



DRAFT S24G ASSESSMENT REPORT

**PROPOSED AGRICULTURAL DEVELOPMENT, ASSOCIATED
INFRASTRUCTURE AND DEVELOPMENT OF EVAPORATION
PONDS ON PORTION 1 AND 2 OF FARM STYRKRAAL NO. 81,
FARM RAAP 'N SKRAAP, ONSEEPKANS.**

DENC Reference No.: S24G04/01/2020

January 2021



DOCUMENT NAME:

Proposed agricultural development and associated infrastructure on Portion 1 and 2 of Farm Styrkraal No. 81, Farm Raap 'n Skraap, Onseepkans.

PROJECT NUMBER:

N/A

DATE:

12 January 2021

REPORT STATUS:

DRAFT

CARRIED OUT BY:

GroenbergEnviro (Pty) Ltd

COMMISSIONED BY:

Keboes Fruit Farms (Pty) Ltd

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SYNOPSIS:

See Below

PREPARED BY:

GroenbergEnviro (Pty) Ltd



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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

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:	Keboes Fruit Farms (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	Keboes Fruit Farms (Pty) Ltd												
Trading name (if any):	Keboes Fruit Farms (Pty) Ltd												
Registration number	2000/000389/07												
Postal address:	P.O. Box 518												
	Kakamas						Postal code:	8870					
Telephone:	(054) 431 7000						Cell:						
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):	Pieter Badenhorst Professional Services												
Contact person:	Elanie Kuhn												
Postal address:	PO Box 1058												
	Wellington						Postal code:	8870					
Telephone:	(021) 873 7228						Cell:	076 584 0822					
E-mail:	elanie@groenbergenviro.co.za elaniem@iafrica.com						Fax:	(086) 476 7139					
EAP Qualifications	Elanie Kuhn – 14 years' experience, environmental management, report writing, project management.												
EAP Registrations/Associations	Elanie Kühn – IAIAAsa												

Name of Landowner(s):	Keboes Fruit Farms (Pty) Ltd				
Contact person(s):	P.A. Karsten				
Postal address:	P.O. Box 518				
	Kakamas	Postal code:	8870		
Telephone:	(054) 431 7000	Cell:			
E-mail:	zeldavd@karsten.co.za	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.

Municipality in whose area of jurisdiction the activity falls:	Kai! Ma Municipality				
Contact person:	Municipal Manager				
Postal address:	P. O. Box 108				
	Pofadder	Postal code:	8890		
Telephone	(054) 933 1000	Cell:			
E-mail:	mmsecretary@khaima.gov.za	Fax:	(054) 933 0252		

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:	Raap 'n Skraap - S24G Rectification of cultivation vineyards across small streams and associated infrastructure and legalisation of existing sewage evaporation ponds on Portion 1 and 2 of Farm Styrkraal No. 81, Onseepkans.				
Property location:	Raap 'n Skraap – Onseepkans				
Farm/Erf name & number (incl. portion):	Portion 1 and 2 of Farm Styrkraal No. 81				
SG21 Digit code:	Portion 1 - C03600140000008100001				
	Portion 2 - C03600140000008100002				

Cultivated area: Portion 1 of Farm Styrkraal No. 81. Co-ordinates:	Latitude (S):			Longitude (E):		
	28°	40'	08.73 "	19°	32'	34.04"

Existing Sewage evaporation pond 1: Portion 1 of Farm Styrkraal No. 81. Co-ordinates:	Latitude (S):			Longitude (E):		
	28°	39'	39.02 "	19°	31'	20.85"

Existing Sewage evaporation pond 2: Portion 1 of Farm Styrkraal No. 81.	Latitude (S):			Longitude (E):		

Co-ordinates:						
	28°	38'	25.77 "	19°	30'	30.36"
Pump station: Portion 2 of Farm Styrkraal No. 81.	Latitude (S):			Longitude (E):		
Co-ordinates:						
	28°	37'	40.18 "	19°	30'	21.26"
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! Ma Municipality					
Magisterial District or Town:	Onseepkans					
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:	Onseepkans				Distance	25 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.						
Owners consent:	NOT REQUIRED AS PROJECT IS ON APPLICANT'S PROPERTY Letters of consent from all landowners or a detailed explanation by the applicant explaining why such letters of consent are not furnished must be attached to the application form. .					

2. APPLICATION HISTORY

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

Has any national, provincial or local authority considered any development / waste management applications on the property previously?	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) __ **Petrus Abraham Karsten** _____ Signature: _____

Place: __ **Kanoneiland** _____ Date: _____

EAP (Full names) _ **Pieter Badenhorst** _____ 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 a pump station on the Orange River.
Activity 1 (o): The construction, erection or upgrading of sewerage treatment plants and associated infrastructure;	Construction of evaporation ponds covering an area of approximately 1.3ha and 0.89ha.

ECA EIA Contraventions: Between 10 May 2002 and before end of day 02 July 2006	
Activities unlawfully commenced with on or after 10 May 2002 and before end 02 July 2006: EIA Regulations promulgated in terms of the ECA, Act No 73 of 1989, as amended	
Listed Activity(ies)	Details of Activity(ies)
Activity 1 (j): The construction, erection or upgrading of canals and channel's, including structures causing riverbed disturbances to the flow of water in a riverbed, and water transfer schemes between water catchments and impoundments;	For the expansion of the existing pump station on the Orange River.

Activity 1 (k): The construction, erection or upgrading dams, levees and weirs affecting the flow of a river;	For the expansion of the existing pump station on the Orange River.
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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
Activity 1 (m) The construction of facilities or infrastructure, including associated structures or infrastructure, for (m) 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; (iv) dams; and (v) weirs;	For the construction of 214ha of agricultural development across small streams.
Government Notice No. R387 Activity No(s):	Details of Activity(ies) requiring a Scoping Report and EIA
NONE APPLICABLE	

NEMA EIA Contraventions: On or after 02 August 2010 until 7 December 2014	
Activities unlawfully commenced with in terms of the EIA Regulations promulgated in terms of the NEMA, Act No 107 of 1998, as amended on or after 02 August 2010 until 7 December 2014	
Government Notice No. R544 Activity No(s):	Details of Activity(ies) requiring Basic Assessment
NONE APPLICABLE	
Government Notice No. R545 Activity No(s):	Details of Activity(ies) requiring a Scoping Report and EIA
NONE APPLICABLE	
Government Notice No. R546 Activity No(s):	Details of Activity(ies) requiring S&EIR

NEMA EIA Contraventions: On or after 8 December 2014	
Activities unlawfully commenced with in terms of the EIA Regulations promulgated in terms of the NEMA, Act No 107 of 1998, as amended on or after 8 December 2014	
Government Notice No. R983 Appendix 1 Activity No(s):	Details of Activity(ies) requiring Basic Assessment
NONE APPLICABLE	
Government Notice No. R984 Appendix 2 Activity No(s):	Details of Activity(ies) requiring a Scoping Report
NONE APPLICABLE	
Government Notice No. R985 Appendix 3 Activity No(s):	Details of Activity(ies) requiring Environmental Impact Assessment Report
None Applicable	

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)
NONE 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)
NONE 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	Existing – Existing agricultural development, and sewerage ponds.
--	----------------	---

(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 farm where the activity occurs is situated approximately 25 kilometres outside of the small town of Onseepkans, in the Northern Cape, in the Kai! Ma Municipal area. The property gains access via gravel roads off the R358, which runs to Pofadder and connects there with the N14.

Refer to the Locality Plan attached at Appendix A (and inserted below as Figure 1).

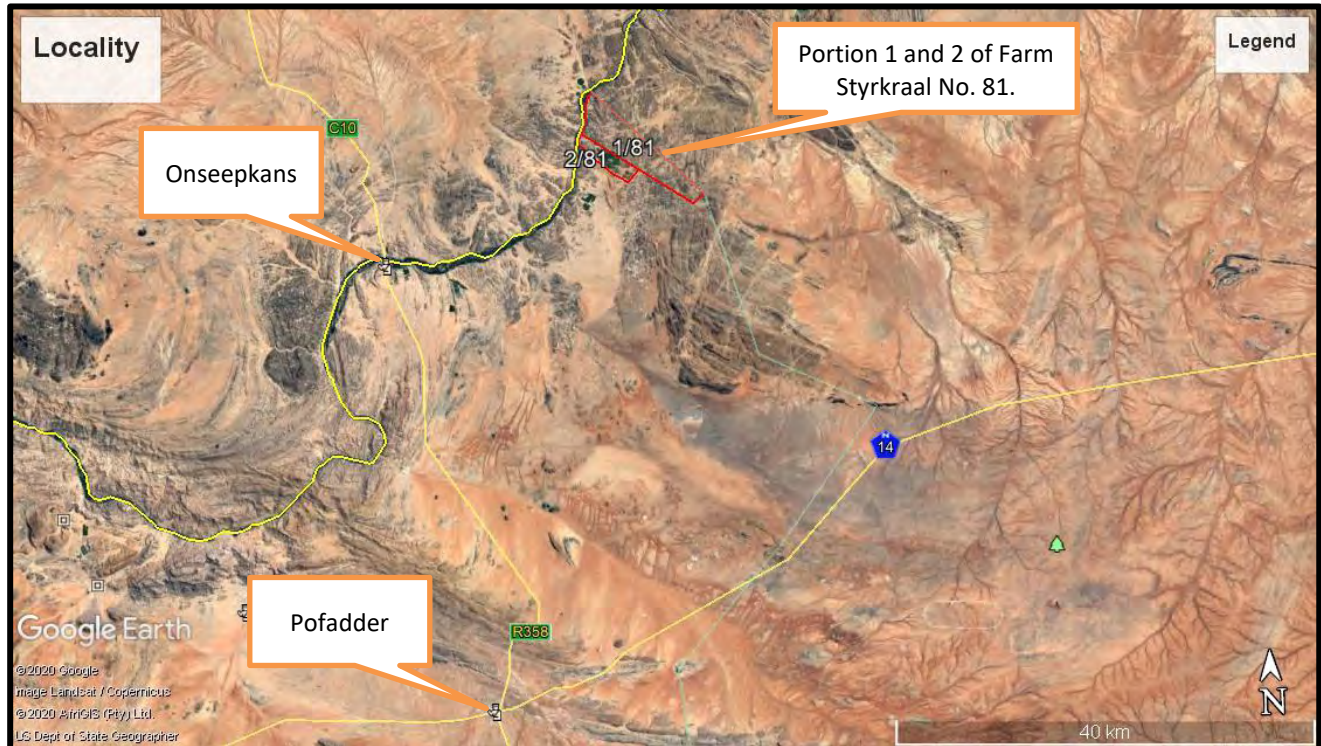


Figure 1: Locality plan

Refer to the Historical Google Earth images attached at Appendix D1: Historical Photographic Imagery.

During the development of the applicant's farm, he unknowingly activated certain listed activities that is included in the NEMA ECA1997/2000 and NEMA 2006 Regulations. Only during an Audit Report conducted by GroenbergEnviro (Pty) Ltd (previously Pieter Badenhorst Professional Services cc), did it become apparent that this is not the case.

The following activities are applied for:

1. NEMA 1998/2000 Regulations:

1. For the construction of sewerage treatment plants for:
 - Evaporation plant 1 - of approximately 1.3ha for the treatment of sewerage consisting of five evaporation ponds.
 - Evaporation plant 2 - of approximately 0.89 for the treatment of sewerage consisting of six evaporation ponds was developed prior to 2000.
2. Construction of new pump station and river intake on the banks of the Orange River, pipelines, and roads as part of the clearance of indigenous vegetation to establish new agricultural areas. Upgrading of the said existing intake structure, that was damage during flooding.

2. The following NEMA 2006 Regulations were also triggered by the development of the applicant's farm:

1. Clearance of 214 hectares within a watercourse, during the development of the agricultural area, see Figure 2.

By 30 September 2006, a total of 214 hectares had been cleared for agricultural development as shown in (Figure 2).

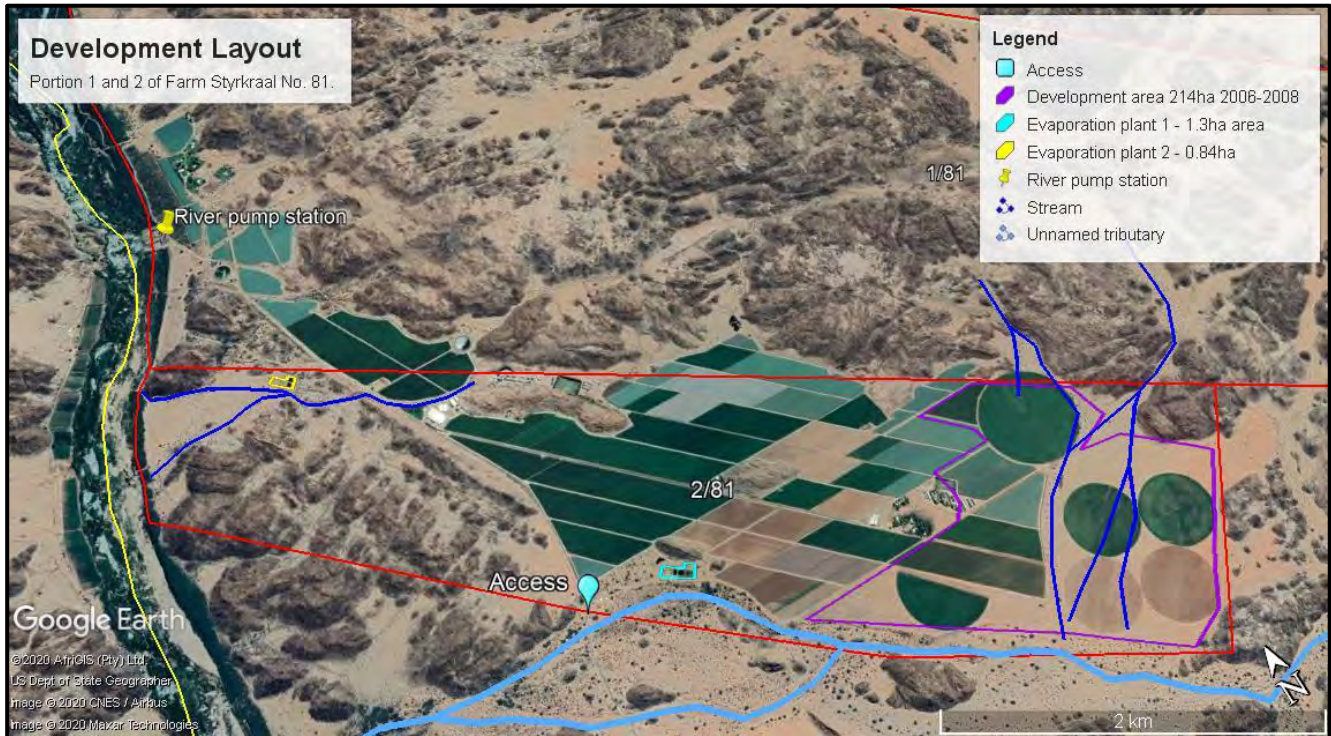


Figure 2: Development Layout

(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:		
No buildings were developed as part of the new agricultural areas or for the evaporation ponds. However, see below Figure 3 in the evaporation ponds developed.		



Figure 3: Evaporation plant 1

Infrastructure (e.g. roads, power and water supply/ storage)

YES

NO

Provide brief description:

Roads:

Access is gained off the R358 district road. The internal farm tracks are not surfaced and are compacted earth with no formal storm water management control structures in place. The low rainfall characteristic of the area negates the need to provide for formal storm water control.

Water:

The WUL Application is for, the Applicant, Keboes Fruit Farms (Pty) Ltd to apply for a Water Use Licence (WULA) in terms of the following, also outlined in Table 1:

- Section 21(c) and (i) of the National Water Act for the streams that were diverted and crossed as part of the illegal establishment of vineyards. The establishment of the vineyards on Portion 2 of Farm Styrkraal No. 81 took place across small sections of the unnamed drainage system that is located on site. 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.
- Section 21 (c) and (i) for the upgrading of the river pump station on Portion 1 of Farm Styrkraal No. 81 at the banks of the Orange River after heavy flooding.
- 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) to transfer approximately 2 ha of water for industrial and Schedule 1 use. From this volume, approximately 1500 m³ should be allocated for Schedule 1 use and approximately 28 500 m³ will be allocated for industrial use.

- Section 21 (g) for the legalisation of existing sewage/evaporation ponds for the treatment of sewage from the existing worker accommodation etc.

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

Table 1: Water Use License Activities

<i>(a) taking of water</i>	For the re-allocation of water between two properties, so as 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 use” 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. For the expansion of an existing pump station on the banks of the Orange River.
<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. For the expansion of an existing pump station on the banks of the Orange River.
<i>(g) Disposing of waste in a manner which may detrimentally impact on a water resource</i>	For the disposal of wastewater into evaporation ponds.

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 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 application is also for the legalisation of the upgrading of the existing river pump station. The river pump station was upgraded during the period 2000 to 2001 as a result of the of flooding damage. The

total area developed for the pump station is approximately 0.5 ha in size. It included a new intake at the river, with gabion mattresses.

The upgrading of the river pump station falls, however, within the NEFPA catchment priority areas.

The application is for the legalisation of the existing sewerage evaporation ponds on Portion 2 of Farm Styrkraal No. 81. The details pertaining to the evaporation dams are shown below in Table 2 and Table 3.

Note: The existing evaporation treatment plant 2 was constructed prior to 1998, and therefore should only be registered as an existing lawful use.

Table 2: Evaporation treatment plant 1 details

Specifications for the sewage evaporation ponds	
Capacity evaporation pond(s)	15 190 m ³ for all 6 dams
Footprint area of all 6 dams	1.3 ha
Total annual volume of sewage	12 035 m ³ /annum

Table 3: Evaporation treatment plant 2 details

Specifications for the sewage evaporation pond	
Capacity evaporation pond(s)	15 000 m ³ for all 6 dams
Footprint area of all 6 dams	0.89 ha
Total volume of sewage annually	8 000 m ³ /annum

Under the WARMS certificates, the properties have the following existing lawful use:

- Portion 1 of Farm Styrkraal No. 81: 90.1 ha (1351500 m³/a)
- Portion 2 of Farm Styrkraal No. 81: 431.3 ha (6469500 m³/a).

Table 4: Water allocations

Property	Property area	Cultivation of vineyards	Agricultural areas (checked)	Water use per area	Lawful/Lawfulness still to be determined	Water Use Certification	Property owner
81,2 Styrkraal Kenhard RD	875,3599	307	444.3	431,3	Lawfulness still to be determined	Yes for 431,3ha	Keboes Fruit Farms (Pty) Ltd

81,1 Styr-Kraal Kenhard RD	3469,065 1	-	75	90,1	Lawfulness still to be determined	Yes for 90,1ha	Keboes Fruit Farms (Pty) Ltd
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As shown above in Table 4, water will have to be moved from Portion 1 of Styrkraal No. 81 to Portion 2 of Styrkraal No. 81 to allow the correct water allocations per property. The applicant, Keboes Fruit Farms (Pty) Ltd, wishes to transfer 195 000m³/a (13 ha) of water from Portion 1 of Styrkraal No. 81, to Portion 2 of Farm Styrkraal No. 81, for the rectification of water allocations for each property. The total volume of water used annually amounts to approximately 3 ha of water. Therefore, the application is to transfer approximately 2 ha (30 000 m³/a) of water for “Industrial” and “Schedule 1” use. From this, approximately 28 500 m³ should be allocated for “Schedule 1” use and approximately 1 500m³ will be allocated for “Industrial” use. This application is therefore recommended for the approval of Section 21 (a), (c), (i) and (g) as outlined in the WULA.

Electricity:

Electricity is provided by Eskom for the irrigation process and is linked to the booster pump. See Figure 8, showing the existing Eskom connection, that has existing capacity.

Processing activities (e.g. manufacturing, storage, distribution)	YES	NO
Provide brief description:		
Storage facilities for raw materials and products (e.g. volume and substances to be stored)		
Provide brief description	YES	NO
Storage and treatment facilities for solid waste and effluent generated by the project		
Provide brief description	YES	NO

Evaporation ponds:

The applicant, Keboes Fruit Farms (Pty) Ltd wishes to comply with the National Water Act (1998) by relocating and upgrading of existing sewage/evaporation ponds for the treatment of sewage from the existing worker accommodations etc, see Figure 5.

The various details pertaining to the evaporation dams are shown below in Table 5.

Table 5: Evaporation treatment plant 1 details

Specifications for the sewage evaporation ponds	
Capacity evaporation pond(s)	15 190 m ³ for all 6 dams
Footprint area of all 6 dams	1.3 ha
Total annual volume of sewage	12 035 m ³ /annum

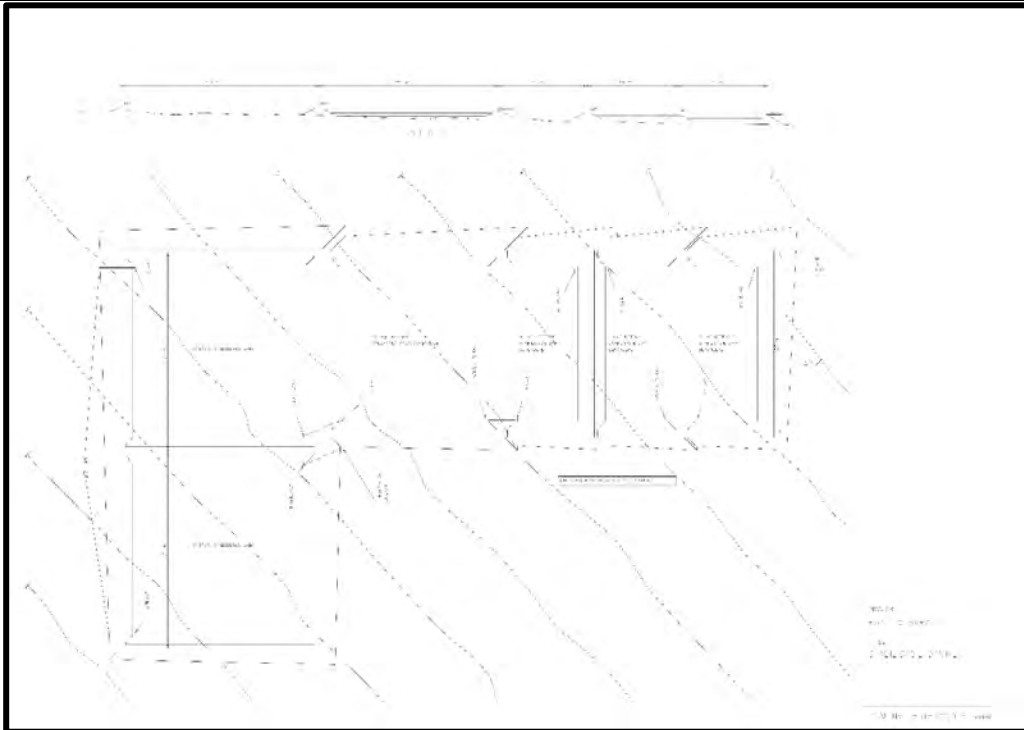


Figure 4: Evaporation dam design layout

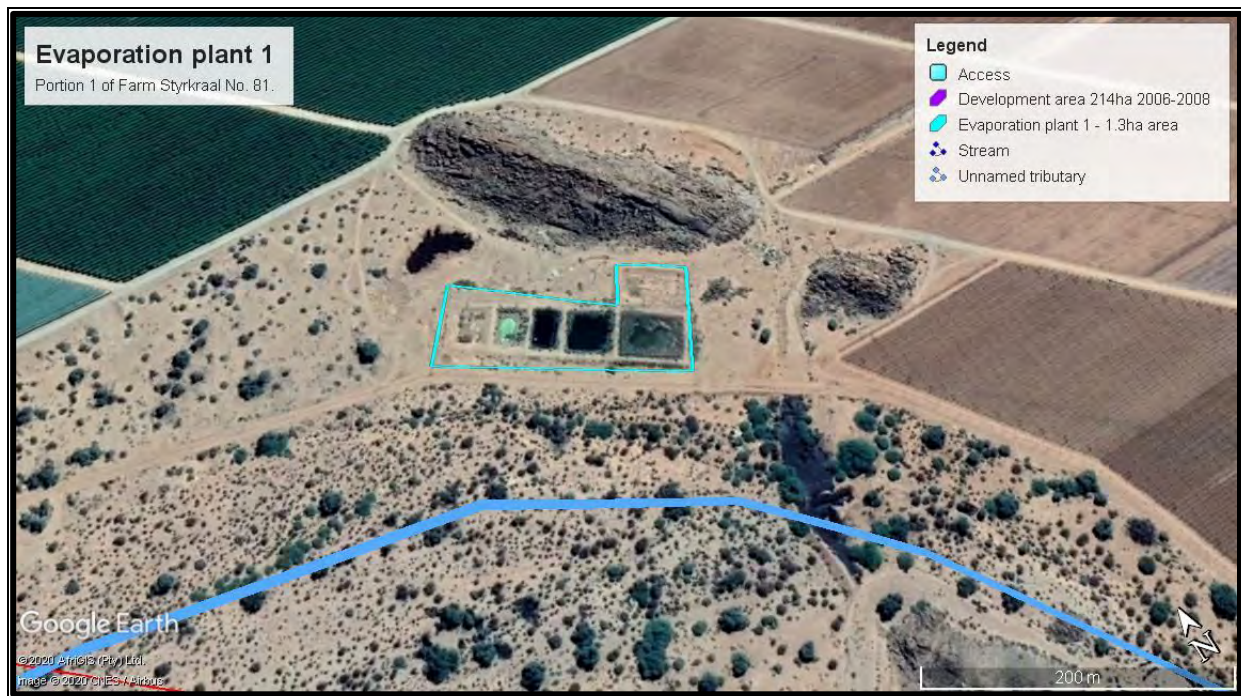


Figure 5: Evaporation pond position

Other activities (e.g. water abstraction activities, crop planting activities)	YES	<input checked="" type="checkbox"/>
Provide brief description		
Crop Planting:		

The applicant has developed an area of 214ha of cultivation areas without environmental authorization. Table grapes are being cultivated as indicated in the project area (refer to Appendix D2: Site Photographs).

As Shown below in Figure 6 the development area, purple block took place between 2006 and 2007.

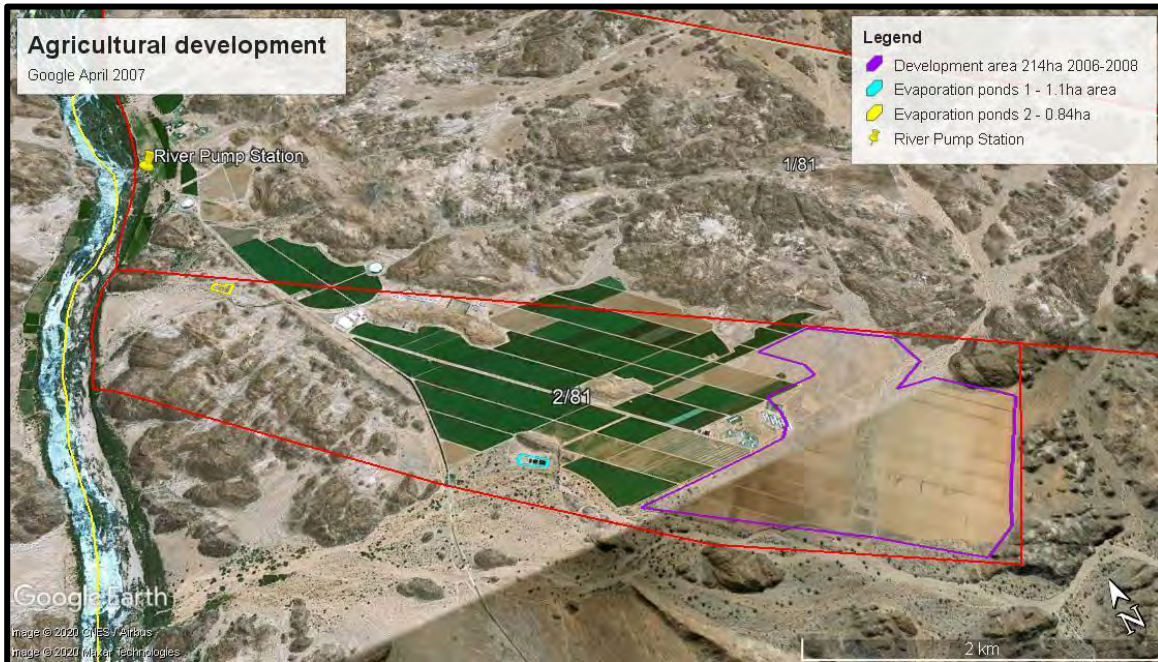


Figure 6: Agricultural development

River pump station and pipelines:

Water is required for the drip irrigation of the established vineyards and is supplied via pipelines from the booster pump station. The other pipelines established is from the homesteads towards the evaporation ponds. These pipelines have a diameter of 160mm and do not need environmental authorization.

The River pump station was expanded during 2000 to 2001 and further development of a small solar plant took place, see Figure 7 and Figure 8. The total area developed for the pump station is approximately 0.5ha in size. It included a new intake at the river, see Figure 9 with gabion mattresses. The intake design is shown in Figure 10.



Figure 7: River pump station



Figure 8: Intake and river pump station



Figure 9: River intake structure

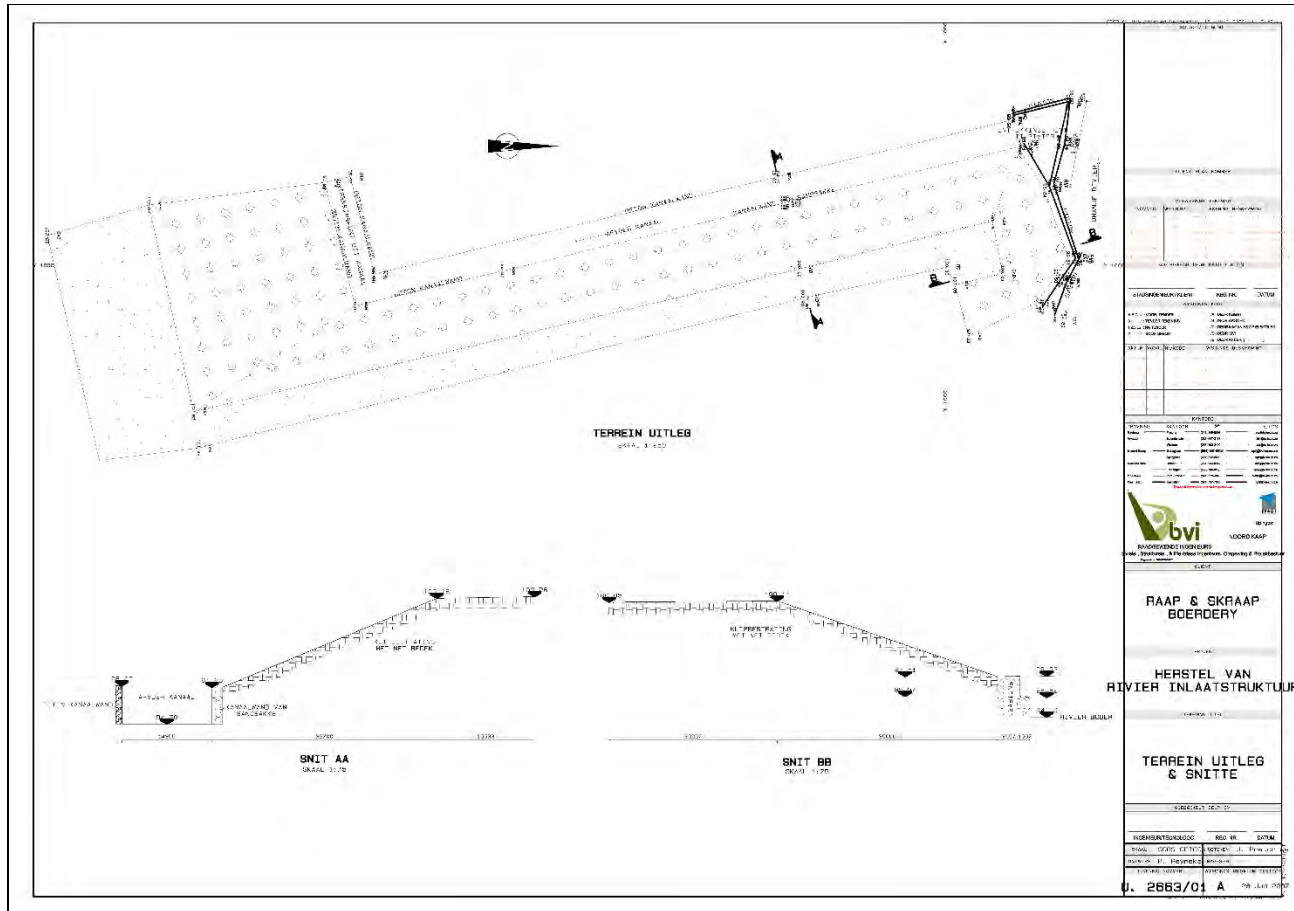


Figure 10: River intake design

3. ACTIVITY NEED AND DESIRABILITY

Describe the need and desirability of the activity:

According to a report prepared by DAFF (2012), South African table grape exports totalled 2 708 767 metric tons that year. The majority of exports are to the European Market, with most table grapes being 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 exporting countries.

Major production areas in South Africa

The Hex River Valley is the country's main table grape production area. More than half of all grape exports come from this district, which 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.

The project area is located within the Lower Orange River wine region (Refer to Figure 11 below.)

Portion 1 and 2 of farm Styrkraal no. 81 contributes to the production of table grapes that are harvested early for the export market, in time for the Christmas festive season overseas. This particular characteristic of growing table grapes in this region gives the growers a highly competitive advantage in the global market.

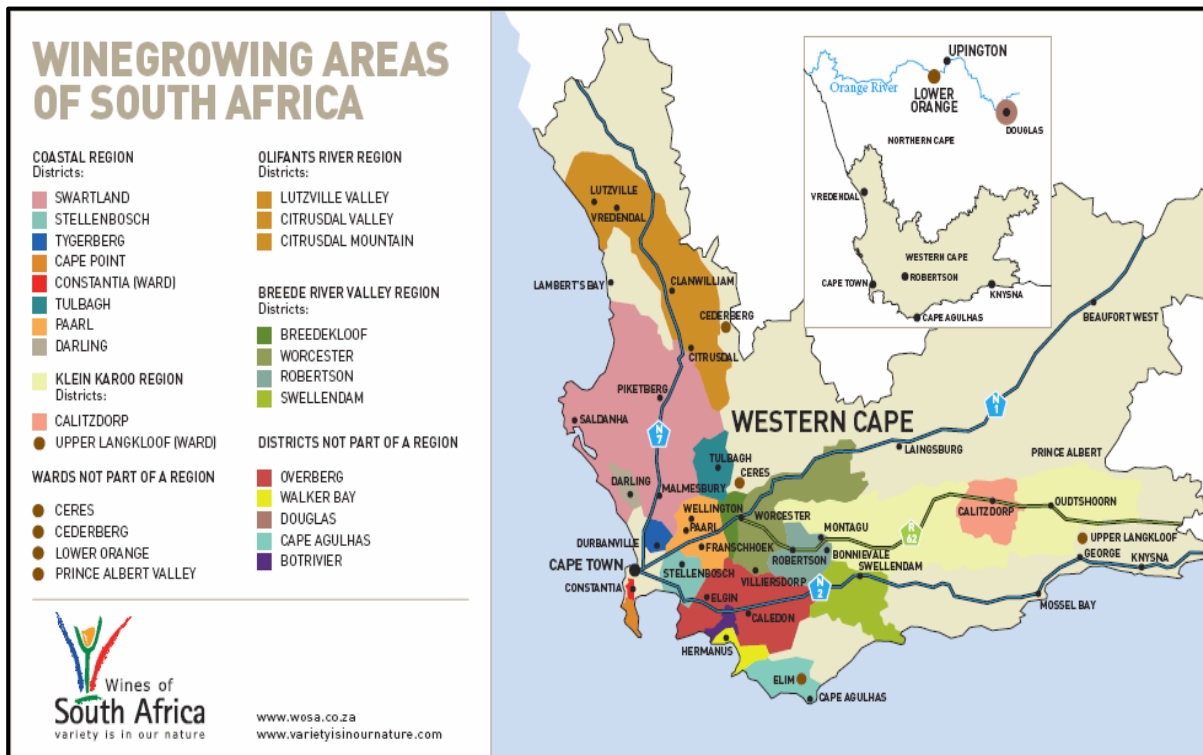


Figure 11: Winegrowing areas of South Africa (sourced from www.wosa.co.za)

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/development phase, and long-term employment during the operational phase. The grower (Karstens) 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 vineyards in general.

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

The export of grapes contributes to the National Gross Domestic Profit (GDP).

The Karsten SA Holdings are Keboes Fruit Farm's only shareholders. The Karsten SA Holdings have a great many endeavours for promoting previously disadvantaged women who have been under the employment of The Karsten Group for 5 years and longer. These shareholding endeavour greatly benefits the previously disadvantaged women.

4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the physical spatial size of the activity as well as associated infrastructure (footprints):	214ha for vineyards 1.3ha for the existing evaporation ponds and 1.5ha for the river intake and pump station.
Indicate the area that has been transformed / cleared to allow for the activity as well as associated infrastructure	214ha for vineyards 1.3ha for the existing evaporation ponds and 1.5ha for the river intake and pump station.
Total area (sum of the footprint area and transformed area)	214ha for vineyards 1.3ha for the existing evaporation ponds and 1.5ha for the river intake and pump station.

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?	m	
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 (Figure 12) and is just under 4 metres wide. This road was constructed prior to 1998, this gravel road gains access off R358 that runs from Pofadder to Onseepkans.

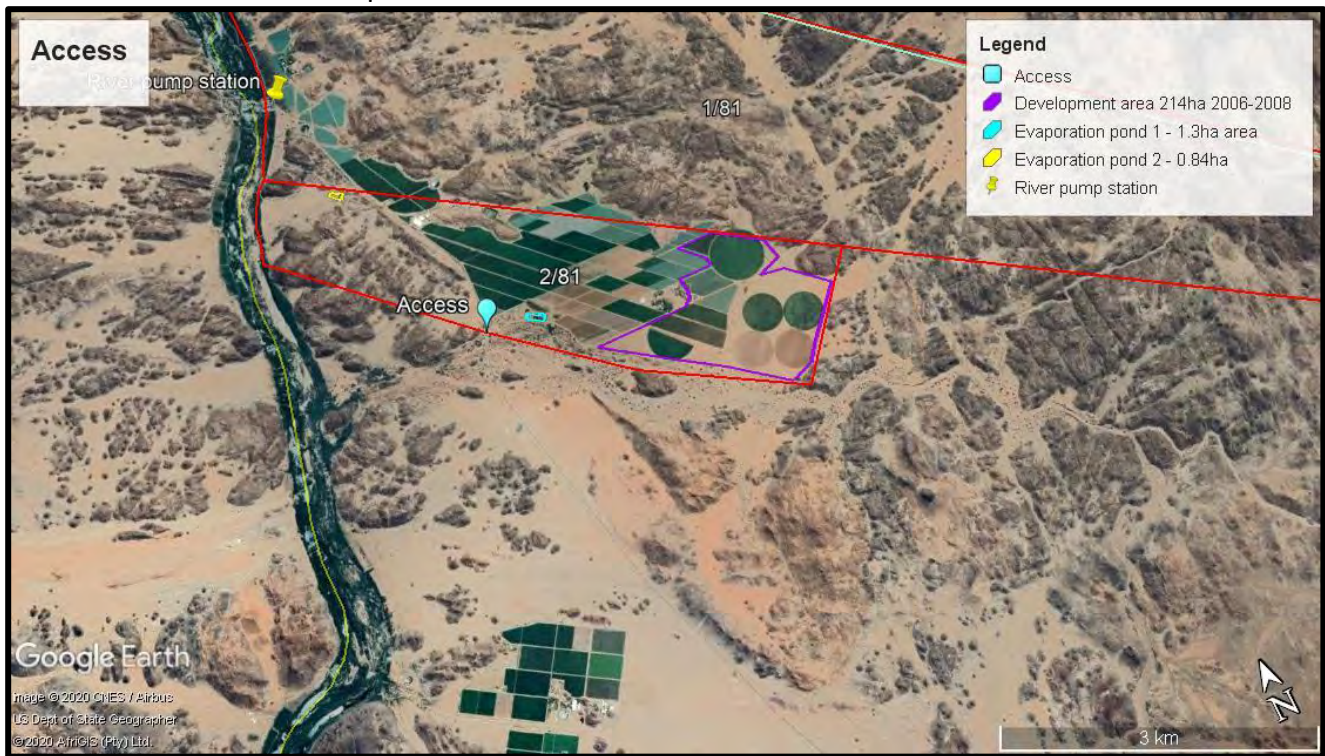


Figure 12: Access Road

6. SITE PHOTOGRAPHS

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

Historical Aerial photographs dated back to 2003 are provided as Figures 1 to 5, attached at APPENDIX D: PHOTOGRAPHS, IMAGERY AND MAPS

Appendix D1: Historical Photographic Imagery. Site Photographs taken is attached as Appendix D2: Site Photographs.

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 or General Authorisation	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)

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)
Sewage		28m³/day

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

Determined from volumes

Determined with weighbridge/scale

Estimated

X

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	
Sewage	Worker Accommodation – Keboes Fruit Farms (Pty) Ltd		10 000m ³	Onsite treatment via evaporation ponds	N/A	N/A

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

Prevailing wind direction (e.g. NWW)

November – April

May - October

NE
S - SSE

The size of population to be served by the facility

	Mark with "X"	Comment
0-499		
500-9,999	X	Number of Workers living on site: September – November = 500 and December – February = 1000
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
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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
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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 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. The river intake at the Orange River falls within a NFEPA priority area as shown below in Figure 13.

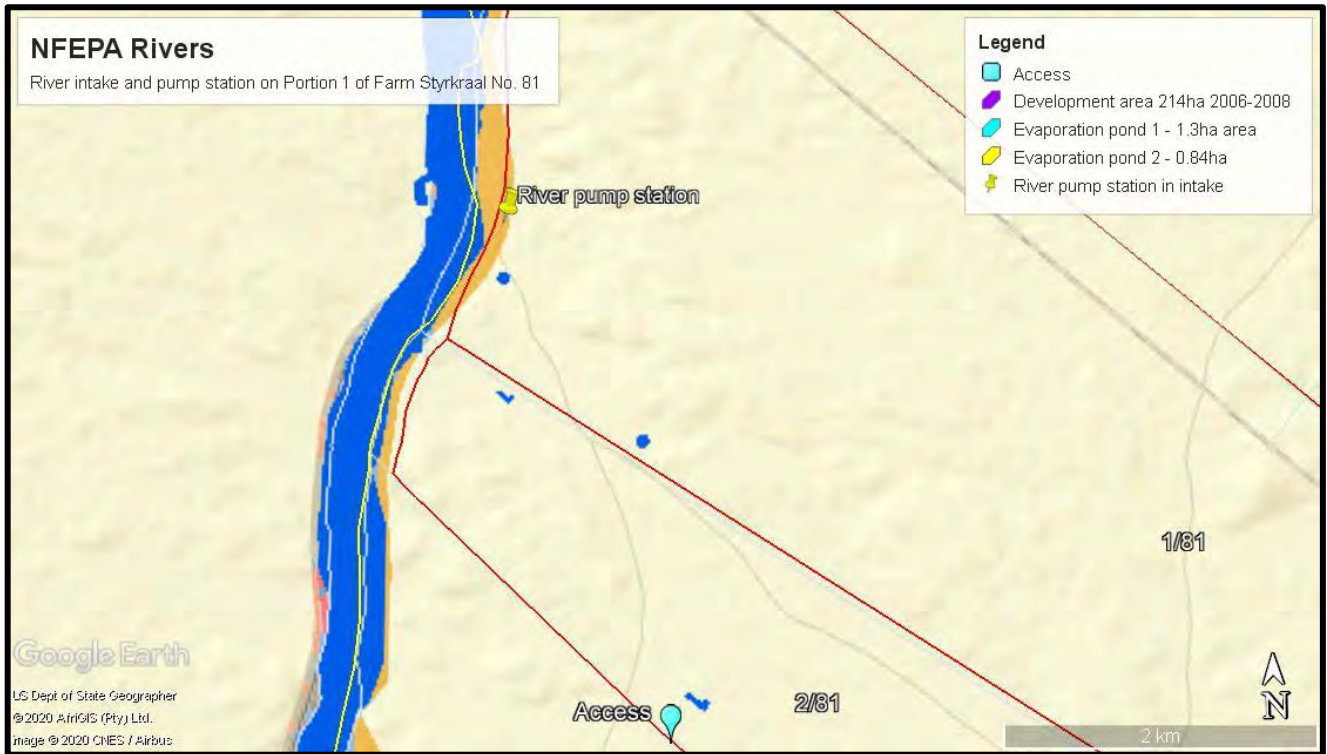


Figure 13: NFEPA River priority areas

5. VEGETATION AND GROUNDWATER

5.1 VEGETATION / GROUNDCOVER (PRE-COMMENCEMENT)

Cross out ("X") 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	X	Indigenous Vegetation with heavy alien infestation	
Describe the vegetation type above: N/A		Describe the vegetation type above: The vegetation types found at Raap en Skraap are mainly Lower Gariep Broken Veld away from the Orange River and Lower Gariep Alluvial Vegetation along the river.		Describe the vegetation type above: N/A	

Provide ecosystem status for above: N/A	Provide ecosystem status for above: Least threatened [according to Mucina & Rutherford (2006) Critical Biodiversity Area 1 (Refer to Appendix F1 showing the CBA status as sourced from bgis.sanbi.org) and inserted below as Figure 14.	Provide Ecosystem status for above: N/A
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: The average depth of the soil is 1.8 metres. The soil is known for rocky nature with limited soil areas.
Bare soil	Building or other structure	Sport field
Other (describe below)	Cultivated land	Paved surface

The following taken from the Botanical Report included in Appendix H2: Botanical Report:
“The vegetation types found at Raap en Skraap are mainly Lower Gariep Broken Veld away from the Orange River and Lower Gariep Alluvial Vegetation along the river (Figure 14).”

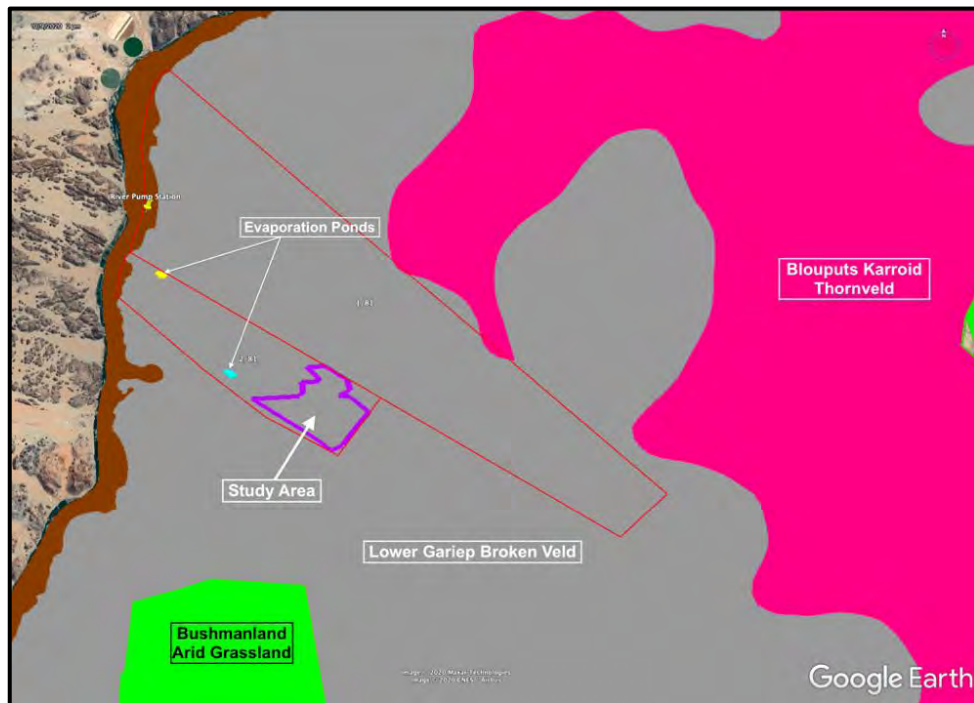


Figure 14: Portion of the Vegetation Map of South Africa, Swaziland and Lesotho showing the farm ‘Raap en Skraap’ outlined in red, lying entirely with Lower Gariep Broken Veld except for the pump station that lies in Lower Gariep Alluvial Vegetation (shaded brown).

5.2. VEGETATION / GROUND COVER (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 – No vegetation left	X	Indigenous Vegetation with scattered aliens – No vegetation left.	X	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		Sport field
Other (describe below) Access roads within cultivated area		Cultivated land		Paved surface
<p>The following taken from the Botanical Report included in Appendix H2: Botanical Report: <i>“There is relatively little cultivation on Portion 1 of Styrkraal 81 and that is not part of this investigation. Most of the cultivation is on Portion 2, as are the evaporation ponds that are both located in the CBA2 area. The area cultivated originally for Hoodia gordonii, and now converted to pivot circles for lucerne and chaff as well as date orchards, was all CBA2.</i></p> <p><i>The area of undisturbed terrain that was cleared of Lower Gariep Broken Veld is 214 ha and the two sets of evaporation ponds together make up 2.14 ha.</i></p> <p><i>The Lower Gariep Alluvial Vegetation is classified as CBA1 and the pump station has negatively impacted the east bank of the river within the zone of a CBA1, although the effect of clearing is limited due to the alluvial vegetation being infested with alien mesquite. It shows a camelthorn tree (Vachellia erioloba) [protected species] that was clearly not affected by the construction of the pump station.”</i></p>				

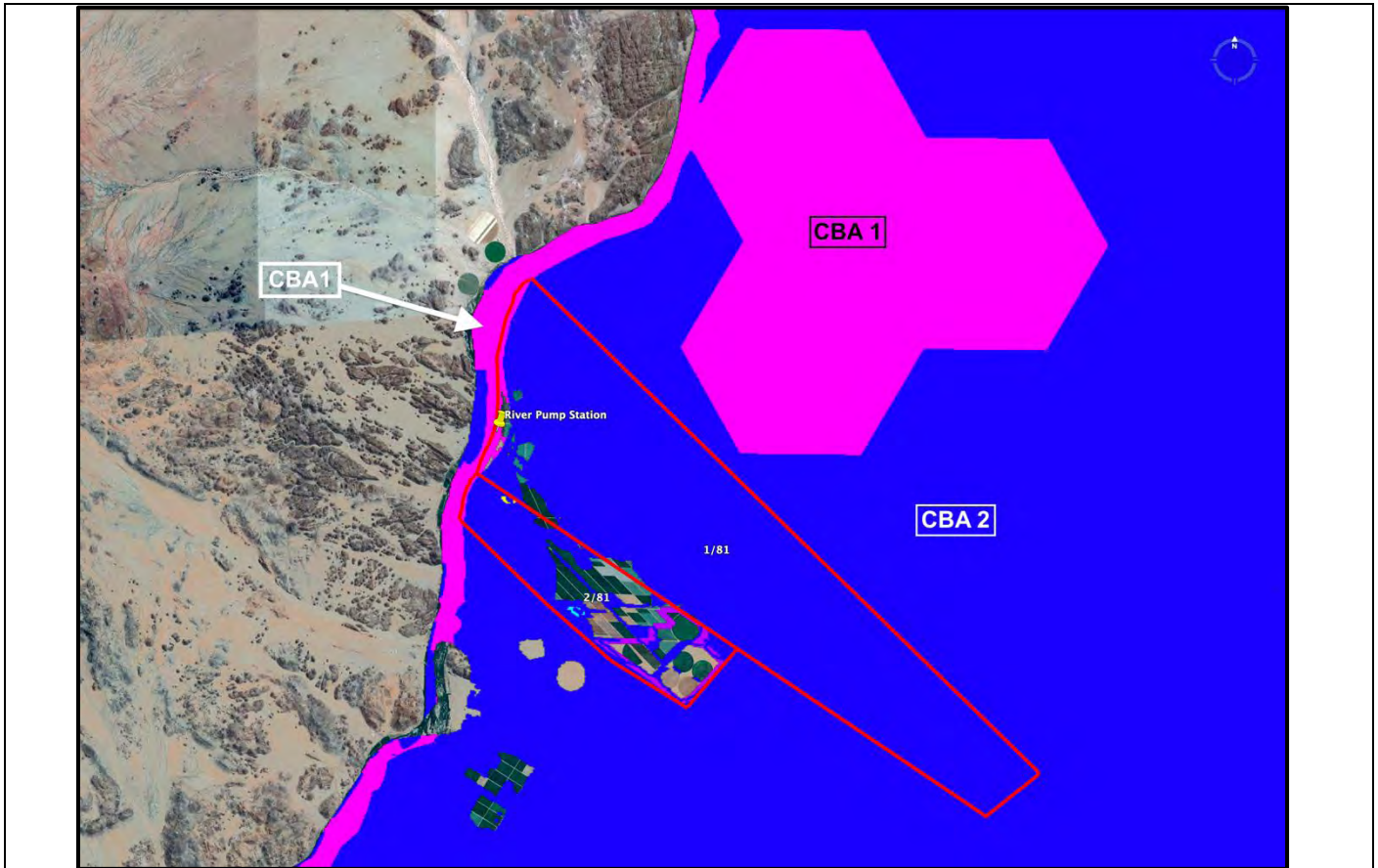


Figure 15: The Critical Biodiversity Area Map of the Northern Cape Province as it applies to “Raap en Skraap”.

5.3 VEGETATION / GROUND COVER MANAGEMENT

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

The following taken from the Botanical Report included in Appendix H2: Botanical Report:

*“There is no doubt that the development of agricultural lands in the area under investigation at ‘Raap en Skraap’ had a negative impact on the vegetation and more specifically a large seasonal wash. However, due to the sparseness of the vegetation, it is difficult to retrospectively determine the intensity of the negative impact. All that can be said is that the wash has been effectively canalised by the soil berms and all vegetation in the wash, except for in the channel that has been left and around the perimeter of the fields, has been lost. It is apparent that there were no large trees in the wash, hence it is concluded that there were no *Vachellia erioloba* nor *Boscia foetida* subsp. *rehmanniana* present when the area was originally cleared.*

The natural vegetation has also been lost at the sites of the evaporation ponds and in this case, since the original vegetation was very sparse, it can be assumed and concluded that the intensity of the resultant negative impact is limited.

The pump station was built prior to 2002 and supplies water to ‘Raap en Skraap’ and a small solar PV installation. The pump station covers an area of approximately 0.5 ha and is well with the alluvial zone. It therefore displaced Lower Gariep Alluvial Vegetation, including the infestation of mesquite. The intensity of the resultant impact is considered to be medium to high negative.” Mitigation measures associated with Storm Water Management is included in the WULA in Appendix H3: Water Use License Report.

6. THE GEOLOGICAL FORMATIONS UNDERLYING THE SITE

GRANITE
SHALE
SANDSTONE

X

QUARTZITE
DOLOMITE
DOLERITE

OTHER _____ NONE _____

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

Cross out ("X") 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 center	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, Portion 1 and 2 of Farm Styrkraal No. 81 is zoned as Agriculture.			
Is/was the activity in line with the following?			
Provincial Spatial Development Framework (PSDF)	YES	NO	Please explain
Portion 1 and 2 of Farm Styrkraal No. 81 is zoned for Agricultural use, and the agricultural activities are in line with the PSDF.			
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 for agriculture.			
Integrated Development Plan of the Local Municipality	YES	NO	Please explain
Portion 1 and 2 of Farm Styrkraal No. 81 is zoned for Agricultural use.			
Spatial Development Framework of the Local Municipality	YES	NO	Please explain
Portion 1 and 2 of Farm Styrkraal No. 81 is zoned for Agricultural use.			
Approved Structure Plan of the Municipality	YES	NO	Please explain
Portion 1 and 2 of Farm Styrkraal No. 81 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 summary is taken from the IDP (2012) summarising the agricultural sector:

“The population for Kai! -Ma has increased to an estimated total of 12,465 people since the last census in 2011 (2016 Community Survey) with a growing rate of 0,83%. The municipality is sparsely populated (+/- 1 person/km²); most people are settled in its five (5) towns and surrounding farms. The municipality is characterized by vast tracts of land, pristine natural environment, unique mountains and its limited cell phone reception, which can be regarded as a unique attraction by some urban dwellers who wish to escape the rush of the cities. The biggest contributors to the local economy are Agriculture and Mining.

As shown below in Figure 16, the biggest contributor of employment within this area is Agriculture:

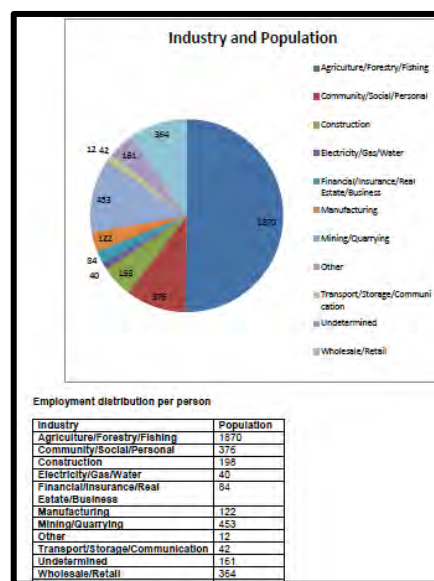


Figure 16: Employment distribution per person

Livestock farming contributes 80% of Kai! -Ma's farming activities. Land that lies along the banks of the Orange River supports the production of some quality agricultural products, i.e., export table grapes, dates, hoodia, geranium and other crops at Onseepkans, Witbank and Pella. Intensive agricultural development should be limited to defined areas along the Orange River where it will no impact negatively on the unique biodiversity of the areas."

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 summary is taken from the IDP (2018/2019) summarising the agricultural sector:

"The agricultural sector is still the main economic sector who made the biggest contribution to the economy of Kai! Ma Municipality in 2018/19.

"Livestock farming contributes 80% of Kai! -Ma's farming activities. Land that lies along the banks of the Orange River supports the production of some quality agricultural products, i.e., export table grapes, dates, hoodia, geranium and other crops at Onseepkans, Witbank and Pella.

Intensive agricultural development should be limited to defined areas along the Orange River where it will no impact negatively on the unique biodiversity of the areas."

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

		YES	NO
		UNCERTAIN	
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?			
If YES, explain:	<p>The following summary from the Archaeological Assessment conducted, included in Appendix H1: Archaeology Report:</p> <p><i>“Findings</i></p> <p><i>A field assessment of the development took place on 14th July 2020, in which the following observations were made:</i></p> <p><i>No archaeological resources were recorded in the 214ha development site. The intensively farmed area constitutes a highly transformed and modified landscape. It is noted that the archaeologist Peter Beaumont, in 2008, recorded no archaeological resources during a survey of a portion of the farm Styrkraal/Raap ‘n Skraap. Previous archaeological assessments undertaken in Onseepkans, has noted the low density of archaeological resources in the area.</i></p> <p><i>Graves</i></p> <p><i>No graves or typical grave features (i. e. stone cairns) were encountered during the study.</i></p> <p><i>Built environment</i></p> <p><i>No old buildings, structures, features or equipment were recorded on the farm.</i></p>		

Impact statement

The results of the study suggest that the listed activity (i. e. an unauthorised agricultural development & development of evaporation ponds) has likely, not had an impact of great significance on archaeological resources.

Conclusion

The receiving environment comprises a severely transformed and modified landscape. The literature survey also indicates that it is unlikely that significant archaeological resources have been impacted by the development. The impact significance of the illegally established vineyards, date and citrus plantations on archaeological heritage is therefore assessed as LOW.

Recommendations

1. With regard to the illegal agricultural development, and construction of two small sewerage evaporation ponds on the Farm Raap 'n Skraap (Portion 2 of the Farm Styrkraal No. 81), no further archaeological mitigation is required."

The following summary from the Paleontological Assessment conducted, included in Appendix H4: Paleontology Report:

"In view of the negligible palaeontological sensitivity of the ancient Precambrian granitoid bedrocks as well as the low sensitivity of the geologically recent superficial sediments along shallow stream tributaries of the Gariep River in the broader Onseepkans region, the unauthorized agricultural developments – including the vineyard, date and citrus development as well as the two evaporation ponds - are not considered to pose a significant threat to local palaeontological heritage. Substantial, potentially-fossiliferous older alluvial deposits of the Orange River are not mapped here.

Pending any significant new fossil discoveries in the area, no further specialist studies or mitigation are considered necessary for this agricultural project.

All South African fossil heritage is protected by the National Heritage Resources Act, 1999. Should substantial fossil remains - 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. Email: rredelstorff@sahra.org.za). 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.

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*

	<p><i>without a permit from SAHRA or the relevant Provincial Heritage Resources Agency;</i></p> <ul style="list-style-type: none"> • <i>The palaeontologist concerned with potential mitigation work will need a valid fossil collection permit from SAHRA 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 SAHRA (2013)."</i> 		
<p>If uncertain, the Department may request that specialist input be provided to establish whether such possibilities occurred on or close to the site.</p>			
<p>Briefly explain the findings of the specialist if one was already appointed:</p>	<p>See above.</p>		
<p>Were any buildings or structures older than 60 years affected in any way?</p>	<table border="1"> <tr> <td style="text-align: center;">YES</td> <td style="text-align: center;">NO</td> </tr> </table>	YES	NO
YES	NO		
<p>Was it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?</p>	<table border="1"> <tr> <td style="text-align: center;">YES</td> <td style="text-align: center;">NO</td> </tr> </table>	YES	NO
YES	NO		
<p>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. Note these findings will be submitted on the SAHRIS online application for comments.</p>			

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 and/or 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.		
Construction phase:		
A small amount of construction related waste associated with vineyards would have been generated, such as cement bags, paint tins, etc.		
Operational phase:		
Operational waste is limited to broken materials associated with the farming activities, and with solid waste associated with food eaten by the farm workers.		
What quantity was/is produced during the construction period?	App. 2	m ³
What was/is the estimated quantity that will be produced per month during the operational phase?	Negligible	m ³

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 to the municipal 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?	Existing 8 000m ³ and new approval 10 000m ³ / annum.																	
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 exist for treating / disposing of the sewage or any other effluent generated by this activity(ies)? Provide written confirmation from the Municipality or relevant authority.																		
N/A																		
Was/is any effluent produced be treated and/or disposed of on site?	YES	NO																
If yes, briefly describe the nature of the effluent and how it was/will be disposed of:																		
<p>Evaporation ponds:</p> <p>The applicant, Keboes Fruit Farms (Pty) Ltd, wishes to comply with the National Water Act (1998) by legalising the existing sewage/evaporation ponds for the treatment of sewage that flows from the existing worker accommodations etc. The various details pertaining to the evaporation dams are shown below in Table 6 and Table 7.</p> <p style="text-align: center;">Table 6: Evaporation treatment plant 1 details</p> <table border="1"> <thead> <tr> <th>Specifications for the sewage evaporation pond</th> <th></th> </tr> </thead> <tbody> <tr> <td>Capacity evaporation pond/s</td> <td>18 795m³ for all 6 dams</td> </tr> <tr> <td>Footprint area of all 6 dams</td> <td>1.3ha</td> </tr> <tr> <td>Total volume of sewage annually</td> <td>11 000m³/annum</td> </tr> </tbody> </table> <p style="text-align: center;">Table 7: Evaporation treatment plant 2 details</p> <table border="1"> <thead> <tr> <th>Specifications for the sewage evaporation pond</th> <th></th> </tr> </thead> <tbody> <tr> <td>Capacity evaporation pond/s</td> <td>15 000m³ for all 6 dams</td> </tr> <tr> <td>Footprint area of all 6 dams</td> <td>0.89ha</td> </tr> <tr> <td>Total volume of sewage annually</td> <td>8 000m³/annum</td> </tr> </tbody> </table> <p>Note: Evaporation treatment plant 2 is existing and was constructed prior to 1998, and therefore should only be registered as an Existing lawful use.</p>			Specifications for the sewage evaporation pond		Capacity evaporation pond/s	18 795m ³ for all 6 dams	Footprint area of all 6 dams	1.3ha	Total volume of sewage annually	11 000m ³ /annum	Specifications for the sewage evaporation pond		Capacity evaporation pond/s	15 000m ³ for all 6 dams	Footprint area of all 6 dams	0.89ha	Total volume of sewage annually	8 000m ³ /annum
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Specifications for the sewage evaporation pond																		
Capacity evaporation pond/s	15 000m ³ for all 6 dams																	
Footprint area of all 6 dams	0.89ha																	
Total volume of sewage annually	8 000m ³ /annum																	
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 exist(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 waste water, if any:

An application is also made to the Department of Water and Sanitation for the evaporation treatment ponds, see Section 2 (a) below.

(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:		

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

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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	Groundwater	Orange River - River, Stream, Dam or Lake	Other	The activity did/does not use water
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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:

_____ m³

Please provide proof of assurance of water supply e.g., letter of confirmation from Municipality/water user associations, yield of borehole etc.

The WUL Application is for, the Applicant, Keboes Fruit Farms (Pty) Ltd to apply for a Water Use Licence (WULA) in terms of the following, also outlined in Table 8:

- Section 21(c) and (i) of the National Water Act for the streams that were diverted and crossed as part of the illegal establishment of vineyards. The establishment of the vineyards on Portion 2 of Farm Styrkraal No. 81 took place across small sections of the unnamed drainage system that is located on site. 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.
- Section 21 (c) and (i) for the upgrading of the river pump station on Portion 1 of Farm Styrkraal No. 81 at the banks of the Orange River after heavy flooding.
- 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) to transfer approximately 2 ha of water for industrial and Schedule 1 use. From this volume, approximately 1500 m³ should be allocated for Schedule 1 use and approximately 28 500 m³ will be allocated for industrial use.
- Section 21 (g) for the legalisation of existing sewage/evaporation ponds for the treatment of sewage from the existing worker accommodation etc.

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

Table 8: Water Use License Activities

<i>(a) taking of water</i>	For the re-allocation of water between two properties, so as 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 use” 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. For the expansion of an existing pump station on the banks of the Orange River.
<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. For the expansion of an existing pump station on the banks of the Orange River.
<i>(g) Disposing of waste in a manner which may detrimentally impact on a water resource</i>	For the disposal of wastewater into evaporation ponds.

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 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 application is also for the legalisation of the upgrading of the existing river pump station. The river pump station was upgraded during the period 2000 to 2001 as a result of the of flooding damage. The total area developed for the pump station is approximately 0.5 ha in size. It included a new intake at the river, with gabion mattresses.

The upgrading of the river pump station falls, however, within the NEFPA catchment priority areas.

The application is for the legalisation of the existing sewerage evaporation ponds on Portion 2 of Farm Styrkraal No. 81. The details pertaining to the evaporation dams are shown below in Table 9 and Table 10.

Note: The existing evaporation treatment plant 2 was constructed prior to 1998, and therefore should only be registered as an existing lawful use.

Table 9: Evaporation treatment plant 1 details

Specifications for the sewage evaporation ponds	
Capacity evaporation pond(s)	15 190 m ³ for all 6 dams
Footprint area of all 6 dams	1.3 ha
Total annual volume of sewage	12 035 m ³ /annum

Table 10: Evaporation treatment plant 2 details

Specifications for the sewage evaporation pond	
Capacity evaporation pond(s)	15 000 m ³ for all 6 dams
Footprint area of all 6 dams	0.89 ha
Total volume of sewage annually	8 000 m ³ /annum

Under the WARMS certificates, the properties have the following existing lawful use:

- Portion 1 of Farm Styrkraal No. 81: 90.1 ha (1351500 m³/a)
- Portion 2 of Farm Styrkraal No. 81: 431.3 ha (6469500 m³/a).

Table 11: Water allocations

Property	Property area	Cultivation of vineyards	Agricultural areas (checked)	Water use per area	Lawful/Lawfulness still to be determined	Water Use Certification	Property owner
81,2 Styr-Kraal Kenhard RD	875,3599	307	444.3	431,3	Lawfulness still to be determined	Yes for 431,3ha	Keboes Fruit Farms (Pty) Ltd
81,1 Styr-Kraal Kenhard RD	3469,0651	-	75	90,1	Lawfulness still to be determined	Yes for 90,1ha	Keboes Fruit Farms (Pty) Ltd

As shown above in Table iv, water will have to be moved from Portion 1 of Styrkraal No. 81 to Portion 2 of Styrkraal No. 81 to allow the correct water allocations per property. The applicant, Keboes Fruit Farms (Pty) Ltd, wishes to transfer 195 000m³/a (13 ha) of water from Portion 1 of Styrkraal No. 81, to Portion 2 of Farm Styrkraal No. 81, for the rectification of water allocations for each property.

The total volume of water used annually amounts to approximately 3 ha of water. Therefore, the application is to transfer approximately 2 ha (30 000 m³/a) of water for “Industrial” and “Schedule 1” use. From this, approximately 28 500 m³ should be allocated for “Schedule 1” use and approximately 1 500m³ will be allocated for “Industrial” use.

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

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 are selected to provide optimum delivery at minimum demand where water use is managed by applying drip irrigation. This is good agricultural practice.

3. POWER SUPPLY

(a) Please indicate the source of power supply eg. Municipality / Eskom / Renewable energy source.

There is an existing Eskom power supply with enough capacity for Portion 1 and 2 of Farm Styrkraal No. 81.

Has the Municipality or relevant service provider confirmed that sufficient electricity capacity (i.e. generation, supply and transmission) exist for activity(ies)?	YES	NO
This is not necessary as there is existing powerline providing electricity to the site currently.		
If yes, provide written confirmation from Municipality or relevant service provider.		

If power supply was/is not available, where was/is it sourced from?

Electricity is supplied by powerline to the cultivated areas from the existing grid.

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

The pumps utilized 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 utilized are selected based on their optimum delivery at minimum demand, and there are no other types of pumps available 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 utilizes 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?		
No, additional noise impacts associated with the development.		

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?		
The site is not situated close to a road or adjacent homesteads.		
(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?		
N/A		

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

Note this data is for the property that has already been developed.

(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 possible 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	Low negative
Loss of non-perennial drainage lines	Medium negative
Water required for irrigation	Medium negative
Visual	Low negative
Noise	Low negative
Cultural	None
Employment creation	Medium-High positive
Production of table grapes for export market	Medium-High positive

Refer to the preliminary impact rating tables below:

NOTE THIS IMPACT RATING IS ONLY FOR THE PREFERRED ALTERNATIVE.

Preliminary Impacts that resulted from the construction phase:

Impacts on geographical and physical aspects:	
Nature of impact:	The area of undisturbed terrain that was cleared of Lower Gariep Broken Veld is 214 ha and the two sets of evaporation ponds together make up 2.14 ha. which the development area falls within a No Natural Area as it has already been transformed.
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:	There is no doubt that the development of agricultural lands in the area under investigation at “ Raap en Skraap ” had a negative impact on the vegetation and more specifically a large seasonal wash. However, due to the sparseness of the vegetation, it is difficult to retrospectively determine the intensity of the negative impact. All that can be said is that the wash has been effectively canalised by the soil berms and all vegetation in the wash, except for in the channel that has been left and around the perimeter of the fields, has been lost. It is apparent that there were no large trees in the wash, hence it is concluded that the were

	<p>no <i>Vachellia erioloba</i> nor <i>Boscia foetida subsp. rehmanniana</i> present when the area was originally cleared.</p> <p>The natural vegetation has also been lost at the sites of the evaporation ponds and in this case, since the original vegetation was very sparse, it can be assumed and concluded that the intensity of the resultant negative impact is limited.</p>
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:	None
Proposed mitigation:	No mitigation is available for the activity already which has already taken place.
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low negative

Impacts on geographical and physical aspects:	
Nature of impact:	The Lower Gariep Alluvial Vegetation is classified as CBA1 and the pump station has negatively impacted the east bank of the river within the zone of a CBA1, although the effect of clearing is limited due to the alluvial vegetation being infested with alien mesquite. There is a camelthorn tree (<i>Vachellia erioloba</i>) [protected species] that was clearly not affected by the construction of the pump station.
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:	High
Cumulative impact prior to mitigation:	The pump station was built prior to 2002 and supplies water to “ Raap en Skraap ” and a small solar PV installation. The pump station covers an area of approximately 0.5 ha and is well within the alluvial zone. It therefore displaced Lower Gariep Alluvial Vegetation, including the infestation of mesquite. The intensity of the resultant impact is considered to be medium to high negative.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium to High negative
Degree to which the impact can be mitigated:	None
Proposed mitigation:	No mitigation is available for the activity already which has already taken place.
Cumulative impact post mitigation:	Medium to High negative

Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium to High negative
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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 cultivation of 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)	Medium negative
Degree to which the impact can be mitigated:	None
Proposed mitigation:	No mitigation is available for the activity which has already taken place. An Application will be lodged with DWS for Section 21 c and i authorization.
Cumulative impact post mitigation:	Medium
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium 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 development of a intake and river pump at the bank of the Orange River.
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)	Medium negative
Degree to which the impact can be mitigated:	None
Proposed mitigation:	No mitigation is available for the activity which has already taken place. An Application will be lodged with DWS for Section 21 c and i authorization.
Cumulative impact post mitigation:	Medium
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Medium negative

Impacts on geographical and physical aspects:	
Nature of impact:	Loss of non-perennial drainage lines: Impact of evaporation ponds within 100m for a stream.
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)	Medium negative
Degree to which the impact can be mitigated:	None
Proposed mitigation:	The mitigation is the lining of the evaporation ponds to prevent any future impact on the groundwater and streams.
Cumulative impact post mitigation:	Low
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 of 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 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 mitigation
Proposed mitigation:	The activity is 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:	No archaeological resources were recorded in the 214ha development site. The intensively farmed area constitutes a highly transformed and modified landscape. It is noted that the archaeologist Peter Beaumont, in 2008, recorded no archaeological resources during a survey of a portion of the farm Styrkraal/Raap 'n Skraap. Previous archaeological assessments undertaken in Onseepkans, has noted

	the low density of archaeological resources in the area.
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:	High
Proposed mitigation:	<ul style="list-style-type: none"> • With regard to the illegal agricultural development, and construction of two small sewerage evaporation ponds on the Farm Raap 'n Skraap (Portion 2 of the Farm Styrkraal No. 81), no further archaeological mitigation is required. • No archaeological monitoring is required.
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:	In view of the negligible palaeontological sensitivity of the ancient Precambrian gneissoe bedrocks as well as the low sensitivity of the geologically recent superficial sediments along southern banks of the Gariep River here, the unauthorized vineyard developments are not considered to pose a significant threat to local palaeontological heritage. Substantial, potentially-fossiliferous older alluvial deposits of the Orange River are not mapped here.
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:	Pending any significant new fossil discoveries in the area, no further specialist studies or mitigation are considered necessary for this agricultural project.
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 of low impact, as area is agricultural with no adjacent neighbours in close proximity. The area falls within an agricultural active area and the impact will not be very big.
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 agricultural active area and the impact will not 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 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 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, the activity already took place.
Proposed mitigation:	None, the activity already took place
Cumulative impact post mitigation:	None, the cleared areas although visible to passing traffic from the main road would be temporary during 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 geographical and physical aspects:	
Nature of impact:	Disturbance of the Lower Gariep Broken Veld with the local watercourse diversion.
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:	The diversion of the watercourse into the 'main channel' has resulted in numerous weedy species establishing in the watercourse. However, these species would probably be removed when the watercourse floods in spate flow at some time in the future. It should be noted that there are a few protected <i>Vachellia erioloba</i> (camelthorn) trees in the watercourse but none of these was affected in any way by the agricultural development.
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:	None
Proposed mitigation:	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.
Cumulative impact post mitigation:	Low
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	Low negative

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:	Continuation of agricultural activities, will secure existing job opportunities within the local and surrounding areas.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None
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)	None

Impacts on socio-economic aspects:	
Nature of impact:	Financial income to Keboes Fruit Farms (Pty) Ltd and region.
Extent and duration of impact:	Region
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 selling of produce nationally and internationally.
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	None
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 selling of produce nationally and internationally.
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	None

Impacts on cultural-historical aspects:	
Nature of impact:	<p>No archaeological resources were recorded in the 214ha footprint area of the unauthorised development. Combined, the five areas of mostly cultivated vineyards constitute a highly transformed landscape.</p> <p>No previous archaeological work has been done in the intensively farmed area, but the archaeologist David Morris notes that there are substantial pre-colonial herder encampments along the floodplain of the Orange River, but these tend to be short duration visits by small groups of hunter-gatherers. Most of these camps have, however, been destroyed by intensive farming activities and would no longer be archaeologically visible in the landscape.</p>
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:	High

Proposed mitigation:	<ul style="list-style-type: none"> No archaeological monitoring is required.
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:	In view of the negligible palaeontological sensitivity of the ancient Precambrian gneiss bedrocks as well as the low sensitivity of the geologically recent superficial sediments along southern banks of the Gariiep River here, the unauthorized vineyard developments are not considered to pose a significant threat to local palaeontological heritage. Substantial, potentially-fossiliferous older alluvial deposits of the Orange River are not mapped here.
Extent and duration of impact:	Permanent site-specific impact
Probability of occurrence:	Improbable
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>All South African fossil heritage is protected by the National Heritage Resources Act, 1999. Should substantial fossil remains - 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. Email: rredelstorff@sahra.org.za). 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.</p> <ul style="list-style-type: none"> 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;

	<ul style="list-style-type: none"> The palaeontologist concerned with potential mitigation work will need a valid fossil collection permit from SAHRA, 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 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 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 vineyards have changed the sense of place, but the nature of impact is limited within the existing established agricultural landscape of the region.

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 vineyards have changed the sense of place, but the nature of impact is limited within the existing established agricultural landscape of the region.
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: the activity already took place.
Proposed mitigation:	None: the activity already took place.
Cumulative impact post mitigation:	The new vineyards have changed the sense of place, but the nature of impact is limited within the existing established agricultural landscape of the region.
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.

Rehabilitation of the site would include the removal of all newly planted orchards to make way for the rehabilitation of the 142ha with indigenous vegetation present at surrounding areas. This would result in a major financial loss for the applicant as well as the loss of employment opportunities for employees currently working for the applicant. Water that would have been used for the vineyards would now have to be used to water the rehabilitated vegetation until the area is self-sustainable. The water rights are for irrigation only.

Impacts on geographical and physical aspects:	
Nature of impact:	No decommissioning impacts.
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)	

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 Land-filling 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	<input type="checkbox"/> YES	<input type="checkbox"/> NO
(b) Is sufficient cover material available	<input type="checkbox"/> YES	<input type="checkbox"/> NO
(c) Will waste be compacted daily	<input type="checkbox"/> YES	<input type="checkbox"/> 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	<input type="checkbox"/>
Recycling installation	<input type="checkbox"/>
Formal salvaging	<input type="checkbox"/>
Contractor	<input type="checkbox"/>
No salvaging planned	<input type="checkbox"/>

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
Within the 1 in 50 year flood line of any watercourse	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 1km 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		
.....		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
.....		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: AOA 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 Appendix F2.1: Pre-Application Advertisement.

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 where to access the information electronically.
2. As part of this 30-day commenting period an advertisement will be placed in the Gemsbok. As part of the prescribed timeframes for the water use license a 60-day notification will be placed in the Gemsbok.
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	Municipal Manager		Khai Ma Municipality: Municipal Manager	054 933 1000	054 933 0252	mmsecretary@khaima.gov.za	P. O. Box 108	Pofadder	8890
2			Khai Ma Municipality: Ward Councillor	054 933 1000	054 933 0252	mmsecretary@khaima.gov.za	P. O. Box 108	Pofadder	8890
3	October	L	Department of Agriculture and Land Reform	054 461 6700	054 461 6401		P. O. Box 18	Springbok	8240
4	White	C	Department of Water Affairs	082 887 8866/ 054 338 5819		SchwartzC@dws.gov.za	Private Bag X5912	Upington	8800
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
7	Le Roux	Mr.	Onseepkans Irrigation Board	054 9510002		onseepkansmission@gmail.com			
8	Mans	J	Department of Agriculture Forestry and Fisheries	054 338 5909		jacolinema@daff.gov.za	P. O. Box 2782	Upington	8800

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: Removal of vegetation for cultivation of vineyards on Portion 2 of Farm Styrkraal No. 81 (Preferred alternative)

The applicant removed 214 ha of indigenous vegetation to establish vineyards for table grape cultivation for export, as shown in Appendix B and below as Figure 17:

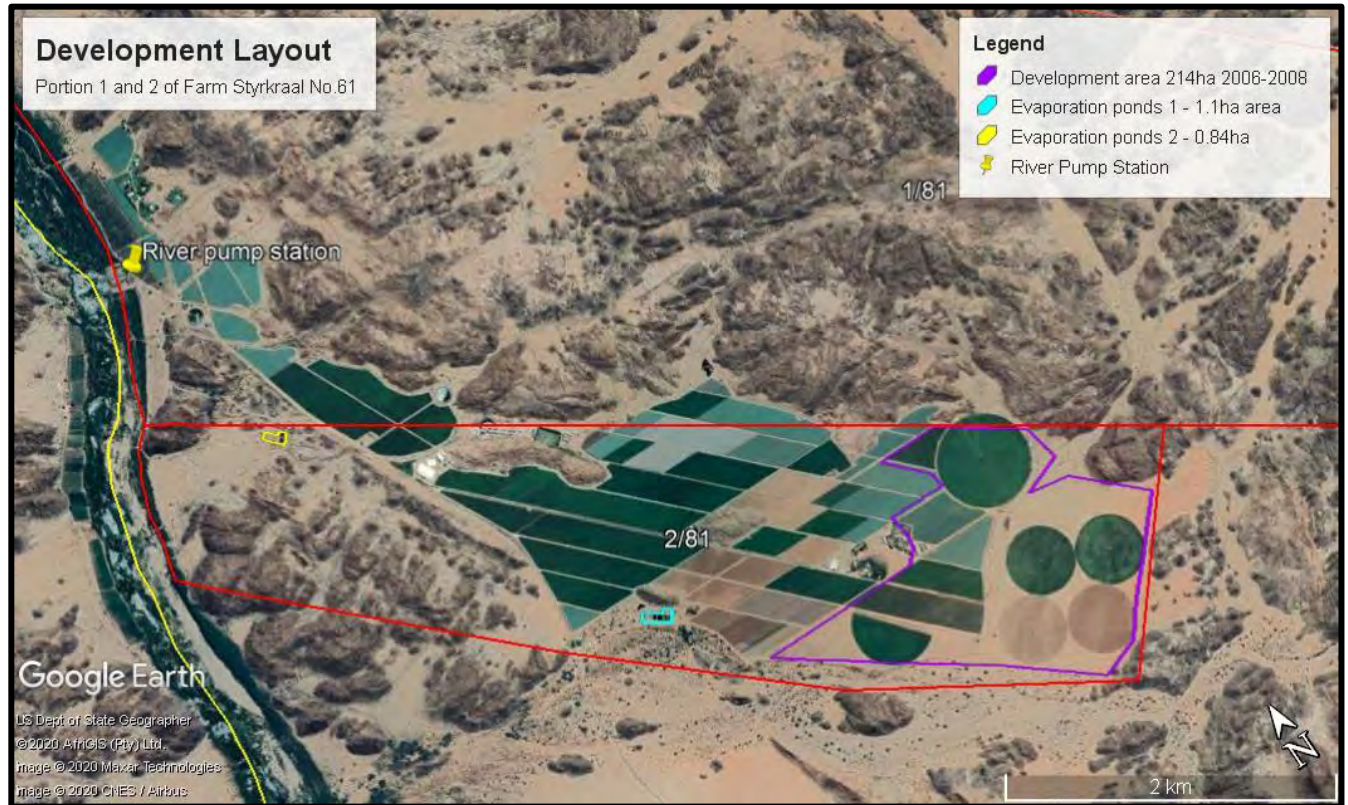


Figure 17: Site Development Master Plan

As the activity has already taken place and rehabilitation will be too costly, this option is the only feasible and preferred alternative.

The evaporation ponds layout location is shown below in Figure 18, the dams will also be lined to prevent any potential seepage into the groundwater. No alternatives sites were deemed desirable.

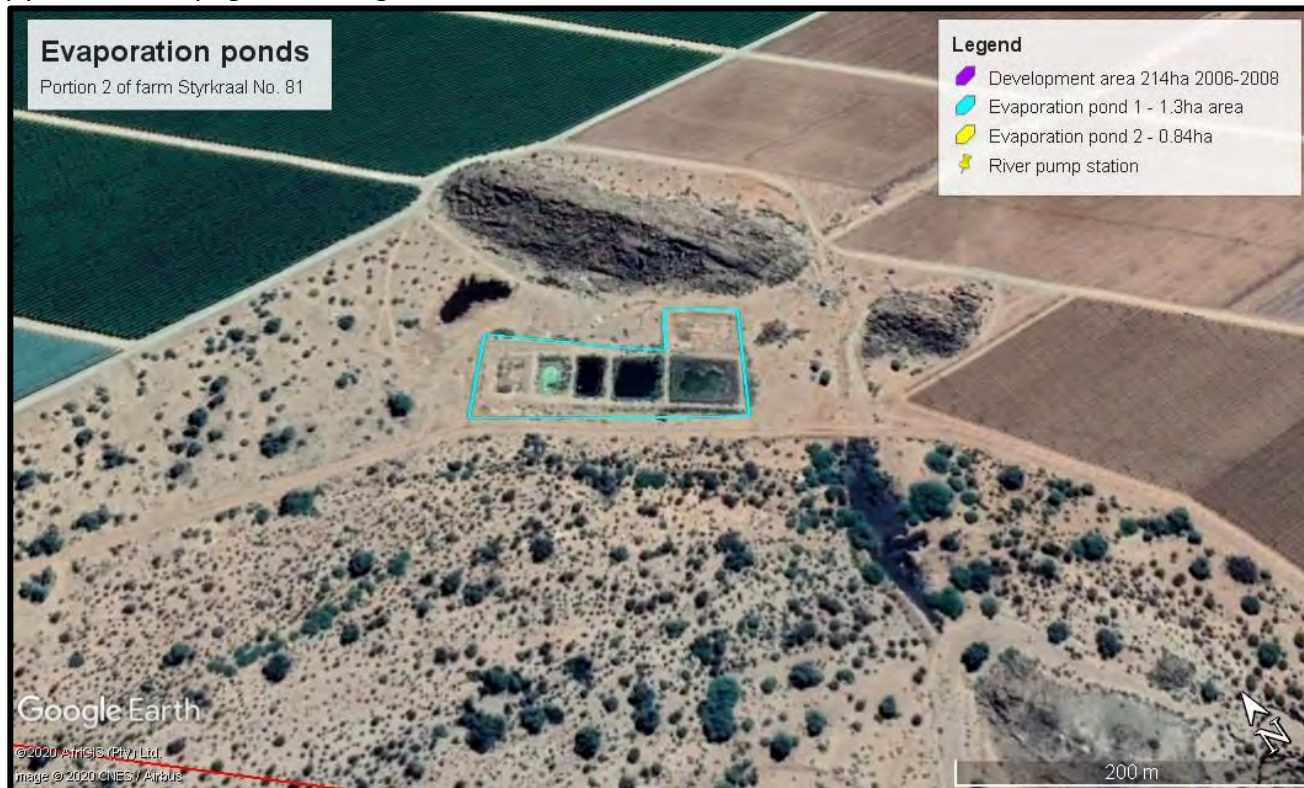


Figure 18: Evaporation pond design

Alternative 2: Re-location of the evaporation ponds.

Alternative 2 is for the relocation of the evaporation ponds on another position. This is not preferred for the following reason:

The existing location is not within close proximity to an existing stream, and also not within a stream
The evaporation ponds are existing and re-location will result in a new impact on another location with existing natural vegetation.

Alternative 3: Removal of vegetation for the cultivation of table grapes after obtaining environmental authorisation

Alternative 3 would have been the preferred alternative, by receiving environmental authorisation before any vegetation were removed.

This would have included comment and input from authorities and I&APs to design the best feasible alternative for the property.

No-Go Option

The No-Go Option would have meant that vegetation would not have been removed from the property. Not cultivation of the land would mean that there were no additional table grapes grown for export, with no associated employment creation, and an opportunity cost for the landowners with their land zoned for agricultural use. This would have resulted in no additional job opportunities for local communities and no income to the business and country's economy.

Rehabilitation of the site would include the removal of all newly planted orchards to make way for the rehabilitation of the 214ha with indigenous vegetation present at surrounding areas. This would result in a major financial loss for the applicant as well as the loss of employment opportunities for employees currently working for the applicant. Water that would have been used for the vineyards would now have to be used to water the rehabilitated vegetation until the area is self-sustainable.

The No-Go Option for the evaporation ponds is also not preferred as it will result in the no ponds to treat the existing workers accommodation.

SECTION H: APPENDICES

The following appendices must be attached where appropriate:

Appendix	Cross out ("X") 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 2 and ESA located on Portion 1 and 2 of Farm Styrkraal No.81	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/ Included in the Assessment Report
Appendix G: Report on alternatives	N/A
Appendix H: Any Other (describe) <ul style="list-style-type: none">• Appendix H1: Archaeology Report• Appendix H2: Botanical Report• Appendix H3: WULA• Appendix H4: EMP	Not yet completed/ Included in the Assessment Report

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.	

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.	

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	

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.	

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 <u>not</u> 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
Describe the firm: Keboes Fruit Farms (Pty) Ltd falls under Karsten Group. <u>History of company:</u> 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 headquarters. 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.

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.

Vision of Company:

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.

The Group is committed to building volume growth, increase value for all stakeholders, and using successes to the benefit of all.

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 emphasizes 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:	

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 A: DECLARATIONS

A1: 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:

Name of company:

Date:

Signature of the Commissioner of Oaths:

Date:

Designation:

Official stamp (below)

A2: DECLARATIONS OF THE APPLICANT

2. The Applicant

I, _____ 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.

ANNEXURE F
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			
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 & 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 & Nature Conservation	(053) 807 7430	053 831 3530	Private Bag X6102 KIMBERLEY 8300
North West Dept. of Agriculture, Conservation, Environment & 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 & 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

ANNEXURE G

CONTACT DETAILS (NATIONAL AND PROVINCIAL ENVIRONMENTAL MANAGEMENT INSPECTORATE)

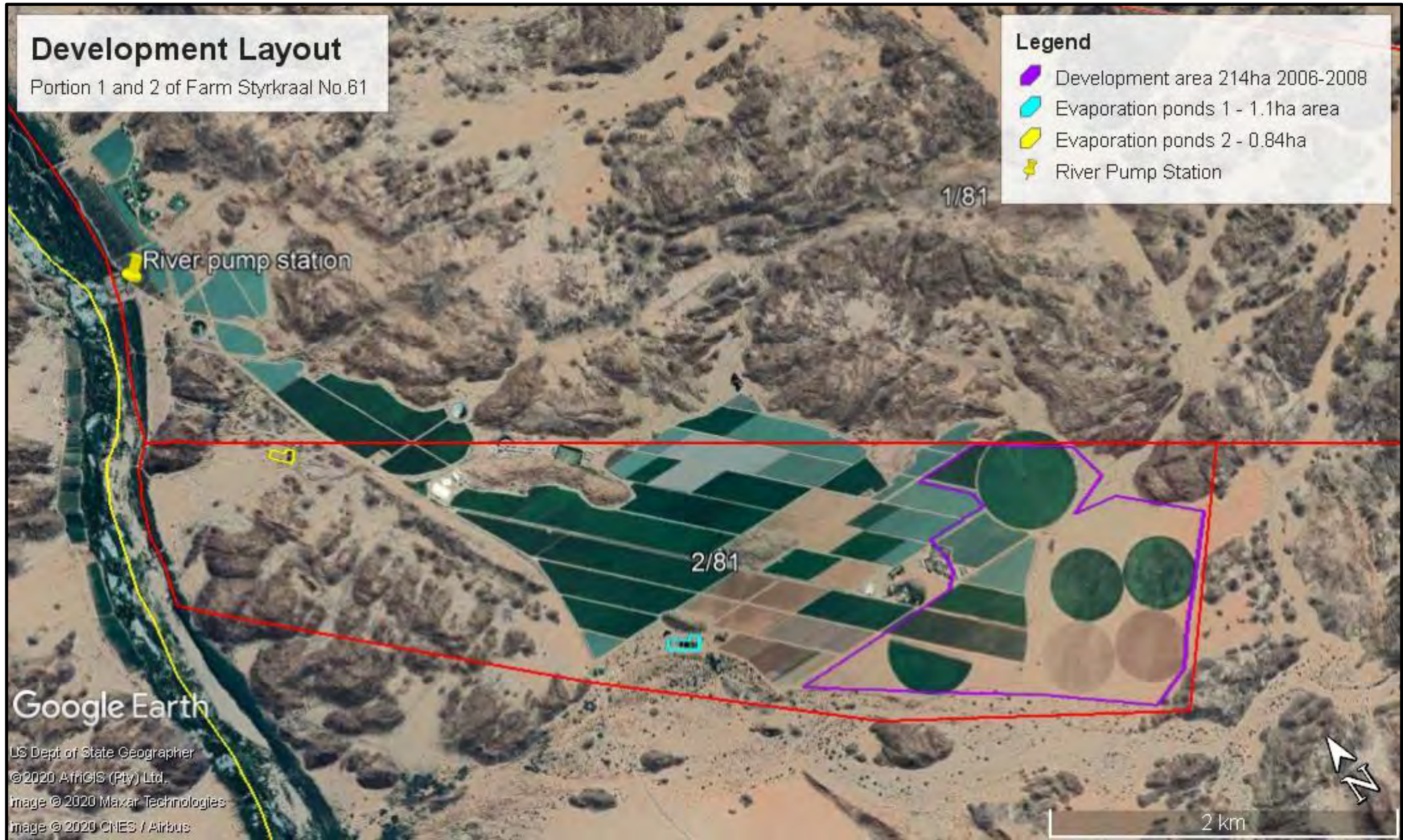
Department	Telephone	Fax	Postal address
National Department Environmental Affairs and Tourism	0800 205 005	(031) 560 7995	Private Bag X447 Pretoria South Africa 0001 pi@toanon.co.za
Eastern Cape Department	082 417 0155		
Free State Department of Tourism, Environmental and Economic Affairs	082 789 4468	(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 & 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 & Nature Conservation	(053) 807 7430 (053) 807 7300		Private Bag 6102 KIMBERLEY 8300
North West Dept. of Agriculture, Conservation, Environment & 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 & Development Planning	(021) 483 3197 (021) 483 4363	(021) 483 4440	Private Bag X 9086 CAPE TOWN 8000

APPENDIX A: LOCALITY MAP



APPENDIX B: SITE PLANS

APPENDIX B1: GOOGLE EARTH IMAGERY OF AREAS DEVELOPED



Evaporation ponds

Portion 2 of farm Styrkraal No. 81

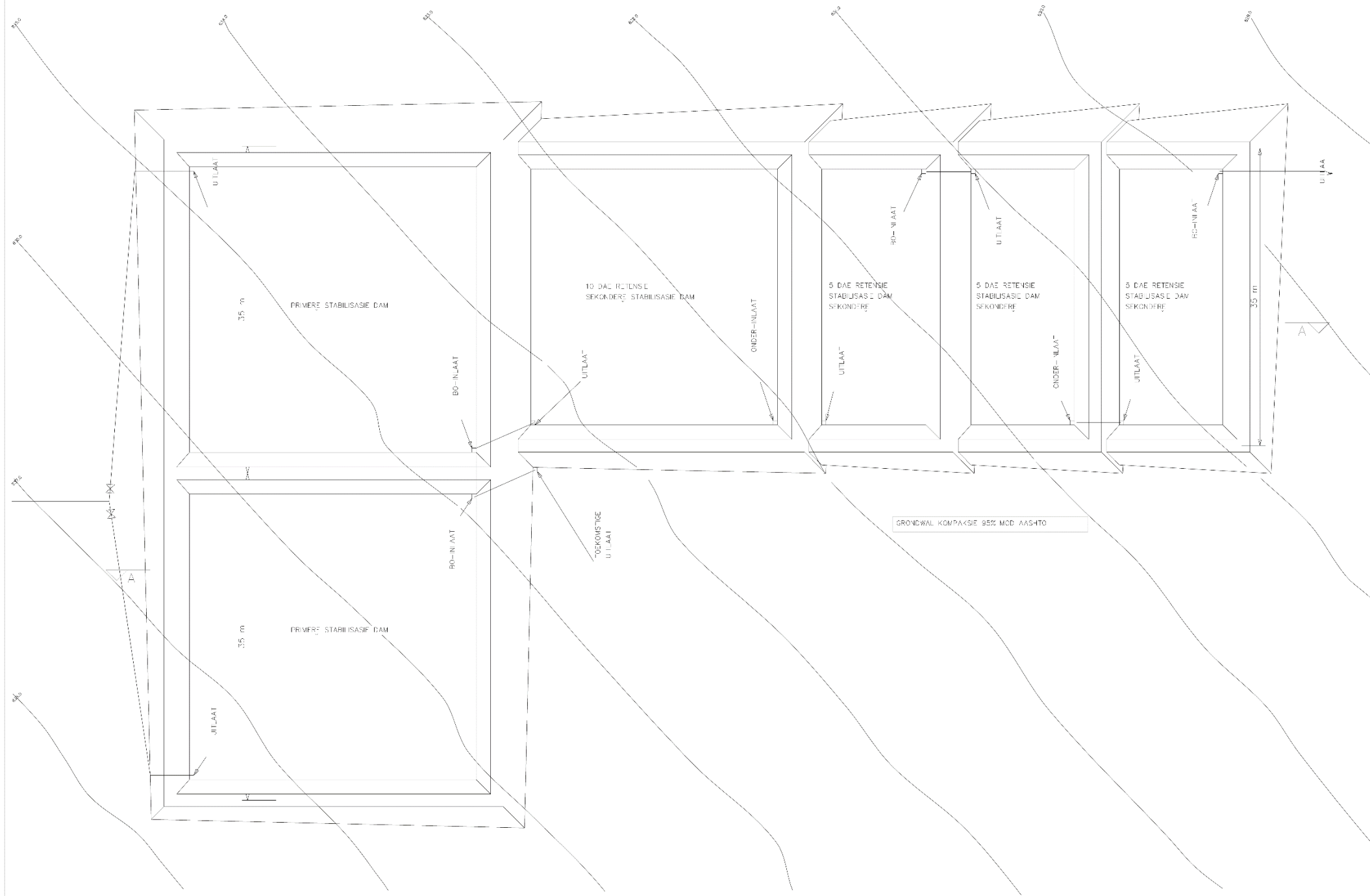
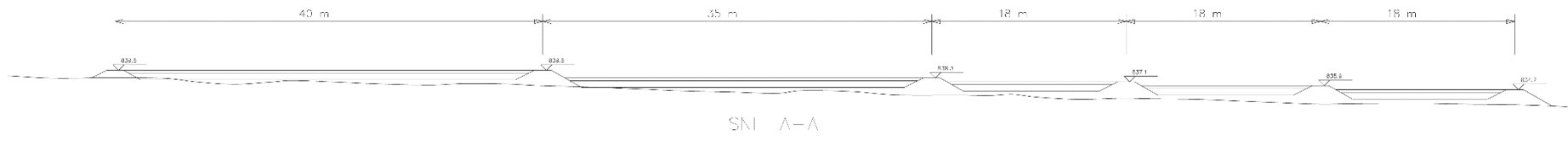
Legend

- Development area 214ha 2006-2008
- Evaporation pond 1 - 1.3ha area
- Evaporation pond 2 - 0.84ha
- River pump station

Google Earth

©2020 AfriGIS (Pty) Ltd.
Image © 2020 CNES / Airbus

200 m



PROJUK:
 RAAP & SKRAAP
 TITEL:
 STABILISASIE DAMME

PLAN No. 5015/01/02 WYSING

APPENDIX D: PHOTOGRAPHS, IMAGERY AND MAPS

APPENDIX D1: HISTORICAL PHOTOGRAPHIC IMAGERY

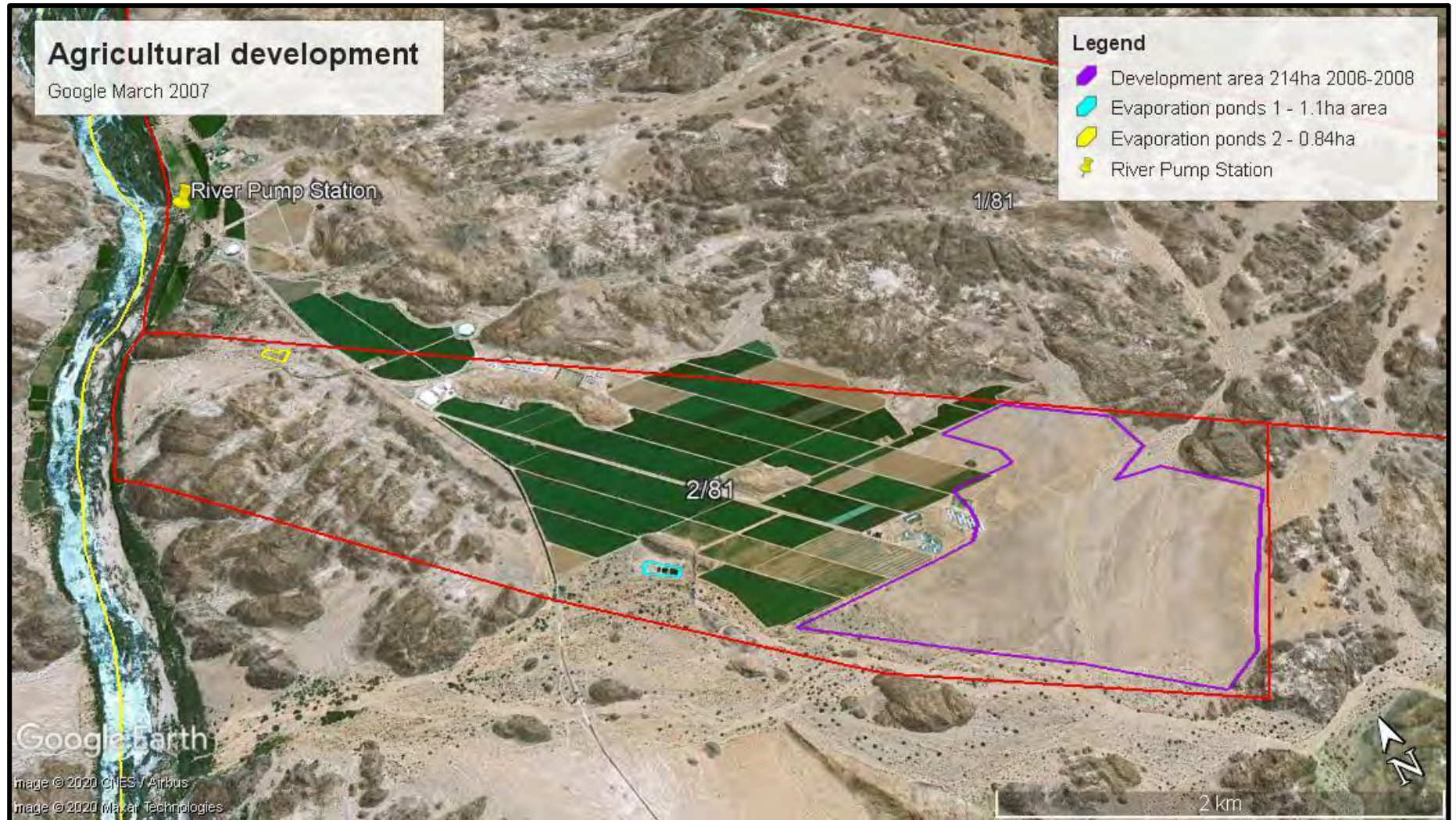
Appendix D1.1: Google 2002



Appendix D1.2: Google 2003



Appendix D1.3: Google March 2007



Appendix D1.4: Google April 2007



APPENDIX D2: SITE PHOTOGRAPHS



River pump station



River intake



Drone footage of the intake structure



Evaporation pond 1

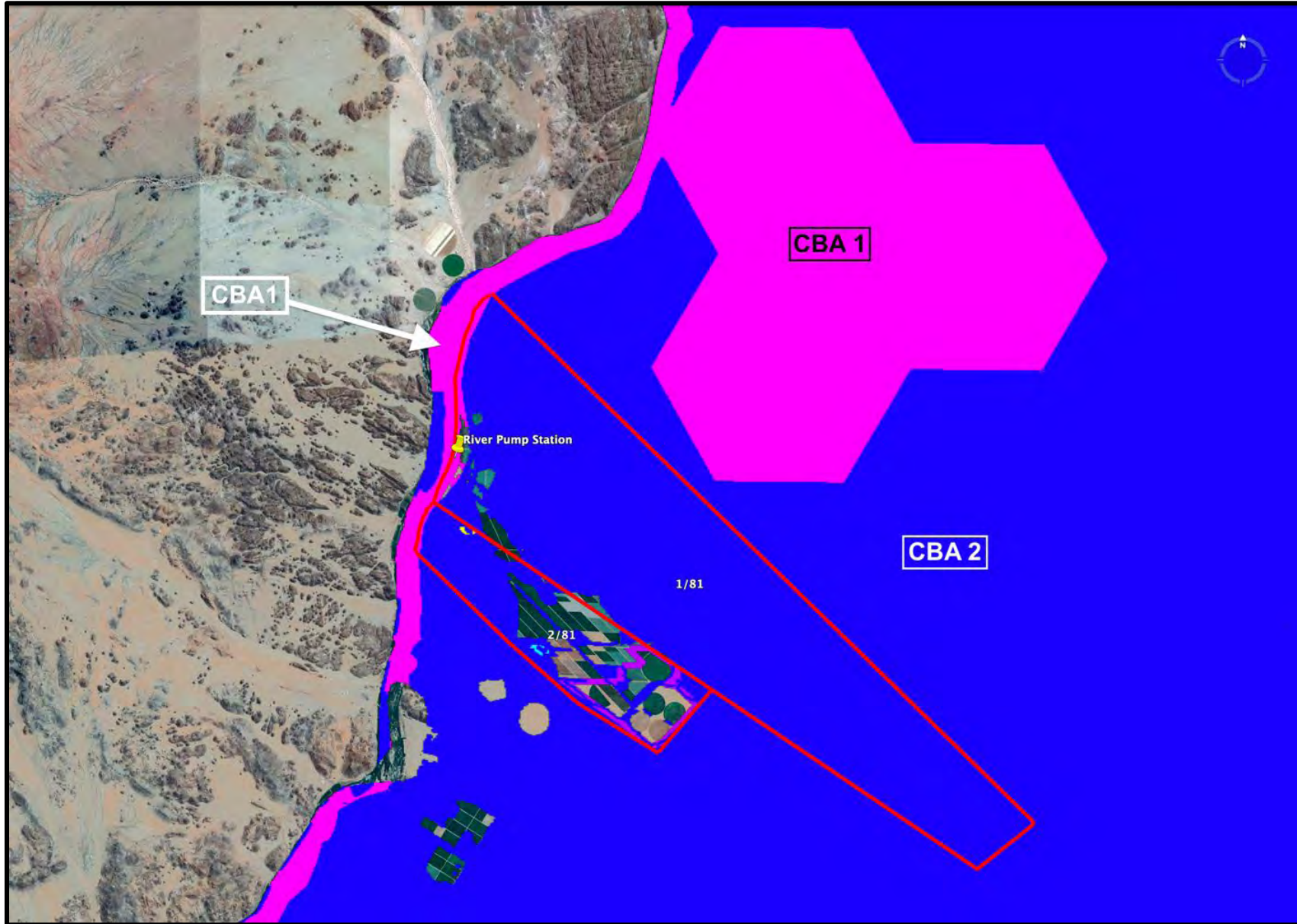


Evaporation pond 3




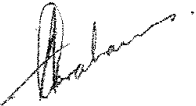
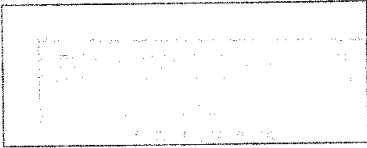
Evaporation pond 5

APPENDIX D3: CBA 2 AND NO-NATURAL AREAS LOCATED ON PORTION 1 AND 2 OF FARM STYRKRAAL NO. 81.



APPENDIX E: LICENSING AND APPROVALS

APPENDIX E1: IRRIGATION RIGHTS FROM DEPARTMENT OF WATER AFFAIRS

 <p>water & forestry Department Water Affairs and Forestry REPUBLIC OF SOUTH AFRICA</p>			
<p>National Register of Water Use Certificate 25020352</p>			
<p>National Register of Water Use Certificate 25020352, issued in terms of the regulations requiring that a Water Use be registered, promulgated under Section 26(1)(c) of the National Water Act (Act 36 of 1998) to:</p>			
<p>Applicant</p>			
Applicant Type:	COMPANY		
Name:	KEBOES FRUIT FARMS		
Enterprise Type	PRIVATE COMPANY		
Business Registration Number:	2000/000369767		
Postal Address:	PO BOX 518 KAKAMAS 8870		
VAT Registration Number:	4800202006		
<p>Water Management Area</p>			
Name:	LOWER ORANGE		
<p>Water Uses</p>			
<p>Section 21(a) Taking water from a water resource.</p>			
<p>See attached Annexure(s)</p>			
			
<p>Office: Lower Orange - Northern Cape Upington Regional Office: Northern Cape Region</p>			
			
<p>Date stamp of issuing office</p>			
<p>DISCLAIMER : This certificate is :</p> <ol style="list-style-type: none"> 1. not an acknowledgement of an entitlement to the registered water use; 2. issued without alterations or erasures and is invalid if it contains alterations not in conformity with the Department's official copy; and 3. in substitution of any National Register of Water Use Certificate the Department may have previously issued and the information is valid as at the date of issue. However, in the case of any water use having been identified as a licensed water use, this certificate is not to be regarded as a replacement of the applicable licence certificate. The license conditions that are applicable to the water use are not currently incorporated in this National Register of Water Use certificate 			
Register No. 25020352	2008/04/29 7:33:53 AM	Print Seq. No. 9	Page 1 of 3

National Register of Water Use Certificate 25020352

Taking water from a water resource in terms of Section 21(a) of the National Water Act

Water Use Identification

Register Number: 25020352
 Water Use Number: 1
 Water Use Start Date: 2002/12/01
 Water Use Status: REGISTERED

Lawfulness Authentication

Finding: LAWFULNESS STILL TO BE DETERMINED
 Finding Date: 2008/04/01
 Finding Reason:
 Finding Confirmed: YES

Succession/Transfer Details

Succession/Transfer Type: SUCCESSION IN TITLE
 Source Part2 Details: Register No. WUN
 25010390 2

Water Use Details

Water Use Sector (i.e. Purpose of Water Use): AGRICULTURE: IRRIGATION
 Source Type: SCHEME
 Point of Abstraction: Latitude Longitude
 28.6567° south 19.52782° east
 Datum Type: CAPE (MODIFIED CLARKE 1880)
 Quaternary Drainage Region: D81E

Scheme Details

Scheme Name:
 Scheme Management Parameter Name: LOWER ORANGE/NAMAQUALAND
 SECTION OF LOWER ORANGE BETWEEN BOEGOEBERG
 AND THE SEA.

Servitude Volume:

Registered Volumes

Start Date	Registered Volume (m ³)	Time Interval
2002/12/01	6469500	PER YEAR

Irrigated field and crop information

Field Number	Crop	Area (hectares)	Planting Date (mm/dd)	Growing season (days)	Rotation factor %	Irrigation system
A	GRAPES-WINE	431.3			100	MICRO SPRAY

National Register of Water Use Certificate 25020352

Taking water from a water resource in terms of Section 21(a) of the National Water Act

Water Use Identification

Register Number: 25020352
 Water Use Number: 1
 Water Use Start Date: 2002/12/01
 Water Use Status: REGISTERED

Property Where Water Use Occurs

Property Name: STYR-KRAAL FARM NO. 81 PORTION NO. 2
 Property Number: 81
 Portion of Property: 2
 Title Deed Number: T107071/2002
 SG Cadastral Code: C0360060000008100002
 Deeds Office: CAPE TOWN
 Registration Division: KENHARDT
 Province: NORTHERN CAPE
 Surveyor General Office: CAPE TOWN

WUN/Property Relationship Details

Relationship Start Date	Relationship End Date
2002/12/01	

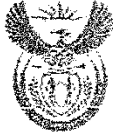
Comment

THIS REGISTER IS AN EXISTING LAWFUL USE. THE PREVIOUS OWNER WAS KARSTEN BOERDERY PTY LTD, REGISTER NO.25010390 WITH WATER USE START DATE 1997-09-05.

DISCLAIMER :

This certificate is :

1. not an acknowledgement of an entitlement to the registered water use;
2. issued without alterations or erasures and is invalid if it contains alterations not in conformity with the Department's official copy; and
3. in substitution of any National Register of Water Use Certificate the Department may have previously issued and the information is valid as at the date of issue. However, in the case of any water use having been identified as a licensed water use, this certificate is not to be regarded as a replacement of the applicable licence certificate. The license conditions that are applicable to the water use are not currently incorporated in this National Register of Water Use certificate



water affairs

Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

National Register of Water Use Certificate 25021093

National Register of Water Use Certificate 25021093, issued in terms of the regulations requiring that a Water Use be registered, promulgated under Section 26(1)(c) of the National Water Act(Act 36 of 1998) to:


Applicant	
Applicant Type:	COMPANY
Name:	KEBOES FRUIT FARMS
Enterprise Type:	PRIVATE COMPANY
Business Registration Number:	2000/000389/07
Postal Address:	PO BOX 518 KAKAMAS 8870
VAT Registration Number:	4800202006

Water Management Area	
Name:	LOWER ORANGE


Register Status	
Status:	ACTIVE

Water Uses
Section 21(a) Taking water from a water resource.

See attached Annexure(s)



Office Lower Orange - Northern Cape
Upington
Regional Office Northern Cape Region



Date stamp of issuing office

DISCLAIMER:
This certificate is :

- not an acknowledgement of an entitlement to the registered water use;
- issued without alterations or erasures and is invalid if it contains alterations not in conformity with the Department's official copy; and
- in substitution of any National Register of Water Use Certificate the Department may have previously issued and the information is valid as at the date of issue. However, in the case of any water use having been identified as a licensed water use, this certificate is not to be regarded as a replacement of the applicable licence certificate. The license conditions that are applicable to the water use are not currently incorporated in this National Register of Water Use certificate.

National Register of Water Use Certificate 25021093

Taking water from a water resource in terms of Section 21(a) of the National Water Act

Water Use Identification
 Register Number: 25021093
 Water Use Number: 1
 Water Use Start Date: 2002/12/01
 Water Use Status Date: 2004/01/23
 Water Use Status: REGISTERED

Lawfulness Authentication
 Finding: LAWFULNESS STILL TO BE DETERMINED
 Finding Date: 2006/04/01
 Finding Reason:
 Finding Confirmed: YES

Water Use Details
 Water Use Sector(s)(i.e. Purpose(s) of Water Use): AGRICULTURE: IRRIGATION
 Source Type: SCHEME
 Point of Abstraction: Latitude Longitude
 28.6488° south 19.56124° east
 Datum Type: CAPE (MODIFIED CLARKE 1880)
 Quaternary Drainage Region: D81E
 Scheduled Use: YES
 Scheduled Area: 90.1 HECTARES
Scheme Details
 Scheme Name: LOWER ORANGE/NAMAQUALAND
 Scheme Management Parameter Name: SECTION OF LOWER ORANGE BETWEEN BOEGOEBERG AND THE SEA.
 Servitude Volume: 15000 CUBIC METRES PER HECTARE PER ANNUM
 Scheduled Quota

Registered Volumes

Start Date	Registered Volume (m³)	Time Interval
2002/12/01	1351500	PER YEAR

Irrigated Field and Crop Information

Field Number	Crop	Area (hectares)	Planting Date (mm/dd)	Growing season (days)	Rotation factor %	Irrigation system
A	GRAPES-WINE	90.1			100	MICRO SPRAY

National Register of Water Use Certificate 25021093

Taking water from a water resource in terms of Section 21(a) of the National Water Act

Water Use Identification

Register number: 25021093
Water Use Number: 1
Water Use Start Date: 2002/12/01
Water Use Status Date: 2004/01/23
Water Use Status: REGISTERED

Property Where Water Use Occurs

Property Name: STYR-KRAAL 81 PORTION 1
Property Number: 81
Portion of Property: 1
Title Deed Number: T107071/2002
SG Cadastral Code: C0360000000008100001
Deeds Office: CAPE TOWN
Registration Division: KENHARDT
Province: NORTHERN CAPE
Surveyor General Office: CAPE TOWN

WUN/Property Relationship Details

Relationship Start Date	Relationship End Date
2002/12/01	

Comment

National Register of Water Use Certificate 25021093

Taking water from a water resource in terms of Section 21(a) of the National Water Act

Water Use Identification

Register Number:	25021093
Water Use Number:	1
Water Use Start Date:	2002/12/01
Water Use Status Date:	2004/01/23
Water Use Status:	REGISTERED

DISCLAIMER:

This certificate is:

1. not an acknowledgement of an entitlement to the registered water use;
2. issued without alterations or erasures and is invalid if it contains alterations not in conformity with the Department's official copy; and
3. in substitution of any National Register of Water Use Certificate the Department may have previously issued and the information is valid as at the date of issue. However, in the case of any water use having been identified as a licensed water use, this certificate is not to be regarded as a replacement of the applicable licence certificate. The license conditions that are applicable to the water use are not currently incorporated in this National Register of Water Use certificate.

APPENDIX E2: HERITAGE LETTER

APPENDIX F: PUBLIC PARTICPATION

APPENDIX F1: I&AP DATABASE

AUTHORITIES

	Erf no	Surname	Initials	Representing	Tel	Fax	email	Post Box	Town	Code	Reg
1		Municipal Manager		Khai Ma Municipality: Municipal Manager	054 933 1000	054 933 0252	mmsecretary@khaima.gov.za	P. O. Box 108	Pofadder	8890	L
2				Khai Ma Municipality: Ward Councillor	054 933 1000	054 933 0252	mmsecretary@khaima.gov.za	P. O. Box 108	Pofadder	8890	L
3		October	L	Department of Agriculture and Land Reform	054 461 6700	054 461 6401		P. O. Box 18	Springbok	8240	L
4		Schwartz	C	Department of Water Affairs	082 887 8866/ 054 338 5819		schwartzc@dws.gov.za	Private Bag X5912	Upington	8800	L
5		Lekwene	T	DENC: NC – 24G	0538077300	0538077328	LekweneT@ncpg.gov.za	Sasko Building, 90 Long street	Kimberley	8300	L
7		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
8		Mans	J	Department of Agriculture Forestry and Fisheries	054 338 5909		jacolinema@daff.gov.za	P. O. Box 2782	Upington	8800	L
9		Le Roux	Mr.	Onseepkans Irrigation Board	054 9510002		onseepkansmission@gmail.com				L

I&AP's

	Erf no	Surname	Initials	Representing	Tel	Fax	email	Post Box	Town	Code	Reg
1	Remainder of Styrkraal 81	Appollis	H	Schamboua Communal Property Association	084 990 3716 /083 524 8494			Straat 62 Rodeville	Worcester	6850	L
2	Remainder of OUP 80			HENQUE 1001 cc			Unable to obtain any contact information for this property.				L
3	Remainder of Lower Zwartmodder 79	Claasens	W. K.		0726112662		witiezaclaassens@hotmail.co. za				L
4	Warmbad Noord 1	Swart	A	Skroef (Pty) Ltd	058-8131303		mail@agritrans.co.za				L
5	Warmbad Zuid 2	Swart	A	Skroef (Pty) Ltd	058-8131303		mail@agritrans.co.za				L

APPENDIX F2: ADVERTISEMENT

Appendix F2.1: Pre-Application Advertisement

Advertisement dated 24 January 2020.

BLADSY 20

GEMSBOK

24 JANUARIE 2020



BLAAUWSKOP

Hulle is nou in die "groot" skool

Die Graad 1'stjies 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 2125, Erf 1470, Erf 1178 and Erf 2281, Kakamas, Northern Cape Province

Notice is hereby given of a public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), 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 15 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
Groenbergrivier (Pty) Ltd
P O Box 1058, Wellington, 7654
Cell: 076 584 0822; Fax: 086 476 7134;
E-mail: elanien@afica.com
Website: www.groenbergrivier.co.za

Department of Water and Sanitation (DWS/Waterreese)
Lower Orange River Proto CMA
Mr. 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 Portion 39 of Zeekeestek No. 89, Bloubaai, Northern Cape Province

Notice is hereby given of a public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), 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 1998 Activity 2 (i)
NEMA, Amended 2010: GN R 544 - Activity 11 and 18; GN R 546 - Activity 12;
NEMA, Amended 2014: GN R 983 - Activity 12, 19 and 27; GN R 985 - 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
Groenbergrivier (Pty) Ltd
P O Box 1058, Wellington, 7654
Cell: 076 584 0822; Fax: 086 476 7134;
E-mail: elanien@afica.com
Website: www.groenbergrivier.co.za

Department of Water and Sanitation (DWS/Waterreese)
Lower Orange River Proto CMA
Mr. 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, dams and associated infrastructure on Erf 2125, Erf 1470, 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, 1998 (Act No. 107 of 1998), 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 1(i);
NEMA, Amended 2006, 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
Groenbergrivier (Pty) Ltd
P O Box 1058, Wellington, 7654
Cell: 076 584 0822; Fax: 086 476 7134;
E-mail: elanien@afica.com
Website: www.groenbergrivier.co.za

Department of Water and Sanitation (DWS/Waterreese)
Lower Orange River Proto CMA
Mr. 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, Onseepkans, Northern Cape Province

Notice is hereby given of a public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), 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 1(i), 1(k) and 10;
NEMA, Amended 2006, 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
Groenbergrivier (Pty) Ltd
P O Box 1058, Wellington, 7654
Cell: 076 584 0822; Fax: 086 476 7134;
E-mail: elanien@afica.com
Website: www.groenbergrivier.co.za

Department of Water and Sanitation (DWS/Waterreese)
Lower Orange River Proto CMA
Mr. 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 Strykraal No. 81, Poffadder, Northern Cape Province

Notice is hereby given of a public participation process in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), 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 1(i); (c);
NEMA, Amended 2002, GN R 670 Activity 1(i), 1(k);
NEMA, Amended 2006, 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), (g), (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
Groenbergrivier (Pty) Ltd
P O Box 1058, Wellington, 7654
Cell: 076 584 0822; Fax: 086 476 7134;
E-mail: elanien@afica.com
Website: www.groenbergrivier.co.za

Department of Water and Sanitation (DWS/Waterreese)
Lower Orange River Proto CMA
Mr. Abe Abrahams
Private Bag X6101
Kimberley, 8300
Tel: 053 830 8800

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.

Herenuing sal R40 meer kos van 1 Februarie 2020 af.

"Daar is baie posbusse beskikbaar; dit hou jou pos veilig 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 in 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. Pensioenarisse kry 'n afslag van slegs R340.

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

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: francoisvisserrpm@gmail.com

PLASETE KOOP PER TENDER

NOORDKAAP - HOUTZEL - VAN ZYL SRUS

OMGEWING

Tenders word ingewag vir die verkoop van die plase bekend as:

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

Die eiendomme is geleë aan die Rivierpad tussen Black Rock en Van Zylrus. Die draagrif is 13 ha per Groen-ee-Eenheid. Die eiendomme grens aan mekaar en kan gesamenlik of afsonderlik aangekoop word.

Tenders moet in Rand per hekar plus BTW gedoen word en moet ingehandig word in n'veerseelde koert 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 aansaaf word nie. Volledige verkoopvoorwaardes en tenderdokumente is beskikbaar by Duvenhage & Van der Merwe Ingelyf te Kuruman.

Navrae: Fanle van Zyl (053) 030 0094/5 of 072 376 3143

Hans Kruger (053) 030 0094/5 of 081 046 6888

E-pos adres: marlene@dvimprok.co.za
Posbus 63 Kuruman 8460

Appendix F2.2: Advertisement

APPENDIX F3: NOTICE BOARDS

Text the same as advertisement.

APPENDIX F4: PROOF OF NOTICES
Appendix F4.1: Proof of Notices to Authorities

Appendix F4.2: Proof of letters to I&AP's

APPENDIX F5: NOTICES SENT
Appendix F5.1: Proof of Emails:

Appendix F5.2: Proof of reports and letters sent to Authorities

Appendix F5.3: Proof of letters sent to I&AP's

APPENDIX F6: COMMENTS RECEIVED

APPENDIX F7: COMMENTS AND RESPONSES SHEET

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

APPENDIX F8: RESPONSES TO COMMENTS FROM SPECIALISTS

APPENDIX G: MEETINGS HELD

APPENDIX G1: ATTENDANCE REGISTER OF MEETING HELD

APPENDIX H: SPECIALIST REPORTS

APPENDIX H1: ARCHAEOLOGY REPORT

ARCHAEOLOGICAL IMPACT ASSESSMENT

**S24G Application, illegal agricultural development on
Raap N Skraap, (Portion 2 of the Farm Styrkraal No. 81),
near Onseepkans, Kai! Ma 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@africa.com

Applicant:

KEBOES FRUIT FARMS (Pty) Ltd

By



ACRM
5 Stuart Road, Rondebosch, 7700
Mobile: 082 321 0172
E-mail: acm@waccess.co.za

**JULY
2020**

Executive summary

1. Introduction

ACRM was instructed by GroenbergEnviro to conduct an Archaeological Impact Assessment (AIA) for an unauthorised agricultural development on the Farm Raap N Skraap, (Portion 2 of the Farm Styrkraal 81) Kai! Ma Municipality in, the Northern Cape.

Raap N Skraap is located adjacent the Gariep/Orange River, about 25kms north-east of the small border settlement of Onseepkans.

The illegal vineyard, date and citrus development, totalling about 214ha in extent, was established in 2006-2008 without environmental authorisation. Two evaporation ponds (2.2ha) were also established without environmental authorisation.

The AIA forms part of a Section 24G Application process, which is designed to legally correct an illegal 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 development was not undertaken at the time.

3. Aim of the AIA

The overall purpose of the AIA is to determine the impact 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 14th July 2020, in which the following observations were made:

No archaeological resources were recorded in the 214ha development site. The intensively farmed area constitutes a highly transformed and modified landscape. It is noted that the archaeologist Peter Beaumont, in 2008, recorded no archaeological resources during a survey of a portion of the farm Styrkraal/Raap N Skraap. Previous archaeological assessments undertaken in Onseepkans, has noted the low density of archaeological resources in the area.

6. Graves

No graves or typical grave features (i. e. stone cairns) were encountered during the study.

7. Built environment

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

8. Impact statement

The results of the study suggest that the listed activity (i. e. an unauthorised agricultural development & development of evaporation ponds) has likely, not had an impact of great significance on archaeological resources.

9. Conclusion

The receiving environment comprises a severely transformed and modified landscape.

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

The impact significance of the illegally established vineyards, date and citrus plantations on archaeological heritage is therefore assessed as LOW.

10. Recommendations

1. With regard to the illegal agricultural development, and construction of two small sewerage evaporation ponds on the Farm Raap N Skraap (Portion 2 of the Farm Styrkraal No. 81), no further archaeological mitigation is required.

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Archaeological Impact Assessment, illegal vineyard development on the Farm Raap N Skraap near Onseepkans, Northern Cape

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 Raap N Skraap (Portion 2 of the Farm Styrkraal 81) near Onseepkans, Kai! Ma Municipality in the Northern Cape Province (Figures 1-3).

The illegal vineyard, date and citrus development, totalling about 214ha in extent, was established without environmental authorisation in 2006-2008. Two sewerage evaporation ponds (totalling 2.2ha) were also established without environmental authorisation (Kühn 2020).

The AIA forms part of a Section 24G Application process which is designed to legally correct an unauthorised development.

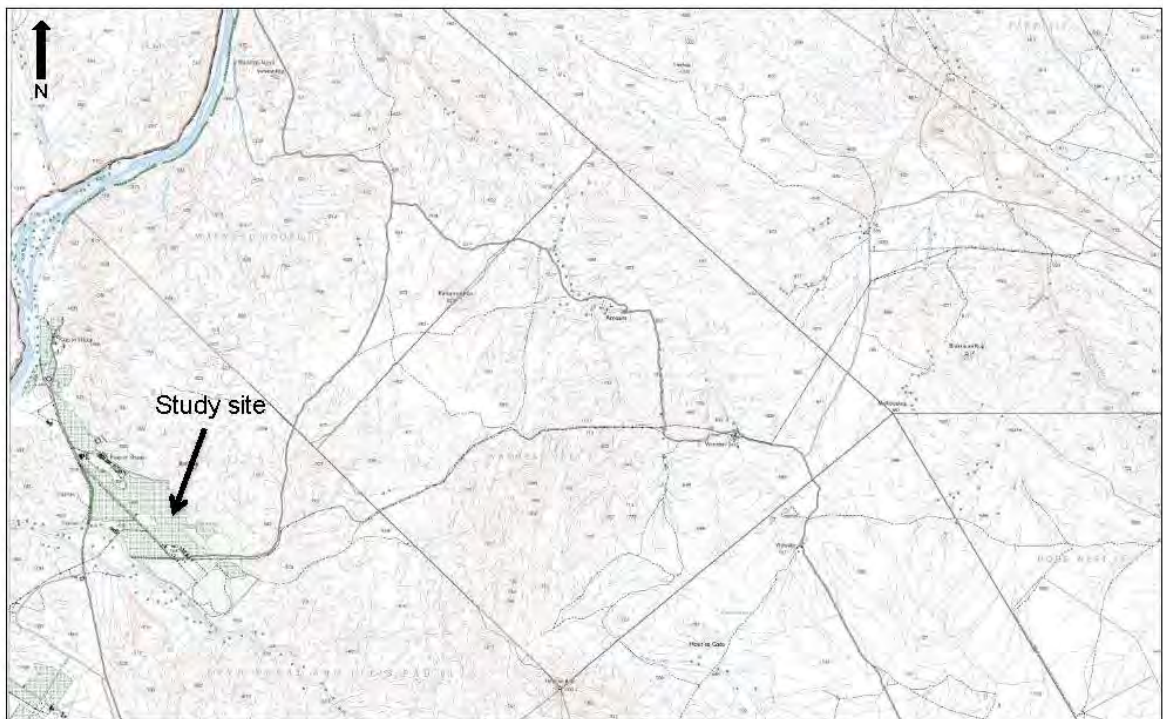


Figure 1. Locality Map (2819DA Skuitdrif). Arrow illustrates the location of the illegal development on the farm

Archaeological Impact Assessment, illegal vineyard development on the Farm Raap N Skraap near Onseepkans, Northern Cape



Figure 2. Google satellite map illustrating the location of the Farm Raap N Skraap in relation to Onseepkans.



Figure 3. Google satellite map indicating the illegal agricultural development (red polygon) on Raap N Skraap

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

Raap N Skraap is located on Portion 2 of the Farm Styrkraal No. 81, adjacent the Gariep/Orange River, about 25kms north-east of the small border settlement of Onseepkans.

The extensive vineyard, date and citrus development were established in 2006-2008 (Figure 4-14). The citrus fields have since been replaced by large centre pivots (refer to Figure 3).

The 2 small evaporation ponds were also constructed in 2006-2008.

Archaeological Impact Assessment, illegal vineyard development on the Farm Raap N Skraap near Onseepkans, Northern Cape



Figure 4. View facing north west



Figure 5. View facing north west



Figure 6. View facing south west

Archaeological Impact Assessment, illegal vineyard development on the Farm Raap N Skraap near Onseepkans, Northern Cape



Figure 7. View facing north west



Figure 8. View facing north west

Archaeological Impact Assessment, illegal vineyard development on the Farm Raap N Skraap near Onseepkans, Northern Cape



Figure 9. View facing north



Figure 10. View facing north east



Figure 11. View facing north west

Archaeological Impact Assessment, illegal vineyard development on the Farm Raap N Skraap near Onseepkans, Northern Cape



Figure 12. View facing south east



Figure 13. View facing north



Figure 14. 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 agricultural development had on archaeological resources.

To this end a site assessment was undertaken on the 14th 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 farm was easy and archaeological visibility was very good.

5.3 Results of the desk top study

Beaumont (2008) recorded no archaeological resources during a survey of the farm Sty-Kraal/Raap N Skraap, when a hoodia and pumpkin project was established on the farm.

Kaplan (2013, 2017) and Engelbrecht (2015) recorded very small numbers of pre-colonial archaeological resources in the course of surveys covering large parcels of land in Onseepkans while Dreyer (2008) recorded no archaeological resources in an investigation of 14 borrow pits alongside the R362 between Pofadder and Onseepkans.

6. FINDINGS

6.1 Illegal vineyard, date and citrus development

No archaeological resources were recorded on the Farm Raap N Skraap (Figure 15). Combined, the 214ha of already cultivated vineyards, dates and new centre pivot (mealies) constitute a highly transformed landscape.

No archaeological resources were encountered in the footprint area of the two small sewerage evaporation ponds.

No archaeological resources were recorded encountered in the surrounding area.

Archaeological Impact Assessment, illegal vineyard development on the Farm Raap N Skraap near Onseepkans, Northern Cape



Figure 15. Trackpaths in blue (site inspection undertaken on 14th July, 2020)

6.1 Built environment

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

6.2 Graves

No graves, or typical graves features (i. e. stone cairns) were encountered during the field assessment.

7. ASSESSMENT OF IMPACTS

In the case of an illegal agricultural development on the Farm Raap N Skraap (Portion 2 of the Farm Styrkraal 81), it is expected that impacts on pre-colonial archaeological heritage are likely to have been *LOW*.

The assessment is based on a field assessment of the unauthorised development, as well as a desktop study of archaeological work undertaken on the farm by Beaumont (2008), and in the nearby Onseepkans area.

8. CONCLUSION

Cultivation of vineyards, date and citrus on the Farm Raap N Skraap (Portion 2 of the Farm Styrkraal 81) in 2006-2008 has fundamentally transformed the receiving environment.

The literature survey suggests that it is unlikely that significant archaeological resources would have been impacted by the unauthorised development.

The impact significance of the development on archaeological heritage is therefore assessed as LOW.

9. RECOMMENDATIONS

With regard to the illegal agricultural development on the Farm Raap N Skraap (Portion 2 of Farm No. 81), the following recommendations are made:

1. No further archaeological mitigation is required.

10. REFERENCES

Beaumont, P. 2008. Phase 1 Heritage Impact Assessment report on a portion of the Remainder of the Farm Sty-Kraal 81 near Onseepkans, Siyanda District Municipality, Northern Cape Province. Report prepared for MEG Environmental Impact Studies. McGregor Museum, Kimberley.

Dreyer, C. 2008. First Phase Archaeological and Cultural Heritage Assessment of the proposed upgrading of the R358 road and borrow pit sites between Pofadder and Onseepkans, Northern Cape. Cobus Dreyer Pr Archaeologist/Heritage Specialist.

Engelbrecht, J. 2015. Archaeological Impact Assessment for the proposed agricultural development at Onseepkans in the Northern Cape Province. Report prepared for Enviroafrica. Ubique Heritage Consultants (Pty) Ltd. Ashkam

Kaplan, J. 2013. Archaeological Impact Assessment for the Proposed Eskom Pofadder-Luiperdshoek 11kv Powerline Project

Kaplan, J. 2015. Heritage Impact Assessment, proposed pump station, solar energy farm, storage reservoir and development of agricultural land at Onseepkans, Northern Cape Province. Report prepared for Enviroafrica. ACRM, Cape Town

Kühn, E. 2020. S24G Application Form. Raap N Skraap – Cultivation of vineyards across small streams, and development of evaporation ponds on Portion 2 of the Farm Stykraal No. 81, Northern Cape Province. Report prepared for Keboes Farms (Pty) Ltd. GroenbergEnviro, Wellington.

APPENDIX H2: BOTANICAL REPORT



Bergwind Botanical Surveys & Tours CC.

14A Thomson Road

Claremont

Cape Town

7708

1 November 2020

TERRESTRIAL BIODIVERSITY COMPLIANCE STATEMENT: RAAP EN SKRAAP (KARSTENS BOERDERY), KHÂI-MA LOCAL MUNICIPALITY, NAMAKWA DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE, FOR PURPOSES OF S24G APPLICATION

As the appointed botanical specialist for assessment of the terrestrial biodiversity (botany) of Farm Styrkraal 81 Portions 1 & 2, Kenhardt, known as 'Raap en Skraap', I hereby verify that:

Section 1.

- (a) I conducted a site visit 15 July 2020.
- (b) The impact of agricultural development on the vegetation of Portion 2 was investigated.
- (c) The impact of the sewerage evaporation ponds and riverside pump station were evaluated from photographs. The sites were not visited.

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).



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012005136298023

1. Location

The farm known as 'Raap en Skraap' (Farm Styrkraal No. 81, Portions 1 & 2, Kenhardt) (Figure 1) lie southeast of the Orange or Gariiep River and northeast of Onseepkans. The properties lie parallel to each other, jointly forming an elongate portion of land, much of which is made up of rocky hills, particularly on Portion 1, and is not arable. The northern border is at the river whereas on the east, west and south sides are other farms.

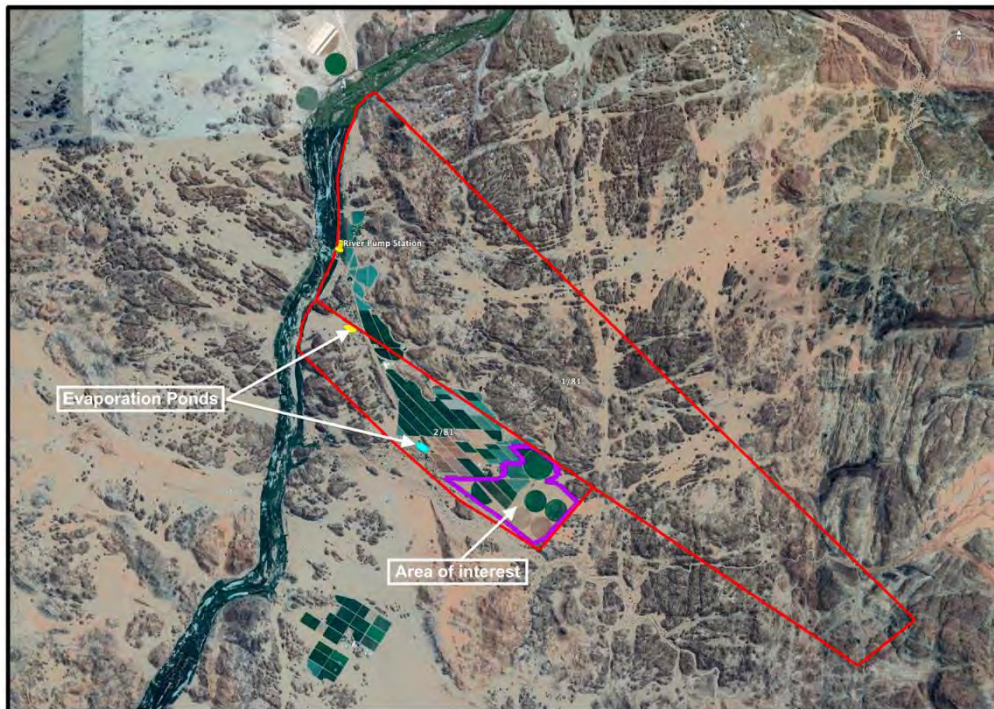


Figure 1. Aerial image (GoogleEarth™) of the farm Styrkraal 81, Portions 1 and 2 (known as *Raap en Skraap*) are outlined in red. The area of interest where the vegetation has been cleared for agriculture is outlined in purple, with the evaporation ponds and pump station labelled.



Figure 2. Aerial image (Garmin Basecamp Birdseye) showing the location of the sample waypoints (RnS#).

2. Vegetation Types

The vegetation types found at Raap en Skraap are mainly Lower Gariep Broken Veld away from the Orange River and Lower Gariep Alluvial Vegetation along the river (Figure 2).

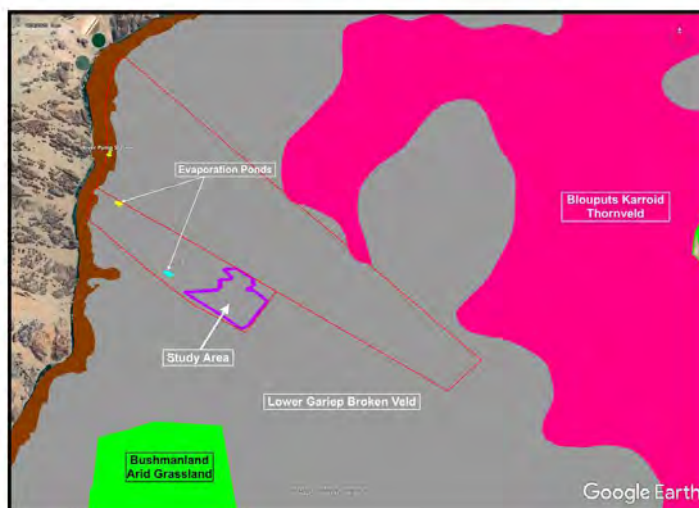


Figure 3. Portion of the Vegetation Map of South Africa, Swaziland and Lesotho showing the farm 'Raap en Skraap' outlined in red, lying entirely with Lower Gariep Broken Veld except for the pump station that lies in Lower Gariep Alluvial Vegetation (shaded brown).

3. Disturbance regime

3.1 South-eastern Agricultural Lands

Historical imagery from Google Earth™ was examined from 2006 to the present. This provided a chronological overview of the changes that have taken place in what are called here the 'Southern Agricultural Lands' on Styrkraal No. 81 Portion 2.

In 2006 there was no development of agricultural lands in the area investigated. The terrain was an open plain between rocky koppies with a seasonal wash (watercourse) running from northeast to southwest to where it joined a larger wash immediately outside the area of investigation Figure 4. From the aerial photograph it is clear that the land was sparsely vegetated, with no large trees (i.e. no *Vachellia erioloba* [camelthorn]) and probably supported *Boscia foetida* subsp. *rehmanniana* (Figure 5) shrubs, *Vachellia mellifera* subsp. *detinens* (Figure 7) and other typical shrubs such as *Sysindite sparteae* (Figure 6) in the wash itself, and sparse shrubs typical of the veld type outside the 'wash' areas.

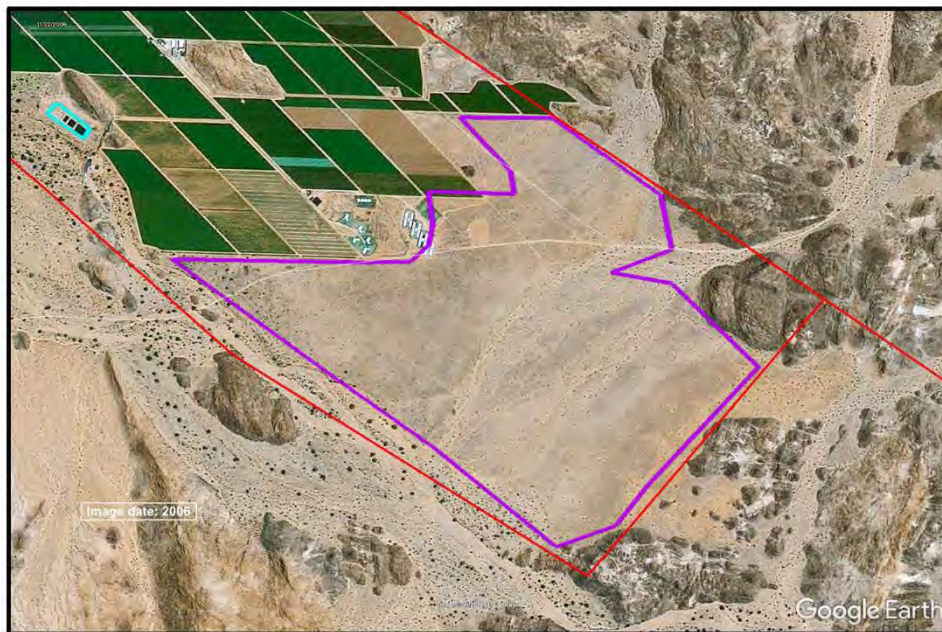


Figure 4. Aerial image (Google Earth™) of 2006, showing the main study area at *Raap en Skraap* prior to cultivation (purple outline). The one set of evaporation ponds is indicated by the light blue outline. A significant seasonal wash flows from northeast to southwest.



Figure 5. *Boscia foetida* subsp. *rehmanniana* at the boundary of Styrkraal 81, Portion 2.



Figure 6. *Sysindite spartea*



Figure 7. *Senegalia mellifera* subsp. *detinens*

Subsequent to 2006, lands were prepared for the growing of *Hoodia gordonii* in 2007 for Unilever for medicinal plant purposes (Figure 8). This was the first time that the land was worked. It should be noted that one watercourse was not ploughed. The following set of historical Google Earth™ images (Figures

9—14) shows the chronological succession of the development of the agricultural land where there had previously been natural veld with extensive washes. These images show the agricultural lands in question outlined in purple and the evaporation ponds on Portion 2 outlined in light blue.

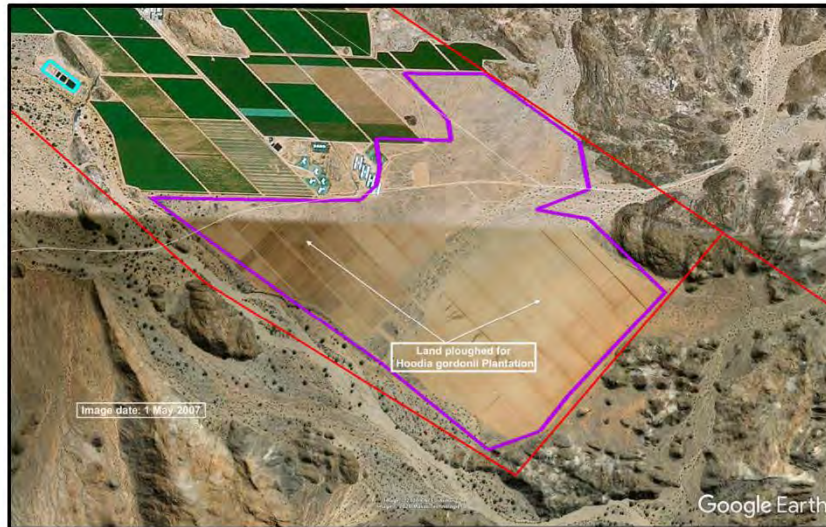


Figure 8. Aerial image (Google Earth™) of 1 May 2007, showing the main study area at *Raap en Skraap* (purple outline) after cultivation for *Hoodia gordonii*. The one set of evaporation ponds is indicated by the light blue outline. The seasonal wash that flows from northeast to southwest was disturbed.



Figure 9. Aerial image (Google Earth™) of 5 September 2011, showing the main study area at *Raap en Skraap* (purple outline) after the removal of the *Hoodia gordonii* plantation and establishment of centre-pivot irrigation. The one set of evaporation ponds is indicated by the light blue outline. A seasonal wash flows from northeast to southwest. The seasonal wash that flows from northeast to southwest was canalised.



Figure 10. Aerial image (Google Earth™) of 2 January 2012, showing the main study area at *Raap en Skraap* (purple outline) with functioning centre-pivot irrigation. The one set of evaporation ponds is indicated by the light blue outline. The seasonal wash that flows from northeast to southwest was canalised.



Figure 11. Aerial image (Google Earth™) of 19 December 2013, showing the main study area at *Raap en Skraap* (purple outline) with functioning centre-pivot irrigation. The one set of evaporation ponds is indicated by the light blue outline. The seasonal wash that flows from northeast to southwest was canalised.



Figure 12. Aerial image (Google Earth™) of 29 February 2016, showing the main study area at *Raap en Skraap* (purple outline) with functioning centre-pivot irrigation. The one set of evaporation ponds is indicated by the light blue outline. The seasonal wash that flows from northeast to southwest was canalised.



Figure 13. Aerial image (Google Earth™) of 19 December 2013, showing the main study area at *Raap en Skraap* (purple outline) with functioning centre-pivot irrigation. The one set of evaporation ponds is indicated by the light blue outline. The seasonal wash that flows from northeast to southwest was canalised.







Figure 14. Aerial image (Google Earth™) of 29 September 2019, showing the main study area at *Raap en Skraap* (purple outline) with functioning centre-pivot irrigation. The one set of evaporations ponds is indicated by the light blue outline. The seasonal wash that flows from northeast to southwest was canalised.





4. The Survey





The survey at the farm was conducted in winter (15 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 namely, cultivation of lucerne using centre-pivot irrigation and date palm orchards with drip irrigation. I was accompanied by the *Raap en Skraap* Guesthouse Manager, Mrs Petro Möller, who showed me the area where the unauthorised agriculture had taken place. After being shown the area I continued the survey on my own and recorded 15 waypoints with notes and photographs (Table 1).



Table 1. Waypoints, short descriptions and photographs taken during the survey.

Waypoint	Notes	Illustration
<p>RnS0001 S 28° 39' 57.93" E 19° 32' 08.26"</p>	<p>At the boundary of the designated survey area. At this point there are vineyards.</p>	
<p>RnS0002 S 28° 39' 49.75" E 19° 32' 18.24"</p>	<p>Lands have either been cleared or there are existing vineyards. Very low sensitivity. All agriculture.</p>	
<p>RnS0003 S 28° 39' 49.93" E 19° 32' 31.89"</p>	<p>At the edge of the centre-pivot area where mealies are grown for chaff, for mulching the vineyards.</p>	
<p>RnS0004 S 28° 39' 51.49" E 19° 32' 53.82"</p>	<p>On the road along the edge of the circle. There are a number of <i>Vachellia erioloba</i> (camelthorn trees) that have not been disturbed.</p>	

<p>RnS0005 S 28° 39' 58.90" E 19° 32' 41.13"</p>	<p>Alongside a seasonal wash. There has been some removal of the sandy soil. A number of <i>Vachellia erioloba</i> (camelthorn) trees are found here together with <i>Lycium</i> sp. and <i>Senegalia mellifera</i> subsp. <i>detinens</i> (swaarthaak) that is parasitised by <i>Tapinanthus oleifolius</i>.</p>	
<p>RnS0006 S 28° 40' 01.55" E 19° 32' 40.61"</p>	<p>In a seasonal wash with a large amount of dead material including palm leaves and branches and stumps of <i>Senegalia mellifera</i> subsp. <i>detinens</i>.</p> <p>The photo opposite shows cut palm leaves that have been dumped in the seasonal wash.</p> <p>The photo opposite is of a large amount of dead plant material, the source of which is unknown, that has been dumped in the seasonal wash.</p>	 
<p>RnS0007 S 28° 40' 00.47" E 19° 32' 43.15"</p>	<p>At a young date plantation (top photo). This is the area cleared of natural veld.</p>	

	<p>A soil berm has been pushed up alongside the plantation (bottom photo).</p>	
<p>RnS0008 S 28° 40' 04.52" E 19° 32' 58.93"</p>	<p>On the road between the soil berm and the date plantation. No natural vegetation present.</p> <p>The soil berm alongside the road has been pushed up to prevent flooding of the palm orchard in the event of a flash flood.</p>	
<p>RnS0010 S 28° 40' 13.18" E 19° 33' 12.18"</p>	<p>On the road between the electric fence and the date plantation. The vegetation on the other side of the fence gives an indication of the type of vegetation that was present before the area was cleared for the date plantation.</p> <p>The top photo opposite is of a camelthorn tree (<i>Vachellia erioloba</i>) [a protected species] that has been left next to the palm orchard.</p> <p>The bottom photo is of the palm plantation with young trees.</p>	 

<p>RnS0011 S 28° 40' 35.94" E 19° 32' 35.31"</p>	<p>On the road on the perimeter of the date plantation and cultivated lands on the west side (top photo).</p> <p>On the other side of the electrified boundary fence is a seasonal wash with many <i>Vachellia erioloba</i>, <i>Senegalia mellifera</i> subsp. <i>detinens</i> and <i>Boscia foetida</i> subsp. <i>rehmanniana</i> trees. Once again this gives a clue as to the vegetation found in the area prior to clearing.</p>	 
<p>RnS0012 S 28° 40' 27.70" E 19° 32' 24.10"</p>	<p>This illustrates one of the centre-pivot circles planted with lucerne.</p>	
<p>RnS0013 S 28° 40' 22.08" E 19° 32' 16.62"</p>	<p>This area is practically bare and has been cleared of <i>Senegalia mellifera</i> subsp. <i>detinens</i> (Black Thorn).</p>	

<p>RnS0014 S 28° 40' 10.02" E 19° 31' 56.33"</p>	<p>This location lies between the ploughed circle and the boundary fence. It has been cleared of vegetation, mainly <i>Senegalia mellifera</i> subsp. <i>detinens</i> (Black Thorn).</p> <p>The top photo is of cleared <i>Senegalia mellifera</i> subsp. <i>detinens</i> small trees.</p> <p>The lower photo is of the road that separates a centre-pivot circle (right) from the remaining area that was used for <i>Hoodia gordonii</i> cultivation (left).</p>	
<p>RnS0015 S 28° 40' 01.65" E 19° 31' 56.91"</p>	<p>This area was previously cultivated, as mentioned above for, <i>Hoodia gordonii</i>. It is now lying fallow. A few <i>Lycium</i> sp. shrubs have established themselves in the fallow land.</p>	

I did not visit the evaporation ponds on Portion 2 nor the river pump station on Portion 1. However, they have been evaluated by using photographs supplied by Ms Elanie Kühn, the appointed Environmental Assessment Practitioner.

The evaporation ponds are within areas that were cleared for cultivation so in terms of disturbance of vegetation they fall within the cultivated areas and thus simply form part of the disturbance from a botanical perspective. These ponds were evaluated from eye-level photographs (Figures 15 & 16) as well as drone photographs.



Figure 15. Sewerage evaporation ponds not in use.



Figure 16. The landscape around one set of sewerage evaporation ponds (seen at lower right in the photograph).

Although the vegetation on the banks of the Orange (Gariiep) River supports Lower Gariiep Alluvial Vegetation, it is heavily invaded by exotic velvet mesquite (*Prosopis velutina*), and this dense invasion would have suppressed the natural vegetation. The invasive velvet mesquite as well as the natural (indigenous) vegetation would have had to be cleared for access to the river at the site of the pump station (Figures 17 & 18).



Figure 17. Overflow channel from the pump station within the alluvial zone of the Orange River.



Figure 18. Pump station infrastructure with *Vachellia erioloba* on the left-hand side.

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. It was determined that for the Terrestrial Plants Sensitivity Theme, the sensitivity is MEDIUM (Figure 18) and for the Terrestrial Biodiversity Sensitivity Theme, the sensitivity is VERY HIGH (Figure 19). The reason for the latter appears to be related to the assignment of the area to Critical Biodiversity Area 2 (CBA2) in the Conservation Status Map of the Northern Cape Province (Figure 20).

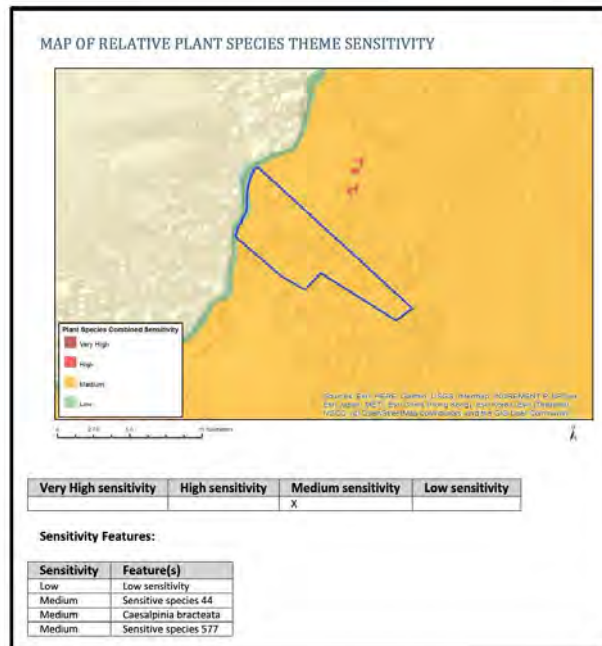


Figure 19. Map of Relative Plant Species Theme Sensitivity from the National Web-based Environmental Screening Tool.

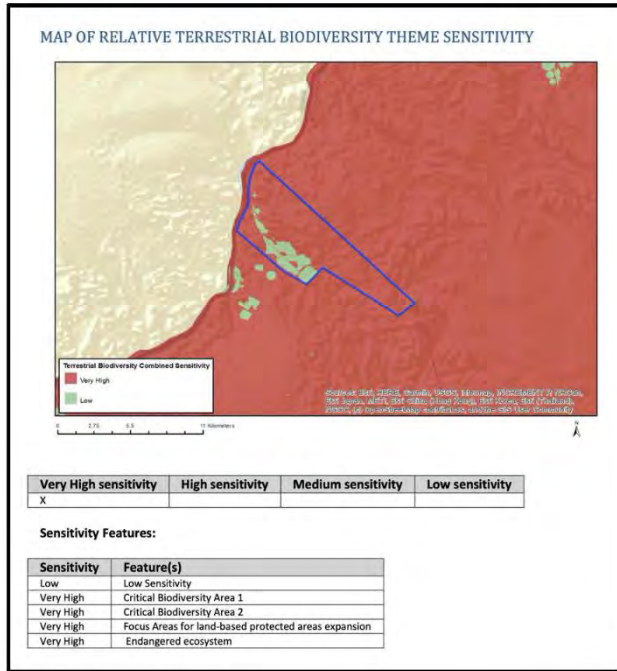


Figure 20. Map of Relative Terrestrial Biodiversity Theme Sensitivity from the National Web-based Environmental Screening Tool.

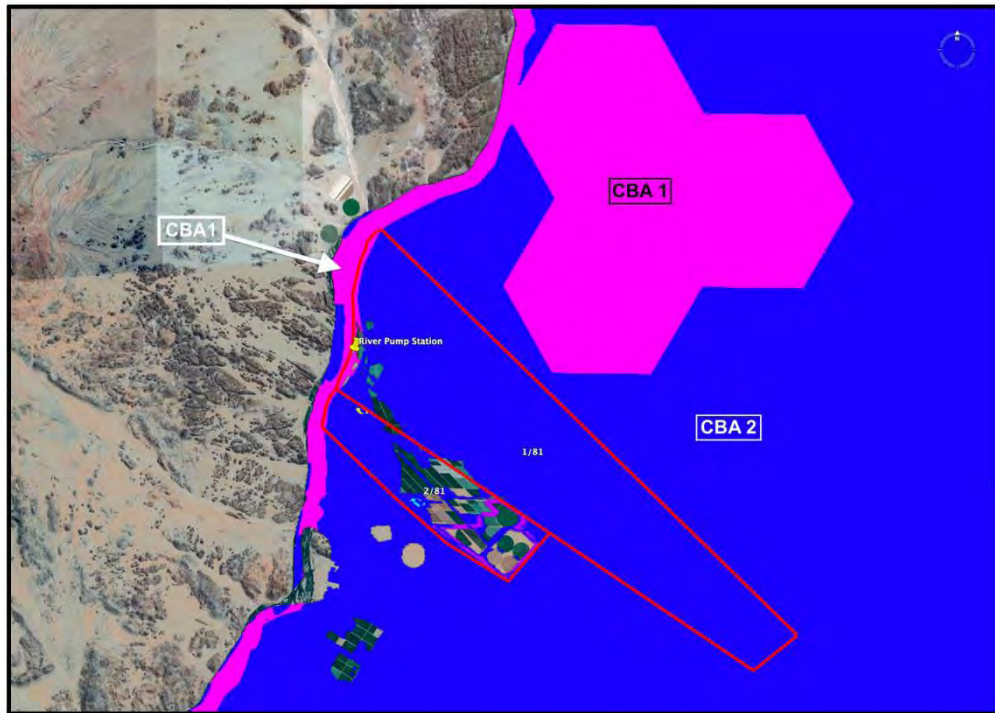


Figure 21. The Critical Biodiversity Area Map of the Northern Cape Province as it applies to 'Raap en Skraap'.

There is relatively little cultivation on Portion 1 of Styrkraal 81 and that is not part of this investigation. Most of the cultivation is on Portion 2, as are the evaporation ponds that are both located in the CBA2 area. The area cultivated originally for *Hoodia gordonii*, and now converted to pivot circles for lucerne and chaff as well as date orchards, was all CBA2.

The area of undisturbed terrain that was cleared of Lower Gariep Broken Veld is 214 ha and the two sets of evaporation ponds together make up 2.14 ha.

The Lower Gariep Alluvial Vegetation is classified as CBA1 (Figure 21) and the pump station has negatively impacted the east bank of the river within the zone of a CBA1, although the effect of clearing is limited due to the alluvial vegetation being infested with alien mesquite. Figure 18 shows a camelthorn tree (*Vachellia erioloba*) [protected species] that was clearly not affected by the construction of the pump station.

6. Conclusions

There is no doubt that the development of agricultural lands in the area under investigation at '*Raap en Skraap*' had a negative impact on the vegetation and more specifically a large seasonal wash. However, due to the sparseness of the vegetation, it is difficult to retrospectively determine the intensity of the negative impact. All that can be said is that the wash has been effectively canalised by the soil berms and all vegetation in the wash, except for in the channel that has been left and around the perimeter of the fields, has been lost. From the aerial photo in Figure 4, it is apparent that there were no large trees in the wash, hence it is concluded that there were no *Vachellia erioloba* nor *Boscia foetida* subsp. *rehmanniana* present when the area was originally cleared.

The natural vegetation has also been lost at the sites of the evaporation ponds and in this case, since the original vegetation was very sparse, it can be assumed and concluded that the intensity of the resultant negative impact is limited.

The pump station was built prior to 2002 and supplies water to '*Raap en Skraap*' and a small solar PV installation. The pump station covers an area of approximately 0.5 ha and is well within the alluvial zone. It therefore displaced Lower Gariep Alluvial Vegetation, including the infestation of mesquite. The intensity of the resultant impact is considered to be medium to high negative.



Signature of the specialist:

Appendix: Curriculum Vitae

Dr David Jury McDonald Pr. Sci. Nat.

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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
- 15 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.
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WATER USE LICENCE APPLICATION

RAAP N SKRAAP – CULTIVATION OF VINEYARDS ACROSS SMALL STREAMS, AND DEVELOPMENT OF EVAPORATION PONDS ON PORTION 1 AND 2 OF FARM STYRKRAAL NO. 81, NORTHERN CAPE PROVINCE

June 2020

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QUALITY CONTROL

Revision	Date	Author	Checked	Status	Approved
00	May 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)

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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, Keboes Fruit Farms (Pty) Ltd to apply for a Water Use Licence (WULA) in terms of the following, also outlined in Table 1:

- Section 21(c) and (i) of the National Water Act for the streams that were diverted and crossed as part of the illegal establishment of vineyards. The establishment of the vineyards on Portion 2 of Farm Styrkraal No. 81 took place across small sections of the unnamed drainage system that is located on site. 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.
- Section 21 (c) and (i) for the upgrading of the river pump station on Portion 1 of Farm Styrkraal No. 81 at the banks of the Orange River after heavy flooding.
- 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) to transfer approximately 2 ha of water for industrial and Schedule 1 use. From this volume, approximately 1500 m³ should be allocated for Schedule 1 use and approximately 28 500 m³ will be allocated for industrial use.
- Section 21 (g) for the legalisation of existing sewage/evaporation ponds for the treatment of sewage from the existing worker accommodation etc.

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, so as 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 use” 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. For the expansion of an existing pump station on the banks of the Orange River.
<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. For the expansion of an existing pump station on the banks of the Orange River.

(g) Disposing of waste in a manner which may detrimentally impact on a water resource

For the disposal of wastewater into evaporation ponds.

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 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 application is also for the legalisation of the upgrading of the existing river pump station. The river pump station was upgraded during the period 2000 to 2001 as a result of the of flooding damage. The total area developed for the pump station is approximately 0.5 ha in size. It included a new intake at the river, with gabion mattresses.

The upgrading of the river pump station falls, however, within the NEFPA catchment priority areas.

The application is for the legalisation of the existing sewerage evaporation ponds on Portion 2 of Farm Styrkraal No. 81. The details pertaining to the evaporation dams are shown below in Table ii and Table iii.

Note: The existing evaporation treatment plant 2 was constructed prior to 1998, and therefore should only be registered as an existing lawful use.

Table ii: Evaporation treatment plant 1 details

Specifications for the sewage evaporation ponds	
Capacity evaporation pond(s)	15 190 m ³ for all 6 dams
Footprint area of all 6 dams	1.3 ha
Total annual volume of sewage	12 035 m ³ /annum

Table iii: Evaporation treatment plant 2 details

Specifications for the sewage evaporation pond	
Capacity evaporation pond(s)	15 000 m ³ for all 6 dams
Footprint area of all 6 dams	0.89 ha

Total volume of sewage annually	8 000 m ³ /annum
---------------------------------	-----------------------------

Under the WARMS certificates, the properties have the following existing lawful use:

- Portion 1 of Farm Styrkraal No. 81: 90.1 ha (1351500 m³/a)
- Portion 2 of Farm Styrkraal No. 81: 431.3 ha (6469500 m³/a).

Refer to the WARMS certificates included in Appendix B.

Table iv: Water allocations

Property	Property area	Cultivation of vineyards	Agricultural areas (checked)	Water use per area	Lawful/Lawfulness still to be determined	Water Use Certification	Property owner
81,2 Styr-Kraal Kenhard RD	875,3599	307	443	431,3	Lawfulness still to be determined	Yes for 431,3ha	Keboes Fruit Farms (Pty) Ltd
81,1 Styr-Kraal Kenhard RD	3469,0651	—	75	90,1	Lawfulness still to be determined	Yes for 90,1ha	Keboes Fruit Farms (Pty) Ltd

As shown above in Table iv, water will have to be moved from Portion 1 of Styrkraal No. 81 to Portion 2 of Styrkraal No. 81 to allow the correct water allocations per property. The applicant, Keboes Fruit Farms (Pty) Ltd, wishes to transfer 195 000m³/a (13 ha) of water from Portion 1 of Styrkraal No. 81, to Portion 2 of Farm Styrkraal No. 81, for the rectification of water allocations for each property.

The total volume of water used annually amounts to approximately 3 ha of water. Therefore, the application is to transfer approximately 2 ha (30 000 m³/a) of water for “Industrial” and “Schedule 1” use. From this, approximately 28 500 m³ should be allocated for “Schedule 1” use and approximately 1 500m³ will be allocated for “Industrial” use.

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

1. THE APPLICATION AND TECHNICAL DETAIL

1.1 The Applicant

The applicant, Keboes Fruit Farms (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 Portion 2 of Farm Styrkraal No. 81 and for the upgrading of a river pump station on Portion 2 of Farm Styrkraal No. 81. 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. They are further applying in terms of Section 21 (g) for the legalisation of existing evaporation ponds for the treatment of sewage from the worker accommodations and packhouses on Portion 2 of Farm Styrkraal No. 81.

The Applicant details:

Keboes Fruit Farms (Pty) Ltd
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Contact Persons: Zelda Van Dyk

1.2 The property on which the water use is intended

The farm where the activity occurs is situated approximately 25 kilometres outside of the small town of Onseepkans in the Northern Cape, in the Kai! Ma Municipal area. The property gains access via gravel roads off the R358, which runs to Pofadder and connects there with the N14, see **Error! Reference source not found.**

The site lies south of the Orange River in an otherwise flat landscape. Small ephemeral streams cross the site. The property is currently zoned 'Agriculture'. The owner of the property is Keboes Fruit Farms (Pty) Ltd, who has appointed GroenbergEnviro as the independent consultant to undertake the EIA process.

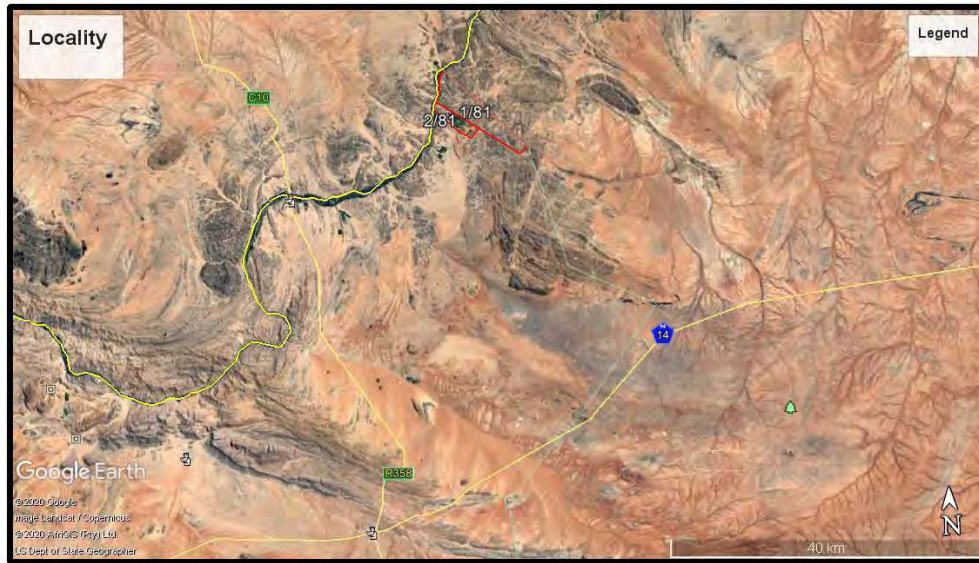


Figure 1: Locality plan

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, Portion 1 and Portion 2 of the farm Styrkraal No. 81, is owned by Keboes Fruit Farms (Pty) Ltd.

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

Cultivated area: Portion 1 of Farm Styrkraal no. 81.	Latitude (S):	Longitude (E):
--	---------------	----------------

Co-ordinates:	28°	40'	08.73 "	19°	32'	34.04"
Existing Sewage evaporation pond 1: Portion 1 of Farm Styrkraal No. 81. Co-ordinates:	Latitude (S):			Longitude (E):		
	28°	39'	39.02 "	19°	31'	20.85"
Existing Sewage evaporation pond 2: Portion 1 of Farm Styrkraal No. 81. Co-ordinates:	Latitude (S):			Longitude (E):		
	28°	38'	25.77 "	19°	30'	30.36"
Pump station: Portion 2 of Farm Styrkraal No. 81. Co-ordinates:	Latitude (S):			Longitude (E):		
	28°	37'	40.18 "	19°	30'	21.26"

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 (north, west and east of the site) is zoned for agricultural use and are natural areas.

1.10 Water Use Licence Application details

Application for a licence in terms of the National Water Act, 1998 is made by the developer, Keboes Fruit Farms (Pty) Ltd, for the following water usages:

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 use 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. For the expansion of an existing pump station on the banks of the Orange River.

(i) altering the bed, banks, course or characteristics of a watercourse	For the construction of agricultural areas and evaporation ponds across ephemeral streams/natural drainage areas. For the expansion of an existing pump station on the banks of the Orange River.
(g) Disposing of waste in a manner which may detrimentally impact on a water resource	For the disposal of wastewater into evaporation ponds.

1.11 Existing lawful water use and development on the property

Two existing WARMS Certificates indicate the properties have the following existing lawful use:

- Portion 1 of Farm Styrkraal No. 81 – 90.1ha (1 351 500 m³/a)
- Portion 2 of Farm Styrkraal No. 81 – 431.3ha (6 469 500 m³/a).

Refer to the WARMS certificates included in Appendix B.

As shown below in Table 3, water will have to be moved from Portion 1 of Styrkraal No. 81 to Portion 2 of Styrkraal No. 81 to allow the correct water allocations per property.

Table 3: Water allocations

Property	Property area	Cultivation of vineyards	Agricultural areas (checked)	Water use per area	Lawful/Lawfulness still to be determined	Water Use Certification	Property owner
81,2 Styr-Kraal Kenhard RD	875,3599	307	431,3	431,3	Lawfulness still to be determined	Yes for 431,3ha	Keboes Fruit Farms (Pty) Ltd
81,1 Styr-Kraal Kenhard RD	3469,0651	-	75	90,1	Lawfulness still to be determined	Yes for 90,1ha	Keboes Fruit Farms (Pty) Ltd

1.12 Details of the Intended Water Use

1.12.1 Section 21 a – change of use - transfer

The applicant, Keboes Fruit Farms (Pty) Ltd, wishes to transfer 195 000 m³/a of water from Portion 1 of Styrkraal No. 81, to Portion 2 of Farm Styrkraal No. 81, for the rectification of water allocations for each property. The additional 30 000 m³/a will be allocated for “Schedule I” and “industrial use”.

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

- Portion 1 of Farm Styrkraal No. 81: 75.1 ha (1 126 500 m³/a)
- Portion 2 of Farm Styrkraal No. 81: 444.3 ha (6 664 500 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)
Donor	Portion 1 of Farm Styrkraal No. 81	15 000	90.1	1 351 500	13	195 000	75.1	1 126 500
	Portion 1 of Farm Styrkraal No. 81				2	30 000		
Receiver	Portion 2 of Farm Styrkraal No. 81	15 000	431.3	6 469 500	13	195 000	444.3	6 664 500
For Industrial use and Schedule 1 use	Portion 2 of Farm Styrkraal No. 81				2	30 000	2	30 000
TOTAL VOLUME TRANSFERRED					15	225 000 m ³ /a		

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

Raap n Skraap Farm uses water from the irrigation allocation for drinking purposes, the packaging shed and garden irrigation. A licence application (WULA) will be required for 21(a) to transfer water from the lawful “irrigation” allocation to the sector “Schedule 1”.

Water used in pack stores are used for commercial purposes and must therefore be licenced for “industrial use”. Licences will be required to transfer water from “irrigation” allocation to “industrial” and “Schedule 1” use.

Table 5: Water balance 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	150	1000	31	2	9300
	150	500	30	3	6750
Permanent housing	150	30	31	12	1674
Guest accommodation	150	20	31 30	12	1116
Gardens and landscaping					9807
TOTAL					30 000 (2 ha)

As shown in Table 5 above, the total volume of water used annually amounts to approximately 2 ha of water. Therefore, the application is to transfer approximately 2 ha (30 000 m³/a) of water for Industrial and Schedule 1 use. From this total, approximately 28 500 m³ should be allocated for Schedule 1 use and approximately 1 500 m³ 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 Portion 2 of Farm Styrkraal No. 81.

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 vineyards 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.

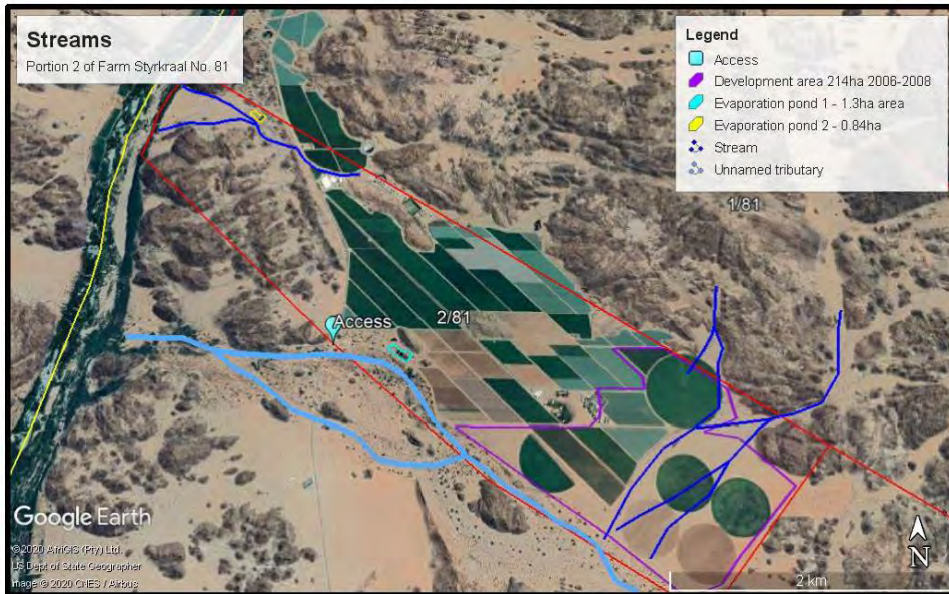


Figure 2: Ephemeral streams/drainage areas

The unnamed drainage 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. As shown below in Figure 3 the site does not fall within a Critical Biodiversity Area.

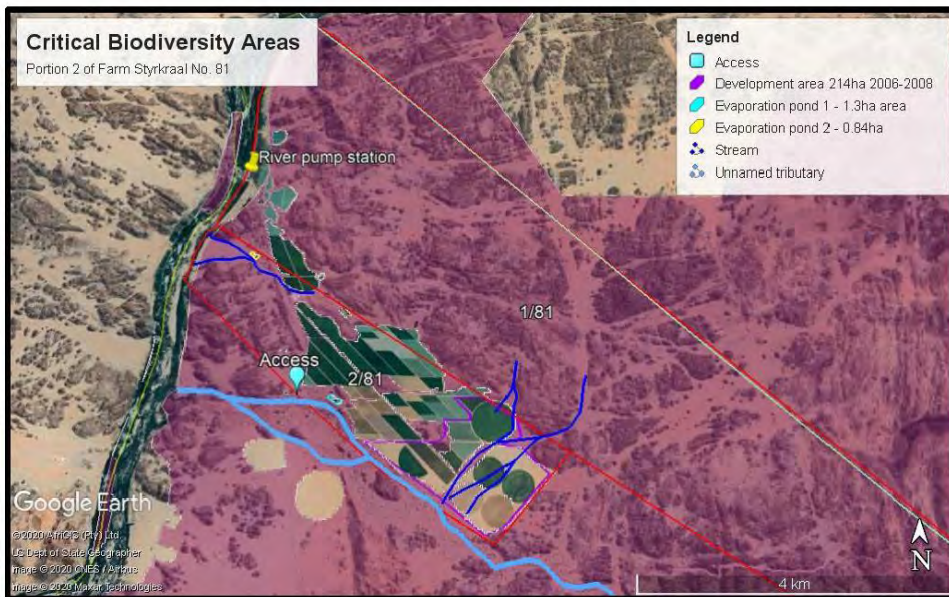


Figure 3: Critical Biodiversity Area

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

1.12.3.2 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 4 below for the location of the Project Site (Portion 2 of Farm Styrkraal No. 81) 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.)

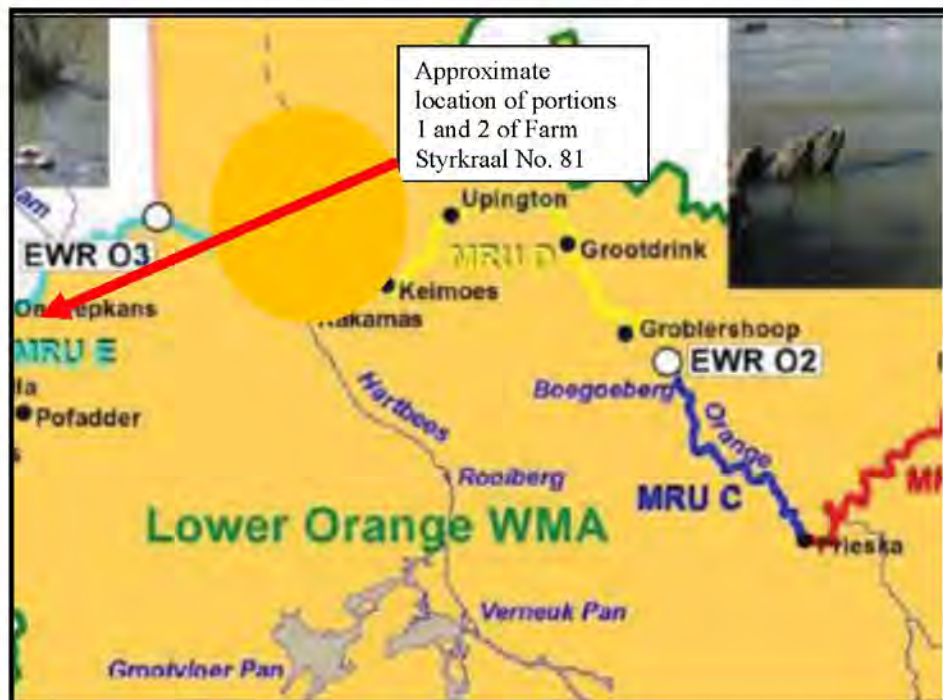


Figure 4: Extract of map that shows the locality of the EWR sites in context of the MRUs (referenced from Figure 3.1 in Report No. RDM/WMA06/00/CON/COMP/2016).

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:03, which refers to a moderately modified system.

1.12.3.3 River pump station

Water is required for the drip irrigation of the established vineyards and is supplied via pipelines from the booster pump station. The other pipelines established are situated from the homesteads towards the evaporation ponds. These pipelines have a diameter of 160 mm and do not need environmental authorisation.

The river pump station was upgraded during the period 2000 to 2001 due to serious flooding that took place (see Figure 5 and Figure 6). The total area developed for the pump station is approximately 0.5 ha in size. It included a new intake at the river (see Figure 7 with gabion mattresses).



Figure 5: River pump station



Figure 6: Intake and river pump station



Figure 7: River intake structure

1.12.3.4 Irrigation of any land

The new, corrected, water allocation will be pumped directly from the Orange River onto Portion 1 of Farm Styrkraal No. 81, and pumped and irrigated onto the vineyards/orchards on both Portions 1 and 2 of Farm Styrkraal No. 81. The S24G Application for the legalisation of existing development area on Portion 2 of Farm Styrkraal No. 81 is for 214 ha of agricultural developments.

1.12.4 Section 21g – Disposing of waste in a manner which may detrimentally impact on a water resource

This application is also for the applicant, Keboes Fruit Farms (Pty) Ltd to comply with the National Water Act (1998) under section 21 (g) for the legalisation of existing sewage/evaporation ponds for the treatment of sewage from the existing worker accommodations etc. The various details pertaining to the evaporation dams are shown in Table 6 and Table 7 below.

Table 6: Evaporation treatment pond 1 details

Specifications for the sewage evaporation pond	
Capacity of evaporation pond(s)	15 190 m ³ for all 6 dams
Footprint area of all 6 dams	1.3ha

Total volume of sewage annually	12 035 m ³ /annum
---------------------------------	------------------------------

Table 7: Evaporation treatment pond 2 details

Specifications for the sewage evaporation pond	
Capacity of evaporation pond(s)	15 000 m ³ for all 6 dams
Footprint area of all 6 dams	0.89 ha
Total volume of sewage annually	8 000 m ³ /annum

Note: The existing Evaporation treatment pond 2 was constructed prior to 1998, and therefore should only be registered as an existing lawful use. Therefore, this section of the application will continue for Evaporation treatment pond 1.

1.12.4.1 Percentage of area served which is unsewered

The pack house and worker accommodations are both sewerred with septic tank systems. The septic tank from the temporary accommodation, as well as the overflow from the pack house septic tanks is directed to the evaporation ponds.

1.12.4.2 Percentage of area served which is sewerred/to be sewerred

The pack house and youth hostel are both sewerred with septic tank systems.

1.12.4.3 What type of network is in place/will be installed?

The existing waste disposal system consists of six evaporation ponds. The evaporation dams' cascade, and the last dam contains only a small amount of wastewater to none at all during dry periods. The existing evaporation ponds are not lined and have not been cleaned to date: the sludge layer in the dams helps to seal the dams.

The proposal is rectifying the illegal construction of the original ponds (see Figure 8 and Figure 9). The new ponds will be lined and comply with standards so that they will not allow seepage into the groundwater.

The various details pertaining to the evaporation dams are shown in Table 8 below.

Table 8: Proposed new evaporation dams' detail

Specifications for the sewage evaporation pond	
Capacity evaporation pond(s)	15 190 m ³ for all 6 dams
Footprint area of all 6 dams	1.3 ha
Total volume of sewage annually	12 035 m ³ /annum

It is strongly recommended that flow meters be installed so that the exact amount of effluent entering the evaporation dams is measured. Alternatively, because flow meters are

expensive, the effluent pump hours and pump characteristics could be used to calculate monthly flows. It has been already been shown that 178 m³ waste of water/day is channelled to the evaporation ponds per day during full production.



Figure 8: Evaporation ponds layout

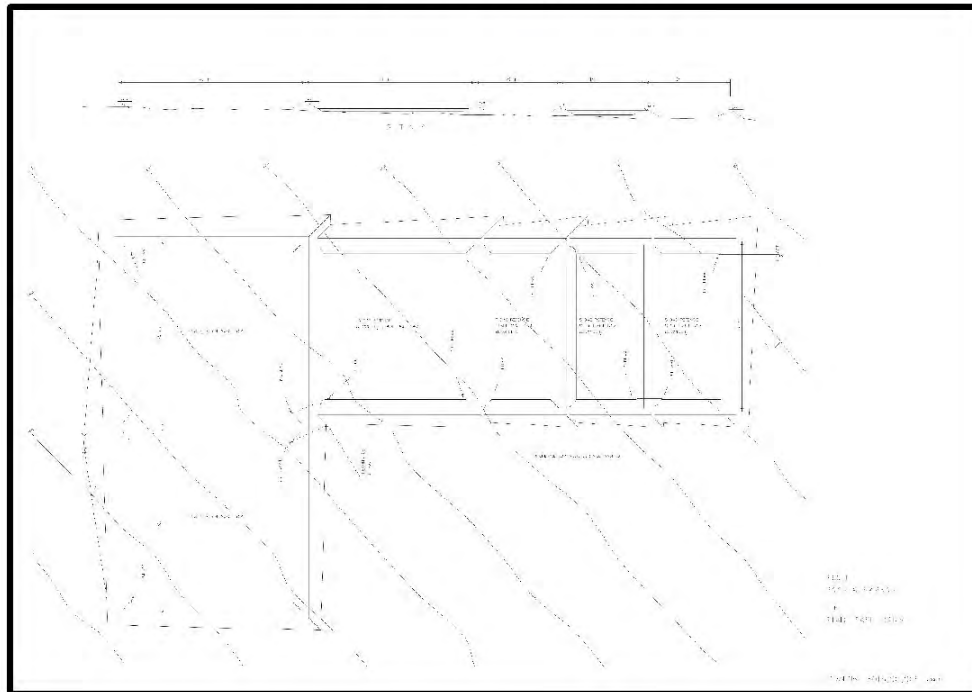


Figure 9: Design of evaporation ponds

1.12.4.4 Location of sewers

The location of the evaporation ponds is shown below in Figure 10.



Figure 10: Location of the evaporation ponds on the site

1.12.4.5 Nature of sewage

Wastewater generated at the pack house (including wastewater from the crate washer) as well as sewage overflow from the septic tank installed at the Raap n Skraap pack house and the septic tank installed at one of the accommodation areas is directed to six evaporation dams that are situated in a fenced area approximately 1 kilometres away from the evaporation ponds.

Therefore, wastewater from the following sources is stored in the six evaporation ponds:

- Water from the crate washer (December – January);
- Septic tanks from the farm hostel, (September – January);
- Sewerage overflow from pack house septic tanks (December – January).

The pack house operates six to seven weeks per year and part of the accommodation is only used for 5 months of the year between September and January. During the months of September until November approximately 500 people stay in the hostel and work in the pack house. During the harvest time (December and January) there are approximately 1000 people a day in the hostel and pack house.

The wastewater flows into the six evaporation ponds from the following sources:

- Water from the crate washer amounts to 500 l/day;

- Septic tanks from the accommodation, = 100 l/day/person;
- Sewerage overflow from pack house septic tanks. This overflow equals approximately 15 l/day/person.

1.12.4.6 Domestic

As can be seen from Table 9 and Table 10 below, the wastewater component that flows to the evaporation dams amounts to approximately 12 035 m³/a. The evaporation dams' capacity amounts to 15 190 m³/a and the evaporation rate in Upington to 33 418 m³/a. The high evaporation rate for Upington means that the effluent volume never exceeds the evaporation dams' capacity.

Table 9: Amount of water routed to the evaporation ponds

Sewerage Component	l/Day	Per Person	Days per month	Months per year	Sewerage amount m ³ /a
Crate washer (pack house)	500	1	30	2	30
Septic tanks (accommodation) during December to January	100	1 000	31	2	6 200
Septic tanks (accommodation) during September to November	100	500	30	3	4 500
Septic tanks (accommodation) during February to August	100	15	30	7	315
Septic tanks (pack house) during December to January	15	1 000	24	2	720
Septic tanks (pack house) during September to November	15	250	24	3	270
Total					12 035

Table 10: The evaporation rate of the evaporation ponds

	Length (m)	Breadth (m)	Depth (m)	Capacity (m ³)	Evaporation rate (m/a)	Evaporation loss per annum (m ³ /a)
Dam 1	35	35	3.1	3 797.5	2,2	8 354,5
Dam 2	35	35	3.1	3 797.5	2,2	8 354,5
Dam 3	35	25	3.1	2 712.5	2,2	5 967,5
Dam 4	35	15	3.1	1 627.5	2,2	3 580,5
Dam 5	35	15	3.1	1 627.5	2,2	3 580,5

Dam 6	35	15	3.1	1 627.5	2,2	3 580,5
Total				15190		33 418

The evaporation dams' cascade and the last dam only contains a small amount of wastewater or none at all during the dry seasons. See Figure 8 for the engineering designs for the evaporation ponds. Wastewater generated from crate washing is no longer disposed of as stormwater but enters the septic tank of the hostel from where it is directed to the evaporation dams. The existing evaporation ponds are not lined and are not located within a stream.

From the tables above, it can be surmised that the wastewater and domestic effluent (sewage) disposed of by the facility will evaporate during the course of a year and that the evaporation dams are of adequate volume and surface area.

It is strongly recommended that flow meters be installed so that the exact amount of effluent can be measured. Alternatively, because flow meters are expensive, the effluent pump hours and pump characteristics could be used to calculate monthly flows. It has been already been shown that 178 m³ wastewater is distributed to the evaporation ponds per day.

Water is abstracted from the Orange River and used on the farm and in the pack house. It is treated before use in the pack house. The abstraction of water from the Orange River for irrigation purposes is registered as an existing lawful water use with the Department of Water and Sanitation (DWS) (See Appendix B).

No washing of produce takes place at the pack house and the small amounts of wastewater are generated from cleaning the pack house floors, walls, tables, equipment, as well as crate washing and hand washing. Water from the crate washer is no longer directed towards the stormwater system as in the past, but to the evaporation ponds. The pack house is only operational from the first week in December to January.

Wastewater generated at the pack house (including wastewater from the crate washer) as well as sewage overflow from the septic tank installed at the Raap n Skraap pack house and the septic tank installed at one of the farm hostels is directed to the six evaporation ponds situated approximately 1 km away from the Raap n Skraap pack house in a fenced area.

Solid waste disposal

The existing evaporation ponds are not lined, and the evaporation dams have not been cleaned to date, therefore currently the sludge layer in the dams helps to seal the dams. However, the dam should be lined and sludge and waste from existing site will be removed to a licenced landfill site/or dried and used as fertilizer on a regular basis.

Water use

Sources of water

Keboes Fruit Farms (Pty) Ltd has an existing registration to abstract from the Orange River (see Appendix B), for use on the farm, at the accommodation facilities and in the pack house. It is strongly recommended that flow meters be installed so that the exact amount of effluent

can be measured. Alternatively, because flow meters are expensive, the effluent pump hours and pump characteristics could be used to calculate monthly flows.

A water meter is installed on the incoming line to the Raap n Skraap pack house. Water meter readings were never recorded in the packing seasons in the past. However, since the 2018/19 packing season, water meter readings were recorded on a weekly basis for the duration of the packing season. Water meter readings include water used for toilets, hand washing, cleaning (inside the pack house, harvesting equipment and crates) as well as a small amount of water used for watering the garden around the pack house. No laundering is done at the pack house.

It is recommended that, if water consumption also takes place after the packing season, water meter readings should be recorded on a weekly basis throughout the year.

1.13 Existing Lawful Water Uses

Under the WARMS certificates, the properties have the following existing lawful use:

- Portion 1 of Farm Styrkraal No. 81 – 90.1 ha (1 351 500 m³/a)
- Portion 2 of Farm Styrkraal No. 81 – 431.3 ha (6 469 500 m³/a).

Refer to the WARMS Certificates included in Appendix B.

1.14 Ground water:

No ground water will be used.

1.15 Stormwater Management

1.15.1 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 Keboes Fruit Farms (Pty) Ltd regarding the successful stormwater management of the proposed irrigation/agricultural development. This section describes the various infrastructure items that are/were to be constructed and the stormwater management objectives that the landowner will undertake to ensure sustainable management of the constructed stormwater infrastructure. Find attached in Appendix F.2, The Stormwater Management Plan.

1.15.2 Mitigation Measures

The main issues to be addressed with mitigation measures include:

- Design
- Irrigation
- Nutrients (fertilisers)
- Spraying (pesticides)
- Storm water channels
- Pipelines
- Erosion control

1.15.2.1 Design

The design of vineyard blocks took into account natural flows to minimise impacts on the ephemeral streams. A stormwater feature diverts flow around the planted blocks towards the streams (see Figure 11). Flow entering the diversion channel will then flow downstream and naturally enter an existing stream.



Figure 11: Stormwater infrastructure

1.15.2.2 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 12**.



Figure 12: Mulching and planting between rows

1.15.2.3 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.

1.15.2.4 Spraying

Spraying of pesticide is normally applied as a vapour by machine. 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.

1.15.2.5 Storm water channels

As shown in the stormwater infrastructure layout plan in Figure 11, the black lines indicated are the stormwater berms/channels constructed to accumulate the stormwater. The stormwater channels flow towards a natural drainage area to small streams, from where it flows towards the Orange River.

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

1.15.2.6 Pipelines

The pipelines to the irrigation areas run along the existing farm roads and from other irrigation areas towards the development area. Included in Appendix F is 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 with no machinery, resulting in the lowest possible impact.
- Infilling with original soils (as per method statement).
- Flow meters must be installed on the pipelines as protective measurement against water losses. This must be monitored on a regular basis and records kept on site.

1.15.2.7 Erosion Control

Erosion would normally occur with the following:

- Over irrigation, which creates water flows from the planted rows to the area between the rows and then to roads between the blocks.

For mitigation see below.

- Pipe breakages, where water will wash from the plants to the area between the rows to the roads between blocks. From there, water can flow towards the retained ephemeral streams – thereby causing an erosion gully.

For mitigation see below.

- 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 between blocks along the roads.

Mitigation include the following:

- i. Mulching and planting/mulching between rows – see Figure 14 for a typical example.
- ii. Scarifying of soil between planted blocks and roads to create a soft/rough area to retain moisture and prevent erosion – see Figure 13.



Figure 13: Scarifying of soil

- iii. Create a buffer with natural vegetation between the planted blocks and roads as shown in Figure 14.



Figure 14: 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.

1.16 Plough certificate

The available Plough Certificate of 2009 covers the majority of the existing planted areas. Therefore, a Plough Certificate is not required for planted areas, as shown in Figure 15.

Find included in Appendix N the existing Plough Certificate 2009. The requirements will be discussed with Department of Agriculture, Forestry and Fisheries regarding if they deem an amendment necessary.

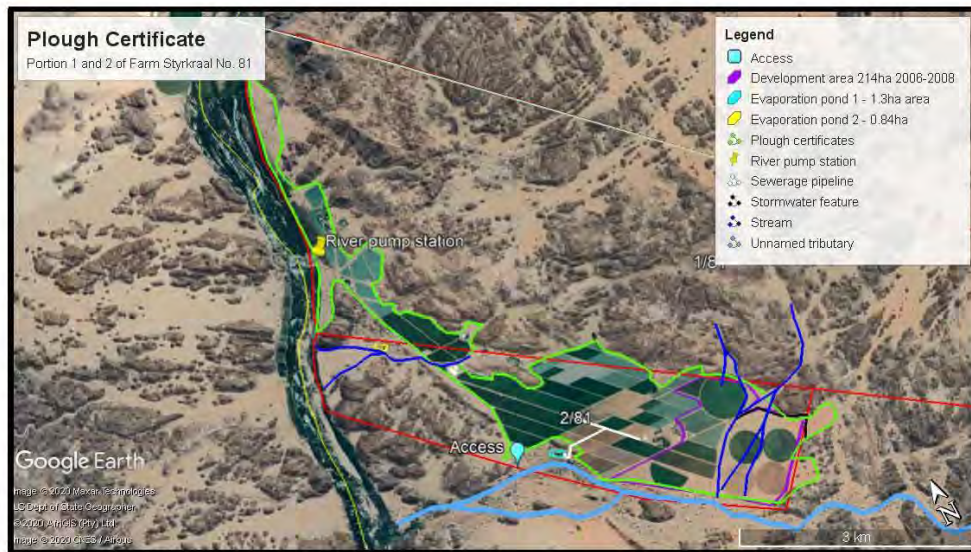


Figure 15: Existing plough certificate areas

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°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 16 gives an indication of the average monthly temperatures and humidity over the 5-year period.

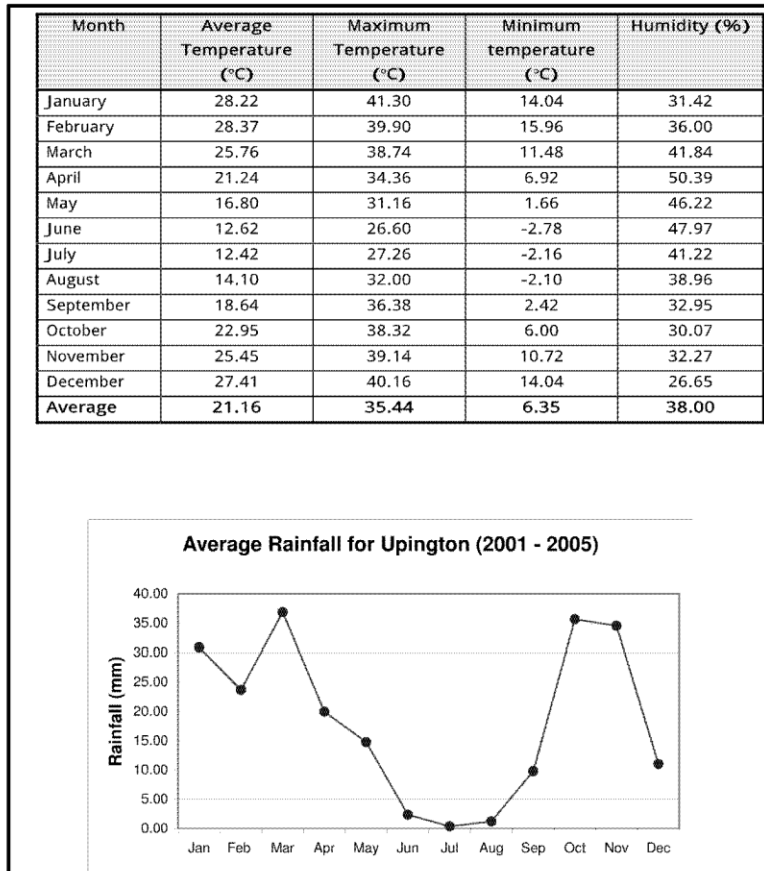


Figure 16: Average monthly rainfall and daily temperatures

2.2 Topography

The area is characterised by flat terrain and is, in general, an area of little topographical relief, although isolated hills and mountains can be found in the area. The area surrounding Onseepkans 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

The farm is located within the Eastern Gariep Biome, which has a least threatened classification. The areas closer to the Orange River consist of Lower Gariep Alluvial vegetation, while the open plain areas between the rocky outcrops contain Lower Gariep Broken veld vegetation. Currently the entire property is located within a Critical Biodiversity Area (CBA). However, the cultivation areas have already been excluded from the CBA and are shown as No natural areas, see Figure 17.

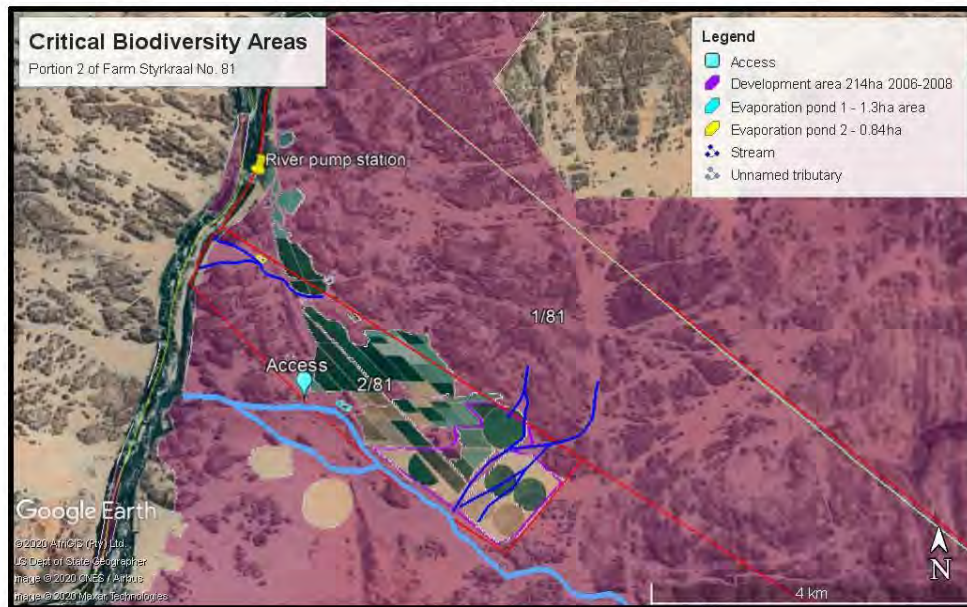


Figure 17: Critical Biodiversity Area.

2.5 Land use

Most areas in the wider study area do not have a high agricultural potential, except a 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 the agricultural potential. Rainfall is very low, while evaporation is extremely high due to the high temperatures. 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 flow only sporadically after rain. These watercourses are not considered to be seasonal rivers that will regularly contain

water in a seasonal pattern. The river intake at the Orange River falls within a NFEPA priority area as shown below in Figure 18.

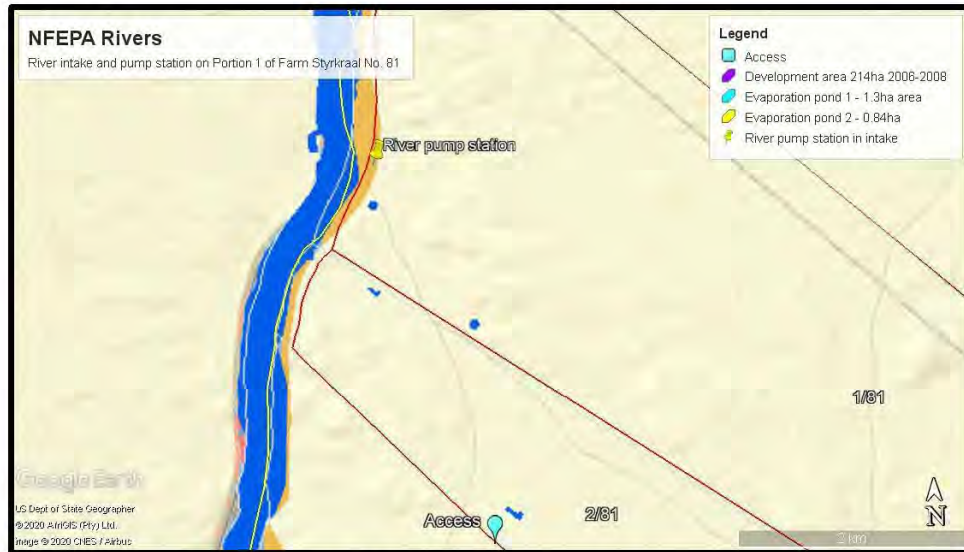


Figure 18: NFEPA river priority areas

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. It is an agricultural development in an existing agricultural area.

2.13 Regional socio-economic structure

The population for Khâi-Ma has increased to an estimated total of 12 465 people since the last census in 2011 (2016 community survey) with a growth rate of 0,83%. The municipality is sparsely populated (+/- 1 person/km²); most people are settled in its five (5) towns and surrounding farms. The municipality is characterised by vast tracts of land, its pristine natural environment, unique mountains and limited cell phone reception, which can be regarded as a unique attraction by some urban dwellers who wish to escape the rush of the cities. The biggest contributors to the local economy are agriculture and mining.

As shown below in Figure 19, the biggest contributor to employment within this area is agriculture:

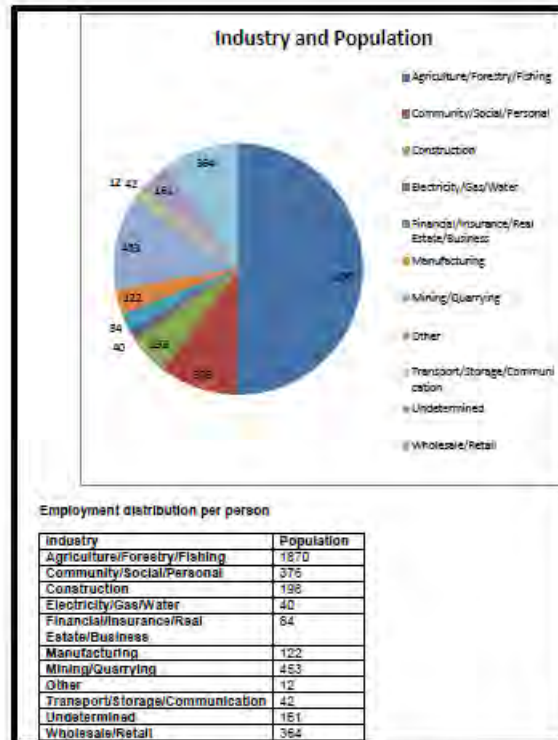


Figure 19: Employment distribution per person

Livestock farming contributes 80% of Khâi-Ma's farming activities. Land that lies along the banks of the Orange River supports the production of some quality agricultural products, i.e. export table grapes, dates, hoodia, geranium and other crops at Onseepkans, Witbank and Pella.

Intensive agricultural development should be limited to defined areas along the Orange River where it will no impact negatively on the unique biodiversity of the areas.

2.14 Interested and Affected parties

Public participation for the iWULA was running in conjunction with the NEMA S24G process. Interested and Affected Parties (I&APs) were given a 30-day commenting period in which the S24G assessment report for the iWULA was made available. All I&APs 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 the public participation process (PPP).

2.15 Industrial activity

The evaporation ponds do not receive wastewater from commercial industrial activities, but only domestic use wastewater and 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 11: 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 tension meters to avoid over-irrigation of the soils.	Mitigation measures adequate to ensure positive impact.

		<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 vineyards with chaff. • Regular monitoring and checks from specialists in the field to introduce best possible irrigation practices. 	
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 vineyards established on these areas: therefore, a low negative impact on surface water flow. • This will, however, be mitigated by establishing stormwater management mitigation measures, as outlined in the SWMP. 	Mitigation measures are adequate to ensure impacts are fully mitigated.
Section 21 (c & i)	Upgrading of inlet structure – the inlet structure was damaged during a flood.	<ul style="list-style-type: none"> • Sandbags to be put in place where flooding took place and the structure is damaged. This will ensure the water quality. • Regular check-ups on gabion structures to ensure the structures are in good condition. 	Mitigation measures are adequate to ensure impacts are fully mitigated.

		<ul style="list-style-type: none"> • Work to take place during dry season periods when the Orange River is at its lowest. 	
Section 21 (g)	Management of existing evaporation ponds	<ul style="list-style-type: none"> • Removal of sludge to a licenced waste site in Upington. • Ensure no leakage, and conduct monthly check-ups on infrastructure. 	Mitigation measures are adequate to ensure impacts 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 11 above.

3.7 The need to redress the results of the past racial and gender discrimination

It is envisaged that Keboes Fruit Farms (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 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 authorized

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:

- Investments in the existing farming unit with its existing infrastructure.
- Investments in the upgrading of the evaporation ponds and construction of the new ponds.

The future investments to be made:

- No additional investments, other than those mentioned above.

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 evaporation ponds and storage dam 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 existing evaporation dams will not impact negatively on the existing streams and the health, safety and possible environmental impacts on workers residing on the property.

The legalisation 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 creation, skills development, social upliftment and foreign currency earned.

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 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 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 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.

It is furthermore recommended that the irrigation area across the small ephemeral streams on Portion 2 of Farm Styrkraal No. 81 and the licencing of the existing evaporation ponds be allowed. It also recommended that the water transfer between properties and the allocation of water for Schedule 1 and industrial use be authorised. It is also recommended to legalise the upgrading of the existing river pump on the banks of the Orange River on Portion 1 and Portion 2 of the Farm Styrkraal No. 81.

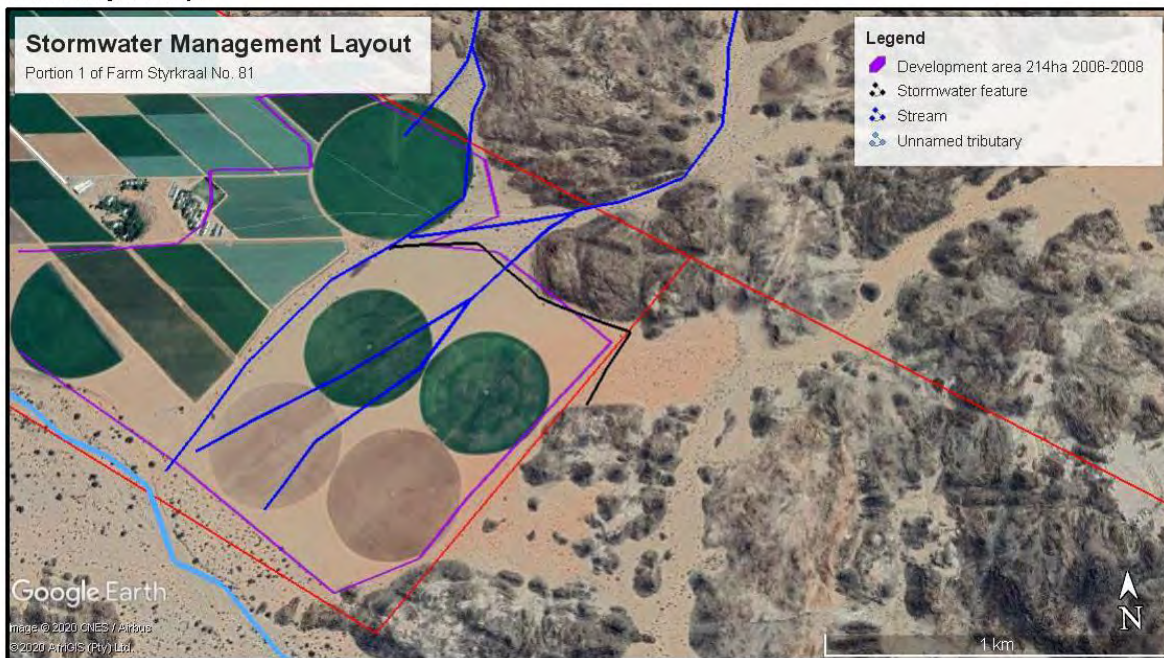
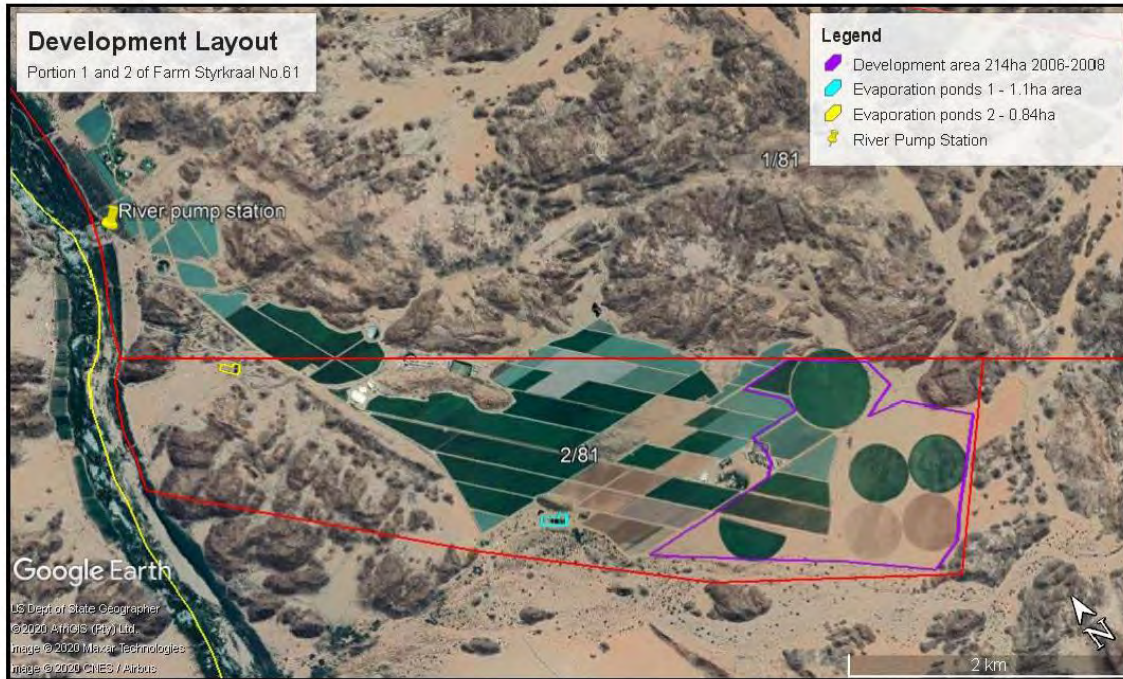
7. APPENDICES

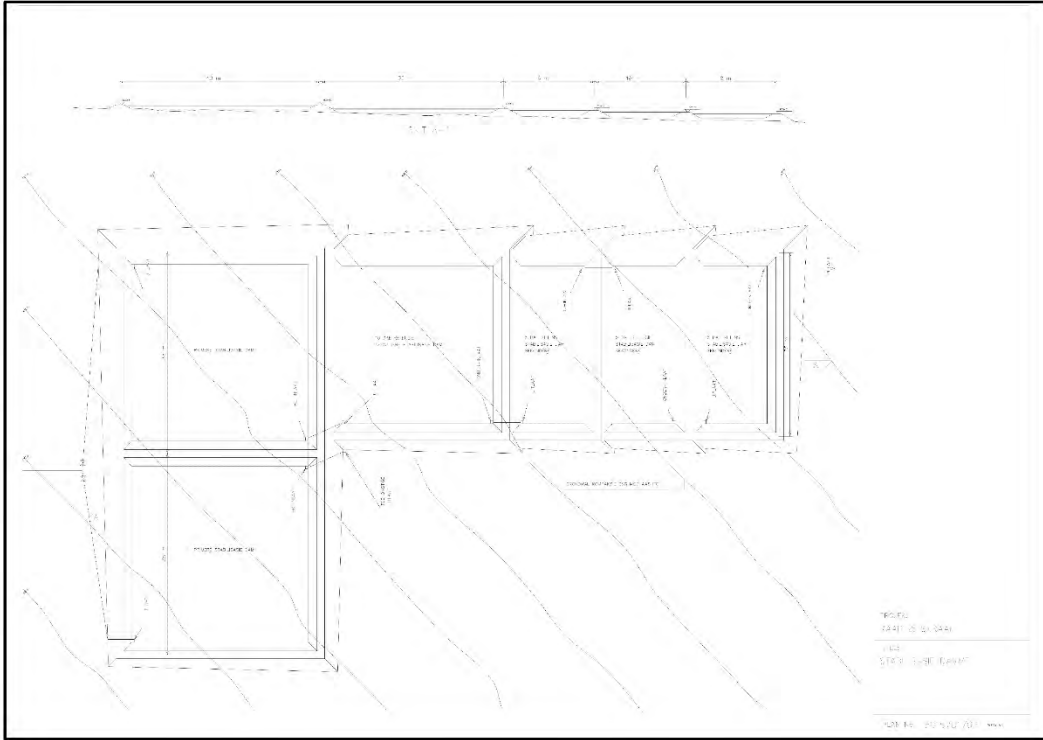
APPENDIX A: Completed Licence Application Forms

APPENDIX B: Existing Water Use Confirmation

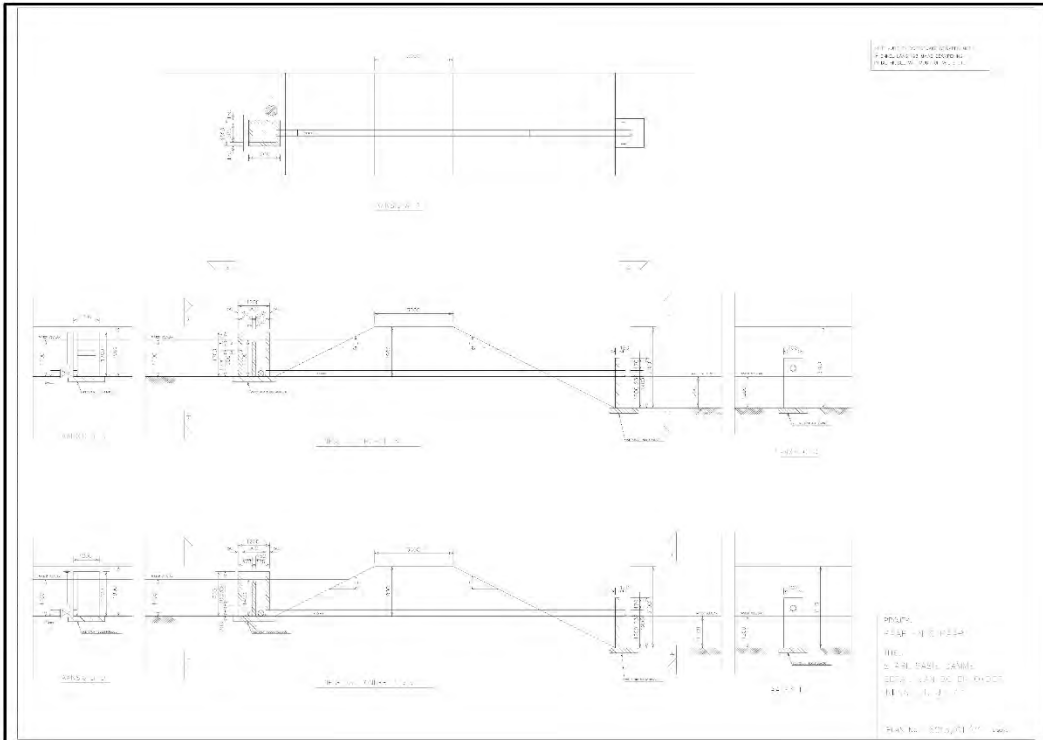
APPENDIX C: Deed Search and Title Deeds

APPENDIX D: Power of Attorney





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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: Storm water 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 and Organogram

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: Water Quality Management Report

Appendix Q: Environmental Authorisation

APPENDIX H4: PALEONTOLOGY REPORT

PALAEONTOLOGICAL ASSESSMENT: RECOMMENDED EXEMPTION FROM FURTHER PALAEONTOLOGICAL STUDIES

Rectification of agricultural developments on Raap N Skraap, (Portion 2 of the Farm Styrkraal No. 81) near Onseepkans, Kai! Ma Municipality, Northern Cape

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August 2020

Executive summary

Unauthorized agricultural developments have been undertaken on the Farm Raap N Skraap (Portion 2 of the Farm Styrkraal No. 81) situated c. 25 km ENE of Onseepkans in the Kai! Ma Municipality, Northern Cape Province. The development footprint is underlain at depth by (1) ancient Precambrian igneous and metamorphic bedrocks that do not contain fossils as well as (2) sparsely fossiliferous or unfossiliferous superficial sediments (stream alluvium, aeolian sands, surface gravels) of probable Quaternary to Recent age. Ancient alluvial terraces (potentially fossiliferous "High Level Gravels") are not mapped or likely to be present in the study area. In view of the small, highly disturbed development footprint and the generally low palaeontological sensitivity of the study region, no further specialist studies or mitigation are considered necessary for this project, as far as fossil heritage is concerned. However, should significant fossil remains (e.g. vertebrate bones and teeth) be encountered during construction, the responsible ECO should inform SAHRA at the earliest opportunity to consider possible mitigation measures. A tabulated Chance Fossil Finds Procedure is appended to this report.

1. Project description

The present palaeontological assessment report forms part of a Section 24G Rectification Process for unauthorized agricultural developments by Keboes Fruit Farms (PTY) Ltd of Kakamas on the Farm Raap N Skraap (Portion 2 of the Farm Styrkraal No. 81) situated in the Kai! Ma Municipality, Northern Cape Province (Fig. 1). The project area is located some 5 km east of the Gariep River, c. 25 km ENE of Onseepkans and c. 50 km NNE of Pofadder. A vineyard, date and citrus development, totalling about 214ha in extent as well as two evaporation ponds (2.2 ha) were established in 2006-2008 without environmental authorisation.

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).

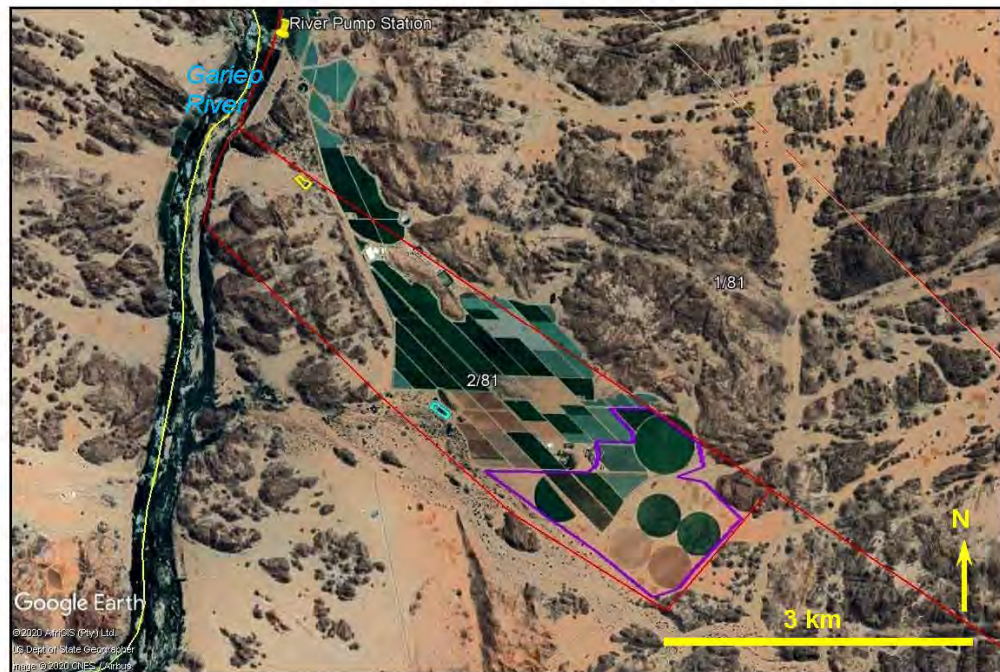


Figure 1. Google earth© satellite image showing the location of the unauthorised vineyard, date and citrus developments (purple polygon) as well as the evaporation ponds (small blue and yellow polygons) located on the Farm Raap N Skraap (Portion 2 of the Farm Styrkraal No. 81) situated in the Kai! Ma Municipality, Northern Cape Province. The development area is now highly disturbed.

2. Geological and palaeontological context

The agricultural project area on the Farm Raap N Skraap (Portion 2 of the Farm Styrkraal No. 81) comprises gently sloping arid terrain between c. 460 and 520 m amsl, which is associated with several small, shallow streams - east bank tributaries of the Gariep River. It is surrounded to the north and east by low basement *koppies* (Fig. 1). The project area is largely mantled by yellowish-hued alluvial sands (possibly with some aeolian re-working) with no major areas of bedrock exposure. It is also extensively disturbed by previous agricultural activities, as shown by illustrations in the AIA report for this project by Kaplan (2020).

The geological context of the study area is shown on the 1: 250 000 geology sheet 2818 Onseepkans (Fig. 2; Council for Geoscience, Pretoria) (Moen & Toogood 2007). The underlying bedrocks are ancient Precambrian granitoids assigned to the **Naros Granite** of the **Namaqua-Natal Province** that are some 1.5 billion years old and entirely unfossiliferous (Cornell *et al.* 2006, Almond & Pether 2008).

The study area lies well to the east and c. 100 m in elevation above the present course of the Gariep, so ancient (Tertiary - Quaternary), consolidated alluvial gravels of the Orange River system – which are known to be highly fossiliferous elsewhere along the Orange (e.g. Partridge *et al.* 2006) – are not likely present here, unless buried at depth (which is unlikely). Neither “High Level Gravels” nor the commonly associated diamond prospecting symbols are mapped on the Farm Styrkraal No. 81 region on the 1: 250 000 geological sheet (Fig. 2). Superficial sediments away from the main drainage courses largely comprise surface gravels (mainly alluvial, sheetwash and deflation deposits) and orange-hued aeolian and locally-derived sands. The reddish sands seen o

satellite images shortly to the south may in part be assigned to the upper part of the **Kalahari Group (Gordonia Formation)** of late Caenozoic (Neogene / Quaternary) age while the alluvial sediments within the project area itself are probably of a similar, geological youthful age. Although fossil remains are occasionally encountered in these younger fluvial and terrestrial units – for example reworked mammalian bones and teeth, freshwater molluscs, calcretified root casts, termitaria, ostrich egg shells, land snail shells (Almond & Pether 2008 and refs. therein) - they are sparsely distributed and occur over a very wide area, so the chances of serious impacts on unique fossil heritage resources here are only slight.

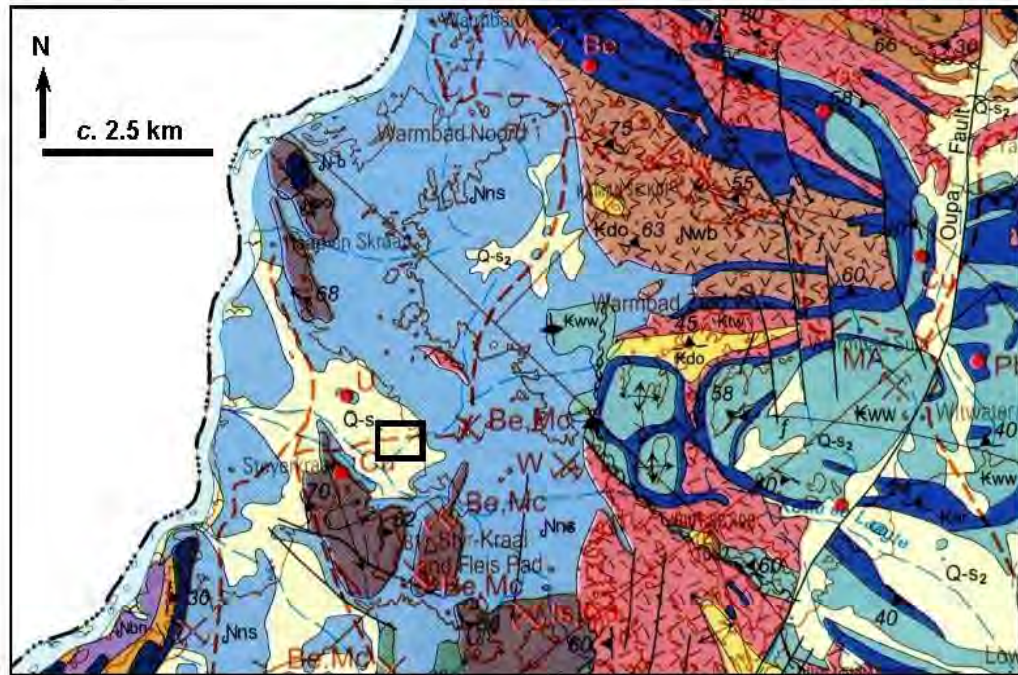


Figure 2. Extract from 1: 250 000 geology sheet 2818 Onseepkans (Council for Geoscience, Pretoria) showing the approximate location of the main Raap N Skraap agricultural project study area (black rectangle) on the eastern side of the Gariep (Orange) River and c. 25 km ENE of Onseepkans, Northern Cape. The project area is underlain at depth by bedrocks of the Naros Granite (Nns, pale blue) that form part of the Precambrian (Proterozoic) Namaqua-Natal Metamorphic Province. At surface the project area is mantled by yellowish to pale brown alluvial sands (Qs2, pale yellow) that are probably of Quaternary to Recent age. Older alluvial gravels (“High Level Gravels”) are not mapped in this area and are not expected this far from (and above) the river.

3. Conclusions & recommendations

In view of the negligible palaeontological sensitivity of the ancient Precambrian granitoid bedrocks as well as the low sensitivity of the geologically recent superficial sediments along shallow stream tributaries of the Gariep River in the broader Onseepkans region, the unauthorized agricultural developments – including the vineyard, date and citrus development as well as the two evaporation ponds - are not considered to pose a significant threat to local palaeontological heritage. Substantial, potentially-fossiliferous older alluvial deposits of the Orange River are not mapped here.

Pending any significant new fossil discoveries in the area, no further specialist studies or mitigation are considered necessary for this agricultural project.

All South African fossil heritage is protected by the National Heritage Resources Act, 1999. Should substantial fossil remains - 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. Email: rredelstorff@sahra.org.za). 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.

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 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 SAHRA (2013).

4. Key references

ALMOND, J.E. 2017. Proposed new vineyard development on Farm 1726 Renosterkop, Farm 1290 & Farm 1537 Augrabies, Northern Cape. Palaeontological assessment: recommended exemption from further palaeontological studies, 17 pp. Natura Viva cc, Cape Town.

ALMOND, J.E. & PETHER, J. 2008. Palaeontological heritage of the Northern Cape (August 2008 draft), 125 pp. Unpublished palaeotechnical report for SAHRA.

CORNELL, D.H., THOMAS, R.J., MOEN, H.F.G., REID, D.L., MOORE, J.M. & GIBSON, R.L. 2006. The Namaqua-Natal Province. *In*: Johnson, M.R., Anhaeusser, C.R. & Thomas, R.J. (Eds.) The geology of South Africa, pp. 461-499. Geological Society of South Africa, Marshalltown.

KAPLAN, J. 2020. S24G Application, illegal agricultural development on Raap N Skraap, (Portion 2 of the Farm Styrkraal No. 81), near Onseepkans, Kai! Ma Municipality, Northern Cape, 15 pp. ACRM, Rondebosch.

McCARTHY, T. & RUBIDGE, B. 2005. The story of Earth and life: a southern African perspective on a 4.6-billion-year journey. 334pp. Struik, Cape Town.

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.

MOEN, H.F.G. & TOOGOOD, D.J. 2007. The geology of the Onseepkans area. Explanation to 1: 250 000 geology Sheet 2818, 101 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.

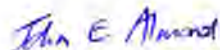
5. Qualifications & experience of the author

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, Mpumalanga, Northwest, Free State and KwaZulu-Natal under the aegis of his Cape Town-based company *Natura Viva cc*. He was 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 Raap N Skraap, (Portion 2 of Farm Styrkraal No. 81) near Onseepkans		
Province & region:	NORTHERN CAPE, Kai! Ma 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	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.	
	2. Record key data while fossil remains are still <i>in situ</i> : 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)	
	3. If feasible to leave fossils <i>in situ</i> : 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	3. If <i>not</i> feasible to leave fossils <i>in situ</i> (emergency procedure only): <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.	



DRAFT CONSTRUCTION, OPERATIONAL & MAINTENANCE MANAGEMENT PROGRAMME

**PROPOSED AGRICULTURAL DEVELOPMENT, ASSOCIATED
INFRASTRUCTURE AND DEVELOPMENT OF EVAPORATION
PONDS ON PORTION 1 AND 2 OF FARM STYRKRAAL NO. 81,
FARM RAAP N SKRAAP, ONSEEPKANS.**

DENC Reference No.: S24G04/01/2020

December 2020



DOCUMENT NAME:

Proposed agricultural development and associated infrastructure on Portion 1 and 2 of Farm Styrkraal No. 81, Farm Raap n Skraap, Onseepkans.

PROJECT NUMBER:

N/A

DATE:

10 December 2020

REPORT STATUS:

DRAFT

CARRIED OUT BY:

GroenbergEnviro (Pty) Ltd

COMMISSIONED BY:

Keboes Fruit Farms (Pty) Ltd

CLIENT CONTACT DETAILS:

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AUTHOR(S):

Elanie Kühn

SYNOPSIS:

See Below

PREPARED BY:

GroenbergEnviro (Pty) Ltd



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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 EMP. 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 79
(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 21
(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 78
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 12 Mitigation measures and management actions included in page 23.
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 27.
(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 27. Further detail with regards to the Compliance with Applicable Laws on page 12.

(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 27. Monitoring & Auditing on page 18.
(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Monitoring & Auditing on page 18. Frequency etc included in table in Proposed Impact Management Actions on page 27.
(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 12 Compliance with Applicable Laws, page 12. Roles and Responsibilities on page 13.
(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 27.
(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 27. The Monitoring & Auditing on page 18.
(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 18 This is also outlined in section Management Programme – Operational on page 23.
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 21.
(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 farm where the activity occurs is situated approximately 25 kilometres outside of the small town of Onseepkans, in the Northern Cape, in the Kai! Ma Municipal area. The property gains access via gravel roads off the R358, which runs to Pofadder and connects there with the N14.

Refer to the Locality Plan attached included in **Figure 1**.

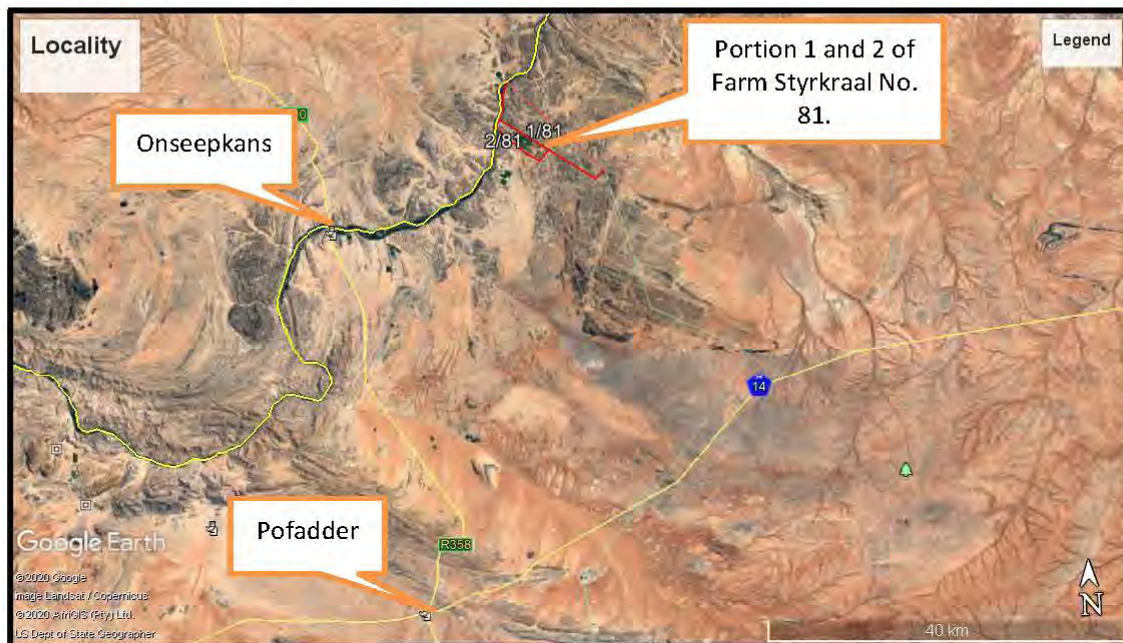


Figure 1: Locality plan

During the development of the applicant's farm, he unknowingly activated certain listed activities that is included in the NEMA ECA1997/2000 and NEMA 2006 Regulations. Only during an Audit Report conducted by GroenbergEnviro (Pty) Ltd (previously Pieter Badenhorst Professional Services cc), did it become apparent that this is not the case.

The following activities are applied for:

1. NEMA 1998/2000 Regulations:

1. For the construction of sewerage treatment plants for:
 - Evaporation plant 1 - of approximately 1.3ha for the treatment of sewerage consisting of five evaporation ponds.
 - Evaporation plant 2 - of approximately 0.89 for the treatment of sewerage consisting of six evaporation ponds was developed prior to 2000.
2. Construction of new pump station and river intake on the banks of the Orange River, pipelines, and roads as part of the clearance of indigenous vegetation to establish new agricultural areas. Upgrading of the said existing intake structure, that was damage during flooding.

2. The following NEMA 2006 Regulations were also triggered by the development of the applicant’s farm:
1. Clearance of 214 hectares within a watercourse, during the development of the agricultural area, see **Figure 2**.

By 30 September 2006, a total of 214 hectares had been cleared for agricultural development as shown in (**Figure 2**).

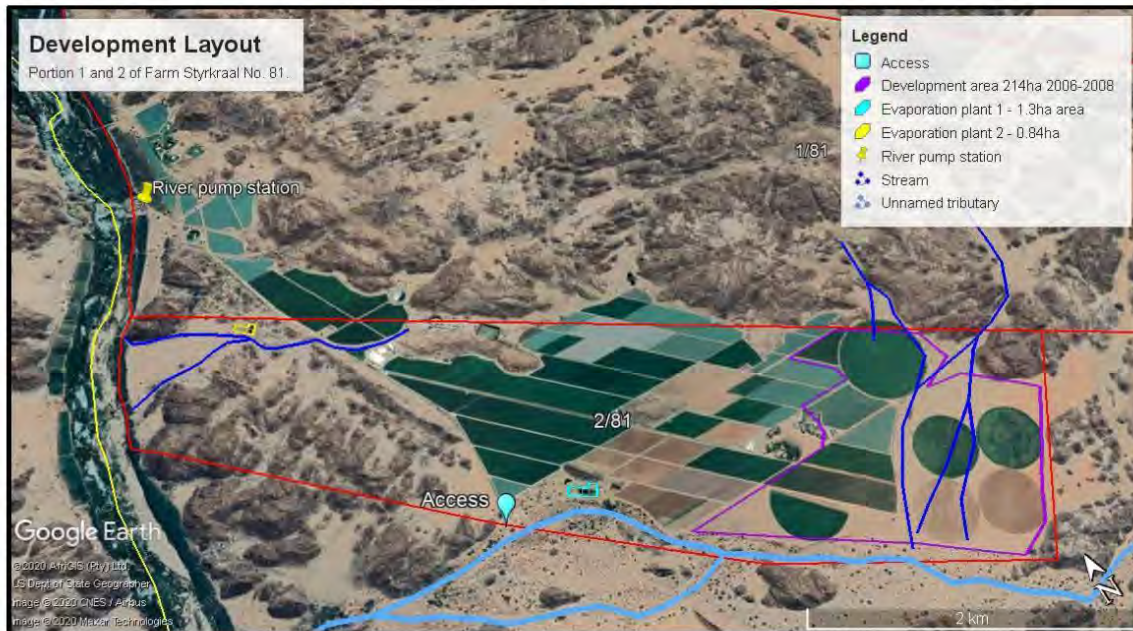


Figure 2: Development Layout

Roads:

Access to the farm is via a gravel road from the R358. The internal farm tracks are compacted earth with no formal storm water management control structures in place. The low rainfall characteristic of the area negates the need to provide for formal storm water control for the farm roads.

Evaporation ponds:

The applicant, Keboes Fruit Farms (Pty) Ltd wishes to comply with the National Water Act (1998) by relocating and upgrading of existing sewage/evaporation ponds for the treatment of sewage from the existing worker accommodations etc, see **Figure 3**.

The various details pertaining to the evaporation dams are shown below in Table 1.

Specifications for the sewage evaporation pond	
Capacity evaporation pond/s	18 795m ³ for all 6 dams
Footprint area of all 6 dams	1.3ha
Total volume of sewage annually	11 000m ³ /annum

Table 1: Evaporation pond details

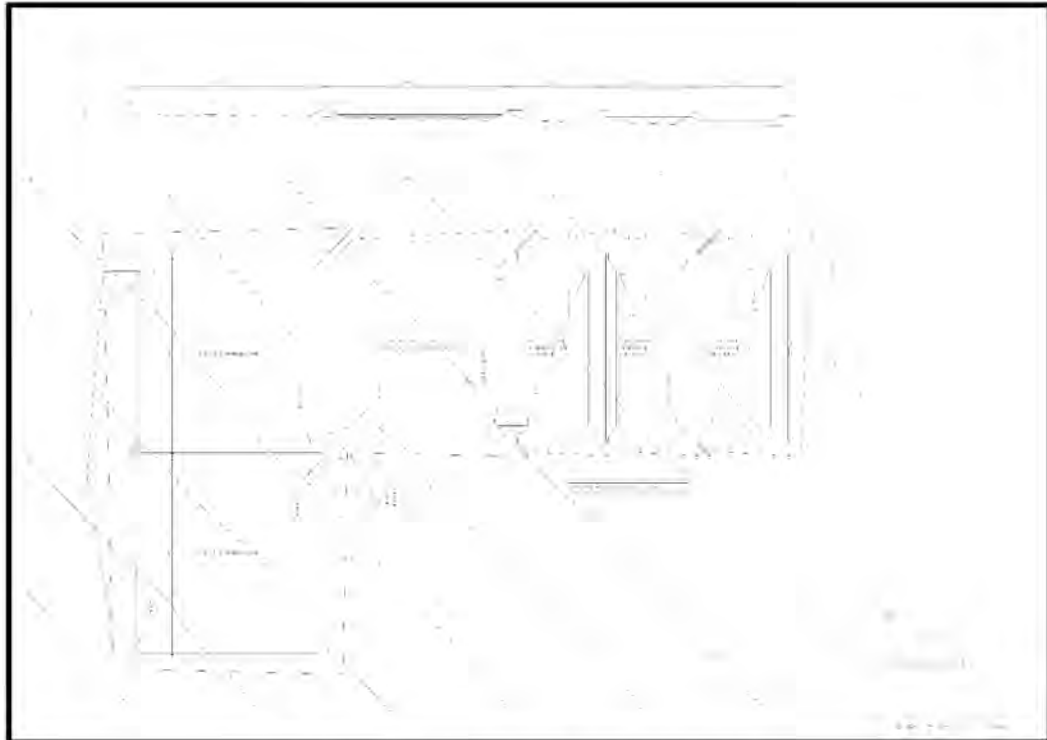


Figure 3: Evaporation dam design layout

River pump station and pipelines:

Water is required for the drip irrigation of the established vineyards and is supplied via pipelines from the booster pump station. The other pipelines established is from the homesteads towards the evaporation ponds. These pipelines have a diameter of 160mm and do not need environmental authorization.

The River pump station was expanded during 2000 to 2001 and further development of a small solar plant took place, see Figure 4 and Figure 5. The total area developed for the pump station is approximately 0.5ha in size. It included a new intake at the river, see Figure 6 with gabion mattresses. The intake design is shown in Figure 7.



Figure 4: River pump station



Figure 5: Intake and river pump station



Figure 6: River intake structure

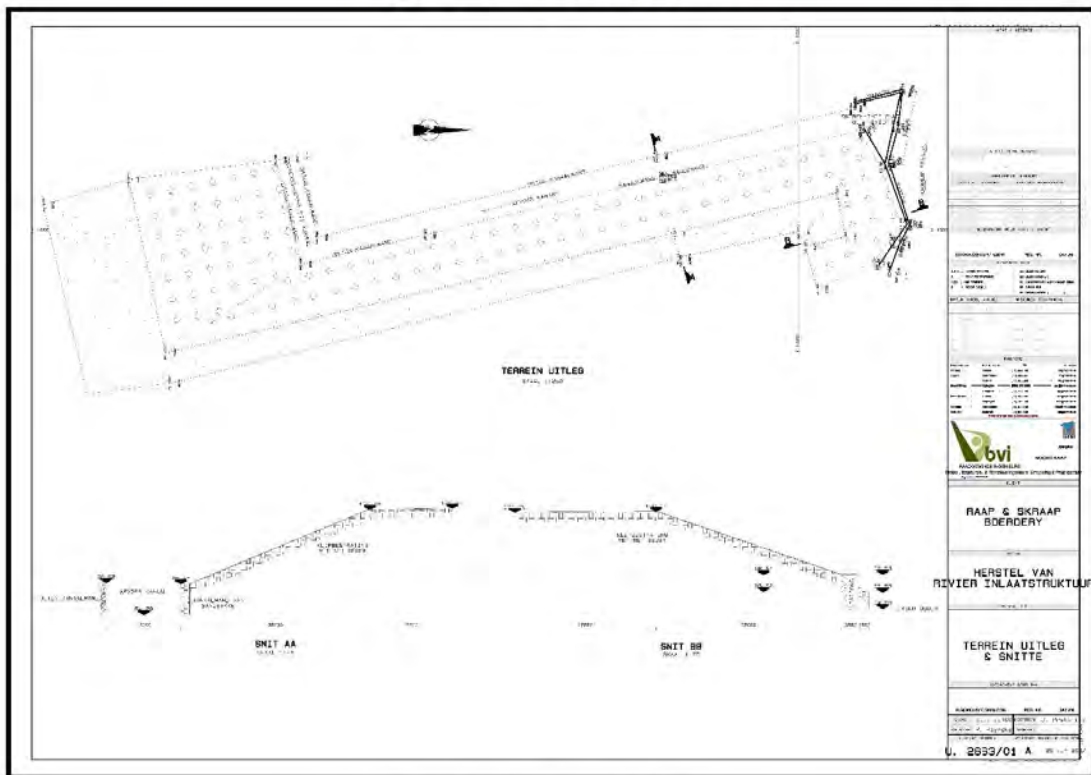


Figure 7: River intake design

Water:

Under the WARMS Certificates, the properties have the following existing lawful use:

- Portion 1 of Farm Styrkraal No. 81 – 90.1ha (1351500m³/a)
- Portion 2 of Farm Styrkraal No. 81 – 431.3ha (6469500m³/a).

Table 2: Water allocations

Property Name	Property area (ha)	Development area (ha)	Total area (checked)	Water allocation	Plough Certificate	Lawful/Lawfulness still to be determined	Water Use Certification	Property owner
81,2 Styr- Kraal Kenhard RD	875,3599	307	348,17	431,3	Yes for 431,3ha	Lawfulness still to be determined	Yes for 431,3ha	Keboes Fruit Farms (Pty) Ltd
81,1 Styr- Kraal Kenhard RD	3469,0651	-	85	90,1	Not available	Lawfulness still to be determined	Yes for 90,1ha	Keboes Fruit Farms (Pty) Ltd

As shown above water will have to be moved from Portion 1 of Styrkraal No. 81 to Portion 2 of Styrkraal No. 81 to allow the correct water allocations per property.

As part of this application it is also the intention to rectify the construction of agricultural development across small ephemeral streams, see Figure 2.

The Water Use License Application will also be submitted for Section 21(g) of the National Water Act for the construction of existing evaporation ponds.

The application is summarised for the following water usages:

Table 3: Water use activities

<i>(a) taking of water</i>	For the re-allocation of water between two properties, so as to ensure the water allocation is distributed according to development areas per property.
<i>(c) impeding or diverting flow of water in a watercourse</i>	For the construction of agricultural areas and evaporation ponds across/adjacent to 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/adjacent ephemeral streams/natural drainage areas.
<i>(g) Disposing of waste in a manner which may detrimentally impact on a water resource</i>	[Disposing of waste in a manner which may detrimentally impact on a water resource] For the disposal of wastewater into evaporation ponds.

Electricity:

Electricity is provided by Eskom for the irrigation process and is linked to the booster pump.

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 vegetation types found at Raap en Skraap are mainly Lower Gariep Broken Veld away from the Orange River and Lower Gariep Alluvial Vegetation along the river (Figure 8).

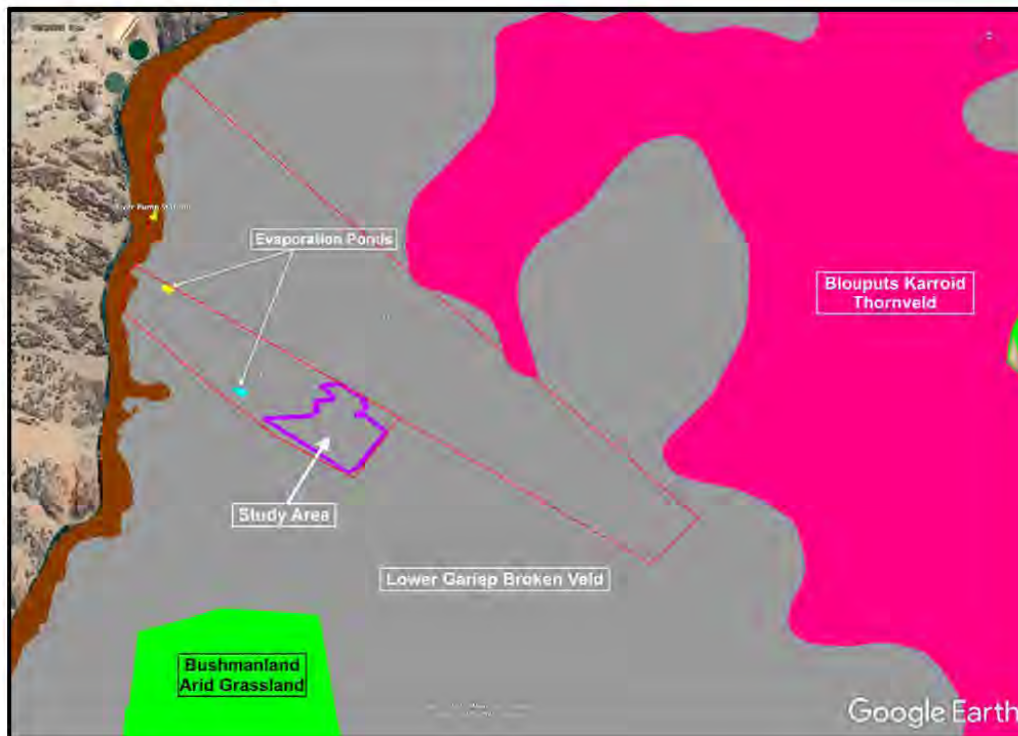


Figure 8: Portion of the Vegetation Map of South Africa, Swaziland and Lesotho showing the farm 'Raap en Skraap' outlined in red, lying entirely with Lower Gariep Broken Veld except for the pump station that lies in Lower Gariep Alluvial Vegetation (shaded brown).

There is relatively little cultivation on Portion 1 of Styrkraal 81 and that is not part of this investigation. Most of the cultivation is on Portion 2, as are the evaporation ponds that are both located in the CBA2 area. The area cultivated originally for *Hoodia gordonii*, and now converted to pivot circles for lucerne and chaff as well as date orchards, was all CBA2.

The area of undisturbed terrain that was cleared of Lower Gariep Broken Veld is 214 ha and the two sets of evaporation ponds together make up 2.14 ha.

The Lower Gariep Alluvial Vegetation is classified as CBA1, see Figure 9, and the pump station has negatively impacted the east bank of the river within the zone of a CBA1, although the effect of clearing is limited due to the alluvial vegetation being infested with alien mesquite. It shows a camelthorn tree (*Vachellia erioloba*) [protected species] that was clearly not affected by the construction of the pump station.

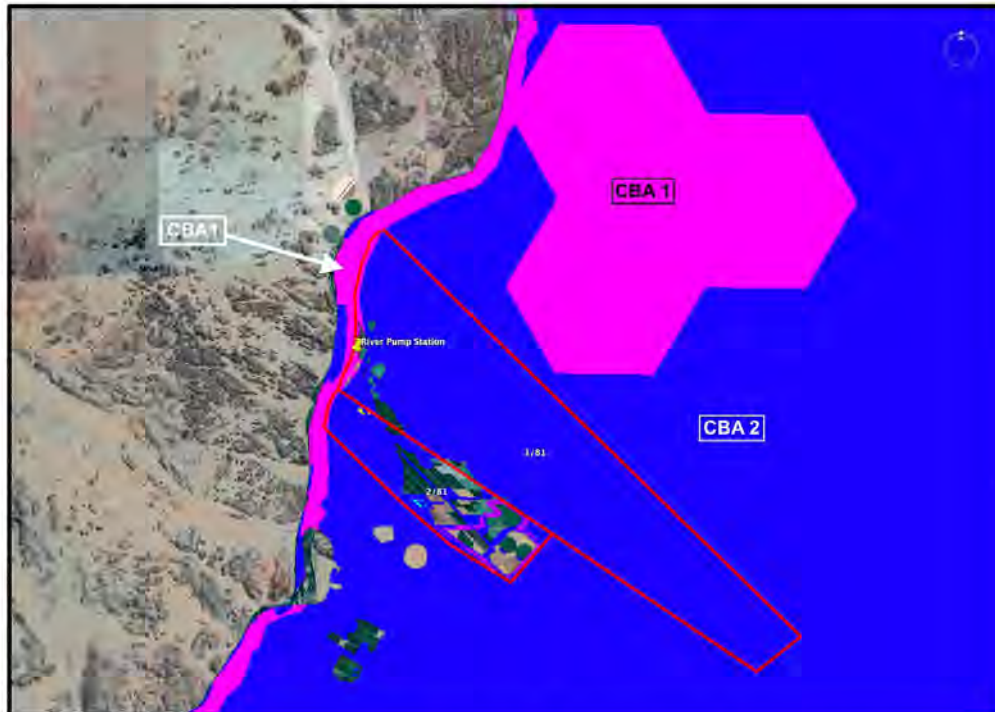


Figure 9: The Critical Biodiversity Area Map of the Northern Cape Province as it applies to "Raap en Skraap".

There is no doubt that the development of agricultural lands in the area under investigation at 'Raap en Skraap' had a negative impact on the vegetation and more specifically a large seasonal wash. However, due to the sparseness of the vegetation, it is difficult to retrospectively determine the intensity of the negative impact. All that can be said is that the wash has been effectively canalised by the soil berms and all vegetation in the wash, except for in the channel that has been left and around the perimeter of the fields, has been lost. It is apparent that there were no large trees in the wash, hence it is concluded that there were no *Vachellia erioloba* nor *Boscia foetida* subsp. *rehmanniana* present when the area was originally cleared.

The natural vegetation has also been lost at the sites of the evaporation ponds and in this case, since the original vegetation was very sparse, it can be assumed and concluded that the intensity of the resultant negative impact is limited. The pump station was built prior to 2002 and supplies water to 'Raap en Skraap' and a small solar PV installation. The pump station covers an area of approximately 0.5 ha and is well within the alluvial zone. It therefore displaced Lower Gariep Alluvial Vegetation, including the infestation of mesquite. The intensity of the resultant impact is considered to be medium to high negative.

2.2 Aquatic habitat

AQUATIC FEATURES

Names of watercourses:

The drainage system is classified as an ephemeral course as it will flow only sporadically after rain. These watercourses are not considered to be seasonal rivers that will regularly contain water in a seasonal pattern. The river intake at the Orange River falls within a NFEPA priority area as shown below in Figure 10.



Figure 10: NFEPA river priority areas

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.

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

The following summary from the Archaeological Assessment conducted:

“Findings

A field assessment of the development took place on 14th July 2020, in which the following observations were made:

No archaeological resources were recorded in the 214ha development site. The intensively farmed area constitutes a highly transformed and modified landscape. It is noted that the archaeologist Peter Beaumont, in 2008, recorded no archaeological resources during a survey of a portion of the farm Styrkraal/Raap 'n Skraap. Previous archaeological assessments undertaken in Onseepkans, has noted the low density of archaeological resources in the area.

Graves

No graves or typical grave features (i. e. stone cairns) were encountered during the study.

Built environment

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

Impact statement

The results of the study suggest that the listed activity (i. e. an unauthorised agricultural development & development of evaporation ponds) has likely, not had an impact of great significance on archaeological resources.

Conclusion

The receiving environment comprises a severely transformed and modified landscape. The literature survey also indicates that it is unlikely that significant archaeological resources have been impacted by the development. The impact significance of the illegally established vineyards, date and citrus plantations on archaeological heritage is therefore assessed as LOW.

Recommendations

1. With regard to the illegal agricultural development, and construction of two small sewerage evaporation ponds on the Farm Raap 'n Skraap (Portion 2 of the Farm Styrkraal No. 81), no further archaeological mitigation is required."

The following summary from the Paleontological Assessment conducted:

"In view of the negligible palaeontological sensitivity of the ancient Precambrian granitoid bedrocks as well as the low sensitivity of the geologically recent superficial sediments along shallow stream tributaries of the Gariep River in the broader Onseepkans region, the unauthorized agricultural developments – including the vineyard, date and citrus development as well as the two evaporation ponds - are not considered to pose a significant threat to local palaeontological heritage. Substantial, potentially-fossiliferous older alluvial deposits of the Orange River are not mapped here.

Pending any significant new fossil discoveries in the area, no further specialist studies or mitigation are considered necessary for this agricultural project.

All South African fossil heritage is protected by the National Heritage Resources Act, 1999. Should substantial fossil remains - 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. Email: rredelstorff@sahra.org.za). 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.

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 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 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) – Keboes Fruit Farms (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 11 below and shows the proposed lines of communication for maintenance activities. The applicant retains overall responsibility for maintenance and the implementation of the EMPr.

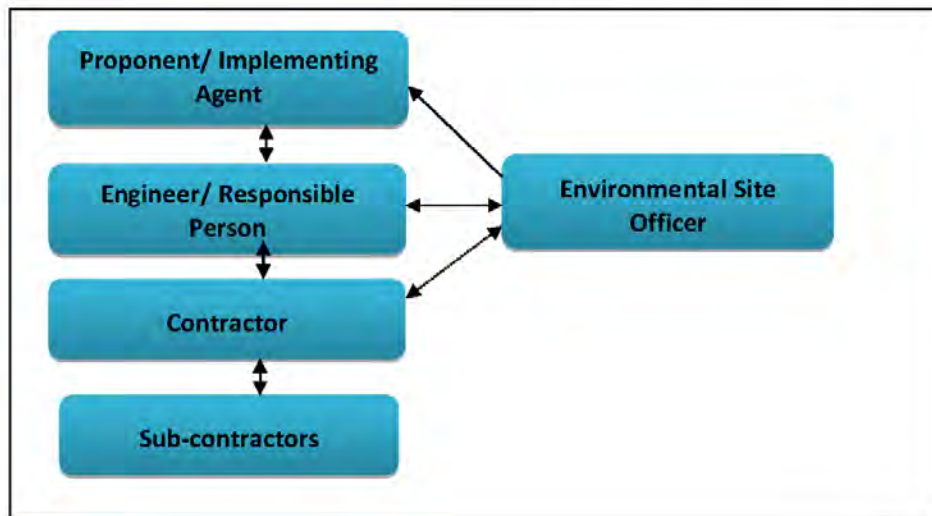


Figure 11: Reporting structure

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

Applicant – Keboes Fruit Farms (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.
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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	<p>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.</p> <p>2. A buffer zone of 32m from all streams, accept those affected by the development and outlined as part of Water Affairs applications.</p>	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	<p>1. A buffer zone of 32m from all streams, accept those affected by the development.</p> <p>2. Rectification of the diversions and embankments would not be possible since the farming operation could then not continue. However, it is strongly</p>	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
	<p>recommended that unnatural rubble , should be removed and deposited in a recognized landfill. It should not be left exposed on the soil surface.</p> <p>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.</p> <p>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).</p>			<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	<p>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.</p> <p>2. The camp must be fenced as agreed with the RE/ECO.</p>	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

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>3. Water from the kitchens, showers, sinks etc., shall be discharged in a manner approved by the RE/ECO.</p> <p>4. The contractor must ensure that all temporary structures, equipment, materials, and facilities used or created 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</p>			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>vegetation or grassland has had to be cleared for its construction).</p> <ol style="list-style-type: none"> 4. The contractor must attend to drainage of the camp site to avoid standing water and / or sheet erosion. 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. 			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>11. Fire prevention facilities must be present at all storage facilities.</p> <p>12. Proper storage facilities for the storage of oils, paints, grease, fuels, chemicals and any hazardous materials to be used must 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</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>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 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, reseeding shall be done.</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<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>			
6. Tree protection	<p>1. 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.</p> <p>2. It should be noted that there are a few protected <i>Vachellia erioloba</i> (camelthorn) trees in the watercourse but none of these was affected in any way by the agricultural development This location is at the upper end (south end) of the cultivated area. Note the netting for dust and the large <i>Vachellia erioloba</i> (camelthorn) tree that has not been disturbed. The main watercourse runs to the left of the tree.</p>	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.

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	3. 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).			
7. Sensitive environments	<p>Additional</p> <ol style="list-style-type: none"> 1. 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: 2. The use of chemical toilets which are supplied and maintained by the subcontractor. 3. 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. 4. 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 must be allowed to enter the river and wetland. These must be disposed of via the solid waste stream. No wastewater 	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 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> <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>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<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 away naturally except possibly snakes. Any problems must be reported to the ECO.</p>			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
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. Dagga 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 appropriate protection from rain and flooding shall be implemented. 	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
	<ol style="list-style-type: none"> 6. Contaminated water treatment on Site shall require a method statement approved by Engineer/ECO/EO. 7. Unused cement bags are to be stored so as not to be affected by rain or runoff events. 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. 9. Concrete transportation shall not result in spillage. 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. 11. Suitable screening and containment shall be in place to prevent wind-blown 			

Action	Proposed impact management action and Procedures / Mitigation measures to achieve it	Responsible person for implementation	Implementation timeframe and frequency	Outcome
	<p>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.	<ul style="list-style-type: none"> •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.	<ul style="list-style-type: none"> 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 into 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><i>Signs/good practice/safety precautions</i></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 bunded 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	<ol style="list-style-type: none"> 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. Containment, clean-up, and remediation must commence immediately. 	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 EMP 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:

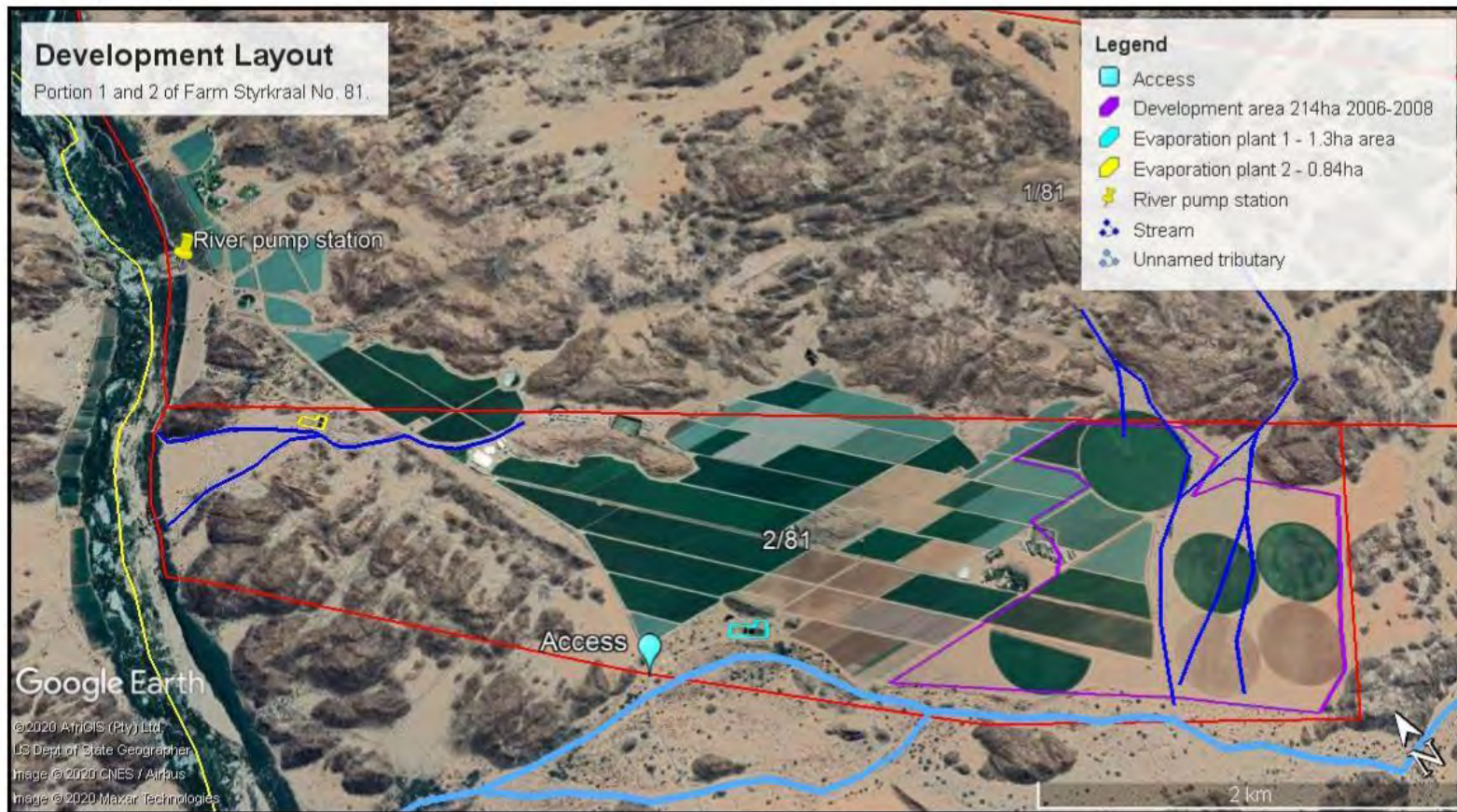
Date requested by: _____ Date submitted: _____

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: 0866721916
 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 (11/93), Inst. of Environmental Assessment, Lincoln, England; ● SPIN Complex Selling (2/94), Sales Productivity Associates, Johannesburg; ● Presentation (3/94), Whitehead Morris, Johannesburg; ● Public participation - Participian (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	<p>Since 1997 1997 1995 - 1996 1993 - 1994 1992 1982 - 1991 1981 1979 - 1980 1978 1974 - 1977</p>	<p>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</p>	
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@iafica.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 		