available for the activity that has already taken place.
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium to Low Negative.

Impacts on geographical and physical aspects:	
Nature of impact:	Loss of non-perennial drainage lines: impeding the flow of water in a watercourse and altering the beds, banks, course and characteristics of the watercourses within the project area through the cultivation of orchards/vineyards.
Extent and duration of impact:	Local extent and long-term duration
Probability of occurrence:	High
Degree to which the impact can be reversed:	Impact cannot be reversed

Degree to which the impact may cause irreplaceable loss of resources:	Medium
Cumulative impact prior to mitigation:	Medium
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	<i>"The negative impact on the season streams is also considered to be Low Negative in terms of cumulative impacts."</i>
Degree to which the impact can be mitigated:	None
Proposed mitigation:	Mitigation measures included in the Storm Water Management Plan. An application will be lodged with DWS for Sections 21 (c) and (i) for the developments across the streams.
Cumulative impact post mitigation:	Medium
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low negative

Impacts on socio-economic aspects:	
Nature of impact:	Job creation
Extent and duration of impact:	Local extent and short-term duration are dependent on the lifespan of the agricultural activities (some will be long term and others will be seasonally linked).
Probability of occurrence:	High
Degree to which the impact can be reversed:	The impact is positive
Degree to which the impact may cause irreplaceable loss of resources:	None
Cumulative impact prior to mitigation:	Job creation to local communities
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium negative prior to job creation
Degree to which the impact can be mitigated:	The activity is the mitigation
Proposed mitigation:	The activity is the mitigation
Cumulative impact post mitigation:	Job creation to local communities
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium positive with job creation

Impacts on cultural-historical aspects:	
Nature of impact:	<i>In the case of the illegal agricultural development on the farm Mosplaas in Kakamas, it is expected that impacts on pre-colonial archaeological heritage are likely to have been low.</i>
Extent and duration of impact:	Permanent site-specific impact.
Probability of occurrence:	Probable
Degree to which the impact can be reversed:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Cumulative impact prior to mitigation:	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low negative
Degree to which the impact can be mitigated:	Not applicable.
Proposed mitigation:	<i>With regard to an illegal agricultural development on the Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement), no further archaeological mitigation is required.</i>

Cumulative impact post mitigation:	Low negative
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Impacts on cultural-historical aspects:	
Nature of impact:	<p><i>“The overall palaeontological impact significance of the agricultural developments on Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement) is considered to be Low because:</i></p> <ul style="list-style-type: none"> <i>• Most of the study area is underlain by unfossiliferous igneous or metamorphic basement rocks (granite-gneisses etc) or mantled by superficial sediments of low palaeontological sensitivity.</i> <i>• Much of the area is already highly disturbed.”</i>
Extent and duration of impact:	Permanent site-specific impact.
Probability of occurrence:	Probable
Degree to which the impact can be reversed:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Cumulative impact prior to mitigation:	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low negative
Degree to which the impact can be mitigated:	Not applicable
Proposed mitigation:	<p><i>It is recommended that, pending the discovery of significant new fossils on site, exemption from further specialist palaeontological studies and mitigation be granted for this development.</i></p> <p><i>Should any substantial fossil remains (e.g., vertebrate bones and teeth, shells, calcretised burrows) be encountered during excavation, however, these should be reported to SAHRA for possible mitigation by a professional palaeontologist (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za).</i></p> <p><i>A tabulated Chance Fossil Finds Procedure is appended to this report. (Attached in Appendix H6: Paleontological Impact Assessment)</i></p> <p><i>Please note that:</i></p> <ul style="list-style-type: none"> <i>• All South African fossil heritage is protected by law (South African Heritage Resources Act, 1999) and fossils cannot be collected, damaged or disturbed without a permit from SAHRA or the relevant Provincial Heritage Resources Agency.</i> <i>• The palaeontologist concerned with potential mitigation work will need a valid fossil collection permit from SAHRA (N. Cape) and any material collected would have to be curated in an approved depository (e.g., museum or university collection);</i>

	<ul style="list-style-type: none"> All palaeontological specialist work should conform to international best practice for palaeontological fieldwork and the study (e.g., data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies developed by HWC (2016) and SAHRA (2013).
Cumulative impact post mitigation:	Low negative
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Noise impacts:	
Nature of impact:	General noise associated with clearing of land
Extent and duration of impact:	Local extent, long-term duration
Probability of occurrence:	High
Degree to which the impact can be reversed:	Low
Degree to which the impact may cause irreplaceable loss of resources:	None
Cumulative impact prior to mitigation:	Noise pollution is of low impact, area is agricultural with no adjacent neighbours within close proximity. The area falls within an active agricultural area, and the impact will not be significant.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium negative
Degree to which the impact can be mitigated:	Low
Proposed mitigation:	Restrict working hours from 06:00 to 20:00. The area falls within an active agricultural area and the impact will be low due to lack of receptors (people).
Cumulative impact post mitigation:	Noise of short-term duration during construction phase with negligible cumulative impact.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low negative

Visual impacts / Sense of Place:	
Nature of impact:	The removal of vegetation for the establishing of the orchards/vineyards.
Extent and duration of impact:	Local extent, long-term duration.
Probability of occurrence:	High
Degree to which the impact can be reversed:	Low
Degree to which the impact may cause irreplaceable loss of resources:	Medium
Cumulative impact prior to mitigation:	None, the cleared areas although visible to passing traffic from the main road would be temporary during the construction phase.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low negative
Degree to which the impact can be mitigated:	Low
Proposed mitigation:	None

Cumulative impact post mitigation:	None. The cleared areas, although visible to passing traffic from the main road, would be temporary during the construction phase.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low negative

Preliminary Impacts that result from the Operational Phase:

Impacts on the geographical and physical aspects:	
Nature of impact:	Vegetation has been cleared for the cultivation of orchards/vineyards, and drainage lines. Therefore, this impact is not rated. No further mitigation necessary.
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

Impacts on the socio-economic aspects:	
Nature of impact:	Job creation
Extent and duration of impact:	Local extent and duration are dependent on the lifespan of the agricultural activities (some will be long term and other will be seasonally linked).
Probability of occurrence:	High
Degree to which the impact can be reversed:	The activity is positive
Degree to which the impact may cause irreplaceable loss of resources:	None
Cumulative impact prior to mitigation:	Job security for existing employees.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High positive
Degree to which the impact can be mitigated:	None
Proposed mitigation:	None: the activity is positive
Cumulative impact post mitigation:	None
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	High positive

Impacts on socio-economic aspects:	
Nature of impact:	Financial income to Mosplaas Citrus (Pty) Ltd and region.
Extent and duration of impact:	Region and long term
Probability of occurrence:	High
Degree to which the impact can be reversed:	None, the impact is positive.

Degree to which the impact may cause irreplaceable loss of resources:	None, the impact is positive.
Cumulative impact prior to mitigation:	Financial income to the company and the country by the selling of produce nationally and internationally.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	High positive
Degree to which the impact can be mitigated:	None, the impact is positive.
Proposed mitigation:	None
Cumulative impact post mitigation:	Financial income to the company and the country by the selling of produce nationally and internationally.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	High positive

Impacts on cultural-historical aspects:	
Nature of impact:	Archaeology and Palaeontology
Extent and duration of impact:	Permanent site-specific impact
Probability of occurrence:	Probable
Degree to which the impact can be reversed:	High
Degree to which the impact may cause irreplaceable loss of resources:	Low
Cumulative impact prior to mitigation:	None
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low
Degree to which the impact can be mitigated:	High
Proposed mitigation:	<p>Attached in Appendix H6: Paleontological Impact Assessment:</p> <p><i>“Should substantial fossil remain - such as vertebrate bones and teeth, or petrified logs of fossil wood - be encountered at surface or exposed during construction, the ECO should safeguard these, preferably in situ. They should then alert the relevant provincial heritage management authority as soon as possible - i.e., SAHRA (contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651; e-mail: rredelstorff@sahra.org.za).</i></p> <p><i>This is to ensure that appropriate action (i.e., recording, sampling or collection of fossils, recording of relevant geological data) can be taken by a professional palaeontologist at the developer’s expense. A tabulated Chance Fossil Finds Procedure is appended to this report.”</i></p>
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low

Noise impacts:	
Nature of impact:	General noise associated with agricultural activities
Extent and duration of impact:	Local extent, long-term duration
Probability of occurrence:	High
Degree to which the impact can be reversed:	Low

Degree to which the impact may cause irreplaceable loss of resources:	None
Cumulative impact prior to mitigation:	Localised noise pollution. The area falls within an agricultural active area and any noise generation is generally seasonal when the entire area is busy with harvesting.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium negative
Degree to which the impact can be mitigated:	Low
Proposed mitigation:	The area falls within an agricultural active area and any noise generation is generally seasonal when the entire area is busy with harvesting. No mitigation necessary.
Cumulative impact post mitigation:	The area falls within an agricultural active area and any noise generation is generally seasonal when the entire area is busy with harvesting.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low negative

Visual impacts / Sense of Place:	
Nature of impact:	The new unlawful orchards/vineyards have changed the sense of place, but the nature of impact is limited within the existing established agricultural landscape of the region. Similarly, the orchards/vineyards will change the sense of place, however, it will also be limited within the existing landscape.
Extent and duration of impact:	Local extent, long-term duration
Probability of occurrence:	High
Degree to which the impact can be reversed:	Low
Degree to which the impact may cause irreplaceable loss of resources:	Medium
Cumulative impact prior to mitigation:	The new unlawful orchards/vineyards have changed the sense of place, but the nature of impact is limited within the existing established agricultural landscape of the region. Similarly, the proposed orchards/vineyards will change the sense of place, however, it will also be limited within the existing landscape.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Low negative
Degree to which the impact can be mitigated:	Low
Proposed mitigation:	None, the developments are in line with the surroundings.
Cumulative impact post mitigation:	The new unlawful orchards/vineyards have changed the sense of place, but the nature of impact is limited within the existing established agricultural landscape of the region. Similarly, the orchards/vineyards will change the sense of place, however, it will also be limited within the existing landscape.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low negative

Impacts that may result from the decommissioning and closure phase:

The agricultural activities will not be decommissioned in the near future and impacts associated with this phase have not been assessed.

ASSESSMENT CRITERIA:

The criteria for the description and assessment of environmental impacts were drawn from the National Environmental Management Act, 1998 (Act No.107 of 1998).

The level of detail was somewhat fine-tuned by assigning specific values to each impact. In order to establish a coherent framework within which all impacts could be objectively assessed it is necessary to establish a rating system, which is consistent throughout all criteria. For such purposes each aspect was assigned a value, ranging from 1-5, depending on its definition.

H-2.1 Potential Impact

This is an appraisal of the type of effect the proposed activity would have on the affected environmental component. Its description should include what is being affected and how it is being affected.

H-2.2 Extent

The physical and spatial scale of the impact is classified as:

Local

The impacted area extends only as far as the activity, e.g., a footprint.

Site

The impact could affect the whole, or a measurable portion of the site.

Regional

The impact could affect the area including the neighbouring erven, the transport routes and the adjoining towns.

H-2.3 Duration

The lifetime of the impact, which is measured in relation to the lifetime of the proposed base?

Short term

The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than any of the phases.

Medium term

The impact will last up to the end of the phases, where after it will be entirely negated.

Long term

The impact will continue or last for the entire operational lifetime of the Development but will be mitigated by direct human action or by natural processes thereafter.

Permanent

This is the only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.

H-2.4 Intensity

The intensity of the impact is considered here by examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functioning, or slightly alters the environment itself. These are rated as:

Low

The impact alters the affected environment in such a way that the natural processes or functions are not affected.

Medium

The affected environment is altered, but functions and processes continue, albeit in a modified way.

High

Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

This will be a relative evaluation within the context of all the activities and the other impacts within the framework of the project.

H-2.5 Probability

This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time. The classes are rated as follows:

Improbable

The possibility of the impact occurring is none, due either to the circumstances, design or experience.

Possible

The possibility of the impact occurring is very low, due either to the circumstances, design or experience.

Likely

There is a possibility that the impact will occur to the extent that provisions must therefore be made.

Highly Likely

It is most likely that the impacts will occur at some stage of the Development. Plans must be drawn up before carrying out the activity.

Definite

The impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied on.

H-2.7 Determination of Significance – With Mitigation

Significance is determined through a synthesis of impact characteristics. It is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. In this case the prediction refers to the foreseeable significance of the impact after the successful implementation of the suggested mitigation measures. Significance with mitigation is rated on the following scale:

No significance

The impact will be mitigated to the point where it is regarded to be insubstantial.

Low

The impact will be mitigated to the point where it is of limited importance.

Low to medium

The impact is of importance, however, through the implementation of the correct mitigation measures such potential impacts can be reduced to acceptable levels.

Medium

Notwithstanding the successful implementation of the mitigation measures, to reduce the negative impacts to acceptable levels, the negative impact will remain of significance. However, taken within the overall context of the project, the persistent impact does not constitute a fatal flaw.

Medium to high

The impact is of great importance. Through implementing the correct mitigation measures the negative impacts will be reduced to acceptable levels.

High

The impact is of great importance. Mitigation of the impact is not possible on a cost-effective basis. The impact continues to be of great importance, and taken within the overall context of the project, is considered to be a fatal flaw in the project proposal. This could render the entire development option or entire project proposal unacceptable.

SECTION E: LANDFILL PARAMETERS (WHERE APPLICATION RELATES TO A WASTE MANAGEMENT ACTIVITY)

THIS SECTION IS NOT APPLICABLE TO THIS APPLICATION.

1. THE METHOD OF DISPOSAL OF WASTE:

Land-building Landfilling Both

2. THE DIMENSIONS OF THE DISPOSAL SITE IN METRES

	At commencement	After rehabilitation
Height/Depth		
Length		
Breadth		

3. THE TOTAL VOLUME AVAILABLE FOR THE DISPOSAL OF WASTE ON THE SITE:

Volume Available	Mark with "X"	Source of information (Determined by surveyor/ Estimated)
Up to 99		
100-34 999		
35 000- 3,5 million		
>3,5 million		

4. THE TOTAL VOLUME ALREADY USED FOR WASTE DISPOSAL:

(a) Will the waste body be covered daily

YES
NO

(b) Is sufficient cover material available

YES
NO

(c) Will waste be compacted daily

YES
NO

If the answers (a) and/or (b) are No, what measures will be employed to prevent the problems of burning or smouldering of waste and the generation of nuisance?

5. THE SALVAGE METHOD

Mark with an "X" the method to be used.

At source

Recycling installation

Formal salvaging

Contractor

No salvaging planned

6. FATAL FLAWS FOR THE SITE:

Indicate which of the following apply to the facility for a waste management activity:

Within a 3000m radius of the end of an airport landing strip

YES	NO
YES	NO

Within the 1 in 50-year flood line of any watercourse

YES	NO
YES	NO

Within an unstable area (fault zone, seismic zone, dolomitic area, sinkholes)	YES	NO
Within the drainage area or within 5 km of water source	YES	NO
Within an area with shallow and/or visible water table	YES	NO
Within an area adjacent to or above an aquifer	YES	NO
Within an area with shallow bedrock and limited available cover material	YES	NO
Within 100 m of the source of surface water	YES	NO
Within 1 km from the wetland	YES	NO
Indicate the distance to the boundary of the nearest residential area	_____metres	
Indicate the distance to the boundary of the industrial area	_____metres	
Wettest six months of the year		

November–April	
May–October	

For the wettest six-month period indicated above, indicate the following for the preceding 30 years.

	Total rainfall for 6 months	Total A-pan evaporation for 6 months	Climatic water balance
For the 1 st wettest year			
For the 2 nd wettest year			
For the 3 rd wettest year			
For the 4 th wettest year			
For the 5 th wettest year			
For the 6 th wettest year			
For the 7 th wettest year			
For the 8 th wettest year			
For the 9 th wettest year			
For the 10 th wettest year			

7. LOCATION AND DEPTH OF GROUND WATER MONITORING BOREHOLES:

Codes of boreholes	Borehole locality	Depth (m)	Latitude	Longitude
.....	<input type="text"/>	<input type="text"/>	<input type="text"/>
.....	<input type="text"/>	<input type="text"/>	<input type="text"/>

.....	.....		o	I	II	o	I	II
.....	.....		o	I	II	o	I	II
.....	.....		o	I	II	o	I	II
.....	.....		o	I	II	o	I	II
.....	.....		o	I	II	o	I	II
.....	.....		o	I	II	o	I	II
.....	.....		o	I	II	o	I	II
.....	.....		o	I	II	o	I	II
.....	.....		o	I	II	o	I	II
.....	.....		o	I	II	o	I	II
.....	.....		o	I	II	o	I	II

8. LOCATION AND DEPTH OF LANDFILL GAS MONITORING TEST PIT:

Codes of boreholes	Borehole locality	Latitude	Longitude
.....	o	I II o I II
.....	o	I II o I II
.....	o	I II o I II
.....	o	I II o I II
.....	o	I II o I II
.....	o	I II o I II
.....	o	I II o I II
.....	o	I II o I II

SECTION F: PROPOSED PUBLIC PARTICIPATION

7.1. PUBLIC PARTICIPATION PROCESS

The person conducting the public participation process must fulfil the requirements outlined in Chapter 6 of the 2014 NEMA EIA Regulations 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:

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	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 <i>Gazette</i> 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. NOT APPLICABLE			
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.

7.2. PUBLIC PARTICIPATION UNDERTAKEN PRIOR TO THE SUBMISSION OF THE NOTICE OF INTENT

Where public participation in terms of Regulations 40(3) and 41 was undertaken prior to submission of this Notice of Intent, please provide a summary of the steps followed to date.

Pre-application public participation:

An advertisement was placed in the Local Newspaper, the Gemsbok, and was advertised for at least 20 days as per the prescribed legislation. The advertisement was placed on 24 January 2020. See proof included in Error! Reference source not found..

Public Participation (all details and proof included in **Appendix F**):

The following steps will be followed:

1. The S24G Report will go out for a 30-day commenting period. As far as possible all I&AP's will be notified of the commenting period and indication given of where to access the information electronically.
2. As part of this 30-day commenting period an advertisement will be placed in the Gemsbok Newspaper. As part of the prescribed timeframes for the water use license a 60-day notification will be placed in the Gemsbok Newspaper.
3. The final S24G report will be submitted for final approval and consideration.

Further details will be provided within the public participation process and agreed with the case officer.

7.3. LIST OF 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.									
	Surname	Initials	Representing	Tel	Fax	email	Post Box	Town	Code
1	Lategan	J.G.	Kai Garib Municipality: Municipal Manager	054 431 6328	054 461 6401	mm@kaigarib.gov.za	Private Bag X6	Kakamas	8870
2	Bock	B.M.	Kai Garib Municipality: Ward Councillor Ward 3	054 431 6328	054 461 6401	mm@kaigarib.gov.za	Private Bag X6	Kakamas	8870
3	White	C	Department of Water Affairs	082 887 8866/ 054 338 5819		SchwartzC@dws.gov.za ThebeE@dws.gov.za	Private Bag X5912	Upington	8800
4	De la Fontaine	S	Nature Conservation	054 338 4800		sdelafontaine@gmail.com	Evelina De Bruin (former Provincial) Building, Corner of Rivier & Nelson Mandela Road	Upington	8800
5	CEO		Kakamas Water Users Association	054 431 0725/6		marinakwgv@isat.co.za			
6	Schwartz	C	Department Water and Sanitation	054 338 5000		schwartzC@dws.gov.za	Private Bag X 5912, Louisvale Road	Upington	8800
7	Mans	J	Department of Agriculture Forestry and Fisheries	054 338 5909		jacolinema@daff.gov.za	P. O. Box 2782	Upington	8800
8	Lekwene	T	DENC: S24G Section	0798744244		LekweneT@ncpg.gov.za	90 Long Street Sasko Building	Kimberley	8301

Above list to be confirmed in draft S24G

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 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.

SECTION G: ALTERNATIVES

As part of this report, consideration must be given to alternatives that are/may have been possible had an environmental impact assessment been undertaken prior to the commencement of the activity. Please provide a detailed description of the alternatives (whether location, technology or environmental) that were/are possible in terms of this application.

Alternative 1 (Preferred): Authorisation of 410.2ha unlawful orchards/vineyards

The alternative requires authorising the 410.2ha existing orchards/vineyards, with the two dams. **Please note this is a preliminary layout.**

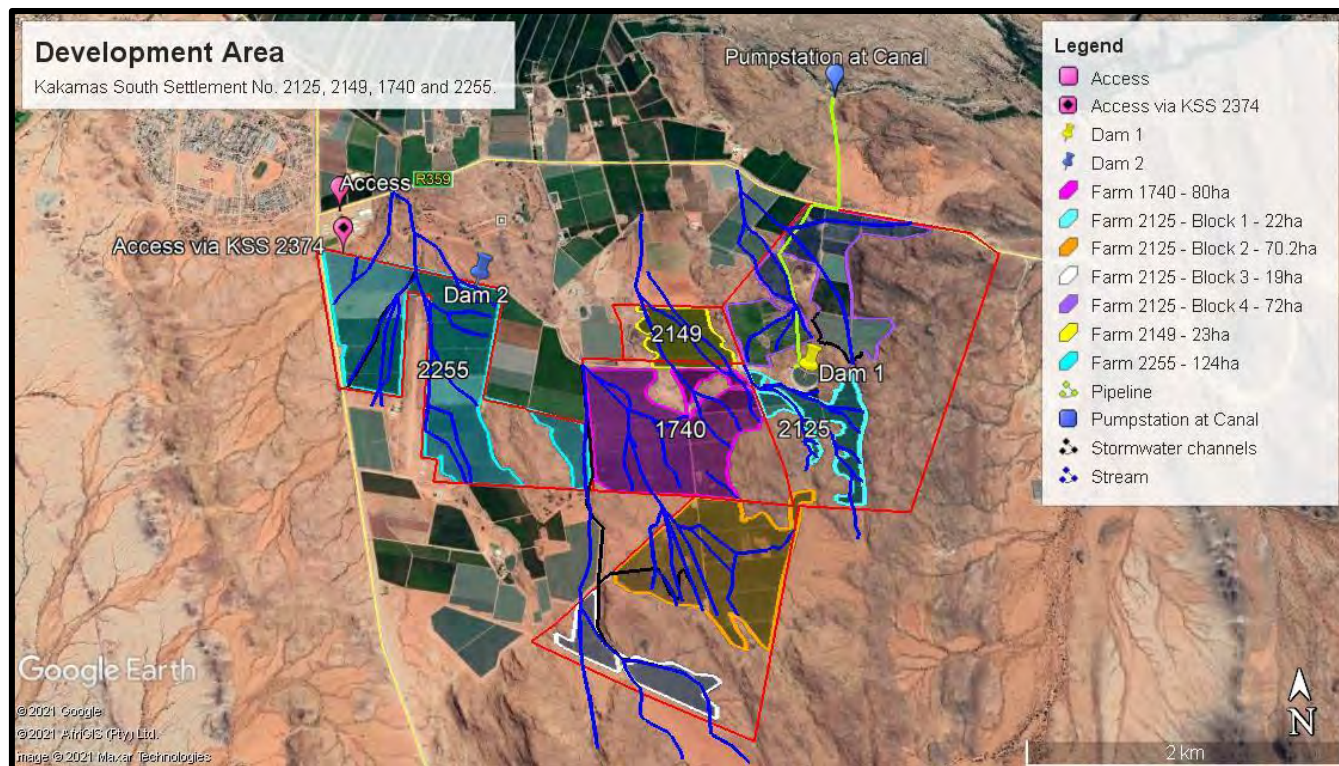


Figure 24: Preferred alternative layout

This alternative takes into consideration the following aspects and is therefore considered the preferred alternative:

- Rehabilitation for the development that has already taken place and will not positively result in further financial gain. The area will not be rehabilitated as it serves no purpose to rehabilitate such a large area. This option of continuation of the development is the only feasible and preferred alternative.
- As stated in the Botanical Statement *“The cumulative impact of the loss of Bushmanland Arid Grassland at Mosplaas is rated as being Low to Very Low Negative due to the extensive occurrence of this habitat type. The negative impact on the season streams is also considered to be Low Negative in terms of cumulative impacts. Very little Lower Gariep Broken Veld (and CBA1 areas) has been disturbed by the farming operation. Consequently, the negative cumulative impacts are very low.”*
- The small **ephemeral** streams crossing the site have a low significance. *“The negative impact on the season streams is also considered to be Low Negative in terms of cumulative impacts.”*

Alternative 2: The development of an alternative site

The alternative would entail the development of alternative areas.

This alternative is not considered as preferred:

- The entirety of the sites was developed, therefore no open areas available. The open areas are within the rocky mountainous areas and not possible to be developed.
- Rehabilitation for the development that has already taken place will not positively result in further financial gain. The area will not be rehabilitated as it will serve no purpose. This option of continuation of the development is the only feasible and preferred alternative. The rehabilitation is not feasible.

No-Go Option

The No-Go option would result in the rehabilitation of clearing of the 410.2ha of unlawful orchards/vineyards. Less cultivation of land would lead to lower production in grapes for export. This, in turn, would lead to loss of income for the company and the country which in turn would lead to job loss and the eventual increase in poverty. There will be no additional job opportunities (both temporary and permanent), no improvement of the local economy and no food generation or job security.

In addition, the rehabilitation of the site would include the removal of the orchards/vineyards which would eventually lead to major financial loss for the applicant. This too would have negative spinoffs with regards to employee job security as well as the longevity of the company.

It is for these reasons that the No-Go option is not considered the preferred alternative.

SECTION H: APPENDICES

The following appendices must be attached where appropriate:

Appendix	Cross out (“☒”) the box if Appendix is attached
Appendix A: Location map.	X
Appendix B: Site plan(s).	X
Appendix C: Owner(s) consent(s).	N/A
Appendix D: Photographs. <ul style="list-style-type: none"> • Appendix D1: Historic aerial photographs (Figures 1 to 5) • Appendix D2: Site photographs • Appendix D3: CBA and Vegetation layers. 	X
Appendix E: Permit(s) / license(s) from any other organ of state including service letters from the municipality. <ul style="list-style-type: none"> • Appendix E1: Irrigation rights from the Department of Water Affairs 	X
Appendix F: Additional Impact Assessment Information. <ul style="list-style-type: none"> • Appendix F: Public Participation 	Not yet completed / To be Included in the Final Assessment Report
Appendix G: Report on alternatives.	N/A
Appendix H: Any Other (describe). <ul style="list-style-type: none"> • Appendix H1: Attendance register of meeting held with DENC and DWS. • Appendix H2: EMP • Appendix H3: WULA • Appendix H4: Botanical Assessment • Appendix H5: Archaeological Impact Assessment 	X

ANNEXURE A TO THE SECTION 24G APPLICATION FORM

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.

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?	YES	NO	UNCERTAIN
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?	YES	NO	UNCERTAIN
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>	YES	NO	UNCERTAIN
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).

SECTION C: QUANTUM OF THE SECTION 24G FINE

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 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: The activity increased job opportunities, fruit production and influx of foreign income into the country, thereby indirectly improving the socio-economic state of the local community.		

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 unlawful development occurred on area indicated as indigenous vegetation as well as occurring over some small ephemeral streams. Though the impact is considered to be minimal, some localised impacts may have occurred.		

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 activity is an agricultural development on agricultural land in an area surrounded by agricultural developments. As such no negative impact on sense of place or heritage.		

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 activity is an agricultural development on agricultural land in an area surrounded by agricultural developments. No pollution has taken place.		

PART 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 actions 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.	
	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.	
	No previous applications have been submitted by the applicant, but the applicant sat on the board of a firm that previously submitted an application.	X
Explanation in respect of all previous applications submitted in terms of section 24G:		

PART 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
<p>Describe the firm: Mosplaas Citrus PTY Ltd falls under the Karsten group.</p> <p><u>History of company:</u></p> <p><i>Piet and Babsie Karsten founded their family farming business in 1968 on Kanoneiland west of Upington along the Orange River. Years later in 1980 they bought the farm Roepersfontein, which is now The Karsten Group's head quarters. In 2000 The Karsten Group acquired a deciduous fruit and vegetable farm in Ceres in the Western Cape where we focus primarily on apples, pears and cherries. In 2004 New Vision Fruit was established as the export and logistics arm of The Karsten Group. More recently, together with two other shareholders, Horizon Fruits was established to take care of the logistical services, in addition to sharing some of the marketing functions of New Vision Fruit. Karsten UK was established in 2005 as the distribution service provider of The Karsten Group in the United Kingdom and Europe. In 2012 The Karsten Group acquired table grape farms in the Western Cape as part of their strategy to broaden their marketing potential.</i></p> <p><i>In 2013 New Vision Fruit B.V. in Rotterdam was established to supply and deliver services to Europe. In partnership with other South African companies The Karsten Group has also established a marketing structure, Hydix, to promote and market its products in the Far- and Middle East. The Karsten Group now has a strong logistics and international marketing structure with companies and offices in London, Rotterdam and Cape Town, as well as being backed by companies in the Northern- and Western Cape.</i></p> <p><u>Vision of Company:</u></p> <p><i>The Karsten Group strives to further optimize productivity in order to increase profits and to develop products and markets that will enable us to create jobs and employ more people during the year.</i></p> <p><i>The Group is committed to building volume growth, increase value for all stakeholders, and using successes to the benefit of all.</i></p> <p><u>Empowerment within the company:</u></p> <p><i>The Karsten Group strive to remain the front runners of the industry through continued focus on the competitive edge, diversification, strategic management and optimal use of water and other resources.</i></p> <p><i>The Karsten Group firmly believes in the empowerment of its employees; not only by means of financial and land ownership, and senior management positions but also through promotion, wider responsibilities given to people on the lowest possible level and a sense of ownership for what you do in any position you might occupy.</i></p> <p><i>The Karsten Group provides seasonal and permanent employment for a large community of people in South Africa's poorest regions. All workers share in benefits such as training and development programmes which are offered in association with various institutions, development programmes and projects are directed towards all workers and their families, including seasonal workers, irrespective of their worker status. Fringe benefits, apart from the provident fund scheme, apply equally to all workers, and people are paid according to their job grading and not their employment status.</i></p> <p><i>Training and career planning are initiated for each permanent worker, ensuring that workers have a clear vision of their future and are able to plan their future in the company. Vacancies are always advertised internally, and continuous training and development is done to ensure that workers are equipped with the basic skills for the next level for which they might qualify.</i></p>		

Social and other benefits are offered to the large community of people working within the group, including preschool care, bursary and study schemes for children of workers, health care and housing for both permanent staff and temporary workers.

Community involvement projects facilitated includes special gardening programmes at schools in the region; crèche facilities on all farms with pre-school children; women's clubs; adult literacy classes; computer training; sports facilities; social skills training workshops to enhance family and social life; leadership training; low interest student loans to parents; housing for employees staying on farms; a comprehensive healthcare plan through clinics on the various farms; recreation facilities and transport that allows staff to attend sport and other social activities; and spiritual counselling.

The importance of balance between career and social development are continuously emphasises and strives to spend ample resources to facilitate and develop both.

Relationships with workers are built in order to create trust and security. This applies especially to seasonal workers and is executed in practice through new developments with different fruit, different regions and different seasons in order to ensure longer working periods for seasonal workers who are in need of prolonged contracts to supply them with a more stable source of income.

The importance on ensuring that the basic needs of the people who work for them are met, with specific focus on clean water, decent housing, medical services and bonuses for top performers.

The training department plays a major role in achieving productivity and sound human relations by ensuring that a full-scale training programme takes place throughout the year.

Learnerships are an important part of the programme to aid workers in getting a formal national qualification combined with their practical skills.

The HIV/AIDS programme has been running for more than ten years. The main focus is to educate people about the dangers of this disease and how to prevent it. Peer group leaders are trained regularly and are supported by a full time co-ordinator, health workers and production managers. Counselling, vitamins, and medication are provided to workers to improve their quality of life.

Index	Any other relevant information that the applicant would like to be considered.
Motivate and explain fully:	<p>During the development of the properties, the applicant did not know and was not informed of the fact that any legal applications should be lodged for the activities outlined in this report. During August 2017 Audit Reports were compiled by Mr. Pieter Badenhorst for all the Karsten Group's Northern Cape Farms. During the compilation of these reports, it became apparent that various activities were triggered but never assessed and Environmental Approvals was deemed necessary in order to legalize the activities.</p>

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.

SECTION D: ADVERTISEMENT – SEE APPENDIX F

When submitting this application form, the applicant must submit proof that the application has been advertised in at least one local newspaper in circulation in the area in which the activity was commenced, in the relevant provincial gazette and on the applicant's website, if any.

The advertisement must state that the applicant commenced a listed or specified activity or activities or waste management activity or activities without the necessary environmental authorisation and/or waste management licence and is now applying for *ex post facto* approval. It must include the following:

- the date;
- the location;
- the applicable legislative provision contravened; and
- the activity or activities commenced with without the required authorisation.

Interested and affected parties must be provided with the details of where they can submit their comment and/or register as an interested and affected party.

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. This application must be attached to any documentation or information submitted by an applicant further to section 24G(1).

SECTION I: DECLARATIONS

I1: DECLARATIONS OF THE EAP

1. The Independent Environmental Assessment Practitioner

I, _____ 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:

GROENBERG ENVIRO (PTY) LTD ON BEHALF OF ELANIE KUHN

Name of company:

Date:

Signature of the Commissioner of Oaths:

Date:

Designation:

Official stamp (below)

12: DECLARATIONS OF THE APPLICANT

2. The Applicant

I, _____ declares to hereby make oath and say that: -

- a. I 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. I 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.

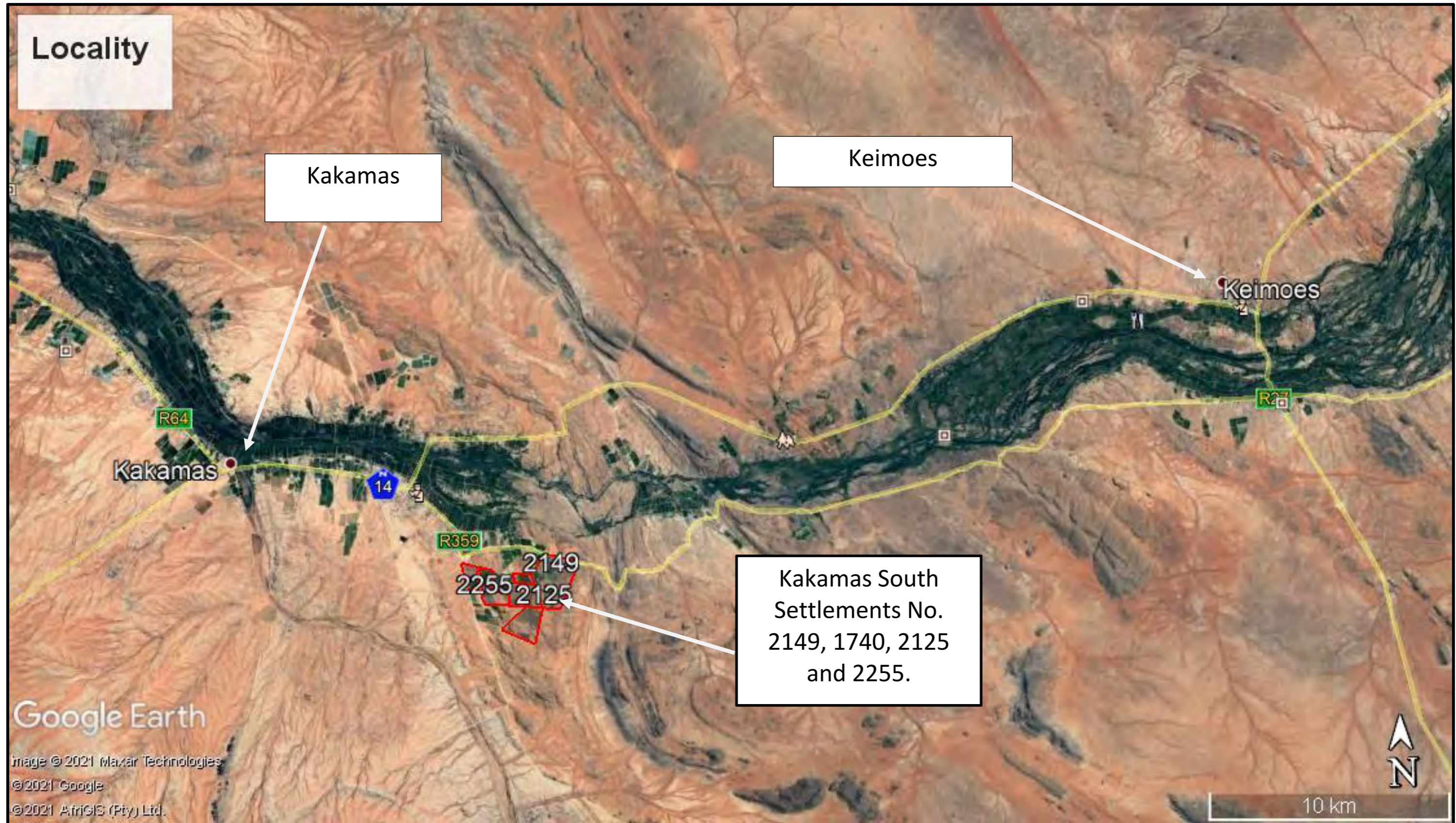
CONTACT DETAILS (NATIONAL AND PROVINCIAL S24G REGULATING DIRECTORATES)

Department	Telephone	Fax	Postal address & e-mail
National Department Environmental Affairs and Tourism	(012) 310 3230	(012) 320-7539	Private Bag X447 Pretoria South Africa 0001
Free State Department of Economic Development, Tourism and Environmental Affairs	(051) 400 9535 0827894468	(051) 400 9538	Private Bag X20801 BLOEMFONTEIN 9300 boing@dteea.fs.gov.za
Eastern Cape Department of Economic Development and Environmental Affairs	0836572465		CNR of Hargeaves & Hockley Close Beacon Hill King Williams Town South Africa bongani.gxilishe@dedea.gov.za
Gauteng Department of Agriculture and Rural Development	(011) 355 1885 (011) 355 1644	(011) 355 1850 (011) 355 1000	P.O. Box 8769 JOHANNESBURG 2000 Green.scorpions@gauteng.gov.za
Kwazulu-Natal Department of Agriculture and Environmental Affairs	(033) 3559427	(033) 355 9614	Private Bag X9059 PIETERMARITZBURG 3200 Christian.Tham@kzndae.gov.za
Limpopo Department of Economic Development, Environment and Tourism	(015) 290 7000 (015) 295 4013	(015) 295 5015	P O Box 55464 POLOKWANE 0700
Mpumalanga Department of Economic Development, Environment and Tourism	(013) 766 6059 082 054 349	(013) 766 8243	Private Bag X 11219 NELSPRUIT 1200
Northern Cape Department of Environment and Nature Conservation	(053) 807 7430	053 831 3530	Private Bag X6102 KIMBERLEY 8300
North West Dept. of Agriculture, Conservation, Environment and Rural Development	(018) 389 5995 (082) 901 8362	(018) 389 5006	Private Bag X2039 MMABATHO 2735 mnkosi@nwpg.gov.za
Western Cape Dept of Environmental Affairs and Development Planning	(021) 483 4093 (021) 483 3722 (044) 805 8781	(021) 483 4372 (021) 483 3633 (044) 874 2423	Private Bag X 9086 CAPE TOWN 8000

CONTACT DETAILS (NATIONAL AND PROVINCIAL ENVIRONMENTAL MANAGEMENT INSPECTORATE)

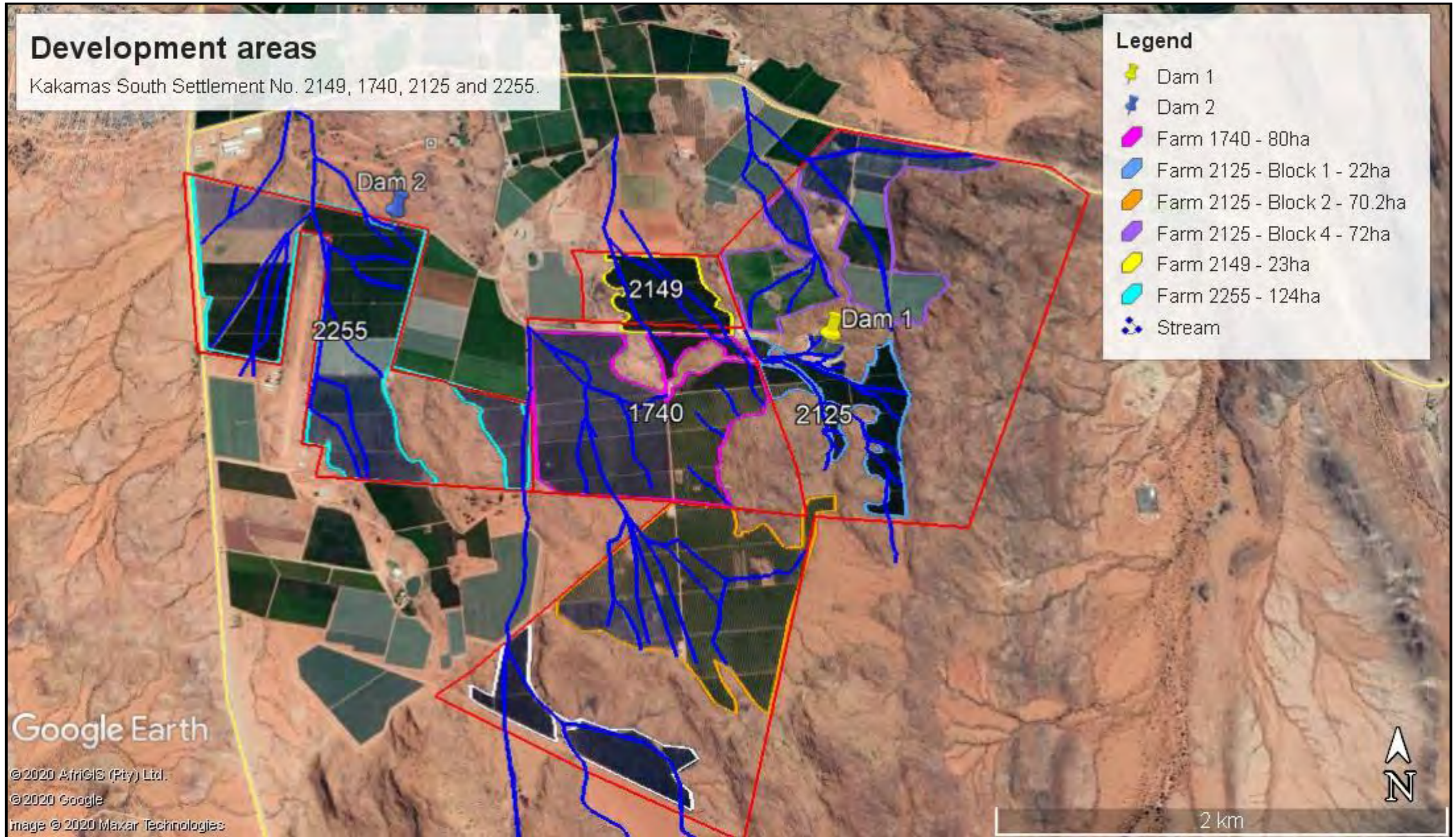
Department	Telephone	Fax	Postal address
National Department Environmental Affairs and Tourism	0800 205 005	(031) 560 7995	Private Bag X447 Pretoria South Africa 0001 pi@toanon.co.za
Eastern Cape Department of Economic Development and Environmental Affairs	0836572465		CNR of Hargeaves & Hockley Close Beacon Hill King Williams Town South Africa bongani.gxilishe@dedea.gov.za
Free State Department of Tourism, Environmental and Economic Affairs	082 789 4468	(051) 400 4772	Private Bag X20801 BLOEMFONTEIN

			9300
Gauteng Department of Agriculture and Rural Development	(011) 355 1440	(011) 355 1850	P.O. Box 8769 JOHANNESBURG 2000 Green.scorpions@gauteng.gov.za
Kwazulu-Natal Department of Agriculture and Environmental Affairs	(033) 355 9427	(033) 355 9614	Private Bag X9059 PIETERMARITZBURG 3200 Christian.Tham@kzndae.gov.za
Limpopo Department of Economic Development, Environment and Tourism	015 295 3980	015 295 4869	P O Box 55464 POLOKWANE 0700
Mpumalanga Department of Economic Development, Environment and Tourism	013 766 6077 084 520 3680	(013) 766 8243	Private Bag X 11219 NELSPRUIT 1200
Northern Cape Department of Environment and Nature Conservation	(053) 807 7430 (053) 807 7300		Private Bag 6102 KIMBERLEY 8300
North West Dept. of Agriculture, Conservation, Environment and Rural Development	(018) 389 5995 (018) 389 5698	018 389 5006	Private Bag X2039 MMABATHO 2735 mnkosi@nwpg.gov.za cwessels@nwpg.gov.za
Western Cape Dept of Environmental Affairs and Development Planning	(021) 483 3197 (021) 483 4363	(021) 483 4440	Private Bag X 9086 CAPE TOWN 8000



APPENDIX B: SITE PLANS

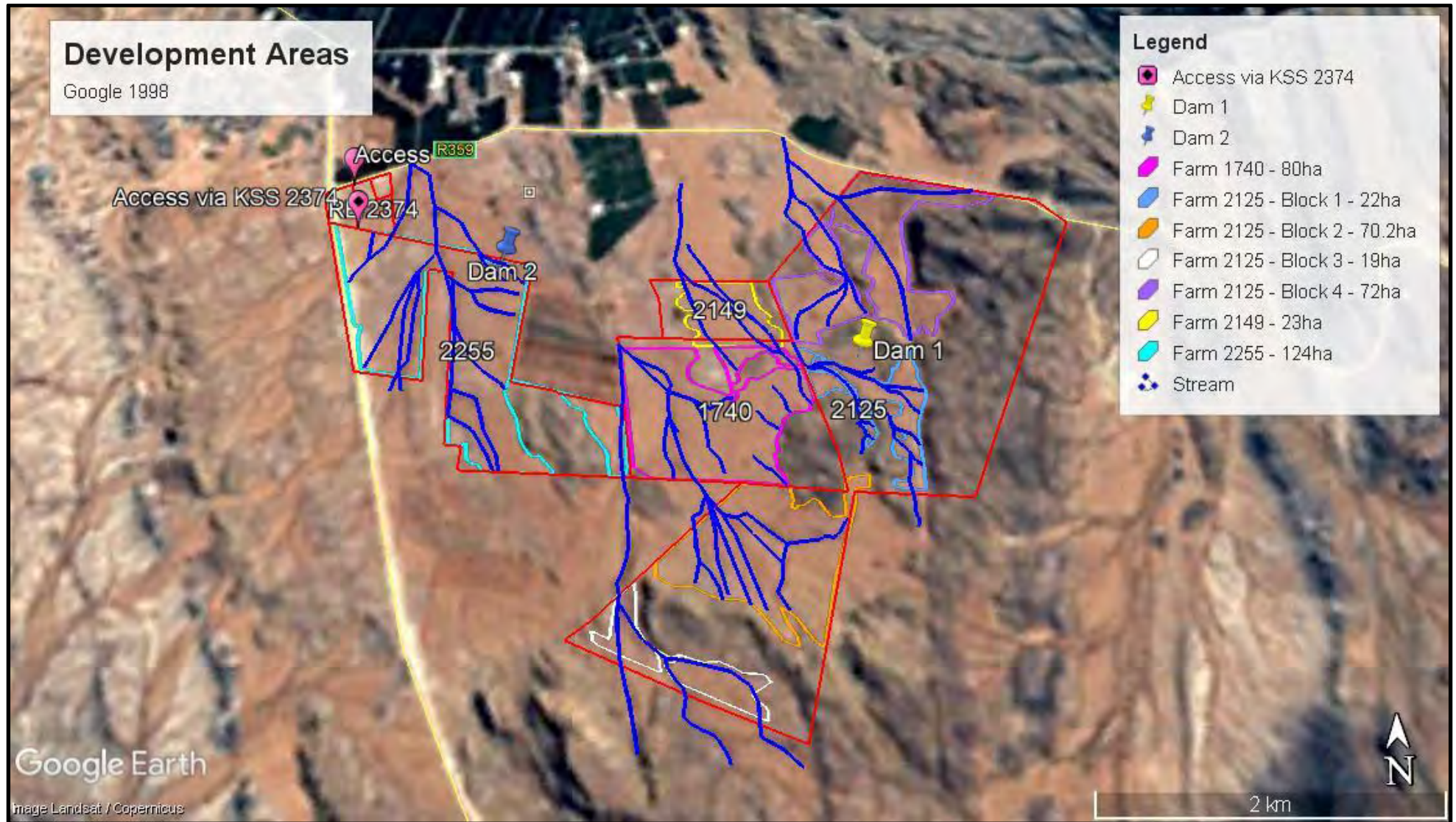
ALTERNATIVE 1: PREFERRED ALTERNATIVE

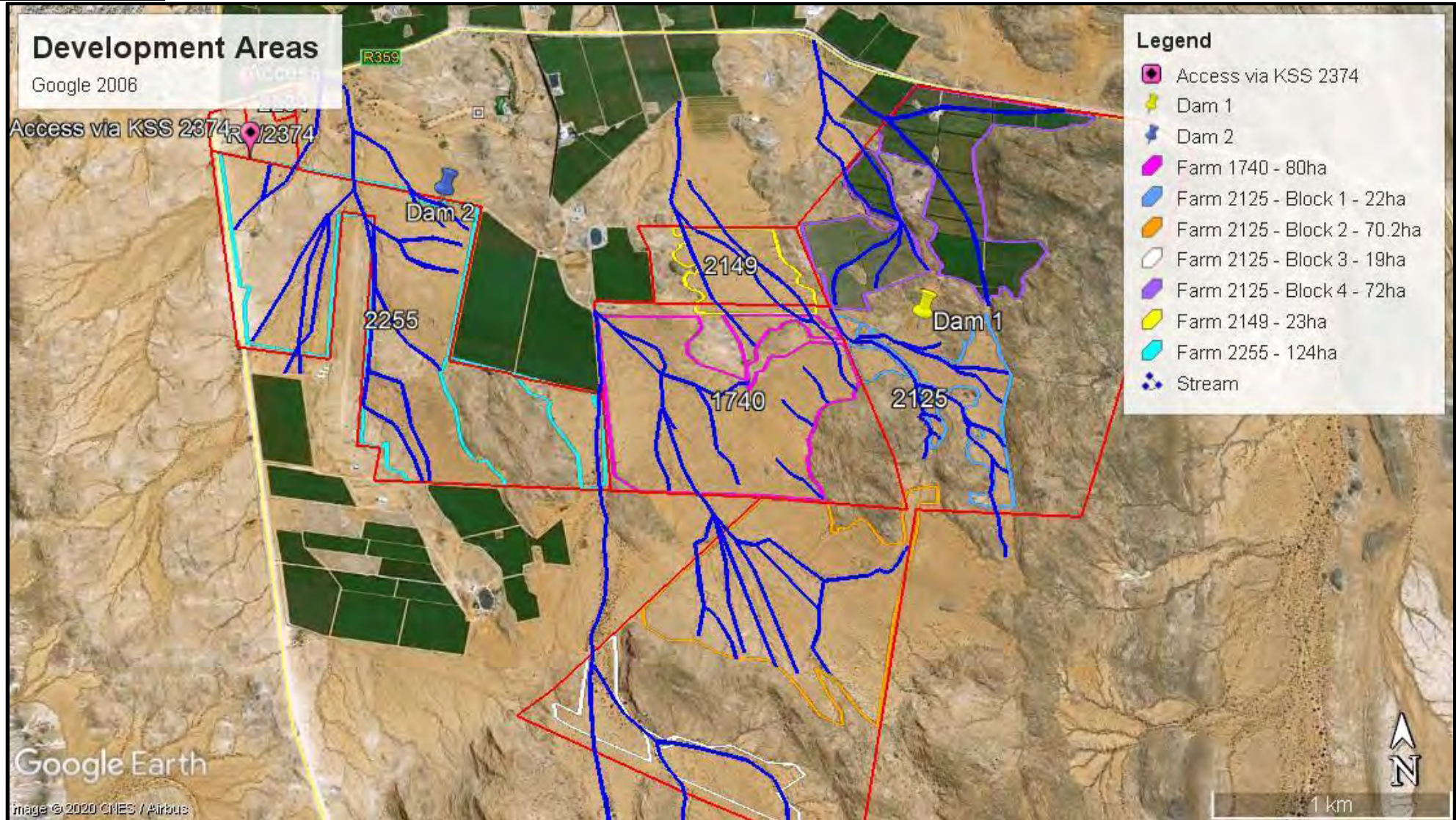


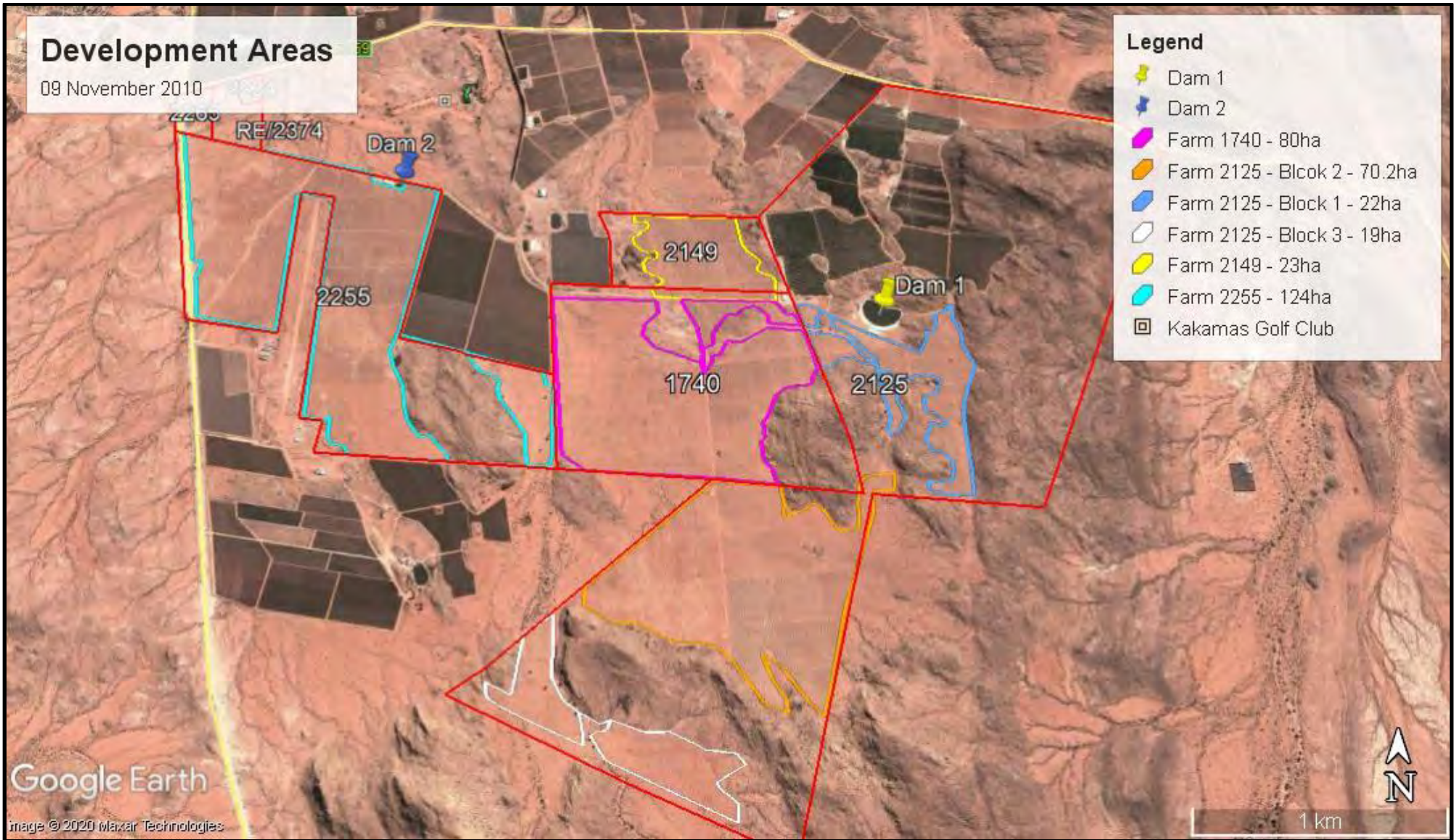
APPENDIX C: CONSENT USE

APPENDIX D1: HISTORICAL PHOTOGRAPHIC IMAGE

Google Earth 1998







APPENDIX D2: SITE PHOTOGRAPHS



Dam 2.



Dam 1.

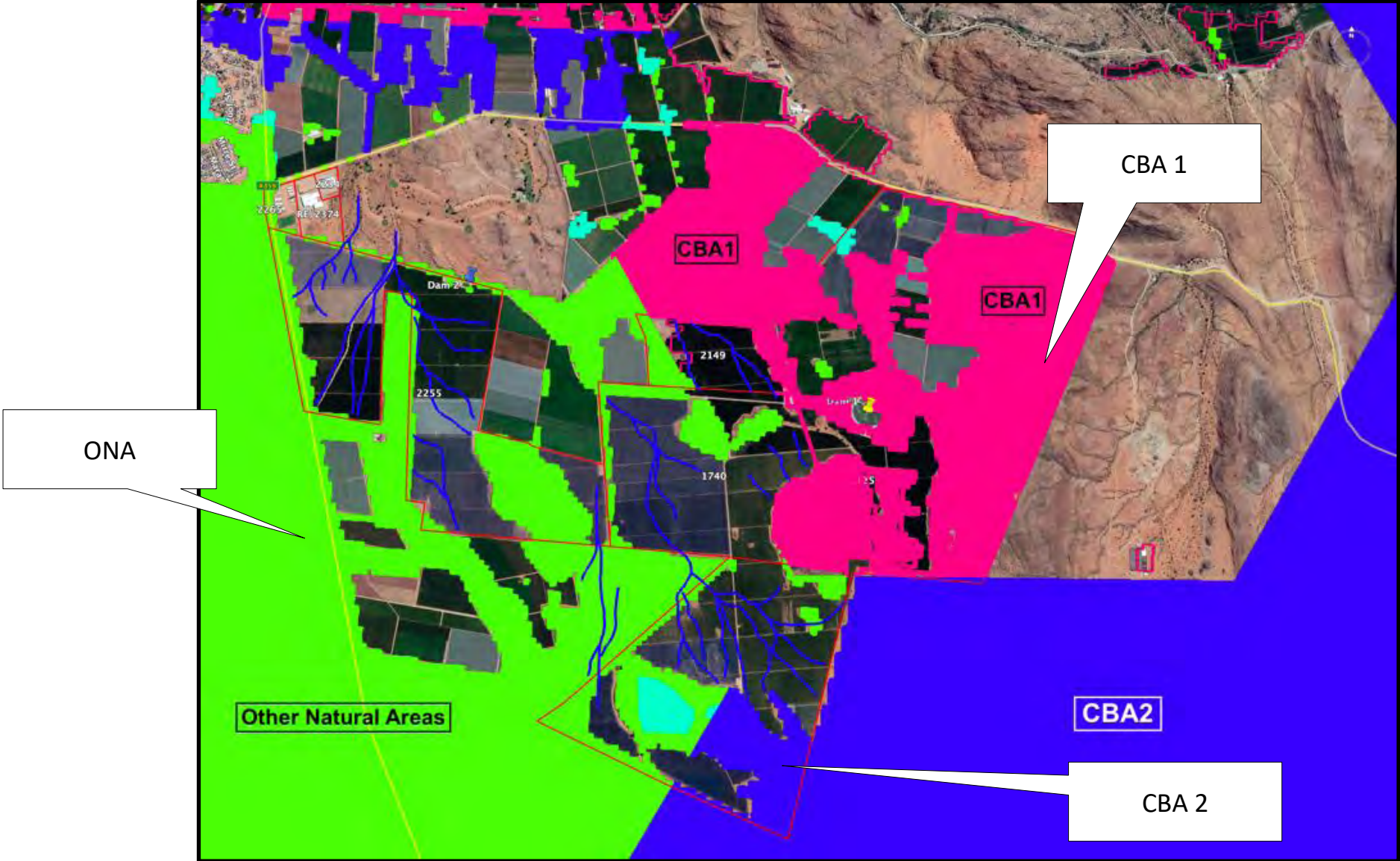


Mountainous areas on Farm 2125.



Natural vegetation

APPENDIX D3: CBA 2 AND ESA LOCATED ON REMAINDER OF KAKAMAS SOUTH SETTLEMENT 2125, 2255, 2149 AND 1740



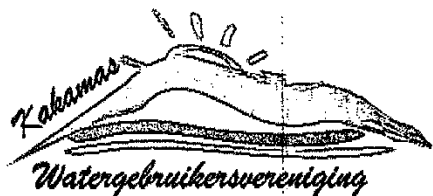
APPENDIX E1: IRRIGATION RIGHTS FROM KAKAMAS WATER USERS ASSOCIATION

05-NOV-2013 12:36 From:KAKAMAS'WGU

0544310348

To:0544919352

P.1/1



Ooshuizenstraat Ooshuizen Street
 Private Bag x4 Private Bag x4
 Kakamas 8870 Kakamas 8870

Tel (054) 431 0725/6
 Faks/Fax (054) 431 0348
 e-Pos/e-Mail kakamaswgu@sat.co.za

C. Williams

05 November 2013

473/D2/1/2265; 473/D2/1/2255;
 473/D2/1/2149; 473/D2/1/2125;
 473/D2/1/1740

KARSTEN
 Posbus 53
 Kanoneiland
 8806

KAKAMAS WATERGEBRUIKERSVERENIGING. NAVRAAG MET BETREKKING TOT WATERGEBRUIKSREGTE OP PERSELE 2265; 2255; 2149; 2125; 1740. KAKAMAS – SUID NEDERSETTING.

U faks van 04 November 2013 het betrekking.

Onderstaande tabel toon gegewens soos deur u versoek. Die gegewens was ten tye van u navraag korrek maar sou u in die onlangse verlede aansoek gedoen het vir wysigings, kan dit wees dat die wysigings nog nie afgehandel is nie en sal dit ook nie as sodanig weergegee wees nie.

Perseelnommer	Maksimum moontlike hektare(*)	Kanaal hektaar(*)	Rivier hektaar(*)
Kakamas – Suid 2265	Geen Inligting		
Kakamas – Suid 2255	54.00	54.00	0.00
Kakamas – Suid 2149	20.00	20.00	0.00
Kakamas – Suid 2125	268.20	268.20	0.00
Kakamas – Suid 1740	99.30	99.30	0.00
TOTAAL	441.50	441.50	0.00

(*) Gehewe kennis te neem dat die gebruikreg van elke individuele eiendom as 'n volume (kubieke meter) teen elke eiendom, soos aangedui in bostaande tabel geregistreer is. Die geregistreerde volume van elke eiendom word dus bereken deur die aantal hektare te vermenigvuldig met die kwota van 15 000 m³ water per jaar.

Registrasie van bogemelde gebruikregte uit die kanaal sowel as uit die rivier, soos in die tabel hierbo aangedui, is gedurende Oktober 2000 namens u geregistreer in terme van die Nasionale Waterwet (Wet 36 van 1998) soos gewysig. Geen verpligte lisensiering is op hierdie stadium van toepassing nie, en slegs in die geval van permanente oordrag van gebruikregte van een gedeelte grond na 'n ander gedeelte word die ontvanger eiendom gelisensieër.

Ek vertrou dat u die inligting in orde sal vind en sal graag meer besonderhede verskaf indien dit benodig word.

HOOF UITVOERENDE BEAMPTTE

APPENDIX E2: CONFIRMATION REPORTS



water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Confirmation Report for Register Number: 25159694
Office: LOWER ORANGE - NORTHERN CAPE UPINGTON OFFICE
Workgroup: LOWER ORANGE - NORTHERN CAPE UPINGTON
Part 1 - DW758: COMPANY, BUSINESS OR PARTNERSHIP;
NATIONAL OR PROVINCIAL GOVERNMENT

Status: ACTIVE
Status Date: 2015/12/21 08:39:39

Generic Part 1 Details

Validation

Validation Status:
Assignment Code:
Assignment Name:
Last Change Date:
Official's Name:

Verification

Verification Status:
Assignment Code:
Assignment Name:
Last Change Date:
Official's Name:

Language Preference

Applicant Language Preference

Written Communication: AFRIKAANS
Verbal Communication: AFRIKAANS

VAT Registration Information

VAT Registration Number: 4950182255

Applicant Details

Name of Company: MOSPLAAS CITRUS
Enterprise Type: (PTY) LTD
Trading Name:
Business Registration Number: 1999/004948/07
Date Established: 2005/05/31
Country Established: SOUTH AFRICA
Part 1 Submission Date: 2015/12/14

MAROPOL@warms-ncape-nt
11:20:50 Page : 1 of 13

Register No: 25159694 2017-01-05

Contact Details

Postal Address: PO BOX 710
KAKAMAS
8870
Physical Address: PERSEEL 216
KAKAMAS

Contact Telephone Number

Area/Cell Code: 054
Number: 4317000
Extension:

Contact Person Details

Surname: BESTER
Name: MARIUS THOMAS
Title: MR

Contact Telephone Number

Number: 054 4317000
Extension:
Cellphone: 0769814842
Fax Number:
Email: MARIUSB@KARSTEN.CO.ZA

Billing Information

Water Management Area: ORANGE
File Number: 27/4/14/25159694
District Municipality Establishment Levy Payable: Yes

Comment

CAPTURED LICENSE NR 14/D53J/B/1649 AND LICENSE 27/2/1/D953/4/1

WUN 1 - DW761: STORING WATER

Status: DELETED
Water Use Status Date: 2015/12/15 11:08:41

Generic Part 2 Details

Validation

Validation Status:
Assignment Code:
Assignment Name:
Last Change Date:
Official's Name:

Verification

Verification Status:
Assignment Code:
Assignment Name:
Last Change Date:
Official's Name:

Succession/Transfer Type and Source Part 2 Details

Succession/Transfer Type:

Source Part 2 Details:

Storage of Water

Registration of: Raw Water

Storage of Raw Water

Name of Watercourse(s) where Water is to be Stored: MOSPLAAS DAM
Total Volume of Raw Water: 42000 CUBIC METRES
The Total Number of Dams for Storing of Raw Water: 1

List and Description of Dams

<i>Dam Name</i>	<i>Estimated/calculated</i>	<i>Measures for movement of aquatic species</i>	<i>Volume (m³)</i>
MOSPLAAS	ESTIMATED	No	42000

Office Use

Part 2 Submission Date: 2015/12/14

Existing Authorisation

Water Use Start Date: 2015/11/01

MAROPOL@warms-ncape-nt
11:20:50 Page :3 of 13

Register No: 25159694

2017-01-05

Existing Permit Information:

<i>Permit Number</i>	<i>Permit Date</i>
----------------------	--------------------

Does water use take place in terms of General Authorisation? No

If an Authorisation has Been Issued Under Other Legislation: NATIONAL WATER ACT, ACT 36 OF 1998

Property Details

Property Id: 130166
 Property Record Status: COMPLETE
 Record Status Date: 2015/12/14 09:19:53
 Property Name: KAKAMAS SUID SETT ERF 2125 PORTION 0
 Office: LOWER ORANGE - NORTHERN CAPE UPINGTON OFFICE
 Property Area: 449.9997
 Area Measure Unit: HECTARES
 Property Physical Status:
 Physical Status Date:
 Property Registration Date: 2005/11/02
 End Date:
 Property Type: ERF

Surveyed Property

Property Type Specific Name:
 Property Number: 2125
 Property Portion Number: 0
 Surveyor-General Cadastral Code: C03600060000212500000
 Surveyor-General Office: CAPE TOWN
 Deeds Office: CAPE TOWN
 Province: NORTHERN CAPE
 Registration Division: KENHARDT

<i>Property Sequence Number</i>	<i>WUN/Property Relationship Start Date</i>	<i>WUN/Property Relationship End Date</i>
1	2015/06/01	

Comment

CAPTURED LICENSE APPLICATION NR 14/D53J/B/1649

WUN 2 - DW762: STORING WATER-DAM REGISTRATION

Status: REGISTERED
Water Use Status Date: 2015/12/21 08:39:39

Generic Part 2 Details

Validation

Validation Status:
Assignment Code:
Assignment Name:
Last Change Date:
Official's Name:

Verification

Verification Status:
Assignment Code:
Assignment Name:
Last Change Date:
Official's Name:

Lawfulness Authentication

Finding: LAWFUL
Finding Date: 2015/05/07
Finding Reason: LICENCE
Finding Confirmed: Yes
Last Change Date: 2015/12/21 08:53:47
Official's Name: ANNA SOPHIA MARIA STEENKAMP

Licence Information

Registration of Licensed Water Use: Yes
NRWU Licence Number: 25159694/2
Licence Status: APPROVED
Expiry Date: 2035/05/31

Licence Review Details

Review Period: 60 MONTHS
Scheduled Review Date: 2020/12/21

RLA Details

RLA Business Unit: WATER ABSTRACTION
RLA Reference: 14/D53J/B/1649

Succession/Transfer Type and Source Part 2 Details

Succession/Transfer Type:

Source Part 2 Details:

MAROPOL@warms-ncape-nt
11:20:50 Page :5 of 13

Register No: 25159694

2017-01-05

General Information

Name of watercourse to which the water would naturally drain:

Quaternary Drainage Region: D53J

Dam Information

Dam Id: 2711

Dam Name: MOSPLAAS DAM

Type of Dam: CLEAN WATER

Geographic position of the centre of the dam wall

Latitude: 28° 48' 26.3" S 28.807306° S 28° 48.43836' S

Longitude: 20° 40' 21.2" E 20.672556° E 20° 40.35336' E

Datum Type: WGS-84

Geographic position of the centre of the river where the river crosses the dam wall

Latitude: 0° 0' 0" S 0° S 0° 0' S

Longitude: 0° 0' 0" E 0° E 0° 0' E

Datum Type: WGS-84

Billable Dam: No

This Dam can be Used for the Following Purposes(s)

<i>Dam Sector Name</i>	<i>Dam Sector Status</i>
AGRICULTURE: IRRIGATION	Active

Water Use Sector

Water Use Sector(s): AGRICULTURE: IRRIGATION

Dam Size and Basin Information

Date of completion of dam: 2010/02/28

Dam Size:

Maximum wall height: 4.95 METRES

Crest length of wall: 500 METRES

Gross storage capacity: 42000 THOUSAND CUBIC METRES

Water surface area at supply level:

Water depth at full supply level:

Basin Information:

Basin shape:

Length:

Width:

MAROPOL@warms-ncape-nt
11:20:50 Page :6 of 13

Register No: 25159694

2017-01-05

Dam Classification

Has Dam Been Classified? No

Technical Information About Dam Structure

Type of Dam:

<i>Type of Dam</i>	<i>Other Description</i>
OTHER	EARTH RESERVOIR LINED WITH HDPE

Spillway Information

Type of Spillway:

<i>Type of Spillway</i>	<i>Other Description</i>

Crest length of spillway:

Description of spillway gates:

Details on any auxiliary spillway

Location:

Nature or type of spillway:

Crest length of auxiliary spillway:

Does the dam structure incorporate a fish ladder or fish way? No

Location of dam

Nearest city or town:

Distance from nearest city or town:

Direction to dam from nearest city or town:

Number of 1:50 000 topographic map, or 1:10 000 orthophoto:

Contact person

Person in control of dam:

Contact telephone number of person in control of dam

Number:

Extension:

Cellphone:

Fax Number:

Email:

Designer or Consultant:

Contractor:

Billing Information

Water Use Start Date: 2015/06/01

MAROPOL@warms-ncape-nt
11:20:50 Page :7 of 13

Register No: 25159694

2017-01-05

Billable Evaporative Loss:

<i>Start Date</i>	<i>End Date</i>	<i>Volume (m³)</i>	<i>Time Interval</i>

Billing Frequency: ANNUALLY

District Municipality

District Municipality: SIYANDA DISTRICT MUNICIPALITY

Office Use

Part 2 Submission Date: 2015/12/15

Existing Authorisation

Existing Permit Information:

<i>Permit Number</i>	<i>Permit Date</i>

Does water use take place in terms of General Authorisation? No

If an Authorisation has Been Issued Under Other Legislation: NATIONAL WATER ACT, ACT 36 OF 1998

Property Details

Property Id: 130181
Property Record Status: COMPLETE
Record Status Date: 2015/12/21 08:25:52
Property Name: KAKAMAS SUID SETT ERF 2149 PORTION 0
Office: LOWER ORANGE - NORTHERN CAPE UPINGTON OFFICE
Property Area: 31.8114
Area Measure Unit: HECTARES
Property Physical Status:
Physical Status Date:
Property Registration Date: 2011/11/01
End Date:
Property Type: ERF

Surveyed Property

Property Type Specific Name:
Property Number: 2149
Property Portion Number: 0
Surveyor-General Cadastral Code: C03600060000214900000
Surveyor-General Office: CAPE TOWN
Deeds Office: CAPE TOWN
Province: NORTHERN CAPE
Registration Division: KENHARDT

MAROPOL@warms-ncape-nt Register No: 25159694 2017-01-05
11:20:50 Page :8 of 13

<i>Property Sequence Number</i>	<i>WUN/Property Relationship Start Date</i>	<i>WUN/Property Relationship End Date</i>
2	2015/06/01	

Comment

CAPTURED LICENSE NR 14/D53J/B/1649

WUN 3 - DW760: TAKING WATER FROM A WATER RESOURCE

Status: REGISTERED
Water Use Status Date: 2015/12/21 08:39:39

Generic Part 2 Details

Validation

Validation Status:
Assignment Code:
Assignment Name:
Last Change Date:
Official's Name:

Verification

Verification Status:
Assignment Code:
Assignment Name:
Last Change Date:
Official's Name:

Lawfulness Authentication

Finding: LAWFUL
Finding Date: 2008/06/09
Finding Reason: LICENCE
Finding Confirmed: Yes
Last Change Date: 2015/12/21 08:54:20
Official's Name: ANNA SOPHIA MARIA STEENKAMP

Licence Information

Registration of Licensed Water Use: Yes
NRWU Licence Number: 25159694/3
Licence Status: APPROVED
Expiry Date: 2028/06/30

Licence Review Details

Review Period: 60 MONTHS
Scheduled Review Date: 2020/12/21

RLA Details

RLA Business Unit: WATER ABSTRACTION
RLA Reference: 27/2/1/D953/4/1

Succession/Transfer Type and Source Part 2 Details

Succession/Transfer Type:

Source Part 2 Details:

MAROPOL@warms-ncape-nt Register No: 25159694 2017-01-05
11:20:50 Page :10 of 13

Water Resource Information

Type of Water Source: SCHEME
Name or Reference No. of Abstraction Point:
Scheme: ORANGE RIVER (KAKAMAS)
Scheme Management Parameter: CANAL
SMP Start Date: 0100/01/01
SMP End Date:
SMP Servitude Volume Information:

Geographic location of the abstraction point

Latitude: 28° 46' 24.9" S 28.77358° S 28° 46.4148' S
Longitude: 20° 36' 51.3" E 20.61424° E 20° 36.8544' E
Datum Type: WGS-84
Reliability of Water Resource: WATER ALWAYS AVAILABLE

Water Use Sector

Sector: AGRICULTURE: IRRIGATION
Scheduled Quota: 15000 CUBIC METRES PER HECTARE PER ANNUM
Scheduled Area: 60 HECTARES
AR Division: RAW WATER
Billing Frequency: BI-ANNUALLY
RPF (Resource Poor Farmer) Subsidy Related: No
Quaternary Drainage Region: D73F

Registered Volume(s):

<i>Start Date</i>	<i>Volume (m³)</i>	<i>Time Interval</i>	<i>Transmission Losses %</i>
2008/07/01	900000	PER YEAR	

Estimated Water Abstraction Pattern is:

Method(s) of Abstraction:

District Municipality

District Municipality: SIYANDA DISTRICT MUNICIPALITY

Office Use

Part 2 Submission Date: 2015/12/21

Existing Authorisation

Existing Permit Information:

MAROPOL@warms-ncape-nt 11:20:50 Page :11 of 13 Register No: 25159694 2017-01-05

<i>Permit Number</i>	<i>Permit Date</i>
----------------------	--------------------

Does water use take place in terms of General Authorisation? No

If an Authorisation has Been Issued Under Other Legislation: NATIONAL WATER ACT, ACT 36 OF 1998

Irrigated Field and Crop Information

Crop Details:

<i>Field Number</i>	<i>Crop</i>	<i>Area</i>	<i>Planting Date (mm/dd)</i>	<i>Growing season (days)</i>	<i>Rotation factor %</i>	<i>Irrigation system</i>
1	CITRUS	60	12/30		%	DRIP

Description of any irrigation scheduling methods used:

Describe any other methods to enhance irrigation efficiency:

Property Details

Property Id: 130166
 Property Record Status: COMPLETE
 Record Status Date: 2015/12/14 09:19:53
 Property Name: KAKAMAS SUID SETT ERF 2125 PORTION 0
 Office: LOWER ORANGE - NORTHERN CAPE UPINGTON OFFICE
 Property Area: 449.9997
 Area Measure Unit: HECTARES
 Property Physical Status:
 Physical Status Date:
 Property Registration Date: 2005/11/02
 End Date:
 Property Type: ERF

Surveyed Property

Property Type Specific Name:
 Property Number: 2125
 Property Portion Number: 0
 Surveyor-General Cadastral Code: C03600060000212500000
 Surveyor-General Office: CAPE TOWN
 Deeds Office: CAPE TOWN
 Province: NORTHERN CAPE
 Registration Division: KENHARDT

<i>Property Sequence Number</i>	<i>WUN/Property Relationship Start Date</i>	<i>WUN/Property Relationship End Date</i>
1	2008/07/01	

Comment

CAPTURED LICENSE NR LICENSE 27/2/1/D953/4/1

APPENDIX F: PUBLIC PARTICIPATION PROCESS

APPENDIX F2.1: I&AP DATABASE

AUTHORITIES

	Erf	Surname	Initials	Representing	Tel	Fax	email	Post Box	Town	Code	Reg
1		Lategan	J.G.	Kai Garib Municipality: Municipal Manager	054 431 6328	054 461 6401	mm@kaigarib.gov.za	Private Bag X6	Kakamas	8870	L
2		Bock	B.M.	Kai Garib Municipality: Ward Councillor Ward 3	054 431 6328	054 461 6401	mm@kaigarib.gov.za	Private Bag X6	Kakamas	8870	L
3		October	L	Department of Agriculture and Land Reform	054 461 6700	054 461 6401		P. O. Box 18	Springbok	8240	L
4		White	C	Department of Water Affairs	082 887 8866/ 054 338 5819		SchwartzC@dws.gov.za ThebeE@dws.gov.za	Private Bag X5912	Upington	8800	L
5		De la Fontaine	S	Nature Conservation	054 338 4800		sdelafontaine@gmail.com	Evelina De Bruin (former Provincial) Building, Corner of Rivier & Nelson Mandela Road	Upington	8800	L
6		CEO		Kakamas Water Users Association	054 431 0725/6		marinakwgv@isat.co.za				L
7		Kgaphola	M	Department Water and Sanitation				28 Central Road, Beaconsfield,	Kimberley	8310	L
8		Mans	J	Forestry and Fisheries	054 338 5909		jacolinema@daff.gov.za	P. O. Box 2782	Upington	8800	L
9		Lekwene	T	DENC: S24G Section	0798744244		LekweneT@ncpg.gov.za	90 Long Street Sasko Building	Kimberley	8301	L

I&AP's

	Erf	Surname	Initials	Representing	Tel	Fax	email	Post Box	Town	Code	Reg
1	1184	Nel	Nicholas Johannes	Kakamas Weiveldeenheid			Not able to gain further information.				L
2	1743 & 2257	Kruger	Alwyn	Kromhout	0825558539		alwynk@karsten.co.za				L
3	1744 & Remaind er of 1742 & 2167	Van Zyl	Andre	Liefland	0827811463		lieflandboerdery@gmail.co m				L
4	2410 & 1800	Wiese	P.R.	Rooiberg ACG Fruit	0647009962		info@acgfruit.com				L
5	Remaind er of 1782			Kakamas Golf Club			marchandbu@lantic.net				L
6	1831	Boetie De Vries			0828237449			P. O. Box 751	Kakamas		L
7	1738	Gerhard Du Plessis		Duiwelsnek Boerdery	0828523969		admin@duiwelsnek.co.za				L
8	1084	Andre Mouton		HMO Landbouskool	0824219005		info@hmoskool.co.za				L

APPENDIX F2.2: ADVERTISEMENT
Appendix F2.2.1: Pre-application advert

BLADSY 20

GEMSBOK

24 JANUARIE 2020

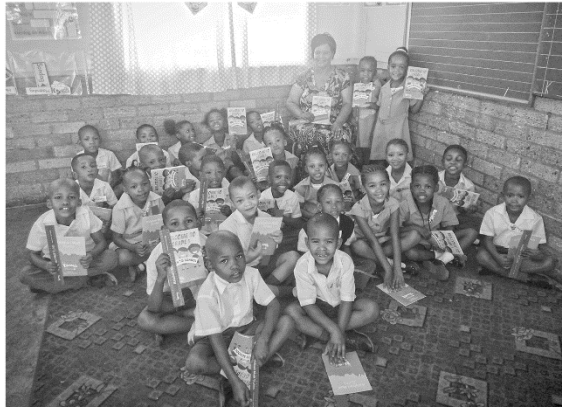


BLAAUWSKOP

Hulle is nou in die "groot" skool

Die Graad 1'tjies van die I/S Blaauwskop het sonder trane, met ywer en met baie trots, hul formele skoolloopbaan begin.

Graad 1B - onder die leiding van Juffrou Van Schalkwyk



Graad 1A - onder die leiding van Juffrou Springbok

PUBLIC PARTICIPATION PROCESS AS PART OF A SECTION 24G APPLICATION PROCESS
 Rectification of the clearing of land and the construction of vineyards, a dam, pipelines and associated infrastructure on Erf 1225, Erf 1479, Erf 1178 and Erf 2261, Kakamas, Northern Cape Province

Notice is hereby given of a public participation process in terms of the National Environmental Management Act, 1989 (Act No. 107 of 1989), and the Regulations relating to the procedure to be followed in terms of a Section 24G Application (July 2017)

The project consists of the unlawful clearing of land and the development of agricultural areas across small streams, the construction of a dam and pipelines.

The development commenced unlawfully and therefore a S24G Process is being undertaken. The following Environmental Impact Assessment (EIA) listed activities is applicable for the application for rectification:
 NEMA, Amended 2018, GN 327, LN1: Activity 12, 19 and 27;
 GN 325, LN 2: Activity 19 and
 GN 324, LN 3: Activity 12 & 14

Additional to the Environmental process will also be a Water Use License Application (WULA), under Section 21 (b), (c) and (d).

More information on the S24G Application and the WULA and work undertaken will be available in the Draft Assessment Report (S24G) which will be made available for comment on our website or the EAP in due course. This notification is for the opportunity to register as an Interested and Affected Party.

Date of this notice: 24 January 2020

In order to ensure that you are identified as an interested and/or affected party (I&AP) please submit your name, contact information and interest in the matter as well as any comment to the EAP before 17:00 on 14 February 2020.

Details of EAP Elanie Kuhn Groenberginro (Pty) Ltd P O Box 1058, Wellington, 7654 Call: 076 584 0822; Fax: 086 476 7134; E-mail: elanien@afriica.com Website: www.groenberginro.co.za	Department of Water and Sanitation (DWS/SAWaterese) Lower Orange River Proto CMA Mnr. Abe Abrahams Private Bag X6101 Kimberley, 8300 Tel: 053 830 8800
--	--

WIMPY UPINGTON/DEBONAIRS PIZZA MOTORFIETS DRYWER

VEREISTES:
 - Ouer as 18 jaar
 - Moet 'n motorfiets leëring/bestuurdersinsensie besit.
 - Moet met kliënte kan werk.
 - Hardwerkend en vriendelike persoonlikheid hê.
 - Bereid wees om lang ure te werk.

'n Uters mededingende vergoedingspakket word aangebied.

Aansoek en volledige CV met bewys van lisensie kan getaks word na: 0865 758 519 / 086 737 3108
 of go-email word na: uptwimpy@lantic.net

Indien u nie binne 14 dae na die sluitingsdatum deur ons gekontak is nie, moet u aanvaar u aansoek was onsuksesvol.

Onthou om jou posbus te hernu, sê die poskantoor

GEMSBOK-UPINGTON: Die SA Poskantoor sê kliënte wat posbusse huur, moet hulle jaarlikse huur voor die einde van Januarie 2020 betaal.

Hernuwing sal R40 meer kos van 1 Februarie 2020 af.

"Daar is baie posbusse beskikbaar; dit hou jou pos veiliger en jy kan jou pos uithaal as dit jou pas," sê Sbu Xaba van die Poskantoor.

Hy noem ook dat kliënte nie by die tak hoef te betaal waar hulle posbusse huur nie. Posbusse en privaatstakke kan by enige poskantoor landwyd betaal word, en dit kan met 'n bankkaart of kontant gedoen word.

Posbusse kan ook aanlyn by www.virtualpostoffice.co.za betaal word. Dit kos R535 om 'n posbus vir 'n jaar lank te huur. Pensioenarië kry 'n afslagprys van slegs R340.

Kliënte met navrae of terugvoer oor posbusse is welkom om 'n epos aan customer.services@postoffice.co.za te stuur

PUBLIC PARTICIPATION PROCESS AS PART OF A SECTION 24G APPLICATION PROCESS
 Rectification of the construction of vineyards and associated infrastructure on Portion 39 of Zeekeesteek No. 89, Blooupots, Northern Cape Province

Notice is hereby given of a public participation process in terms of the National Environmental Management Act, 1989 (Act No. 107 of 1989), and the Regulations relating to the procedure to be followed in terms of a Section 24G Application (July 2017)

The project consists of the unlawful development of approximately 88ha of vineyards, across natural vegetation and small streams, as well as the building of a dam.

The development commenced unlawfully and therefore a S24G Process is being undertaken. The following Environmental Impact Assessment (EIA) listed activities is applicable for the application for rectification:
 NEMA, Amended 1988: Activity 2 (i)
 NEMA, Amended 2010: GN R 544 - Activity 11 and 18; GN R 546 - Activity 12;
 NEMA, Amended 2014: GN R585 - Activity 12, 19 and 27; GN R586 - Activity 12.

Additional to the Environmental process will also be a Water Use License Application (WULA), under Section 21 (c) and (d).

More information on the S24G Application and the WULA and work undertaken will be available in the Draft Assessment Report (S24G) which will be made available for comment on our website or the EAP in due course. This notification is for the opportunity to register as an Interested and Affected Party.

Date of this notice: 24 January 2020

In order to ensure that you are identified as an interested and/or affected party (I&AP) please submit your name, contact information and interest in the matter as well as any comment to the EAP before 17:00 on 14 February 2020.

Details of EAP Elanie Kuhn Groenberginro (Pty) Ltd P O Box 1058, Wellington, 7654 Call: 076 584 0822; Fax: 086 476 7134; E-mail: elanien@afriica.com Website: www.groenberginro.co.za	Department of Water and Sanitation (DWS/SAWaterese) Lower Orange River Proto CMA Mnr. Abe Abrahams Private Bag X6101 Kimberley, 8300 Tel: 053 830 8800
--	--

PUBLIC PARTICIPATION PROCESS AS PART OF A SECTION 24G APPLICATION PROCESS
 Rectification of the construction of vineyards and associated infrastructure on Remainder of Farm Afstof No. 421, Onseopkans, Northern Cape Province

Notice is hereby given of a public participation process in terms of the National Environmental Management Act, 1989 (Act No. 107 of 1989), and the Regulations relating to the procedure to be followed in terms of a Section 24G Application (July 2017)

The project consists of the unlawful development of approximately 57ha of vineyards, across natural vegetation and small streams, as well as the building of a dam.

The development commenced unlawfully and therefore a S24G Process is being undertaken. The following Environmental Impact Assessment (EIA) listed activities is applicable for the application for rectification:
 NEMA, Amended 2002, GN R 488 Activity 10), 16) and 10;
 NEMA, Amended 2008, GN R 544 - Activity 1;
 NEMA, Amended 2010: GN R 544 - Activity 11 and 18; GN R 546 - Activity 12;

Additional to the Environmental process will also be a Water Use License Application (WULA), under Section 21 (c) and (d).

More information on the S24G Application and the WULA and work undertaken will be available in the Draft Assessment Report (S24G) which will be made available for comment on our website or the EAP in due course. This notification is for the opportunity to register as an Interested and Affected Party.

Date of this notice: 24 January 2020

In order to ensure that you are identified as an interested and/or affected party (I&AP) please submit your name, contact information and interest in the matter as well as any comment to the EAP before 17:00 on 14 February 2020.

Details of EAP Elanie Kuhn Groenberginro (Pty) Ltd P O Box 1058, Wellington, 7654 Call: 076 584 0822; Fax: 086 476 7134; E-mail: elanien@afriica.com Website: www.groenberginro.co.za	Department of Water and Sanitation (DWS/SAWaterese) Lower Orange River Proto CMA Mnr. Abe Abrahams Private Bag X6101 Kimberley, 8300 Tel: 053 830 8800
--	--

PRIMERE SKOOL FRANCOIS VISSER PRIMARY SCHOOL

TEACHING POST (Departmental post) POST DESCRIPTION LSEN Post

QUALIFICATION
 A qualified Foundation Phase Teacher
 SACE Register
 Diploma in Special Needs Education - ADE

DOCUMENTATION
 Copies of original documentation
 Curriculum Vitae and other relevant documents
 SACE Certificate

MEDIUM OF INSTRUCTION
 Afrikaans

CLOSING DATE
 31 January 2020

APPLY TO:
 The Principal, Tel: 054 933 0159/073 299 3971
 Fax: 054 933 0159
 email: francoisvissersrnm@gmail.com

PLASE TE KOOP PER TENDER NOORDKAAP - HOTAZEL - VAN ZYL/SRUS DMGEWING

Tenders word ingevir vir die verkoping van die plaase bekend as:

1. RESTANT VAN GEDEELTE 13, (ALMERIA) VAN PLAAS 704 GELEË IN DIE AFDDELING KURUMAN GROOT 1629,6492 HEKTAAR
2. GEDEELTE 20, MERINOVALE, VAN PLAAS NR 703 GELEË IN DIE AFDDELING KURUMAN GROOT 1286,1613 HEKTAAR

Die eiendomme is geleë aan die Rivierpad tussen Black Rock en Van Zyl/Srus. Die draakrag is 13 ha per Grootvee-Eenheid. Die eiendomme grens aan mekaar en kan gesamentlik of afsonderlik aangekoop word.

Tenders moet in Rand per hektaar plus BTW gedoen word met ingehandig word in nversseide koever by die kantore van Duvenhage & Van der Merwe Ingelyf, Bearestraat 52B, Kuruman voor of op Vrydag 14 Februarie 2020 om 12:00. Die suksesvolle tenderaar, indien enige, sal in kennis gestel word nie later as 21 Februarie 2020 nie. Die hoogste of enigste tender sal nie noodwendig aanvaar word nie. Volledige verkoopvoorwaardes en tenderdokumente is beskikbaar by Duvenhage & Van der Merwe Ingelyf te Kuruman.

Navrae: Fanie van Zyl (053) 030 0094/5 of 072 376 3143
 Hans Kruger (053) 030 0094/5 of 081 046 5888

E-pos adres: marlene@dvdmp.co.za
 Posbus 83 Kuruman 8460

PUBLIC PARTICIPATION PROCESS AS PART OF A SECTION 24G APPLICATION PROCESS
 Rectification of the construction of vineyards, dams and associated infrastructure on Erf 2125, Erf 1478, Erf 2149 and Erf 2255, Kakamas, Northern Cape Province

Notice is hereby given of a public participation process in terms of the National Environmental Management Act, 1989 (Act No. 107 of 1989), and the Regulations relating to the procedure to be followed in terms of a Section 24G Application (July 2017)

The project consists of the unlawful development of agricultural development across small streams. The development commenced unlawfully and therefore a S24G Process is being undertaken. The following Environmental Impact Assessment (EIA) listed activities is applicable for the application for rectification:
 ECA Act No 43 of 1989, GN 1997, R 1182 & 1183 Activity 10);
 NEMA, Amended 2008, GN R 386 Activity 1 (m).

Additional to the Environmental process will also be a Water Use License Application (WULA), under Section 21 (a), (b), (c) and (d).

More information on the S24G Application and the WULA and work undertaken will be available in the Draft Assessment Report (S24G) which will be made available for comment on our website or the EAP in due course. This notification is for the opportunity to register as an Interested and Affected Party.

Date of this notice: 24 January 2020

In order to ensure that you are identified as an interested and/or affected party (I&AP) please submit your name, contact information and interest in the matter as well as any comment to the EAP before 17:00 on 14 February 2020.

Details of EAP Elanie Kuhn Groenberginro (Pty) Ltd P O Box 1058, Wellington, 7654 Call: 076 584 0822; Fax: 086 476 7134; E-mail: elanien@afriica.com Website: www.groenberginro.co.za	Department of Water and Sanitation (DWS/SAWaterese) Lower Orange River Proto CMA Mnr. Abe Abrahams Private Bag X6101 Kimberley, 8300 Tel: 053 830 8800
--	--

PUBLIC PARTICIPATION PROCESS AS PART OF A SECTION 24G APPLICATION PROCESS
 Rectification of the construction of vineyards, sewerage treatment plants, dams and associated infrastructure on Portion 1 and 2 of Farm Stykraal No. 31, Pofadder, Northern Cape Province

Notice is hereby given of a public participation process in terms of the National Environmental Management Act, 1989 (Act No. 107 of 1989), and the Regulations relating to the procedure to be followed in terms of a Section 24G Application (July 2017)

The project consists of the unlawful development of infrastructure and agricultural developments across small streams, as well as the building of dams and sewerage evaporation ponds.

The development commenced unlawfully and therefore a S24G Process is being undertaken. The following Environmental Impact Assessment (EIA) listed activities is applicable for the application for rectification:
 ECA Act No 43 of 1989, GN 1997, R 1182 & 1183 Activity 10); 1(a);
 NEMA, Amended 2002, GN R 670 Activity 10), 16);
 NEMA, Amended 2008, GN R 386 Activity 1 (m).

Additional to the Environmental process will also be a Water Use License Application (WULA), under Section 21 (a), (b), (c) and (d).

More information on the S24G Application and the WULA and work undertaken will be available in the Draft Assessment Report (S24G) which will be made available for comment on our website or the EAP in due course. This notification is for the opportunity to register as an Interested and Affected Party.

Date of this notice: 24 January 2020

In order to ensure that you are identified as an interested and/or affected party (I&AP) please submit your name, contact information and interest in the matter as well as any comment to the EAP before 17:00 on 14 February 2020.

Details of EAP Elanie Kuhn Groenberginro (Pty) Ltd P O Box 1058, Wellington, 7654 Call: 076 584 0822; Fax: 086 476 7134; E-mail: elanien@afriica.com Website: www.groenberginro.co.za	Department of Water and Sanitation (DWS/SAWaterese) Lower Orange River Proto CMA Mnr. Abe Abrahams Private Bag X6101 Kimberley, 8300 Tel: 053 830 8800
--	--

Appendix F2.2.2: Advertisement

To be included in draft S24G

APPENDIX F2.3: NOTICE BOARDS

Will be included in the final Assessment Report.

APPENDIX F2.4: PROOF OF NOTICES SENT

Will be included in the final Assessment Report.

APPENDIX F2.5: NOTICES SENT

Appendix F2.5.1: Notices

Will be included in the final Assessment Report.

APPENDIX F2.6: COMMENTS RECEIVED
Appendix F2.6.1 Comments from DENC

Will be included in the final Assessment Report.

Appendix F2.6.2 Comments received.

Will be included in the final Assessment Report.

APPENDIX F2.7: COMMENTS AND RESPONSES SHEET

COMMENTS ON DRAFT ASSESSMENT REPORT				
Date	Comments from.	Comments received.	Response from.	Response received.

APPENDIX H1: ATTENDANCE REGISTER OF MEETING HELD

Will be included in the final Assessment Report.

APPENDIX H2: ENVIRONMENTAL MANAGEMENT PROGRAMME



DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME

**MOSPLAAS FARM – RECTIFICATION OF THE CLEARING OF
LAND AND THE CONSTRUCTION OF
ORCHARDS/VINEYARDS AND ASSOCIATED
INFRASTRUCTURE ON KAKAMAS SOUTH SETTLEMENT
NO. 2255, 2149, 1740, 2125, KAKAMAS, NORTHERN CAPE
PROVINCE**

March 2020



DOCUMENT NAME:

Mosplaas Farm – Rectification of the clearing of land and the construction of orchards/vineyards and associated infrastructure on Kakamas South Settlement No. 2255, 2149, 1740, 2125, Kakamas, Northern Cape Province

PROJECT NUMBER:

N/A

DATE:

15 March 2021

REPORT STATUS:

DRAFT ASSESSMENT
REPORT

CARRIED OUT BY:

GroenbergEnviro (Pty) Ltd

COMMISSIONED BY:

Mosplaas Citrus (Pty) Ltd

AUTHOR(S):

Elanie Kühn

CLIENT CONTACT DETAILS:

Mr. P. Karsten

P.O. Box 53, Kanoneiland, 8806

Email: zeldavd@karsten.co.za

Tel: 054 431 7000

SYNOPSIS:

See Below

PREPARED BY:

GroenbergEnviro (Pty) Ltd



CONTENTS

1	Introduction.....	1
2	Environmental issues.....	10
2.1	Vegetation.....	10
2.2	Aquatic habitat.....	15
3	Aim and Objectives of the EMPr	17
4	Compliance with Applicable Laws	18
5	Roles and Responsibilities	18
6	Monitoring & Auditing.....	23
6.1	ECO Monitoring.....	23
6.2	Auditing.....	24
7	Environmental auditing and monitoring schedule.....	26
8	Management Programme – Operational	28
8.1	Specific conditions as stated in EA.....	28
8.2	Contractual obligations.....	28
8.3	Penalties.....	28
8.4	Methodology statement.....	29
8.5	Proposed Impact Management Actions	32
	Appendix A: Additional Reports.....	73
	Appendix B: Tracking Table.....	74
	Appendix C: Schedule of Fines	75
	Appendix D: Method Statement Proforma.....	77
	Appendix E: Method Statement Control Sheet	80
	Appendix F: Project map.....	82
	Appendix G: EAP Curriculum Vitae	83

List of Figures

Figure 1: Locality map of Kakamas, South Settlement No. 2149, 1740, 2125, 2255	1
Figure 2: Unlawfully cleared vegetation indicated in purple.....	2
Figure 3: Farm 2255, 124ha orchards / vineyards (Google 2006)	3
Figure 4: Farm 2255, 124ha orchards / vineyards (Google 2010)	3
Figure 5: Farm 2125, Block 1, 2 and 3 (Google 2006)	4

Figure 6: Farm 2125, Block 1, 2 and 3 (Google 2010)4

Figure 7: Farm 2419 and 1740 (Google 2006)5

Figure 8: Farm 2419 and 1740 (Google 2010)5

Figure 9: Final development layout.....6

Figure 10: Access to the farm6

Figure 11: Ephemeral streams/drainage areas8

Figure 12: *Portion of the Vegetation Map of South Africa, Swaziland and Lesotho (SANBI 2018) with Mosplaas overlaid.*11

Figure 13: Uncultivated Bushmanland Arid Grassland outside the Mosplaas boundary to the west of the farm12

Figure 14: Uncultivated Bushmanland Arid Grassland with *Senegalia mellifera* subsp. *detinens* (black thorn) prominent shrubby trees. Very little rock is exposed12

Figure 15: Lower Gariep Broken Veld found on rocky substrates13

Figure 16: Portion of the Critical Biodiversity Areas map for the Northern Cape Province as it pertains to Mosplaas14

Figure 17: Non-Perennial Streams.....16

Figure 18: Reporting structure19

List of abbreviations

BAR	Basic Assessment Report
CBA	Critical Biodiversity Area
DEA	National Department of Environmental Affairs
DENC	Northern Cape: Department of Environment and Nature Conservation
DWS	National Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIS	Ecological Importance and Sensitivity
ELU	Existing Lawful Use
EMPr	Environmental Management Programme
ESA	Ecological Support Area

ERW	Ecological Release Water
EWR	Existing Water Rights
FEPA	Fresh Water Ecosystem Priority Areas
HWC	Heritage Western Cape
&AP's	Interested and Affected Parties
MAR	Mean Annual Run-off
MMP	Maintenance Management Plan
NFEPA	National Freshwater Ecology Priority Areas
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEM: AQA	National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)
NEM: ICMA	National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008)
NEM: WA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
PA	Protected Area
PES	Present Ecological Status
PPP	Public Participation Process
RE	Resident Engineer
RP	Responsible Person
SANBI	South African National Biodiversity Institute
V&V	Validation and Verification
WCBSP	Western Cape Biodiversity Spatial Plan
WMA	Water Management Area
WULA	Water Use Licence Application
WUL	Water Use License

Definitions

Alien species - Plants and animals which do not arrive naturally in an area - they are brought in by humans. Alien plants often force indigenous species out of the area. Rooikrans is a good example of alien species in the Cape.

Alternative - A possible course of action, in place of another, that would meet the same purpose and need defined by the development proposal. Alternatives considered in the EIA process can

include location and/or routing alternatives, layout alternatives, process and/or design alternatives, scheduling alternatives or input alternatives.

Aspect – Element of an organisation’s activities, products or services that can interact with the environment.

Auditing - A systematic, documented, periodic and objective evaluation of how well the environmental management programme is performing with the aim of helping to safeguard the environment by facilitating management control which would include meeting regulatory requirements. Results of the audit help the organisation to improve its environmental policies and management systems.

Biodiversity - The rich variety of plants and animals that live in their own environment. Fynbos is a good example of rich biodiversity in the Cape.

Built environment - Physical surroundings created by human activity, e.g. buildings, houses, roads, bridges and harbours.

Conservation - Protecting, using and saving resources wisely, especially the biodiversity found in an area.

Construction site, working area or Site - means any area within the boundaries of the property(ies) where construction is taking place.

Contamination - Polluting or making something impure.

Corrective (or remedial) action - Response required to address an environmental problem that is in conflict with the requirements of the EMPr. The need for corrective action shall be determined through monitoring, audits or management review.

Degradation - The lowering of the quality of the environment through human activities, e.g. river degradation, soil degradation.

Ecology - The scientific study of the relationship between living things (animals, plants and humans) and their environment.

Ecosystem - The relationship and interaction between plants, animals and the non-living environment.

Environment - Our surroundings, including living and non-living elements, e.g. land, soil, plants, animals, air, water and humans. The environment also refers to our social and economic surroundings, and our effect on our surroundings.

Environmental Impact Assessment (EIA) - An Environmental Impact Assessment (EIA) refers to the process of identifying, predicting and assessing the potential positive and negative social, economic and biophysical impacts of a proposed development. The EIA includes an evaluation of alternatives; recommendations for appropriate management actions for minimising or avoiding negative impacts and for enhancing positive impacts; as well as proposed monitoring measures.

Environmental Management System (EMS) - Environmental Management Systems (EMS) provide guidance on how to manage the environmental impacts of activities, products and services. They detail the organisational structure, responsibilities, practices, procedures, processes and resources for environmental management. The ISO14001 EMS standard has been developed by the International Standards Organisation.

Environmental policy - Statement of intent and principles in relation to overall environmental performance, providing a framework for the setting of objectives and targets.

For the purposes of this Specification the following definitions shall apply (please note some definitions may not apply to this EMP):

Fynbos - Low-growing and evergreen vegetation found only in the south Western Cape. Fynbos is known for its rich biodiversity.

Habitat - The physical environment that is home to plants and animals in an area, and where they live, feed and reproduce.

Hazardous waste – Waste, even in small amounts, that can cause damage to plants, animals, their habitat and the well-being of human beings, e.g. waste from factories, detergents, pesticides, hydrocarbons, etc.

Impact - A description of the potential effect or consequence of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space.

Indigenous species - Plants and animals that are naturally found in an area.

Infrastructure - The network of facilities and services that are needed for economic activities, e.g. roads, electricity, water, sewerage.

Integrated - Mixing or combining all useful information and factors into a joint or unified whole.

Integrated Environmental Management (IEM) - A way of managing the environment by including environmental factors in all stages of development. This includes thinking about physical, social, cultural and economic factors and consulting with all the people affected by the proposed developments. Also called "IEM".

Land use - The use of land for human activities, e.g. residential, commercial, industrial use.

Mitigation - Measures designed to avoid, reduce or remedy adverse impacts

Natural environment - Our physical surroundings, including plants and animals, when they are unspoiled by human activities.

No-Go area- means any area where no access is allowed.

Over-utilisation - Over-using resources - this affects their future use and the environment.

Policy - A set of aims, guidelines and procedures to help you make decisions and manage an organisation or structure. Policies are based on people's values and goals. See Integrated Metropolitan Environmental Policy.

Process - Development usually happens through a process - a number of planned steps or stages.

Proponent – Developer. Entity which applies for environmental approval and is ultimately accountable for compliance to conditions stipulated in the Environmental authorisation (EA) and requirements of the EMPr.

Recycling - Collecting, cleaning and re-using materials.

Refuse- refers to all solid waste, including construction debris (cement bags, wrapping materials), waste and surplus food, food packaging, organic waste etc.

Resources - Parts of our natural environment that we use and protect, e.g. land, forests, water, wildlife, and minerals.

Scoping Report - A report presenting the findings of the scoping phase of the EIA. This report is primarily aimed at reaching closure on the issues and alternatives to be addressed in the EIA (in the case of a full EIA process).

See Integrated Environmental Management.

Stakeholders - A subgroup of the public whose interests may be positively or negatively affected by a proposal or activity and/or who are concerned with a proposal or activity and its consequences. The term includes the proponent, authorities and all interested and affected parties.

Storm water management – Strategies implemented to control the surface flow of storm water such that erosion, sedimentation and pollution of surface and ground water resources in the immediate and surrounding environments are mitigated. This is specifically important during the construction and decommissioning phases of a project.

Sustainability - Being able to meet the needs of present and future resources.

Sustainable development - Development that is planned to meet the needs of present and future generations, e.g. the need for basic environmental, social and economic services. Sustainable development includes using and maintaining resources responsibly.

Waste Management – Classifying, recycling, treatment and disposal of waste generated during construction and decommissioning activities.

Wetlands - An area of land with water mostly at or near the surface, resulting in a waterlogged habitat containing characteristic vegetation species and soil types e.g. vleis, swamps.

Zoning - The control of land use by only allowing specific type development in fixed areas or zones.

Requirements as stated in GN 982 Environmental Impact Assessment Regulations, 2014, Appendix 4 and corresponding section.

Requirement	Section
1. (1) An EMPr must comply with section 24N of the Act and include-	
(a) details of (i) the EAP who prepared the EMPr; and (ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;	Details of EAP, page 9 Appendix G: EAP Curriculum Vitae, page 83
(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Environmental auditing and monitoring schedule included on page 26
(c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;	Appendix F: Project map, page 82
d) a description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including- (i) planning and design; (ii) pre-construction activities; (iii) construction activities; (iv) rehabilitation of the environment after construction and where applicable post closure; and (v) where relevant, operation activities;	Aim and Objectives of the EMPr, page 17 Mitigation measures and management actions included in page 28.
e) a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	Proposed Impact Management Actions refers to the outcomes in the table on page 32.
(f) a description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to – (i) avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;	Mitigation measures and management actions included in page 32. Further detail with regards to the Compliance with Applicable Laws on page 18.

(ii) comply with any prescribed environmental management standards or practices; (iii) comply with any applicable provisions of the Act regarding closure, where applicable; and (iv) comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable;	
(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Mitigation measures and management actions included in page 32. Monitoring & Auditing on page 23.
(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Monitoring & Auditing on page 23. Frequency etc included in table in Proposed Impact Management Actions on page 32.
(i) an indication of the persons who will be responsible for the implementation of the impact management actions;	Aim and Objectives of the EMPr, page 17 Compliance with Applicable Laws, page 18. Roles and Responsibilities on page 18.
(j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Proposed Impact Management Actions includes the expected time management on page 32.
(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Proposed Impact Management Actions includes the mechanism for monitoring and compliance on page 32. The Monitoring & Auditing on page 23.
(l) a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Monitoring & Auditing refers to reporting on compliance on page 23 This is also outlined in section Management Programme – Operational on page 28.
m) an environmental awareness plan describing the manner in which- (i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and	This is included under page 26.
(n) any specific information that may be required by the competent authority	Appendix G.

Details of EAP

Company of Environmental Assessment Practitioner (EAP):	GroenbergEnviro (Pty) Ltd	
EAP name:	Elanie Kühn	
Postal address:	P. O. Box 1058	
	Wellington	Postal code: 7655
Telephone:	021 873 7228	Cell: 076 584 0822
E-mail:	elaniem@iafrica.com elanie@groenbergenviro.co.za	Fax: 086 672 1946
EAP Qualifications:	<p>Pieter Badenhorst - 46 years' experience (16 @ CSIR) in environmental management; report writing; project management; facilitation also including preparing of EMPr's</p> <p>Elanie Kühn – BSc Hons. in Environmental Management, 14 years' experience in environmental management and water use license applications etc.</p>	
EAP Registrations/Associations:	<p>Pieter -IAIAsa, Pr Eng, SAICE</p> <p>Elanie - IAIAsa</p>	

1 Introduction

Locality:

The property (Mosplaas Farm) on which the construction of the agricultural development (orchards/vineyards) and associated infrastructure took place, is situated on the Kakamas South Settlement (KSS) No. 2255, 2149, 1710 and 2152.

The farm is situated approximately 10 km south-east of Kakamas along the R359, in the Northern Cape (see **Figure 1**). The affected site lies south of the Orange River and is currently zoned Agriculture Zone I. Small ephemeral streams cross the entire site. The owner of the farm is Mosplaas Sitrus (Pty) Ltd, who has appointed GroenbergEnviro (Pty) Ltd as the independent environmental consultant to conduct the required environmental authorisation process.

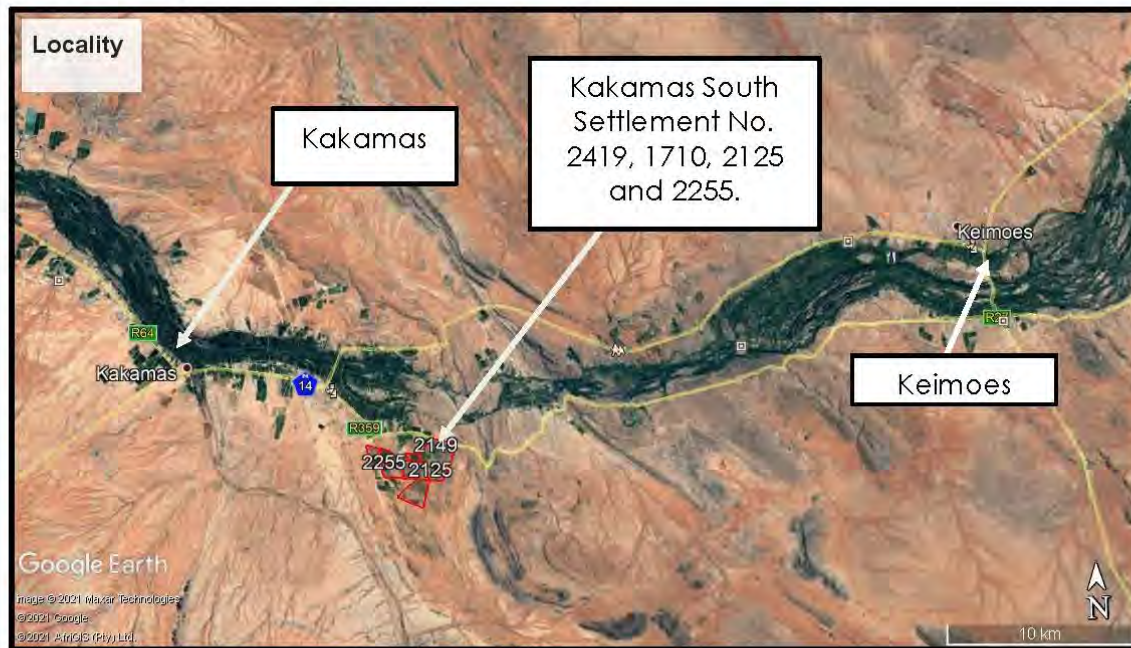


Figure 1: Locality map of Kakamas, South Settlement No. 2149, 1740, 2125, 2255

Project Description:

The agricultural development triggered a section 24G process due to the unlawful clearing within 32m of a stream without prior authorisation.

During the period from 1997 to 2016 various developments have taken place on the farm, of which most are the agricultural developments of vineyards and orchards. The agricultural development consisted of various listed activities that triggered the ECA 1997 up until the NEMA 2016, outlined below accordingly.

Also refer to the Historical Google Earth images shown in **Figures 2 to 9**.

NEMA Application:

(The affected areas are outlined below as per the areas that were developed and the associated timeframe to each given with the NEMA listed activities).

1. 1997-1999 Development:

- Construction took place during 1998 for the infrastructure development of the orchards/vineyards on Block 4 (KSS 2125) of approximately (72ha), as shown in **Figure 2** Error! Reference source not found. as the purple area.
- The construction took place over small ephemeral streams without prior authorisation.

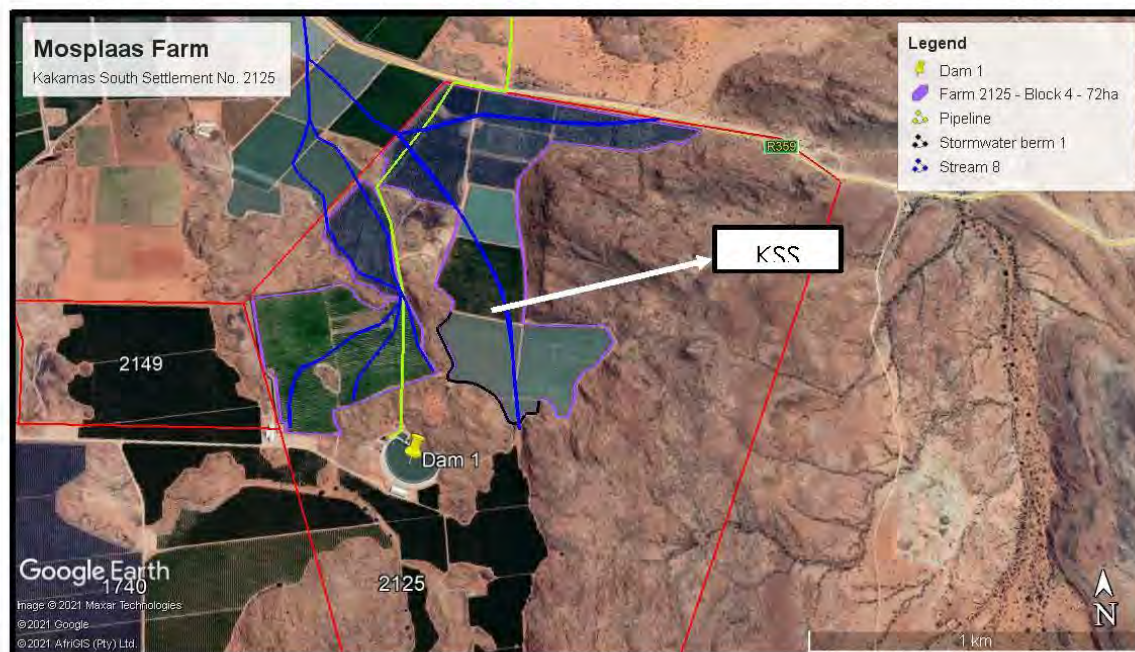


Figure 2: Unlawfully cleared vegetation indicated in purple.

2. 2006-2010 Development

- Construction of orchards/vineyards across small streams on the following properties:
 KSS 2255 – 124ha, see **Figure 3** and **Figure 4**;
 KSS 2125 – Block 2 – 70.2ha (orange), Block 3 – 19ha (white) and Block 1– 22ha (turquoise blocks), see **Figure 5** and **Figure 6**;
 KSS 1740 – 80ha, see pink areas in **Figure 7** and **Figure 8**;
 KSS 2419 – 23ha, see yellow areas in **Figure 7** and **Figure 8**.
- The construction of a dam (Dam 1) with a volume of 42 000m³, and a wall height of 4.95m on KSS 2125. It is noted that the dam in itself did not trigger an activities, however, it triggered NEMA as the dam was constructed within 32m from a small stream, see **Figure 5** and **Figure 6**;
- The construction of a dam (Dam 2) with a volume of 1 900m³ on KSS 2125. The dam did not activate an activity due to the small size. However, the dam runs across small streams, see **Figure 3** and **Figure 4**.

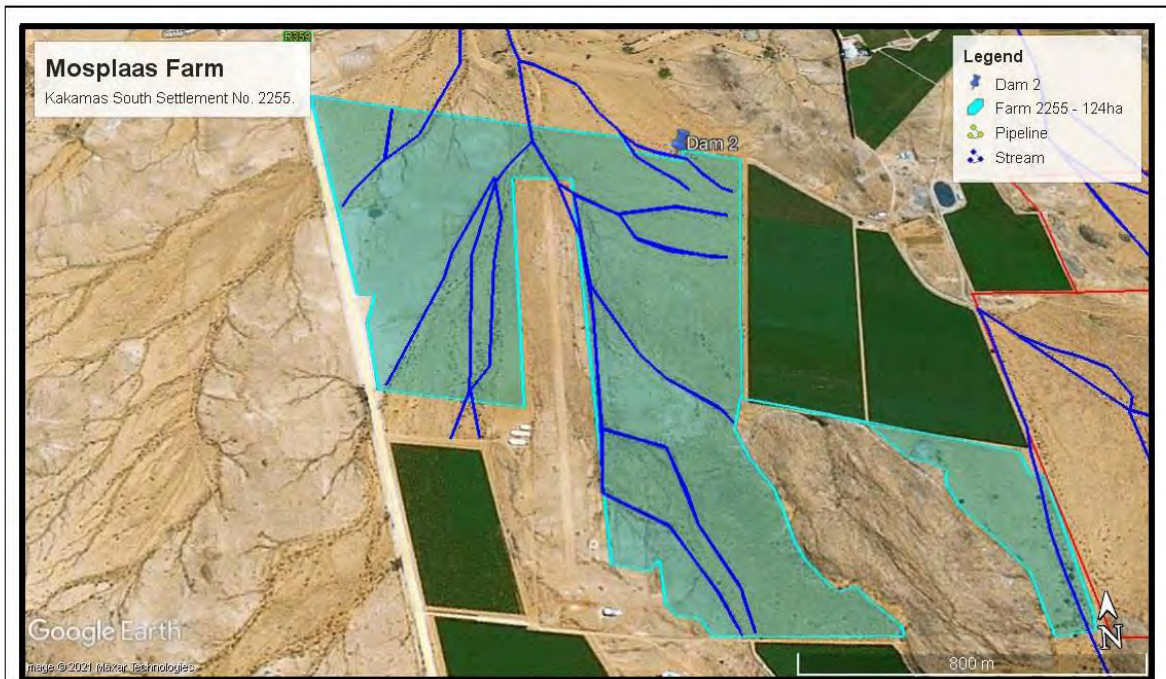


Figure 3: Farm 2255, 124ha orchards / vineyards (Google 2006)

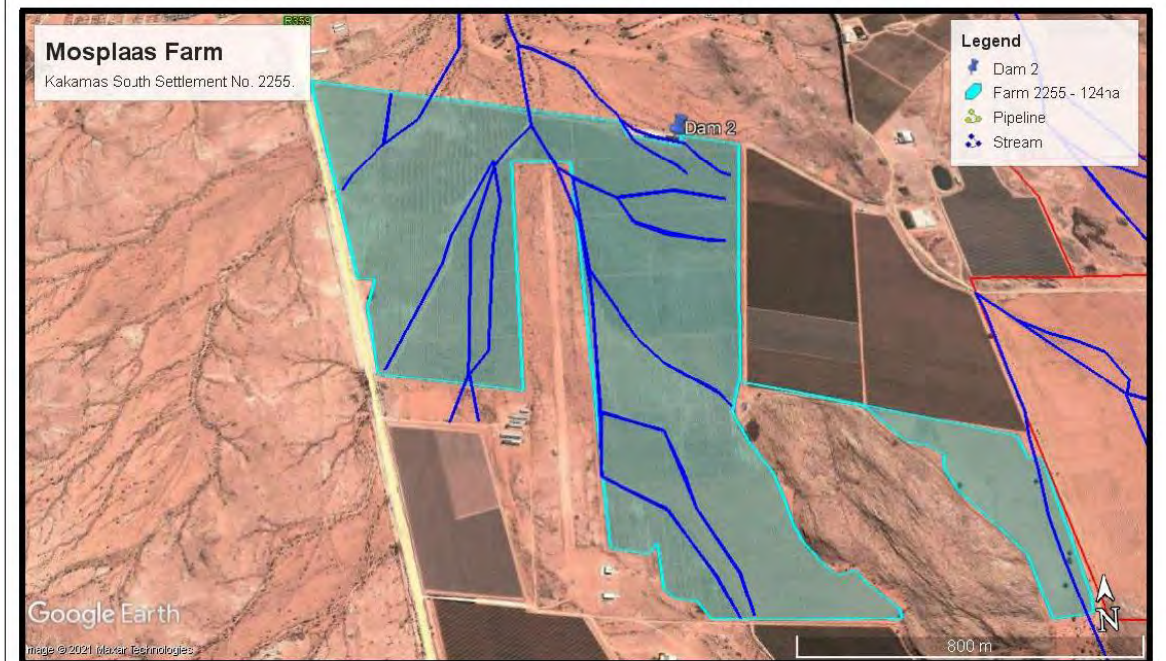


Figure 4: Farm 2255, 124ha orchards / vineyards (Google 2010)

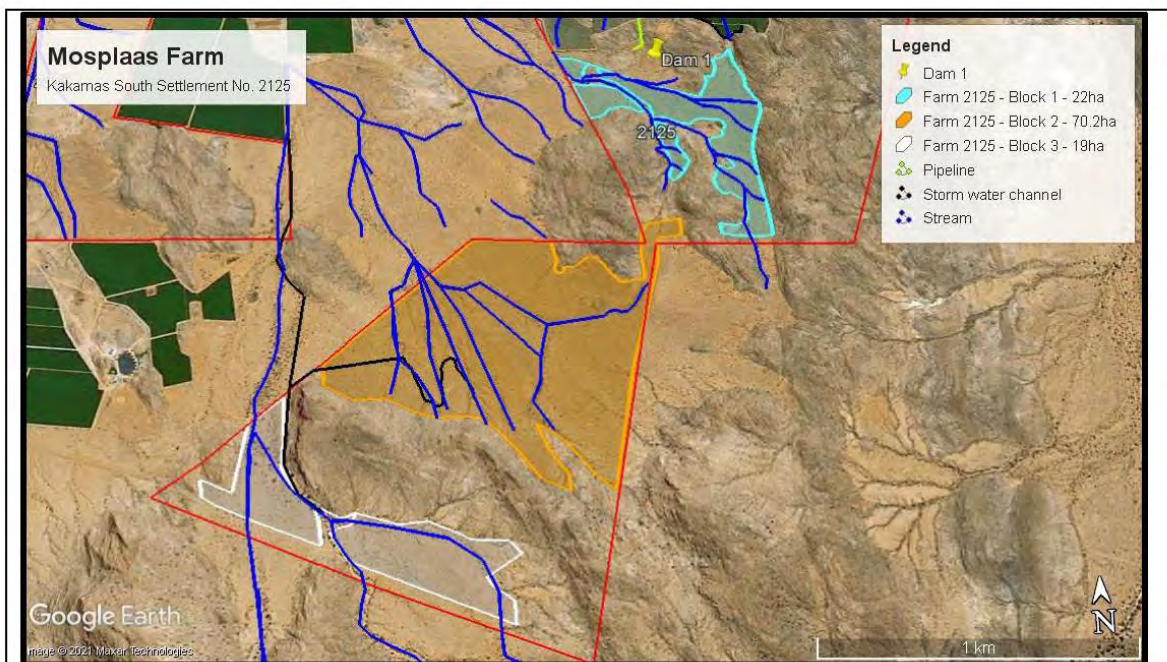


Figure 5: Farm 2125, Block 1, 2 and 3 (Google 2006)

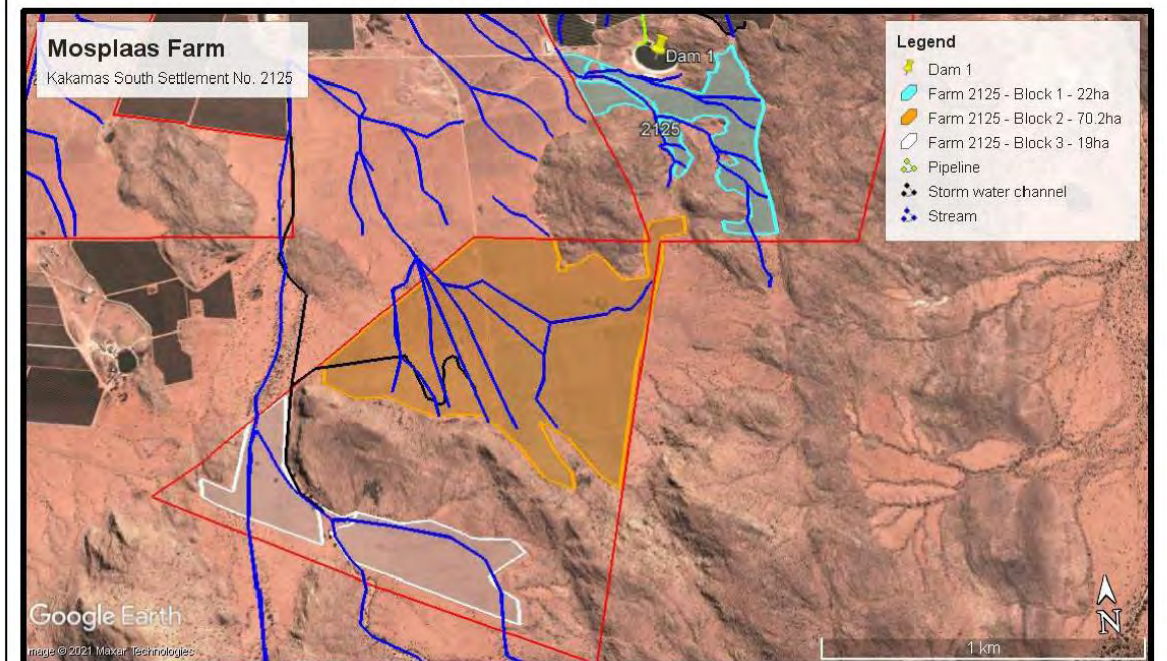


Figure 6: Farm 2125, Block 1, 2 and 3 (Google 2010)

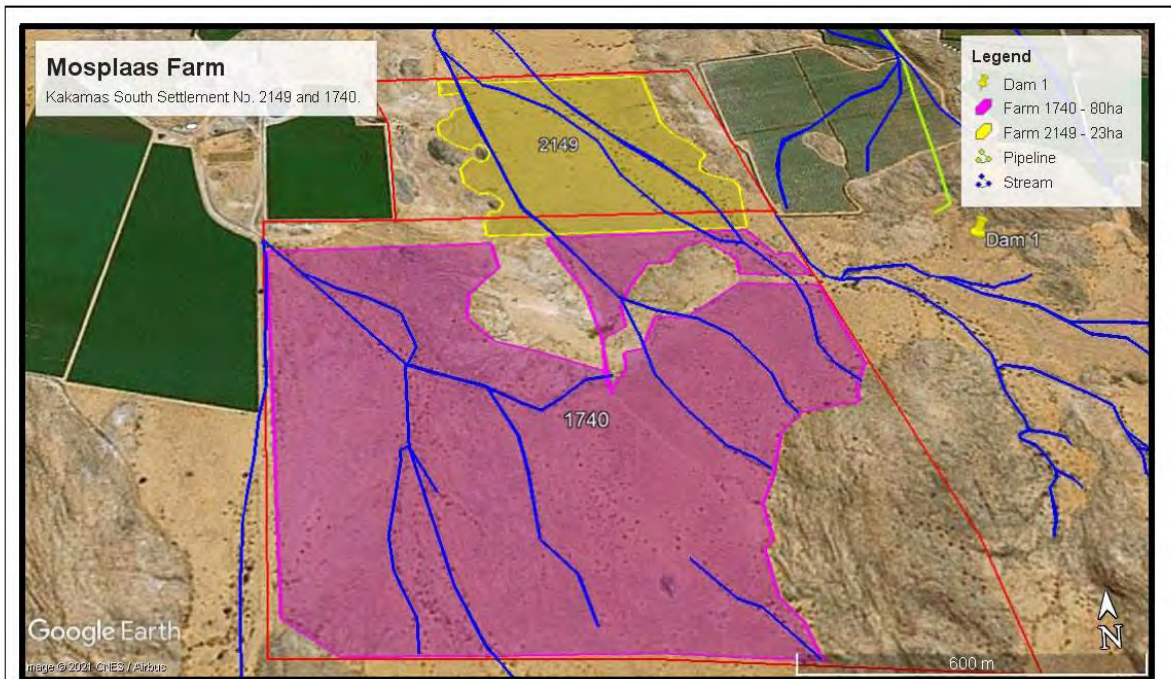


Figure 7: Farm 2419 and 1740 (Google 2006)

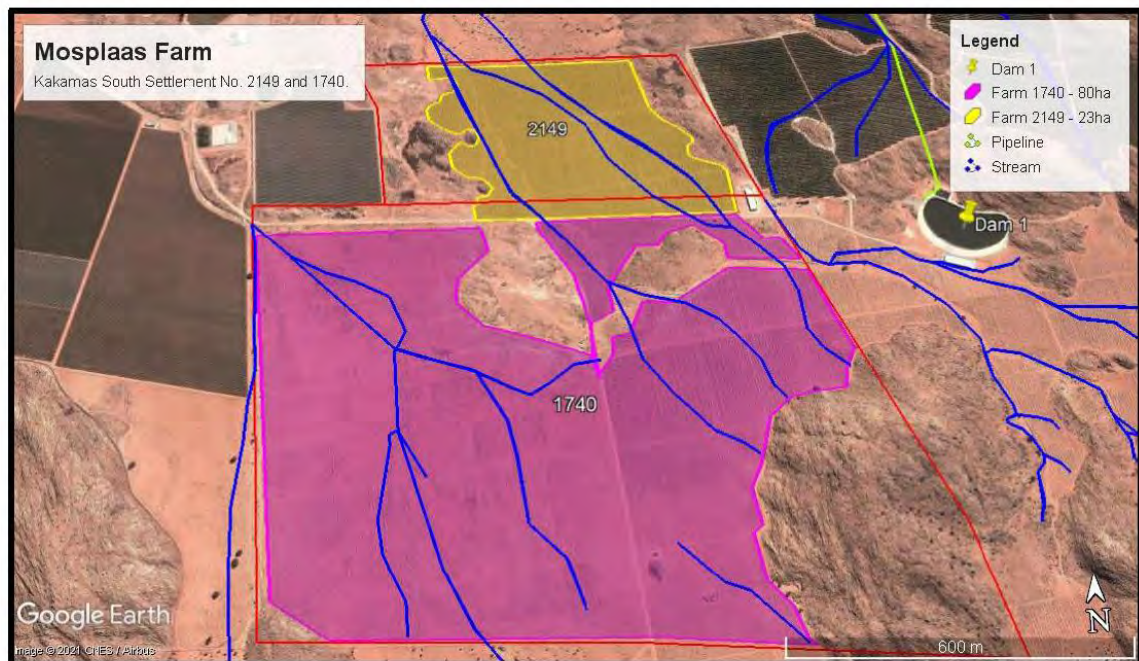


Figure 8: Farm 2419 and 1740 (Google 2010)

Please see Figure 9 below for the final development areas outlined.

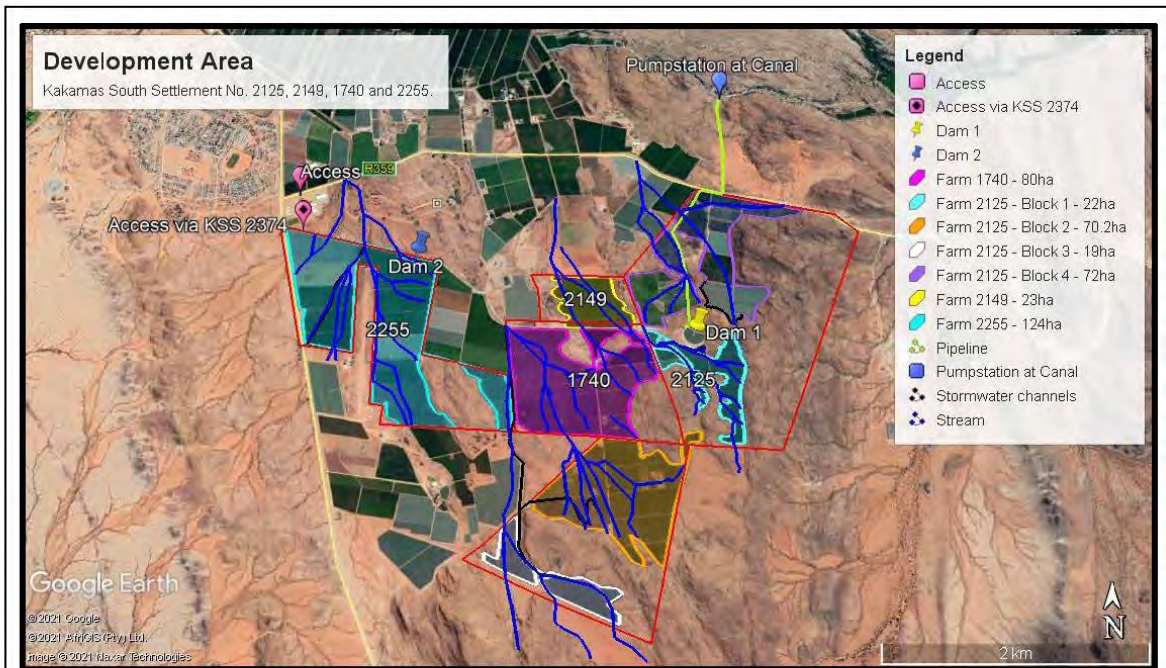


Figure 9: Final development layout

Roads:

Access to the farm is gained via a gravel road that intersects with the R359 (see Figure 10). The internal farm roads are not surfaced and consist of in-situ compacted earth with no formal storm water management structures in place for the stream crossings. This is due to the low rainfall characteristic of the area negating the need to provide formal storm water control.



Figure 10: Access to the farm

Pipelines:

The pipelines that come from a canal was constructed prior to 1997, therefore no listed activities applicable, see **Figure 9**.

Water:

Application for a license in terms of the National Water Act, 1998 is made by the developer, Mosplaas Citrus PTY Ltd, for the following water usages:

Table 1: Applying for the following Water Uses.

(a) taking of water	For the re-allocation of water between two properties, to ensure the water allocation is distributed according to development areas per property.
(b)	Registration of a small dam. Dam 2 is a small balancing dam, with a capacity of 1 900m ³ .
(c) impeding or diverting flow of water in a watercourse	For the construction of agricultural areas across ephemeral streams/natural drainage areas.
(i) altering the bed, banks, course or characteristics of a watercourse	For the construction of agricultural areas across ephemeral streams/natural drainage areas.

The Water Use License Application for Section 21(c), and (i) of the National Water Act, is for the streams that were diverted and crossed, as part of the illegal establishment of orchards/vineyards. The establishment of the orchards/vineyards on Kakamas South Settlement 2255, 2125, 2149 and 1740 took place across small sections of the unnamed ephemeral streams that is located on-site. Mosplaas Farm falls within the Quaternary Catchment Region D73F. The agricultural development had an impact on drainage streams that can be regarded as non-perennial watercourses that would have naturally flow during heavy rain pours.

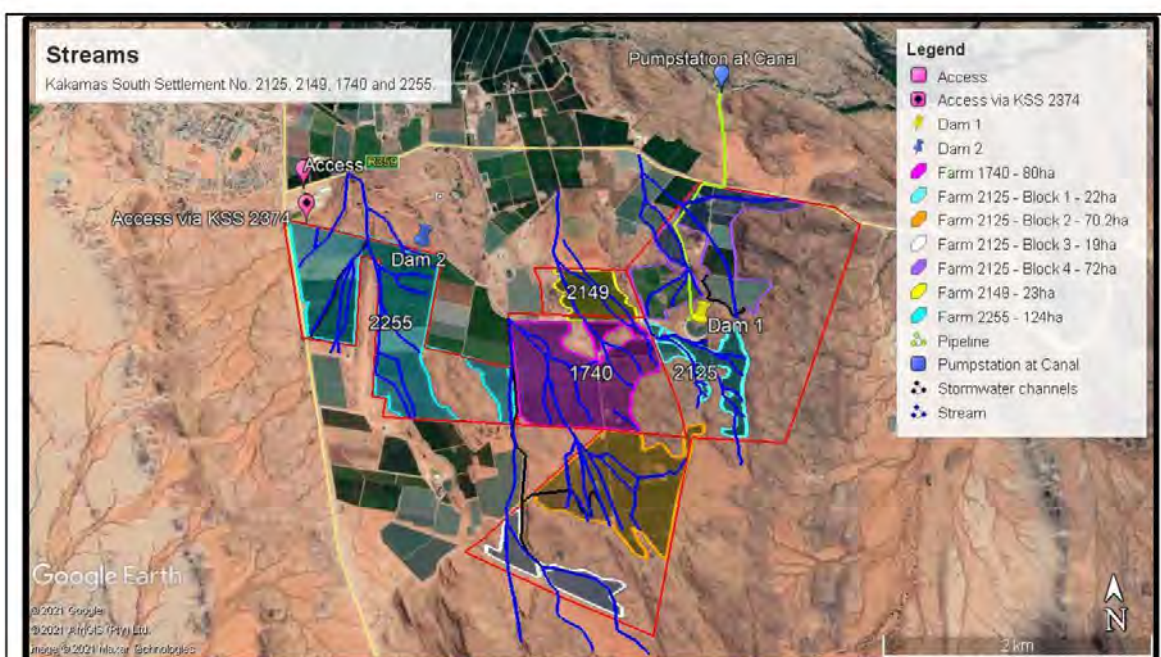


Figure 11: Ephemeral streams/drainage areas

The final part of the application is for a Section 21 (a) to rectify the water allocations on the various properties within Mosplaas Farm with regards to the actual hectares planted as outlined below in Table 2.

Table 2: Properties, Owners, Water Rights and Plough Certificate

Property description	Property area (ha)	Vineyards and orchards (ha)	Area disturbed for the developed (ha)	Existing Irrigation m ³ (ha x 15 000)	Water allocations as per WARMs Certificates	Donor and receiving (m ³)	TOTAL Water rights
Erf 1740 Kakamas South Settlement	116,3878	80	80	1 200 000	99,3 (1 489 500)		1 489 500
Erf 2149 Kakamas South Settlement	31,8114	22,72	23	345 000	20 (300 000)	Receiving property 3ha (45 000)	345 000
Erf 2255 Kakamas South Settlement	159,4888	123,67	124	1 860 000	54 (795 000)	Receiving property 70ha (1 050 000)	1 860 000
Erf 2125 Kakamas	449,9997	96,75	183.2	2 748 000	268,2 (4 023 000)	Donor property 195.2 (70 + 3)	2 928 000

South Settlement						=73(1 095 000)	
TOTAL			410.2ha		441.5ha		6 622 500

As shown above water will have to be moved from Erf 2125 to Erf 2255 and Erf 2149 to allow the correct water allocations per property.

There are two dams on the farms. Dam 1 has an existing License (14/D53J/B/1649). Dam 2 is a small balancing dam, with a capacity of 1 900m³.

Electricity:

There are existing electricity connections available for the farms.

This document is a requirement for environmental authorization (EA) to be attached at Appendix A. All mitigation measures included in the EA will be inserted into Appendix C. On approval by DEA&DP the developer must ensure that its conditions are implemented by making the document available to the contractor and also ensure that an ECO or the Resident Engineer are appointed, and systems are in place to evaluate compliance. The contractor(s) is expected to familiarise himself with the contents of this document and to implement its conditions.

Overall the EMPr will aim to:

- Control the construction and operational activities in such a way that negative impacts on the physical environment, sensitive areas and surrounding residential areas are prevented or minimised.
- Ensure that mitigation and rehabilitation measures are implemented where required.

Please note that this document does not replace any other regulations, laws and bylaws that the contractor must adhere to. It specifically does not replace the regulations of the Occupational Health and Safety act of 1993 (Act No. 85 of 1993).

Funding for the implementation of the Construction EMPr is the financial responsibility of the developer.

The project environmental issues are shown in section 2 with the construction EMPr in section 3 and the operational EMPr in section 4.

2 Environmental issues

No significant biophysical impacts are anticipated as the environment has been degraded due to agricultural activities in the surrounding area.

2.1 Vegetation

VEGETATION AND FAUNA (AS PER THE BOTANICAL OPINION, INCLUDED IN BAR)

“The two vegetation types found at Mosplaas, according to Mucina et al. (2006) are Bushmanland Arid Grassland (Figure 12).

The areas under cultivation in the respective historical vegetation types are as follows:

- *Erf 2125 Block 1 – 20ha: Lower Gariep Broken Veld.*
- *Erf 2125 Block 2 – 70.2ha: Lower Gariep Broken Veld, 47.6 ha; Bushmanland Arid Grassland, 22.6 ha.*
- *Erf 2125 Block 3 – 19ha: Lower Gariep Broken Veld.*
- *Erf 2125 Block 4 – 72ha: Lower Gariep Broken Veld.*
- *Erf 1740 – 80ha: Lower Gariep Broken Veld, 6.7ha; Bushmanland Arid Grassland, 73.3 ha.*
- *Erf 2149 – 43ha: Lower Gariep Broken Veld 0.48ha; Bushmanland Arid Grassland, 42.52ha.*
- *Erf 2255 – 124ha: Bushmanland Arid Grassland.*

It is noted that Dam 1 is located in an area that was Lower Gariep Broken Veld and Dam 2 is located in an area that was Bushmanland Arid Grassland (Figure 13, Figure 14 and Figure 15).

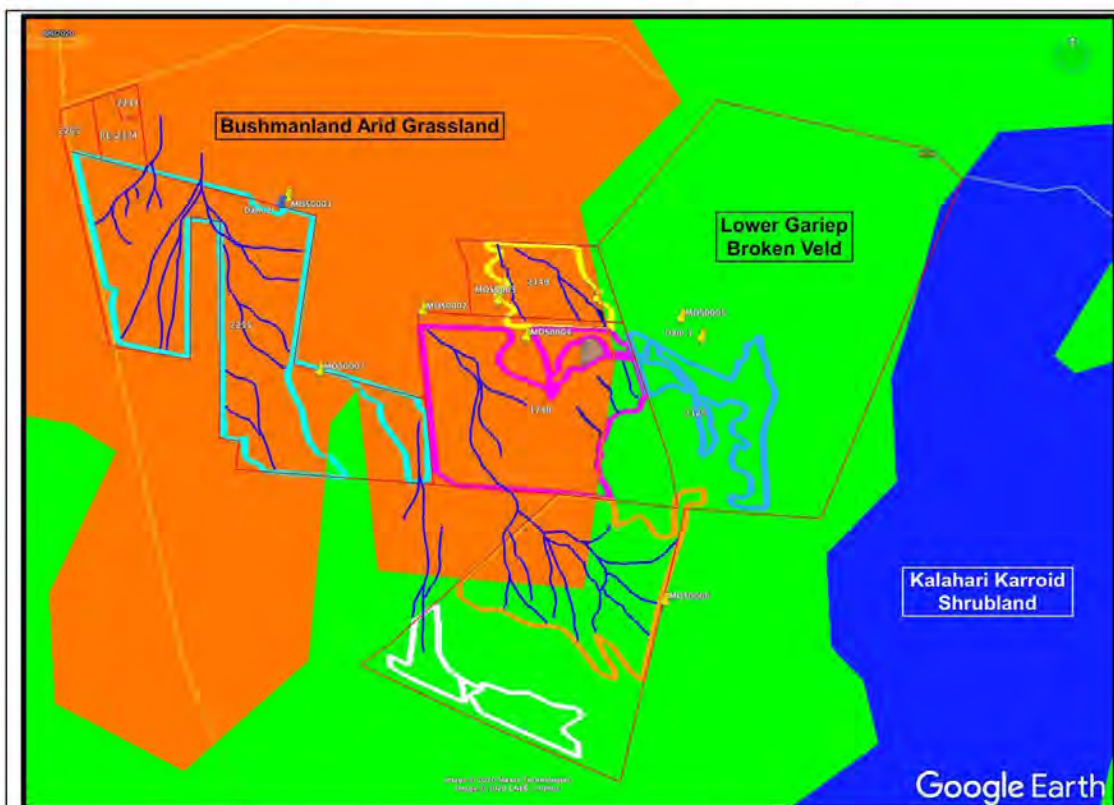


Figure 12: Portion of the Vegetation Map of South Africa, Swaziland and Lesotho (SANBI 2018) with Mosplaas overlaid.

Erf 2149 (yellow boundary); Erf 1740 (pink boundary); Erf 2255 (light blue-green boundary); Erf 2125 Block 1 (light blue boundary); Block 2 (orange boundary); Block 3 (white boundary). Block 4 is indicated but does not form part of this investigation. Note the dark blue lines denoting seasonal watercourses. The sample waypoints are shown with yellow pins and the dams with blue pins.



Figure 13: Uncultivated Bushmanland Arid Grassland outside the Mosplaas boundary to the west of the farm



Figure 14: Uncultivated Bushmanland Arid Grassland with *Senegalia mellifera* subsp. *detinens* (black thorn) prominent shrubby trees. Very little rock is exposed



Figure 15: Lower Gariep Broken Veld found on rocky substrates

It is shown in Figure 12 that the areas of high biodiversity sensitivity (that also reflect the vegetation sensitivity i.e. high) are outside the cultivated areas for this application. The cultivated areas have low biodiversity sensitivity. This outcome agrees with the Critical Biodiversity Areas map for the Northern Cape Province (Figure 16) that indicates that the CBA1 areas are the areas that are not cultivated (and consist mostly of Lower Gariep Broken Veld), the CBA2 classification applies only to the south-eastern part of Erf 2125. The CBA map designates the classification of 'Other Natural Areas' to most of the uncultivated land in the western half of Mosplaas."

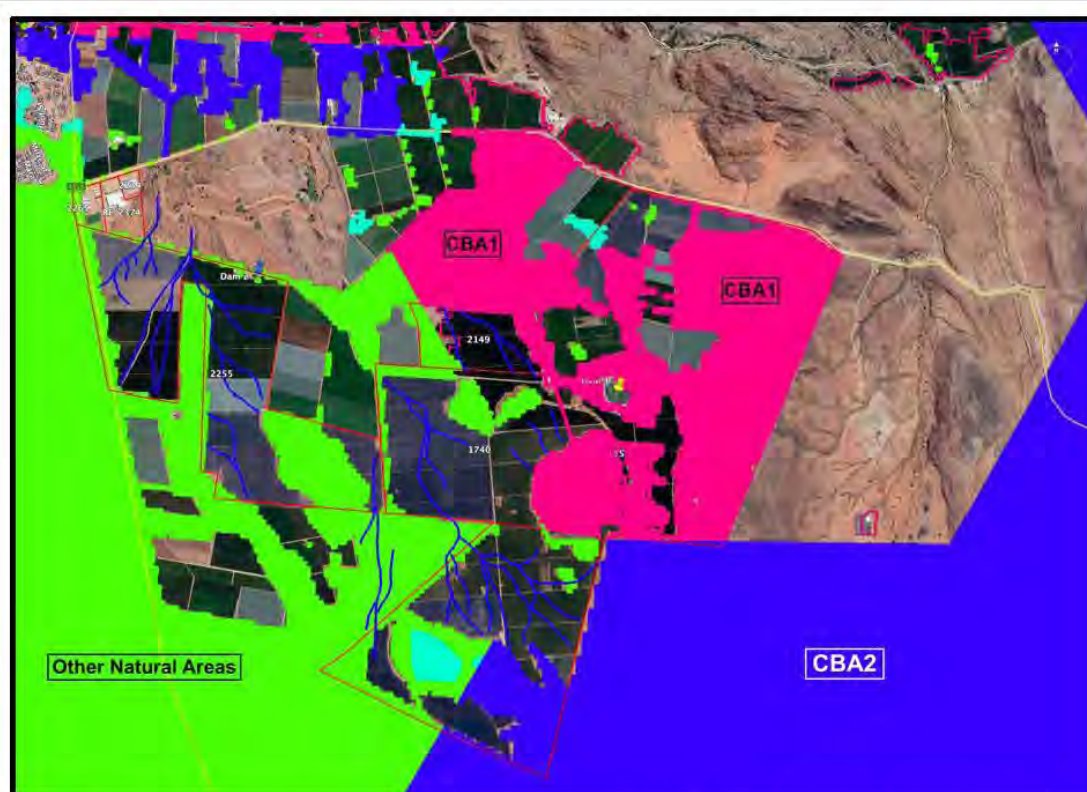


Figure 16: Portion of the Critical Biodiversity Areas map for the Northern Cape Province as it pertains to Mosplaas.

“The areas cultivated with orchards / vineyards at Mosplaas are mainly in areas that were originally vegetated with Bushmanland Arid Grassland. The exception is Erf 2125 Block 4 where, according to the mapping, Lower Gariep Broken Veld was cleared. However, the latter area was not included in this investigation.

*The areas of Bushmanland Arid Grassland were generally not sensitive. However, reference to **Figure 12** shows that all the areas investigated except for Erf 2125, Blocks 2 & 3 had seasonal watercourses (seasonal streams) or washes prior to cultivation. All these washes have now been disturbed by diversion or simply removal of the vegetation. This will no doubt have a negative impact in the short to long term since no water would be dispersed in these areas to recharge the aquifer.*

Given the above, and that Bushmanland Arid Grassland is a very widespread vegetation type and is not threatened in any way at a broad scale, the impact of the clearing of natural vegetation and the agricultural development is considered to be Medium to Low Negative at a local scale.

Dam 2 is located in an area that formerly supported Bushmanland Arid Grassland and since the surface area of the dam is small, it would have had negligible negative impact beyond that of the adjacent fruit orchards.

Dam 1 is located in an area historically mapped as Lower Gariep Broken Veld and it falls within an area mapped as CBA1. The dam is located on a flat, not rocky, area that was probably transitional

between Lower Gariep Broken Veld and Bushmanland Arid Grassland. Therefore, the impact of the dam is considered to be Medium Negative at a local scale, but Low Negative at a broad scale.

The cumulative impact of the loss of Bushmanland Arid Grassland at Mosplaas is rated as being Low to Very Low Negative due to the extensive occurrence of this habitat type. The negative impact on the season streams is also considered to be Low Negative in terms of cumulative impacts.

Very little Lower Gariep Broken Veld (and CBA1 areas) has been disturbed by the farming operation. Consequently, the negative cumulative impacts are very low.”

2.2 Aquatic habitat

AQUATIC FEATURES (AS PER THE BOTANICAL OPINION, INCLUDED IN BAR)

The areas cultivated with orchards/ vineyards at Mosplaas are mainly in areas that were originally vegetated with Bushmanland Arid Grassland. The exception is Erf 2125 Block 4 where, according to the mapping, Lower Gariep Broken Veld was cleared. However, the latter area was not included in this investigation.

*The areas of Bushmanland Arid Grassland were generally not sensitive. However, reference to **Figure 12** shows that all the areas investigated except for Erf 2125, Blocks 2 & 3 had seasonal watercourses (seasonal streams) or washes prior to cultivation. All these washes have now been disturbed by diversion or simply removal of the vegetation. This will no doubt have a negative impact in the short to long term since no water would be dispersed in these areas to recharge the aquifer.*

The negative impact on the season streams is also considered to be Low Negative in terms of cumulative impacts.”

It is noted, however, that these drainage systems are classified as ephemeral courses, as it may only flow sporadically after rainfall, see **Figure 17**. These watercourses are not considered to be seasonal rivers/streams that will regularly contain water in a seasonal pattern.

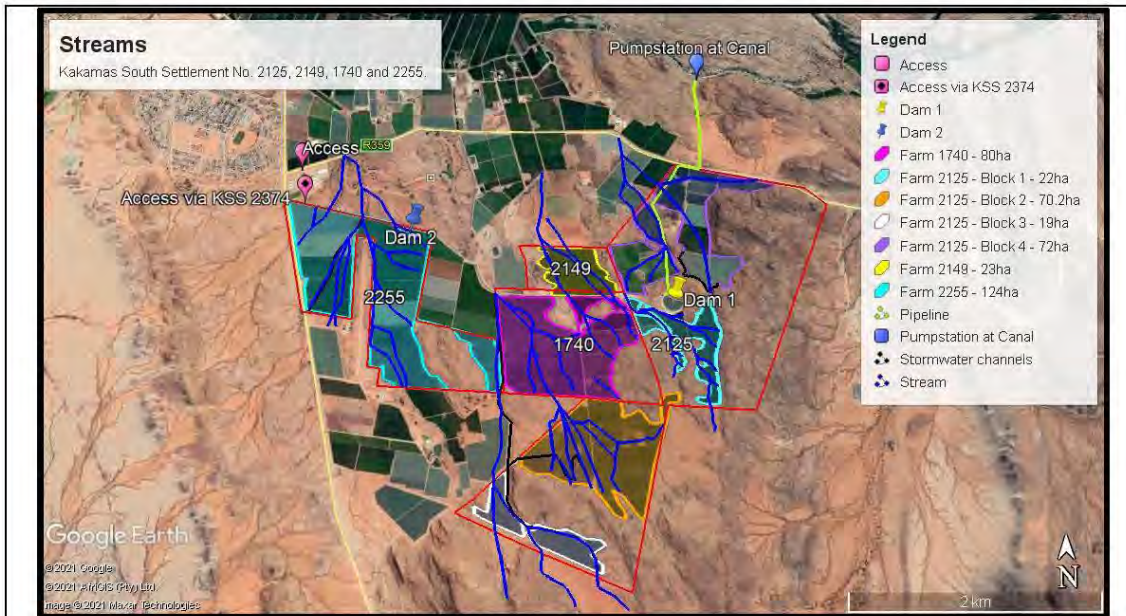


Figure 17: Non-Perennial Streams

ARCHAEOLOGY AND PALAEOLOGY (AS PER THE ARCHAEOLOGY AND PALAEOLOGY ASSESSMENTS, INCLUDED IN BAR)

Archaeology:

Findings:

No archaeological resources were recorded in the 410ha footprint area of the unauthorised development. The extensive agricultural development constitutes a highly transformed and modified landscape. However, one banded ironstone MSA flake and a utilized cortex flake/chunk (S28° 49.382' E20° 39.737') were recorded in the rocky hills overlooking Erf 2125/Block 9.

Built environment:

No old buildings, structures, features or equipment were recorded on the farm.

Graves:

No graves were encountered during the site assessment.

Impacts:

In the case of the illegal agricultural development on the farm Mosplaas in Kakamas, it is expected that impacts on pre-colonial archaeological heritage are likely to have been low.

Conclusion:

Cultivation of illegal citrus orchards on the Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement) has completely transformed the receiving environment.

The literature survey indicates that it is unlikely that significant archaeological resources were impacted by the development.

The impact significance of the unauthorised development archaeological heritage is therefore, assessed as low. With regard to an illegal agricultural development on the Farm Mossop (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement), no further archaeological mitigation is required.”

Palaeontology:

“The overall palaeontological impact significance of the agricultural developments on Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement) is considered to be LOW because:

- *Most of the study area is underlain by unfossiliferous igneous or metamorphic basement rocks (granite-gneisses etc.) or mantled by superficial sediments of low palaeontological sensitivity.*
- *Much of the area is already highly disturbed.*

It is therefore recommended that, pending the discovery of significant new fossils on site, exemption from further specialist palaeontological studies and mitigation be granted for this development.

Should any substantial fossil remain (e.g., vertebrate bones and teeth, shells, calcretised burrows) be encountered during excavation, however, these should be reported to SAHRA for possible mitigation by a professional palaeontologist (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za). A tabulated Chance Fossil Finds Procedure is appended to this report.

Please note that:

- *All South African fossil heritage is protected by law (South African Heritage Resources Act, 1999) and fossils cannot be collected, damaged or disturbed without a permit from SAHRA or the relevant Provincial Heritage Resources Agency.*
- *The palaeontologist concerned with potential mitigation work will need a valid fossil collection permit from SAHRA (Northern Cape) and any material collected would have to be curated in an approved depository (e.g., museum or university collection).*
- *All palaeontological specialist work should conform to international best practice for palaeontological fieldwork and the study (e.g., data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies developed by HWC (2016) and SAHRA (2013).”*

3 Aim and Objectives of the EMPr

The aim of the EMPr is to:

- Identify those construction activities identified for the proposed project that may have a negative impact on the environment;

- Outline the mitigation measures that will need to be taken and the steps necessary for their implementation; and,
- Describe the reporting system to be undertaken during construction.

The objectives of the EMPr are to:

- Identify a range of mitigation measures which shall reduce and mitigate the potential adverse impacts to minimal or insignificant levels;
- Provide a pro-active and practical working mechanism to enable the measurement and monitoring of environmental performance on site; and,
- Ensure that the environmental specifications are identified, effective and contractually binding to enable compliance on site.

4 Compliance with Applicable Laws

The supreme law of the land is “The Constitution of the Republic of South Africa”, which states: *“Every person shall have the right to an environment which is not detrimental to his or her health or well-being”*.

Laws applicable to protection of the environment in terms of Environmental Management (and relating to construction activities) include but are not restricted to:

- National Environmental Management Act, No. 107 of 1998
- National Environmental Management: Air Quality Act (AQA), No. 39 of 2004
- National Environmental Management: Biodiversity Act, No. 10 of 2004
- National Environmental Management: Waste Act, No. 59 of 2008
- National Heritage Resources Act, No. 25 of 1999
- National Forests Act (NFA) (Act 84 of 1998)
- National Water Act, No 36 of 1998 and amendments
- National Veld and Forest Fire Act, No 101 of 1998
- Occupational Health and Safety Act, No 85 of 1993
- Soil Conservation Act, Act No 76 of 1969
- Sub-division of Agricultural Land Act Repeal Act 64 of 1998 (re: soil conservation) and all regulations framed there under and amendments there to.

Of particular importance is Section 28 (1) of the National Environmental Management Act (NEMA – Act 107 of 1998) which places an obligation on all individuals to take due care of the environment and to ensure remedial action is instituted to minimise and mitigate environmental impact.

The EMPr forms part of the Contract Documentation and is thus a legally binding document. In terms of this Act an individual responsible for environmental damage must pay costs both to environment and human health and the preventative measures to reduce or prevent additional pollution and/or environmental damage from occurring. This is referred to as the Polluter Pays Principle.

5 Roles and Responsibilities

The key role players during maintenance work are anticipated to be as follows:

- Applicant (Holder of the EA) – Mosplaas Citrus (Pty) Ltd
- Engineer / Responsible Person (RP), who will oversee the activities of the contractors on site;
- Environmental Control Officer (ECO);
- Contractors responsible for the maintenance and repair activities; and
- Any sub-contractors hired by the contractor.

The anticipated management structure (organogram) is presented in Figure 18 below and shows the proposed lines of communication for maintenance activities. The applicant retains overall responsibility for maintenance and the implementation of the EMPr.

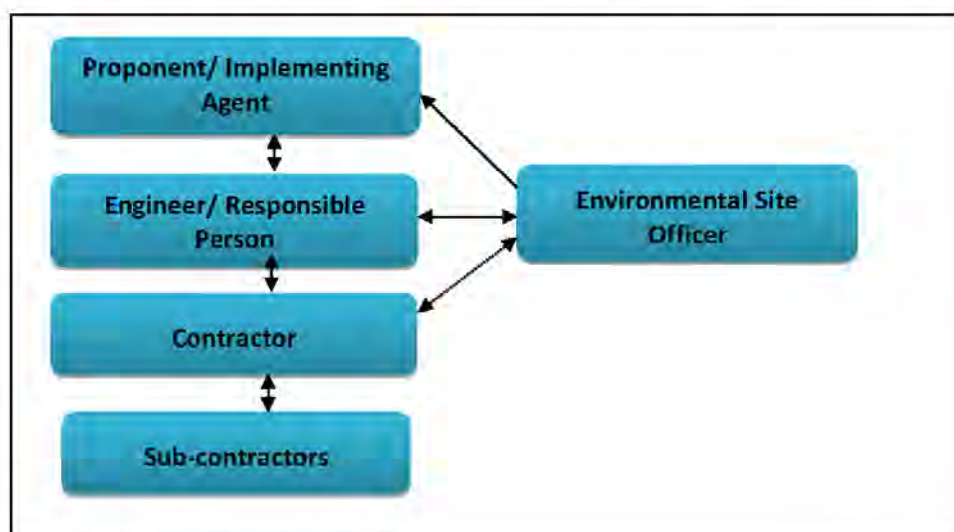


Figure 18: Reporting structure

Key roles and responsibilities with respect to the implementation of the EMPr is outlined below.

Applicant – Mosplaas Sitrus (Pty) Ltd:

The applicant (through their Implementing Agent if applicable) has overall responsibility for management of maintenance activities. In terms of environmental management, the proponent will:

- Appoint suitably experienced Engineers, if required, who will be responsible for the overall management of activities on site;
- Identify any activities not covered by the scope of this EMPr, and determine the need for, and where required, obtain relevant authorisations;
- Ensure that the Engineers are aware of the requirements of the EMPr, implement the EMPr and monitor the Contractor's activities on site;
- Ensure that the Contractor is aware of and contractually bound to the provisions of this EMPr by including the relevant environmental management requirements in tender and contract documents, as appropriate;
- Appoint a suitably qualified and experienced ECO to oversee environmental management of the required works;
- Ensure that the Contractor remedies environmental problems timeously and to the satisfaction of the Engineer and authorities (when necessary); and
- Notify the authorities should problems not be remedied timeously.

Responsible Person:

The applicant will appoint suitably qualified Engineers (if necessary), who in turn will designate a responsible person (RP) to oversee activities of the Contractor. This role will be fulfilled either by the Resident Engineer or a suitably qualified representative of the applicant, if applicable. The RP shall:

- Ensure that the Contractor is duly informed of the EMPr and associated responsibilities and implications of this EMPr prior to commencement of construction and maintenance activities;
- Identify the need for, and request/provide Method Statements for future maintenance and repair works;
- Monitor the Contractor's activities regarding the requirements outlined in the EMPr;
- Report any environmental emergencies/concerns to the applicant immediately; and
- Ensure that non-compliance is remedied timeously and to the satisfaction of the relevant authorities.

Environmental Control Officer:

The ECO shall be a suitably qualified/experienced environmental professional or professional firm, appointed by the proponent, for the duration of repair or maintenance works. The ECO shall:

- Request Method Statements from the Contractor prior to the start of relevant activities, where required, and approve these (as appropriate) without causing undue delay;
- Monitor, review and verify compliance with the EMPr by the main Contractor, as well as any sub-contractors and specialist contractors;
- Undertake site inspections at least twice a month to determine compliance with the EMPr;
- Identify areas of non-compliance and recommend corrective actions (measures) to rectify them in consultation with the applicant, the RP and the Contractor, as required;
- Compile a checklist highlighting areas of non-compliance following each ECO inspection;
- Ensure follow-up and resolution of all non-compliances;
- Provide feedback for continual improvement in environmental performance;
- Respond to changes in project implementation or unanticipated activities which are not addressed in the EMP, and which could potentially have environmental impacts, and advise the applicant, the RP and Contractor as required; and
- Act as a point of contact for local residents and community members.

Contractor:

The Contractor will be required to appoint or designate a Contractor's Environmental Representative (CER) who will assume responsibility for the Contractor's environmental management requirements on site and be the point of contact between the Contractor, the ECO and the RP. The CER shall:

- Ensure that all activities on site are undertaken in accordance with the EMPr and /or an approved Method Statement which applicable;
- Monitor the Contractor's activities with regard to the requirements outlined in the EMPr;
- Ensure that all employees and Sub-contractors comply with the EMPr;
- Immediately notify the RP and ECO of any non-compliance with the EMPr, or any other issues of environmental concern; and
- Ensure that non-compliance is remedied timeously and to the satisfaction of the RP and ECO.

The Contractor has a duty to demonstrate respect and care for the environment. The Contractor will be responsible for the cost of rehabilitation of any environmental damage that may result from non-compliance with the EMPr, environmental regulations and relevant legislation.

Sub-contractors:

All Sub-contractors will be required to:

- Ensure that all employees are duly informed of the EMPr and associated responsibilities and implications of this EMPr prior to maintenance activities;
- Ensure that all activities on site are undertaken in accordance with the EMPr;
- Monitor employees' activities with regard to the requirements outlined in the EMPr;
- Immediately notify the RP and ECO of any non-compliance with the EMPr, or any other issues of environmental concern; and
- Ensure that non-compliance is remedied timeously and to the satisfaction of the RP and ECO.

The Sub-contractor has a duty to demonstrate respect and care for the environment. The Sub-contractor will be responsible for the cost of rehabilitation of any environmental damage that may result from non-compliance with the EMPr, environmental regulations and relevant legislation, resulting from their presence on site.

6 Monitoring & Auditing

6.1 ECO Monitoring

The holder of the E.A. must appoint a suitably experienced environmental control officer ("ECO"), for the duration of the construction and rehabilitation phases of implementation.

The ECO must-

- be appointed prior to commencement of any vegetation clearing or construction/maintenance activities commencing;
- ensure compliance with the EMPr and the conditions contained herein;
- keep record of all activities on site; problems identified; transgressions noted, and task schedule of tasks undertaken by the ECO;
- Remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is ready for operation.

An Environmental Control Officer (ECO) will implement and monitor environmental control of the development. The ECO duties will be as follows:

- **Ensure implementation and monitoring of the EMPr.**
- **Make changes to the EMPr as required.**

- **Please note this EMPr is just for the maintenance, or operational activities as the development has already taken place fully.**

A copy of the Environmental Authorisation, EMPr, any independent assessments of financial provision for rehabilitation and environmental liability, closure plans, audit reports and compliance monitoring reports must be kept at the site of the authorised activities.

Access to the site referred to in Section C must be granted, and the environmental reports mentioned above must be produced, to any authorised official representing the Competent Authority who requests to see it for the purposes of assessing and/or monitoring compliance with the conditions contained herein.

The ECO will maintain a file containing the following:

- 1) Copy of the EMPr
- 2) Methodology statement(s) by the contractor(s) – ONLY FOR MAINTENANCE ACTIVITIES
- 3) Site establishment plan
- 4) Letter from contractor(s) indicating that he has familiarised himself with the contents of the EMPr.
- 5) Letter from contractor(s) on environmental awareness training
- 6) The applicant must ensure that complaints received by the farm are documented.
- 7) The contractor shall maintain a copy of the following documents on-site:
 - Operational Plan;
 - Emergency response and remedial action plan;
 - Environmental Management Programme (EMPr) and other documents related to the operation on file.
- 8) Tracking table (see Appendix B).
- 9) Method Statements (See Appendix E and F).

6.2 Auditing

The holder must, for the period during which the environmental authorisation and EMPr remain valid-

- ensure the compliance with the conditions of the environmental authorisation and the EMPr, is audited;
- An Audit report must be compiled within 6 months after completion of any maintenance construction activities.
- During the operational phase, the holder must ensure that environmental audit(s) are performed and submitted as outlined in the Environmental Authorisation. During the operational phase the frequency of the auditing of compliance with the conditions of the

environmental authorisation and of compliance with the EMPr shall not exceed intervals of 5 years;

- the environmental audit report must be prepared and submitted to the Competent Authority, by an independent person with the relevant environmental auditing expertise;
- The Environmental Audit Report, must-
 - a. provide verifiable findings, in a structured and systematic manner, on-
 - i. the level of compliance with the conditions of the environmental authorisation and the EMPr and whether this is sufficient or not; and
 - ii. The ability of the measures contained in the EMPr to sufficiently provide for the avoidance, management and mitigation of environmental impacts associated with the undertaking of the activity.
 - b. identify and assess any new impacts and risks as a result of undertaking the activity;
 - c. evaluate the effectiveness of the EMPr;
 - d. identify shortcomings in the EMPr;
 - e. identify the need for any changes to the avoidance, management and mitigation measures provided for in the EMPr;
 - f. indicate the date on which the construction work was commenced with and completed or in the case where the development is incomplete, the progress of the development and rehabilitation;
 - g. indicate the date on which the operational phase was commenced with and the progress of the rehabilitation;
 - h. include a photographic record of the site applicable to the audit; and
 - i. Be informed by the ECO reports (where applicable to the construction phase).

7 Environmental auditing and monitoring schedule

Environmental auditing and monitoring schedule			
Non-operational phases			
	Frequency	Record & duties to be fulfilled	Report
ECO site visits	Once Monthly	<ul style="list-style-type: none"> • Ensure compliance with the EMPR and the conditions contained herein; • Keep record of all activities on site; problems identified; transgressions noted, and a task schedule of tasks undertaken by the ECO; • Remain employed until all rehabilitation measures, as required for implementation due to construction damage, are completed and the site is ready for operation. 	Site visit report to holder of EA.
Auditing	Completion of project	Ensure the compliance with the conditions of the environmental authorisation and The EMPR	Submit the Environmental Audit Report(s) to the Competent Authority.
Final construction phase Environmental Audit Report	Within six (6) months of completion of construction.	Ensure the compliance with the conditions of the environmental authorisation and The EMPR	Submit these Environmental Audit Report(s) to the Competent Authority.
Operational phases			
Environmental audit(s)	The frequency of the auditing of compliance with the Conditions of the environmental	<ul style="list-style-type: none"> • The holder must ensure that environmental audit(s) are performed regularly. • The Report must comply with the conditions of the Environmental Authorisation. 	<ul style="list-style-type: none"> • Submit these Environmental Audit Report(s) to the Competent Authority,

	<p>authorisation and of compliance with the EMPR shall not exceed intervals of 5 years.</p>		<ul style="list-style-type: none"> •The environmental audit report must be prepared and submitted to the Competent Authority, by an independent person with the relevant environmental auditing expertise.
--	---	--	---

8 Management Programme – Operational

Please note that the EMPr must be included in any tender documentation and all sub-contractors on the site must be made aware of this EMPr and they must at all times adhere to the procedures specified.

Only those sections applicable to the specific construction activity are relevant and to be implemented.

8.1 Specific conditions as stated in EA

- 1) To be included after issue of EA

8.2 Contractual obligations

1. The Contractor shall acknowledge receipt of copies of the EMPr and confirm in writing that he has familiarised himself with the contents thereof;
2. The Contractor shall comply with all environmental obligations imposed by the RE/ECO/EO.
3. The Contractor shall co-operate fully with the RE/ECO/EO and use his best endeavours to ensure that the objectives of the EMPr are fulfilled in the course of the Contractor's execution of the works or the relevant part thereof.
4. The Contractor must ensure that all workers are given environmental awareness training on the requirements of the EMPr. This must form part of the Contractor's contract agreement. The RE/ECO/EO must be informed in writing of implementation.
5. Working hours will be from 7:00pm to 18:00pm Monday to Saturday. No work will be allowed on Sundays or public holidays.
6. Deliveries will only be allowed between 8:00am and 5pm.
7. Preference must be given to local labour.
8. Workers (except security guards) shall not be housed on site.

8.3 Penalties

Penalties must be instituted for non-compliance. The penalty is over and above the cost of rectifying the problem and/or damage. Penalties vary on a sliding scale from R 1 000 to R 5 000 for non-serious to serious issues as determined by the RE/ECO/EO/EO.

These penalties must be paid into a separate account to be administered by the developer. The RE/ECO/EO/EO will decide how the penalties, if any, are to be spent.

Refer to Appendix D for the Schedule of Fines.

8.4 Methodology statement

Method Statements must be compiled by the contractor(s) before any maintenance construction activity shall commence. The statement must include a site establishment plan indicating all relevant areas. The RE/ECO/EO must approve the Method Statement. Refer to Appendix E.

The ECO must identify Method Statements that will be required as part of the project implementation. The list provided below is generic, and only that which is applicable to the maintenance activities for the existing developed agricultural areas will be required (underlined).

Access routes

- Upgrading and construction of access routes.
- Rehabilitation of temporary access routes.

Alien plant clearing

- Method of control to be used for the eradication or control of alien vegetation.

Blasting

- Details of all methods and logistics associated with blasting.

Bunding

- Method of bunding for static plant.

Camp establishment

- Layout and preparation of the construction camp.
- Method of installing fences required for “no go” areas, working areas and construction camp areas.
- Preparation of the working area.

Cement /concrete batching

- Location, layout and preparation of cement/ concrete batching facilities including the methods employed for the mixing of concrete including the management of runoff water from such areas.

Contaminated water

- Contaminated water management plan, including the containment of runoff and polluted water.

Demolition

- Proposed method(s) of demolition.

Dredging

- Proposed methods and compounds to treat spills.
- Methods of refuelling dredger.

Drilling and jack hammering

- Method of drill coring with water or coolant lubricants.
- Methods to prevent pollution during drilling operations.

Dust

- Dust control.

Earthworks

- Method for the control of erosion during bulk earthwork operations.
- Method of undertaking earthworks, including hand excavation and spoil management.

Emergency

- Emergency construction method statements.

Environmental awareness course

- Logistics for the environmental awareness course for all the Contractors employees.
- Logistics for the environmental awareness course for the Contractors management staff.

Erosion control

- Method of erosion control, including erosion of spoil material.

Exposed aggregate finishes

- The method of control, treatment and disposal with respect to exposed aggregate finishes.

Fire, hazardous and poisonous substances

- Handling and storage of hazardous wastes.
- Emergency spillage procedures and compounds to be used.
- Emergency procedures for fire.
- Use of herbicides, pesticides and other poisonous substances.
- Methods for the disposal of hazardous building materials including asbestos, fibre claddings, refrigerants and coolants.

Fuels and fuel spills

- Methods of refuelling vehicles.
- Details of methods for fuel spills and clean-up operations.
- Refuelling of construction vehicles in high flow areas [or in the 1 in 50-year floodplain].
- Method of refuelling dredger during dredging operations.

Piling, jacking and thrust boring

- The method of piling operation (e.g. driven or bored) or in situ casting or pre-cast pile structures.

Rehabilitation

- Rehabilitation of disturbed areas and revegetation after construction is complete.
- Rehabilitation of street or hardened surfaces after construction is complete.
- Retaining walls and gabions.
- Method for construction and installation of retaining walls/ gabion baskets.

Riverine corridors

- Method for all construction activities within the 1 in 50-year floodplain.

Rock breaking

- Details of chemical applications to be used for rock breaking.

Settlement ponds and sumps

- Layout and preparation of settlement ponds and sumps.

Solid waste management

- Solid waste control and removal of waste from Site.
- Methods for the disposal of vegetation cuttings, building materials or rubble generated by construction.

Sources of materials

- Details of materials imported to the site (where applicable).

Sensitive environments

- Proposed construction methods within any sensitive environments. These can include but are not limited to wetlands, dams and rivers.

Traffic

- Traffic safety measure for entry/ exit onto/ off public roads.

- Traffic control when crossing roads or pedestrian routes with construction activities.

Vegetation clearing

- Method of vegetation clearing during site establishment.

Wash areas

- Location, layout, preparation and operation of all wash areas, including vehicle wash, workshop washing and paint washing and clearing.

Wastewater treatment works

- Emergency procedures for accidental leaks, spillage or overflow of raw wastewater, semi treated wastewater, sludge or final effluent. The Method Statement shall include the following:
 - a. a comprehensive list of available equipment (e.g. pipes and pumps) in the event of a spill
 - b. the location of all emergency equipment
 - c. the individual(s) responsible for the upkeep and maintenance of the emergency equipment
 - d. an indication of how regularly the emergency equipment will be checked to ensure that it is working properly
 - e. the location of any and all temporary emergency sumps, including old sludge ponds, clarifiers, low lying areas etc.
 - f. the size of spillage which the emergency procedures shall contain
 - g. where and how any spilled material will be returned to the wastewater works system
 - h. who shall be notified in the event of an emergency, including contact numbers for the relevant local authority
- Methods to isolate any section of the wastewater infrastructure for construction or maintenance purposes.
- Methods to connect new structures or reconnect old structures to the wastewater treatment infrastructure.

8.5 Proposed Impact Management Actions

The environmental management and mitigation measures that must be implemented during all construction and operational activities, as well as responsibilities and timelines for the implementation of these measures are presented in Table 4-2. Monitoring thereof, is discussed in section 6.1 above.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
1. Environmental awareness training	<ol style="list-style-type: none"> All the Contractors employees and Sub-Contractors employees and any suppliers' employees that spend more than 1 day a week or four days in a month on site, must attend an Environmental Awareness Training course presented by the Contractor the first of which shall be held within one week of the Commencement Date. Subsequent courses shall be held as and when required. The Engineer/ECO will provide the Contractor with the course content for the environmental awareness training course, and the Contractor shall communicate this information to his employees on the site, to any new employees coming onto site, to his subcontractors and to his suppliers. The Contractor shall supply the Engineer/ECO with a monthly report 	Contractor	Within one week of the Commencement Date/or of new appointments. Subsequent courses shall be held as and when required.	<ul style="list-style-type: none"> Understanding of the EMPr. Compliance of Contractor with the EMPr.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>indicating the number of employees that will be present on site during the following month and any changes in this number that may occur during the month.</p> <p>4. The Contractor shall submit a Method Statement detailing the logistics of the environmental awareness training course.</p>			
2. Buffer area	<ol style="list-style-type: none"> 1. A buffer area of 32m of the streams should be kept during construction activities, and the stream area beyond that strictly treated as a No-Go area. 2. A buffer zone of 32m from all streams, accept those affected by the development and outlined as part of Water Affairs applications. 	Holder of EA or representative	Before construction commences and maintained throughout development.	<ul style="list-style-type: none"> • Ensure no illegal entries. • Ensuring no further degradation of the natural environment. • Ensure no vegetation cleared or disturbed. • Ensuring no degradation to freshwater ecology/environment downstream of the activity.
3. Stream & Wetland Sensitive - Environments	<ol style="list-style-type: none"> 1. A buffer zone of 32m from all streams, accept those affected by the development. 2. Rectification of the diversions and embankments would not be possible since the farming operation could then not continue. 	Holder of EA or representative/ contractor/ freshwater ecologist	Before construction commences and maintained throughout	<ul style="list-style-type: none"> • Ensure no illegal entries. • Ensuring no further degradation of the natural environment. • Ensure no vegetation cleared or disturbed.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<ol style="list-style-type: none"> 3. Given that the environment is arid, artificial restoration of the vegetation would be almost impossible. The best that can be suggested is that the environment be cleaned of foreign materials and that no further unauthorised activities should take place i.e. movement of large quantities of soil and creation of further embankments. 4. If any trees of significance are found a permit should be applied for the removal of trees of significance under the National Forests Act (NFA) (Act 84 of 1998). 			<ul style="list-style-type: none"> • Ensuring no degradation to freshwater ecology/environment downstream of the activity. • Enhancing the downstream wetlands and water quality. • Only enlisted water will be used. • Monitoring as outlined is adhered to.
5. Camp	<ol style="list-style-type: none"> 1. The Contractor's camp, offices, and storage facilities shall not be located within an environmentally sensitive area or the No-Go areas. The camp's position must be approved by RE/ECO. 2. The camp must be fenced as agreed with the RE/ECO. 3. Water from the kitchens, showers, sinks etc., shall be discharged in a manner approved by the RE/ECO. 4. The contractor must ensure that all temporary structures, equipment, materials, and facilities used or created 	Holder of EA or representative/ Contractor	Before construction commences and maintained throughout	<ul style="list-style-type: none"> • All construction infrastructure etc. is located within a demarcated camp, within which possible impacts on the environment can be mitigated. • The site is not located close to any environmentally sensitive areas.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>on-site during the construction phase are removed and appropriately disposed of.</p> <p>5. No littering by the contractor's employees shall be tolerated under any circumstances, anywhere in the demarcated area for construction.</p> <p>Site of construction camp</p> <p>1. Choice of site for the contractor's camp requires the ECO's permission and must take into account location of local residents and / or ecologically sensitive areas, including flood zones and slip / unstable zones. A site plan must be submitted to the ECO and project manager for approval.</p> <p>2. The construction camp must not be situated within the 1:100-year flood line or on slopes greater than 1:3.</p> <p>3. The size of the construction camp must be minimized (especially where natural vegetation or grassland has had to be cleared for its construction).</p> <p>4. The contractor must attend to drainage of the camp site to avoid standing water and / or sheet erosion.</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<ol style="list-style-type: none"> 5. Suitable control measures over the contractor's yard, plant and material storage to mitigate any visual impact of the construction activity must be implemented. 6. No development, or activity of any sort associated with camp, is allowed below the 1:50 year flood line of any water system. 7. Storage of materials (including hazardous materials) at site camp 8. Choice of location for storage areas must take into account prevailing winds, distances to water bodies, general on-site topography and water erosion potential of the soil. 9. Storage areas must be designated, demarcated and fenced. 10. Storage areas must be secure to minimize the risk of crime. They must also be safe from access by unauthorised persons. 11. Fire prevention facilities must be present at all storage facilities. 12. Proper storage facilities for the storage of oils, paints, grease, fuels, chemicals and any hazardous materials to be used must 			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>be provided to prevent the migration of spillage into the ground and groundwater regime around the temporary storage area(s). These pollution prevention measures for storage must include a bund wall high enough to contain at least 110% of any stored volume, and this must be sited away from drainage lines in a site with the approval of the ECO.</p> <p>13. These storage facilities (including any tanks) must be on an impermeable surface that is protected from the ingress of storm water from surrounding areas in order to ensure that accidental spillage does not pollute local soil or water resources.</p> <p>14. Clear signage must be placed at all storage areas containing hazardous substances / materials. Staff dealing with these materials / substances must be aware of their potential impacts and follow the appropriate safety measures.</p> <p>15. A Waste Disposal Contractor must be employed to remove waste oil. These wastes must only be disposed of at a licensed landfill sites designed to handle</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>hazardous wastes. A disposal certificate must be obtained from the Waste Disposal Contractor.</p> <p>16. All excess cement and concrete mixes are to be contained on the construction site prior to disposal off site.</p> <p>17. Any spillage, which may occur, shall be investigated and immediate action must be taken. This must also be reported to the ECO and DEA&DP, as well as local authorities if so required.</p> <p>18. Drainage of construction camp</p> <p>19. Run-off from the camp site must not discharge into neighbours' properties.</p> <p>End of construction</p> <p>1. Once construction has been completed on site and all excess material has been removed, the storage area shall be rehabilitated. If the area was badly damaged, reseeded shall be done.</p> <p>2. Such areas shall be rehabilitated to their natural state. Any spilled concrete shall be removed, and soil compacted during construction shall be ripped, levelled and re-vegetated.</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
6. Tree protection	<ol style="list-style-type: none"> If any trees of significance are found a permit should be applied for the removal of trees of significance under the National Forests Act (NFA) (Act 84 of 1998). 	Holder of EA or representative	If and when required. Before construction commences and maintained throughout. Note possible application to DAFF.	<ul style="list-style-type: none"> Protect the various protected trees, note possible application to DAFF.
7. Sensitive environments	<p>Additional</p> <ol style="list-style-type: none"> Ablution facilities must be located as far away as possible from the river and wetland. Safe and effective sewage treatment will require one of the following sewage handling methods: The use of chemical toilets which are supplied and maintained by the subcontractor. The establishment of ablution facilities for all staff and construction workers. A minimum of one toilet must be provided per 15 persons at each working area. Effluent and wastewater – All effluent water from the camp/office must be disposed of in a properly designed and constructed system (ablution facilities), situated so as not to adversely affect the river and wetland. No construction fluids 	Holder of EA or representative/ Contractor	Before construction commences and maintained throughout. If and when required.	<ul style="list-style-type: none"> No further impacts on the fauna and flora other than outlined and approved.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>must be allowed to enter the river and wetland. These must be disposed of via the solid waste stream. No wastewater must be disposed of onto soil. This does not include clean groundwater from excavations or rainwater.</p> <p>5. Hazardous waste and spillage – Petrochemicals, oils and identified hazardous substances must only be stored under controlled conditions. All hazardous materials must be stored in a secured, appointed area that is fenced and has restricted entry. The site must be protected from direct or indirect spillage of pollutants such as cement, concrete, sewage, chemicals, fuels, oils, aggregate, tailings, wash water, organic materials and bituminous or tar products. Responsibility for spill treatments lies with the contractor. Should water downstream of the spill be polluted, and fauna and flora show signs of deterioration or death, specialist hydrological or ecological advice will be sought for appropriate treatment and remedial procedures to be followed.</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>6. Construction vehicles and equipment must be kept in a good working condition. Storage and re-fuelling areas must be clearly demarcated, bunded and lined.</p> <p>7. Spillage of any fuels directly onto bare soil or into a watercourse must be prevented at all times.</p> <p>8. Litter and solid waste – No littering by construction workers must be allowed. Measures must be taken by the contractor to reduce the potential for litter and negligent behaviour with regard to the disposal of all refuse. The contractor must provide litter bins at all places of work. Solid waste must be stored in an appointed area in covered, tip proof metal drums for collection and disposal.</p> <p>Animals</p> <p>1. The site is within a rural area that has been extensively cultivated and it is therefore unlikely that any animal life would be present. However, should any animal life be encountered it must be carefully removed and none must be harmed or killed. Most animals will move</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	away naturally except possibly snakes. Any problems must be reported to the ECO.			
8. Cement mixing/batching plant	<ol style="list-style-type: none"> 1. The cement mixing or batching plant area(s) must be indicated on the Site Establishment Plan. 2. All wastewater resulting from batching of concrete shall be disposed of via the wastewater management system where available. 3. The cement/ concrete batching works shall be kept neat and clean at all times. No batching activities shall occur on unprotected substratum of any kind. 4. All runoff from batching areas shall be strictly controlled, and cement-contaminated water shall be collected, stored and disposed of at a site approved by the Engineer/ECO/EO. Dagma boards, mixing trays and impermeable sumps shall be used at all mixing and supply points. Contaminated water shall be disposed at a waste disposal site approved by the Engineer/ECO/EO. 5. Contaminated water storage facilities shall not be allowed to overflow and 	Holder of EA or representative/ Contractor	Continuously Throughout the construction phase. If and when required.	<ul style="list-style-type: none"> • Mixing of cement will be done in an environmentally sensitive manner. • No cement spillage takes place.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>appropriate protection from rain and flooding shall be implemented.</p> <p>6. Contaminated water treatment on Site shall require a method statement approved by Engineer/ECO/EO.</p> <p>7. Unused cement bags are to be stored so as not to be affected by rain or runoff events.</p> <p>8. Used bags shall be stored in weatherproof containers to prevent wind-blown cement dust and water contamination. Used bags shall be disposed of on a regular basis via the solid waste management system and shall not be used for any other purpose.</p> <p>9. Concrete transportation shall not result in spillage.</p> <p>10. Cleaning of equipment and flushing of mixers shall not result in pollution of the surrounding environment: Care shall be taken to collect contaminated wash water from cleaning activities and dispose of it in a manner approved by the Engineer/ECO/EO. To prevent spillage onto roads, ready mix trucks shall rinse off the delivery shoot into a suitable sump prior to leaving Site.</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>11. Suitable screening and containment shall be in place to prevent wind-blown contamination associated with bulk cement silos, loading and batching.</p> <p>12. With respect to exposed aggregate finishes, the Contractor shall collect all contaminated water & fines and store it in sumps for disposal at an approved waste site.</p> <p>13. All visible remains of excess concrete shall be physically removed on completion of the plaster or concrete pour section and disposed. Washing the remains into the ground is not acceptable. All excess aggregate shall also be removed. Any mixed cement (for building or plastering) at the work area must be placed on boards or container to prevent spillage or contamination of the soil.</p> <p>14. During cement delivery boards or other protection material must be used to prevent spilling on the ground.</p> <p>15. No mixed concrete/dagga must be placed or stored on bare surfaces. Dagga boards must be use at all times to prevent contamination of surfaces.</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
9. Surface and groundwater pollution	<ol style="list-style-type: none"> 1. The Contractor shall take all reasonable steps to prevent pollution of surface and groundwater as a result of his activities. Such pollution could result from release (accidental or otherwise) of chemicals, oils, fuels, paint, and sewage, water from excavations, construction water, water carrying soil particles or waste products. 2. Cement or concrete mixing must take place in such a way as to prevent any cement water runoff. All pieces of cement or related material are to be stored and dumped at the approved Municipal site. 3. Bulk cement silos and storage areas must be properly lined/screened/contained to prevent windblown cement dust or pollution of water during rain events. 4. On completion, storm water catch pits must be closed with geotextile (biddim) or similar material to prevent sand or other contaminants from entering the system. 5. Ready-mix trucks are not permitted to clean chutes at the work site. 6. Adequate plastic or concrete lined cleaning pits are to be installed to 	Holder of EA or representative/ Contractor	Continuously Throughout the construction phase. If and when required.	•No further degradation or deterioration of ground and surface water due to construction activities.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>facilitate washing of all cement and painting equipment. A functional, non-leaking, water point must be installed at each pit. The top 75% of the water in the pit must be disposed down the sewerage system, with approval from the Engineer. The remaining water and sludge must be disposed of at a Municipal approved site or removed by a chemical contractor.</p> <p>7. The Contractor shall provide water and/or washing facilities at the construction camp for personnel.</p> <p>8. In the event of any pollution entering any water body, the Contractor shall inform the RE/ECO/EO immediately.</p> <p>9. The contractor will be responsible for any clean-up costs involved should pollution, erosion or sedimentation have taken place.</p>			
10. Air pollution	<p>Air Pollution</p> <p>1. During the construction/re-development phase, and due to the nature of the project, a small amount of dust could be generated. Dust pollution may have an impact on the operational workers.</p>	Holder of EA or representative/ Contractor	Continuously Throughout the construction phase. If and when required.	Ensuring dust etc associated with construction activities are mitigated and managed to prevent any degradation to the natural environment.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>2. In order to minimize the effect of dust pollution, the construction area must be kept wet as far as possible and the workers must wear the necessary safety clothing. The applicant is referred to section 19 of the National Water Act No. 36 of 1998 with regard to the prevention of, and remedies for, the effects of pollution. In terms of this section of the Act, the person who owns controls, occupies or uses the land in question is responsible for taking measures to prevent pollution of water resources and property.</p>			
11. Noise control	<ol style="list-style-type: none"> 1. Working hours will be restricted to daily normal working hours. 2. Limit the use of heavy vehicle machinery and construction activities associated with high level noise to 07h00 to 18h00 from Mondays to Saturdays, particularly to where residential areas or sensitive institutions are situated close to the site. 3. All noise and sounds generated by plant or machinery must adhere to SABS 0103 specifications for the maximum 	Holder of EA or representative	Continuously Throughout the construction phase. If and when required.	<ul style="list-style-type: none"> • Ensuring no noise levels above Standard and mitigating possible noise in the receiving environment.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>permissible noise levels for residential areas.</p> <ol style="list-style-type: none"> 4. All plant and machinery are to be fitted with adequate silencers. 5. No sound amplification equipment such as sirens, loud hailers or hooters shall be used on site, after normal working hours, except in emergencies. 6. If work is to be undertaken outside of normal work hours, permission must be obtained from the Local Authority. Prior to commencing any such activity, the Contractor is also to advise the potentially affected neighbouring residents. Dates, times and the nature of the work to be undertaken are to be provided. Notification may include letter-drops. 7. The acceptable noise level according to SABS 10103 Code of Practice is 45dBA in rural district during the day and 35dBA at night. The applicant must comply/adhere to this requirement. 8. The Contractor shall make adequate provision to prevent or minimize the possible effects of air and noise pollution. Should the noise from the construction 			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	work be found to cause problems, (which is not anticipated to be the case) work hours in these areas must be restricted between 06:00 and 18:00, or as otherwise agreed between the parties involved. Strict measures shall therefore be enforced, especially in terms of the contract specifications, to prevent any negative impacts in this regard.			
12. Pipe testing and cleaning	<ol style="list-style-type: none"> Cleaning/flushing of pipelines shall not impair (down grade) downstream baseline water quality. Materials used in the sterilisation of pipelines, viz. chlorine solutions shall be treated as hazardous substances and disposed of at an approved landfill site. Litter traps shall be installed and maintained at the outflow of all pipelines. 	Holder of EA or representative/ Contractor	Continuously Throughout the construction phase. If and when required.	<ul style="list-style-type: none"> No blockages and damage to pipes.
13. Erosion control	<p>The Contractor must take all reasonable precautions to prevent soil erosion resulting from a diversion, restriction or increase in the flow of storm water or water resulting from its operations and activities, to the satisfaction of the RE/ECO/EO. Possible measures that can be considered include the following:</p> <ol style="list-style-type: none"> Brush cut packing 	Holder of EA or representative/ Contractor	Continuously Throughout the construction phase. If and when required.	<ul style="list-style-type: none"> Ensuring no further degradation of the natural environment. Ensure no more vegetation cleared or Disturbed due to erosion.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<ol style="list-style-type: none"> 2. Mulch or chip cover 3. Straw stabilising (at the rate of one bale/m² and rotated into the top 100mm of the Completed earthworks) 4. Watering 5. Planting / sodding 6. Hand seeding sowing 7. Hydroseeding 8. Soil binders and anti-erosion compounds 9. Mechanical cover or packing structures 10. Gabions & mattresses 11. Geofabric 12. Hessian cover 13. Armourflex 14. Log / pole fencing 15. Retaining walls 16. The Contractor shall take reasonable measures to control the erosive effects of storm water runoff. 17. The Contractor shall use silt screens to prevent overland flowing water from causing erosion. 18. The use of straw bales as filters, which are placed across the flow of overland storm water flows, shall be used as an erosion protection measure. 			<ul style="list-style-type: none"> •No erosion downstream of the newly constructed dams.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>19. The ploughing-in of straw offers limited protection against storm water runoff induced erosion and shall be used as an erosion protection measure.</p> <p>20. The Contractor shall be liable for any damage to downstream property caused by the diversion of overland storm water flows.</p>			
14. Dust control	<p>DUST - generated by works</p> <ol style="list-style-type: none"> 1. Sand stockpiles are to be covered with hessian, shade cloth or DPC plastic. 2. Stockpiles are to be located in sheltered areas and the usable/cut face orientated away from the direction of the prevailing wind for that season. 3. Excavating, handling or transporting erodible materials in high wind or when dust plumes visible shall be avoided. 4. If high winds prevail the Engineer shall decide whether water dampening measures or cessation of activities is required, and if necessary, they shall have the authority to temporarily stop certain of the works until wind conditions become more favourable. 	Contractor	Continuously Throughout the construction phase. If and when required.	<ul style="list-style-type: none"> • Ensuring proper dust suppression. • Minimizing the potential dust impacts during construction.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>Dust – generated by roads and vehicle movement</p> <p>1) Vehicle speeds shall not exceed 40km/h along gravel roads or 20km/h on unconsolidated or non-vegetated areas. Dust plumes created by vehicle movement are to be monitored.</p> <p>2) If access roads are generating dust beyond acceptable levels dust suppression measures must be initiated. These include, but are not limited to the following:</p> <p>2.1 Reduction of travelling speeds along the road.</p> <p>2.2 Restriction of vehicle or plant usage.</p> <p>2.3 Application of chemical soil binders.</p> <p>2.4 Application of a suitable sacrificial road surfacing.</p> <p>2.5 If water is to be used for dust suppression, then only the critical areas shall be watered. The use of water carts or hand watering is preferable. Overhead sprayers shall not be permitted in windy conditions, as the evaporation loss is too high. Watering is to be supervised to prevent unnecessary water wastage, and runoff into potentially sensitive areas. Preferable watering times are early morning and late afternoon/ evening. Water restrictions are to be observed if in place.</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
15. Fire management	<p>1) No open fires or naked flames for heating or cooking shall be allowed on Site. Stoves and other electrical equipment shall only be permitted in the Contractor’s camp and never be left unattended.</p> <p>1.1. The Contractor shall take all reasonable and active steps to avoid increasing the risk of fire through their activities on Site. No fires shall be lit except at places approved by the Engineer/ECO/EO.</p> <p>1.2. The Contractor shall ensure that the basic fire-fighting equipment is on site.</p> <p>1.3. The Contractor shall supply all living quarters, site offices, kitchen areas, workshop areas, materials, stores and any other areas identified by the Engineer/ECO/EO with tested and approved firefighting equipment.</p> <p>1.4. Fire and “hot work” shall be restricted to a site approved by the Engineer/ECO/EO</p> <p>1.5. A braai facility shall be considered at the discretion of the Engineer/ECO/EO. The area shall be away from flammable stores. All events shall be under management supervision and a fire extinguisher shall be immediately available. “Low smoke”</p>	Contractor	Continuously Throughout the construction phase. If and when required.	<ul style="list-style-type: none"> • Prevent any open fires from taking place. • Prevention measures in place if any accidental fires do take place.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>fuels shall be used. Smoke free zoning regulations shall be considered.</p> <p>1.6. Fires within National Parks, Nature Reserves and natural areas are prohibited.</p> <p>1.7. Cooking shall be restricted to bottled gas facilities under strict control and supervision. The sensitivity of the surrounding land uses and occurrence of natural indigenous vegetation must be considered when assessing the risk of fires.</p> <p>1.8. The Contractor shall take precautions when working with welding or grinding equipment near potential sources of combustion. Such precautions include having a suitable, tested and approved fire extinguisher immediately at hand and the use of welding curtains.</p> <p>1.9. The Contractor shall identify the authorities responsible for fighting fires in the area and shall liaise with them regarding procedures should a fire start. The Contractor shall ensure that his staff are aware of the fire danger at all times and are aware of the procedure to be followed in the event of a fire. The</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>Contractor shall also ensure that all the necessary telephone numbers etc. are posted at conspicuous and relevant locations in the event of an emergency. The Contractor shall advise the relevant authority of a fire as soon as one starts and shall not wait until he can no longer control it.</p> <p>1.10. Should a contractor be found responsible for the outbreak of a fire, he shall be liable for any associated costs.</p>			
16. Water management	<ol style="list-style-type: none"> 1. The Contractor shall provide water for drinking and construction purposes until such time as it is available from the local system. Water from the local system must be used carefully and sparingly with the view of not wasting water. 2. Taps are to be attached to secure supports and leaking taps and hosepipes are to be repaired immediately. 3. Watering as dust suppression must be undertaken as a last resort. It is preferable that sand stockpiles be covered rather than watered. 4. Any abstraction from natural water sources such as a stream or groundwater 	Holder of EA or representative	Continuously Throughout the construction phase. If and when required.	<ul style="list-style-type: none"> •Management of water for drinking, construction activities and dust suppression.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>will require a Method Statement for approval by the RE/ECO/EO.</p> <p>5. An adequate supply of potable water that complies with bacteriological and chemical quality must be available at all times.</p> <p>6. Water samples of the potable water must be taken at regular intervals and the results kept on record.</p> <p>7. The aforementioned records must be made available to a competent authority upon request.</p>			
17. Waste management	<p>1. A waste minimisation approach must be followed. This requires recycling wherever possible. All waste therefore to be suitably contained and removed regularly from site in accordance with the municipal waste management procedures. Other examples shall include the use of rubble as fill, minimisation of waste concrete and the use of brush cuttings for mulching on rehabilitated areas.</p> <p>2. The Contractor shall be responsible for the establishment of a refuse control and removal system that prevents the spread</p>	Holder of EA or representative/ Contractor.	Continuously Throughout the construction phase. If and when required.	<ul style="list-style-type: none"> •Ensure the site is kept free of litter. •Ensuring proper waste management and removal takes place. •Ensuring legal waste removal takes place.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>of refuse within and beyond the construction sites.</p> <p>3. The Contractor shall ensure that all refuse is deposited in refuse bins, which he shall supply and arrange to be emptied on a weekly basis. Refuse bins shall be of such a design that the refuse cannot be blown out and that animals or birds are not attracted to the waste and spread it around. Refuse bins shall be water tight, wind-proof and scavenger-proof and shall be appropriately placed throughout the site. Refuse must also be protected from rain, which may cause pollutants to leach out. Refuse bins shall be appropriately placed throughout the Site and shall be conspicuous (e.g. painted bright yellow).</p> <p>4. Refuse shall be disposed of at an approved waste site (site and method to be agreed with Local Authority). Refuse shall not be burnt or buried on or near the Site.</p> <p>5. The Contractor shall provide labourers to clean up the Contractor’s camp and Site on a weekly basis.</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>6. The Contractor shall also clean the Contractor's camp and Site of all structures, equipment, residual litter and building materials at the end of the contract.</p> <p>7. No waste, specifically rubble and "building rubble" shall be utilised for fill material, except where such actions are approved or licenced</p>			
18. Toilets	<p>1. The Contractor shall be responsible for providing all sanitary arrangements for construction and supervisory staff on the site. A minimum of one chemical toilet shall be provided per 15 persons. Toilets provided by the Contractor must be easily accessible and within a practical distance from the workers. Toilets shall be located within areas of low environmental importance. The toilets shall be of a neat construction and shall be provided with doors and locks and shall be secured to prevent them blowing over. Toilets shall be placed outside areas susceptible to flooding.</p> <p>2. The Contractor shall keep the toilets in a clean, neat and hygienic condition. The</p>	Holder of EA or representative	Continuously Throughout the construction phase. If and when required.	<ul style="list-style-type: none"> •Appropriate sewerage management will take place. •Sufficient ablution facilities provided.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>Contractor shall supply toilet paper at all toilets.</p> <p>3. The Contractor shall be responsible for the cleaning, maintenance, servicing and emptying of the toilets on a regular basis (by chemical contractor). No waste to be dumped in the bush or wetland.</p> <p>4. The Contractor shall ensure that the toilets are emptied before the builders' or other holidays and the waste be stored and disposed of at an appropriate place off site.</p> <p>5. The Contractor shall ensure that no spillage occurs when chemical toilets are cleaned and emptied.</p> <p>6. The Contractor shall supply a contingency plan for spills from toilets.</p> <p>7. Performing ablutions in any other area is strictly prohibited.</p> <p>8. The location for construction camps and toilets must be approved by the ECO.</p>			
19. Fuel and chemical management	<p>1. Fuel may be stored on site providing the following is strictly adhered to:</p> <p>2. All necessary approvals with respect to fuel storage and dispensing shall be</p>	Holder of EA or representative	Continuously Throughout the construction phase. If and when required.	•Ensuring proper use/ storage/ handling and management of fuel on site.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>obtained from the appropriate authorities.</p> <p>3. The Municipal Fire Chief (or as applicable) must be informed and consulted to Fire Regulations.</p> <p>4. The Contractor shall ensure that all liquid fuels and oils are stored in tanks with lids, which are kept firmly shut and under lock and key at all times.</p> <p>5. The Contractor shall stand any equipment that may leak, and does not have to be transported regularly, on watertight drip trays to catch any pollutants. The drip trays shall be of a size that the equipment can be placed inside it. Drip trays shall be cleaned regularly and shall not be allowed to overflow.</p> <p>6. All hazardous material (e.g., oils. Petrol or diesel) used on site must be disposed of at an approved hazardous waste facility or with the services of a licensed waste transportation company. All certificates of disposal and weigh bridge slips need to be signed by all relevant officials and kept as records on the premises.</p>			<ul style="list-style-type: none"> •Ensuring minimal to no impact on the natural environment.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>7. The contractor will be responsible for the cleaning up of any spill and associated costs.</p> <p>8. Areas for storage of fuels and other flammable materials shall comply with standard fire safety regulations and shall require the approval of the Municipal Fire Chief (in urban areas) or RE/ECO/EO.</p> <p>9. Temporary above ground storage tanks may be permitted at the discretion of the Municipal Fire Chief based on the merit of the situation, provided that the following requirements are complied with:</p> <p>10. Written application together with a plan and authority from the Municipality shall be forwarded to the Municipal Fire Chief (in urban areas) or RE/ECO/EO at least fourteen (14) days prior to the installation being erected on site. Written permission shall be obtained from the chief fire officer for the erection of the installation.</p> <p>Location</p> <p>11. The fuel storage area shall be located at one of the following locations: {provide a list of acceptable locations for the fuel storage area}.</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>12. The Engineer/ECO shall be advised of the area that the Contractor intends using for the storage of fuel.</p> <p>13. The location of the fuel storage area will be determined by the Municipal Fire Chief (in urban areas) and be approved by the Engineer/ECO/EO.</p> <p>14. The tank shall be erected at least 3.5 meters from buildings, boundaries and any other combustible or flammable materials.</p> <p>Signs/good practice/safety precautions</p> <p>15. Symbolic safety signs depicting “No Smoking”, “No Naked Lights” and “Danger” conforming to the requirement of SABS 1186 are to be prominently displayed in and around the fuel storage area. The volume capacity of the tank shall be displayed.</p> <p>16. No smoking shall be allowed in the vicinity of the stores.</p> <p>17. The capacity of the tank shall be clearly displayed, and the product contained within the tank clearly identified using the emergency information system detailed in SABS 0232 part 1.</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>18. There shall be adequate fire-fighting equipment at the fuel storage and dispensing area or areas.</p> <p>19. Fuel shall be kept under lock and key at all times.</p> <p>Tanks</p> <p>20. The storage tank shall be removed on completion of the works.</p> <p>21. The storage tank shall be on the premises only for as long as the contract last.</p> <p>22. All such tanks to be designed and constructed in accordance with a recognised code.</p> <p>23. The rated capacity of tanks shall provide sufficient capacity to permit expansion of the product contained therein by the rise in temperature during storage.</p> <p>Bunds/storage areas</p> <p>24. Tanks shall be situated in a banded area the volume of which shall be at least 150% of the volume of the largest tank. The floor of bund shall be smooth and impermeable constructed of concrete or plastic sheeting with impermeable joints with a layer of sand over to prevent perishing. The bund walls shall be of</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>concrete or formed of well-packed earth with the impermeable lining extending to the crest. The floor of the bund shall be sloped towards an oil trap or sump to enable any spilled fuel and/or fuel-soaked water to be removed.</p> <p>25. A bacterial hydrocarbon digestion agent that is effective in water approved by the Engineer/ECO/EO shall be installed in the sump.</p> <p>26. The tanks and bunded areas shall be covered by a roofed structure to prevent the bunded area from filling with rain water. This structure shall be constructed in such a way, and to the approval of the Engineer/ECO/EO, to ensure that it is wind resistant.</p> <p>27. Any water that collects in the bund shall not be allowed to stand and shall be removed within one day and taken off Site to a disposal site approved by the Engineer/ECO/EO, and the bacterial hydrocarbon digestion agent shall be replenished.</p> <p>Empty containers</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>28. Only empty and externally clean tanks shall be stored on the bare ground. All empty and externally dirty tanks shall be sealed and stored on an area where the ground has been protected.</p> <p>Filling/dispensing methods</p> <p>29. Any electrical or petrol-driven pump shall be equipped and positioned so as not to cause any danger of ignition of the product.</p> <p>30. If fuel is dispensed from 200 litre drums, the proper dispensing equipment shall be used. The drum shall not be tipped in order to dispense fuel. The dispensing mechanism of the fuel storage tank shall be stored in a waterproof container when not in use.</p> <p>31. Adequate precautions shall be provided to prevent spillage during the filling of any tank and during the dispensing of the contents.</p> <p>Method statements</p> <p>32. A method statement is required for the filling of and dispensing from storage tanks.</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
20. Vehicles and access roads	<ol style="list-style-type: none"> 1. The movement of any vehicles and/ or personnel outside of the designated working areas shall not be permitted without the written authorisation of the Engineer/ECO. 2. Should the Contractor not exercise sufficient control to restrict all work to the area within the marker boundaries, then these on instruction of the Engineer/ECO/EO shall be replaced by fencing the additional cost of which shall be borne by the Contractor. 3. Dust control measures such as dampening with water shall be implemented where necessary, as indicated by the Engineer/ECO. 4. Access and haul roads shall be maintained by the Contractor. 5. Maintenance includes adequate drainage and side drains, dust control and restriction of edge use. 6. All temporary access routes shall be rehabilitated at the end of the contract to the satisfaction of the Engineer/ECO. 7. All public roads shall be kept clear of mud and sand. Mud and sand that has been 	Holder of EA or representative	Continuously Throughout the construction phase. If and when required.	<ul style="list-style-type: none"> •Proper vehicle movement on site and surrounding areas. •Management of potential damage to existing roads during construction. •Traffic management to ensure safety on roads.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>deposited through construction activities shall be cleared regularly.</p> <p>8. Any materials used for layer works shall be approved by the Engineer/ECO prior to the activity commencing.</p> <p>9. Damage to the existing access roads as a result of construction activities shall be repaired to the satisfaction of the Engineer/ECO/EO, using material similar to that originally used. The cost of the repairs shall be borne by the Contractor</p> <p>10. Traffic safety measures, to the satisfaction of the Engineer/ECO, shall be considered in determining entry / exit onto public roads.</p> <p>11. All users of haul roads shall not exceed 45 km/h (cars)/ 15 km/h (trucks) {note that the standard spec places a site speed limit of 45 km/h for all vehicles}</p> <p>12. Appropriate traffic warning signs shall be erected and maintained.</p> <p>13. Trained and equipped flagmen shall be used where the access road intersects with any public roads.</p> <p>14. Attention shall be paid to minimising disruption of the flow of traffic and</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>reducing the danger to other road users and pedestrians.</p> <p>15. Method statements are required for the following: -</p> <ul style="list-style-type: none"> • Traffic safety measures with regard to entry and exit on public roads and the control of construction traffic. • Proposed route for new access roads, tracks, or haul roads; the proposed construction of new roads, and the method of upgrading existing roads; and the proposed methods of rehabilitation on completion. 			
21. Stockpiling of materials	<p>1. The Contractor shall temporarily stockpile topsoil materials in such a way that the spread of materials is minimised, and thus the impact on the natural vegetation. The stockpiles must be placed within areas demarcated for this purpose. The RE/ECO/EO shall approve stockpile areas.</p>	Holder of EA or representative/Contractor	Continuously Throughout the construction phase. If and when required.	<ul style="list-style-type: none"> •Appropriate stockpiling, to ensure topsoil can be utilised properly. •Re-establish vegetation
22. Heritage remains	<p>1. Should any unmarked human burials/remains or ostrich eggshell water flask caches be uncovered, or exposed during preparation of the lands for cultivation, , these must immediately be reported to the archaeologist (Jonathan</p>	Holder of EA or representative/Contractor If discovered qualified archaeologist and/or palaeontologist.	Continuously Throughout the construction phase. If and when required.	<ul style="list-style-type: none"> •To ensure the proper management of heritage remains are undertaken in the event of a discovery during construction and excavations.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>Kaplan 082 321 0172), or the South African Heritage Resources Agency (Ms Natasha Higgitt' 021 462 4502). Burials, etc. must not be removed or disturbed until inspected by the archaeologist.</p> <p>2. It is therefore recommended that, pending the discovery of significant new fossils remains before or during development, exemption from further specialist palaeontological studies and mitigation be granted for the proposed agricultural development on Remainder of Kakamas North Settlement no 355 near Augrabies, Northern Cape.</p> <p>3. A qualified archaeologist and/or palaeontologist must be contracted where necessary (at the expense of the holder) to remove any heritage remains.</p> <p>4. If any evidence of archaeological sites or remains (e.g. remnants of stone-made structures, indigenous ceramics, bones, stone artefacts, ostrich eggshell fragments, charcoal and ash concentrations), fossils or other categories of heritage resources are found during the proposed development, SAHRA</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>APM Unit (Natasha Higgitt/Phillip Hine 021 462 5402) must be alerted as per section 35(3) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA.</p> <p>5. If unmarked human burials are uncovered, the SAHRA Burial Grounds and Graves (BGG) Unit (Thingahangwi Tshivhase/Mimi Seetelo 012 320 8490), must be alerted immediately as per section 36(6) of the NHRA. Non-compliance with section of the NHRA is an offense in terms of section 51(1)e of the NHRA.</p> <p>6. The following conditions apply with regards to the appointment of specialists: i) If heritage resources are uncovered during the course of the development, a professional archaeologist or palaeontologist, depending on the nature of the finds, must be contracted as soon as possible to inspect the heritage resource. If the newly discovered heritage resources prove to be of archaeological or palaeontological significance, a Phase 2</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	rescue operation may be required subject to permits issued by SAHRA;			
23. Contingency planning	<p>1. In the event of a spill or leak of product into the ground and/or water courses (e.g. that of hazardous substances used for the construction phase), such incidents must be reported (within 14 days) to all the relevant authorities including the Directorate: Pollution Management in accordance with Section 30(10) of the National Environmental Management Act No. 107 of 1998 (NEMA) and Section 20 (3) of the National Water Act No.36 of 1998 (NWA), that pertains to the control of emergency incidents and the remediation of the affected area. All necessary documentation must be completed and submitted within the prescribed timeframes.</p> <p>2. Containment, clean-up, and remediation must commence immediately.</p>	Holder of EA or representative	Continuously Throughout the construction phase. If and when required.	<ul style="list-style-type: none"> •Management tools and emergency contacts available in the event of a spillage or incident.
24. Energy Efficiency & Waste Minimization Measures	The following design measures will be considered for energy and water saving measures:	Holder of EA or representative	Continuously Throughout the construction phase. If and when applicable and required.	<ul style="list-style-type: none"> •Energy and water saving mechanisms implemented.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<ul style="list-style-type: none"> • Household waste to be separated and re-cycled (glass, paper, green/garden waste). • The use of energy saving bulbs in all structures, alternatively use low voltage or compact fluorescent lights are to be used in this project. 			

Appendix A: Additional Reports

No additional reports

Appendix B: Tracking Table

Requirement	Received		Date	Comment
	Yes	No		
Methodology statement				
Site establishment plan				
Letter re contents of EMPr				
Letter re awareness training				

Appendix C: Schedule of Fines

SCHEDULE OF FINES FOR ENVIRONMENTAL DAMAGE OR EMPr TRANSGRESSIONS

(Based on City of Cape Town: Standard Environmental Specifications – Ver. 5 (03/2002))

Note: The maximum fine for any environmental damage will never be less than the cost of applicable environmental rehabilitation.

EMPr TRANSGRESSION OR RESULTANT ENVIRONMENTAL DAMAGE	MIN. FINE	MAX. FINE
Failure to comply with prescriptions regarding appointment of an ESO and monitoring of EMPr compliance.	R500	R2000
Failure to comply with prescriptions regarding environmental awareness training.	R500	R5000
Failure to comply with prescriptions regarding method statements.	R500	R5000
Failure to report environmental damage or EMPr transgressions to the ESO.	R500	R1000
Failure to carry out instructions of the ESO regarding the environment or the EMPr.	R500	R1000
Failure to comply with prescriptions posting of emergency numbers.	R500	R5000
Failure to comply with prescriptions regarding a complaint register.	R500	R1000
Failure to comply with prescriptions regarding information boards.	R500	R1000
Failure to comply with prescriptions regarding site demarcation and enforcement of 'no go' areas.	R500	R5000
Failure to comply with prescriptions regarding site clearing.	R500	R5000
Failure to comply with prescriptions for supervision for loading and off-loading of delivery vehicles.	R500	R1000
Failure to comply with prescriptions for securing of loads to ensure safe passage of delivery vehicles.	R500	R1000
Failure to comply with prescriptions for the storage of imported materials within a designated contractor's yard.	R500	R1000
Failure to comply with prescribed administration, storage or handling of hazardous substances.	R500	R1000
Failure to comply with prescriptions regarding equipment maintenance and storage.	R500	R1000
Failure to comply with fuel storage, refuelling, or clean-up prescriptions.	R500	R1000
Failure to comply with prescriptions regarding procedures for emergencies (spillages and fires).	R1000	R5000
Failure to comply with prescriptions regarding construction camp.	R500	R5000
Failure to comply with prescriptions for the use of ablution facilities.	R500	R1000
Failure to comply with prescriptions regarding water provision.	R500	R1000
Failure to comply with prescriptions for the use of designated eating areas, heating source for cooking or presence of fire extinguishers	R500	R1000
Failure to comply with prescriptions regarding fire control.	R500	R5000
Failure to comply with prescriptions for solid waste management.	R500	R5000
Failure to comply with prescriptions regarding road surfacing.	R500	R5000
Failure to comply with prescriptions to prevent water pollution and sedimentation	R500	R5000
Failure to comply with prescriptions to the protection of natural features, flora, fauna and archaeology.	R500	R5000
Failure to comply with prescriptions regarding speed limits.	R500	R1000
Failure to comply with prescriptions regarding noise levels of construction activities.	R500	R5000

Failure to comply with prescriptions regarding working hours.	R500	R5000
Failure to comply with prescriptions regarding aesthetics.	R500	R1000
Failure to comply with prescriptions regarding dust control.	R500	R1000
Failure to comply with prescriptions regarding security and access onto private property	R500	R1000
Failure to comply with prescriptions regarding cement and concrete batching	R500	R5000

For each subsequent similar offence committed by the same individual, the fine shall be doubled in value to a maximum value of R50,000.

Appendix D: Method Statement Proforma

METHOD STATEMENT PROFORMA

METHOD STATEMENT FOR THE:

This method statement is to be completed by the Contractor (in consultation with the Resident Engineer and EO) at least 5 working days prior to the proposed commencement date of the said work and represents a binding agreement to the method statement by all site contractors and sub-contractors involved in the work for which the method statement is submitted.

DATE OF SUBMISSION: _____

LEAD CONTRACTOR: _____

OTHER CONTRACTORS AND/OR SUB-CONTRACTORS: _____

Describe in detail what work is to be undertaken?

Describe in detail where on the site the works are to be undertaken and the extent? Provide a sketch plan and grid block reference.

Lead supervisor/foreman name and contact details: _____

Number of personnel: _____

Construction activities: _____

Plant and machinery to be used: _____

Other: _____

What environmental impacts are anticipated and what precautions are proposed to prevent these impacts? (Refer to the relevant sections of the EMPr for guidance and provide general site camp layout).

Toilet facilities: _____

Litter: _____

Security: _____

Plant/machinery (operation, servicing, management, storage, refuelling, etc.).

Emergencies and fire: _____

Hazardous materials (handling, management, storage):

Have all personnel involved been through an environmental induction course?

Petrochemical spill remediation and containment measures:

Other:

DECLARATION BY PARTIES

Contractor:

I understand the contents of the method statement and the scope of the works required of me. I further understand that the method statement may be amended on application to the above signatories and that the Environmental Officer will audit my compliance with the contents of this method statement.

Print Name

Date

Signed

Environmental Officer (EO):

The work described in this method statement, if carried out according to the methodology described, is satisfactory mitigation to prevent avoidable environmental harm.

Print Name

Date

Signed

Resident Engineer:

The work described in this method statement, if carried out according to the methodology described, is satisfactory mitigation to prevent avoidable environmental harm.

Print Name

Date

Signed

Appendix E: Method Statement Control Sheet

METHOD STATEMENT CONTROL SHEET

CONTRACT NO: _____

METHOD STATEMENT CONTROL SHEET

(This control sheet is to be attached to all methods statements)

MS Number:

THIS SECTION TO BE COMPLETED BY THE CONTRACTOR/METHOD STATEMENT AUTHOR ONLY

TITLE:
DESCRIPTION:
SUBMITTED BY:

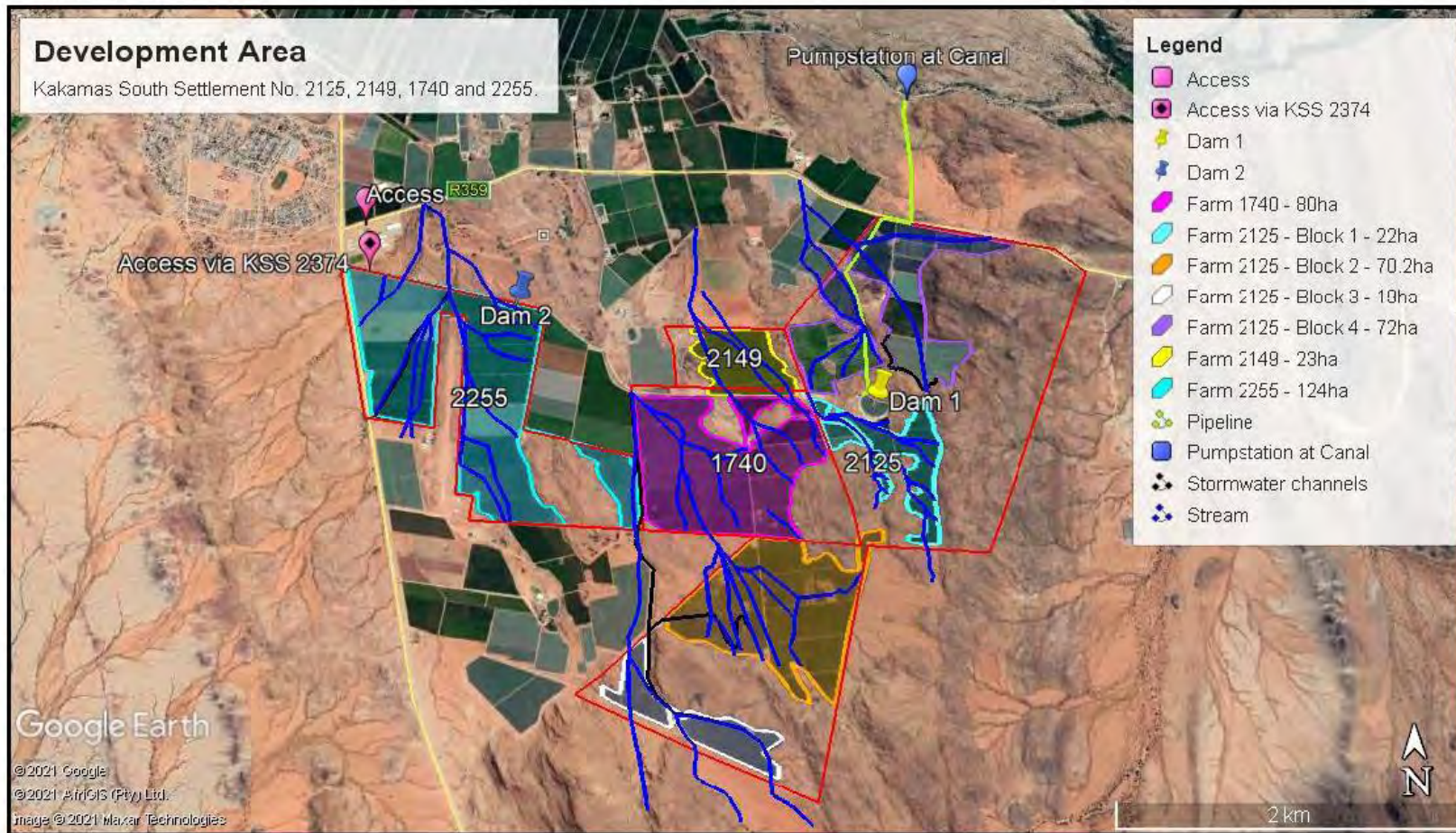
Date requested by: _____ Date submitted: _____

Date response required by: _____ Date work start: _____

REVIEW SCHEDULE		
Date	Authority	Comments

DISTRIBUTION AND AUTHORISATION			
	APPLICANT	EO	CONTRACTOR
Name			
Signature			
Date			

Appendix F: Project map



Appendix G: EAP Curriculum Vitae

PB Professional Services CC Phone: 021 873 7228
 PO Box 1058 Cell: 0827763422
 Wellington 7654 Fax: 0866721816
 E-mail: pbps@africa.com

Pieter Badenhorst

Nationality	South African		
Date of birth	25 March 1951		
Qualifications	B.Sc. B.Eng. (Civil) M Eng. (Irrigation) B Hons. (B&A) MBA	University of Stellenbosch University of Stellenbosch University of Stellenbosch University of Stellenbosch	1973 1977 1992 1993
Special courses	<ul style="list-style-type: none"> ● Project Management (5/1990), GROMAN, Stellenbosch; ● Project Management Diploma (2-7/91), Damelin Management School, Cape Town; ● Time Management (7/91), FSA-Contact group, Cape Town; ● Advanced Project Management, GROMAN (9/91), Stellenbosch; ● Environmental Auditing (11/83), Inst. of Environmental Assessment, Lincoln, England; ● SPIN Complex Selling (2/94), Sales Productivity Associates, Johannesburg; ● Presentation (3/94), Whitehead Morris, Johannesburg; ● Public participation - Participlan (10/94), CSIR/Univ. Cape Town 		
Professional membership	Professional engineer, member of the Engineering Council of South Africa Member of the South African Institute of Civil Engineers Member of International Association for Impact Assessment (South Africa)		
Career	Since 1997 1997 1995 - 1996 1993 - 1994 1992 1982 - 1991 1981 1979 - 1980 1978 1974 - 1977	Own consultancy CSIR, Environmentek; Provincial Business Development Manager Gulf Petrochemical Services LLC, Business Development Engineer (Sultanate of Oman & UAE) and CSIR Marketing Manager Middle East (Sultanate of Oman, UAE & Qatar). CSIR, Ematek, Coastal Development Programme; Marketing Manager Study for MBA CSIR, Ematek, Coastal Development Programme; Project Manager Municipality of Somerset West; Deputy Town Engineer Municipality of Kuls River; Town Engineer Municipality of Klerksdorp; Senior Engineer (water) Department of Water Affairs; Assistant Engineer	
Current position	Owner of Pieter Badenhorst Professional Services CC. As a private consultant now provide consultancy services in Environmental/coastal Management, Environmental Engineering, Public Participation and Project Management.		
Professional experience	<p>39 years experience in civil, municipal and environmental engineering as well as business development. Civil experience in heavy construction with Department of Water Affairs. Municipal experience includes Senior Engineer, Klerksdorp, Town Engineer of Kuls River and Deputy Town Engineer of Somerset West. Nearly 16 years at CSIR in environmental management (estuarine and coastal), business management, coastal engineering and project management. Work and lived two years in Middle East working in business development, project management for CSIR contracts, tender preparation and environmental management advice. Have extensively traveled the coastlines of Australia and USA to study coastal management. Other overseas visits were undertaken to UK, Netherlands and Australia to investigate commercialisation of CSIR products and general business opportunities.</p> <p>Now mainly involved with environmental studies and management. Have produced various technology research reports for CSIR. The following projects were undertaken for DEAT: a Coastal Management Technical Guide; project managed the Adopt A Beach and Interpretive Signage projects as well as public participation components; initiated and implemented the Blue Flag campaign in South Africa. A number of impact studies were/are undertaken for various clients including major developments with/without golf courses and eco estates. Produced various Scoping and Environmental Impact Reports, Environmental Management Plans and an Environmental Management Framework. Act as Environmental Control Officer for many developments including Thesen Islands Canal development (Knysna), Pezula Private Estate development (Knysna), George Mall development, Leisure Isle Boat Club upgrade (Knysna), Breakwater Bay (George), St Helena Bay development and various building sites. Have undertaken a number of asset assessments for Municipalities.</p> <p>Presented a third year course in Coastal Management at Cape Technikon.</p>		
Publications/Contracts (A full list is available on request)	<ul style="list-style-type: none"> ● Scoping and Environmental Impact reports. ● Environmental Management Plans –construction and operation. ● Basic Assessment Reports ● S24G Applications ● Waste License Applications ● Water Use License Applications ● Quarry applications/EMPRs ● Contract reports on coastal and estuarine environmental management, coastal engineering and monitoring (including a beach monitoring project along the KZN coastline) and various reports on implementation of the Blue Flag campaign. ● Contract reports in business management include market research and technology requirements (environment, food and textile/clothing industries). ● Publications include CZM Technical Guide, CZM Guidelines and Coastal Processes. Research publications on sedimentation in estuaries and low-level environmental monitoring techniques. ● Formed part of the Estuarine and Coastal Unit (ECRU) team that compiled the "Estuaries of the Cape" series. ● Formed part of the team that compiled the Policy and Principles & Objectives for Coastal Zone Management in the RSA – for Council of the Environment. ● Formed part of the team that developed Norms and Standards for inclusion into NEMA. ● Feasibility studies for Department of Environment Affairs & Tourism and Department of Water Affairs. ● EIA Review for DEAT on proposed Cape Town Harbour expansion ● Member of team – SA Wetland audit for SANBI 		

PB Professional Services CC Phone: 021 8737228
 PO Box 1058 Cell: 076 584 0822
 Wellington 7654 Fax: 0866721916
 E-mail: elaniem@iafrica.com

Elanie Kühn

Nationality	South African		
Date of birth	20 February 1983		
Qualifications	B.Sc. Degree (Zoology & Physiology) B Sc. Hons. (Environmental Management)	North West University – Potchefstroom North West University – Potchefstroom	2004 2005
Special courses	None additional to the above.		
Professional membership	IAIA South Africa		
Career	2010 - current 2006 - 2009 2005	Pieter Badenhorst Professional Services - Wellington Doug Jeffrey Environmental Consultants - Paarl DERA Environmental Consultancy – Klerksdorp (Part time while completing Hons.)	
Current position	Environmental Assessment Practitioner at Pieter Badenhorst Professional Services cc. As a private consultant now provide consultancy services in Environmental Management, Public Participation and Project Management.		
Professional experience	The consultant has 13 years' experience in project management and report writing. She has worked for two other environmental assessment companies prior to the present. She completed her BSc degree and gained an Honours Degree in Environmental Management from the North West University in Potchefstroom. She has been working with Pieter Badenhorst for the last nine years working on Environmental Impact Assessments and Water Use License Applications.		
Publications/ Contracts (A full list is available on request)	Projects and work experience range from: <ul style="list-style-type: none"> ● Project Management ● Basic Assessment Reports ● Scoping and Environmental Impact Assessment reports. ● Environmental Management Programmes –construction/operational/decommissioning. ● S24G Applications ● Waste License Applications ● Water Use License Applications ● Mining EMP's ● Mining Rights and Prospecting Rights applications ● Environmental Control Officer (ECO) ● Auditing Reports 		



WATER USE LICENCE APPLICATION

**MOSPLAAS -CULTIVATION OF ORCHARDS/VINEYARDS ACROSS
SMALL STREAMS, AND DEVELOPMENT KAKAMAS SOUTH
SETTLEMENT 2255, 2149, 1740, 2125, 2265, 2234 AND
REMAINDER OF 2374, NORTHERN CAPE PROVINCE.**

June 2020

Applicant details:

Mosplaas Citrus (Pty) Ltd
Piet Karsten
P. O. Box 53
Kanoneiland
8806
Tel: 054 431 7000

Consultant details:

GroenbergEnviro (Pty) Ltd
P.O. Box 1058
Wellington, 7654
Cell: 0866721916
Email: pbps@iafrica.com



QUALITY CONTROL

Revision	Date	Author	Checked	Status	Approved
00	June 2020	Elanie Kühn	Lia Labuschagne	Draft with dBAR.	
01	June 2020	Elanie Kühn	Lia Labuschagne	Final for submission.	

APPLICATION FOR A LICENCE FOR THE USE OF WATER (CONTROLLED ACTIVITY) IN TERMS OF THE NATIONAL WATER ACT, 1998 (ACT NO 36 OF 1998)

TABLE OF CONTENTS

1. THE APPLICATION AND TECHNICAL DETAIL	11
1.1 The Applicant	11
1.2 The property on which the water use is intended	11
1.3 Existing exemption	12
1.4 Contract between Water Service Authority/Provider and the Developer:	12
1.5 Magisterial District and Regional Service Authority	12
1.6 Ownership of the land:	12
1.7 Longitude and Latitude of the Property/Site:	12
1.8 Zoning of the Land:	13
1.9 Ownership of the adjacent/potentially impacted land:	13
1.10 Water Use Licence Application details	14
1.11 Existing lawful water use and development on the property	14
1.12 Details of the water use intended	15
1.12.1 Section 21 a – change of use - transfer	15
1.12.2 Section 21 a – change of use – Schedule 1 use and Industrial use	16
1.12.3 Section 21c & i –impeding and diverting flow in a watercourse; and altering the bed, banks, course or characteristics of a watercourse.	17
1.13 Storm Water Management	23
1.13.1 Introduction	23
1.13.2 Mitigation Measures:	23
1.14 Plough certificate	27
2. DESCRIPTION OF THE ENVIRONMENT	28
2.1 Climate	28
2.2 Topography	29
2.3 Geology and Soils	29
2.4 Natural vegetation and plant life	29
2.5 Land use	31
2.6 Surface water	31
2.7 Groundwater	32
2.8 Air quality	32
2.9 Noise	32
2.10 Sites of archaeological interest	32

2.11	Sensitive landscapes	32
2.12	Visual aspects	32
2.13	Regional socio-economic structure	32
2.14	Interested and Affected parties	36
2.15	Industrial activity	37
3.	CONSIDERATIONS AND ASSESSMENT CRITERIA	38
3.1	The reserve	39
3.2	The class and resource quality objectives of the water resource	39
3.3	The strategic importance of the water to be authorised	39
3.4	The existing lawful water use in the catchment under consideration	39
3.5	The likely effect of the water uses to be authorised on the water resource and on other water users in the catchment	39
3.6	The impact on the environment	39
3.6.1	Assessment of the impacts associated with the water use:	41
3.7	The need to redress the results of the past racial and gender discrimination	41
3.8	Efficient and beneficial use of the water in public interest	42
3.9	Socio economic impact of water use to be authorised	42
3.10	Investment already made and to be made by the water user in respect of the water use in question	43
3.11	The period for which the licence is to be issued	43
3.12	Failure to authorise the water use	43
4.	CONCLUSION	43
5.	CONDITIONS	44
6.	RECOMMENDATION	44
7.	APPENDICES	46
	APPENDIX A: COMPLETED LICENCE APPLICATION FORMS	46
	APPENDIX B: EXISTING WATER USE CONFIRMATION	47
	APPENDIX C: DEED SEARCH AND TITLE DEEDS	48
	APPENDIX D: POWER OF ATTORNEY	49
	APPENDIX E1: PROPOSED LOCALITY AND DEVELOPMENT LAYOUT	50
	APPENDIX F: TECHNICAL DOCUMENTS	53
	APPENDIX F.1: ENVIRONMENTAL IMPACT REPORT	53
	APPENDIX F.2: STORMWATER MANAGEMENT PLAN	54
	APPENDIX G: PROOF OF PUBLIC PARTICIPATION	55
	APPENDIX H: SECTION 27 MOTIVATION REPORT	56

APPENDIX I: CERTIFIED COPY OF ID	57
APPENDIX J: COMPANY REGISTRATION CERTIFICATES	58
APPENDIX K: COPY OF RECEIPT	59
APPENDIX L: SECTION 21 C AND I LIST OF DRAINAGE LINES COORDINATES AND RISK MATRIX	60
APPENDIX M: LANDS CLAIM CONFIRMATION	61
APPENDIX N: PLOUGH CERTIFICATE	62
APPENDIX O: TRANSFER MOTIVATIONAL REPORT	63
APPENDIX P: ENVIRONMENTAL AUTHORISATION	64

Table of Figures

Figure 1: Locality map op Kakamas South Settlement No 2435, 387, 2106, 1248.	12
Figure 2: Ephemeral streams/drainage areas.....	17
Figure 3: Critical Biodiversity Area	18
Figure 4: Dam 1 position.....	19
Figure 5: Dam 2 position.....	20
Figure 6: Extract of map that shows the locality of the EWR sites in context of the MRUs (referenced from Figure 3.1 in Report No. RDM/WMA06/00/CON/COMP/2016).	21
Figure 7: Pump station and pipelines.....	22
Figure 8: Small dam 2.	22
Figure 9: Stormwater infrastructure	24
Figure 10: Mulching and planting between rows	24
Figure 11: Scarifying of soil	26
Figure 12: Buffer areas with natural vegetation between blocks and roads	27
Figure 13: Existing Plough certificate areas	28
Figure 14: Average monthly rainfall and daily temperatures.....	29
Figure 15: Vegetation across the sites.	30
Figure 16: Critical Biodiversity areas	31
Figure 17: Active economic sectors in the area	33
Figure 18: Economic profile of the area	34
Figure 19: Water supply and sanitation in the area.....	35

Figure 20: Housing need in the area 36

List of tables

Table 1: Geographical Coordinates 13

Table 2: Water Use Licence activities triggered..... 14

Table 3: Water allocations..... 14

Table 4: Water transfer allocations..... 15

Table 5: Water summary 16

Table 6: Impacts table 39

List of Abbreviations

BAR	Basic Assessment Report
CBA	Critical biodiversity Area
DEA	Department of Environmental Affairs
DENC	Department of Environment and Nature Conservation
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EIS	Ecological Importance and Sensitivity
ELU	Existing Lawful Use
EMPr	Environmental Management Programme
ESA	Ecological Support Areas
ERW	Ecological Release Water
EWR	Existing Water Rights
FEPA	Fresh Water Ecosystem Priority Areas
HWS	Heritage Western Cape
I&AP's	Interested and Affected Parties
MAR	Mean Annual Runoff
MMP	Maintenance Management Plan
NFEPA	National Fresh Water Ecology Priority Areas
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEM: AQA	National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)
NEM: ICMA	National Environmental Management: Integrated Coastal Management Act, 2008 (Act No. 24 of 2008)
NEM: WA	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
NHRA	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
PA	Protected Areas
PES	Present Ecological Status

PPP	Public Participation Process
RE	Resident Engineer
SANBI	South African National Biodiversity Institute
SAHIRS	South African Heritage Information Resources System
SWMP	Storm Water Management Plan
S24G	Section 24G Process
V&V	Validation and Verification
WMA	Water Management Area
WQMR	Water Quality Management Report
WULA	Water Use Licence Application

SYNOPSIS

This application is for, the Applicant, Mosplaas Sitrus (Pty) Ltd to apply for a Water Use Licence Application (WULA) in terms of the following, also outlined in Table i:

- Section 21 (a) for the correct allocation of water rights on each property to ensure water is available for the agricultural production.
- Section 21 (a) applying for a licence for the transfer of water from the lawful “irrigation” allocation to “Industrial” and “Schedule 1” use. The packing shed and accommodation is located on Remainder of Kakamas South Settlement No. 2374, 2265 and 2234.
- Section 21(c) and (i) of the National Water Act (NWA) for the streams that were diverted and crossed as part of the illegal establishment of orchards/vineyards. The establishment of the orchards/vineyards on Kakamas South Settlement No. 2255, 2125, 2149 and 1740 took place across small sections of the unnamed drainage system that is located on-site.

The WULA application is summarised, in the table below, for the following water usages:

Table i: Water use licence activities

<i>(a) taking of water</i>	For the re-allocation of water between two properties, to ensure the water allocation is distributed according to development areas per property. Applying for a licence for the “transfer” of water from the lawful “irrigation” allocation to “Industrial” and “Schedule 1” use.
<i>(c) impeding or diverting flow of water in a watercourse</i>	For the construction of agricultural areas and evaporation ponds across ephemeral streams/natural drainage areas.
<i>(i) altering the bed, banks, course, or characteristics of a watercourse</i>	For the construction of agricultural areas and evaporation ponds across ephemeral streams/natural drainage areas.

As part of this application it is also the intention to rectify the construction of agricultural development across small ephemeral streams. The drainage channel system on site has not been mapped (as a watercourse) on any of the maps available of the study area. However, on request from DENC and DWS, the drainage system is seen as a watercourse. Please note: There was no planting of orchards/vineyards within the larger drainage channels. Most of the channels running towards the Orange River have already been modified and development has taken place across them, which prevents water flow towards the Orange River.

The unnamed drainage system is therefore classified as an ephemeral course, as it will only flow sporadically after rain. These watercourses are not considered to be seasonal rivers that

will regularly contain water in a seasonal pattern. However, the site falls within an area outlined as Critical Biodiversity Area 2.

The proposed agricultural development areas fall within the Lower Orange River catchment area. It, however, does not fall within any NEFPA catchment priority areas.

The final part of the application is for Section 21 (a) to rectify the water allocations on the various properties with regards to the actual hectares planted as outlined below in Table ii.

Table ii: Water allocations

Property description	Property owner	Lawful/ Lawfulness still to be determined	Property area	Area developed	Total area (checked)	Water allocations
Kakamas South Settlement No. 1740	Mosplaas Citrus (Pty) Ltd	Confirmed by WUA	116,3878	80	80	99,3
Kakamas South Settlement No. 2149	Mosplaas Citrus (Pty) Ltd	Confirmed by WUA	31,8114	22,72	23	20
Kakamas South Settlement No. 2255	Mosplaas Citrus (Pty) Ltd	Confirmed by WUA	159,4888	123,67	124	54
Kakamas South Settlement No. 2125	Mosplaas Citrus (Pty) Ltd	Confirmed by WUA	449,9997	96,75	183,2	268,2

As shown above 70 ha (1 050 000 m³/a) of water will have to be moved from Kakamas South Settlement No. 2125 to Kakamas South Settlement No. 2255 to allow the correct water allocations per property.

Refer to the WARMS Certificates and letters from WUA included in Appendix B.

The total volume of water used annually amounts to approximately 3 ha of water. Therefore, the application is to transfer approximately 1.5 ha (22 500 m³/a) of water for Industrial and Schedule 1 use. From this approximately 21 000 m³ should be allocated for Schedule 1 use and approximately 1 500 m³ will be allocated for Industrial use.

There are two dams on the site. Dam 1 has an existing Licence (14/D53J/B/1649). Dam 2 is a small balancing dam, with a capacity of 1 900 m³.

This application is therefore recommended for the approval of Section 21 (a), (c) and (i) as outlined in this study.

1. THE APPLICATION AND TECHNICAL DETAIL

1.1 The Applicant

The applicant, Mosplaas Sitrus (Pty) Ltd, is applying for a Water Use Licence Application (WULA) in terms of Section 21(c) and (i) of the National Water Act for the construction of orchards/vineyards across small streams on Kakamas South Settlement 2255, 2125, 2149 and 1740 took place across small sections of the unnamed drainage system that is located on-site. The site falls within the Quaternary Catchment Region D73F. The application is also in terms of Section 21 (a) for the correction of water allocation on each property and for allocation of "Schedule 1" and "Industrial" use on Kakamas South Settlement No. 2265, 2234 and Remainder of 2374.

The Applicant details:

Mosplaas Sitrus (PTY) Ltd
Mr. Piet Karsten
P. O. Box 53
Kanoneiland
8806
Tel: 054 431 7000
E-mail: zeldavd@karsten.co.za

Contact Persons: Zelda Van Dyk

1.2 The property on which the water use is intended.

The proposed property on which the construction of the agricultural development (vineyards) and associated infrastructure has taken place is situated on the Kakamas South Settlement No. 2255, 2149, 1710 and 2152. The packing shed and accommodation is located on Kakamas South Settlement No. 2265, 2234 and Remainder of 2374.

The farm is situated approximately 10 km outside of the small town of Kakamas in the Northern Cape, along the R359 towards Kakamas (see Figure 1). The site lies south of the Orange River. Small ephemeral streams cross the entire site. The site is currently zoned Agriculture Zone I.

The owner of the properties is Mosplaas Sitrus (Pty) Ltd, who has appointed GroenbergEnviro (Pty) Ltd as the independent environmental consultant to conduct the environmental authorisation process necessary.



Figure 1: Locality map op Kakamas South Settlement No. 2419, 2125, 2255, 2265, 2234, 1740 and Remainder of 2374.

1.3 Existing exemption

N/A.

1.4 Contract between Water Service Authority/Provider and the Developer:

N/A

1.5 Magisterial District and Regional Service Authority

The proposed development site lies within Kai! Ma Municipal area, in the Northern Cape.

1.6 Ownership of the land:

The land relevant to this application, Kakamas South Settlement No. 1740, 2125, 2255, 2149, 2435, 387, 2106, 1248, is owned by Mosplaas Sitrus (Pty) Ltd. The packing shed and accommodation is located on Kakamas South Settlement no. 2265, 2234 and Remainder of 2374. The agricultural development is located on Kakamas South Settlement No. 1740, 2125, 2255 and 2149.

1.7 Longitude and Latitude of the Property/Site:

The geographical coordinates of the various activities are outlined below in Table 1.

Table 1: Geographical Coordinates

Co-ordinates:	Latitude (S):			Longitude (E):		
Cultivation areas: Erf 2255: Block 1	28°	47'	52.27"	20°	38'	16.09"
	28°	48'	25.63"	20°	38'	24.22"
	28°	48'	50.69"	20°	39'	25.99"
	28°	48'	03.65"	20°	39'	03.36"
Erf 2149	28°	48'	07.30"	20°	39'	38.76"
	28°	48'	22.13"	20°	39'	42.74"
	28°	48'	22.40"	20°	40'	03.79"
	28°	48'	07.84"	20°	39'	56.97"
Erf 1740	28°	48'	22.74"	20°	39'	25.47"
	28°	48'	25.97"	20°	40'	07.17"
	28°	48'	52.41"	20°	40'	04.00"
	28°	48'	47.57"	20°	39'	28.69"
Erf 2125: Block 1	28°	48'	23.51"	20°	40'	06.86"
	28°	48'	24.15"	20°	40'	33.47"
	28°	48'	54.45"	20°	40'	34.65"
	28°	48'	34.26"	20°	40'	11.10"
Block 2	28°	48'	52.29"	20°	39'	52.82"
	28°	49'	09.69"	20°	39'	33.15"
	28°	49'	24.13"	20°	40'	09.55"
	28°	48'	51.21"	20°	40'	21.85"
Block 3	28°	49'	11.16"	20°	35'	28.21"
	28°	49'	22.23"	20°	39'	19.16"
	28°	49'	38.04"	20°	39'	56.71"
	28°	49'	31.06"	20°	39'	57.85"
Block 4	28°	48'	07.84"	20°	40'	02.01"
	28°	48'	42.36"	20°	40'	24.60"
	28°	47'	49.69"	20°	40'	57.00"
	28°	48'	21.54"	20°	40'	39.78"
	28°	48'	22.15"	20°	40'	06.56"
Dam 1:	28°	48'	25.73"	20°	40'	21.18"
Dam 2	28°	48'	02.05"	20°	38'	56.38"

1.8 Zoning of the Land:

The proposed site is currently zoned as Agricultural Zone I.

1.9 Ownership of the adjacent/potentially impacted land:

Most of the surrounding land (west and east of the site) is zoned for agriculture use and is natural areas to the south. To the north of the Kakamas South Settlements is the Kakamas Golf Club.

1.10 Water Use Licence Application details

Application for a Licence in terms of the National Water Act, 1998 is made by the developer, Mosplaas Sitrus (Pty) Ltd, for the following water usages, below in Table 2:

Table 2: Water Use Licence activities triggered.

<i>(a) taking of water</i>	For the re-allocation of water between two properties, to ensure the water allocation is distributed according to development areas per property. For the allocation of "Schedule 1" and "Industrial" use.
<i>(c) impeding or diverting flow of water in a watercourse</i>	For the construction of agricultural areas and evaporation ponds across ephemeral streams/natural drainage areas.
<i>(i) altering the bed, banks, course, or characteristics of a watercourse</i>	For the construction of agricultural areas and evaporation ponds across ephemeral streams/natural drainage areas.

1.11 Existing lawful water use and development on the property

The existing water use is confirmed by the Kakamas Water Users Association (KWUA) and is outlined below in Table 3.

Table 3: Water allocations

Property description	Property owner	Lawful/Lawfulness still to be determined	Property area	Area developed	Total area (checked)	Water allocations
Kakamas South Settlement No. 1740	Mosplaas Sitrus (Pty) Ltd	Confirmed by WUA	116,3878	80	80	99,3
Kakamas South Settlement No. 2149	Mosplaas Sitrus (Pty) Ltd	Confirmed by WUA	31,8114	22,72	20	20
Kakamas South Settlement No. 2255	Mosplaas Sitrus (Pty) Ltd	Confirmed by WUA	159,4888	123,67	124	54

Kakamas South Settlement No. 2125	Mosplaas Sitrus (Pty) Ltd	Confirmed by WUA	449,9997	96,75	183.2	268,2
-----------------------------------	---------------------------	------------------	----------	-------	-------	-------

As shown above 70 ha (1 050 000 m³/a) of water will have to be moved from Kakamas South Settlement No. 2125 to Kakamas South Settlement No. 2255 to allow the correct water allocations per property.

1.12 Details of the water use intended

1.12.1 Section 21 a – change of use - transfer

The applicant, Mosplaas Sitrus (Pty) Ltd, wishes to transfer 1 050 000 m³/a (70 ha) of water from Kakamas South Settlement No. 2125, to Kakamas South Settlement No. 2255, for the rectification of water allocations for each property. The additional 22 500 m³/a will be allocated for “Schedule I” and “Industrial use” on Kakamas South Settlement No. 2265, 2234 and Remainder of Kakamas South Settlement No. 2374.

The new irrigation water allocation for each property will be as follows:

- Kakamas South Settlement no. 2255 – 124 ha (1 860 000 m³/a)
- Kakamas South Settlement no. 2125 – 196.7 ha (2 950 500 m³/a).
- Kakamas South Settlement no. 1740 – 99.3 ha (1 489 500 m³/a).
- Kakamas South Settlement no. 2149 – 20 ha (300 000 m³/a).

See Table 4 below indicating the transfer and total new volumes for each affected property.

Table 4: Water transfer allocations

Facility Details		Quota	Before Transfer		Transfer Volume		After Transfer	
Transfer	Properties		Area (ha)	Volume (m ³)	Area (ha)	Volume (m ³)	Area (ha)	Volume (m ³)
Doner	Kakamas South Settlement no. 2125	15 000	268.2	4 023 000	70	1 050 000	196.7	2 950 500
	Kakamas South Settlement no. 2125				1.5	22 500		
Receiver	Kakamas South Settlement no. 2255	15 000	54	810 000	70	1 050 000	124	1 860 000

For Industrial use and Schedule 1 use	Remainder of Kakamas South Settlement no. 2374 & 2265 & 2234.				1.5	22 500	1.5	22 500
TOTAL VOLUME TRANSFERRED					71.5	1 072 500 m³/a		

1.12.2 Section 21 a – change of use – Schedule 1 use and Industrial use

Mosplaas Farm uses water from the irrigation allocation for drinking purposes, the packaging shed and garden irrigation.

A Water use licence application (WULA) will be required for 21(a) to transfer water from “irrigation” to the sector “Schedule 1”. Water used in pack stores are used for commercial purposes and must, therefore, be licenced as “Industrial” use on Remainder of Kakamas South Settlement No. 2374.

It can, therefore, be concluded that licences will be required to “transfer” water from the lawful “irrigation” allocation to “Industrial” and “Schedule 1” use.

Table 5: Water summary

Water use	l/Day	Person/s	Day/s	Months	Total (m ³ /annum)
Packhouse (washers)	500	2 packhouses	31	3	93
Packhouse (greywater)	15	1000	24	2	720
	15	500	24	3	540
Accommodation & Offices	150	1000	31	2	9300
	150	500	30	3	6750
	150	35	30	12	1890
Gardens and landscaping					3 207
TOTAL					22 500 (1.5 ha)

As shown above in Table 5, the total volume of water used annually amounts to approximately 1.5 ha of water. Therefore, the application is to transfer approximately 1.5 ha (22 500 m³/a) of water for Industrial and Schedule 1 use. From this approximately 21 000 m³ should be allocated for Schedule 1 use and approximately 1 500 m³ will be allocated for Industrial use.

1.12.3 Section 21c & i –impeding and diverting flow in a watercourse; and altering the bed, banks, course or characteristics of a watercourse.

1.12.3.1 Development across streams on Kakamas South Settlement No. 2255, 2149, 1710 and 2152.

The drainage channel system on site has not been mapped (as a watercourse) on any of the maps available of the study area. However, on request from DENC and DWS, the drainage system is seen as a watercourse. See Figure 2 for the development layout showing the streams crossing the site. There was NO planting of orchards within the larger drainage channels and the unnamed tributary, as most of the channels running towards the Orange River have already been modified and development has taken place across them, therefore preventing water flow towards the Orange River.

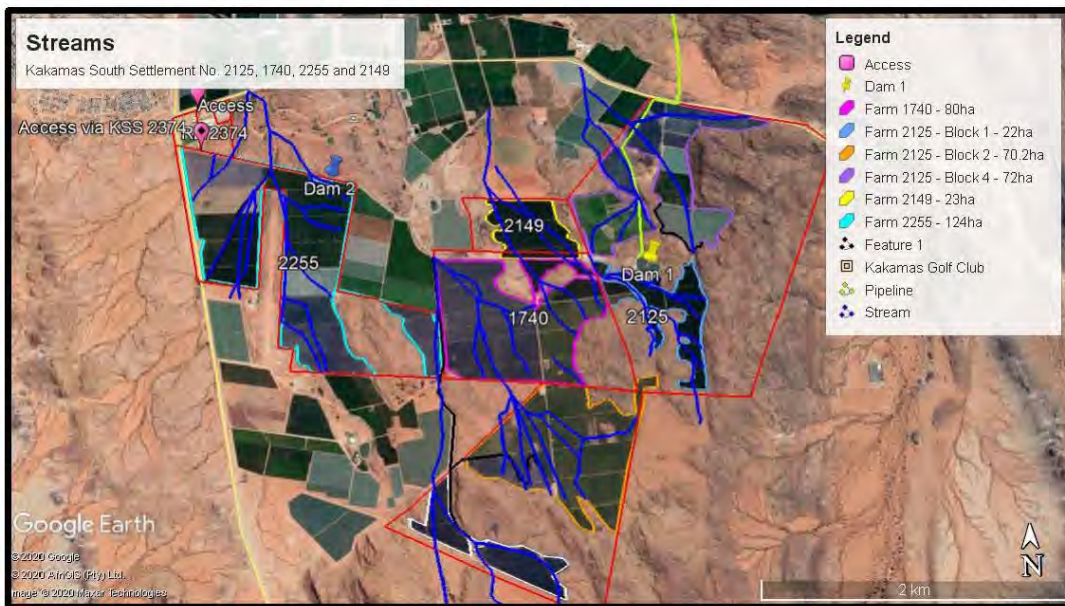


Figure 2: Ephemeral streams/drainage areas

The unnamed drainage systems are therefore classified as an ephemeral course as it will only flow sporadically after rain. These watercourses are not considered to be seasonal rivers which will regularly contain water in a seasonal pattern. As shown below in Figure 3 the sites do not fall within a Critical Biodiversity Area.

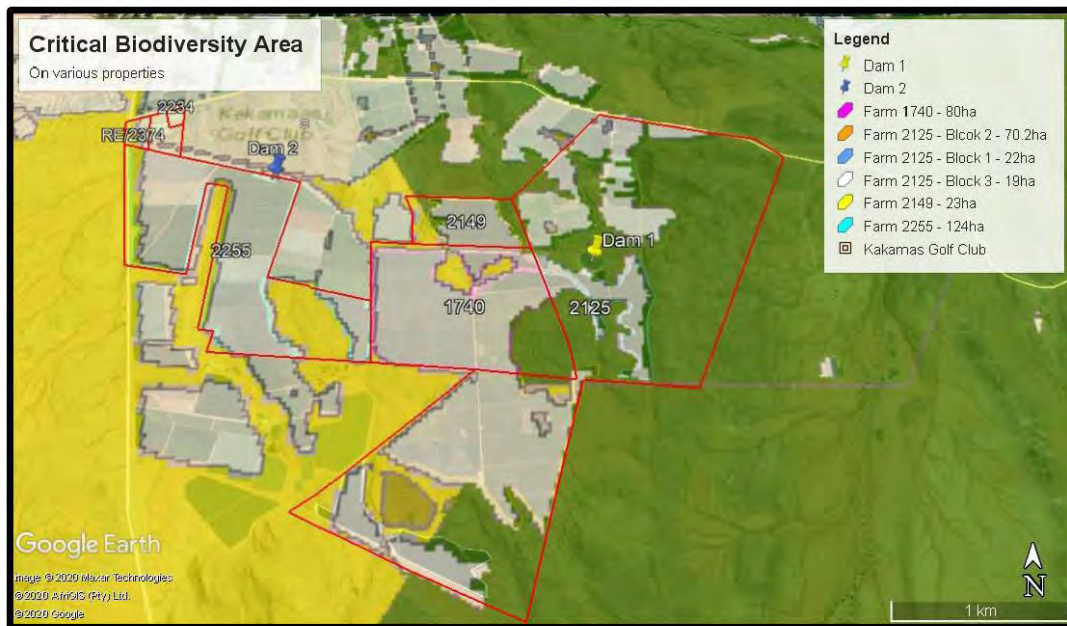


Figure 3: Critical Biodiversity Area

The proposed agricultural development areas fall within the Lower Orange River catchment area. The agricultural areas do not fall within any NEPPA catchment priority areas.

1.12.3.2 Development of dams across streams.

Dam 1:

The existing dam has a capacity of 42 000 m³, with a wall height of 4.95m. The dam has an existing Water Use Licence (14/D53J/B/1649). Therefore, no further water uses approvals necessary. The dam, however, was not constructed across small streams, see Figure 4.



Figure 4: Dam 1 position

Dam 2:

The existing dam that needs to be legalised. The dam has a capacity of 1900m³, with a wall height of 2 m and is 800 m² in size. This dam therefore does not need a water use Licence, only registration of the dam is necessary. However, this dam was constructed across a stream as part of the development of the agricultural area on Kakamas South Settlement No. 2255, see Figure 5.



Figure 5: Dam 2 position

1.12.3.3 Present Ecological Status (PES) & Ecological Importance Sensitivity (EIS)

Reference is made to the Draft Department of Water and Sanitation (DWS) Report (dated August 2016): "Determination of Ecological Water Requirements for Surface Water (rivers, estuaries and wetlands) and groundwater in the Lower Orange WMA; Report No. RDM/WMA06/00/CON/COMP/2016)1".

This report provides the PES and EIS of the Orange River at EWR 02, located upstream of the confluence of the water courses that flow into the Orange River from the project sites, and at EWR 03, downstream of the Augrabies Falls and downstream of the confluence of the watercourses that flow into the Orange River from the project sites.

Refer to Figure 6 below for the location of the Project Site (Kakamas South Settlement No. 2255, 2149, 1710 and 2152) in relation to EWR 02 and EWR 03.

EWR 02 and EWR 03 both have:

- A PES of C (Moderately Modified); and,
- An EIS denoted as high (the river in terms of biota and habitat may be sensitive to flow modifications but in some cases may have a substantial capacity for use.)



Figure 6: Extract of map that shows the locality of the EWR sites in context of the MRUs (referenced from Figure 3.1 in Report No. RDM/WMA06/00/CON/COMP/2016).

The drainage channel system is in a sub-catchment of an unnamed tributary that flows towards the Orange River. The small tributaries flow into the unnamed tributary, which is not really a river, but more accurately fits the description of an ephemeral stream. The overall analysis according to the DWS: PES & EIS desktop assessment is that the site was not assessed, and the ecological importance of the river is exceptionally low. Because it was not assessed, one must fall back to the overall assessment for the EWR:02, which refers to a moderately modified system.

1.12.3.4 Canal pump station, pipelines, and dams.

Water is required for the drip irrigation of the established orchards/vineyards and is supplied via pipelines from the booster pump station. The water is pumped from the canal via a this pump station, see Figure 7, to the dams, see Figure 8, from where it is distributed further two the irrigations areas.

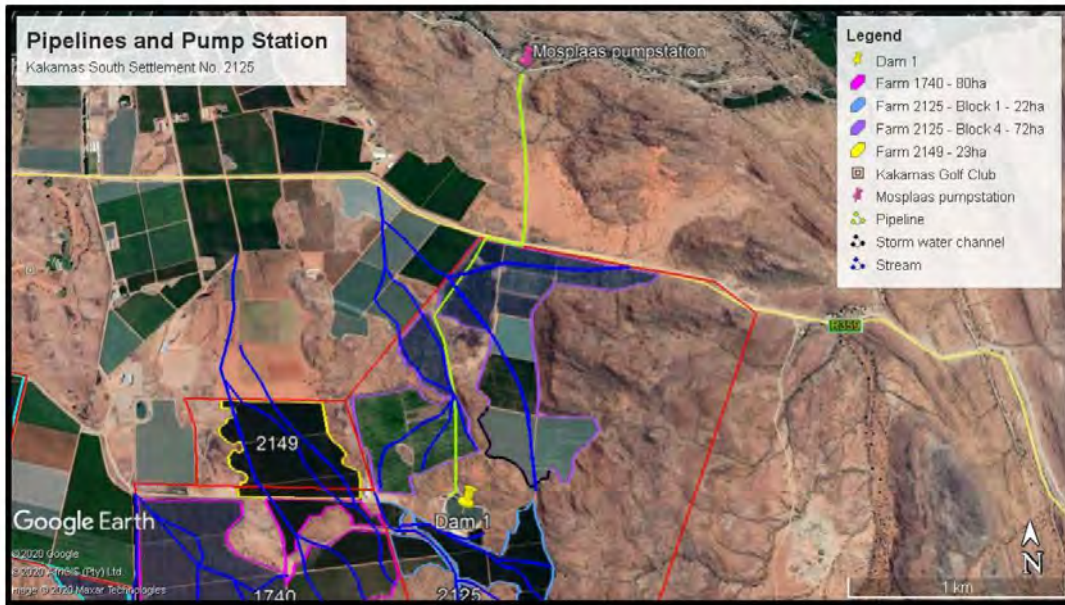


Figure 7: Pump station and pipelines



Figure 8: Small dam 2.

1.12.3.5 Irrigation of any land

The new corrected water allocation will be pumped directly from the canal and irrigated onto the orchards/vineyards/orchards on Kakamas South Settlement No. 2255, 2149, 1740 and 2152.

1.13 Storm Water Management

1.13.1 Introduction

This section in the report is intended to provide the Department of Water Affairs with all necessary information to assess the suitability of the measures to be taken by Mosplaas Citrus (Pty) Ltd regarding the successful storm water management of the proposed irrigation/agricultural development. This section describes the various infrastructure items that are/were to be constructed and the storm water management objectives that the landowner will undertake to ensure sustainable management of the constructed storm water infrastructure. Find attached in Appendix F.2 the Storm water Management Plan.

1.13.2 Mitigation Measures:

The main issues to be addressed with mitigation measures include:

1. Design
2. Irrigation
3. Nutrients (fertilisers)
4. Spraying (pesticides)
5. Storm water channels
6. Pipelines
7. Erosion control
8. River pump station

1.13.2.1 Design

The design of vineyard blocks took into account the natural flows to minimise impacts on the ephemeral streams. A storm water feature diverts flow around the planted blocks towards the streams, see Figure 9. Flow entering the diversion channel will then flow downstream and naturally enter an existing stream.

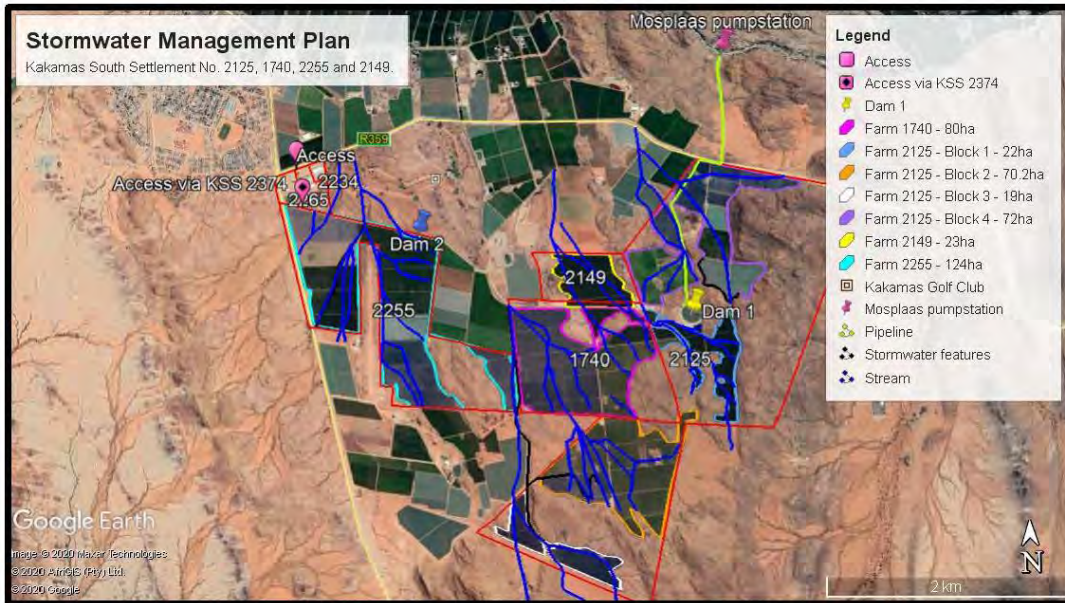


Figure 9: Stormwater infrastructure

1.13.2.2 Irrigation

In order to prevent over irrigation, which might lead to water flows creating erosion and or transporting nutrients to the retained ephemeral streams, good farming practises such as irrigation on demand should be utilised.

In addition, the use of mulching should be used to reduce evaporation losses. The mulch also serves to retain moisture and prevent erosion near the plants at the source of irrigation; microjet or drip.

A typical example with mulching along the planted rows and planting between rows is shown below in **Figure 10**.



Figure 10: Mulching and planting between rows

1.13.2.3 Nutrients

Nutrients are usually applied in the irrigation water. Every effort must be made to only apply as required by the plant and soil.

Should fertiliser powder or pellets be used, and applied by hand or machine, it must only be placed along the vine plants and no mess or waste between rows should be allowed. Powder or pellet fertiliser may not be spilled between vine rows or on access roads between the vine blocks. Should this happen it must be picked up and removed immediately.

1.13.2.4 Spraying

Spraying of pesticide is normally applied by machine as a vapour. The main potential source of pollution would be from spillages. Therefore, filling of the spray machine must be done in a safe area where pollution of the soil would not be possible. The best place would be on a concrete area where the pesticide is mixed with water.

1.13.2.5 Storm water channels

As shown in the storm water infrastructure layout plan in Figure 9, the black lines indicated are the storm water berms/channels constructed to accumulate the storm water. The storm water channel flows towards a natural drainage area towards small streams, from where it flows towards the Orange River.

It should be noted that no dissipation/retention structures other than the storm water channels and drainage pipelines are included to prevent erosion and storm water accumulation. However, natural vegetation has over time accumulated within the channels and does reduce flow. The storm water channels are deep enough to prevent overflow and erosion.

1.13.2.6 Pipelines

The pipelines to the irrigation areas runs along the existing farm roads and from other irrigation areas towards the development area. Find included in Appendix F the SWMP with the pipeline method statement for construction of pipelines (PVC Pipes) below ground, if any pipelines should be replaced. The following mitigation measures should be implemented for work on the pipelines:

- Care will be taken to only construct/replace the pipelines during the dry seasons
- As far as possible the section of the pipeline across/within the stream should be done manually, no machinery, resulting in the lowest possible impact.
- Infilling with original soils (as per method statement)
- Flow meters must be equipped on the pipelines - protective measurement on water losses. This must be monitored on a regular basis and records kept on site.

1.13.2.7 Erosion control

Erosion would normally occur with the following:

1. Over irrigation which create water flows from the planted rows to the area between the rows and then to roads between the blocks.
 - For mitigation see (3) below.

2. Pipe breakages where water will wash from the plants to the area between the rows to the roads between blocks and from here water can flow towards the retained ephemeral streams – thereby causing erosion gulley.
 - For mitigation see (3) below.
3. Rain events where the water will flow down slope to reach the ephemeral streams and along the way cause erosion where development took place; that is – between the planted rows and along the roads between blocks.

Mitigation include the following:

- Mulching and planting/mulching between rows – see Figure 12 for typical example.
- Scarifying of soil between planted blocks and roads to create a soft/rough area to retain moisture and prevent erosion – see Figure 11.



Figure 11: Scarifying of soil

- Create a buffer with natural vegetation between the planted blocks and roads as shown in Figure 12.



Figure 12: Buffer areas with natural vegetation between blocks and roads

Overall, therefore, the natural approach is preferred whereby mulching, planting, and natural buffer areas are used to serve as mitigation to prevent flows that could create erosion. This has the further advantage that it also acts against spreading of nutrients and pesticides.

1.14 Plough certificate

The available plough certificate indicates sufficient available plantable areas, although it is not clear it seems that the planted area per property correspond with Plough Certificate mapped area. However, from the Google Earth imagery plantings were done over water course, which was against the plough certificate conditions.

Find included in Appendix N the existing Plough certificate, the requirements will be discussed with Department of Agriculture, Forestry and Fisheries (DAFF) regarding the amendment.

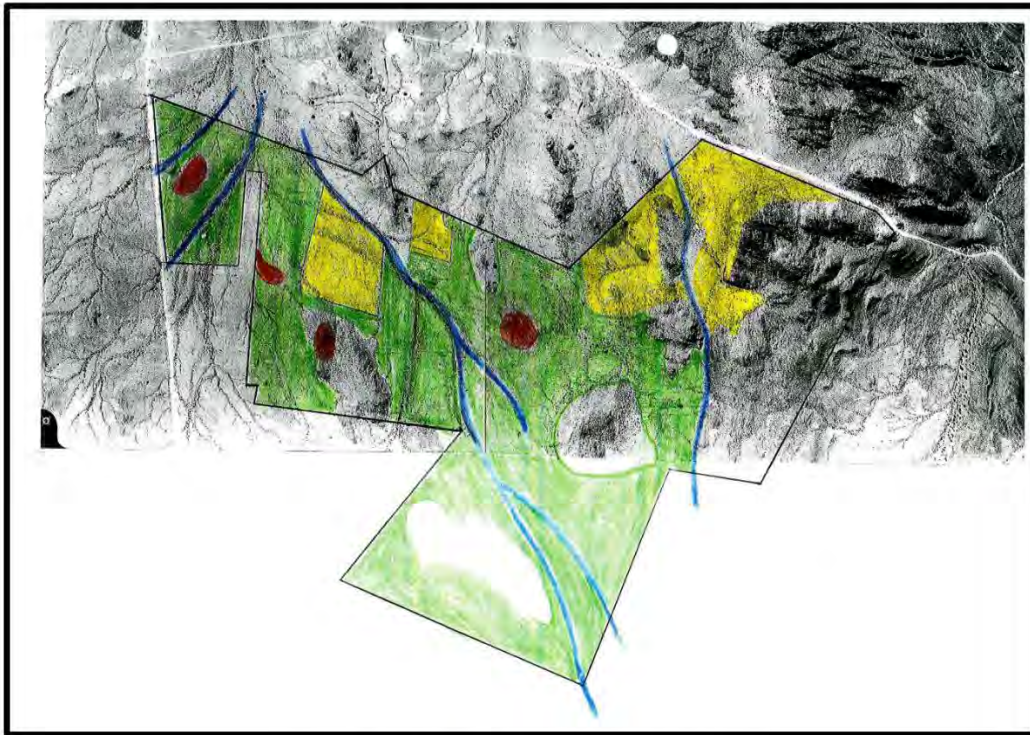


Figure 13: Existing Plough certificate areas

2. Description of the Environment

2.1 Climate

The climatic conditions of this region of the Northern Cape are typical of conditions characteristics of semi-desert / arid savannah areas. The area is characterised by fluctuating temperatures, low and unpredictable rainfall and high evaporation rates. The low annual rainfall (average of 170 - 240 mm in Upington or even lower in some surrounding areas) is significantly lower than the evaporation rate. Rainfall usually occurs during the late spring and summer months.

The area experiences high temperatures, especially in the summer months, where daily maximums of $>42^{\circ}\text{C}$ are experienced. The annual evaporation in the area is approximately 2 281 mm. Winter temperatures can drop to below 4°C . Frost is rare, but occurs occasionally in most years, though usually not severely.

Weather data was received for the area for the time period 2001 - 2005. Figure 14 gives an indication of the average monthly temperatures and humidity over the 5-year period.

Month	Average Temperature (°C)	Maximum Temperature (°C)	Minimum temperature (°C)	Humidity (%)
January	28.22	41.30	14.04	31.42
February	28.37	39.90	15.96	36.00
March	25.76	38.74	11.48	41.84
April	21.24	34.36	6.92	50.39
May	16.80	31.16	1.66	46.22
June	12.62	26.60	-2.78	47.97
July	12.42	27.26	-2.16	41.22
August	14.10	32.00	-2.10	38.96
September	18.64	36.38	2.42	32.95
October	22.95	38.32	6.00	30.07
November	25.45	39.14	10.72	32.27
December	27.41	40.16	14.04	26.65
Average	21.16	35.44	6.35	38.00

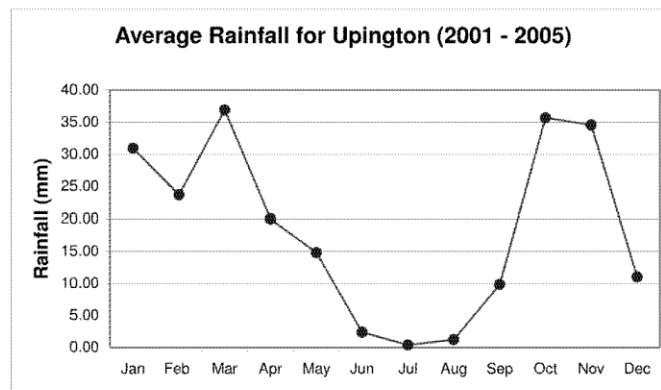


Figure 14: Average monthly rainfall and daily temperatures

2.2 Topography

The area is characterised by flat terrain and is, in general, an area of little topographical relief. Isolated hills and mountains can be found in the area. The area surrounding Mosplaas can be described as ranging from large sandy plains with windblown sand dunes and low hills breaking the flat relief, to rocky outcrops and mountainous areas.

2.3 Geology and Soils

The soils of most of the area are red yellow apedal soils, freely drained, with a high base status and <300 mm deep, with about one fifth of the area deeper than 300 mm, typical of Ag and Ae land type.

2.4 Natural vegetation and plant life

Three vegetation types occur across the various properties:

- Bushmanland Arid Grassland is listed as vegetation types of Least Concern (medium pink),
- Lower Gariep Brokenveld is also listed as vegetation types of Least Concern (dark pink),
- Kalahari Karroid Shrubland is listed as vegetation types of Least Concern (light pink), see Figure 15.

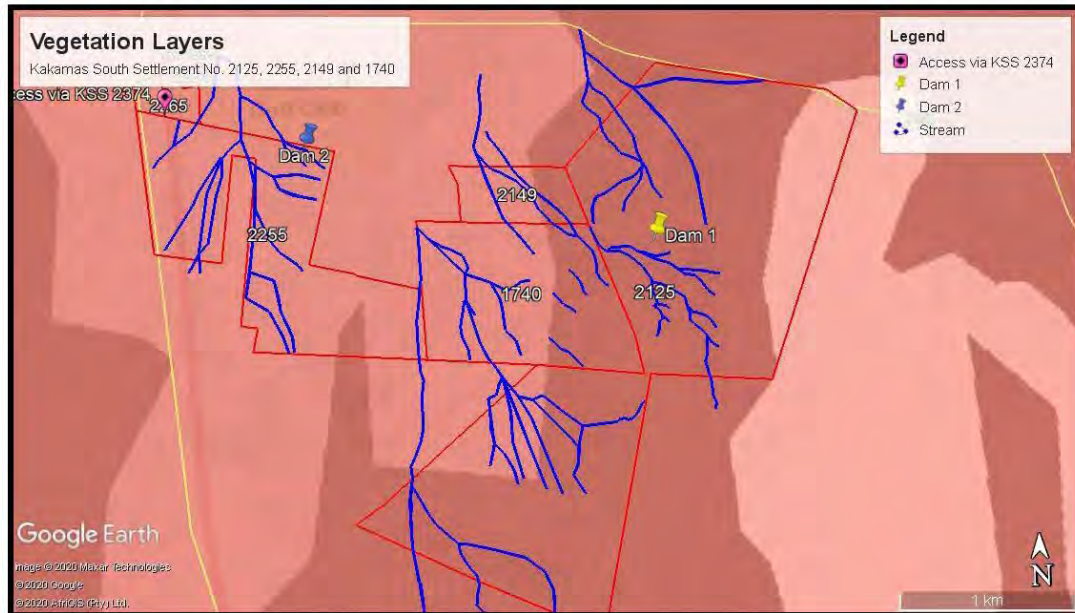


Figure 15: Vegetation across the sites.

According to the Northern Cape Critical Biodiversity Areas (2016), the proposed site will not impact on a CBA area, as the development areas has already been mapped as changed areas characterised by intensive farming, see Figure 16.

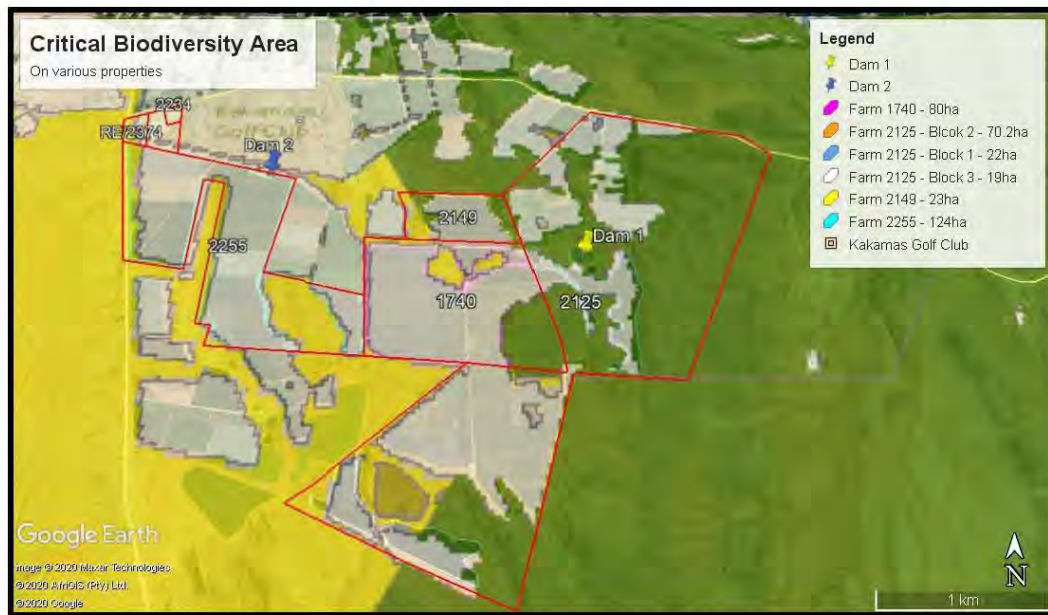


Figure 16: Critical Biodiversity areas

2.5 Land use

Most areas in the wider study area do not have a high agricultural potential, except few portions in the alluvial zones close to the Orange River, where irrigation may be practiced. In addition, there are also severe climatic restrictions to agricultural potential. Rainfall is very low, while evaporation is extremely high, due to the high temperatures. For this reason, even the best soils are unsuited for dryland agriculture under these conditions.

Land use of the uncultivated areas is predominantly livestock farming, with overgrazing evident in many areas. The grazing capacity of the natural grasslands of the plains can vary between 25 and 35 hectares per large stock unit (equal to 3.5 to 5 hectares per small livestock unit).

2.6 Surface water

Names of watercourses:

The drainage system is classified as an ephemeral course as it will only flow sporadically after rain. These watercourses are not considered to be seasonal rivers which will regularly contain water in a seasonal pattern.

Surface water use:

No surface water will be used during the operation of this project.

Presence of wetlands:

No specific wetland areas have been identified.

2.7 Groundwater

No ground water will be used.

2.8 Air quality

No significant impact on the present conditions, which could be classed as fairly good air quality.

2.9 Noise

There will be no significant contribution to noise from any planned activities.

2.10 Sites of archaeological interest

The site is already disturbed by the existing evaporation ponds and agricultural areas.

2.11 Sensitive landscapes

The site is already disturbed by the existing evaporation ponds.

2.12 Visual aspects

The site is already disturbed by the existing evaporation ponds. Agricultural development in an existing agricultural area.

2.13 Regional socio-economic structure

Population:

The total population of Kai! Garib Municipality is 65 869. The total households are estimated at 16 703 and of these 34.6% are female-headed households. The average household size is 2.9 people.

Economic activities:

The Orange River played an enormous role in the formation of the municipal area and most of the towns and settlements are to be found close to or adjacent thereto. The economy is heavily dependent on the intensive and extensive agricultural sector. The major roads (N14, R27 and R359) assist in the growth the municipal area experience.

It is important to note that new opportunities have opened for the Kai! Garib municipal area since the need for the generation of sustainable energy in South Africa was introduced by Eskom and the South African government. According to SDF, Kai! Garib Municipality immediately became a hotspot for solar energy developments and numerous developments are currently in process. The resulting economic spin-offs are eagerly anticipated. Although the 'solar corridor' as identified by the PGDS and NCPSTDF, does not include the N14 between

Upington and Kakamas, current developments indicate that this area will form the centre of solar development. Figure 17 below shows the most active economic sectors.

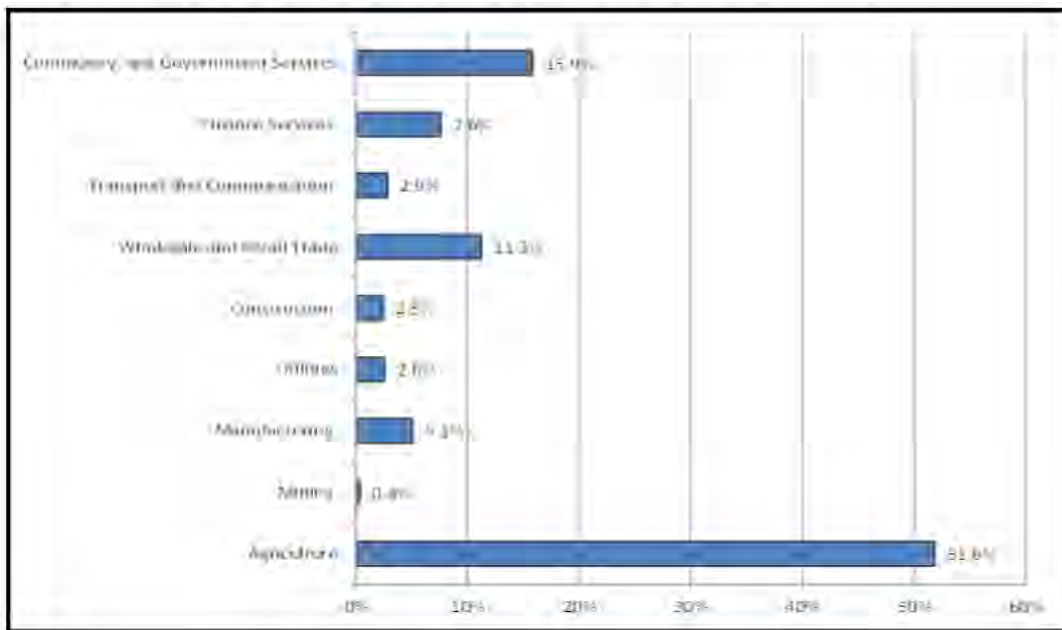


Figure 17: Active economic sectors in the area

Employment and income

Currently, 30 949 people are economically active (employed or unemployed, but looking for work), and of these, 10% are unemployed. Of the 19 375 economically active youth (15-35 years) in the area, 10% are unemployed, as shown in Figure 18.



Figure 18: Economic profile of the area

Water supply and sanitation:

The Kai! Garib Municipality experiences huge problems with sanitation in all of its nine wards. Many settlements are currently making use of the ventilated improved pit (VIP) systems, which are currently full and posing health risks to communities. The worse-affected areas are Riemvasmaak, Keimoes, Alheit, Augrabies, Lutzburg and Marchand. Almost all informal settlements in Kai! Garib do not have a decent sanitation system.

The municipality launched a pilot programme to address the situation. The programme proved successful but could not be fully implemented due to a lack of funding. It is also important to note that none of the informal settlements have any form of sanitation. The sewerage systems within the formal areas or the main towns Keimoes, Kakamas and Kenhardt are currently under much strain, and need to be upgraded. Figure 19 summarises the needs in terms of sanitation in the various wards.

Toilet Facility	Percentage
None	11,9%
Flush toilet (connected to sewerage system)	59,6%
Flush toilet (with septic tank)	12,4%
Chemical toilet	0,1%
Pit toilet with ventilation	5,5%
Pit toilet without ventilation	9,1%
Bucket toilet	0,5%
Other	0,9%

Figure 19: Water supply and sanitation in the area

Power supply:

The municipality are currently only distributing electricity within the three main towns. The smaller settlements around the three main towns are served by Eskom directly. The challenge, however, still exists that some of the households within the settlements do not have any access to electricity. The informal areas within the municipality are posing a great challenge in terms of providing electricity. Households without access to electricity usually make use of wood for fire, and candles and paraffin for lighting. All the informal settlements are not fully connected to an electricity grid.

The need of bulk electricity services also poses a challenge in areas such as Kakamas, Keimoes and to a lesser extends Kenhardt. Greenfields plots in Kakamas need installation of bulk services before any reticulation connections can take place. These sources pose various dangers and are environmentally unsustainable. The municipality is, however, very optimistic about the future, due to the rise of solar energy developments in the municipal area.

Housing:

The municipality has indicated that there is a pressing need for houses, especially low-cost houses, as well as serviced plots within all the communities of the Kail Garib Municipal Area. It is quite satisfying to see that a great deal of progress was made in the delivering brick houses to communities since 1994, but unfortunately, the communities' needs for houses exceed the speed at which houses are built.

According to Census 2011 (Stats SA), 88.4 % of the population live in formal dwellings and 43.1% of households live in houses which they own and have paid off fully. However, according to service delivery data from the municipality, the number of informal settlements is growing overnight and the demand for service provision in these areas poses great challenges. The Housing Sector Plan is currently under review. According to the Human Settlement Plan 2012, the housing need is as follow in Figure 20.

Table 14.1 Population & Households per ward in 2015

WARD	Population 2015	Households 2015
Ward 1	11 408	3 044
Ward 2	8 191	1 892
Ward 3	9 317	2 044
Ward 4	6 375	1 680
Ward 5	5 499	1 566
Ward 6	7 684	1 730
Ward 7	4 856	1 299
Ward 8	5 660	1 782
Ward 9	6 679	1 666
Total	65 863	16 703

Source: StatsSA, Census 2011

Figure 20: Housing need in the area

In summary, this proposed development will not put further strain on the services infrastructure, as these services are provided on site. The development's focus is more on a retirement village with a frail care unit, rather than low cost housing. Nevertheless, the rest of this development has already been functioning since 2002, and the proposed further development will take pressure off the Municipality in terms of providing a safe environment for the retirement sector of the public. This development's location is also such that it will provide job opportunities in the area.

2.14 Interested and Affected parties

Public Participation for the iWULA was running in conjunction with the NEMA S24G Process. Interested and Affected Parties were provided with a 30-day commenting period in which the S24G assessment Report the iWULA was made available. All I&AP's were also provided with a 60-day commenting period for which the draft iWULA Report was made available. Please refer to Appendix G of the WULA for proof of PPP.

2.15 Industrial activity

The evaporation ponds do not receive wastewater from commercial industrial activities, only domestic use wastewater as well as water from the crate washer in the packhouse.

3. CONSIDERATIONS AND ASSESSMENT CRITERIA

Management actions in the development of an Integrated Water Quality Management Strategy for the Upper and Lower Orange Water Management Areas include the following:

Area 1: Boegoeberg to Kanon Islands

It is the vision of all interested and affected parties within Visioning Area 1 to contribute towards the integrated management of the surface and groundwater resources in all LOWMA catchments between Douglas and Boegoeberg Dam, to secure sufficient water that is fit for all beneficial uses, specifically including domestic and variable agricultural use, and to support a healthy aquatic ecosystem, particularly for ecological sensitive areas such as the Douglas Conservancy.

Area 2: Boegoeberg to Kanon Islands

It is the vision of all interested and affected parties within Visioning Area 2: (Kakamas/Augrabies/Keimoes falls within this area) to contribute towards securing suitable water supplies of qualities for all LOWMA catchments between Boegoeberg and Kanon Islands, that will sustain:

- a thriving table grape export market and wine production;
- local agricultural activities via an extensive irrigation canal system;
- a thriving stock farming industry;
- domestic and light industrial water use in all towns, specifically including Upington;
- supplying water to rural communities via both the Kalahari West and Karos-Geelkoppan water supply schemes.

Area 3: Kanon Islands to Pella It is the vision of all interested and affected parties within Visioning Area 3 to promote the participatory and integrated management of all water resources pertaining to the LOWMA catchments situated between Kanon Islands and Pella in order to ensure that water supplies are of an acceptable quality to all water users, in particular to sustain a prominent conservation and ecotourism industry, as well as livestock and private game farming, while allowing room for beneficial water use.

Other legislation and guidelines that have been considered includes the following:

- The Constitution of South Africa Act No.108 of 1996.
- The National Environmental Management Act, 1998 (Act No. 107 of 1998).
- Conservation of Agricultural Resources Act No 43 of 1983.
- Subdivision of Agricultural Land Act, 1970 (Act No. 70 of 1970).
- National Environmental Management: Biodiversity Act (Act 10 of 2004).
- Planning Legislation and Guideline.

3.1 The reserve

The Department of Water Affairs and Forestry have recently completed the reserve determination for the Orange River: Directorate of Scientific Services in Pretoria.

From the reserve determination it was possible to obtain from your department the availability of water for the allocation of the water usages requested for the issue of a licence to the applicant.

3.2 The class and resource quality objectives of the water resource

These aspects could only be addressed and commented on by the Department of Water Affairs.

3.3 The strategic importance of the water to be authorised

This water use has no strategic importance.

3.4 The existing lawful water use in the catchment under consideration

This authorisation will have no impact on any existing lawful water use within the investigation area, as these are existing rights that will be allocated to the various properties as outlined in 1.11. The property falls within the Lower Orange River catchment area.

3.5 The likely effect of the water uses to be authorised on the water resource and on other water users in the catchment

This application, managed by DWS: Upington, will have little effect on the quantity of water available from within the catchment.

3.6 The impact on the environment

The impacts and mitigation measures are summarised in the table below:

Table 6: Impacts table

Water Uses	Potential Impact on	Proposed Mitigation Measures	Review of the adequacy of suggested mitigation measures
Section 21 (c&i)	Irrigation areas associated with the additional water use rights	Low positive <ul style="list-style-type: none">Measures should be implemented to reduce water use within the proposed development, such as the use of	Mitigation measures adequate to

		<p>tension meters to avoid over irrigation of the soils.</p> <ul style="list-style-type: none"> • Environmental education programmes for workers will ensure that they will be sensitive to the environment and report incidents such as leaking taps, broken irrigation systems, etc. • The irrigation system to be used is the DFM method along with irri-check calibrations and recommendations. • Test pits and data collections from these pits are taken on a regular basis to determine the moisture content for soil etc. • Soil coverage within the orchards/vineyards with chaff. • Regular monitoring and checks from specialists in the field to introduce best possible irrigation practices. 	ensure positive impact.
Section 21 (c&i)	Water quality	<ul style="list-style-type: none"> • No impact on water quality, as construction will be conducted outside the rainfall season. (replanting) • No flow from agricultural areas as stormwater structures were already constructed. • Measures should be implemented to reduce water use within the proposed development, such as the use of tension meters to avoid over irrigation of the soils. 	Mitigation measures adequate to ensure impacts are fully mitigated.
	Impeding and diverting flow within ephemeral streams.	<p>Low negative</p> <ul style="list-style-type: none"> • The natural drainages areas and small ephemeral stream will be filled in and orchards/vineyards established on these areas, therefore a low negative impact on surface water flow. • This will however be mitigated by establishing a storm water management mitigation measures, outlined in the SWMP. 	Mitigation measures adequate to ensure impacts are fully mitigated.
Section 21 c&i	Construction of a small dam across area with ephemeral streams	<ul style="list-style-type: none"> • Sandbags to be put in place if floodings take place and the structure is damage, to ensure water quality remains. 	Mitigation measures adequate to ensure impacts

		<ul style="list-style-type: none"> • Regular check-ups on infrastructures to ensure structure is in good condition. • Work to take place during dry season periods when the Orange River is at its lowest. 	are fully mitigated.
--	--	--	----------------------

3.6.1 Assessment of the impacts associated with the water use:

The impacts associated with the development (already took place) of agricultural areas across stream is low negative, however mitigation measure considered can prevent any further negative impacts, see Table 6 above.

3.7 The need to redress the results of the past racial and gender discrimination

It is envisaged that Mosplaas (Pty) Ltd will not create new employment opportunities from this application. However, it will ensure the continuation of the existing jobs and the entity plans to convert some of the current seasonal positions to permanent positions, should this Water Use Licence Application be successful. However, the main positive impact is the job security of current positions.

The new WULA will lead to the security of the farming operation, and will create a demand for new staff and new skills, e.g.:

- Skilled agricultural labourers
- Specific knowledge of orchards/vineyards production
- Specific knowledge of management of evaporation ponds on site
- Specific knowledge of fruit packing
- Support staff: administration, forklift drivers, tractor operators and Code 14 drivers.

Currently preference is given to black/coloured people for these positions, and more specifically, to black/coloured women where possible.

The Karsten Group strives to remain the frontrunners of the industry through continued focus on a competitive edge, diversification, strategic management and optimal use of water and other resources.

The Group firmly also believes in the empowerment of its employees: not only by means of financial and land ownership and senior management positions, but also through promotion, wider responsibilities given to people on the lowest possible levels and a sense of “ownership for what you do in any position you might occupy”.

The Group provides seasonal and permanent employment for a large community of people in one of South Africa’s poorest regions. All workers share in benefits such as training and development programmes offered in association with various institutions. Development programmes and projects are directed towards all workers and their families, including seasonal workers, irrespective of their worker status. Fringe benefits, apart from the provident

fund scheme, apply equally to all workers, and people are paid according to their job grading and not their employment status.

Training and career planning processes are initiated for each permanent worker, ensuring that workers have a clear vision of their future and are able to plan their future in the company. Vacancies are always advertised internally, and continuous training and development ensure that workers are equipped with the basic skills for the next level for which they might qualify.

Social and other benefits are offered to the large community of people working within the group, including pre-school care, bursary and study schemes for children of workers, health care, and housing for both permanent staff and temporary workers.

3.8 Efficient and beneficial use of the water in public interest

The new water use will have the following benefits:

The legalisation of water rights will directly secure existing and new job opportunities.

- More sustainable water will immediately create the opportunity to proceed with the expensive exercise to plant new varieties that can spread the preparation, pruning, harvesting and packing seasons over longer periods. This will support the entity in their efforts to convert as many as possible seasonal job opportunities into permanent job opportunities. The main positive is the job security of the existing workers and continued production for export.
- The increase in production of export-grade produce will bring more foreign capital to South Africa – capital, which is much needed to strengthen our economy, and as such is fully supported by Government.

3.9 Socio economic impact of water use to be authorised

In a rural area such as this with a high unemployment rate, any new employment positions have a huge impact on the immediate and extended families of the new workers. This positive impact is reinforced and compounded by more families in this rural community having access to proper housing, undergoing skills training and going to church, sport, etc. while their children can go to school. Even seasonal work opportunities have the advantage of extra income plus the opportunity to gain skills that can be used to gain permanent employment on the farm or elsewhere in the future.

Not only are the employment opportunities important, but also the facts that:

- Existing jobs can be secured: enough water will directly secure existing and new job opportunities.
- More sustainable water will immediately create the opportunity to proceed with the expensive exercise to plant new varieties that can spread the preparation, pruning, harvesting and packing seasons over longer periods. This will support the entity in their efforts to convert as many as possible seasonal job opportunities into permanent job opportunities. In particular, black females from the farm and neighbouring towns will benefit. The positive impact on their lives could be even higher, as more of them will also be promoted to supervisory level to help manage the increased production.

- The increase in value-adding volume and the secure production of export-grade produce will bring more foreign capital to South Africa – capital, which is much needed to strengthen our economy, and as such is fully supported by Government.

3.10 Investment already made and to be made by the water user in respect of the water use in question

The following investments have been made:

- All investments made already as this is part of an existing farming unit with existing infrastructure.

The future investments to be made:

- No additional investments, other than mentioned above and continuation of farming activities and export licensing with all the various legal documentation in place.

3.11 The period for which the licence is to be issued

The licence should be issued for the maximum possible period, as the water use will be of a permanent nature.

3.12 Failure to authorise the water use

Failure to authorise the water use will result in the following:

- Financial loss due to existing investments already made, buying of properties and water use rights.
- The high financial costs of the design and implementation of processes to obtain authorisation would also be lost.
- Loss of current and future employment opportunities, and skills development and training opportunities.

4. CONCLUSION

The development of the agricultural areas across small streams and the legalisation of the will not negatively impact on any other water users in the area. The site is already largely modified to the Orange River side of the development.

The legalisation (registration) of the dam will ensure the future use as a crucial part of the agricultural activities on the properties.

The authorisation of the farm and procurement of the correct rights on each property, thereby complying with the necessary legislation will have numerous positive socio-economic impacts not only on the farm but also the region and result in job creations, skills development, social upliftment and earning of foreign currency.

5. CONDITIONS

When instructed to do so by the Responsible Authority the user must fit a self- registering meter at the user's expense to measure water use and the user at his expense must maintain the meter in satisfactory working condition.

Officers from the Department of Water Affairs will always have free access to the property and the water works for supervision and control purposes.

The Department's or Responsible Authority's local representative will issue the necessary instructions to the user regarding the keeping of proper registers of water use and quality, and the owner must at all times comply with such instructions.

The Department accepts no liability for any damage, loss or inconvenience, of whatever nature, suffered as a result of: shortage of water; inundation or flood; siltation of the river or dam basin; and/or the shifting of water work in the event of a rise or drop in the water level of river or dam.

The quality or suitability of the water for any purpose is not guaranteed.

The water abstracted/used in terms of this licence may only be used for the authorised purposes.

This licence is not a permanent, lawful right and is not transferable from one user to another or from one property to another.

The user must take every possible precaution to the satisfaction of the Department, to prevent pollution of water resources.

The Department of Water Affairs reserves the right to withdraw this licence in the event of failure to comply with any of the said conditions or provisions.

The applicant has a period of 2 (two) years within which to commence/implement this water use, failing which, the licence will lapse.

6. RECOMMENDATION

The following recommendations should be adhered to:

- Any further recommendations outlined in the Environmental Authorisation and the Water Use Licence issued.

- When instructed to do so by the Responsible Authority the user must fit a self-registering meter at the user's expense to measure water use and the user at his expense must maintain the meter in satisfactory working condition.
- Officers from the Department of Water Affairs will at all times have free access to the property and the water works for supervision and control purposes.
- The Department's or Responsible Authority's local representative will issue the necessary instructions to the user with regard to the keeping of proper registers of water use and quality, and the owner must at all times comply with such instructions.
- The Department accepts no liability for any damage, loss or inconvenience, of whatever nature, suffered as a result of: shortage of water; inundation or flood; siltation of the river or dam basin; and/or the shifting of water work in the event of a rise or drop in the water level of river or dam.
- The quality or suitability of the water for any purpose is not guaranteed.
- The water abstracted/used in terms of this licence may only be used for the authorized purposes.
- This licence is not a permanent, lawful right and is not transferable from one user to another or from one property to another.
- The user must take every possible precaution to the satisfaction of the Department, to prevent pollution of water resources.

The Department of Water Affairs reserves the right to withdraw this licence in the event of failure to comply with any of the said conditions or provisions.

The applicant has a period of 2 (two) years within which to commence/implement this water use, failing which, the licence will lapse.

It is also recommended that the irrigation area across small ephemeral streams on Kakamas South Settlement No. 2125, 2255, 1740, 2149 be allowed. It also recommended that the water transfer between properties and the allocation of water for Schedule 1 and Industrial use be authorised.

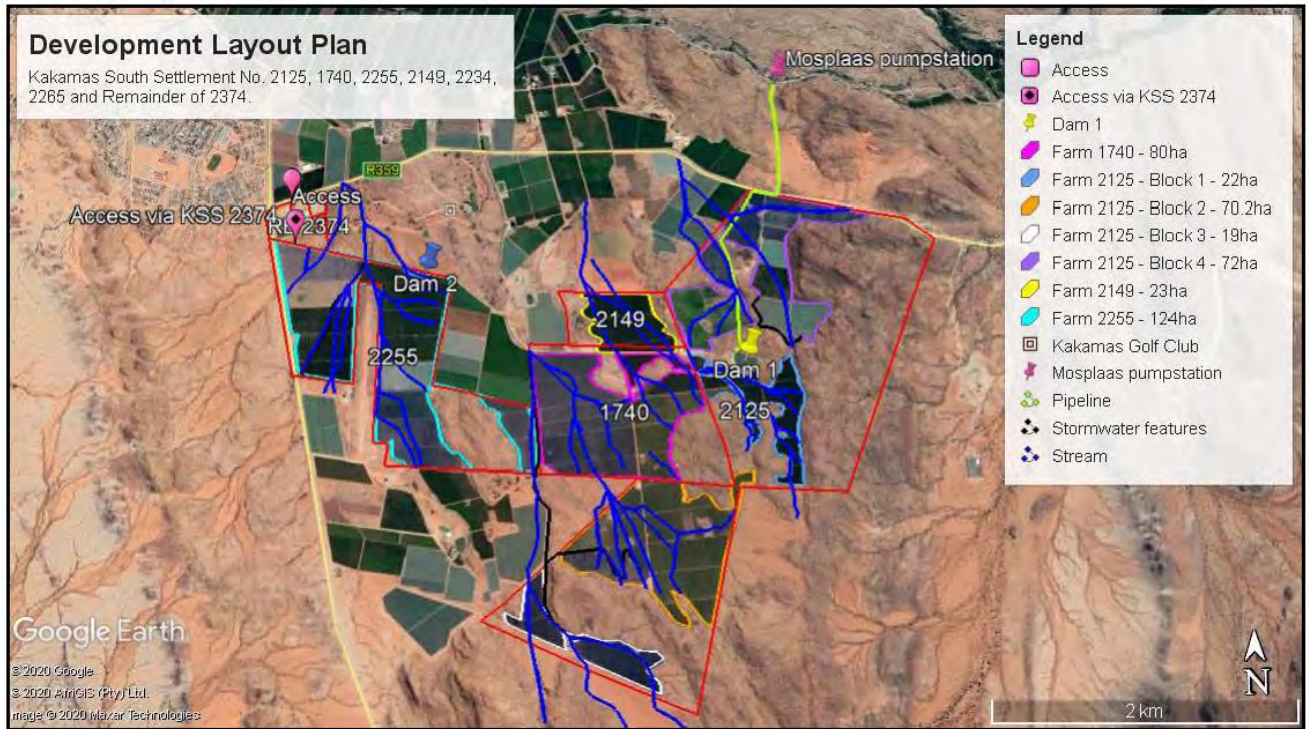
7. APPENDICES

APPENDIX A: Completed Licence Application Forms

APPENDIX B: Existing Water Use Confirmation

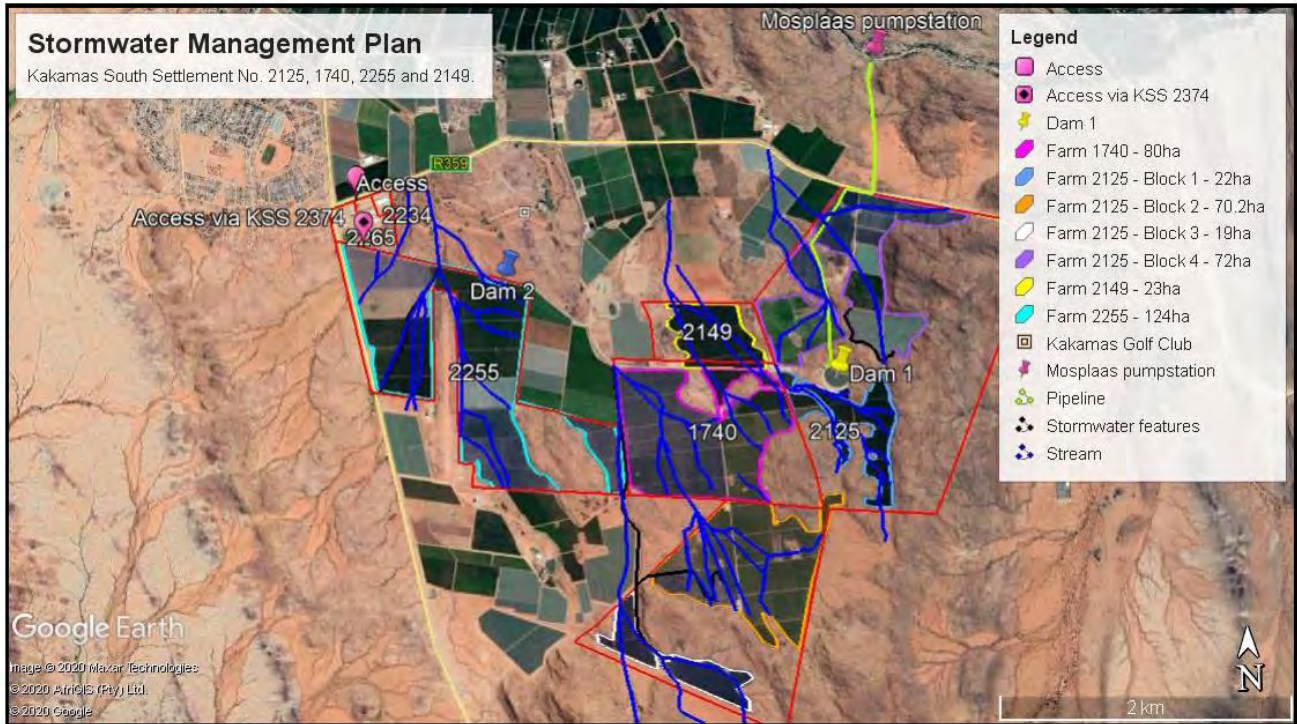
APPENDIX C: Deed Search and Title Deeds

APPENDIX D: Power of Attorney



Development Design Layout





APPENDIX F: Technical Documents

Appendix F.1: Environmental Impact Report

S24G will be submitted to DENC, approval is awaited. Find included on the cd.

Appendix F.2: Stormwater Management Plan

APPENDIX G: Proof of Public Participation

APPENDIX H: Section 27 Motivation Report

APPENDIX I: Certified copy of ID

APPENDIX J: Company Registration certificates

APPENDIX K: Copy of Receipt

APPENDIX L: Section 21 c and i list of drainage lines coordinates and Risk Matrix

APPENDIX M: Lands Claim confirmation

APPENDIX N: Plough Certificate

Appendix O: Transfer Motivational Report

Appendix P: Environmental Authorisation

APPENDIX H4: BOTANICAL ASSESSMENT



Bergwind Botanical Surveys & Tours CC.

14A Thomson Road

Claremont

Cape Town

7708

23 January 2021

TERRESTRIAL BIODIVERSITY COMPLIANCE STATEMENT: RECTIFICATION OF CLEARING OF LAND AND DEVELOPMENT OF CITRUS ORCHARDS ON ERVEN 2255, 2149, 1740, 2125, KAKAMAS SOUTH SETTLEMENT (KNOWN AS MOSPLAAS) KAKAMAS, KAI !GHARIB MUNICIPALITY, NORTHERN CAPE PROVINCE.

As the appointed botanical specialist for assessment of the terrestrial biodiversity (botany) of Erven 2255, 2149, 1740, 2125, Kakamas South Settlement (known as Mosplaas; applicant Mosplaas Citrus (Pty) Ltd) Kakamas, Kai !Gharib Municipality, Northern Cape Province, I hereby verify that:

Section 1.

- (a) I conducted a site visit 17 July 2020.
- (b) The impact of agricultural development due to cultivation of citrus orchards and establishment of two farm dams.

Section 2.

a. **Specialist:** Dr David J. McDonald, Bergwind Botanical Surveys & Tours CC, 14A Thomson Road, Claremont. Telephone: 021-671-4056; mobile – 082-876-4051.
SACNASP Reg. No. 400094/06 Ecological Science (Curriculum vitae appended)

b. Declaration of independence:

I David Jury McDonald, as the appointed Specialist hereby declare/affirm the correctness of the information provided or to be provided as part of the application, and that I, in terms of the general requirement to be independent, other than fair remuneration for work performed in terms of this application:

- (i) have no business, financial, personal or other interest in the development proposal or application and that there are no circumstances that may compromise my objectivity;
- (ii) in terms of the remainder of the general requirements for a specialist, have throughout this EIA process met all of the requirements;
- (iii) have disclosed to the applicant, the EAP, the Review EAP (if applicable), the Department and I&APs all material information that has or may have the potential to influence the decision of the Department or the objectivity of any report, plan or document prepared or to be prepared as part of the application; and
- (iv) am aware that a false declaration is an offence in terms of Regulation 48 of the EIA Regulations, 2014 (as amended).



tel: +27 21 671 4056 | mobile 082-876-4051 | e-mail: dawe@bergwind.co.za
web: www.bergwind.co.za

01200513629903

1. Location

The farm known as Mosplaas consists of the following erven: 2255, 2149, 1740, 2125, Kakamas South Settlement (Figure 1). The farm lies south of the town of Kakamas and the Orange or Gariep River, Northern Cape Province. The areas of focus are the developed citrus blocks on Erf 2125; Block 1 = 22ha; Block 2 = 70.2ha; Block 3 = 19ha. 80ha of erf 1740 is under citrus as are 23ha of Erf 2149 and 124ha of Erf 2255 (Figures 1 & 2).

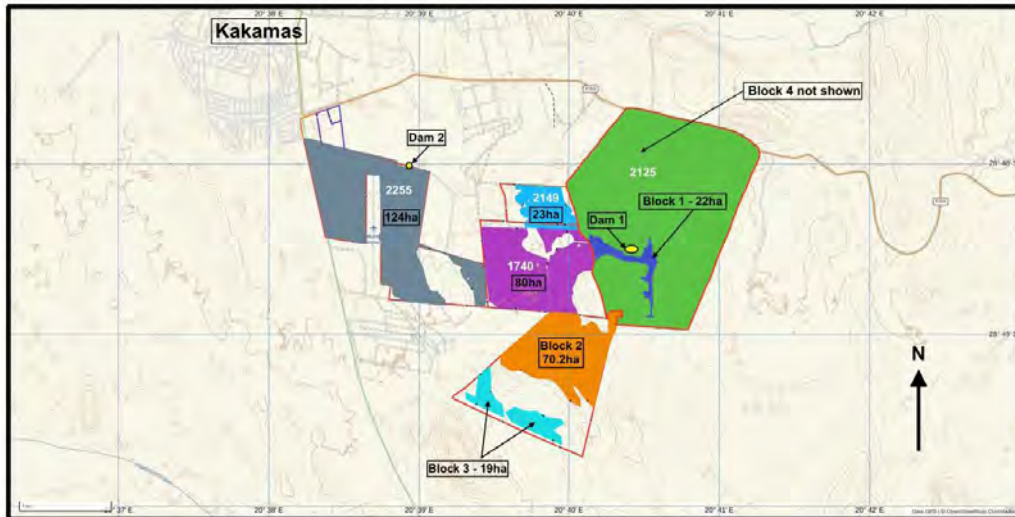


Figure 1. Mosplaas Farm south of Kakamas showing the erven of interest.

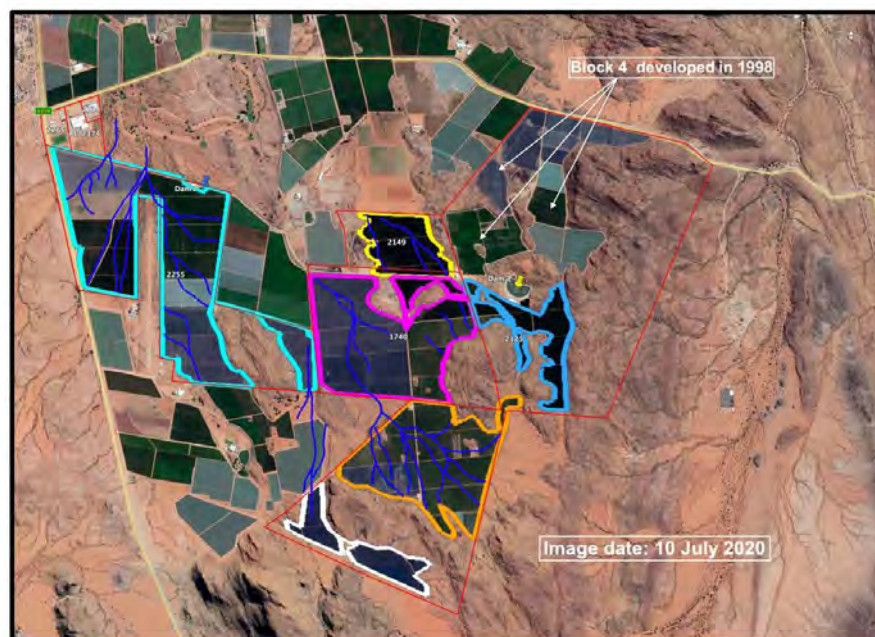


Figure 2. Aerial image (Google Earth™) of 10 July 2020 showing the agricultural development at Mosplaas. Erf 2149 (yellow boundary); Erf 1740 (pink boundary); Erf 2255 (light blue-green boundary); Erf 2125 Block 1 (light blue boundary); Block 2 (orange boundary); Block 3 (white boundary). Block 4 is indicated but does not form part of this investigation. Note the dark blue lines denoting seasonal watercourses.

2. Disturbance regime

Historical satellite imagery from Google Earth™ was examined from 2003 to the present. This provided a chronological overview of the changes that have taken place over the above timespan at Mosplaas with respect to plants and habitat. Only two aerial images are presented here; those of 2003 and 2020 (Figures 2 & 3).

In 2003, no development of orchards had taken place in the above areas on the respective erven (Figure 3). The shallow seasonal streams and washes had thus not been directly impacted at that time and Dams 1 & 2 had not been built. The only agricultural development that had taken place was on Erf 2125 where a 72ha block of citrus (Block 4) had been established in 1998. Block 4 does not form part of this study but for completeness it should be noted that Lower Gariep Broken Veld was removed for this development.

Most of the agricultural development (vineyards / citrus orchards) took place between 2006 and 2010 when the seasonal streams and sheet washes were completely cleared of natural vegetation on Erf 2125 (Blocks 1—3), Erf 1740 (80ha), Erf 2419 (23ha) and Erf 2255 (124ha). In addition, Dam 1 with a volume of 42 000m³ and wall height of 4.95m was constructed on Erf 2125 and Dam 2 with a volume of 1 900m³ on Erf 2255 for which natural vegetation was also cleared.

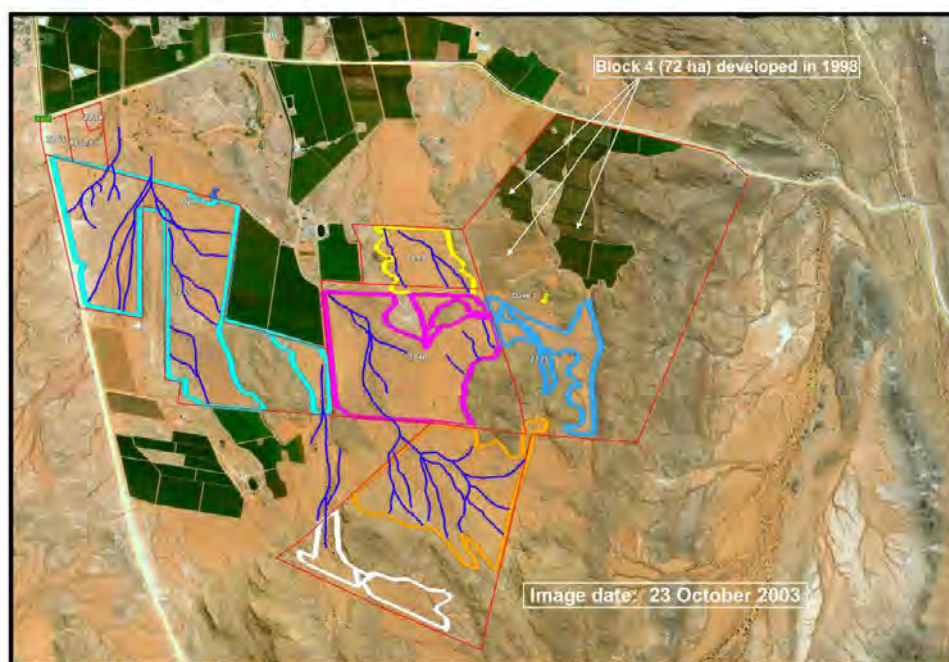


Figure 3. Aerial image (Google Earth™) of 10 July 2020 showing the agricultural development at Mosplaas. Erf 2149 (yellow boundary); Erf 1740 (pink boundary); Erf 2255 (light blue-green boundary); Erf 2125 Block 1 (light blue boundary); Block 2 (orange boundary); Block 3 (white boundary). Block 4 is indicated but does not form part of this investigation. Note the dark blue lines denoting seasonal watercourses.

3. Vegetation Types

The two vegetation types found at Mosplaas, according to Mucina *et al.* (2006) are Bushmanland Arid Grassland (Figure 4 and illustrated in Figures 5, 6 & 7).

The areas under cultivation in the respective historical vegetation types are as follows:

Erf 2125 Block 1 – 20ha.....Lower Gariep Broken Veld.

Erf 2125 Block 2 – 70.2ha.....Lower Gariep Broken Veld, 47.6 ha; Bushmanland Arid Grassland, 22.6 ha.

Erf 2125 Block 3 – 19ha.....Lower Gariep Broken Veld

Erf 2125 Block 4 – 72ha.....Lower Gariep Broken Veld

Erf 1740 – 80ha.....Lower Gariep Broken Veld, 6.7ha; Bushmanland Arid Grassland, 73.3 ha

Erf 2149 – 43ha.....Lower Gariep Broken Veld 0.48ha; Bushmanland Arid Grassland, 42.52ha

Erf 2255 – 124ha.....Bushmanland Arid Grassland

In addition, Dam 1 is located in an area that was Lower Gariep Broken Veld and Dam 2 is located in an area that was Bushmanland Arid Grassland (Figure 4).

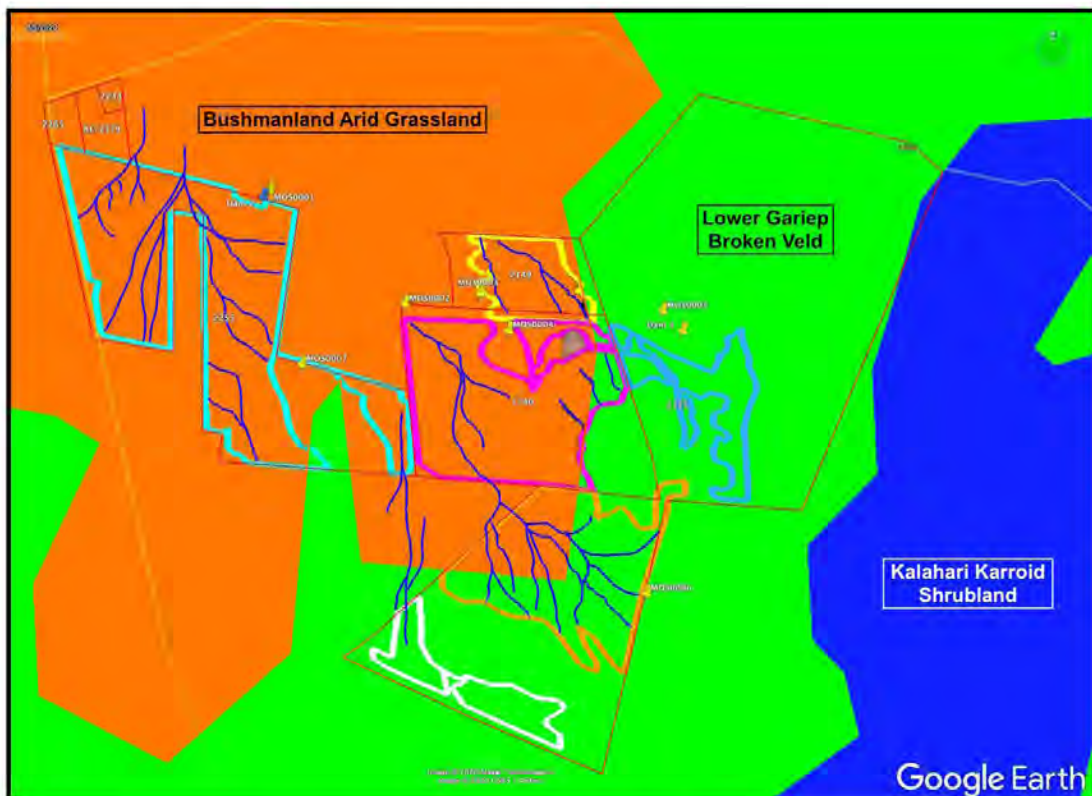


Figure 4. Portion of the Vegetation Map of South Africa, Swaziland and Lesotho (SANBI 2018) with Mosplaas overlaid. Erf 2149 (yellow boundary); Erf 1740 (pink boundary); Erf 2255 (light blue-green boundary); Erf 2125 Block 1 (light blue boundary); Block 2 (orange boundary); Block 3 (white boundary). Block 4 is indicated but does not form part of this investigation. Note the dark blue lines denoting seasonal watercourses. The sample waypoints are shown with yellow pins (MOS#) and the dams with blue pins.



Figure 5. Uncultivated Bushmanland Arid Grassland outside the Mosplaas boundary on the left side.



Figure 6. Uncultivated Bushmanland Arid Grassland with *Senegalia mellifera* subsp. *detinens* (black thorn) the prominent shrubby trees. Very little rock is exposed.






Figure 7. Lower Gariep Broken Veld found on rocky substrates.




4. The Survey


The survey at the farm was conducted in winter (17 July 2010) for a period of four hours to determine what natural vegetation and habitat had been removed or altered to accommodate the expansion of agricultural activities (vineyards / orchards). I was accompanied by the *Mosplaas* Farm Manager, Mr Ean Holland-Mütter, who showed me various parts of the farm where the unauthorised activities had taken place. Two-hundred- and-Forty-four photographs that were automatically geotagged were taken to record the present condition and other aspects of the site. Some of the photos with their co-ordinates are used below to illustrate the impacts noted at seven recorded waypoints (Table 1).

Table 1. Waypoints, short descriptions and photographs taken during the survey.

Waypoint	Notes	Illustration
<p>MOS0001 28° 48' 0.93. " S 20° 38' 57.750" E</p>	<p>Dam 2 is on the edge of Erf 2255 and surrounded by citrus orchards on three sides and an access road along the erf boundary on the north side. Bushmanland Arid Grassland was displaced to make way for the dam and the orchards.</p>	
<p>MOS0002 28° 48' 20.98" S 20° 39' 25.12" E</p>	<p>Citrus orchards at Erf 1740, covered with netting to prevent sunburn. Bushmanland Arid Grassland was displaced at this location.</p>	

<p>MOS0003 28° 48' 19.13" S 20° 39' 40.29" E</p>	<p>Although the area at this waypoint is mapped as Bushmanland Arid Grassland, which here has been displaced by citrus orchards, the rocky ridge on the left side of the image is Lower Gariiep Broken Veld that has not been displaced.</p>	
<p>MOS0004 28° 48' 25.66" S 20° 39' 46.02" E</p>	<p>This location is at a small conservation area with sensitive habitat. It is a relatively small area of rocky terrain that supports some interesting arid flora; species such as <i>Nerine gaberonsensis</i> (Least Concern) and <i>Anacampseros papyracea</i> subsp. <i>namaensis</i> (Least Concern).</p>	
<p>MOS0005 28° 48' 22.23" S 20° 40' 17.15" E</p>	<p>This location is in an area where Lower Gariiep Broken Veld has been displaced by citrus orchards (above) and Dam 1 (below).</p>	

	<p>Dam 1 seen from a small hill at waypoint MOS0005. This dam marginally affected Lower Gariep Broken Veld in an area mapped as CBA1.</p>	
<p>MOS0006 28° 49' 12.26" S 20° 40' 13.88" E</p>	<p>This waypoint was recorded at the south-eastern boundary of Erf 2125. Block 2 is seen below the koppie and this area is all mapped as Lower Gariep Broken Veld. I suspect, however that the cultivated land was originally Bushmanland Arid Grassland because it is low-lying and not as rocky a Lower Gariep Broken Veld as seen in the immediate foreground.</p>	 

<p>MOS0007 28° 48' 31.64" S 20° 39' 4.32" E</p>	<p>Typical Lower Gariep Broken Veld is seen in the uncultivated area at waypoint MOS0007.</p> <p>Between the citrus orchards near this locality the substrate is sandy and supports the coarse <i>Stipagrostis namaquensis</i> (River Bushman Grass). As the common name suggests, this grass indicates fluvial conditions and clearly this area was a seasonal watercourse within the broader Bushmanland Arid Grassland prior to being developed for agriculture.</p>	
--	---	---

5. The National Web-based Environmental Screening Tool and Critical Biodiversity Areas

The National Web-based Environmental Screening Tool was applied to determine the environmental sensitivity of the area investigated. Some errors in the running of the screening tool prevented printout of a report hence a map of the Biodiversity Sensitivity Theme was captured as a screenshot. Two maps show the outcome of the analysis for Mosplaas as an independent map (Figure 8) and with the map of Figure 8 overlaid on a Google Earth™ image (Figure 9).

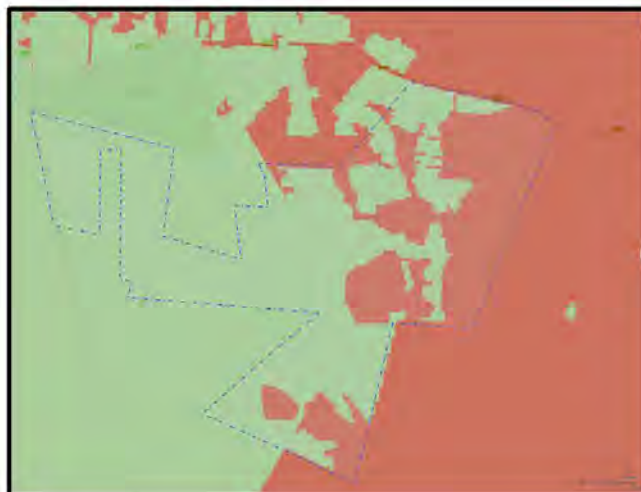


Figure 8. The Biodiversity Theme sensitivity map generated by the National Web-based Environmental Screening Tool. The red areas have high biodiversity sensitivity and the green areas have low biodiversity sensitivity.



Figure 9. A superimposition of the Biodiversity Sensitivity output from the National Web-based Environmental Screening Tool over a 2020 Google Earth™ image of Mosplaas. The high biodiversity areas (red shading) are all the areas not under cultivation (mainly Lower Gariep Broken Veld) and all the light green areas (low sensitivity) coincide with the cultivated areas and areas of Bushmanland Arid grassland that have not been cultivated.

It is immediately seen in Figure 9 that the areas of high biodiversity sensitivity (that also reflect the vegetation sensitivity i.e. high) are outside the cultivated areas. The cultivated areas have low biodiversity sensitivity. This outcome is in agreement with the Critical Biodiversity Areas map for the Northern Cape Province (Figure 10) that indicates that the CBA1 areas are those areas not cultivated (and mostly Lower Gariep Broken Veld) and the CBA2 classification applies only to the south-east part of Erf 2125. The CBA map designates the classification of 'Other Natural Areas' to most of the uncultivated land in the western half of Mosplaas.

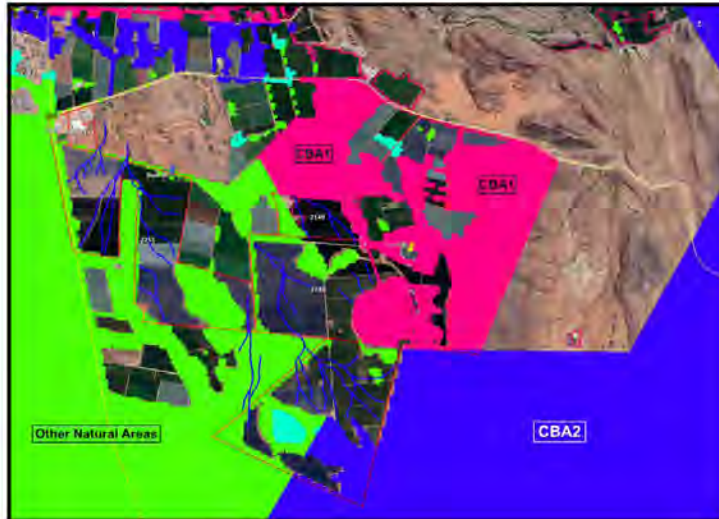


Figure 10. Portion of the Critical Biodiversity Areas map for the Northern Cape Province as it pertains to Mosplaas.

6. Conclusions

The areas cultivated with citrus / vineyards at Mosplaas are mainly in areas that were originally vegetated with Bushmanland Arid Grassland. The exception is Erf 2125 Block 4 where, according to the mapping, Lower Gariep Broken Veld was cleared. However, the latter area was not included in this investigation.

The areas of Bushmanland Arid Grassland were generally not sensitive. However, reference to Figures 3 & 4 shows that all the areas investigated except for Erf 2125, Blocks 2 & 3 had seasonal watercourses (seasonal streams) or washes prior to cultivation. All these washes have now been disturbed by diversion or simply removal of the vegetation. This will no doubt have a negative impact in the short to long term since no water would be dispersed in these areas to recharge the aquifer.

Given the above, and that Bushmanland Arid Grassland is a very widespread vegetation type and is not threatened in any way at a broad scale, the impact of the clearing of natural vegetation and the agricultural development is considered to be **Medium to Low Negative** at a local scale.

Dam 2 is located in an area that formerly supported Bushmanland Arid Grassland and since the surface area of the dam is small, it would have had negligible negative impact beyond that of the adjacent fruit orchards.

Dam 1 is located in an area historically mapped as Lower Gariep Broken Veld and it falls within an area mapped as CBA1. The dam is located on a flat, not rocky, area that was probably transitional between Lower Gariep Broken Veld and Bushmanland Arid Grassland. Therefore, the impact of the dam is considered to be **Medium Negative** at a local scale, but **Low Negative** at a broad scale.

The cumulative impact of the loss of Bushmanland Arid Grassland at Mosplaas is rated as being **Low to Very Low Negative** due to the extensive occurrence of this habitat type. The negative

impact on the season streams is also considered to be Low Negative in terms of cumulative impacts.

Very little Lower Gariep Broken Veld (and CBA1 areas) has been disturbed by the farming operation. Consequently, the negative cumulative impacts are very low.

A handwritten signature in black ink, appearing to read 'D.J. McDonald', with a horizontal line underneath the name.

Dr D.J McDonald Pr. Sci. Nat.

Signature of the specialist:

Appendix: Curriculum Vitae

Dr David Jury McDonald Pr. Sci. Nat.

Name of Company: Bergwind Botanical Surveys & Tours CC. (Independent consultant)

Work and Home Address: 14 A Thomson Road, Claremont, 7708

Tel: (021) 671-4056 **Mobile:** 082-876-4051 **Fax:** 086-517-3806

E-mail: dave@bergwind.co.za

Website: www.bergwind.co.za

Profession: Botanist / Vegetation Ecologist / Consultant / Tour Guide

Date of Birth: 7 August 1956

Employment history:

- 19 years with National Botanical Institute (now SA National Biodiversity Institute) as researcher in vegetation ecology.
- Five years as Deputy Director / Director Botanical & Communication Programmes of the Botanical Society of South Africa
- 14 years as private independent Botanical Specialist consultant (Bergwind Botanical Surveys & Tours CC)

Nationality: South African (ID No. 560807 5018 080)

Languages: English (home language) – speak, read and write
Afrikaans – speak, read and write

Membership in Professional Societies:

- South Africa Association of Botanists
- International Association for Impact Assessment (SA)
- South African Council for Natural Scientific Professions (**Ecological Science, Registration No. 400094/06**)
- Field Guides Association of Southern Africa

Key Qualifications:

- Qualified with a M. Sc. (1983) in Botany and a PhD in Botany (Vegetation Ecology) (1995) at the University of Cape Town.
- Research in Cape fynbos ecosystems and more specifically mountain ecosystems.
- From 1995 to 2000 managed the Vegetation Map of South Africa Project (National Botanical Institute).
- Conducted botanical survey work for AfriDev Consultants for the Mohale and Katse Dam projects in Lesotho from 1995 to 2002. A large component of this work was the analysis of data collected by teams of botanists.
- **Director: Botanical & Communication Programmes** of the Botanical Society of South Africa (2000—2005), responsible for communications and publications; involved with conservation advocacy particularly with respect to impacts of development on centres of plant endemism.
- Further tasks involved the day-to-day management of a large non-profit environmental organisation.
- **Independent botanical consultant** (2005 – to present) over 300 projects have been completed related to environmental impact assessments in the Western, Southern and Northern Cape, Karoo and Lesotho. A list of reports (or selected reports for scrutiny) is available on request.

Higher Education

Degrees obtained
and major subjects passed:

B.Sc. (1977), University of Natal, Pietermaritzburg
Botany III
Entomology II (Third year course)

B.Sc. Hons. (1978) University of Natal, Pietermaritzburg
Botany (Ecology /Physiology)

M.Sc. - (Botany), University of Cape Town, 1983.
Thesis title: 'The vegetation of Swartboschkloof, Jonkershoek,
Cape Province'.

PhD (Botany), University of Cape Town, 1995.
Thesis title: 'Phytogeography endemism and diversity of the
fynbos of the southern Langeberg'.

Certificate of Tourism: Guiding (Culture: Local)
Level: 4 Code: TGC7 (Registered Tour Guide: WC 2969).

Employment Record:

January 2006 – present: Independent specialist botanical consultant and tour guide in own company:

Bergwind Botanical Surveys & Tours CC

August 2000 - 2005 : Deputy Director, later Director Botanical & Communication Programmes,
Botanical Society of South Africa

January 1981 – July 2000. : Research Scientist (Vegetation Ecology) at National
Botanical Institute

January 1979—Dec 1980 : National Military Service

Further information is available on my company website: www.bergwind.co.za

ARCHAEOLOGICAL IMPACT ASSESSMENT

S24G Application, illegal agricultural development on Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement), Kai! Garib Municipality Northern Cape

Assessment conducted under Section 38 (3) of the National Heritage Resource Act
(No. 25 of 1999)

Prepared for:

GROENBERGENVIRO (PTY) LTD
PO Box 1058, Wellington, 7654
E-mail: elaniem@iafrica.com

Applicant:

KEBOES FARMS (Pty) Ltd

By



ACRM
5 Stuart Road, Rondebosch, 7700
Mobile: 082 321 0172
E-mail: acrm@wcaccess.co.za

**JULY
2020**

Executive summary

1. Introduction

ACRM was instructed by GroenbergEnviro to conduct an Archaeological Impact Assessment (AIA) for an illegal agricultural development on the Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement), Kai! Garib Municipality in the Northern Cape.

Mosplaas is located on the north eastern edge of the town of Kakamas, on the gravel road to Loeriesfontein/Kenhardt.

The illegal citrus plantations totalling 410a in extent were established in 1998, and between 2006 and 2010, without environmental authorisation.

The AIA forms part of a Section 24G Application. A S24G Application is a process in which to legally correct an unauthorised development.

2. Legal requirements

In terms of Section 38 (1) (c) (iii) of the National Heritage Resources Act 1999 (Act 25 of 1999), a Heritage Impact Assessment (HIA) of the proposed project is required if the footprint area of the development is more than 5000m² in extent.

A HIA of the agricultural development was not undertaken at the time

3. Aim of the AIA

The overall purpose of the AIA is to determine the impacts that the unauthorised development had on archaeological resources.

4. Limitations

There were no constraints or limitations associated with the study.

5. Findings

A field assessment of the development took place on 15th July 2020, in which the following observations were made:

No archaeological resources were recorded in the 410ha footprint area of the unauthorised development. The extensive agricultural development constitutes a highly transformed and modified landscape.

Two banded ironstone flakes were recorded on a rocky kopje overlooking the citrus plantations.

It is also noted that a number of archaeological surveys have been undertaken in Kakamas in recent years, which is characterised by low density scatters of isolated Stone Age tools.

6. Built environment

No old buildings, structures, features or equipment were recorded on the farm.

7. Graves

No graves were located on the farm.

8. Impact statement

The results of the study indicate that the listed activity (i. e. an extensive citrus development), has likely not had an impact of great significance on archaeological resources.

9. Conclusion

The receiving environment comprises a severely transformed landscape.

The literature survey suggests that it is unlikely that significant archaeological resources have been impacted by the development.

The impact significance of the illegally established citrus plantations on archaeological heritage is therefore assessed as LOW.

10. Recommendations

1. With regard to an illegal agricultural development on the Farm Mossop (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement), no further archaeological mitigation is required.

Table of Contents

	Page
Executive summary	1
1. INTRODUCTION	4
2. HERITAGE LEGISLATION	6
3. TERMS OF REFERENCE	6
4. THE STUDY SITE	6
5. STUDY APPROACH	11
5.1 Method of survey	11
5.2 Constraints and limitations	11
5.3 Results of the desk top study	11
6. FINDINGS	12
6.1 Illegally developed citrus orchards	12
6.2 Built Environment	13
6.3 Graves	13
7. ASSESSMENT OF IMPACTS	13
8. CONCLUSION	13
9. RECOMMENDATIONS	13
10. REFERENCES	14

1. INTRODUCTION

ACRM was instructed by GroenbergEnviro, on behalf of Keboes Fruit Farms (Pty) Ltd to conduct an Archaeological Impact Assessment (AIA) for an illegal agricultural development on the Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement), Kail Garib Municipality in the Northern Cape Province (Figures 1-3).

The illegal citrus plantations were established in 1998 (Ptn of Erf 2125), and between 2006 and 2010 without environmental authorisation (Kühn 2020).

The AIA forms part of a Section 24G Application process, which is designed to legally correct an illegal development.

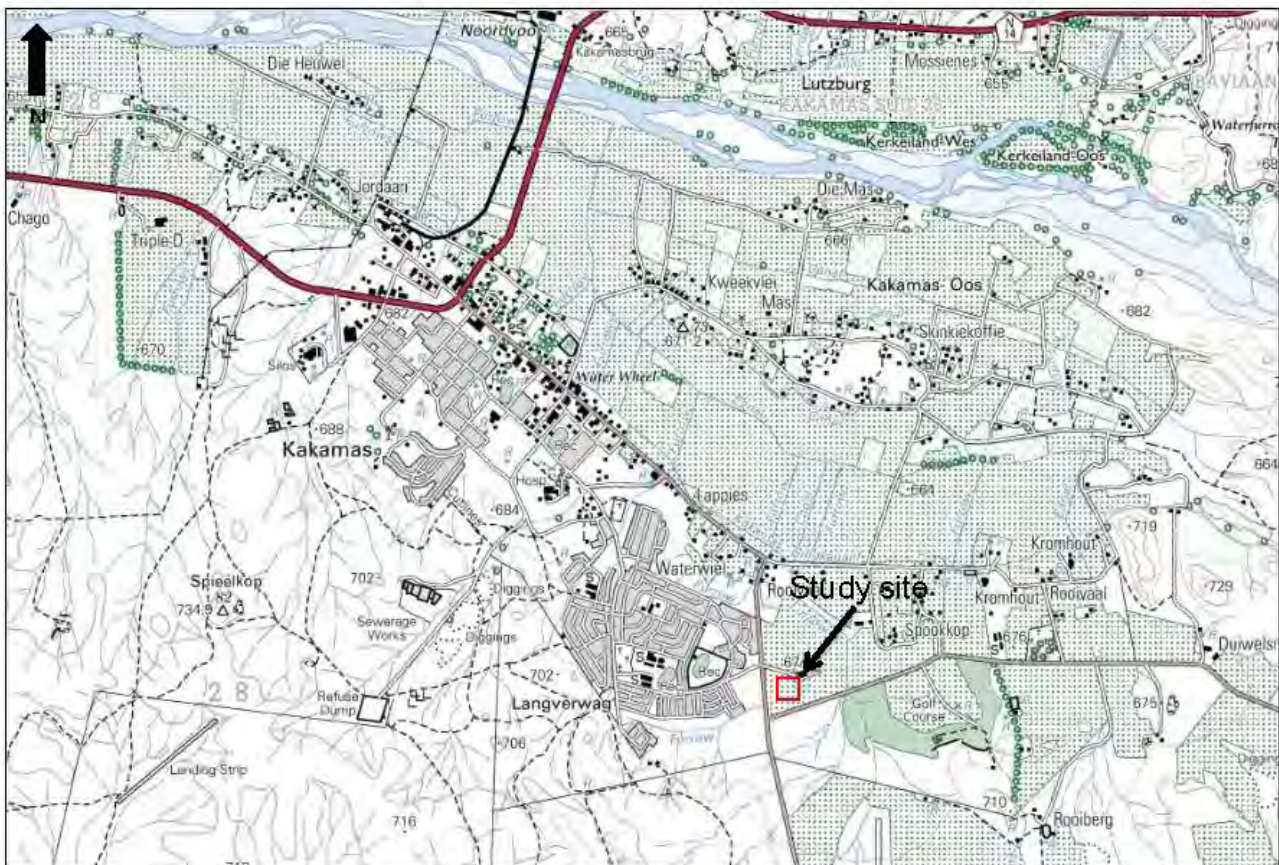


Figure 1. Locality Map (2820DC Kakamas). Red polygon illustrates the location of the farm Mosplaas on the north eastern edge of the town of Kakamas

Archaeological Impact Assessment, illegal citrus development on Mosplaas in Kakamas, Northern Cape



Figure 2. Google satellite map illustrating the location of the Farm Mosplaas in Kakamas.

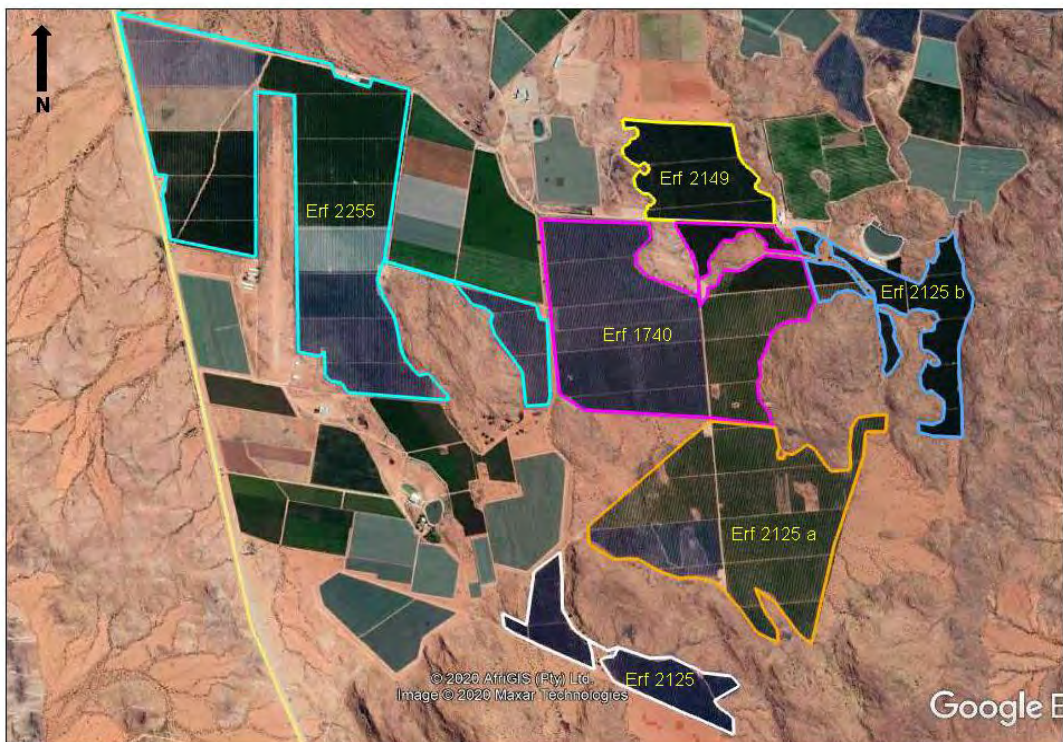


Figure 4. Google satellite map indicating the illegal citrus fields developed in 1998 & between 2006 & 2010

2. HERITAGE LEGISLATION

The National Heritage Resources Act (Act No. 25 of 1999) makes provision for a compulsory Heritage Impact Assessment (HIA) when an area exceeding 5000 m² is being developed. This is to determine if the area contains heritage sites and to take the necessary steps to ensure that they are not damaged or destroyed during development.

The NHRA provides protection for the following categories of heritage resources:

- Landscapes, cultural or natural (Section 3 (3))
- Buildings or structures older than 60 years (Section 34);
- Archaeological sites, palaeontological material and meteorites (Section 35);
- Burial grounds and graves (Section 36);
- Public monuments and memorials (Section 37);
- Living heritage (defined in the Act as including cultural tradition, oral history, performance, ritual, popular memory, skills and techniques, indigenous knowledge systems and the holistic approach to nature, society and social relationships) (Section 2 (d) (xxi)).

3. TERMS OF REFERENCE

The terms of reference for the archaeological study were to:

- Determine whether there are likely to be any archaeological resources that may have been impacted by the proposed development activities;
- Identify potentially sensitive archaeological areas, and
- Recommend any mitigation action.

4. THE STUDY SITE

Mosplaas Sitrus is located on the north eastern edge of the town of Kakamas, on the gravel road to Loeriesfontein/Kenhardt. The site lies south of the Orange River. Intensive development of citrus orchards has irrevocably transformed the landscape (Figures 5-15). Surrounding land use is agriculture and residential.

Archaeological Impact Assessment, illegal citrus development on Mosplaas in Kakamas,
Northern Cape



Figure 5. Erf 2125 a. View facing north



Figure 6. Erf 2125 a. View facing north

Archaeological Impact Assessment, illegal citrus development on Mosplaas in Kakamas,
Northern Cape



Figure 7. Erf 2125. View facing south



Figure 8. Erf 2125. View facing south

Archaeological Impact Assessment, illegal citrus development on Mosplaas in Kakamas,
Northern Cape



Figure 9. Erf 2125 b. View facing north west



Figure 10. Erf 2125 b. View facing northeast



Figure 11. Erf 2125 b. View facing south west

Archaeological Impact Assessment, illegal citrus development on Mosplaas in Kakamas,
Northern Cape



Figure 12. Erf 1740. View facing west



Figure 13. Erf 2149. View facing north



Figure 14. Erf 1749. View facing south west



Figure 15. Erf 2255. View facing south

5. STUDY APPROACH

5.1 Method of survey

The overall purpose of the AIA is to determine the impacts that the illegal development had on archaeological resources.

To this end a site assessment was undertaken on the 15th July, 2020.

A literature survey was also carried out to assess the archaeological context of the surrounding area.

5.2 Constraints and limitations

There were no constraints or limitations associated with the study. Access to the site was easy and archaeological visibility was good.

5.3 Results of the desk top study

Several AIAs have been undertaken in Kakamas in recent years. Dispersed scatters of Later Stone Age (LSA) and Middle Stone Age (MSA) implements in banded ironstone, quartzite and indurated shale were recorded on weathered gravels during a study for a solar energy farm west of the town's Waste Water Treatment Works/WWTW (Kaplan 2012). A study for a proposed low cost housing development in the town did not encounter any archaeological resources (Kaplan 2013), while a few banded ironstone flakes were recorded in Erf 2142 inside the urban edge (Kaplan 2016). Dispersed scatters of LSA tools and a few MSA tools including a rare notched bifacial point were recorded during a recent study for the proposed upgrading of the WWTW (Kaplan 2020 in prep).

6. FINDINGS

6.1 Illegally developed citrus orchards

No archaeological resources were recorded in the 410ha footprint area of the unauthorised development. The extensive agricultural development constitutes a highly transformed and modified landscape. However, one banded ironstone MSA flake and a utilized cortex flake/chunk (S28° 49.382' E20° 39.737') were recorded in the rocky hills overlooking Erf 2125/Block 9 (Figures 16 & 17).



Figure 16. Track paths in blue and waypoint of archaeological finds (Point 708).



Figure 17. Point 708. Ruler scale is in cm

6.2 Built environment

No old buildings, structures, features or equipment were recorded on the farm.

6.3 Graves

No graves were encountered during the site assessment.

7. ASSESSMENT OF IMPACTS

In the case of the illegal agricultural development on the farm Mosplaas in Kakamas, it is expected that impacts on pre-colonial archaeological heritage are likely to have been *LOW*.

8. CONCLUSION

Cultivation of illegal citrus orchards on the Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement) has completely transformed the receiving environment.

The literature survey indicates that it is unlikely that significant archaeological resources were impacted by the development.

The impact significance of the unauthorised development archaeological heritage is therefore assessed as *LOW*

9. RECOMMENDATIONS

1. With regard to an illegal agricultural development on the Farm Mossop (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement), no further archaeological mitigation is required.

10. REFERENCES

Kaplan, J. 2020 (in prep). Archaeological Impact Assessment, proposed Kenhardt Bulk Water Supply Project, Northern Cape. Report prepared for EnviroAfrica. ACRM, Cape Town

Kaplan, J. 2017. Archaeological Impact Assessment, Proposed Keren Energy Kakamas Solar Energy Farm on Erf 1654 Kakamas, Northern Cape Province, Report prepared for EnviroAfrica. ACRM, Cape Town

Kaplan, J. 2016. Archaeological Impact Assessment, proposed housing development on Erf 1612, Kakamas. Report prepared for EnviroAfrica. ACRM, Cape Town

Kaplan, J. 2013. Archaeological Impact Assessment proposed low cost housing development in Kakamas, Northern Cape. Report prepared for EnviroAfrica. ACRM, Cape Town

Kühn, E. 2020. Section 24G Application Form, rectification of the clearing of land and the construction of vineyards and associated infrastructure on Erf 2255, 2149, 1740 and 2125 Kakamas South Settlement, Northern Cape Province. Report produced for Keboes Fruit Farms (Pty) Ltd. Groenberg Enviro, Wellington.

APPENDIX H6: PALEONTOLOGICAL IMPACT ASSESSMENT

RECOMMENDED EXEMPTION FROM FURTHER PALAEOLOGICAL STUDIES & MITIGATION:

Rectification of agricultural developments on Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement), Kai! Garib Municipality, Northern Cape

John E. Almond PhD (Cantab.)
Natura Viva cc,
PO Box 12410 Mill Street,
Cape Town 8010, RSA
naturaviva@universe.co.za

August 2020

EXECUTIVE SUMMARY

Citrus plantations totalling 410 ha in extent have been developed without authorization on the Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement), situated on the south-eastern outskirts of Kakamas in the Kai! Garib Municipality of the Northern Cape. The development footprint is underlain by ancient Precambrian basement rocks belonging to the **Namaqua-Natal Province**. These basement rocks are approximately two to one billion years old and entirely unfossiliferous. They are mantled by Late Caenozoic sandy soils, surface gravels and possibly calcretes; consolidated older fluvial gravels of the Orange River system are unlikely to be represented here. The overall palaeontological impact significance of the agricultural development is considered to be LOW because:

- Most of the study area is underlain by unfossiliferous igneous or metamorphic basement rocks (granite-gneisses *etc*) or mantled by superficial sediments of low palaeontological sensitivity;
- Much of the area is already highly disturbed.

It is therefore recommended that, pending the discovery of significant new fossils on site, exemption from further specialist palaeontological studies and mitigation be granted for this development.

Should any substantial fossil remains (e.g. vertebrate bones and teeth, shells, petrified wood, calcretised burrows) be encountered during excavation, however, these should be reported to SAHRA for possible mitigation by a professional palaeontologist (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za). A tabulated Chance Fossil Finds Procedure is appended to this report.

1. OUTLINE OF DEVELOPMENT

Keboes Farms (Pty) Ltd has undertaken the unauthorised development of citrus plantations totalling 410 ha in extent on the Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement), situated on the south-eastern outskirts of Kakamas in the Kai! Garib Municipality of the Northern Cape (Figs. 1 & 2). The study site lies on the eastern side of the gravel road to Kenhardt and Loeriesfontein as well as south of the R359 from Kakamas to Upington.

The Section 24G Rectification process for this agricultural development is being co-ordinated by Groenbergenviro (Pty) Ltd (Contact details: Ms Elanie Kühn. GroenbergEnviro (Pty) Ltd,

PO Box 1058 Wellington 7654. Cell: 0765840822. E-mail: Elaniem@iafrica.com). The present report contributes to the heritage component of the process under the aegis of Mr Jonathan Kaplan of ACRM (5 Stuart Road, Rondebosch, 7700. Ph/Fax: 021 685 7589. Cell: 082 321 0172. E-mail: acrm@waccess.co.za).

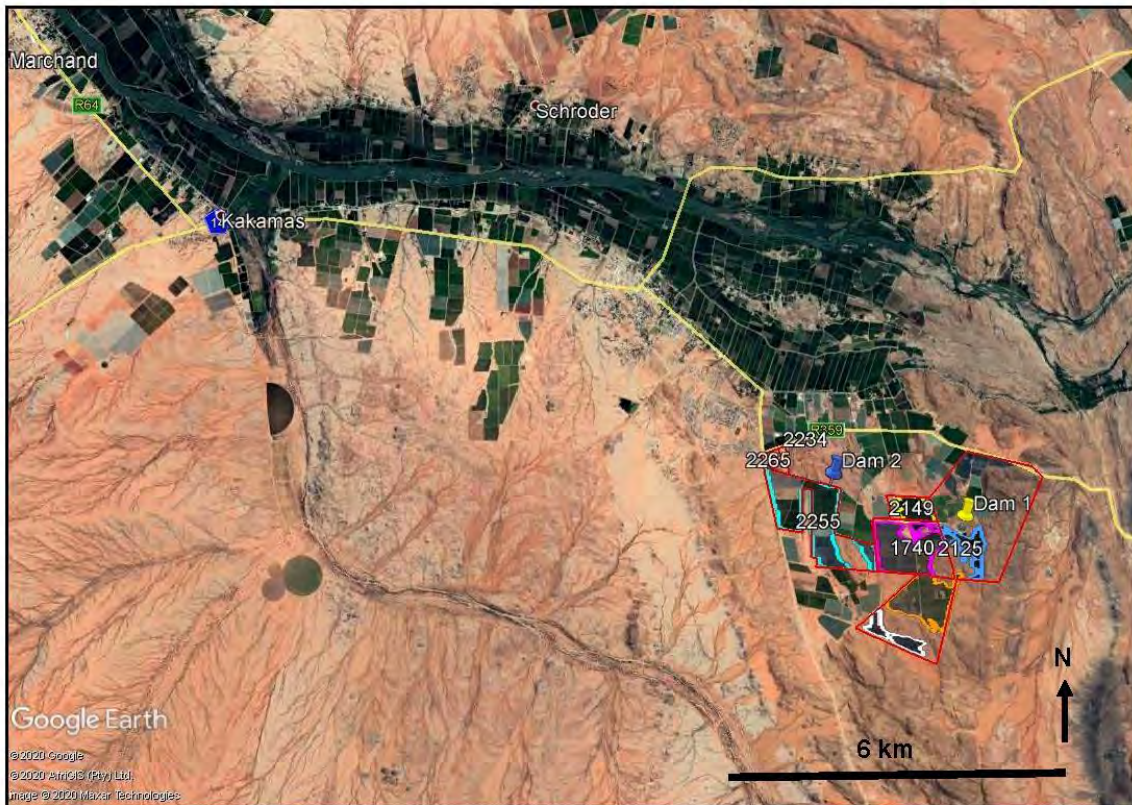


Figure 1: Google Earth© satellite image showing the location of the agricultural projects on Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement) situated on the south-eastern outskirts of Kakamas, Kai! Garib Municipality, Northern Cape (coloured polygons).

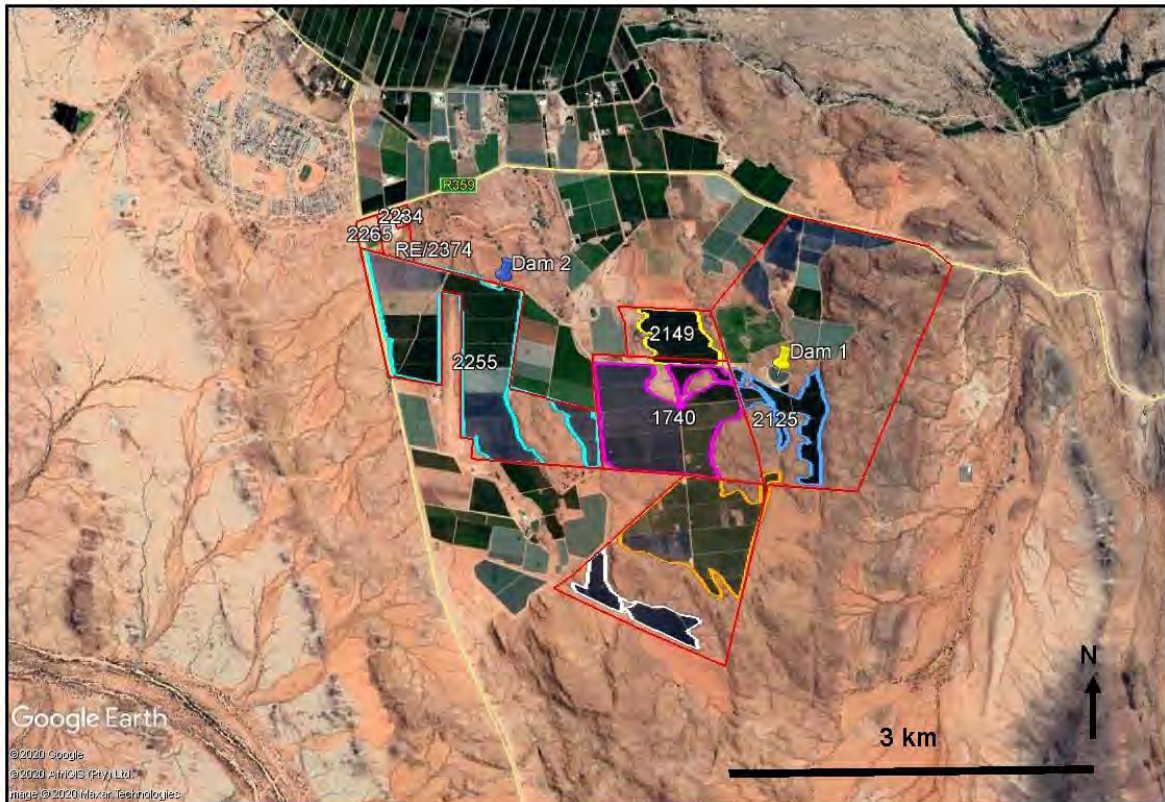


Figure 2: Google Earth© satellite image showing the agricultural projects on Farm Mosplaas in more detail.

2. GEOLOGICAL BACKGROUND

The agricultural project area on Farm Mosplaas is situated on highly disturbed (partially developed), arid, sandy to gravelly terrain at 675 to 740 m amsl on the south-eastern outskirts of the town of Kakamas, some 4 km or more south of the present course of the Orange River / Gariep (Figs. 1 & 2). The area was originally traversed by shallow, dendritic stream systems that intermittently drain northwards into the Orange River.

The geology of the study area near Kakamas is shown on the 1: 250 000 geology map 2820 Upington (Council for Geoscience, Pretoria; Fig. 3 herein). A comprehensive sheet explanation for this map has been published by Moen (2007). The agricultural development site is underlain by ancient Precambrian basement rocks – the **Riemvasmaak granite-gneiss (Mrm)** – that belong to the **Namaqua-Natal Province** of Mid Proterozoic (Mokolian) age (Cornell *et al.* 2006, Moen 2007). These basement rocks are approximately two to one billion years old and entirely unfossiliferous (Almond & Pether 2008).

The Precambrian basement rocks within the study area are mantled with a spectrum of other coarse to fine-grained **Late Cenozoic superficial deposits** such as rocky soils, downwasted surface gravels, colluvium (slope deposits), sheet wash, calcrete hardpans and alluvium of intermittently flowing streams. These deposits are generally young (Quaternary to Recent) and have been mapped as **Gordonia Formation (Kalahari Group)** aeolian sands although a colluvial and alluvial sedimentary component is also likely to have occurred here.

The study site is over 4 km away from the present course of the Orange River and elevated perhaps 20-25 m or more higher than this. According to Moen (2007) ancient river terrace gravels

occur “all along the river” within 2 km of the present banks and at elevations of up to 45 m (rarely as high as 85m) above the present flood plain. It is considered unlikely that significant deposits of Late Tertiary Orange River alluvial gravels are present within the study area, and none are mapped here on the 1: 250 000 Upington geology sheet.

3. PALAEOLOGICAL HERITAGE

The Precambrian metamorphic and igneous basement rocks of the Namaqua-Natal Metamorphic Province in the study area are entirely unfossiliferous (Almond & Pether 2008).

Alluvial gravels of the Orange River of Miocene and younger age are locally highly fossiliferous (e.g. Hendy 1984, Schneider & Marias 2004, Almond 2009 and extensive references therein) but, as argued above, these are *not* mapped within the study area and are unlikely to occur here.

The **Gordonia Formation** dune sands (Qg in Fig. 3) were mainly active during cold, drier intervals of the Pleistocene Epoch that were inimical to most forms of life, apart from hardy, desert-adapted species. Porous dune sands are not generally conducive to fossil preservation. However, mummification of soft tissues may play a role here and migrating lime-rich groundwaters derived from the underlying bedrocks (including, for example, dolerite) may lead to the rapid calcretisation of organic structures such as burrows and root casts. Occasional terrestrial fossil remains that might be expected within this unit include calcretized rhizoliths (root casts) and termitaria (e.g. *Hodotermes*, the harvester termite), ostrich egg shells (*Struthio*) and shells of land snails (e.g. *Trigonephrus*) (Almond & Pether 2008). Other fossil groups such as freshwater bivalves and gastropods (e.g. *Corbula*, *Unio*), and snails, ostracods (seed shrimps), charophytes (stonewort algae), diatoms (microscopic algae within siliceous shells) and stromatolites (laminated microbial limestones) are associated with local watercourses and pans. Microfossils such as diatoms may be blown by wind into nearby dune sands. These Kalahari fossils (or subfossils) can be expected to occur sporadically but widely, and the overall palaeontological sensitivity of the Gordonia Formation is therefore considered to be low.

The palaeontological sensitivity of the Kakamas agricultural development study area is assessed as LOW.

4. CONCLUSIONS & RECOMMENDATIONS

The overall palaeontological impact significance of the agricultural developments on Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement) is considered to be LOW because:

- Most of the study area is underlain by unfossiliferous igneous or metamorphic basement rocks (granite-gneisses *etc*) or mantled by superficial sediments of low palaeontological sensitivity;
- Much of the area is already highly disturbed.

It is therefore recommended that, pending the discovery of significant new fossils on site, exemption from further specialist palaeontological studies and mitigation be granted for this development.

Should any substantial fossil remains (e.g. vertebrate bones and teeth, shells, calcretised burrows) be encountered during excavation, however, these should be reported to SAHRA for possible mitigation by a professional palaeontologist (Contact details: Dr Ragna Redelstorff, SAHRA, P.O. Box 4637, Cape Town 8000. Tel: 021 202 8651. Email: rredelstorff@sahra.org.za). A tabulated Chance Fossil Finds Procedure is appended to this report.

Please note that:

- All South African fossil heritage is protected by law (South African Heritage Resources Act, 1999) and fossils cannot be collected, damaged or disturbed without a permit from SAHRA or the relevant Provincial Heritage Resources Agency;
- The palaeontologist concerned with potential mitigation work will need a valid fossil collection permit from SAHRA (N. Cape) and any material collected would have to be curated in an approved depository (e.g. museum or university collection);
- All palaeontological specialist work should conform to international best practice for palaeontological fieldwork and the study (e.g. data recording fossil collection and curation, final report) should adhere as far as possible to the minimum standards for Phase 2 palaeontological studies developed by HWC (2016) and SAHRA (2013).

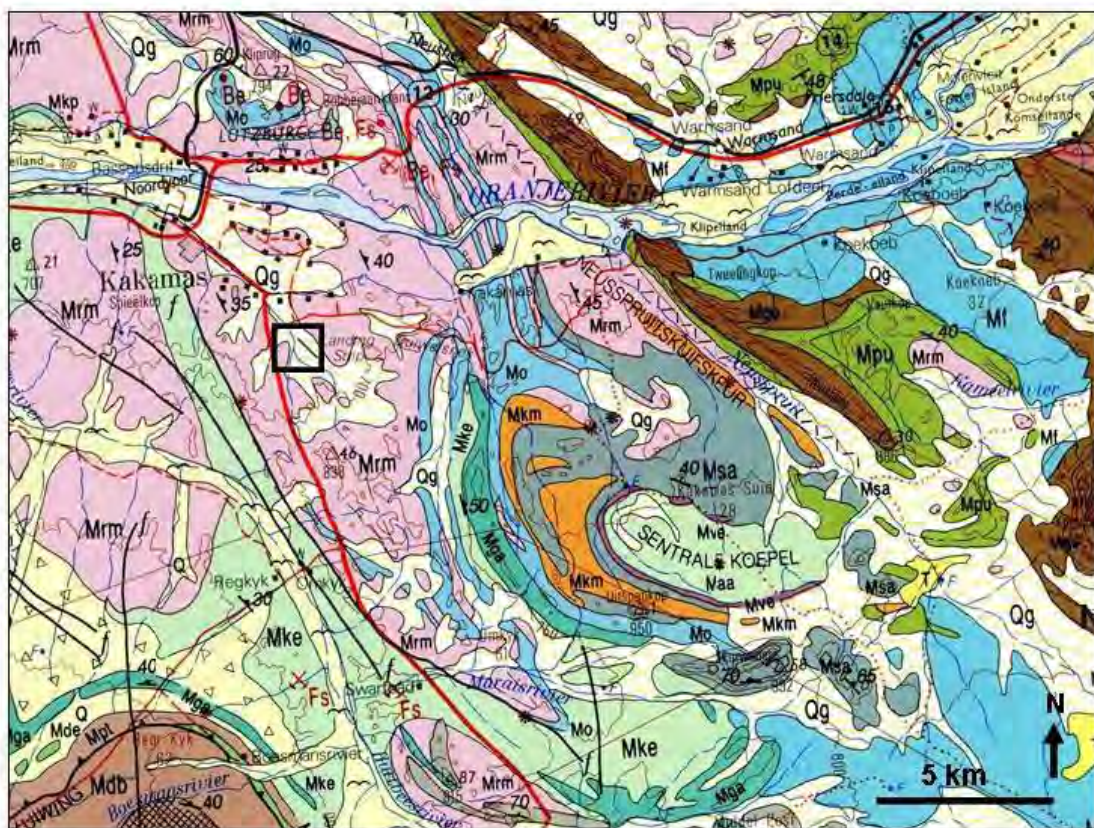


Figure 3: Extract from 1: 250 000 geological map 2820 Upington (Council for Geoscience, Pretoria) showing approximate location of the agricultural developments on Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement) situated on the south-eastern outskirts of Kakamas, Kail Garib Municipality, Northern Cape (black rectangle). The project area is underlain by unfossiliferous Precambrian (Middle Proterozoic / Mokolian) basement rocks of the Namaqua-Natal Metamorphic Province, principally the Riemvasmaak granite-gneiss (Mrm, pink), which are in part mantled by Late Caenozoic superficial sands of the Gordonia Formation (Kalahari Group) (Qg, pale yellow).

5. REFERENCES

- ALMOND, J.E. 2009. Contributions to the palaeontology and stratigraphy of the Alexander Bay sheet area (1: 250 000 geological sheet 2816), 117 pp. Unpublished report for the Council for Geoscience. Natura Viva cc, Cape Town.
- ALMOND, J.E. 2011. Proposed hydropower station on the Orange River near Kakamas, Northern Cape Province (DEA Ref. No. 12/12/20/2012). Palaeontological assessment: recommended exemption from further palaeontological studies, 6 pp. Natura Viva cc, Cape Town.
- ALMOND, J.E. 2017. Proposed Kakamas Keren Solar Plant on Erf 1654 Kakamas, Kai Garib Municipality, Northern Cape. Recommended exemption from further palaeontological studies & mitigation, 10 pp. Natura Viva cc, Cape Town.
- ALMOND, J.E. & PETHER, J. 2008. Palaeontological heritage of the Northern Cape. Interim SAHRA technical report, 124 pp. Natura Viva cc, Cape Town.
- CORNELL, D.H. *et al.* 2006. The Namaqua-Natal Province. In: Johnson, M.R., Anhaeusser, C.R. & Thomas, R.J. (Eds.) The geology of South Africa, pp 325-379. Geological Society of South Africa, Johannesburg & Council for Geoscience, Pretoria.
- KAPLAN, J. 2020. S24G Application, illegal agricultural development on Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement), Kai! Garib Municipality Northern Cape. Archaeological Impact Assessment, 15 pp. ACRM, Rondebosch.
- HENDEY, Q.B. 1984. Southern African late Tertiary vertebrates. In: Klein, R.G. (Ed.) Southern African prehistory and paleoenvironments, pp 81-106. Balkema, Rotterdam.
- MOEN, H.F.G. 2007. The geology of the Upington area. Explanation to 1: 250 000 geology Sheet 2820 Upington, 160 pp. Council for Geoscience, Pretoria.
- PARTRIDGE, T.C., BOTHA, G.A. & HADDON, I.G. 2006. Cenozoic deposits of the interior. In: Johnson, M.R., Anhaeusser, C.R. & Thomas, R.J. (Eds.) The geology of South Africa, pp. 585-604. Geological Society of South Africa, Marshalltown.
- SAHRA 2013. Minimum standards: palaeontological component of heritage impact assessment reports, 15 pp. South African Heritage Resources Agency, Cape Town.
- SCHNEIDER, G. & MARAIS, C. 2004. Passage through time – the fossils of Namibia. 159 pp. Gamsberg MacMillan, Windhoek.

6. QUALIFICATIONS & EXPERIENCE OF THE AUTHOR

Dr John Almond has an Honours Degree in Natural Sciences (Zoology) as well as a PhD in Palaeontology from the University of Cambridge, UK. He has been awarded post-doctoral research fellowships at Cambridge University and in Germany, and has carried out palaeontological research in Europe, North America, the Middle East as well as North and South Africa. For eight years he was a scientific officer (palaeontologist) for the Geological Survey / Council for Geoscience in the RSA. His current palaeontological research focuses on fossil record of the Precambrian - Cambrian boundary and the Cape Supergroup of South Africa. He has recently written palaeontological reviews for several 1: 250 000 geological maps published by the Council for Geoscience and has contributed educational material on fossils and evolution for new school textbooks in the RSA.

Since 2002 Dr Almond has also carried out palaeontological impact assessments for developments and conservation areas in the Western, Eastern and Northern Cape, Limpopo, Gauteng, KwaZulu-Natal, Mpumalanga, Northwest and Free State under the aegis of his Cape Town-based company *Natura Viva cc*. He has been a long-standing member of the Archaeology, Palaeontology and Meteorites Committee for Heritage Western Cape (HWC) and an advisor on palaeontological conservation and management issues for the Palaeontological Society of South Africa (PSSA), HWC and SAHRA. He is currently compiling technical reports on the provincial palaeontological heritage of Western, Northern and Eastern Cape for SAHRA and HWC. Dr Almond is an accredited member of PSSA and APHP (Association of Professional Heritage Practitioners – Western Cape).

Declaration of Independence

I, John E. Almond, declare that I am an independent consultant and have no business, financial, personal or other interest in the proposed project, application or appeal in respect of which I was appointed other than fair remuneration for work performed in connection with the activity, application or appeal. There are no circumstances that compromise the objectivity of my performing such work.



Dr John E. Almond
Palaeontologist
Natura Viva cc

CHANCE FOSSIL FINDS PROCEDURE: Agricultural developments on Farm Mosplaas (Erf 2255, 2149, 1740 & 2125 Kakamas South Settlement)	
Province & region:	NORTHERN CAPE, Kai! Garib Municipality
Responsible Heritage Resources Authority	SAHRA (Contact details: P.O. Box 4637, Cape Town 8000. Tel: 021 462 4502)
Rock unit(s)	Late Caenozoic alluvium, aeolian sands
Potential fossils	Mammalian bones and teeth, freshwater molluscs, calcretised root casts, termitaria, ostrich egg shells, land snail shells
ECO protocol	<p>1. Once alerted to fossil occurrence(s): alert site foreman, stop work in area immediately (<i>N.B.</i> safety first!), safeguard site with security tape / fence / sand bags if necessary.</p> <p>2. Record key data while fossil remains are still <i>in situ</i>:</p> <ul style="list-style-type: none"> • Accurate geographic location – describe and mark on site map / 1: 50 000 map / satellite image / aerial photo • Context – describe position of fossils within stratigraphy (rock layering), depth below surface • Photograph fossil(s) <i>in situ</i> with scale, from different angles, including images showing context (<i>e.g.</i> rock layering)
	<p>3. If feasible to leave fossils <i>in situ</i>:</p> <ul style="list-style-type: none"> • Alert Heritage Resources Authority and project palaeontologist (if any) who will advise on any necessary mitigation • Ensure fossil site remains safeguarded until clearance is given by the Heritage Resources Authority for work to resume <p>3. If <i>not</i> feasible to leave fossils <i>in situ</i> (emergency procedure only):</p> <ul style="list-style-type: none"> • <i>Carefully</i> remove fossils, as far as possible still enclosed within the original sedimentary matrix (<i>e.g.</i> entire block of fossiliferous rock) • Photograph fossils against a plain, level background, with scale • Carefully wrap fossils in several layers of newspaper / tissue paper / plastic bags • Safeguard fossils together with locality and collection data (including collector and date) in a box in a safe place for examination by a palaeontologist • Alert Heritage Resources Authority and project palaeontologist (if any) who will advise on any necessary mitigation
	4. If required by Heritage Resources Authority, ensure that a suitably-qualified specialist palaeontologist is appointed as soon as possible by the developer.
	5. Implement any further mitigation measures proposed by the palaeontologist and Heritage Resources Authority
Specialist palaeontologist	Record, describe and judiciously sample fossil remains together with relevant contextual data (stratigraphy / sedimentology / taphonomy). Ensure that fossils are curated in an approved repository (<i>e.g.</i> museum / university / Council for Geoscience collection) together with full collection data. Submit Palaeontological Mitigation report to Heritage Resources Authority. Adhere to best international practice for palaeontological fieldwork and Heritage Resources Authority minimum standards.