Application for the rectification of unlawful commencement or continuation of a listed activity in terms of Section 24G of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended.

S24G DRAFT ASSESSMENT REPORT

DENC S24G Ref: 03/01/2018

24G RECTIFICATION OF CULTIVATION OF FARMLAND ON PORTION 7 OF FARM STOCKENSTRÖM KOP NO 77, NORVALSPONT

COMPILED BY: PIETER BADENHORST & HELENE BOTHA

PIETER BADENHORST PROFESSIONAL SERVICES

DATE: JUNE 2018

CONTENTS

Table of Figures

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

Sasko Building 90 Long Street, Private Bag X6012, Kimberley, 8300.

Tel (053) 8077430, Fax (053) 831 3530

Application form for the rectification of unlawful commencement or continuation of a listed activity in terms of Section 24G of the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended

Kindly note that:

1. This application form must be completed for all applications in terms of Section 24G of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, by an independent Environmental Assessment Practitioner.
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. The content of the application for rectification form comprises of:
   Section A: Application Information
   Section B: Activity Information
   Section C: Description of Receiving Environment
   Section D: Preliminary Impact Assessment
   Section E: Alternatives
   Section F: Appendices
   Section G: Declarations
4. An independent EAP must be appointed to complete the application form on behalf of the applicant; the declaration of independence must be completed by the independent EAP and submitted with the impact assessment report.
5. The required information must be typed within the spaces provided. The sizes of the spaces provided are not necessarily indicative of the amount of information to be provided. The space provided extend 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). A digital copy of the application form is available on the Department's website (details below).
6. The use of *"not applicable"* in the application form must be done with circumspection.
7. No faxed or e-mailed applications will be accepted.
8. Unless protected by law, all information contained in and attached to this application form may become public information on receipt by the competent authority. Upon request, any interested and affected party must be provided with the information contained in and attached to this application form.
9. This application form must be submitted to the Department at the postal address given below or by delivery thereof to the Registry Office of the competent authority. Unnecessary delays will be incurred should the application and attached information not be submitted to the correct address and / or competent authority.
10. This application form constitutes the initiation of the Section 24G application process.

DEPARTMENTAL DETAILS

The Director: Biodiversity Management, Compliance and Enforcement
Department of Environment and Nature Conservation
Bag X 6012
Kimberley
8301
South Africa

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**

Project applicant:	Van Der Merwe Boerdery Trust												
RSA Identity number:	8	0	0	3	2	4	5	0	4	9	0	8	1
Contact person:	Izak Schalk Van der Merwe												
Position in company	Owner												
Registered Name of Company/ Closed Corporation													
Trading name (if any):													
Registration number													
Postal address:	P.O. Box 202												
	Gariep Dam					Postal code:	9922						
Telephone:						Cell:	0826005431						
E-mail:	Southey@vodamail.co.za					Fax:	0866235665						

Environmental Assessment Practitioner (EAP):	Pieter Badenhorst Professional Services		
Contact person:	Pieter Badenhorst		
Postal address:	PO Box 1058		
	Wellington	Postal code:	7654
Telephone:	(021) 873 7228	Cell:	0827763422
E-mail:	pbps@iafrica.com	Fax:	(086) 672 1916
EAP Qualifications	Pieter -IAIAsa, Pr Eng, SAICE Civil Engineering degree with 43 years' experience in environmental field		
EAP Registrations/Associations	Pieter Badenhorst - 43 years' experience (16 @ CSIR) in environmental management; report writing; project management; facilitation Helene Botha – BSc (Hons) in Zoology, currently a consultant in environmental management and concluding her Masters in Environmental Management at NWU.		

Landowner(s):	Izak Schalk Van der Merwe		
Contact person(s):	Mr. Van der Merwe		
Postal address:	P.O. Box 202		
	Gariep Dam	Gariep Dam	Gariep Dam
Telephone:	0826005431		

E-mail:	Southey@vodamail.co.za	Fax:	0866235665

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:	Umsobomvu Local Municipality		
Contact person:	Municipal Manager		
Postal address:	Private Bag X6		
	Colesberg	Postal code:	9795
Telephone	(051) 753 0777	Cell:	
E-mail:		Fax:	(051) 753 0574

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:	24G Rectification Of Clearing Of Land And Cultivation Of maize On Portion 7 Of Farm Stockenström Kop No 77, Norvalspont					
Property location:	Norvalspont					
Farm/Erf name & number (incl. portion):	Farm Stockenström Kop No 77					
SG21 Digit code:	C02100000000007700007					
Co-ordinates:	Latitude (S):			Longitude (E):		
	30º	36‘	0 “	25º	25‘	48“

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 projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

Street address:	21A Church Street		
Magisterial District or Town:	Colesberg		
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:	Norvalspont	Distance	2 Km
Zoning of Property:	Agricultural		
Please Note: In instances where there is more than one zoning, please attach a list of zonings that also indicate which portions each use pertains to, to this application.			
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. In instances where there is more than one zoning, please attach a list of zonings that also indicate which portions each use pertains to, to this application.

Owners consent:	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 back of this document as Appendix C: Consent, page 56.

2. Application History

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

Has any national, provincial or local authority considered any development 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 were more than one application, please attach a list of these applications)		
N/A		
Which authority considered the application:		
N/A		
Has any one of the previous application/s on the property been approved or rejected? If so provide a list of the successful and unsuccessful application/s and the reasons for decision/s.	~~Yes~~	**NO**
N/A		
Provide detail on the period of validity of decision and expiry dates of the above applications/ permits etc. **N/A**		

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

Applicant (Full names)_____**Izak Schalk Van der Merwe**_____

Signature:_____

Place: _____ Date: _____

EAP (Full names): **Pieter Badenhorst**

Signature:_____

Place: _____ Date: _____

Section B: Activity Information

1. Activities Applied For:

Separate rectification applications are required for one development site where more than one listed activity has commenced and where these unlawfully commenced activities constitute offences in terms of different EIA regulations Applicants and EAP'S are strongly advised to discuss the merits of a combined application (if deemed appropriate) with the relevant Department prior to the completion of this application form and submission thereof. The relevant Department will use its discretion in deciding to allow one rectification application for more than 1 Section 24F(2(a) contravention on one development site. All potential listed activities associated with the development must be indicated below. (See Annexures B, C, D and E). 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.

2. Activity Description

An application may be made for more than one listed or specified activity that, together, make up one development proposal. All the listed activities that make up this application must be listed.

Number and date of the relevant notice:	Activity No (s) (in terms of the relevant or notice) :	Describe each listed activity
GNR 983 of 2014 Listing Notice 1 (Basic Assessment) Activity 12	The development of: (xii) infrastructure or structures with a physical footprint of 100 square metres or more; Where such development occurs – (a) within a watercourse; (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of the watercourse;	The construction of infrastructure associated with the cultivation of the maize such as irrigation pipelines located within water courses. Refer to Figure 1.

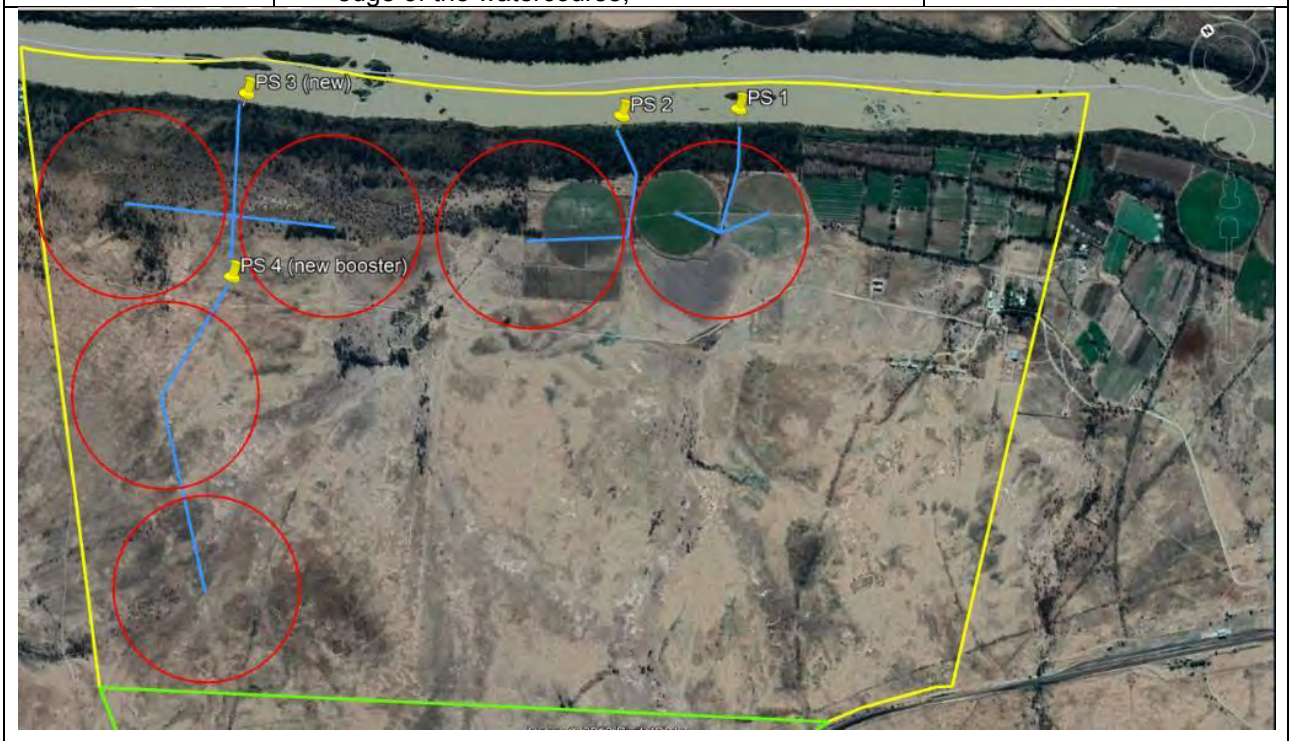


Figure 1: Locality of Proposed centre pivots and related infrastructure within 32m of a watercourse

GNR 983 of 2014 Listing Notice 1 (Basic Assessment)	The infilling or depositing of any material of more than 5 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 5 cubic metres from-	Clearing will not be across the stream but planting will take place within 32m of the stream.

Activity 19	(i) watercourse	
GNR 984 of 2014 Listing Notice 2: (Scoping & EIR) Activity 15	The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	The clearance of 200ha vegetation, of which 170ha is indigenous vegetation not cultivated with the last 10 years. Refer to Figure 2.

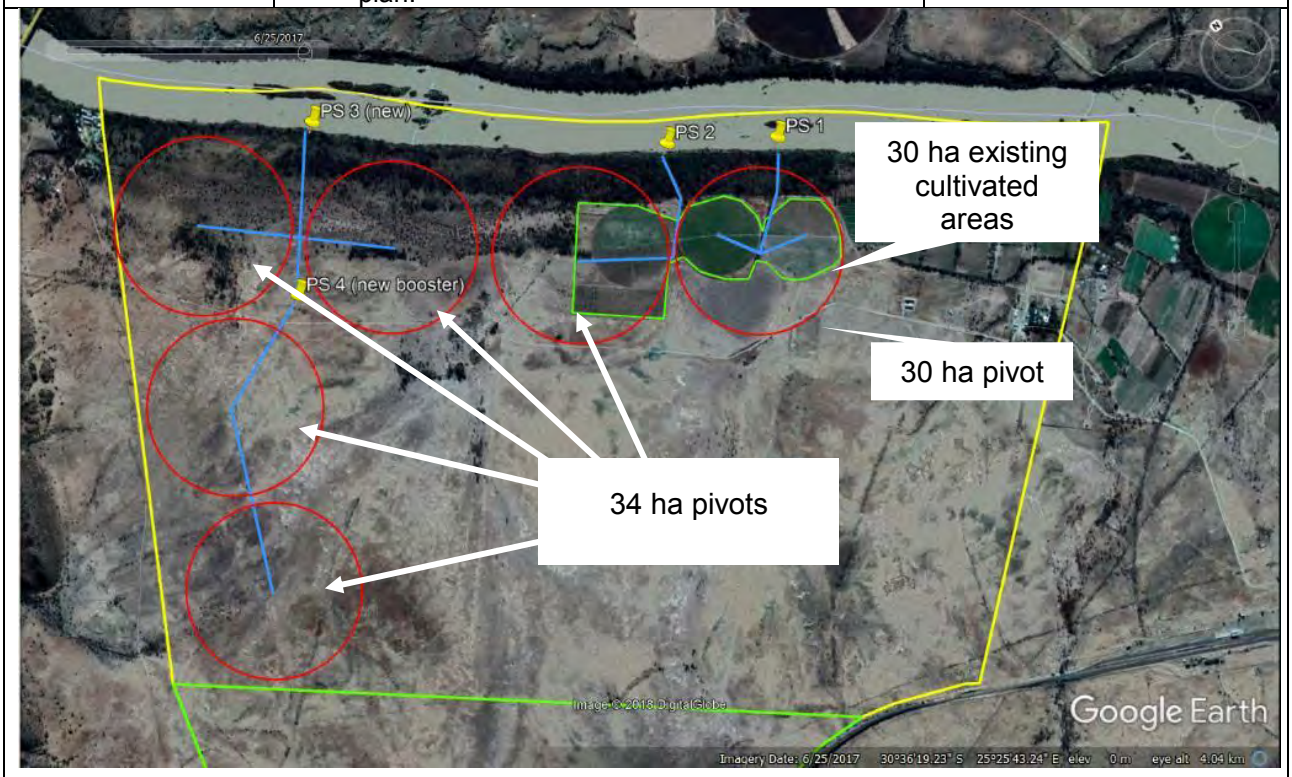


Figure 2: 200 ha of vegetation to be cleared, of which 70 ha is already established cultivation areas

GNR 985 of 2014 Listing Notice 3: (Basic Assessment) Activity 4	The development of a road wider than 4 metres with a reserve less than 13,5 metres: (a) In the Northern Cape: (iii) Outside urban areas, in: (ee) Critical Biodiversity Areas as identified in systematic biodiversity plans adopted by the competent authority or in bioregional plans; (gg) within 10 kilometres from national parks	There are roads wider than 4 metres with road reserves less than 13,5 meters within the cultivated areas to provide access for the agricultural activities. The area under cultivation is located within a CBA (Refer to Figure 3)

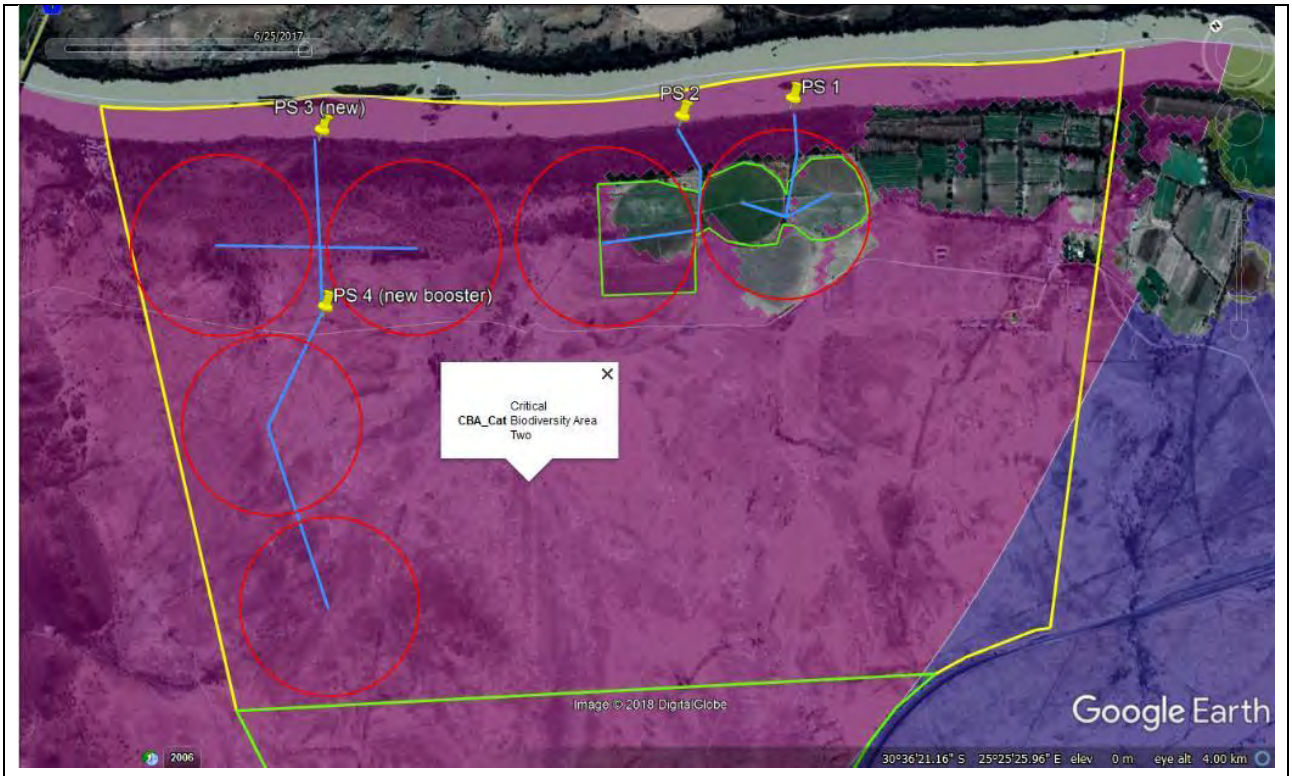


Figure 3: CBA classification of site for clearance and cultivation

GNR 985 of 2014 Listing Notice 3: (Basic Assessment) Activity 12	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan. (d) in Northern Cape ii. Within critical biodiversity areas identified in bioregional plans.	Total area cleared of indigenous vegetation for cultivation will be 170 hectares. Refer to Figure 3 (CBA map).
GNR 985 of 2014 Listing Notice 3: (Basic Assessment) Activity 14	The development of – (xii) infrastructure or structures with a physical footprint of 10 square metres or more; Where such development occurs- (a) within a watercourse; (a) In the Northern Cape: (ii) Outside urban areas, in: (ff) Critical biodiversity areas or ecosystem service areas as identified as identified in systematic biodiversity plans adopted by the competent authority or in bioregional pans; (hh) areas within 10 kilometres from national parks.	The construction of infrastructure associated with the cultivation of maize and Lucerne such as irrigation pipelines within water courses. The project site is located within a CBA.

Please note that any authorisation that may result out of this application will only cover activities applied for. Omissions may render any authorisation that is based on incomplete information to be nil and void.

(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~~	**Upgrade**

(b) Clearly describe the activity and associated infrastructure commenced with, indicating what has been completed, what still has to be completed and applicable commencement dates.

Locality

The proposed development is situated approximately 2 kilometers outside of the small town of Norvalspont in the Northern Cape, within the Umsobomvu Local Municipal area.

Refer to the Locality Plan attached at Appendix A: Locality Map, page 54 (and inserted below as Figure 5).

Figure 4: Locality plan

Proposed development:

The proposed development consisted of the following activities that triggered Listed Activities as stipulated in NEMA 2014:

1. Clearance is planned for approximately 170 hectares of indigenous vegetation after 2018. (Refer to Figure 5).

Please note that only pivots 1 and 2 (30 ha and 34 ha in size, respectively) will be developed at this stage. Of this 64 ha area, 30ha has been cultivated for several years and is not regarded as indigenous vegetation. <u>Therefore, the unlawful clearing that will be established before the S24G process has been finalised is only 34ha.</u> The remaining 106ha are of pivots 3 to 6 will only be established from 2019. Authorisation is, however made for all the pivots

2. Construction of pipelines and roads as part of the clearance of the 170 hectares of indigenous vegetation.
3. Two new pump stations (one located with 32m of a watercourse) will also be established.

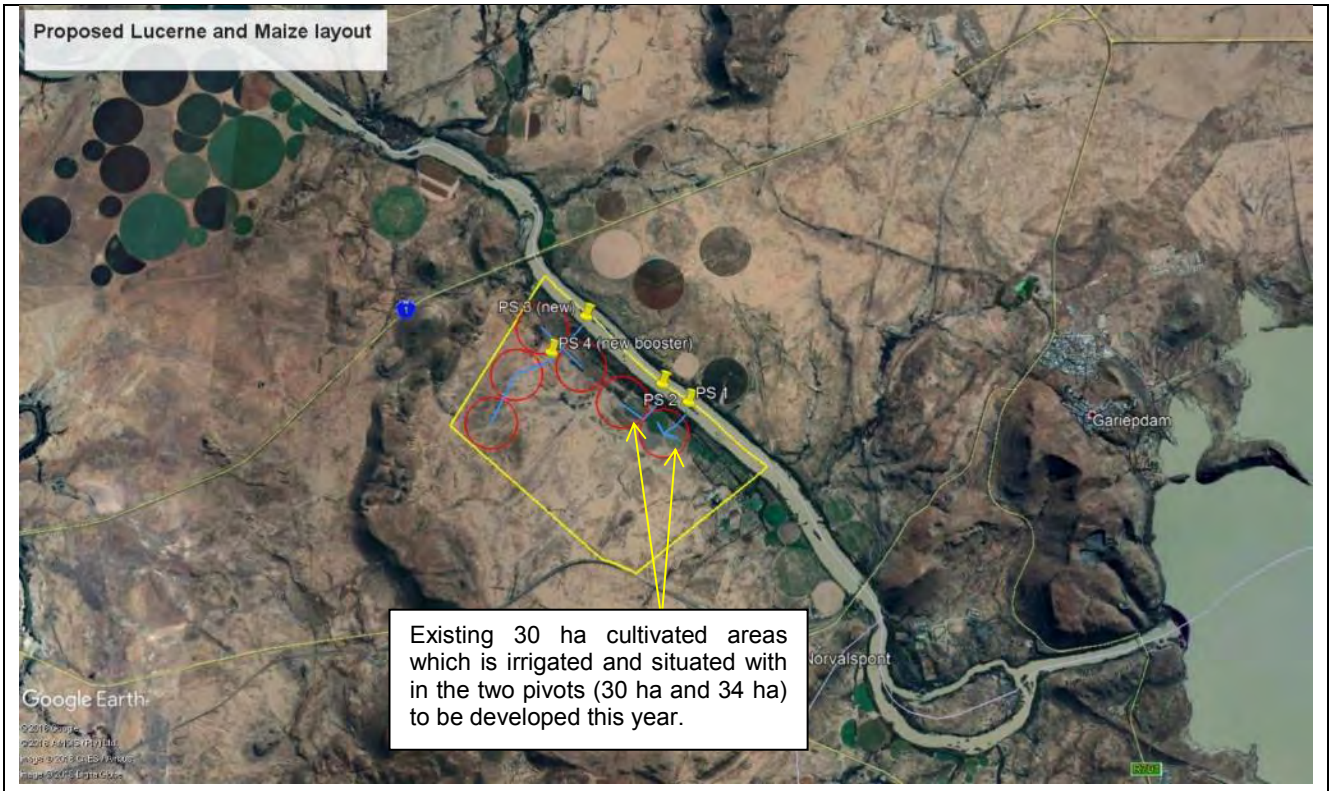


Figure 5: Proposed clearing by end 2018

No further agricultural activities are required within the project area comprising the 24G application.

Refer to the Site Photographs attached at Appendix D2: Site Photographs, page 59.

(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:		
Not applicable		
Infrastructure (e.g. roads, power and water supply/ storage)	**YES**	~~NO~~
Provide brief description:		
Refer to Appendix B: Site Plans, page 55		

Roads:

Access is gained off the R58 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:

Water is required for the irrigation of the established centre pivots, and is supplied via pipelines from the booster pump station and pump lines as shown Figure 6.

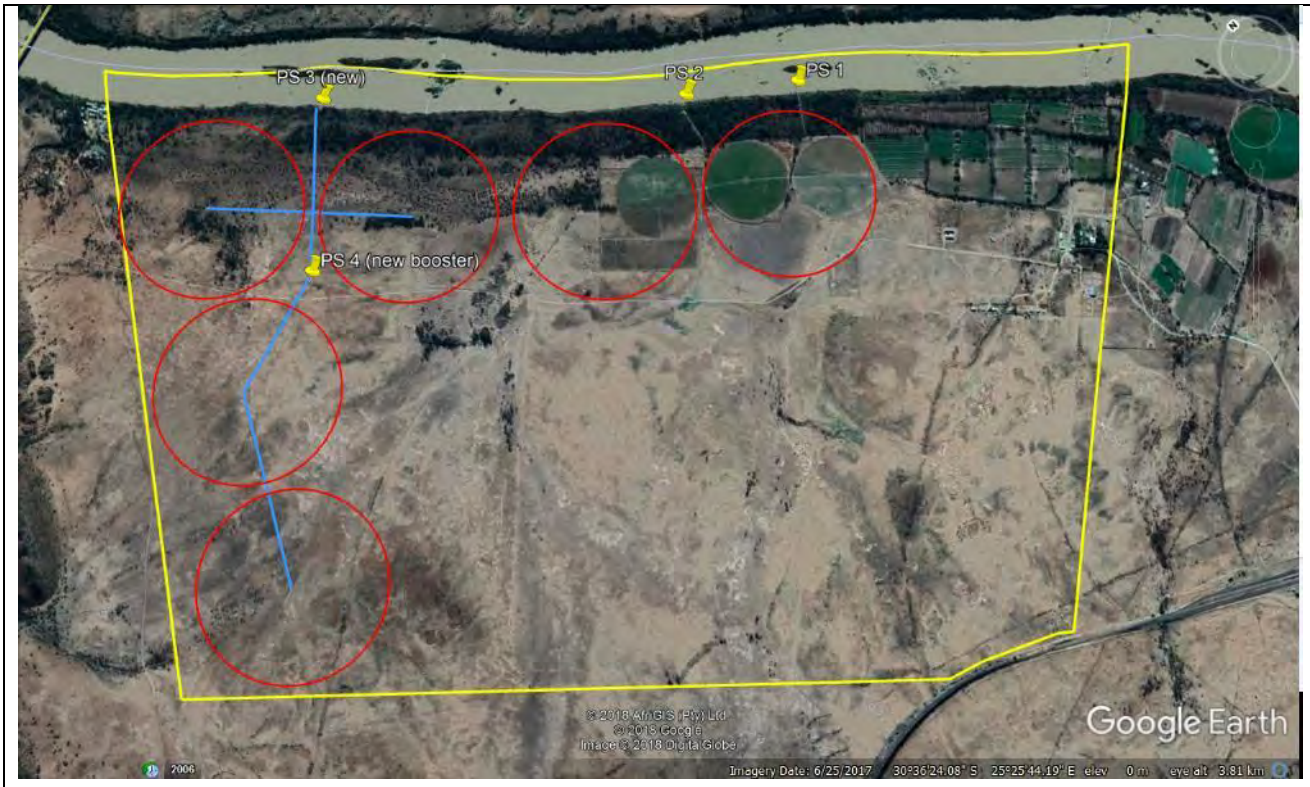


Figure 6: Proposed new centre pivots and infrastructure for irrigation of crops

Portion 7 of Farm Stockenström Kop no 77 has water use rights of at least 40 hectares (440 000m^3) per annum that are registered with the Orange River Scheme to be confirmed (see Appendix E1: Irrigation Rights From , page 74) .

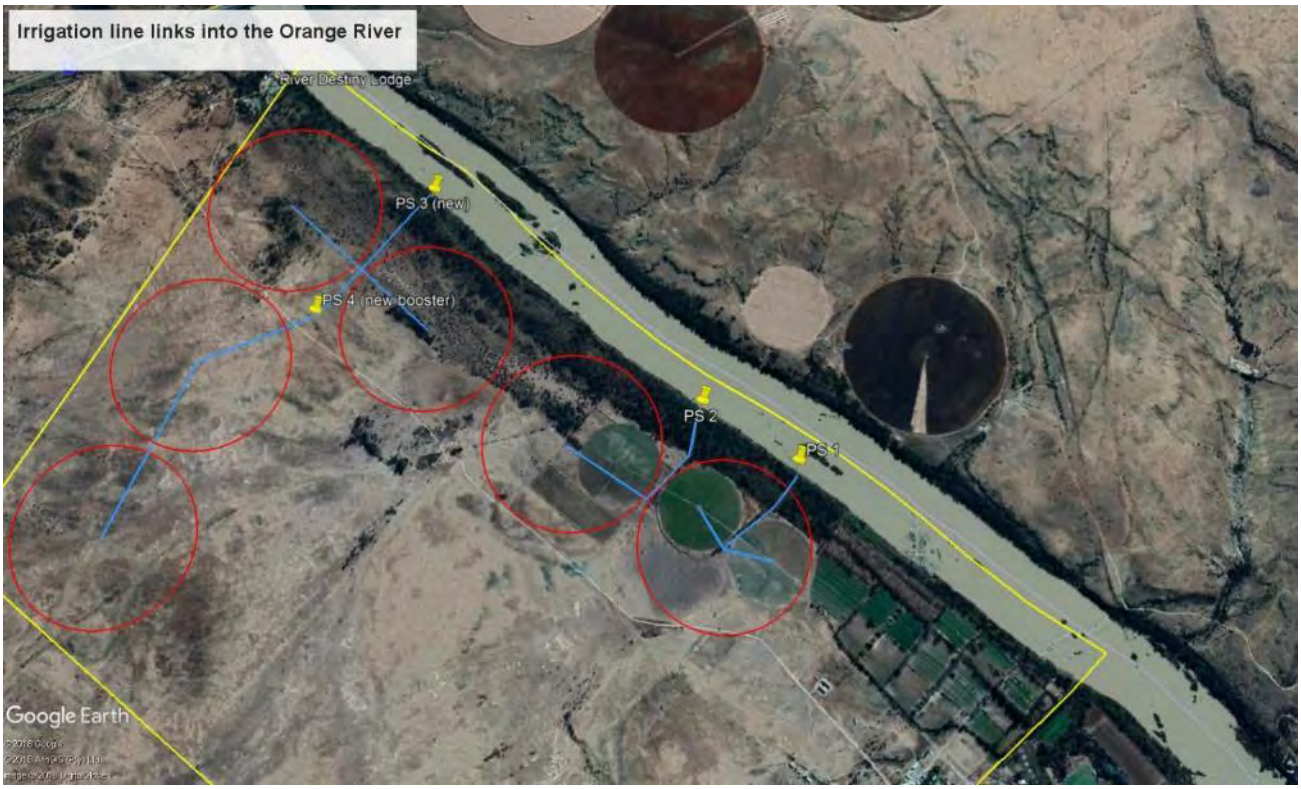
Although 200 ha of cultivation areas will be established (170ha indigenous clearing), the applicant will plant maize and Lucerne which is seasonal and will only be irrigated for the cultivation period. Maize has a water requirement of 7000m^3/ha/a.

The applicant also proposes to not cultivate all pivots simultaneously since rotating planting periods will be implemented. Although 200 ha of crops will require 1 400 000m^3/a, the applicant will be able to irrigate 62.9ha of crops simultaneously (440 000 m^3 / 7000m^3/ha/a= 62.9ha) with the available water.

Electricity:

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

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	~~YES~~	**NO**
Provide brief description		
Other activities (e.g. water abstraction activities, crop planting activities)	**YES**	~~No~~

Provide brief description
Crop Planting: Six new pivots will be established totalling 200 Hectares. The additional area that will be created for irrigation totals 170 Hectares. Portion 7 of Farm Stockenström Kop no 77 has water use rights of 40 hectares (440 000m^3) per annum that were registered with the Orange River Scheme. Although 200 ha of cultivation areas will be established, the applicant will plant maize and Lucerne which is seasonal and will only be irrigated for the cultivation period. Maize has a water requirement of 7000m^3/ha/a. The applicant also proposes to not cultivate all pivots simultaneously and this will be done by rotating planting periods. Although 200 ha of crops will require 1 400 000m^3/a, the applicant will be able to irrigate 62.9ha of crops simultaneously (440 000 m^3 / 7000m^3/ha/a= 62.9ha) **Water abstraction activities:** Water will be extracted from the Orange River with existing pump (refer to Figure 7 below) and distributed to the pivots using existing and new pipe infrastructure.      **Figure 7: Locality of new and existing pump stations (PS)** Refer to (see Appendix E1: Irrigation Rights From , page 74)

3. Activity Need And Desirability

Describe the need and desirability of the activity:
According to the report prepared by DAFF (2003): Maize is the most important grain crop in South Africa. Approximately 8,0 million tons of maize grain are produced in South Africa annually on approximately 3,1 million ha of land. Half of the production consists of white maize, for human food consumption.

On average, Southern African Development Community (SADC) produces 29 million tons of maize. About 42% of that total is produced in South Africa. Moreover, about 70% of SADC (excluding SA) annual maize imports come from South Africa, which means that a decrease in South Africa's maize production could affect the entire region (Agbiz, 2016).

Maize is the most important grain crop in South Africa, being both the major feed grain and the staple food for the majority of the South African population. About 60% of maize produced in South Africa is white and the other 40% is yellow maize. Yellow maize is mostly used for animal feed production while the white maize is primarily for human consumption. Maize is the second large crop produced in South Africa after sugar cane. The maize industry is important to the economy both as an employer and earner of foreign currency because of its multiplier effects. This is because maize also serves as a raw material for manufactured products such as paper, paint, textiles, medicine and food. The gross value of production for maize is dependent on the quantity produced and prices received by producers. The trend in the gross value follows the pattern of prices and production, since the industry is characterized by volatile prices

The contribution of the maize industry to the gross value of agricultural production experienced a substantial increase to a level above 20 billion Rands during the 2007/'08 production season mainly due to increases in the total production and average producer prices during that production season. The contribution of maize industry to the GVP declined between 2008/09 and 2009/10 seasons, despite a slight increase in production volumes and this was followed by a slight increase in Gross Value of Maize Production during 2010/11 marketing season.

Maize is produced throughout South Africa with Free State, Mpumalanga and North West provinces being the largest producers (see Figure 2 below), accounting for approximately 83% of total production. Maize is produced mostly on dry land although there is less than 10% that is produced under irrigation. South Africa is divided into 36 grain production regions. Regions 1 to 9 are winter rainfall areas (Western Cape), as well as the Eastern Cape and Karoo where no commercial maize is produced. Region 10 is Griqualand West and region 11 is Vaalharts in the North West. Regions 12 to 20 are all in the North West province. Regions 21 to 28, which are in the Free State and North West, contributes approximately 62% to the total maize production in SA. Regions 29 to 33 are within Mpumalanga, which is the second largest maize-producing province. Region 34 falls within Gauteng, region 35 within Limpopo and region 36 within Kwazulu-Natal.

The industry is divided into commercial and developing agriculture. Commercial maize farmers are estimated at 9,000 and the number of developing agricultural farmers is unknown. Figure 2 indicates that during 2010/11 season, the Free State province produced 39% of the total commercial maize in South Africa. North West produced 23% followed by the Mpumalanga Province which produced 21% of the total commercial maize grown in the country. During the same period Northern Cape Province produced 5%

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 maize and Lucerne will create short-term employment during the construction phase, and long-term employment during the operational phase. The applicant has to employ a large number of workers to harvest the crops during harvest time, and there is a team to ensure the maintenance of the property 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 maize contributes to the National Gross Domestic Profit (GDP).

4. Physical Size Of The Activity

Indicate the physical spatial size of the activity as well as associated infrastructure (footprints):	170 ha

Indicate the area that has been transformed / cleared to allow for the activity as well as associated infrastructure	170 ha
Total area (sum of the footprint area and transformed area)	170 ha

5. Site Access

Was there an existing access road? **The access road is an existing road as shown below in the Google Earth photograph below (refer to Figure below), and is just under 4 metres wide.**  **Figure 8: Access Roads**	**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 existing access road is a farm dirt track that existed prior to 2006.		

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.

Historical Aerial photographs dated back to 2006 are provided in Appendix D1: Historical Photographic Imagery, page 57. Site Photographs taken is attached as Appendix D2: Site Photographs, page 59.

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.

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
Conservation of Agricultural Resources Act	Department of Agriculture	Plough Certificate; Comment on EIA	In progress
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	

PLEASE NOTE THIS IS A S24G PROCESS. THIS FORM THEREFORE SERVES AS THE REPORT THAT WILL BE DISTRIBUTED AND SUBMITTED FOR APPROVAL.

8. Application For Basic Assessment (BA)

Is the rectification process done through an application for conducting a basic assessment (as defined in the regulations)?	~~**YES**~~	**NO**
If, YES, is a basic assessment report attached?	~~**YES**~~	~~**NO**~~

If, NO, please indicate when the basic assessment report will be submitted:

N/A

9. Application for Scoping and Environmental Impact Assessment (EIA)

Is the rectification process done through an application for Scoping and EIA (as defined in the regulations)?	**YES**	~~**NO**~~
If, YES, is a Scoping Report and Plan of Study for EIA attached?	~~**YES**~~	**NO**

If, NO, please indicate when the Scoping Report and Plan of Study for EIA will be submitted:

This report will be extended to an Assessment Report.

The scoping report and/or the plan of study for EIA will be submitted after consultation with the competent authority:	~~**YES**~~	**NO**
A consultation with the competent authority is hereby requested:	**YES**	~~**NO**~~

Please refer to the attendance register from the site meeting with officials from DENC and DWS, attached as APPENDIX H1: ATTENDANCE REGISTER OF SITE Meeting

Will be included in final AR , page 140

.

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):	**N/A**

1. Gradient Of The Site

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

~~Flat~~	**Flatter than 1:10**	~~1:10 – 1:5~~	~~Steeper than 1:5~~

2. Location In Landscape

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

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

3. Groundwater, Soil And Geological Stability Of The Site

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

Shallow water table (less than 1.5m deep)	~~YES~~	**NO**	~~UNSURE~~
Seasonally wet soils (often close to water bodies)	~~YES~~	**NO**	~~UNSURE~~
Unstable rocky slopes or steep slopes with loose soil	~~YES~~	**NO**	~~UNSURE~~
Dispersive soils (soils that dissolve in water)	~~YES~~	**NO**	~~UNSURE~~
Soils with high clay content	~~YES~~	**NO**	~~UNSURE~~
Any other unstable soil or geological feature	~~YES~~	**NO**	~~UNSURE~~
An area sensitive to erosion	~~YES~~	**NO**	~~UNSURE~~
If any of the answers to the above are "YES" or "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~~

5. Vegetation And Groundcover

5.1. Vegetation / Groundcover (Pre-Commencement)

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

~~Indigenous Vegetation - good condition~~		**Indigenous Vegetation with scattered aliens**	☒	~~Indigenous Vegetation with heavy alien infestation~~	

Describe the vegetation type above:

Vegetation Classification as per Plough Certificate soil analysis

Besemkaree Koppies Shrubland, cultivated more than 10 years before.

Species present on site (as identified in Appendix E2: Soil Science Report, page 85 include:

"Vegetation consists mainly of a , mixed dwarf shrub/grass layer with a few

- *Acacia Karroo (soetdoring',)*
- *Diospyros Lycioides (bloubos) spread towards the lower lying area.*
- *Dominant shrub species are:*
- *Lycium ,cinereum (kriedoring),*
- *Osteospermum Sinuatum (Geelbitou),*
- *Osteospermum Scari.osum (Sagtebitou) ,*
- *Pentia Globosa (Vaalkaroo),*
- *Peritzia Incana (Ankerkaroo),*
- *Hermania Cernua Coccocarpa (Moederskappie),*
- *Eberlanzia Ferox (Doringvygie),*
- *Chrysocoma Ciliata (Bitterbos).*

Grasses exist mainly of the following:

- *Aristida Adscensionis (Steekgras),*
- *Sporobolus Fimbriatus (Fynsaadgras),*
- *Tricholaena Monachne (Blousaadgras),*
- *Eragrostis Bicolor (Fynvleigras),*
- *Eragrostis Obtusa (Douvatgras),*
- *Panicum Coloratum (Kleinbuffelsgras),*
- *Hyparrhenia Hirta (Dekgras),*
- *Cynodon Dactylon (Kweek).*
- *Themeda Triandra (Rooigras).*

None of the above mentioned trees, shrubs and grasses are of the scarce varieties."

Provide ecosystem status for above:

Ecosystem status according to Mucina & Rutherford (2006)

Least threatened because largely excluded from intensive agricultural activities. Target 28%. About 5% statutorily conserved in the Rolfontein, Tussen Die Riviere, Oviston, Gariep Dam, Caledon and Kalkfontein Dam Nature Reserves. In addition a small patch is also protected in the private Vulture Conservation Area. About 3% of the area has been lost through building of dams (Bethulie, Egmont, Gariep, Kalkfontein, Vanderkloof and Welbedacht Dams). Erosion moderate (68%), high (20%) and low (10%).

Critical Biodiversity Area Classification as per SANBI BGIS Northern Cape CBA Map

The majority of the site is classified as an CBA 2 according to the SANBI BGIS Northern Cape CBA Map.

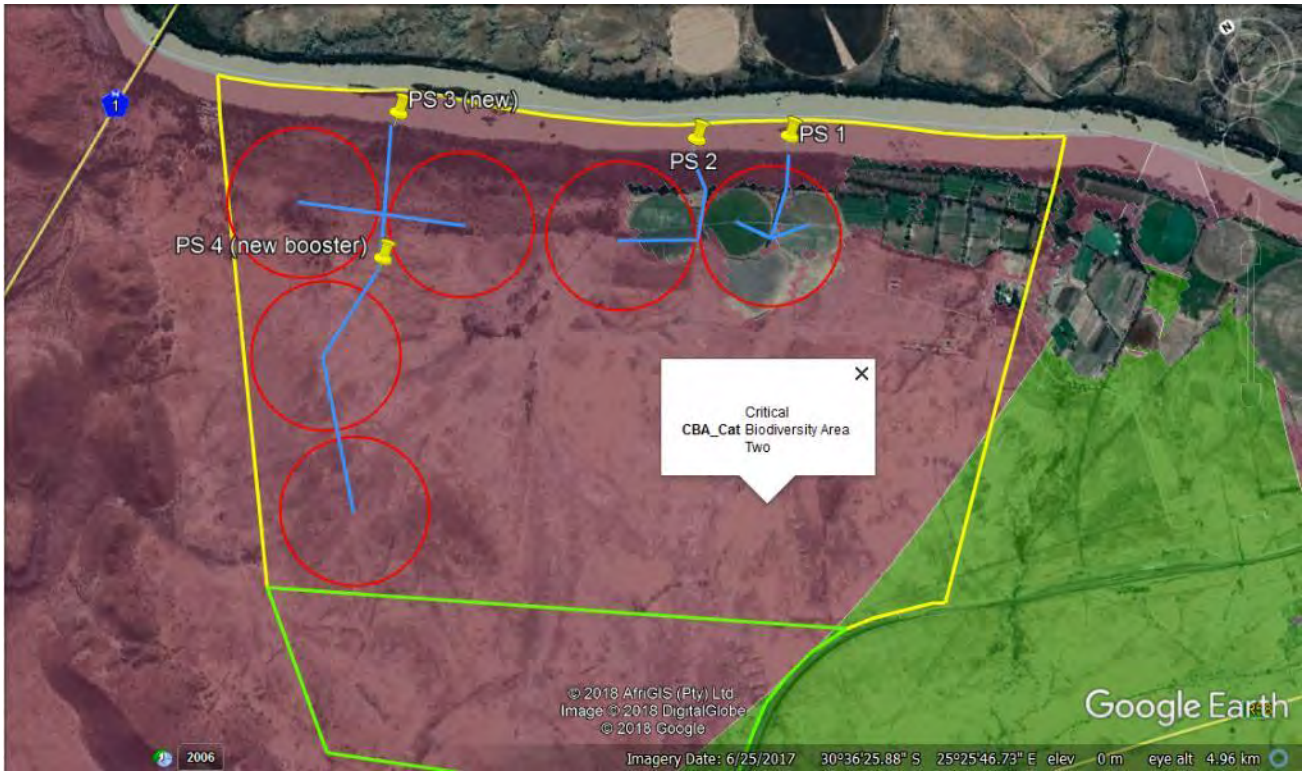


Figure 9: CBA classification of site indicating majority of site classified as CBA2, as per the SANBI BGIS Northern Cape CBA map

~~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: See Appendix E2: Soil Science Report, page 85
~~Bare soil~~	~~Building or other structure~~	~~Sport field~~
~~Other (describe below)~~	**Cultivated land**	~~Paved surface~~
Some areas as shown in Figure 10 were cultivated in the last 10 years.		

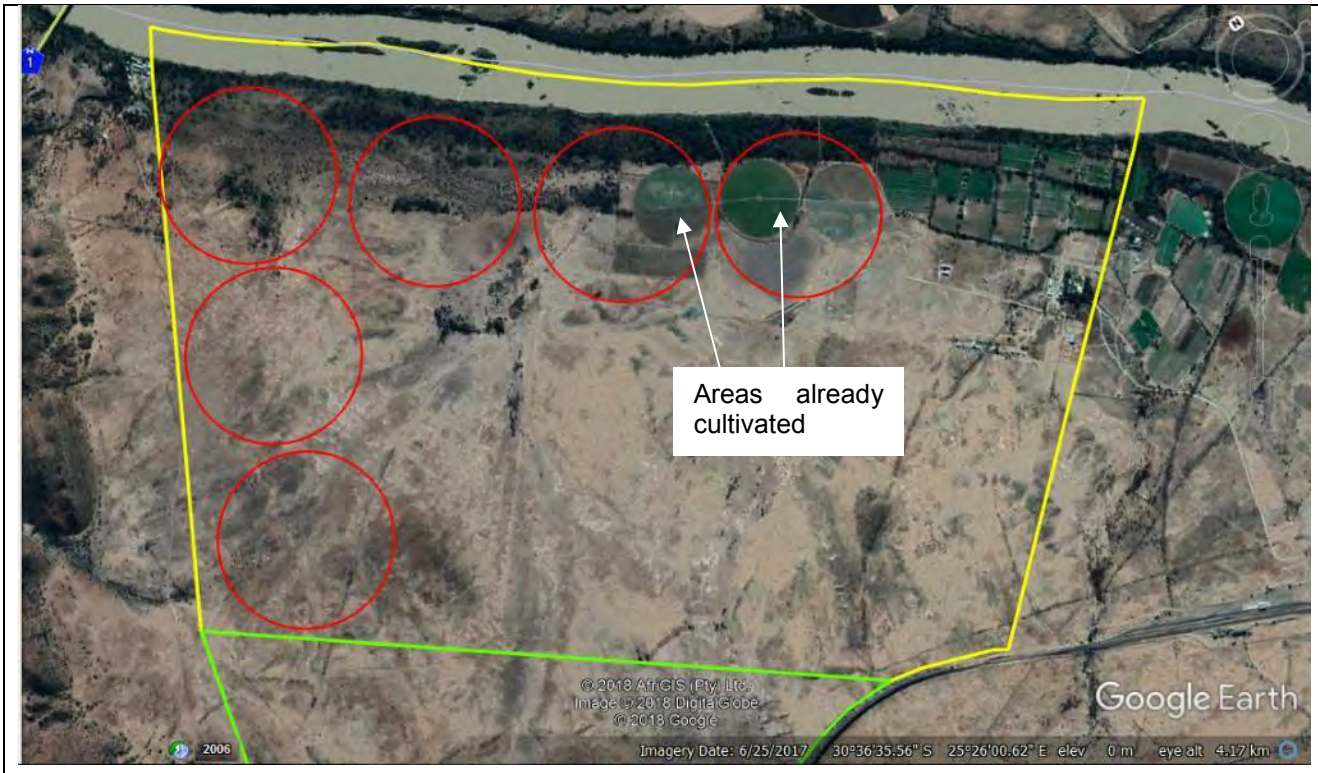


Figure 10: Proposed areas for clearance and cultivation and areas previously cultivated

5.2.5.2. Vegetation / Groundcover (Post-Commencement)

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

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

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

5.3. Vegetation / Groundcover Management

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

The vegetation will be removed. No further mitigation necessary. The area will be cultivated with maize and Lucerne. Mitigation measures will be included in the EMP, page 141.

6. Land Use Character Of Surrounding Area (Pre-Commencement)

Cross out ("☒") the block that reflects the past land uses and/or prominent features that occur/red within +/- 500m radius of the site and neighbouring properties if these are located beyond 500m of the site.

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

Currently the site is situated on agricultural property, and is also surrounded by properties that partake in agricultural activities. The majority of the site was cultivated previously more than 10 years prior to this application, and a small portion of the site is currently cultivated, as seen below in Figure 11.

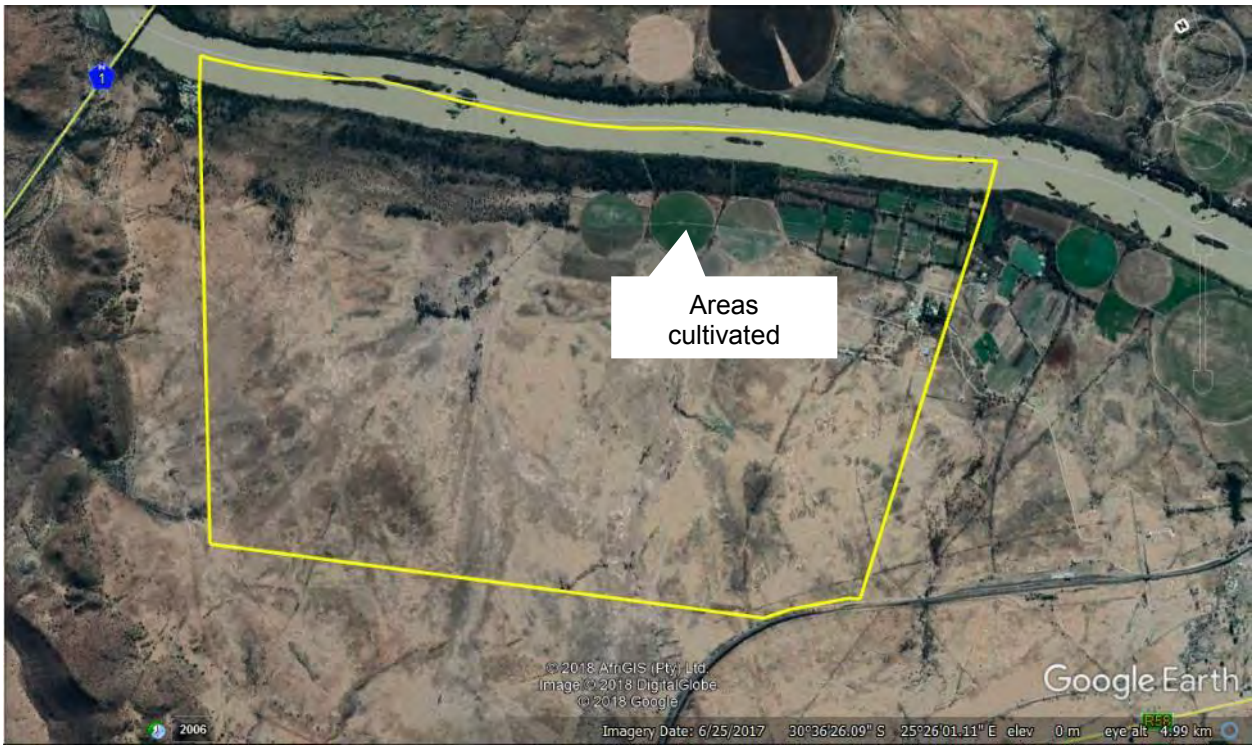


Figure 11: Characteristics of site as prior to the activity taking place

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

7. Regional Planning Context

Is/was the activity permitted in terms of the property's existing land use rights? Please explain			
Yes, Portion 7 of Farm Stockenström Kop No 77 is zoned as Agriculture.			
Is/was the activity in line with the following?			
Provincial Spatial Development Framework (PSDF)	**YES**	~~NO~~	Please explain
Portion 7 of Farm Stockenström Kop No 77 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 agricultural use.			
Integrated Development Plan of the Local Municipality	**YES**	~~NO~~	Please explain
Portion 7 of Farm Stockenström Kop No 77 is zoned for Agricultural use, and the agricultural activities are in line with the IDP.			
Spatial Development Framework of the Local Municipality	**YES**	~~NO~~	Please explain
Portion 7 of Farm Stockenström Kop No 77 is zoned for Agricultural use, and the agricultural activities are in line with the SDF.			
Approved Structure Plan of the Municipality	**YES**	~~NO~~	Please explain
Portion 7 of Farm Stockenström Kop No 77 is zoned for Agricultural use, and the agricultural activities are in line with the Structure Plan.			
Any other Plans	~~YES~~	~~NO~~	Please explain
N/A			

8. Socio-Economic Context

8.1 Socio-Economic Context (Pre-Commencement)

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

Socio-economic Municipal Profile as per IDP[1]

1. Population

According to Census 2011, Umsobomvu Municipality's population has risen from 23 640 in 2001 to 28 376 in 2011. The number of households in the Municipality has also increased from 5 848 in 2001 to 7 841 in 2011. However, the average household size has decreased from 3.9 to 3.6. The average household size in Umsobomvu is 3.5 (statistics 2011) persons per household and the highest number of persons per household is found in Colesberg and the lowest in the Norvalspont.

There has been a positive growth rate of 1.8 which is significant change from the -1.41 recorded in 2001. This is mainly due to the growth in economic activities and job opportunities in the Municipality resulting in migration of people from other towns as well as rural areas to the urban areas such as Colesberg. The table below indicated the population per age group as well as the changes within the groups experienced between 2001 and 2011 in Umsobomvu Municipality.

The population is as follows:

- The population classified as minors (under15 years of age) has decreased from 33.7% 2001 to 31.4% in 2011.
- The population between 15 to 64 years of age, classified as economically active has increased from 61% to 62.8%.
- The elderly, 65 and older have had a slight increase from 5.3% to 5.8%.

The significance of the above-mentioned is that it influences income, needs determination and the allocation of resources. For example, the decrease in minors and increase in the elderly may mean that more resources are allocated to the elderly such as the provision of health care facilities and welfare. The increase in the economically active population also means potential increase in income earnings, however putting pressure on job opportunities as there is the possibility for smaller and slower growing economies to provide work to the increasing population.

2. Dependency and gender ratio

The number of dependents per 100 of the economically active group (15-64) has decreased from 59.3 to 63.8. The gender ratio determined as males per 100 females has increased from 91.8 to 93.2 and the number of female headed households has decreased from 43.1% to 41.5%. Discrepancies exist in the male/female ration mainly caused by local adverse economic activities. Men outnumber women in areas where mining or agriculture are the predominant economic sector.

3. Population Density

Census 2011 classifies settlements according to the characteristics of a residential population in terms of urban and rural, degree of planned and unplanned (in the case of urban) and jurisdiction (in the case of rural). The four broad settlement types found in South Africa are:

- Formal urban areas;
- Informal urban areas;
- Commercial farms;
- Tribal areas and rural informal settlements.

Population density is a key factor in determining the provision of infrastructure and services. The population density of the District is 1.8 persons per km2 which is less than the Provincial density of 2.27 persons per km2. According to Statistics 2011 Umsobomvu Municipality population density is 4

[1] Umsobomvu Municipality IDP review 2015/16

persons per km2. This indicates that Umsobomvu Municipality has a population density well above the average density of the District. From a planning point of view, this inequitable population distribution within the district will require formulation and implementation of regional development policies so as to remove the imbalances.

According to the above classification, Umsobomvu Municipality, can be classified as urbanized (implying that most households live in settlements and towns i.e. not scattered or living on farming units), with only 1% of households living dispersed on farms.

Past planning in the urban areas of Colesberg and Noupoort has resulted in distinct townships and suburb areas. The poor usually live furthest from the centre of town, with the townships and town not forming a coherent whole. This has an impact on the daily movement of people and results in greater use of vehicular transport. Population is clustered at the larger settlements throughout the Municipality.

4. Population and Households

The largest town, Colesberg; has a population of close to 13 000 persons, living in more than 3 000 households, whereas the Norvalspont has less than 400 households. Umsobomvu accounts for 14% of the population within the Pixley Ka Seme District Municipality according to Statistics 2011.

The above is reflected in the Population Distribution which indicates the population distribution in 2001 for the Umsobomvu Municipality. With the increase in population by 4735 recorded in Census 2011, this pattern in distribution has changed.

5. Population Growth and Migration Growth

The growth rate of the population in the Municipality will depend on economic opportunities that the Municipality can offer, especially to young adults who are the most mobile group. A stagnating economy that cannot provide school learners with job opportunities will result in the loss of these economically active adults to areas with economic opportunities.

While the population size of the municipality in 1996 was 25 368, the population in 2001 was 23 636 and 21 995 in 2007 (with a negative growth rate of -1.29%). However Census 2011 revealed a positive grown rate of 1.83% which is a significant transformation. The trend from 2001 to 2007 has been negative. A negative growth rate is forecasted for the rural population due to emigration. Therefore the statistics reveal the rapid migration to towns within the Municipality.

The growth rate according to the Integrated Waste Management Plan (2007) for each of the towns within Umsobomvu Municipality is:

- Colesberg : 2%
- Norvalspont : : 1%
- Noupoort : 1%

As services are provided at a household level, the growth in households is more relevant than population growth. In many instances the population may be static, but settlement is increasing with the formation of new households which has increased by 1 993 since 2001, however household size has decreased from 3.9 to 3.5. This will have a significant impact on service needs and provision as well as economic opportunities.

Migration

Migration is a determinant of population growth. Both urban to urban migration and rural to urban migration are relevant in the district. Rural to urban migration is the dominant migration type at present.

It was previously predicted that rapid decline in migration into the province would result in a similar trend for Umsobomvu local municipality. However, with the rapid increase in the population, towns are growing physically as new households are formed and rural households move to towns to access better facilities and services. This rural-urban migration trend is expected to continue due to access to health and education facilities as major enticements.

Urbanisation

In the Umsobomvu Municipality it is estimated that 87% of the population is urbanised. The relatively higher increase in the population in the towns was due to farm workers moving to the towns. The higher the average growth in the towns results in the reduction of the farming population.

Future Growth

While the population of Umsobomvu was 25 389 in 1996, 2001 was estimated at 23 636 and 2011 population was estimated at 28 376. A negative growth rate is forecast for the rural population and towns are beginning to show a positive growth rate.

The prevalence rate of HIV/AIDS has been Umsobomvu's major factor in shaping population estimates. The HIV/AIDS prevalence rate in 2000 for Umsobomvu was higher than the Northern Cape average, and well below the South African prevalence rate of 24.5%. Although it is not high by comparison to South Africa, it is undoubted a factor which has impacted on the growth and welfare of the Municipalities population.

A rapid decline in migration into the Province is predicted. With its declining mining industry, the Northern Cape is unlikely to attract immigrants to the same extent as the larger urban complexes such as Gauteng. Negative growth is estimated in the study area between 2005 and 2015 for both high and low growth scenarios.

6. Household Income

Household income is a parameter which is, amongst others, is also indicative of poverty levels within a community. A financially healthy community's household income usually displays a so-called "normal" income distribution pattern where the income is spread over a fairly wide range of income categories, and the income of the bulk of the community is situated more or less within the first half to two thirds of the income category range.

Females are more likely to be unemployed and looking for work than males (43% versus 22% respectively). This is similar to the Northern Cape pattern, although the female unemployment rate is greater in Umsobomvu than in the Northern Cape.

Poor communities are sometimes highly dependent on the environment for coping and survival purposes and, in this regard, almost always over-exploits the environment. Of concern is that 47% of the households in Umsobomvu have no income and a further 17% have an income of less than R 400 per month.

7. Local Economic Development

Umsobomvu municipality's economical activities are dominated largely by agriculture, financial services, trade, hospitality industry, tourism and transport. The area is known as an agricultural area dedicated almost entirely t horses and merino sheep. The greater Colesberg breeds many of the country's top merinos and is also renowned for producing high-quality racehorses and many stud farms are in the area.

The status of the municipality's economy epitomizes the legacy of apartheid thought its skewed development among former white areas and townships. All communities are affected in terms of poverty and development deficit. Upliftment of the local economy has therefore been a key area of focus for the Municipality.

Umsobomvu Municipal economy is characterised by the following:

- High levels of poverty and low levels of education.
- A declining economy that is largely based on sheep farming.
- An economy that was too dependent on Spoornet in Noupoort, which has since declined because of the withdrawal of Spoornet.
- Promising growth in tourism in Colesberg Area.
- Rapid population growth in Colesberg because of the migration from other parts of the municipal area, which puts a heavy burden on the infrastructure

By virtue of its geographic location the Municipality prides itself as a natural transportation route for people travelling to destinations such as Cape Town, Port Elizabeth, Gauteng and Bloemfontein since two of the major national roads, namely N1 and N9 pass through the Municipality.

8. Employment Status

Employment status refers to whether a person is employed, unemployed or not economically active. The two categories of employment and unemployment together constitute the economically active category. The category of not economically active constitutes all those who are currently not regarded as part of the labour force e.g. scholars, housewives, pensioners, disabled, those not wishing to work, etc.

The employment status of the actual available workforce/economically active group of the Umsobomvu Municipal Area is illustrated in Table 13, employment status.

Unemployment

The overall results regarding the employment status of the actual available workforce/potential economically active group in the Umsobomvu have improved from 2001's figure of 28.83% employed versus 31.12% unemployed. In 2007 34% of people in the economically active age of the population are employed versus 25% that are unemployed. In 2011 the rate of unemployment decreased from 51.9% in 2001 to 33% in 2011.

This high unemployment rate has serious repercussions on the ability of the residents of Umsobomvu to pay for their daily needs. Unemployment is more than 30% in most of the areas and people survive on subsistence farming, pension/welfare payments and labour intensive jobs.

Employment by Sector

Agriculture/farming and community, social and personal services play an important role in providing employment to the working population. The following observations can be made:

- The highest percentages are employed by the agriculture sector.
- The second highest employment is by community, social and personal services including government associations.
- Pensioners and retired people are predominantly found in urban areas.

An average of 86% of the population in the Umsobomvu municipal area lives below the minimum living level (MLL). This is the highest percentage in the Pixley ka Seme district.

9. Challenges for Growth and Development

Examination and analysis of the socio-economic indicators listed above indicate without that the most critical challenge facing the district is the reduction of poverty. Other challenges that the district must confront, but which in themselves will also address poverty, include the following:

- Ensuring that all citizens have access to basic services such as water, sanitation, electricity and housing.
- Increasing access to services in education, health and social services.
- Stabilizing and decreasing the rate of HIV and AIDS infection, tuberculosis, FAS etc.
- Reduction in the rate of crime.
- Economic empowerment
- The shortage of critical skills – development of an attraction and retention strategy; improving skills of the labour force etc.
- Targeting special groups e.g. women, disabled and youth; and
- Sustainable job creation.

2.3.3 Opportunities for Growth and Development

An analysis of the economic indicators indicates opportunities for potential growth in the following:

- Agriculture and agro-processing
- Manufacturing
- Tourism
- Transport and infrastructure
- Wholesale and retail; and
- Mining and value adding – beneficiation.

The analysis is necessary to show what infrastructure is currently available and, where there are opportunities for development and exactly what the needs of the local community are. When planning for future development, it is not only necessary to know what is needed, but also what resources such as land, buildings and other facilities are available to address these needs.

8.2 Socio-Economic Context (Post-Commencement)

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

With the development of additional cultivated land by the applicant, additional agricultural employment opportunities will be provided, with associated local socio-economic spin-offs. According to the IDP (2015/2016); The agricultural sector is still the main economic sector for the Umsobomvu Municipal Area. The Agriculture sector is also a major employer in the Municipality, and is also the sector with the largest potential for economic growth. The applicant will farm especially with maize and Lucerne and will provide additional job opportunities to community members and lead to skills development of employees.

8.3 Cultural/Historical Features

Were there any signs or evidence (unearthed during construction) of culturally or historically significant elements including archaeological or palaeontological sites, on or in close proximity to the site?		~~YES~~	**NO**
		~~UNCERTAIN~~	
If YES, explain:			
If uncertain, the Department may request that specialist input be provided to establish whether there was such possibilities occurred on or close to the site.			
Briefly explain the findings of the specialist if one was already appointed:	As taken from Appendix E3.1: Heritage Impact Assessment, page 102 *A Phase 1 Heritage Impact Assessment were carried out for the expansion of 2 existing agricultural pivots and the establishment and 4 new agricultural pivots on the farm Stockenstroms Kop 77 near Norvalspont in the Northern Cape Province. The site is characterized by flat, open grassland and old agricultural land primarily located on old floodplain deposits of the Orange River. The area flanking the river bank has largely been disturbed by previous and ongoing farming activities. The proposed study area is underlain by potentially fossil-bearing sedimentary strata of the Late Permian Adelaide that are capped by superficial deposits of low to moderate palaeontological sensitivity. No evidence was found for the accumulation and preservation of intact fossil material within the superficial sediments capping the terrain. Visibility of Adelaide Subgroup outcrop sediments is low given the low topography terrain and generally well-developed Quaternary overburden flanking the riverbank, so it will be difficult to determine the potentially adverse effect of the development in the area except to assume that given the nature of the project (aboveground agricultural activity), it will primarily affect geologically recent soils in the form of severely degraded alluvial deposits and residual top soils. The fact that pivot farming will largely effect already degraded top soil layers, potential impact on Quaternary fossils or intact Karoo sedimentary strata is considered very low. As far as the palaeontological heritage is concerned, the proposed development may proceed with no additional heritage assessments necessary, provided that all agricultural activities are restricted to within the boundaries of the development footprints. The pedestrian survey revealed no indication of in situ Stone Age archaeological material, capped or distributed as intact surface scatters on the landscape. There are also no indications of rock art (engravings on dolerite outcrop), prehistoric structures, graves or buildings with historical significance older*		

	than 60 years situated within the boundaries of the study area. The fact that pivot farming will largely effect already degraded top soil layers, potential impact on capped Stone Age archaeological remains is considered very low. The terrain in general is regarded as of low archaeological significance and is assigned a rating of Generally Protected C (GP.C).		
Were any buildings or structures older than 60 years be affected in any way?		~~YES~~	**NO**
Was it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?		~~YES~~	**NO**
If yes, please submit or, make sure that the applicant or a specialist submit the necessary application to SAHRA or the relevant provincial heritage agency and attach proof thereof to this application. Please see Appendix E3.2: Proof Of Submission To Sahris, page 126.			

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: Construction of a pivot and pipelines mainly entails earth works with no solid waste generated. **Operational phase:** Planting of pivots entail earth works and seeding with no waste generated.		
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?	**Negligible**	m^3

Did/does the activity produce any hazardous 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.		
N/A		
What quantity was/is produced during the construction period?	**N/A**	m^3
What was/is the estimated quantity that will be produced per month during the operational phase?	**N/A**	m^3

Where and how was/is waste treated / disposed of (describe each waste stream)?		
No waste.		
Has the municipality or relevant authority confirmed that sufficient capacity exist 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 exist 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**
None associated with the development of irrigation pivots.		
What was/is the estimated quantity produced per month?	**N/A**	m^3
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:		
N/A		
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: **N/A**	~~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:
N/A

(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:		
N/A		

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

The planting and operation of irrigation pivots do not generate solid waste.

2. Water Use

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

~~Municipal~~	~~Water Board~~	~~Groundwater~~	**River, Stream, Dam or Lake** **ELU from Orange River**	~~Other~~	~~The activity did/does not use water~~

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

Water is required for pivot irrigation and is supplied via pipelines from the booster pump station (Figure 10) and pump lines as shown in Appendix B. Portion 7 of Farm Stockenström Kop No 77 has water use rights of 40 hectares that is registered with the Gariep Water Users Association. Please note that application is made for pivot irrigation area of 200 Hectares whereas only 40ha water is available, to be confirmed with DWS. This is due to the fact that the type of crops require that pivots cannot be used crop after crop and therefore a much larger area is available for planting purposes.

Figure 12: Pumps

440000m^3

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

Refer to Appendix E1: Irrigation Rights From Orange River Scheme, page 74 providing proof of the water use for Portion 7 of Farm Stockenström Kop No 77 from the Orange River Scheme. Water is allocated from the Orange River.

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 via pivot irrigation. This is an optimal agricultural practice for corn, Lucerne, etc.

3. Power Supply

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

There is an existing Eskom power supply on Portion 7 of Farm Stockenström Kop No 77, as shown below in Figure 11.

Figure 13: Electrical access point

Has the Municipality or relevant service provider confirmed that sufficient electricity capacity (i.e. generation, supply and transmission) exist for activity(ies)? If yes, provide written confirmation from Municipality or relevant service provider.	~~YES~~	~~NO~~

NOTE: The existing connection point used for present irrigation will be used.		

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

(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:

Pivot irrigation is a energy sufficient use of electricity. In addition other sources such as solar is costly and not suited for this type of 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?		
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 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 property is a property away from the N1 and the surrounding areas are in line with agricultural activities and the use of pivots. The project area would therefore be similar to the existing.		
(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?		
N/A		
(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

(a) What was/is the expected capital value of the activity on completion?	**±R40 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?	**±R10 000 000**	
(c) Did/does the activity contribute to service infrastructure?	~~YES~~	**NO**
(d) How many permanent new employment opportunities were created?	**±20**	
(e) What was/is the expected current value of the employment opportunities to date?	**±R100 000**	
(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 select local labourers.

8. Preliminary Impact Assessment

Briefly describe the impacts (as appropriate), significance rating of impacts, mitigation and significance rating of impacts of the activity. 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	**Low negative**
Water required for irrigation	**Medium positive**
Visual	**None**
Noise	**None**
Cultural	**Low negative**
Employment creation	**Medium-High positive**
Production of annual crops	**Medium-High positive**

Refer to the preliminary impact rating tables below:

8.1. Preliminary Impacts That Resulted From The Construction Phase:

Impacts on geographical and physical aspects:	
Nature of impact:	**Removal of 170ha of disturbed indigenous vegetation Besemkaree Koppies Shrubland (classified as least threatened) on Portion 7 of Farm Stockenström kop 77, located within a CBA2 area.**

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 conclusions made here have been made before the clearing of the vegetation. Keep in mind the general conclusions reached are that given the location of the site within a terrestrial Critical Biodiversity Area 2 and considering available information and evidence (disturbance regime, least threatened vegetation type etc.) the impact of the clearing for the centre pivots is low negative. The rating would have been medium negative if the area was completely undisturbed prior to clearing.**
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:	**Pivot areas are sited largely on exiting planted areas to minimize impact on indigenous vegetation.**
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:	**Minimal impact on non-perennial drainage lines: Impeding the flow of water in a watercourse and altering the beds, banks, course and characteristics of the river adjacent to the project area for new pump stations.**
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:	**None since after placement of the pump stations pipes there will be no obstruction in the river.**
Cumulative impact prior to mitigation:	**Medium**
Significance rating of impact prior to mitigation	**Low negative**

(Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	**Pipes are placed in such a way that no permanent changes to the stream and stream bed will occur.**
Proposed mitigation:	**Pipes are placed in such a way that no permanent changes to the stream and stream bed will occur.**
Cumulative impact post mitigation:	**Low negative**
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	**Medium negative**

Impacts on socio-economic aspects:	
Nature of impact:	**Job creation**
Extent and duration of impact:	**Local extent and short-term duration is 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 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:	**Impact on paleontological heritage**
Extent and duration of impact:	**Site, permanently**
Probability of occurrence:	**Highly likely**
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:	**Loss of palaeontological heritage**
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	**Medium low**
Degree to which the impact can be mitigated:	**Medium to high**
Proposed mitigation:	**No mitigation required –** *As far as the palaeontological heritage is concerned, the proposed development may proceed with no additional heritage assessments necessary, provided that all agricultural activities are restricted to within the boundaries of the development footprints. The terrain in general is regarded as of low archaeological significance and is assigned a rating of Generally Protected C (GP.C)*
Cumulative impact post mitigation:	**None**
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	**Low negative**

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 be negligible.**
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	**Low negative**
Degree to which the impact can be mitigated:	**Low**
Proposed mitigation:	**None**

Cumulative impact post mitigation:	**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 centre pivots.**
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:	**Low negative**
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:	**Low**
Proposed mitigation:	**Pivot layout was done to minimize loss of vegetation.**
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**

8.2. Preliminary Impacts That Result From The Operational Phase:

Impacts on the geographical and physical aspects:	
Nature of impact:	**None because operational activities are taking place on the land created during establishment of the pivots.**
Extent and duration of impact:	
Probability of occurrence:	
Degree to which the impact can be reversed:	
Degree to which the impact may cause irreplaceable loss of resources:	
Cumulative impact prior to mitigation:	

Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	
Degree to which the impact can be mitigated:	
Proposed mitigation:	
Cumulative impact post mitigation:	
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	

Impacts on the socio-economic aspects:	
Nature of impact:	**Job creation**
Extent and duration of impact:	**Local extent and duration is 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 activity is positive**
Degree to which the impact may cause irreplaceable loss of resources:	**None**
Cumulative impact prior to mitigation:	**Additional job opportunities created for new agricultural activity.**
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 applicant 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 owner and the country by selling of produce locally and nationally.**
Significance rating of impact after mitigation (Low, Medium, Medium-High, High, or Very-High)	**Positive**

Impacts on the cultural-historical aspects:	
Nature of impact:	**None**
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)	

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 with associated noise generation.**
Significance rating of impact prior to mitigation (Low, Medium, Medium-High, High, or Very-High)	**Low negative**
Degree to which the impact can be mitigated:	**Low**
Proposed mitigation:	**The area falls within an agricultural active area and any noise generation is associated with the area.**
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 pivots will be larger than the existing.**
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:	**Low impact because pivots are generally observed in the area.**
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 because pivots are pivots.**
Proposed mitigation:	**None.**
Cumulative impact post mitigation:	**Low because pivots are generally observed in the area.**

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

8.3. Impacts That May Result From The Decommissioning And Closure Phase:

The agricultural activities will not be decommissioned unless some catastrophic event takes place should no water be available in long term.

Should such an event takes place the planted areas will naturally in time return to indigenous vegetation.

Not applicable

~~Potential impacts on the geographical and physical aspects:~~	
~~Nature of impact:~~	
~~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)~~	

~~Potential impact on biological aspects:~~	
~~Nature of impact:~~	
~~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)~~	

~~Potential impacts on the socio-economic aspects:~~	
~~Nature of impact:~~	
~~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)~~	

~~Potential impacts on the cultural-historical aspects:~~	
~~Nature of impact:~~	
~~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)~~	

~~Potential noise impacts:~~	
~~Nature of impact:~~	
~~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)~~	

~~Potential visual impacts:~~	
~~Nature of impact:~~	
~~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)~~	

8.4. Any Other Impacts:

~~Potential impact:~~	
~~Nature of impact:~~	
~~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)~~	

8.5. Assessment Criteria:

The criteria for the description and assessment of environmental impacts were taken 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: 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: The preferred - Removal of vegetation for establishing irrigation pivots

The applicant proposes the removal of 200ha of vegetation (170 ha of indigenous vegetation, 30ha of cultivated ares) to establish centre pivots for maize and Lucerne cultivation, as shown in the Appendix B below as Figure 11 and 12:

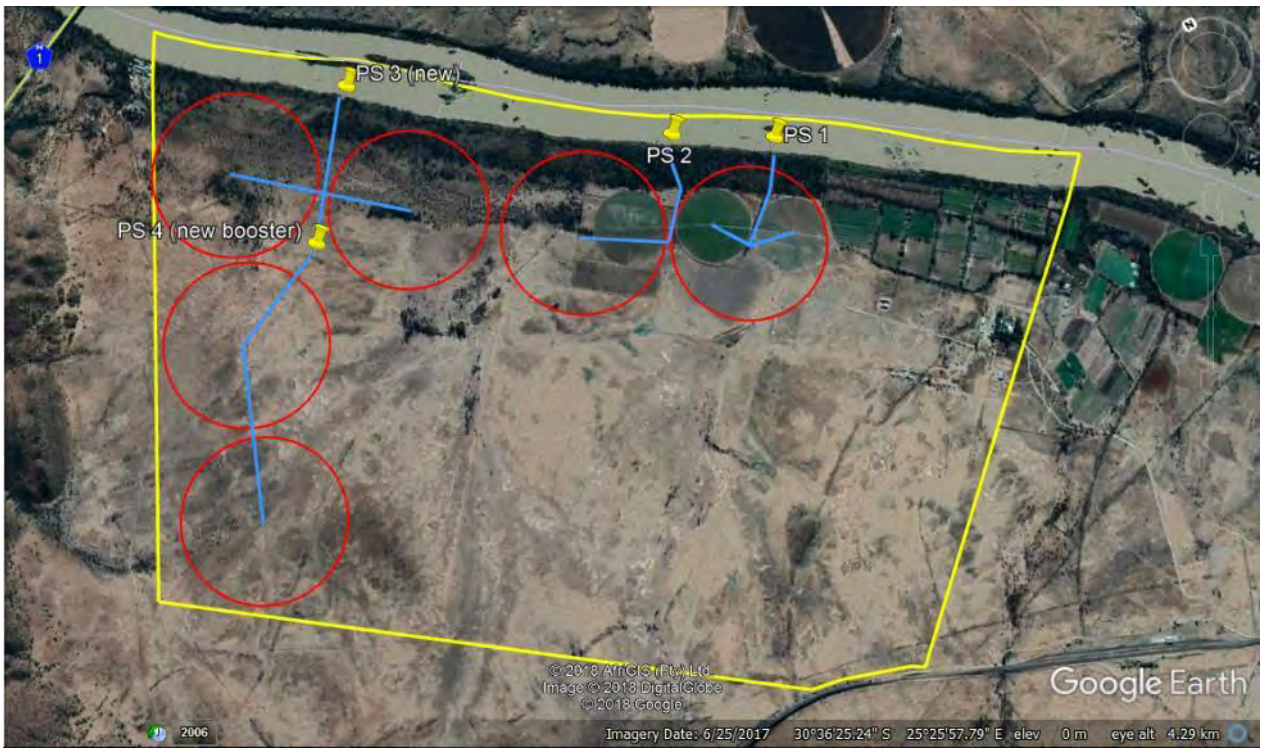


Figure 14: Site Plan

Alternative 2: Removal of vegetation for the cultivation of crops such as table or vine grapes

This option has not been preferred because the cultivation of crops such as corn and Lucerne are the preferred for the area due to soil and environmental conditions.

No-Go Option

The No-Go Option would have meant that the existing small-scale pivot irrigation would have continued. As observed by the previous owner the type of crops requires large scale cultivation to be economical and sustainable. The present setup is not viable and a change is urgently require as is implemented by the new owner.

Section F: Appendices

The following appendices must be attached where appropriate:

Appendix	Cross out ("☒") the box if Appendix is attached
Appendix A: Location map	☒
Appendix B: Site plan(s)	☒
Appendix C: Owner(s) consent(s)	☒
Appendix D: Photographs • Appendix D1: Historic aerial photographs • Appendix D2: Site photographs	☒
Appendix E: Permit(s) / license(s) from any other organ of state including service letters from the municipality • Appendix E1: Irrigation rights from Orange River • Appendix E2: Soil Science Report • Appendix E3.1: Heritage Impact Assessment • Appendix E3.2: Proof of application submitted via SAHRIS	☒
Appendix F: Additional Impact Assessment Information • Appendix F1: CBA 2 located on Portion 77 of Farm Stockenström Kop 77 • Appendix F2: Public Participation	☒
Appendix G: Report on alternatives	N/A
Appendix H: Any Other (describe) • Appendix H1: Attendance register of meeting held with DENC and DWS. • Appendix H2: EMP • Appendix H3: Quantum of the Section 24G Fine	☒

Section G: Declarations

G1: Declarations of the EAP

The Independent Environmental Assessment Practitioner

I, _____declare under oath 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 Section 24G 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 Section 24G of the National Environmental Management Act, read together with the Environmental Impact Assessment Regulations, 2006;

f. will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and 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 to support the 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 such information is favourable to the applicant or not.

_____

Signature of EAP

_____

Name of company

_____

Date

_____

Designation

Official stamp (below)

G2: Declarations of the Applicant

1. The Applicant

I, ,declare under oath that I -

a. am the applicant in this application;

b. appointed the environmental assessment practitioner as indicated under **G1** above to act as the independent environmental assessment practitioner for this application;

c. will provide the environmental assessment practitioner and the competent authority with access to all information at my disposal that is relevant to the application;

d. am responsible for complying with the directive or conditions of any environmental authorisation issued by the competent authority;

e. understand that I will be required to pay an administration fine in terms of section 24G(2) of the Act and that a decision in this regard will only be forthcoming after payment of such a fine;

f. 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; and

_____

Signature of Applicant

Van de Merwe Boerdery Trust

Name of company

_____

Date

_____

Designation

_____

Commissioner of Oaths

_____

Signature

_____

Date

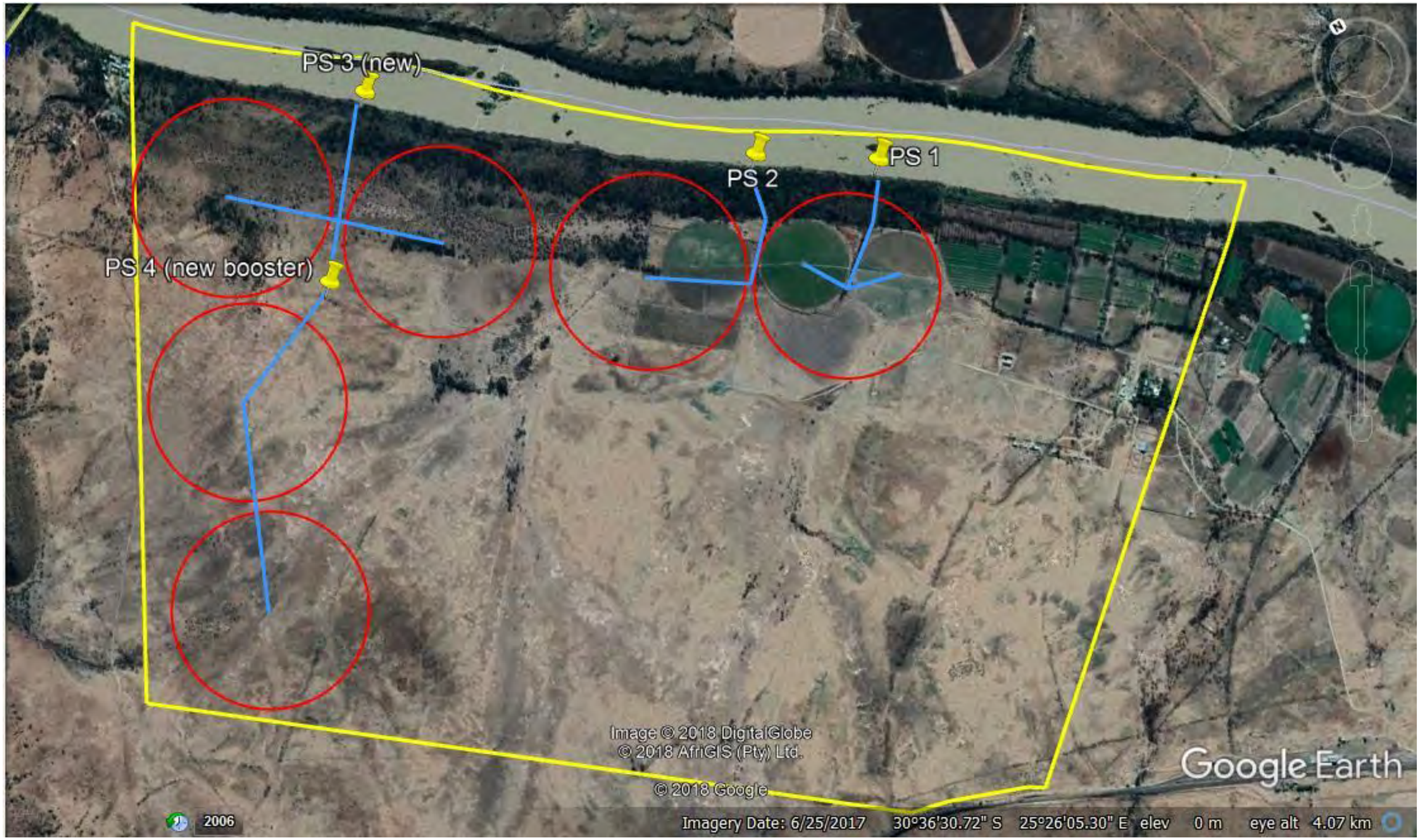
_____

Designation

Official stamp(below)

Appendix A: Locality Map

Appendix B: Site Plans



Appendix C: Consent

Appendix D1: Historical Photographic Imagery

22/11/2018

25/06/2017

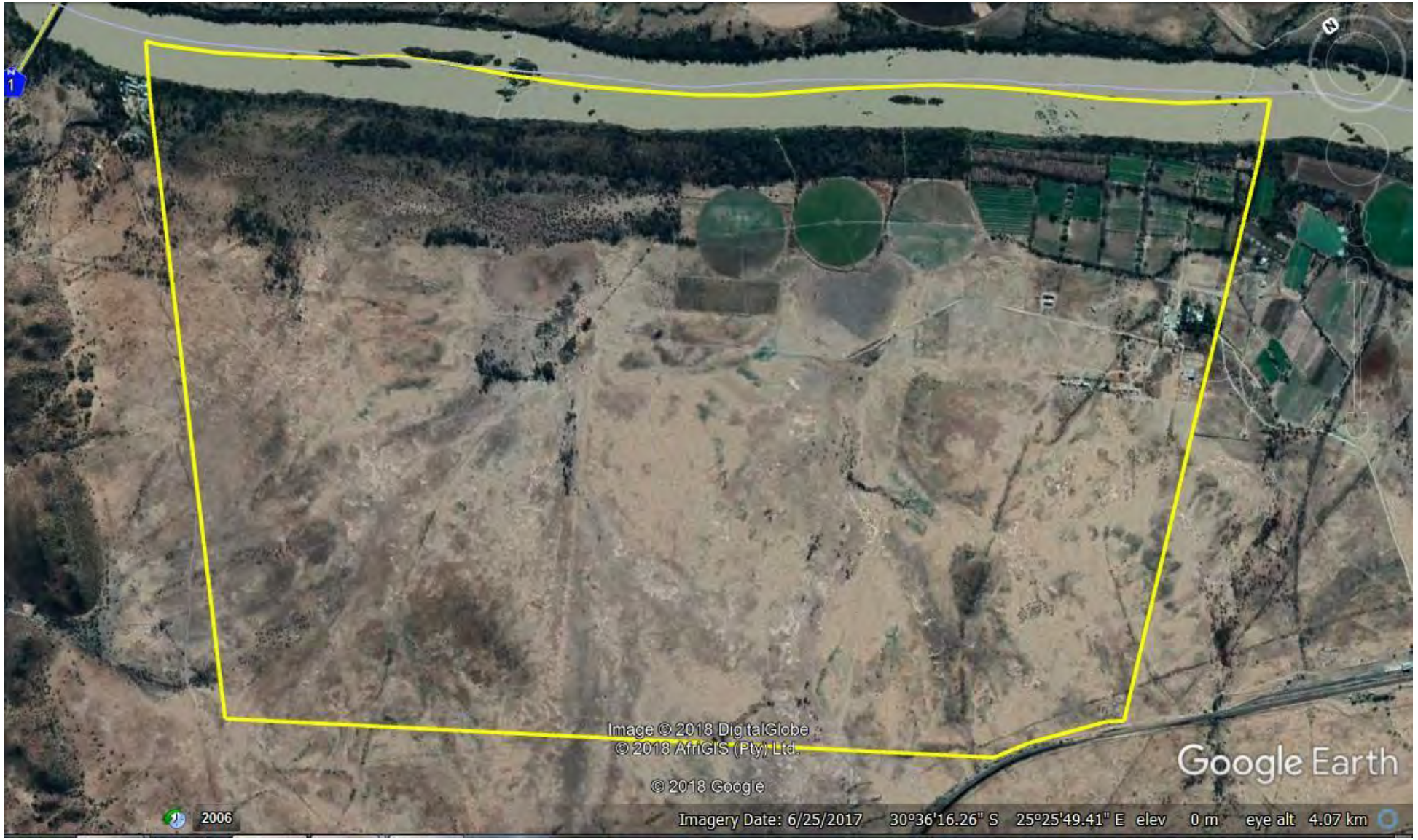
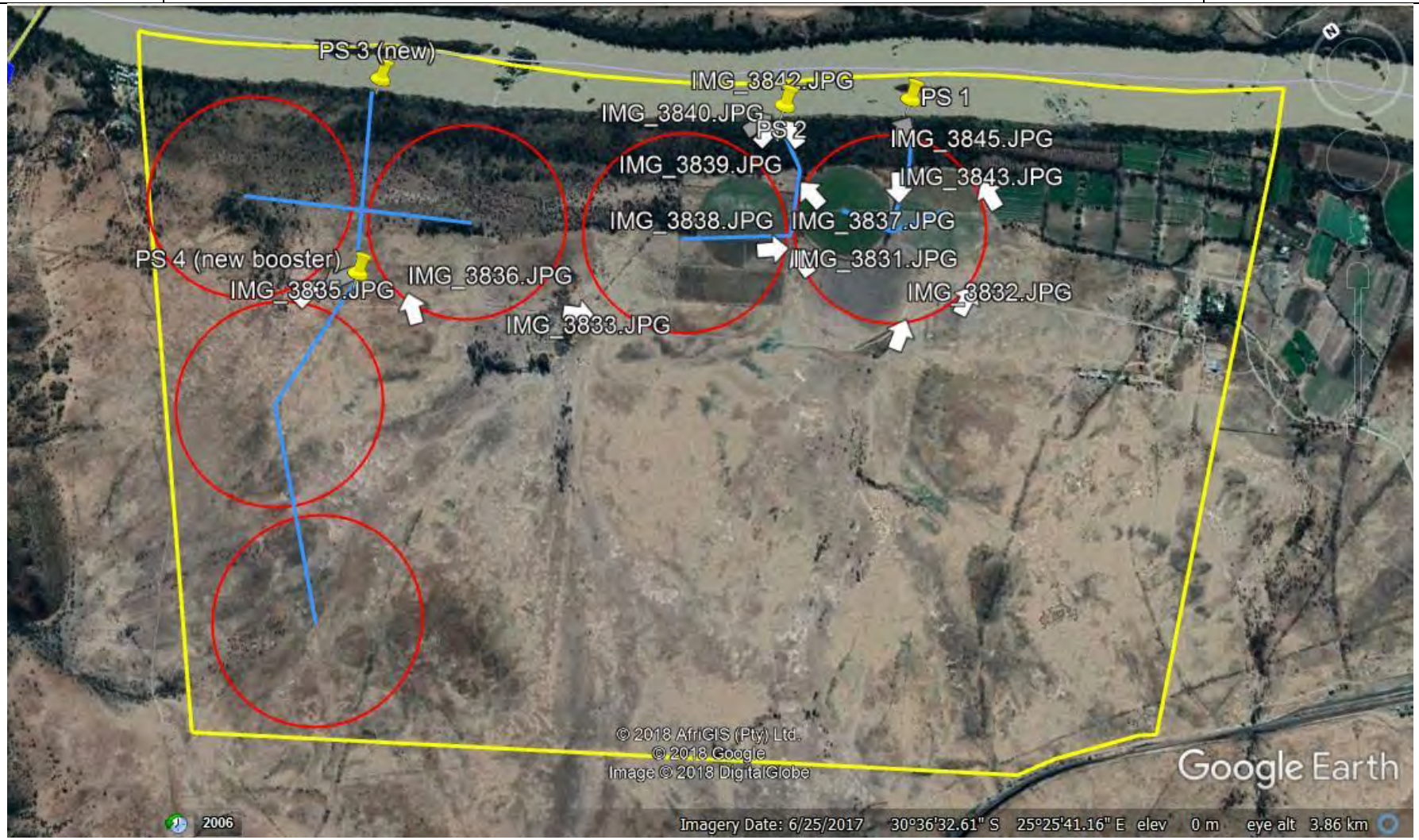


Image © 2018 DigitalGlobe
© 2018 AfriGIS (Pty) Ltd.
© 2018 Google
Google Earth
2006
Imagery Date: 6/25/2017 30°36'16.26" S 25°25'49.41" E elev 0 m eye alt 4.07 km

Appendix D2: Site Photographs

IMAGE NR	IMAGE	DESCRIPTION



Overview Google Earth image of where images were taken

IMAGE NR	IMAGE	DESCRIPTION
IMG_3831		Current vegetation on site, to be removed as part of this application
IMG_3832		Current vegetation on site, to be removed as part of this application with existing pivots visible

IMAGE NR	IMAGE	DESCRIPTION
IMG_3833		Current vegetation on site, to be removed as part of this application

IMAGE NR	IMAGE	DESCRIPTION
IMG_3834		Current vegetation on site, to be removed as part of this application. Electrical connection also visible.

IMAGE NR	IMAGE	DESCRIPTION
IMG_3835		Current vegetation on site, to be removed as part of this application

IMAGE NR	IMAGE	DESCRIPTION
IMG_3836		Current vegetation on site, to be removed as part of this application

IMAGE NR	IMAGE	DESCRIPTION
IMG_3837		Current vegetation on site, to be removed as part of this application, disturbed within the last 10 years.

IMAGE NR	IMAGE	DESCRIPTION
IMG_3838		Current vegetation on site, to be removed as part of this application, disturbed within the last 10 years.

IMAGE NR	IMAGE	DESCRIPTION
IMG_3839		Area where proposed pipeline will cross

IMAGE NR	IMAGE	DESCRIPTION
IMG_3840		Existing Pump station (PS2) and pipeline used for extraction from the river

IMAGE NR	IMAGE	DESCRIPTION
IMG_3841		Existing Pump station (PS2) and pipeline used for extraction from the river

IMAGE NR	IMAGE	DESCRIPTION
IMG_3842		Existing Pump station (PS2) and pipeline used for extraction from the river

IMAGE NR	IMAGE	DESCRIPTION
IMG_3843		Existing pivot and disturbed are to be cultivated with maize and Lucerne as part of this application

IMAGE NR	IMAGE	DESCRIPTION
IMG_3844		Existing Pump Station 1 (PS1) and pipeline used to abstract water from the Orange River

IMAGE NR	IMAGE	DESCRIPTION
IMG_3845		Existing cultivation taking place on property

Appendix E1: Irrigation Rights From Orange River Scheme

Department of Water Affairs & Forestry - Departement van Waterwese & Bosbou
Isebe Lwezamanzi Namahlathi - Lefa Pha La Merero Ya Metsi Le Jalo Ya Dikgwa
Republic of South Africa - Republiek van Suid-Afrika
Iriphabliki Yomzantsi Afrika - Repaboliki ya Afrika-Bo Rwa

GARIEPDAM * GARIEP DAM * LETAMO LA GARIEP * IDAMA LASA GARIEP

*Tel No.: (051) 754-0001 ; (051) 754-0002 ; (051) 754-0403 * Faks No.: (051) 754-0134*

Private Bag X09 ; Gariep Dam ; Republic of South Africa

March 6, 2001
Mr Southey DGM
Post Box 202
Gariep Dam
9922

Ref: comp motiv

Re;- REGISTRATION OF WATER USE/REGISTRASIE VAN WATERGEBRUIK

Farm/*Plaas:* Stockenstroms Kop
Number/*Nommer:* 77
Portion/*Gedeelte:* Ptn 7
Scheduled water right/*Ingelyste waterreg:* 40.0 Hectare
Annual water allocation/*Jaarlikse water toekenning:* m³ per annum/per jaar 440000 m³

This serves to inform you that in terms of The National Water Act No 36 of 1998 the Area Manager of Gariep Dam is registering the use of water abstracted out of the Orange River by riparian farmers between Gariep Dam and Vanderkloof Dam on your behalf.

Neem kennis dat in terme van Die Nasionalewaterwet No 36 van 1998 sal die Gebiedsbestuurde Gariep Dam water verbruik deur die oewerboere teen die Oranjerivier tussen Gariep Dam en Vanderkloof Dam namens u registreer

The information at the top of this page reflects your current use and entitlment

Die inligting bo aangewys weerspiel u huidige verbruik en waterreg..

Should you not want to have this registration done on your behalf you are required to notify the Area Manager in writhing within 28 days of the date of this letter but not later than 4 April 2001.

Sou u NIE wil registreer nie moet u binne 28 dae vanaf die datum van hierdie skrywe maar nie later as 4 April2001 die Gebiedsbestuurder skriftelik in kennis stel van u besluit. Let wel dat as u NIE wil registreer nie mag u nie na 1 April 2001 meer water uit die Oranjerivier onttrek nie.

Please note that should you opt NOT accept this registration you may not abstract any further water from the Orange River as from 1 April 2001

A.A. [Dolf] Cochrane.
AREA MANAGER/GEBIEDSBESTUURDER

DEPARTMENT OF WATER AFFAIRS AND FORESTRY

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

Sector: AGRICULTURE: IRRIGATION

Water resource: ORANGE RIVER (GARIEP DAM, VANDERKLOOF DAM AND ORANGE-FISH TUNNEL)

Source: SCHEME

Total volume taken per year is 440000.00 **cubic metres** **(effective from** 2003-04-01)

Water use start date: 2003-04-01 **Water Use No.:** 2

Comment: Additional 40 Ha.

40 Ha @ 11.000 Cu. mtrs

36 Ha Sold to G. Players

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 registration certificate that may have been previously issued by the Department and the information is valid as at the date of issue.

water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Confirmation Report for Register Number: 23051215
Office: FREE STATE OFFICE
Workgroup: FREE STATE OFFICE WORKGROUP
Part 1 - DW756: INDIVIDUAL

Status: ACTIVE
Status Date: 2006/09/13 03:32:07 PM

Generic Part 1 Details

Validation

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

Verification

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

Language Preference

Applicant Language Preference

Written Comunication: ENGLISH
Verbal Communication: ENGLISH

VAT Registration Information

VAT Registration Number:

Applicant Details

Surname: SOUTHEY
Initials: DGM
Title: MR
Identification Type: RSA ID DOCUMENT
Identification Number: 4308095025089
Gender: Male
Population Group: White

Part 1 Submission Date:

Contact Details

Postal Address:	PO BOX 202 GARIEP DAM 9922
Physical Address:	STOCKENSTROMS KOP 77/7 COLESBERG

Contact Telephone Number

Area/Cell Code:	051
Number:	7555104
Extension:	

Contact Person Details

Surname:	SOUTHEY
Name:	DAVID GEORGE MONTAGU
Title:	

Contact Telephone Number

Number:	0517555104
Extension:	
Cellphone:	
Fax Number:	
Email:	

Billing Information

Water Management Area:	ORANGE
File Number:	K/1/D340/87
District Municipality Establishment Levy Payable:	Yes

Comment

WUN 1 - DW760: TAKING WATER FROM A WATER RESOURCE

Status:	CLOSED
Water Use Close Date:	2006/03/31
Water Use Close Reason:	SCHEME MANAGEMENT PARAMETER CLOSED

Generic Part 2 Details

Validation

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

Verification

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

Lawfulness Authentication

Finding:	LAWFULNESS STILL TO BE DETERMINED
Finding Date:	2006/03/31
Finding Reason:	
Finding Confirmed:	Yes
Last Change Date:	2006/03/31 05:46:37 PM
Official's Name:	WARMSADM WARMSADM

Licence Information

Registration of Licensed Water Use: No

Succession/Transfer Type and Source Part 2 Details

Succession/Transfer Type:

Source Part 2 Details:

Water Resource Information

Type of Water Source:	SCHEME
Name or Reference No. of Abstraction Point:	VDK 26
Scheme:	ORANGE RIVER (GARIEP DAM, VANDERKLOOF DAM AND ORANGE-FISH TUNNEL)
Scheme Management Parameter:	VANDERKLOOF GOVERNMENT WATER CONTROL AREA

SMP Start Date: (BETWEEN VANDERKLOOF DAM AND HOPETOWN)
SMP End Date: 0100/01/01
SMP Servitude Volume Information:

Geographic location of the abstraction point

Latitude:	30° 36' 0" S	30.6° S	30° 36' S
Longitude:	25° 25' 48" E	25.43° E	25° 25.8' E
Datum Type:	CAPE (MODIFIED CLARKE 1880)		
Reliability of Water Resource:	WATER ALWAYS AVAILABLE		

Water Use Sector

Sector: AGRICULTURE: IRRIGATION
Scheduled Area:
AR Division: RAW WATER
Billing Frequency: BI-ANNUALLY
RPF (Resource Poor Farmer) Subsidy Related: No
Quaternary Drainage Region: D34A

Registered Volume(s):

Start Date	*Volume (m³)*	*Time Interval*	*Transmission Losses %*
2003/04/01	704000	PER YEAR	

Estimated Water Abstraction Pattern is:

Method(s) of Abstraction:

District Municipality

District Municipality: KAROO DISTRICT MUNICIPALITY

Office Use

Part 2 Submission Date:

Existing Authorisation

Existing Permit Information:

Permit Number	*Permit Date*

Does water use take place in terms of General Authorisation? No
If an Authorisation has Been Issued Under Other Legislation:

Irrigated Field and Crop Information

Crop Details:

Field Number	Crop	Area	Planting Date (mm/dd)	Growing season (days)	Rotation factor %	Irrigation system
1	LUCERNE	64	12/30	365	100%	SPRINKLER: DRAGLINE

Description of any irrigation scheduling methods used:

Describe any other methods to enhance irrigation efficiency:

Property Details

Property Id:	92513
Property Record Status:	COMPLETE
Record Status Date:	2008/08/23 02:40:35 PM
Property Name:	STOCKENSTROMS KOP
Office:	FREE STATE OFFICE
Property Area :	685.2256
Area Measure Unit :	HECTARES
Property Physical Status:	
Physical Status Date:	
Property Registration Date :	2003/04/01
End Date:	
Property Type :	FARM

Surveyed Property

Property Type Specific Name :	STOCKENSTROMS KOP
Property Number:	77
Property Portion Number :	7
Surveyor-General Cadastral Code:	C02100000000007700007
Surveyor-General Office :	CAPE TOWN
Deeds Office:	CAPE TOWN
Province:	EASTERN CAPE
Registration Division:	COLESBURG

Property Sequence Number	WUN/Property Relationship Start Date	WUN/Property Relationship End Date
1	2003/04/01	

WUN 2 - DW760: TAKING WATER FROM A WATER RESOURCE

Status:	CLOSED
Water Use Close Date:	2003/09/30
Water Use Close Reason:	PERMANENT - FULL TRANSFER

Generic Part 2 Details

Validation

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

Verification

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

Lawfulness Authentication

Finding:	LAWFULNESS STILL TO BE DETERMINED
Finding Date:	2006/03/31
Finding Reason:	
Finding Confirmed:	Yes
Last Change Date:	2006/03/31 05:46:37 PM
Official's Name:	WARMSADM WARMSADM

Licence Information

Registration of Licensed Water Use: No

Succession/Transfer Type and Source Part 2 Details

Succession/Transfer Type:

Source Part 2 Details:

Water Resource Information

Type of Water Source:	SCHEME
Name or Reference No. of Abstraction Point:	VDK 26A
Scheme:	ORANGE RIVER (GARIEP DAM, VANDERKLOOF DAM AND ORANGE-FISH TUNNEL)
Scheme Management Parameter:	VANDERKLOOF GOVERNMENT WATER CONTROL AREA

SMP Start Date: (BETWEEN VANDERKLOOF DAM AND HOPETOWN)
SMP End Date: 0100/01/01
SMP Servitude Volume Information:

Geographic location of the abstraction point

Latitude:	30° 36' 0" S	30.6° S	30° 36' S
Longitude:	25° 25' 48" E	25.43° E	25° 25.8' E
Datum Type:	CAPE (MODIFIED CLARKE 1880)		
Reliability of Water Resource:	WATER ALWAYS AVAILABLE		

Water Use Sector

Sector: AGRICULTURE: IRRIGATION
Scheduled Area:
AR Division: RAW WATER
Billing Frequency: BI-ANNUALLY
RPF (Resource Poor Farmer) Subsidy Related: No
Quaternary Drainage Region: D34A

Registered Volume(s):

Start Date	*Volume (m³)*	*Time Interval*	*Transmission Losses %*
2003/04/01	154000	PER YEAR	

Estimated Water Abstraction Pattern is:

Method(s) of Abstraction:

District Municipality

District Municipality: KAROO DISTRICT MUNICIPALITY

Office Use

Part 2 Submission Date:

Existing Authorisation

Existing Permit Information:

Permit Number	*Permit Date*

Does water use take place in terms of General Authorisation? No
If an Authorisation has Been Issued Under Other Legislation:

Irrigated Field and Crop Information

Crop Details:

Field Number	Crop	Area	Planting Date (mm/dd)	Growing season (days)	Rotation factor %	Irrigation system
1	LUCERNE	14	12/30	365	100%	SPRINKLER: DRAGLINE

Description of any irrigation scheduling methods used:

Describe any other methods to enhance irrigation efficiency:

Property Details

Property Id:	92513
Property Record Status:	COMPLETE
Record Status Date:	2008/08/23 02:40:35 PM
Property Name:	STOCKENSTROMS KOP
Office:	FREE STATE OFFICE
Property Area :	685.2256
Area Measure Unit :	HECTARES
Property Physical Status:	
Physical Status Date:	
Property Registration Date :	2003/04/01
End Date:	
Property Type :	FARM

Surveyed Property

Property Type Specific Name :	STOCKENSTROMS KOP
Property Number:	77
Property Portion Number :	7
Surveyor-General Cadastral Code:	C02100000000007700007
Surveyor-General Office :	CAPE TOWN
Deeds Office:	CAPE TOWN
Province:	EASTERN CAPE
Registration Division:	COLESBURG

Property Sequence Number	WUN/Property Relationship Start Date	WUN/Property Relationship End Date
1	2003/04/01	

WUN 3 - DW760: TAKING WATER FROM A WATER RESOURCE

Status: REGISTERED
Water Use Status Date: 2006/09/13 03:31:46 PM

Generic Part 2 Details

Validation

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

Verification

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

Lawfulness Authentication

Finding: LAWFULNESS STILL TO BE DETERMINED
Finding Date: 2006/09/13
Finding Reason:
Finding Confirmed: Yes
Last Change Date: 2006/09/13 03:31:45 PM
Official's Name: FLIP VAN DER WALT

Licence Information

Registration of Licensed Water Use: No

Succession/Transfer Type and Source Part 2 Details

Succession/Transfer Type:

Source Part 2 Details:

Water Resource Information

Type of Water Source: SCHEME
Name or Reference No. of Abstraction Point: VDK 26
Scheme: ORANGE RIVER (GARIEP DAM, VANDERKLOOF DAM AND ORANGE-FISH TUNNEL)
Scheme Management Parameter: VANDERKLOOF GOVERNMENT WATER CONTROL AREA (BETWEEN GARIEP DAM AND VANDERKLOOF DAM)

Appendix E2: Soil Science Report

VAN DER MERWE FARMING TRUST

IRRIGATION REPORT

AVV NAUDE

2 FEBRUARY 2018

ATTENTION:

REPORT ON PROPOSED IRRIGATION LAND

PERSONAL INFORMATION:

AvV NAUDE (AGRONOMIST)

Registration no. By SACNASP=400031/04 Agricultural Science.

I have been working as an Agronomist since 1986.

- NITROPHOSKA (14 years),
- SASOL NITRO (10 years)
- and OMNIA for the last 10 years.

I am mainly responsible for the followings irrigation areas:

- FISHRIVER,
- SUNDAYSRIVER,
- GAMTOOSVALLEY
- and GARIEPRIVER from COLESBERG up to ALIWAL NORTH.

STOCKENSTROMSKOP owned by VAN DER MERWE FARMING TRUST

Information regarding my visit to the planned irrigation area at STOCKENSTROMSKOP in COLESBERG district.

SIZE

- The planned land is 200 ha.

TOPOGRAPHY

The Topography of the planned lands are as follow:

- Profiles 1 - 3: slope from SOUTH to NORTH at 10-15 degrees

- Profile 4: slope from SOUTH SOUTH WEST TO NORTH NORTH EAST at 10-15 degrees

- Profiles 5 - 8: slope from SOUTH to NORTH at 5-10 degrees.

➢ The slopes of all the above mentioned planned lands are between 5 - 15 degrees without any indication of erosion.

➢ NO earth moving are necessarry because of the even lay of all the lands without any erosion.

➢ There are NO WATER COURSES running through the planned lands that could have a negative influence on this report

VEGETATION

Vegetation consists mainly of a mixed dwarf shrub/grass layer with a few

- ACACIA KARROO (soetdoring)
- DIOSPYROS LYCIOIDES (bloubos)

spread towards the lower lying area.

Dominant shrub species are:

- Lycium cinereum (kriedoring),
- Osteospermum Sinuatum (Geelbitou),
- Osteospermum Scariosum (Sagtebitou),
- Pentia Globosa (Vaalkaroo),
- Pentzia Incana (Ankerkaroo),
- Hermania Cernua Coccocarpa (Moederskappie),
- Eberlanzia Ferox (Doringvygie),
- Chrysocoma Ciliata (Bitterbos).

Grasses exist mainly of the following:

- Aristida Adscensionis (Steekgras),
- Sporobolus Fimbriatus (Fynsaadgras),

- Tricholaena Monachne (Blousaadgras),
- Eragrostis Bicolor (Fynvleigras),
- Eragrostis Obtusa (Douvatgras),
- Panicum Coloratum (Kleinbuffelsgras),
- Hyparrhenia Hirta (Dekgras),
- Cynodon Dactylon (Kweek).
- Themeda Triandra (Rooigras).

None of the above mentioned trees, shrubs and grasses are of the scarce varieties.

METHOD OF INVESTIGATION:

- Profile holes where dug before hand to the depth of 1.5m.

CHARACTERISTICS

The **characteristics** of the profiles are as follow:

- The actual dept varied from 1.2m and deeper.
- No **DORBANK, HARD ROCK OR HARD PAN CARBONATE** layers were noticed in the profiles.
- The soil layers in ALL the profile holes (except profile 3,4 and 7) were more or less the same, consisting of an **A horizon, LIGHT BROWN** in colour on top of a **B horizon, DARK BROWN** in colour.
- The soil layers in profiles 3,4 and 7 consist of an A horizon, **LIGHT BROWN** in colour on top of a B horizon **REDISH BROWN** in colour.
- Both the A and B horizons of ALL the profiles except profiles 3,4 and 7 lies on top of an **UNSPECIFIED C** horizon.
- The A and B horizons of profiles 3,4 and 7 lies on top of a **SOFT CARBONATE** (crumble structure) **C** horizon.
- There were no differences amongst the colour and different ratios between the **A** and **B** HORIZONS of the two different groups of profiles.

- **Free lime** were noticed in die B HORIZONS of profile holes 3,4 and 7.

- No **FREE LIME** were noticed in the rest of the profile holes.

- The C HORIZONS in all the profiles were deeper than 1.2m.

THE SOIL CONSISTS OF:

- Profiles 1,2,5,6 and 8 consists of an **ORTHIC A HORIZON** from 15-20cm deep, **LIGHT BROWN** in colour.

- A **NEOCUTANIC B HORIZON, DARKER BROWN** in clour with **NON LUVIC CHARATERISTICS** from 15cm - 1.2m and deeper on top of an **UNSPECIFIED C** HORIZON without any signs of wettness.

  - Profiles **3 and 4** consists of an **ORTHIC A HORIZON** from 15 - 20cm deep, LIGHT BROWN in colour.

  - A **NEOCARBONATE B HORIZON, REDDISH BROWN** in colour with **LUVIC CHARACTARISTICS** on a **SOFT CARBONATE** (crumble structure) **C** HORIZON without any signs of wettness.

- Profile 7 consist of an **ORTHIC A HORIZON** from 15 - 20cm deep, **LIGHT BROWN** in colour.

- A **NEOCARBONATE B HORIZON, REDISH BROWN** in colour with **NON LUVIC CHARACTERISTICS** on a **SOFT CARBONATE** (crumble structure) C HORIZON without any signs of wettness

- The **B** HORIZONS strethes from 15cm - 1.2m and deeper

- NO **DORBANK, HARD PAN LIME or HARD ROCK** banks were noticed any where.

- **No** water containing layers were noticed in the profiles.

- The above mentioned fact accentuates the crumble structure of the **C** HORIZON of profiles 3, 4 and 7.

According to the **TAXONOMICAL CLASSIFICATION OF 1991** the planned lands are classified as follow:

- 1,2,5,6 and 8 as **COOPER** soils, therefor **serie 2110** and of the **OAKLEAF** form family.
- 3 and 4 as **SUTTONDALE** soils, therefor **serie 2221** and of the **ADDO** form family.
- 7 as **MIMOSA** soils, therefor **serie 2211** and of the **ADDO** form family.

TEXTURE:

TEXTURE OF THE LAND IS AS FOLLOWS PER SOIL ANALYSIS:

	SAND %	SILT%	CLAY%	TEXTURE
1A	59	21	20	Sand/Loam
1B	63	17	20	Sand/loam
2A	44	34	22	Loam
2B	64	16	20	Sand/loam
3A	64	24	12	Sand/loam
3B	50	26	24	Sand/clay/loam
4A	74	14	12	Sand/loam
4B	56	10	34	Sand/clay/loam
5A	15	41	44	Silty/clay
5B	24	40	36	Clay/loam
6A	54	30	16	Sand/loam
6B	56	28	16	Sand/loam
7A	52	28	20	Sand/loam
7B	53	31	16	Sand/loam
8A	64	22	14	Sand/loam
8B	77	15	8	Loam/sand

- The clay % in the B HORIZON increased a little bit with depth in some of the profiles.
- Heavy prismatic clay stuctures were **NOT** noticed anywhere.
- **NO** stones where noticed in the A OR B horizons of the profiles.
- Waterinfiltration is immediate because of the sand % of the top soil. Infiltration to the B horizon is quickly.

- NO compaction layers were noticed anywhere that could have an negative influance on the infiltration rate.

- In spite of good rain no water layers were noticed anywhere that could be an indication of drainage problems.

- Roots of existing plants such as the Karoo-, and Krie bushes were found as deep as 1.2m, even in the SOFT CARBONATE C horizon.

- The fact that no hard stone layers or hard lime banks are present accentuates the fact of good soil drainage.

- By improving the organic content of the A HORIZON by incorporating plant rests to the top soil the waterholding capasity of the soil can be improved dramatically.

- No compaction layers where noticed in any of the 8 (eight) prophiles.

CHEMICAL ANALYSIS

The A of each prophile represents the top 30cm.

The B the lower 30-60cm.

The chemical analyses is attached. It shows all relevant ratios.

According to the FSSA the following ratios are important for irrigation purposes.

	EC (ms/m)	Ca/Mg	Mg/K	Ca+Mg/K	SAR
Norm		1.5-4.5	3-4	10-20	Less 1
1A	45.5	1.4	10.7	26	0.03
1B	48.0	2.2	18.4	59	0.05
2A	42.5	1.0	10.0	21	0.04
2B	33.4	1.0	42.5	83	0.13
3A	19.73	1.5	5.9	15	0.03
3B	39.8	2.2	13.3	43	0.06
4A	54.5	1.8	7.8	22	0.03
4B	27.1	1.8	13.1	37	0.05
5A	31.9	1.7	4.8	13	0.03
5B	22.0	2.2	7.3	23	0.03
6A	31.3	2.5	19.5	67	0.13
6B	42.8	2.3	30.1	100	0.37
7A	29.4	1.9	6.0	18	0.02
7B	18.3	1.5	17.0	43	0.03
8A	20.6	2.6	5.4	19	0.04
8B	11.98	2.5	24.0	83	0.06

REMARKS:

- ✓ The very low **SAR** values of all the prophile holes indicate that **SALINITY** and **BRAK** causes no problem.
- ✓ The ratios of the lower lying 30-60cm soil are higher than the exceptable norms, but it is not a negative because it is due to the high **CALCIUM** and **MAGNESIUM** coming from the **soft CARBONATE** layer. It can easily be rectified.

RECOMMODATION:

My recommodation for the planned Lucern planting is as follows:

- At planting: 250 kg MAXIPHOS+Zn (16 N+36 P+12 S)
- This can be repeated after 2 (two) years if necessary

7

- Topdress 100 kg K2SO4 twice a year to rectify the skew ratios between K:CA and K:MG from the second year onwards.

SUMMARY

This 200ha of land is **extremely suitable** for irrigation because of the following facts:

(a) no restrictive layers or heavy clays appears in the profiles

(b) the slope of the land

(c) no structrual limitations of the land were present

(d) chemical ratios are all in place without any access salts.

(e) No ERROTION and WATER COURSES appears on the planned lands.

Yours sincerly

AvV NAUDE
AGRONOMIST

Vormnommer	334565

omnia
NUTRIOLOGY • NUTRILOGIE*
*the science of growing • wetenskap vir groei

LABORATORIUM ONTLEDINGSVERSLAG

Kliënt	ISAK VAN DER MERWE	Landdrosdistrik	COLESBERG
Verteenwoordiger	VISSER NAUDE 0824129534	Landboukundige	Adriaan Naudè 0825783134
Monster Datum	2017/12/14	Verslag Datum	2017/12/28

ROETINE GRONDONTLEDING

Plaasnaam		V/DER MERWE	V/DER MERWE	V/DER MERWE	V/DER MERWE	
Landnommer		1A	1B	2A	2B	
Lab nommer		1213	1214	1215	1216	
Gewas		Mielies	Mielies	Mielies	Mielies	
Hektaar		1.0	1.0	1.0	1.0	
Monsterdiepte		Bo-grond	Bo-grond	Bo-grond	Bo-grond	
Kleur		Dnker Br	Dnker Br	Dnker Br	Ro Br	
Brutodigtheid	($kg \cdot m^{-3}$)	1315	1235	1210	1245	
pH	(KCl)	5.4	6.7	5.7	6.3	
Uitruilbare suur		NVT	NVT	NVT	NVT	
Suurversadiging	(%)	NVT	NVT	NVT	NVT	
S	($mg \cdot kg^{-1}$)	3 //	5 //	6 //	3 //	10+
P	($mg \cdot kg^{-1}$)	9 //	10 //	18 //	3 //	25+
P (Olsen)	($mg \cdot kg^{-1}$)	-	-	-	-	
K	($mg \cdot kg^{-1}$)	167	145	262	113 //	140+
	K(% van EKUK)	4	2	5	1	3-6%
Ca	($mg \cdot kg^{-1}$)	1270	3020	1410	2340	350+
	Ca(% van EKUK)	56	67	48	47	60-80%
Mg	($mg \cdot kg^{-1}$)	559	832	821	1500	40+
	Mg(% van EKUK)	40	30	46	50	13-20%
Na	($mg \cdot kg^{-1}$)	15	40	23	104	<250
	Na(% van EKUK)	1	1	1	2	<5%
EKUK	($cmol_c \cdot kg^{-1}$) Bereken	11.4	22.5	14.5	24.7	
Ca / Mg		1.4	2.2	1.0	1.0	
Mg / K		10.7	18.4	10.0	42.5	
(Ca + Mg) / K		26	59	21	83	
Elektriese geleiding	($mS \cdot m^{-1}$)	NVT	NVT	NVT	NVT	

Die interpretasie van hierdie analise is na gelang van algemene norme en plekgewas-spesifieke interpretasie word aanbeveel.

Hierdie laboratorium is ISO/IEC 17025:2005 geakkrediteer deur SANAS (Toets laboratorium No T0466) vir die kwantifisering van Ca, Mg, Na en K in grond.

Ekstraksiemetodes	P - Bray I \ Olsen(pH >= 7.3)	Katione - NH_4OAc

Vormnommer	334565

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Monster Datum	2017/12/14	Verslag Datum	2017/12/28

NIE-ROETINE GRONDONTLEDING

Plaasnaam		V/DER MERWE	V/DER MERWE	V/DER MERWE	V/DER MERWE
Landnommer		1A	1B	2A	2B
Lab nommer		1213	1214	1215	1216
Gewas		Mielies	Mielies	Mielies	Mielies
Hektaar		1.0	1.0	1.0	1.0
Monsterdiepte		Bo-grond	Bo-grond	Bo-grond	Bo-grond
Tot-N	($mg \cdot kg^{-1}$)	-	-	-	-
N	(%)	-	-	-	-
NO_3-N	($mg \cdot kg^{-1}$)	-	-	-	-
NH_4-N	($mg \cdot kg^{-1}$)	-	-	-	-
Sand	(%)	59	63	44	64
Slik	(%)	21	17	34	16
Klei	(%)	20	20	22	20
Volumetriese klipfraksie	(%)	-	-	-	-
Elektriese geleiding	($mS \cdot m^{-1}$)	45.50	48.00	42.50	33.40
Organiese C	(% m/m)	-	-	-	-
Organiese Materiaal	(% m/m)	-	-	-	-
Cl	($mg \cdot kg^{-1}$)	-	-	-	-
Zn	($mg \cdot kg^{-1}$)	0.6	0.2	0.6	0.1
Mn	($mg \cdot kg^{-1}$)	8.39	3.03	8.54	1.08
Fe	($mg \cdot kg^{-1}$)	15.0	11.0	15.0	10.0
Cu	($mg \cdot kg^{-1}$)	1.7	0.8	1.5	0.5
B	($mg \cdot kg^{-1}$)	-	-	-	-
P (Truog)	($mg \cdot kg^{-1}$)	-	-	-	-
FSI		-	-	-	-
Ni	($mg \cdot kg^{-1}$)	0.50	0.30	0.70	0.10
Si	($mg \cdot kg^{-1}$)	-	-	-	-

2,0+
1,42+
0,5+

Die interpretasie van hierdie analise is na gelang van algemene norme en plek/gewas-spesifieke interpretasie word aanbeveel.

Hierdie laboratorium neem deel aan die gehalteversekeringskema van ALASA en voldoen aan hierdie assosiasie se standaarde. Hierdie laboratorium is ISO 9001:2000 gesertifiseer.

Ekstraksiemetodes	Tot-N – 0.1N K_2SO_4	Cl – 0.1N KNO_3	Organiese C – Walkley-Black metode
	Fe,Mn,Zn,Cu,Ni – DTPA	B – Warm waterekstrak	P – Truog

Vormnommer	334565

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Monster Datum	2017/12/14	Verslag Datum	2017/12/28

ROETINE GRONDONTLEDING

Plaasnaam		V/DER MERWE	V/DER MERWE	V/DER MERWE	V/DER MERWE
Landnommer		3A	3B	4A	4B
Lab nommer		1217	1218	1219	1220
Gewas		Mielies	Mielies	Mielies	Mielies
Hektaar		1.0	1.0	1.0	1.0
Monsterdiepte		Bo-grond	Bo-grond	Bo-grond	Bo-grond
Kleur		Gl Br	Dnker Br	Dnker Br	Dnker Br
Brutodigtheid	($kg \cdot m^{-3}$)	1330	1165	1420	1270
pH	(KCl)	5.1	6.1	5.3	5.7
Uitruilbare suur		NVT	NVT	NVT	NVT
Suurversadiging	(%)	NVT	NVT	NVT	NVT
S	($mg \cdot kg^{-1}$)	2	4	5	3
P	($mg \cdot kg^{-1}$)	19	3	13	12
P (Olsen)	($mg \cdot kg^{-1}$)	-	-	-	-
K	($mg \cdot kg^{-1}$)	234	174	147	146
	K(% van EKUK)	6	2	4	3
Ca	($mg \cdot kg^{-1}$)	1100	2640	1080	1780
	Ca(% van EKUK)	57	67	62	62
Mg	($mg \cdot kg^{-1}$)	433	722	357	598
	Mg(% van EKUK)	37	30	33	34
Na	($mg \cdot kg^{-1}$)	14	44	14	30
	Na(% van EKUK)	1	1	1	1
EKUK	($cmol_c \cdot kg^{-1}$) Bereken	9.7	19.8	8.8	14.3
Ca / Mg		1.5	2.2	1.8	1.8
Mg / K		5.9	13.3	7.8	13.1
(Ca + Mg) / K		15	43	22	37
Elektriese geleiding	($mS \cdot m^{-1}$)	NVT	NVT	NVT	NVT

Die interpretasie vanhierdie analise is na gelang van algemene norme en plaklige / ras-spesifieke interpretasie word aanbeveel

Hierdie laboratorium is ISO/IEC 17025:2005 geakkrediteer deur SANAS (Toets laboratorium No T0466) vir die kwantifisering van Ca, Mg, Na en K in grond.

Ekstraksiemetodes	P - Bray I \ Olsen(pH >= 7.3)	Katione - NH_4OAc

Vormnommer	334565

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Kliënt	ISAK VAN DER MERWE	Landdrosdistrik	COLESBERG
Verteenwoordiger	VISSER NAUDE 0824129534	Landboukundige	Adriaan Naudè 0825783134
Monster Datum	2017/12/14	Verslag Datum	2017/12/28

NIE-ROETINE GRONDONTLEDING

Plaasnaam		V/DER MERWE	V/DER MERWE	V/DER MERWE	V/DER MERWE
Landnommer		3A	3B	4A	4B
Lab nommer		1217	1218	1219	1220
Gewas		Mielies	Mielies	Mielies	Mielies
Hektaar		1.0	1.0	1.0	1.0
Monsterdiepte		Bo-grond	Bo-grond	Bo-grond	Bo-grond
Tot-N	($mg \cdot kg^{-1}$)	-	-	-	-
N	(%)	-	-	-	-
NO_3-N	($mg \cdot kg^{-1}$)	-	-	-	-
NH_4-N	($mg \cdot kg^{-1}$)	-	-	-	-
Sand	(%)	64	50	74	56
Slik	(%)	24	26	14	10
Klei	(%)	12	24	12	34
Volumetriese klipfraksie	(%)	-	-	-	-
Elektriese geleiding	($mS \cdot m^{-1}$)	19.73	39.80	54.50	27.10
Organiese C	(% m/m)	-	-	-	-
Organiese Materiaal	(% m/m)	-	-	-	-
Cl	($mg \cdot kg^{-1}$)	-	-	-	-
Zn	($mg \cdot kg^{-1}$)	0.3 //	0.1 //	0.2 //	0.1 //
Mn	($mg \cdot kg^{-1}$)	6.14	1.40	4.90	2.79
Fe	($mg \cdot kg^{-1}$)	13.0	6.5	11.0	9.4
Cu	($mg \cdot kg^{-1}$)	0.8	0.9	0.6	0.7
B	($mg \cdot kg^{-1}$)	-	-	-	-
P (Truog)	($mg \cdot kg^{-1}$)	-	-	-	-
FSI		-	-	-	-
Ni	($mg \cdot kg^{-1}$)	0.30	0.20	0.20	0.10
Si	($mg \cdot kg^{-1}$)	-	-	-	-

Die interpretasie van hierdie analise is na gelang van algemene norme en plaasgewas-spesifieke interpretasie word aanbeveel

Hierdie laboratorium neem deel aan die gehalteversekeringskema van ALASA en voldoen aan hierdie assosiasie se standaarde. Hierdie laboratorium is ISO 9001:2000 gesertifiseer.

Ekstraksiemetodes	Tot-N – 0.1N K_2SO_4	Cl – 0.1N KNO_3	Organiese C – Walkley-Black metode
	Fe,Mn,Zn,Cu,Ni – DTPA	B – Warm waterekstrak	P – Truog

Vormnommer	334565

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Monster Datum	2017/12/14	Verslag Datum	2017/12/28

ROETINE GRONDONTLEDING

Plaasnaam		V/DER MERWE	V/DER MERWE	V/DER MERWE	V/DER MERWE
Landnommer		5A	5B	6A	6B
Lab nommer		1221	1223	1224	1225
Gewas		Mielies	Mielies	Mielies	Mielies
Hektaar		1.0	1.0	1.0	1.0
Monsterdiepte		Bo-grond	Bo-grond	Bo-grond	Bo-grond
Kleur		H Br	H Br	Ro Br	Ro Br
Brutodigtheid	($kg \cdot m^{-3}$)	1000	1155	1185	1175
pH	(KCl)	5.1	5.9	6.8	6.6
Uitruilbare suur		NVT	NVT	NVT	NVT
Suurversadiging	(%)	NVT	NVT	NVT	NVT
S	($mg \cdot kg^{-1}$)	7	3	4	4
P	($mg \cdot kg^{-1}$)	40	21	11	6
P (Olsen)	($mg \cdot kg^{-1}$)	-	-	-	-
K	($mg \cdot kg^{-1}$)	554	402	137	103
	K(% van EKUK)	7	4	1	1
Ca	($mg \cdot kg^{-1}$)	2310	3280	3350	3660
	Ca(% van EKUK)	58	66	69	66
Mg	($mg \cdot kg^{-1}$)	827	915	833	967
	Mg(% van EKUK)	34	30	28	28
Na	($mg \cdot kg^{-1}$)	20	21	105	309
	Na(% van EKUK)	0	0	2	5
EKUK	($cmol_c \cdot kg^{-1}$) Bereken	19.8	25.0	24.4	27.8
Ca / Mg		1.7	2.2	2.5	2.3
Mg / K		4.8	7.3	19.5	30.1
(Ca + Mg) / K		13	23	67	100
Elektriese geleiding	($mS \cdot m^{-1}$)	NVT	NVT	NVT	NVT

Die interpretasie van hierdie analise is na gelang van algemene norme en plaasgewas spesifieke interpretasie word aanbeveel

Hierdie laboratorium is ISO/IEC 17025:2005 geakkrediteer deur SANAS (Toets laboratorium No T0466) vir die kwantifisering van Ca, Mg, Na en K in grond.

Ekstraksiemetodes	P - Bray I \ Olsen(pH >= 7.3)	Katione - NH_4OAc

Vormnommer	334565

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Monster Datum	2017/12/14	Verslag Datum	2017/12/28

NIE-ROETINE GRONDONTLEDING

Plaasnaam		V/DER MERWE	V/DER MERWE	V/DER MERWE	V/DER MERWE
Landnommer		5A	5B	6A	6B
Lab nommer		1221	1223	1224	1225
Gewas		Mielies	Mielies	Mielies	Mielies
Hektaar		1.0	1.0	1.0	1.0
Monsterdiepte		Bo-grond	Bo-grond	Bo-grond	Bo-grond
Tot-N	($mg \cdot kg^{-1}$)	-	-	-	-
N	(%)	-	-	-	-
NO_3-N	($mg \cdot kg^{-1}$)	-	-	-	-
NH_4-N	($mg \cdot kg^{-1}$)	-	-	-	-
Sand	(%)	15	24	54	56
Slik	(%)	41	40	30	28
Klei	(%)	44	36	16	16
Volumetriese klipfraksie	(%)	-	-	-	-
Elektriese geleiding	($mS \cdot m^{-1}$)	31.90	22.00	31.30	42.80
Organiese C	(% m/m)	-	-	-	-
Organiese Materiaal	(% m/m)	-	-	-	-
Cl	($mg \cdot kg^{-1}$)	-	-	-	-
Zn	($mg \cdot kg^{-1}$)	0.9 //	0.4 //	0.1 //	0.2 //
Mn	($mg \cdot kg^{-1}$)	9.16	3.53	1.59	1.22 //
Fe	($mg \cdot kg^{-1}$)	130.0	27.0	9.3	6.6
Cu	($mg \cdot kg^{-1}$)	3.7	3.9	1.2	1.4
B	($mg \cdot kg^{-1}$)	-	-	-	-
P (Truog)	($mg \cdot kg^{-1}$)	-	-	-	-
FSI		-	-	-	-
Ni	($mg \cdot kg^{-1}$)	1.10	0.50	0.20	0.10
Si	($mg \cdot kg^{-1}$)	-	-	-	-

Die interpretasie van hierdie analises is ter geleentheid van algemene norme en 'n eksgewasspesifieke interpretasie word aanbeveel

Hierdie laboratorium neem deel aan die gehalteversekeringskema van ALASA en voldoen aan hierdie assosiasie se standaarde. Hierdie laboratorium is ISO 9001:2000 gesertifiseer.

Ekstraksiemetodes	Tot-N – 0.1N K_2SO_4	Cl – 0.1N KNO_3	Organiese C – Walkley-Black metode
	Fe,Mn,Zn,Cu,Ni – DTPA	B – Warm waterekstrak	P – Truog

Vormnommer	334565

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NIE-ROETINE GRONDONTLEDING

Plaasnaam		V/DER MERWE	V/DER MERWE	V/DER MERWE	V/DER MERWE
Landnommer		7A	7B	8A	8B
Lab nommer		1226	1227	1228	1229
Gewas		Mielies	Mielies	Mielies	Mielies
Hektaar		1.0	1.0	1.0	1.0
Monsterdiepte		Bo-grond	Bo-grond	Bo-grond	Bo-grond
Tot-N	($mg \cdot kg^{-1}$)	-	-	-	-
N	(%)	-	-	-	-
NO_3-N	($mg \cdot kg^{-1}$)	-	-	-	-
NH_4-N	($mg \cdot kg^{-1}$)	-	-	-	-
Sand	(%)	52	53	64	77
Slik	(%)	28	31	22	15
Klei	(%)	20	16	14	8
Volumetriese klipfraksie	(%)	-	-	-	-
Elektriese geleiding	($mS \cdot m^{-1}$)	29.40	18.30	20.60	11.98
Organiese C	(% m/m)	-	-	-	-
Organiese Materiaal	(% m/m)	-	-	-	-
Cl	($mg \cdot kg^{-1}$)	-	-	-	-
Zn	($mg \cdot kg^{-1}$)	0.4 //	0.1 //	0.2 //	0.1 //
Mn	($mg \cdot kg^{-1}$)	6.01	2.46	27.87	1.44
Fe	($mg \cdot kg^{-1}$)	21.0	16.0	36.0	6.0
Cu	($mg \cdot kg^{-1}$)	1.7	1.3	1.0	0.8
B	($mg \cdot kg^{-1}$)	-	-	-	-
P (Truog)	($mg \cdot kg^{-1}$)	-	-	-	-
FSI		-	-	-	-
Ni	($mg \cdot kg^{-1}$)	0.60	0.30	0.60	0.20
Si	($mg \cdot kg^{-1}$)	-	-	-	-

Die interpretasie van hierdie analyse is na gelang van algemene norme en plaaslike spesifieke interpretasie word aanbeveel

Hierdie laboratorium neem deel aan die gehalteversekeringskema van ALASA en voldoen aan hierdie assosiasie se standaarde. Hierdie laboratorium is ISO 9001:2000 gesertifiseer.

Ekstraksiemetodes	Tot-N – 0.1N K_2SO_4	Cl – 0.1N KNO_3	Organiese C – Walkley-Black metode
	Fe,Mn,Zn,Cu,Ni – DTPA	B – Warm waterekstrak	P – Truog

Vormnommer	334565

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ROETINE GRONDONTLEDING

Plaasnaam		V/DER MERWE	V/DER MERWE	V/DER MERWE	V/DER MERWE
Landnommer		7A	7B	8A	8B
Lab nommer		1226	1227	1228	1229
Gewas		Mielies	Mielies	Mielies	Mielies
Hektaar		1.0	1.0	1.0	1.0
Monsterdiepte		Bo-grond	Bo-grond	Bo-grond	Bo-grond
Kleur		H Br	Gl Br	Dnker Br	Dnker Br
Brutodigtheid	($kg \cdot m^{-3}$)	1150	1235	1170	1285
pH	(KCl)	5.9	5.4	4.1	5.3
Uitruilbare suur		NVT	NVT	0.20	NVT
Suurversadiging	(%)	NVT	NVT	1.6	NVT
S	($mg \cdot kg^{-1}$)	5 //	3 //	5 //	3 //
P	($mg \cdot kg^{-1}$)	26	8 //	32	6 //
P (Olsen)	($mg \cdot kg^{-1}$)	-	-	-	-
K	($mg \cdot kg^{-1}$)	356	156	234	69 //
	K(% van EKUK)	5	2	5	1
Ca	($mg \cdot kg^{-1}$)	2100	2050	1680	2080
	Ca(% van EKUK)	62	58	67	69
Mg	($mg \cdot kg^{-1}$)	671	826	393	517
	Mg(% van EKUK)	32	39	26	28
Na	($mg \cdot kg^{-1}$)	17	24	21	36
	Na(% van EKUK)	0	1	1	1
EKUK	($cmol_c \cdot kg^{-1}$) Berekeн	17.0	17.5	12.5	15.0
Ca / Mg		1.9	1.5	2.6	2.5
Mg / K		6.0	17.0	5.4	24.0
(Ca + Mg) / K		18	43	19	83
Elektriese geleiding	($mS \cdot m^{-1}$)	NVT	NVT	NVT	NVT

Die interpretasie van plantanalise is 'n gelang van algemene norme en plantgewas-spesifieke interpretasie word aanbeveel

Hierdie laboratorium is ISO/IEC 17025:2005 geakkrediteer deur SANAS (Toets laboratorium No T0466) vir die kwantifisering van Ca, Mg, Na en K in grond.

Ekstraksiemetodes	P - Bray I \ Olsen(pH >= 7.3)	Katione - NH_4OAc

Appendix E3.1: Heritage Impact Assessment

Phase 1 Heritage Impact Assessment of proposed new agricultural pivots on Farm Stockenstroms Kop 77 near Norvalspont, Northern Cape Province.

Report prepared by
Palaeo Field Services
PO Box 38806
Langenhoven Park
9330

15 /06 / 2018

Summary

A Phase 1 Heritage Impact Assessment were carried out for the expansion of 2 existing agricultural pivots and the establishment and 4 new agricultural pivots on the farm Stockenstroms Kop 77 near Norvalspont in the Northern Cape Province. The site is characterized by flat, open grassland and old agricultural land primarily located on old floodplain deposits of the Orange River. The area flanking the river bank has largely been disturbed by previous and ongoing farming activities. The proposed study area is underlain by potentially fossil-bearing sedimentary strata of the Late Permian Adelaide that are capped by superficial deposits of low to moderate palaeontological sensitivity. No evidence was found for the accumulation and preservation of intact fossil material within the superficial sediments capping the terrain. Visibility of Adelaide Subgroup outcrop sediments is low given the low topography terrain and generally well-developed Quaternary overburden flanking the riverbank, so it will be difficult to determine the potentially adverse effect of the development in the area except to assume that given the nature of the project (aboveground agricultural activity), it will primarily affect geologically recent soils in the form of severely degraded alluvial deposits and residual top soils. The fact that pivot farming will largely effect already degraded top soil layers, potential impact on Quaternary fossils or intact Karoo sedimentary strata is considered very low. As far as the palaeontological heritage is concerned, the proposed development may proceed with no additional heritage assessments necessary, provided that all agricultural activities are restricted to within the boundaries of the development footprints. The pedestrian survey revealed no indication of *in situ* Stone Age archaeological material, capped or distributed as intact surface scatters on the landscape. There are also no indications of rock art (engravings on dolerite outcrop), prehistoric structures, graves or buildings with historical significance older than 60 years situated within the boundaries of the study area. The fact that pivot farming will largely effect already degraded top soil layers, potential impact on capped Stone Age archaeological remains is considered very low. The terrain in general is regarded as of low archaeological significance and is assigned a rating of Generally Protected C (GP.C).

Contents

Introduction

A Phase 1 Heritage Impact Assessment were carried out for the expansion of 2 existing agricultural pivots and the establishment and 4 new agricultural pivots on the farm Stockenstroms Kop 77 near Norvalspont in the Northern Cape Province (**Fig. 1**). The region's unique and non-renewable archaeological and palaeontological heritage sites are 'Generally' protected in terms of the National Heritage Resources Act (Act No 25 of 1999, section 35) and may not be disturbed at all without a permit from the relevant heritage resources authority. As many such heritage sites are threatened daily by development, both the environmental and heritage legislation require impact assessment reports that identify all heritage resources including archaeological and palaeontological sites in the area to be developed, and that make recommendations for protection or mitigation of the impact of the sites.

The primary legal trigger for identifying when heritage specialist involvement is required in the Environmental Impact Assessment process is the National Heritage Resources (NHR) Act (Act No 25 of 1999). The NHR Act requires that all heritage resources, that is, all places or objects of aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance are protected. Thus any assessment should make provision for the protection of all these heritage components, including archaeology, shipwrecks, battlefields, graves, and structures over 60 years of age, living heritage and the collection of oral histories, historical settlements, landscapes, geological sites, palaeontological sites and objects. The Act identifies what is defined as a heritage resource, the criteria for establishing its significance and lists specific activities for which a heritage specialist study may be required. In this regard, categories of development listed in Section 38 (1) of the NHR Act are:

- The construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- The construction of a bridge or similar structure exceeding 50m in length;
- Any development or other activity which will change the character of the site

a) exceeding 5000 m² in extent; or

b) involving three or more existing erven or subdivisions thereof; or

c) involving three or more subdivisions thereof which have been consolidated within the past five years;

- The rezoning of a site exceeding 10 000 m²; or
- Any other category of development provided for in regulations by the South African Heritage Resources Agency (SAHRA).

A range of contexts can be identified which typically have high or potential cultural significance and which would require some form of heritage specialist involvement (**Table 1**). This may include formally protected heritage sites or unprotected, but potentially significant sites or landscapes. The involvement of the heritage specialist in such a process is usually necessary when a proposed development may affect a heritage resource, whether it is formally protected or unprotected, known or unknown. In many cases, the nature and degree of heritage significance is largely unknown pending further investigation (e.g. capped sites, assemblages or subsurface fossil remains). On the other hand, it is also possible that a site may contain heritage resources (e.g. structures older than 60 years), with little or no conservation value.

Methodology

The archaeological significance of the affected area was evaluated through a desktop study and carried out on the basis of existing field data, database information and published literature. This was followed by a field assessment by means of a pedestrian survey. A Garmin Etrex Vista GPS hand model (set to the WGS 84 map datum) and a digital camera were used for recording purposes. Relevant heritage information, aerial photographs and site records were consulted and integrated with data acquired during the on-site inspection.

Terms of Reference:

- Identify and map possible heritage sites and occurrences using available resources.
- Determine and assess the potential impacts of the proposed development on potential heritage resources;
- Recommend mitigation measures to minimize potential impacts associated with the proposed development.

Field Rating

Site significance classification standards as prescribed by SAHRA (2005) for archaeological sites were used for the purpose of this report (**Table 3**).

Locality data

1 : 50 000 scale topographic map: 3025 CB Norvalspont

1 : 250 000 scale geological map 3024 Coleserg

The study area comprises four 34 ha sites and one 30 ha area on the farm Stockenstroms Kop 77, located about 3 km northwest Norvalspont (**Fig. 2 & 3**).

Site coordinates (**Fig. 2**):

A) 30°36'25.18"S 25°24'46.98"E

B) 30°35'30.34"S 25°25'5.19"E

C) 30°36'24.26"S 25°26'25.70"E

Background

The geology of the region has been described by Le Roux (1993) and Johnson (2006) and is shown on the 1: 250 000 geological map 3024 Colesberg (Council for Geoscience, Pretoria 1997). According to the SAHRIS Palaeo-sensitivity map and 1:250 000 scale geological map 3024 Colesberg, the study area is located on moderately sensitive, Late Cenozoic alluvial deposits underlain by palaeontologically significant, Late Permian Beaufort Group sediments of the Adelaide Subgroup (*Pa*) (**Fig. 4**). The former may include sheet wash, alluvium and unconsolidated residual soils. Dykes and sills of resistant Jurassic dolerites (*Jd*) determine the relief of the study in the form of the surrounding koppies.

The affected area is situated within the *Dicynodon* Assemblage Zone (AZ) near the latter's eastern boundary with the Early Triassic sediments of the overlying *Lystrosaurus* AZ (Rubidge 1995) (**Fig. 5 & 6**). The *Dicynodon* Assemblage represents the terminal phase of the Palaeozoic continental biota, that was dominated by therapsid "mammal-like reptiles" and *Glossopteris* Flora before it was largely wiped out by the end-Permian Mass Extinction Event (Ward *et al.* 2005). This Late Palaeozoic extinction event, which severely reduced the diversity of life represented in the terrestrial fossil record (a disappearance of over 70% in the number of tetrapod families), is used as a marker to define the boundary between the Permian and

Triassic periods. The area around Bethulie in particular, produces a wealth of Karoo vertebrate localities related to the Permian-Triassic transition and extinction event. For example, the principal casualties of the end-Permian extinction include all Gorgonopsian predators, and most Dicynodontian herbivores, with the exception of *Lystrosaurus*. Late Cenozoic valley fill deposits may occasionally contain much younger fossil biotas, including the skeletal remains of Quaternary mammals, non-marine molluscs and a variety of other microfossils (Klein 1984; Berger & Brink 1996; Rossouw 1999; Rossouw 2006). Unlike the wealth of Karoo vertebrate fossil localities found in the region, the distribution of Late Cenozoic (primarily Quaternary) palaeontological deposits is localized and infrequent.

The upper Orange River valley represents a long and rich archaeological record that spans back to the Early Stone Age. Prehistoric archaeological remains previously recorded in the region include Stone Age artifacts and mammal fossil remains from sealed and or exposed contexts as well as rock engravings. Well-known sites near the study area include Riversmead Shelter, Glen Elliot and Holmsgrove Shelter. Along much of the course of the upper Orange River and its tributaries alluvial deposits in the form of river terraces occur that contain occurrences of Middle and Later Stone Age material eroding out of the overbank sediments. Surface sites are common along valley floors, dolerite hills and ridges (Samson 1984). Stone tools found in the region are mostly made of hornfels, a dark, fine-grained isotropic rock found in the hot-contact zone between the dolerites and shales in the area.

Norval's Pont was established in 1848 when a Scot named Norval built a ferry at this point to cross the Orange River. The ferry was replaced by a rail bridge in 1890 when the railway line from Colesberg Junction to Bloemfontein was opened. A section of the old railway line, which was abandoned when a newer line was laid further to the north to serve the construction a few kilometers upstream of the Gariep Dam, is still visible (from GPS coordinates 30°37'45.62"S 25°26'37.08"E to 30°37'48.07"S 25°26'43.25"E) (**Fig.** 7). A formal graveyard and the Norvalspont Concentration Camp Memorial Site are respectively located 1 km southwest and 1.6 km south of Norvalspont (**Fig. 7, Table 2**). The concentration camp was established on the southern banks of the Orange River by the British in November 1900. By 4 April 1901 the Superintendent Mr Cole-Bowen stated in his report that 3 215 people were in the camp of which 517 were men, 1 022 were women and 303 children.

Field Assessment

The site is characterized by flat, open grassland and old agricultural land primarily located on old floodplain deposits of the Orange River (**Fig. 8**). The area flanking the river bank has largely been disturbed by previous and ongoing farming activities (**Fig. 9**). No evidence was found for the accumulation and preservation of intact fossil material within the superficial sediments capping the terrain (**Fig. 10**). Outcrop visibility is generally poor along the footprint, but fine- to coarse-grained, sandstones and mudrocks are occasionally exposed along low weathered ridges located to the south and southwest of the footprints (**Fig. 11**). The pedestrian survey revealed no indication of *in situ* Stone Age archaeological material, capped or distributed as intact surface scatters on the landscape (**Fig. 12**). There are also no indications of rock art (engravings on dolerite outcrop), prehistoric structures, graves or buildings with historical significance older than 60 years situated within the boundaries of the study area.

Impact Statement and Recommendation

The proposed study area is underlain by potentially fossil-bearing sedimentary strata of the Late Permian Adelaide that are capped by superficial deposits of low to moderate palaeontological sensitivity. Visibility of Adelaide Subgroup outcrop sediments is low given the low topography terrain and generally well-developed Quaternary overburden flanking the riverbank, so it will be difficult to determine the potentially adverse effect of the development in the area except to assume that given the nature of the project (aboveground agricultural activity), it will primarily affect geologically recent soils in the form of severely degraded alluvial deposits and residual top soils. The fact that pivot farming will largely effect already degraded top soil layers, potential impact on capped Stone Age archaeological remains, Quaternary fossils or intact Karoo sedimentary strata is considered very low.

As far as the palaeontological heritage is concerned, the proposed development may proceed with no additional heritage assessments necessary, provided that all agricultural activities are restricted to within the boundaries of the development footprints. The terrain in general is regarded as of low archaeological significance and is assigned a rating of Generally Protected C (GP.C) (**Table 3**).

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DECLARATION OF INDEPENDENCE

I, Lloyd Rossouw, declare that I act as an independent specialist consultant. I do not have or will not have any financial interest in the undertaking of the activity other than remuneration for work as stipulated in the terms of reference. I have no interest in secondary or downstream developments as a result of the authorization of this project and have no conflicting interests in the undertaking of the activity.

15 / 06 / 2018

Tables and Figures

Table 1: Relationship between different heritage contexts, heritage resources likely to occur within these contexts, and likely sources of heritage impacts in the region.

Heritage Context	Heritage Resources	Impact
Palaeontology	• Palaeozoic and Mesozoic fossil remains, e.g. Karoo Supergroup. • Neogene regolith, e.g. Quaternary alluvial deposits, lacustrine sediments, natural springs, pans	Subsurface excavations including ground levelling, landscaping & foundation preparation, road cuttings, quarries, mining development, bridge and pipeline construction , new cemeteries, construction of electrical infrastructure and alternative energy facilities, township development, demolition or alteration work.
Archaeology Early Stone Age Middle Stone Age LSA - Herder	• Localized Stone Age sites, containing cultural remains, animal and human remains found near or at *inter alia* the following: river courses and natural springs; pans and natural deflation hollows; stone tool making sites (e.g. dolerite contact zones); cave sites and rock shelters; freshwater shell middens; • Ancient, kraals and stonewalled complexes; • Abandoned areas of past human settlement and burials sites over 100 years old	
Historical	• Historical sites and structures older than 60 years old, including rubbish dumps/middens; • Objects, including industrial machinery, older than 60 years; • Burial sites, e.g. concentration camps; • Burial architecture older than 60 years; • Graves (marked or unmarked, known or unknown); • Places associated with social identity/displacement, e.g. Witsieshoek Cave; • Mission settlements, e.g. Bethulie and Beersheba	
Natural Landscapes	• Formally proclaimed nature reserves • Evidence of pre-colonial occupation • Scenic resources, e.g. view corridors, viewing sites, • Historical structures/settlements older than 60 years • Geological sites of cultural significance.	
Relic Landscapes	• Battle /military sites and graveyards • Pre-colonial settlements	

Table 2. Additional sites located near but outside the development footprint.

Fig. 7 no.	Site	Coordinates
2	SA War Concentration Camp Memorial	30°38'41.71"S 25°27'21.44"E
5	Graveyard	30°38'11.78"S 25°26'38.23"E
6	SA War Blockhouse	30°37'21.78"S 25°27'49.06"E
7	Old Train Station	30°37'44.78"S 25°27'5.04"E

Table 3. Field rating categories as prescribed by SAHRA.

Field Rating	Grade	Significance	Mitigation
National Significance (NS)	Grade 1	-	Conservation; national site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; provincial site nomination
Local Significance (LS)	Grade 3A	High significance	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High significance	Mitigation (part of site should be retained)
Generally Protected A (GP.A)	-	High/medium significance	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium significance	Recording before destruction
Generally Protected C (GP.C)	-	Low significance	Destruction

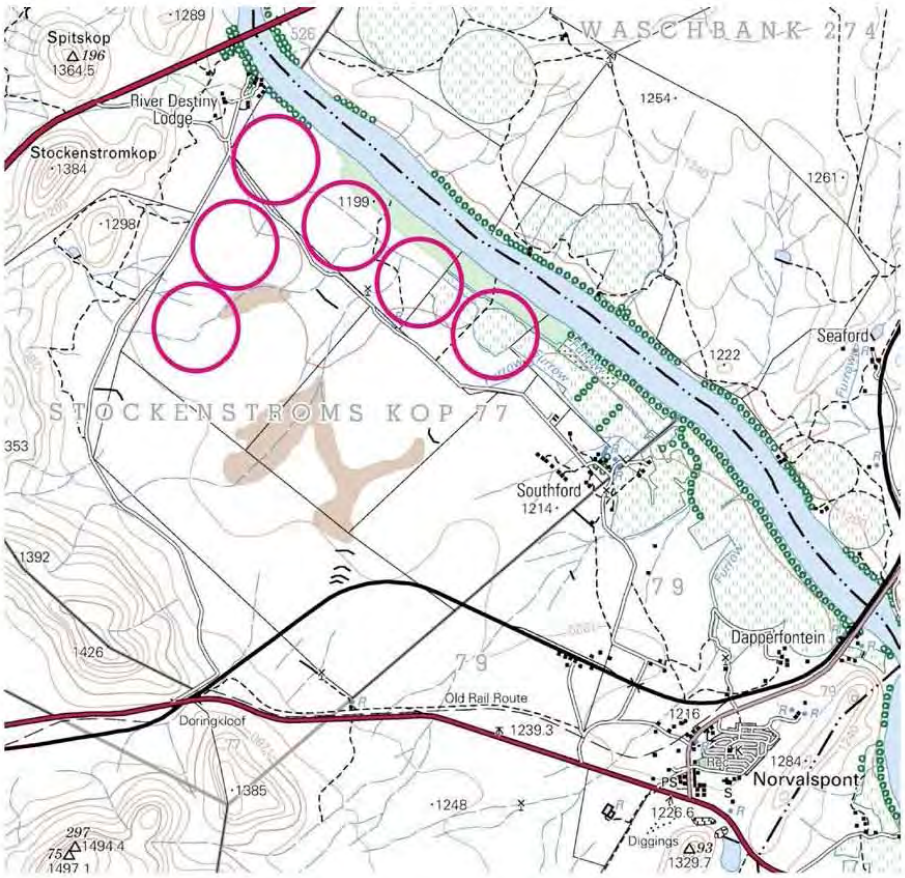


Figure 1. Map of the study area (portion of 1:50 000 scale topographic 3025CB Norvalspont).

Figure 2. Aerial view of the study area.

Figure 3. Layout of the proposed new pivot sites.

Figure 4. According to the 1:1 Ma scale geological map of SA and 1: 250 000 geological map 3024 Colesberg (Council for Geoscience, Pretoria 1997). the area between Colesberg and Norvalspont is underlain by highly sensitive sedimentary strata represented by Late Permian Adelaide Subgroup mudrocks and sandstones (*Pa*).

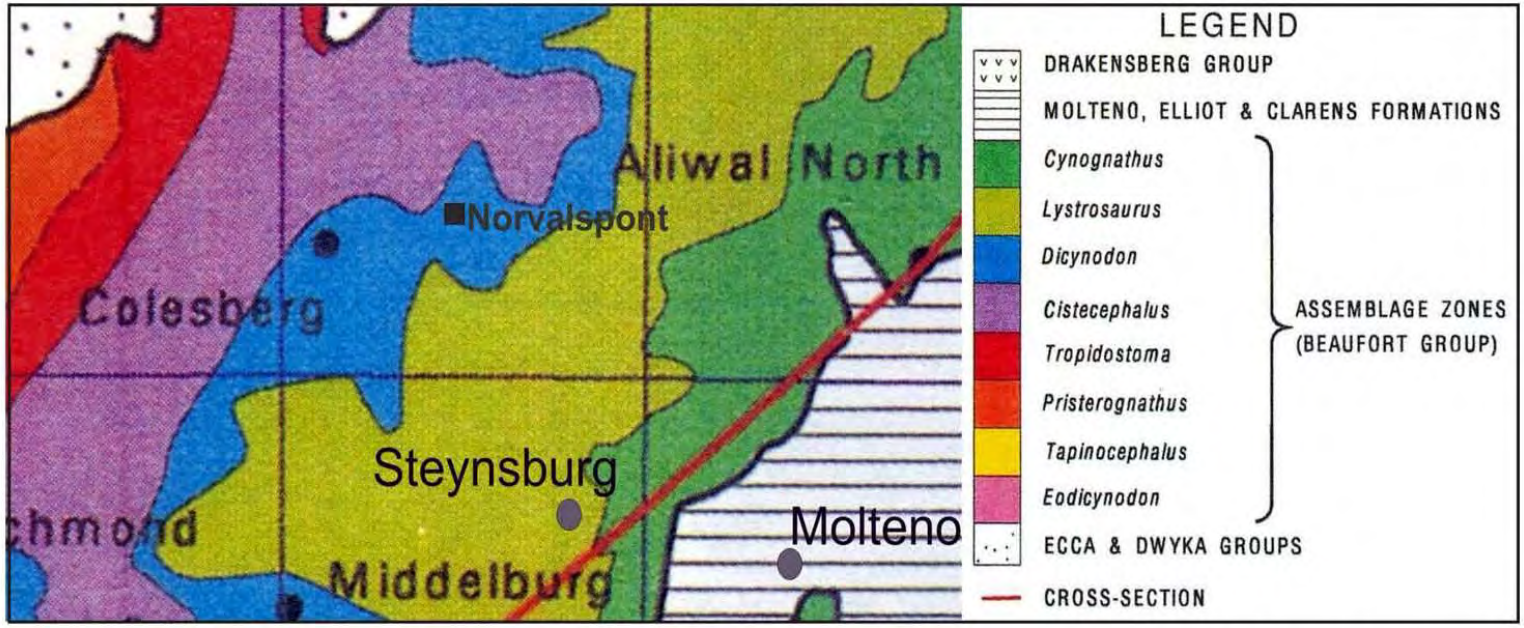


Figure 5. Portion of map showing geographic distribution of vertebrate biozones of the Beaufort Group (after Rubidge 1995).

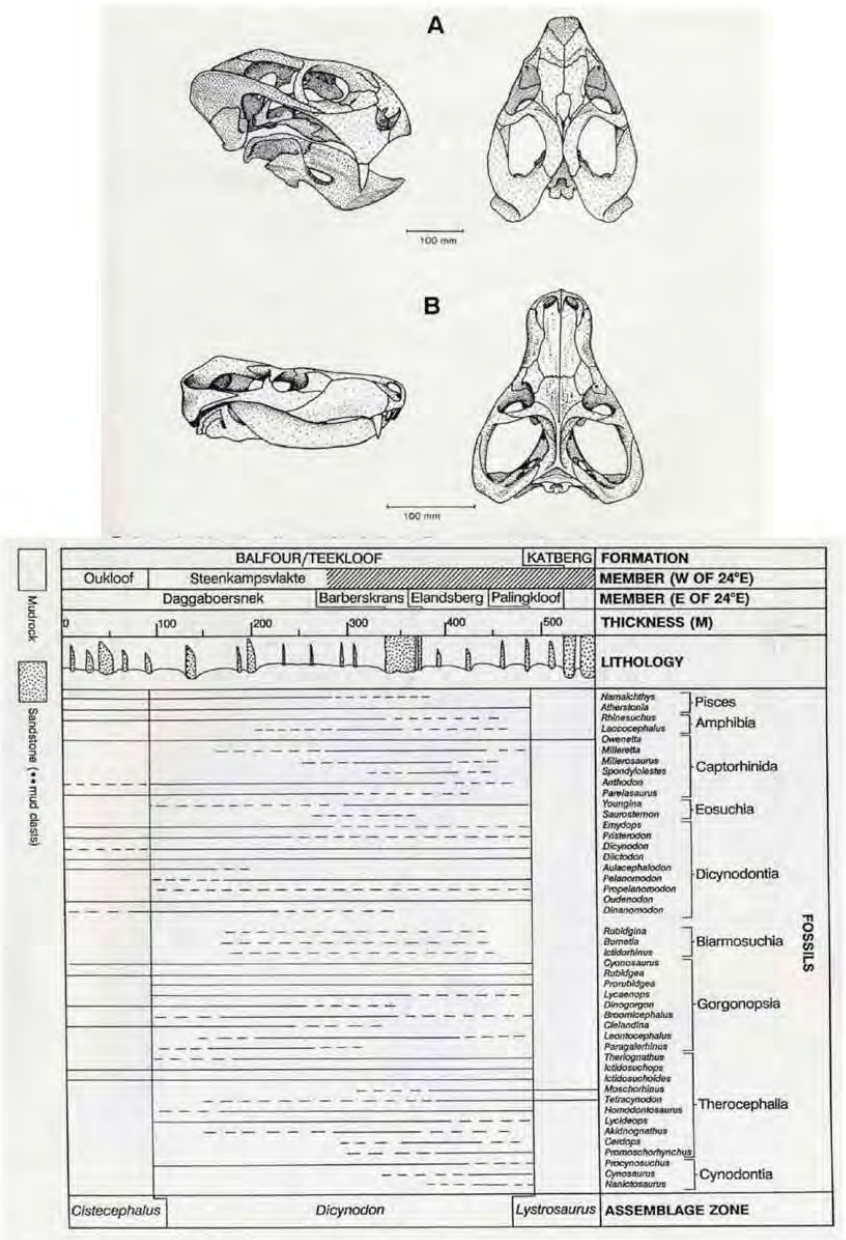


Figure 6. Lateral and dorsal views of biozone-defining fossils of the *Dicynodon* AZ (top) and stratigraphic section showing ranges of vertebrate taxa present in the *Dicynodon* AZ (after Kitching 1995).

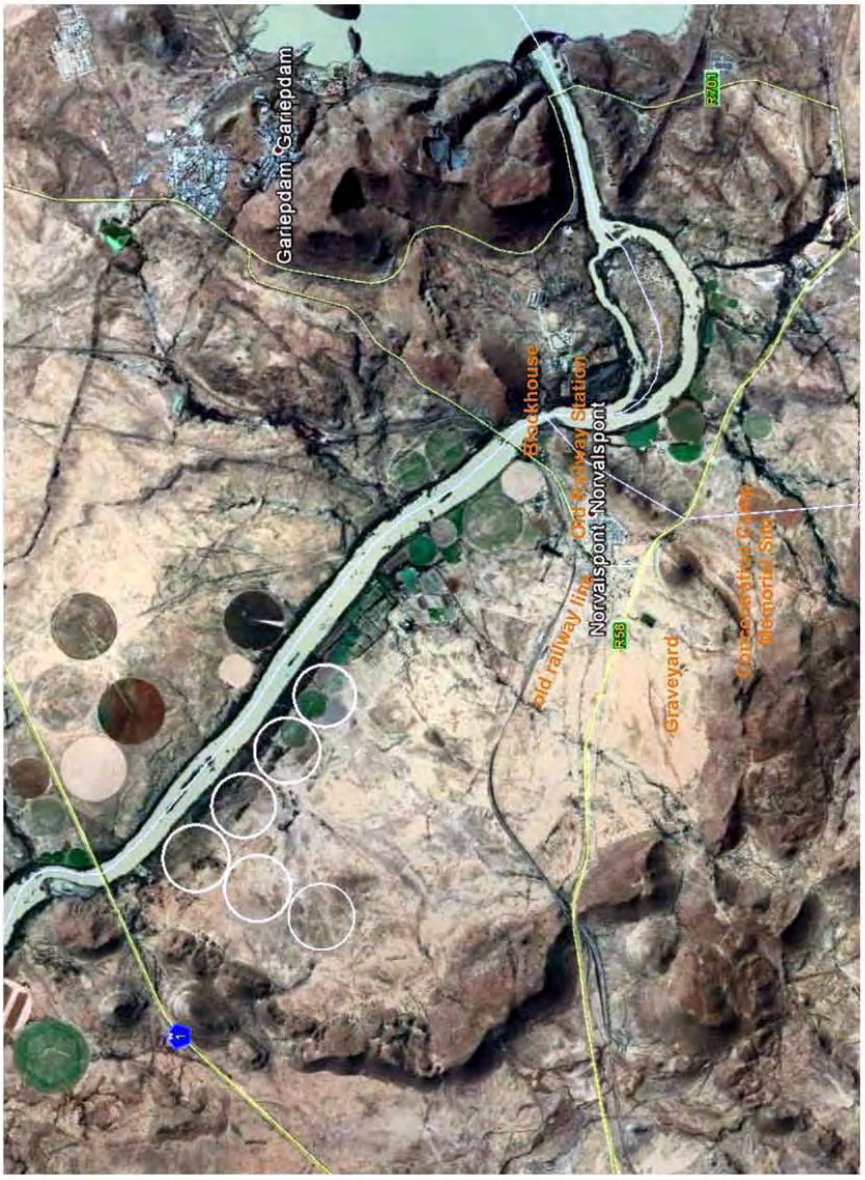


Figure 7. Locality map of historical sites and features found near the study area.

Figure 8. The area is characterized by flat, open grassland and old agricultural land primarily located on old floodplain deposits of the Orange River - looking northwest, north, northeast and northeast respectively..

Figure 9. The area flanking the river bank has largely been disturbed by previous and ongoing farming activities.

Figure 10. The study area is capped by well-developed Quaternary overburden made up of alluvium and locally derived residual soils. Scale 1 = 10 cm.

Figure 11. Fine- to coarse-grained, sandstones and mudrocks exposed along low ridges located to the south and southwest of the footprints. Scale 1 = 10 cm.

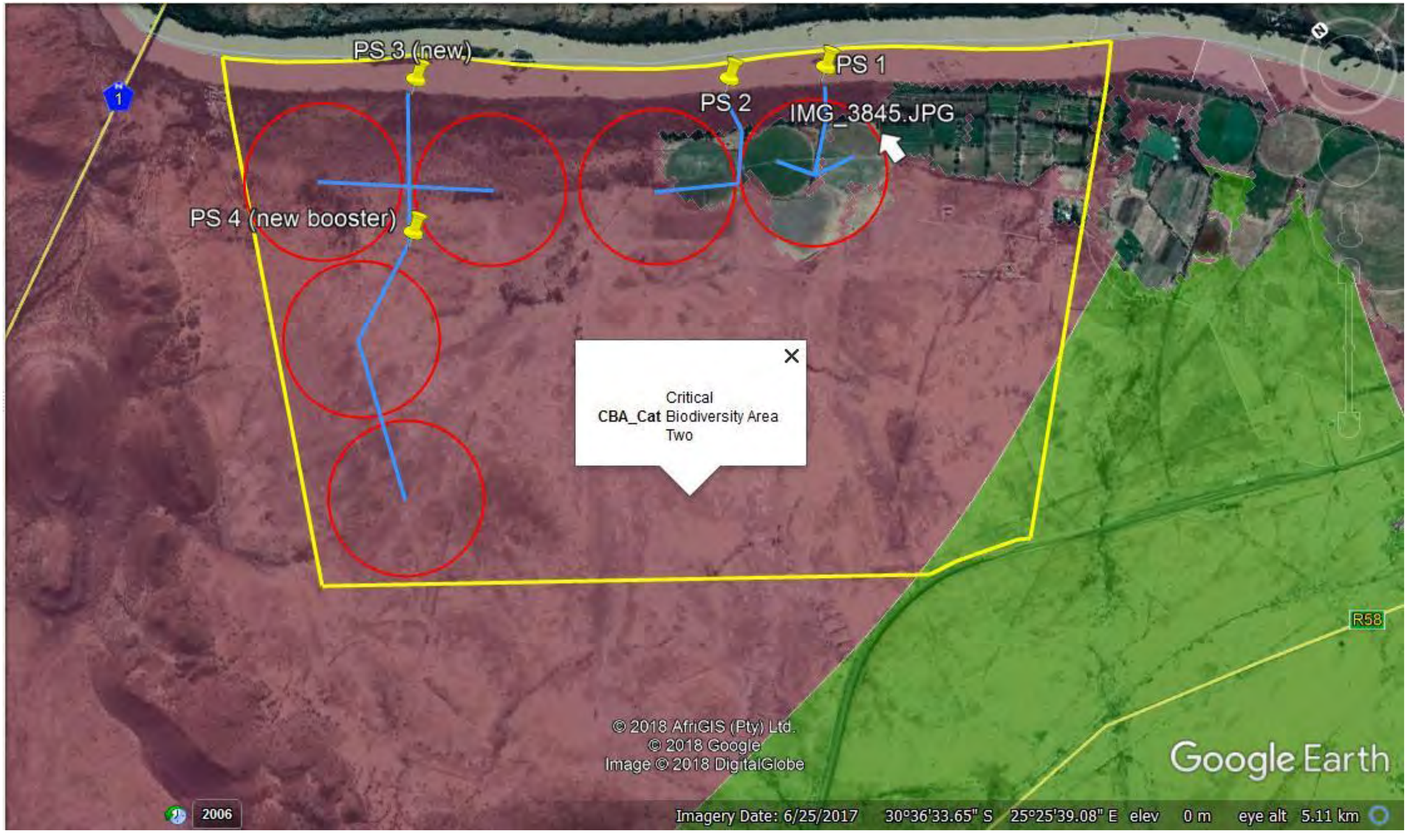
Figure 12. Highly weathered, locally derived, isolated and very low density stone tool scatters observed during the survey.

Appendix E3.2: Proof Of Submission To Sahris

Will be included in fAR

Appendix F1: CBA2 Located On Portion 7 Of Farm 77

The pink area indicates the Critical Biodiversity Area 2 (sanbi/bgis.co.za)



Appendix F2: Public Participation

Appendix F2.1: Identified and Registered I&AP's Database

AUTHORITIES AND I&AP's

	Surname	Initials	Representing	Tel	Fax	Email	P.O. Box	Town	Code
1.	NO INFORMATION AVAILABLE ON WINDEED		Portion 2 of Farm Summerhill 526						
2.	Bloem	H	Farm 274	0764009113		Hendrikb2@gmail.com			
3.	Southey	D.G.M.	Portion 6 of 77 Portion 21 of Farm 79 Portion 23 of Farm 79	0826005431		southey@vodamail.co.za	P.O. Box 202	Gariep dam	9922
4.	TRANSNET LTD		Portion 13, 14, 15 of Farm 77						
5.	J.A.	Botes	Re of 77	0517530203		info@riverdestiny.co.za	P.O. Box 242	Calesberg	9795
6.	Hannes Roux		Department of Agriculture: De Aar			hroux@ncpg.gov.za	P.O.Box 84,.	De Aar,	7000
7.	Lekwene	T	Department of Environment and Nature Conservation			LekweneT@ncpg.gov.za	Private Bag X6120, Sasko Building, 90 Long Street, Kimberley, 8300	Kimberley,	8301
8.	Shaun Cloete		Department of Water Affairs			CloeteS@dws.gov.za	Louisvale Road,	Upington,	
9.	Municipal Manager and Ward Councillor					mpela@umsobomvumun.co.za mosomphat@umsobomvumun.co.za	Private Bag X6,	Colesberg	9795
10.	Natasha Higgitt					nhiggitt@sahra.org.za	Submitted via the South African Heritage Resources Information System		
11.	Ms Nicole Abrahams		South African National Roads Agency: Western Region	0219574602		AbrahamsN@nra.co.za	Private Bag X19,	Bellville,	7535

Appendix F2.2: Advertisements

Proof of advertisements for the Registration of I&AP's

A tricky encounter

On Saturday Union's first hockey team played Cradock in a tricky encounter on a grass surface. The team deserves much praise as they approached the game with complete professionalism, and thoroughly enjoyed the encounter. The girls dominated the game, but could not finish their opportunities, winning 1-0. Special mention must be made of Jenna McNaughton who played extremely well. In other results, Union's U.16 team beat Cradock's third team 12 - 0 and the second team won 3 - 0. Seen here is Union's first hockey team after their game on Saturday.

Union takes on Cradock

On Saturday, teams from Union High travelled to Cradock to play rugby and hockey matches against Cradock High and Marlow. The first team and U.16A rugby was cancelled due to an outbreak of flu in Cradock. In the rugby, Union's U.14A team lost 17-33, the U.15B team won 41-19, the U.15A team won 24-12, the second team won 20-10 and the third team lost against Marlow's fourth team 0-36. Seen here is Union's second team taking the field.

NUTRITIONIST

Montego Pet Nutrition is looking for a focused, motivated and driven Nutritionist

ESSENTIAL FUNCTIONS

Essential functions and responsibilities may include but are not limited to:

- Evaluate the chemical and nutritional value of feeds and feed supplements;
- Formulate diets and rations to maximise growth, reproduction, health and/or performance;
- Assess the relative nutritional and economic value of feeding systems;
- Research the effectiveness of dietary regimes;
- Conduct animal-based studies and laboratory trials;
- Provide advice on nutrition to pet owners and veterinarians;
- Rationalise animal feed manufacturing techniques;
- Expand existing ranges of animal food products and develop new ones;
- Support commercial teams in producing and launching new products;
- Carry out sales and marketing strategies following the launch of a new product;
- Balance a growing consumer interest in quality with the need to develop competitive systems;
- Maintain expertise in nutritional trends and keep up to date with regulatory changes;
- Use computer software to formulate diets, conduct research and generate reports;
- Investigate nutritional disorders and the safe storage of feeds, often in conjunction with veterinary surgeons.

SKILLS AND ATTRIBUTES:

- Senior certificate with a B.Sc-degree;
- 10+ years' experience in nutrition;
- An understanding of the scientific basis of nutrition;
- Familiarity with analysing data and writing reports;
- Ability to conduct research in a safe, ethical and reliable manner;
- The capability to formulate and communicate ideas;
- The capacity to form long-term relationships with customers and clients;
- Advanced numeracy and IT skills;
- Fluent in both English and Afrikaans.

Closing date: Friday, 8 June 2018 at 12:00

Should you meet the requirements for this position, please apply with your CV and a letter of application to -

The Human Resources Assistant Manager, Montego Holdings, henry@montego.co.za

Correspondence will only be conducted with short listed candidates.

VACANCIES

ONDERWYSER
Afrikaans (Gr. 4-7)
Beheerliggaampos

Meld buitemuurse ervaring
Bestuurslisensie met PDP
SACE registrasie 'n vereiste
Koshuisinwoning beskikbaar

Pos aanvaarding:
So spoedig moontlik

Taal van onderrig:
Afrikaans

Sluitingsdatum:
11 Junie 2018

Stuur aansoek aan:
Die Skoolhoof
Faks: 049 891 0802
E-Pos:hooflvs@webmail.co.za

Slegs persone wat na die onderhoud genooi word, sal gekontak word.

SWAERSHOEK VEEVEILING

20 Junie 2018 • 11:00

Buffelshoek, SOMERSET-OOS

- 125 ou ooie, droog
- 50 ou ooie, dragtig
- 400 dragtige Ooie
- 280 Stoorlammers
- 30 droë koeie
- 60 Speenkalwers
- 10 Bulle

NOG INSKRYWINGS VERWAG

NAVRAE:
Johannes de Jager **082 498 9866** / Colin van Rensburg **082 411 7368**

ROETE:
14km vanaf Somerset-Oos na Pearston, draai regs by Cradock afdraai, 34 km tot op plaas.

Saam bereik ons meer

VOORWAARDES:
1. Betaling streng kontant of bankgewaarborgde tjek op dag van veiling.
2. Elektroniese bankdienste beskikbaar.
3. BTW-, ID-nommer en adres moet bevestig word met registrasie.
4. Veilingsreels/voorwaardes beskikbaar by www.cmw.co.za / kantoor 041 406 7500

GWK Veilings Humansdorp 087 820 4532
Jan Erasmus (Bedryfshoof) 082 924 6096
Renier Zietsman (Afslaer) 082 491 5182
Riaan Harding (Bemarker) 074 601 3425

GWK

PRELIMINARY PUBLIC PARTICIPATION PROCESS AS PART OF A SECTION 24G APPLICATION PROCESS

Rectification Of Clearance and Cultivation Of Farmland On Portion 7 Of Farm Stockenstroms Kop No 77, Umsobomvu Local Municipality, Norvalspont

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 proposed development consists of the clearance and establishment of six new centre pivots with a total area of approximately 200ha on Portion 7 of Farm Stockenstroms Kop No. 77, outside of Norvalspont. This approximate 200ha clearance will entail the clearance of about 175 hectares of indigenous vegetation during 2018. This development also includes the construction of pipelines for irrigation by means of existing lawful water uses from the Orange River and gravel roads between pivots.

The development will be undertaken without Authorisation and therefore a S24G Process is being undertaken. The following Environmental Impact Assessment (EIA) listed activities apply to the application for rectification: GN R 327: Activity 12, 19; GN R 325: Activity 15; GN R 324: Activity 4,12, 14.

More information on the S24G Application and work undertaken will be available in the Draft Assessment Report (S24G) which will be made available for comment from www.pbps.co.za or the EAP in due course. Should you wish to register as an Interested and Affected Party (I&AP), please submit your name, contact information and interest in the matter as well as any comment to the EAP.
The registration period is from 1 June 2018 until 21 June 2018.

Date of this notice: 31 May 2018

Details of EAP/OBP
Helene Botha
Pieter Badenhorst Professional Services;
P O Box 1058, Wellington, 7654
Cell: 0768004959; Fax: 0866721916;
E-mail: heleneb@iafrica.com
Website: www.pbps.co.za

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 21 June 2018.

Appendix F2.3: Notice Boards

Text for the site notice

PUBLIC PARTICIPATION PROCESS AS PART OF A SECTION 24G APPLICATION PROCESS

Rectification Of Clearance and Cultivation Of Farmland On Portion 747 Of Farm Stockenstroms Kop No 77, Umsobomvu Local Municipality, Norvalspont

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 proposed development consists of the clearance and establishment of six new centre pivots with a total area of approximately 200ha on Portion 7 of Farm Stockenstroms Kop No. 77, outside of Norvalspont. This approximate 200ha clearance will entail the clearance of about 175 hectares of indigenous vegetation during 2018. This development also includes the construction of pipelines and pump stations for irrigation by means of existing lawful water uses from the Orange River and gravel roads between pivots.

The development will be undertaken without Authorisation and therefore a S24G Process is being undertaken. The following Environmental Impact Assessment (EIA) listed activities apply to the application for rectification: GN R 327: Activity 12, 19; GN R 325: Activity 15; GN R 324: Activity 4,12, 14.

This notice serves as notification of the proposed development and for I&AP's to register to receive more information. The 30-day Public Participation Process will run from 25 June 2018 until 25 July 2018. This also serves as notification of the availability of the draft Assessment Report (dAR) during this period. More information of the development will be available from the EAP as per the details provided below. The dAR may be accessed at www.pbps.co.za from 25 June 2018.

Date of this notice: 16 June 2018

Details of EAP/OBP Helene Botha Pieter Badenhorst Professional Services; P O Box 1058, Wellington, 7654 Cell: 0768004959; Fax: 0866721916; E-mail: heleneb@iafrica.com Website: www.pbps.co.za	In order to ensure that you are identified as an interested and/or affected party **(I&AP'S) please submit your name, contact** information and interest in the matter as well as any comment to the EAP before 17:00 on 25 July 2018.

Proof of Notice Boards for AR

PUBLIC PARTICIPATION PROCESS AS PART OF A SECTION 24G APPLICATION PROCESS

Rectification Of Clearance and Cultivation Of Farmland On Portion 7 Of Farm Stockenstroms Kop No 77, Umsobomvu Local Municipality, Norvalspont

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 proposed development consists of the clearance and establishment of six new centre pivots with a total area of approximately 200ha on Portion 7 of Farm Stockenstroms Kop No. 77, outside of Norvalspont. This approximate 200ha clearance will entail the clearance of about 175 hectares of indigenous vegetation during 2018. This development also includes the construction of pipelines and pump stations for irrigation by means of existing lawful water uses from the Orange River and gravel roads between pivots.

The development will be undertaken without Authorisation and therefore a S24G Process is being undertaken. The following Environmental Impact Assessment (EIA) listed activities apply to the application for rectification: GN R 327: Activity 12, 19; GN R 325: Activity 15; GN R 324: Activity 4,12, 14

This notice serves as notification of the proposed development and for I&AP's to register to receive more information. The 30-day Public Participation Process will run from 25 June 2018 until 25 July 2018. This also serves as notification of the availability of the draft Assessment Report (dAR) during this period. More information of the development will be available from the EAP as per the details provided below. The dAR may be accessed at www.pbps.co.za from 25 June 2018.

Date of this notice: 16 June 2018

Details of EAP/OBP
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In order to ensure that you are identified as an interested and/or affected party (I&AP'S) please submit your name, contact information and interest in the matter as well as any comment to the EAP before 17:00 on 25 July 2018.

Appendix F2.4: Proof Of Notices

Proof of notices for AR.

Will be included in the Final Assessment Report.

Appendix F2.5: Notices

Notices sent to Authorities for AR.

Will be included in the Final Assessment Report.

Notices sent to I&AP's for AR.

Will be included in the Final Assessment Report.

Appendix F2.6: Comments Received From DENC

Will be included in the Final Assessment Report.

Appendix F2.7: Comments And Responses Sheet

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

Appendix F2.8: Comments Received

Will be included in the Final Assessment Report.

Appendix H1: Attendance Register Of Site Meeting

Will be included in final AR

Appendix H2: Environmental Management Programme

Application in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998) and the 2014 Environmental Impact Assessment Regulations

CONSTRUCTION, OPERATIONAL & MAINTENANCE MANAGEMENT PROGRAMME

FOR

24G RECTIFICATION OF CULTIVATION OF FARMLAND ON PORTION 7 OF FARM STOCKENSTRÖM KOP NO 77, NORVALSPONT

DENC Application Reference: 03/01/2018

COMPILED BY: Helene Botha & Pieter Badenhorst

Pieter Badenhorst Professional Services

DATE: June 2018

CONTENTS

List of Figures

List of abbreviations

DENC	Department of Environment and Nature Conservation
EA	Environmental authorisation
ECO	Environmental Control Officer as per the environmental authorisation
EMPr	Environmental Management Programme
EO	Environmental officer as appointed by the client or contractor
RE/Engineer	Resident Engineer overseeing the construction activity

Definitions

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

Alternative - A possible course of action, in place of another, that would meet the same purpose and need defined by the development proposal. Alternatives considered in the EIA process can include location and/or routing alternatives, layout alternatives, process and/or design alternatives, scheduling alternatives or input alternatives.

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

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

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

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

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

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

Contamination - Polluting or making something impure.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Recycling - Collecting, cleaning and re-using materials.

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

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

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

See Integrated Environmental Management.

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

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

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

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

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

Wetlands - An area of land with water mostly at or near the surface, resulting in a waterlogged habitat containing characteristic vegetation species and soil types e.g. vlei's, 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 8 Appendix G: EAP Curriculum Vitae, page 46
(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;	Introduction, page 9
(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: Super-imposed project map, page 45
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 14 Non-operational Management Programme – Pre-construction & Construction, page 15Operational Management Programme , page 36
e) a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	Aim and Objectives of the EMPr, page 14
(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; (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;	Non-operational Management Programme – Pre-construction & Construction, page 15Operational Management Programme , page 36
(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Monitoring, page 14

(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Monitoring, page 14
(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 14 Compliance with Applicable Laws, page 14
(j) the time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Monitoring, page 14
(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Monitoring, page 14
(l) a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Monitoring, page 14
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	Environmental awareness training, page 19
(n) any specific information that may be required by the competent authority	Appendix A: Environmental Authorisation, page 37

Details of EAP

Company of Environmental Assessment Practitioner (EAP):	Pieter Badenhorst Professional Service cc	
EAP name:	Helene Botha & Pieter Badenhorst	
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	Wellington	Postal code: 7655
Telephone:	021 873 7228	Cell: 076 800 4959
E-mail:	heleneb@iafrica.com	Fax: 086 672 1946
EAP Qualifications:	Pieter Badenhorst - 43 years' experience (16 @ CSIR) in environmental management; report writing; project management; facilitation also including preparing of EMPr's Helene Botha – BSc (Hons) in Zoology, currently a consultant in environmental management and busy with her Masters in Environmental Management.	
EAP Registrations/Associations:	Pieter -IAIAsa, Pr Eng, SAICE	

1 Introduction

LOCALITY

The proposed development is situated approximately 2 kilometers outside of the small town of Norvalspont in the Northern Cape, within the Umsobomvu Local Municipal area.

Refer to the Locality Plan inserted below as Figure 1.

Figure 1: Locality plan

PROPOSED DEVELOPMENT:

The proposed development consisted of the following activities that triggered Listed Activities as stipulated in NEMA 2014:

1. Clearance is planned for approximately 170 hectares of indigenous vegetation after 2018. (Refer to Figure 2).

Please note that only pivots 1 and 2 (30 ha and 34 ha in size, respectively) will be developed at this stage. Of this 64 ha area, 30ha has been cultivated for several years and is not regarded as indigenous vegetation. Therefore, the unlawful clearing that will be established before the S24G process has been finalised is only 34ha. The remaining 106ha are of pivots 3 to 6 will only be established from 2019. Authorisation is, however made for all the pivots

2. Construction of pipelines and roads as part of the clearance of the 170 hectares of indigenous vegetation.
3. Two new pump stations (one located with 32m of a watercourse) will also be established.

Figure 2: Proposed clearing by end 2018

No further agricultural activities are required within the project area comprising the 24G application.

ROADS:

Access is gained off the R58 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:

Water is required for the irrigation of the established centre pivots, and is supplied via pipelines from the booster pump station and pump lines as shown Figure 3.

Portion 7 of Farm Stockenström Kop no 77 has water use rights of at least 40 hectares (440 000m³) per annum that are registered with the Orange River Scheme to be confirmed.

Although 200 ha of cultivation areas will be established (170ha indigenous clearing), the applicant will plant maize and Lucerne which is seasonal and will only be irrigated for the cultivation period. Maize has a water requirement of 7000m³/ha/a.

The applicant also proposes to not cultivate all pivots simultaneously since rotating planting periods will be implemented. Although 200 ha of crops will require 1 400 000m³/a, the applicant will be able to irrigate 62.9ha of crops simultaneously (440 000 m³ / 7000m³/ha/a= 62.9ha) with the available water.

ELECTRICITY:

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

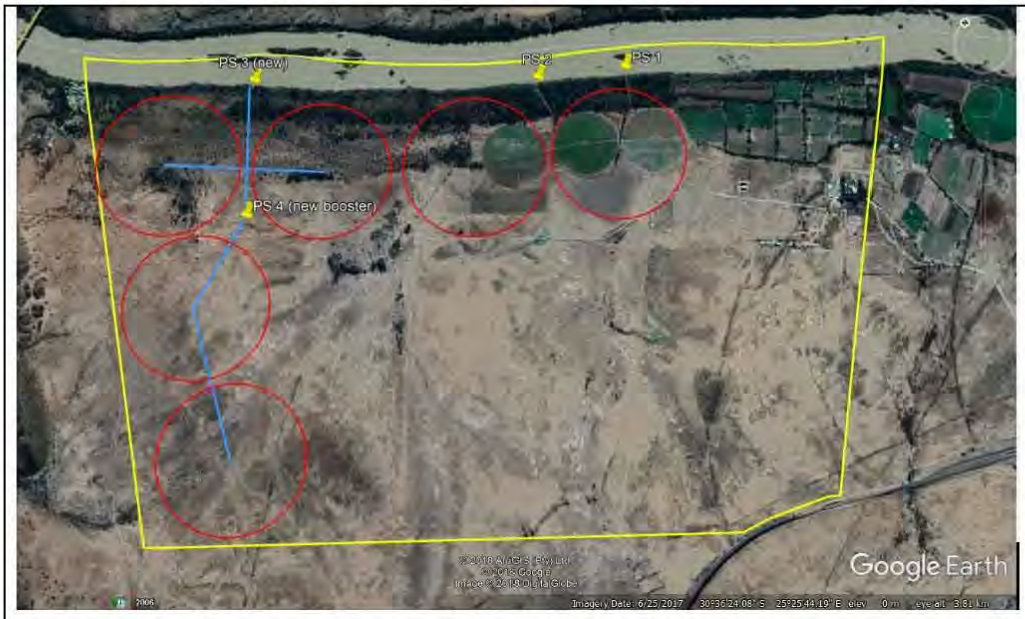


Figure 3: Proposed new centre pivots and infrastructure for irrigation of crops

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 DENC 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.

2.1.1 Vegetation

Vegetation Classification as per Plough Certificate soil analysis

Besemkaree Koppies Shrubland, cultivated more than 10 years before.

Species present on site include:

"Vegetation consists mainly of a , mixed dwarf shrub/grass layer with a few

- Acacia Karroo (soetdoring',)
- Diospyros Lycioides (bloubos) spread towards the lower lying area.
- Dominant shrub species are:
- Lycium ,cinereum (kriedoring),
- Osteospermum Sinuatum (Geelbitou),
- Osteospermum Scari.osum (Sagtebitou) ,
- Pentia Globosa (Vaalkaroo),
- Peritzia Incana (Ankerkaroo),
- Hermania Cernua Coccocarpa (Moederskappie),
- Eberlanzia Ferox (Doringvygie),
- Chrysocoma Ciliata (Bitterbos).

Grasses exist mainly of the following:

- Aristida Adscensionis (Steekgras),
- Sporobolus Fimbriatus (Fynsaadgras),
- Tricholaena Monachne (Blousaadgras),
- Eragrostis Bicolor (Fynvleigras),
- Eragrostis Obtusa (Douvatgras),
- Panicum Coloratum (Kleinbuffelsgras),
- Hyparrhenia Hirta (Dekgras),
- Cynodon Dactylon (Kweek).
- Themeda Triandra (Rooigras).

None of the above mentioned trees, shrubs and grasses are of the scarce varieties."

ECOSYSTEM STATUS ACCORDING TO MUCINA & RUTHERFORD (2006)

Least threatened because largely excluded from intensive agricultural activities. Target 28%. About 5% statutorily conserved in the Rolfontein, Tussen Die Riviere, Oviston, Gariep Dam, Caledon and Kalkfontein Dam Nature Reserves. In addition a small patch is also protected in the private Vulture Conservation Area. About 3% of the area has been lost through building of dams (Bethulie, Egmont, Gariep, Kalkfontein, Vanderkloof and Welbedacht Dams). Erosion moderate (68%), high (20%) and low (10%).

CRITICAL BIODIVERSITY AREA CLASSIFICATION AS PER SANBI BGIS NORTHERN CAPE CBA MAP

The majority of the site is classified as an CBA 2 according to the SANBI BGIS Northern Cape CBA Map.

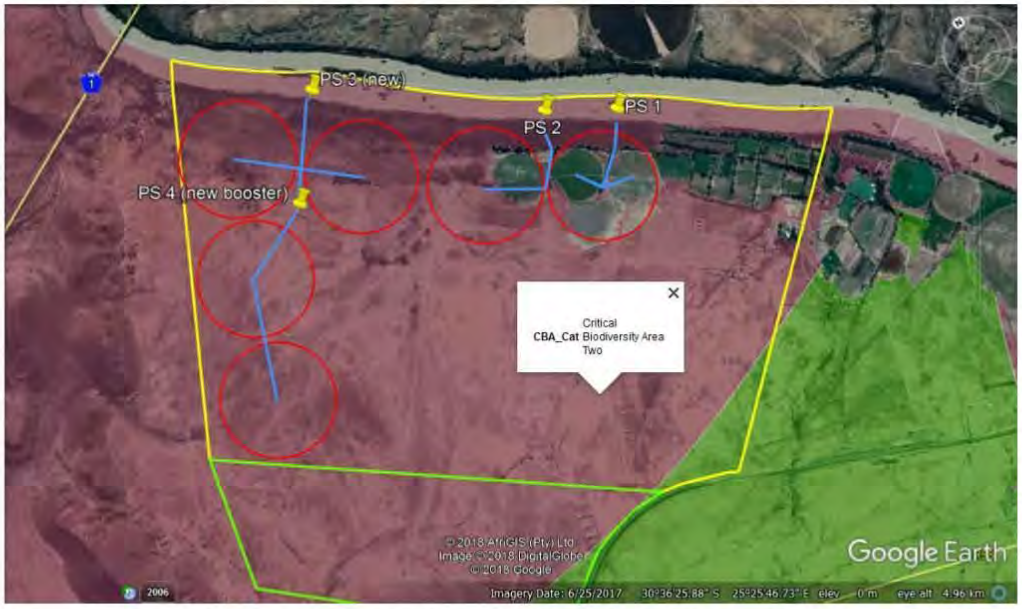


Figure 4: CBA classification of site indicating majority of site classified as CBA2, as per the SANBI BGIS Northern Cape CBA map

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 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 Monitoring & Auditing

5.1 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 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.
- Visit the site regularly.
- Prepare reports as required by mitigation measures or by the EA.
- Maintain a photographic record of the work and environmental issues.
- These visits must take place prior to construction and site clearing, after construction and 6 months after construction.
- Site visit reports must be compiled which includes photographic evidence and recommendations. The report must be made available to the contractor, applicant and applicable authorities.

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.

6 Non-operational Management Programme – Pre-construction & Construction

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.

6.1 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.
1) The Contractor shall erect an information board containing background information for the construction activity and listing the relevant contact details for complaint.

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.

6.2 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.

6.3 Methodology statement

Method Statements must be compiled by the contractor(s) before any construction or 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 proposed development of the chicken houses will be required.

Access routes

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

6.4 Environmental awareness training

1) 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.
2) 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.
3) The Contractor shall supply the Engineer/ECO with a monthly report 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.
4) The Contractor shall submit a Method Statement detailing the logistics of the environmental awareness training course.

6.5 Site clearing

1) The stripping and separation of topsoil shall occur as stipulated by the Engineer/ECO/EO. As a guide the upper 250 mm of soil (topsoil, which includes roots and leaf litter) shall be placed separately. This soil shall be used for re-shaping and filling as required.

6.6 Aesthetics

The aesthetics measures indicated below must be implemented as required by the specific site and situated and as agreed with the RE/ECO/EO/EO.

1) The Contractor shall be required to visually screen the site.
2) Visual screening shall be aesthetically pleasing and shall be erected by the Contractor prior to commencing any activities.
3) Visual screening shall be maintained by the Contractor for the duration of the Contract.
4) Visual screening must be of the following types:
    a. Shade cloth
    b. Hessian
    c. Berms

6.7 Camp

1) The Contractor's camp, offices, and storage facilities shall not be located within an environmentally sensitive area or the No-Go areas. The camp's position must be approved by RE/ECO.
2) The camp must be fenced as agreed with the RE/ECO.
3) Water from the kitchens, showers, sinks etc., shall be discharged in a manner approved by the RE/ECO.
4) The contractor must ensure that all temporary structures, equipment, materials, and facilities used or created on-site during the construction phase are removed and appropriately disposed of.
5) No littering by the contractor's employees shall be tolerated under any circumstances, anywhere in the demarcated area for construction.

6.7.1 Site of construction camp

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.
2) The construction camp must not be situated within the 1:100 year flood line or on slopes greater that 1:3.
3) The size of the construction camp must be minimized (especially where natural vegetation or grassland has had to be cleared for its construction).
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.

6.7.2 Storage of materials (including hazardous materials) at site camp

1) 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.
2) Storage areas must be designated, demarcated and fenced.
3) Storage areas must be secure so as to minimize the risk of crime. They must also be safe from access by unauthorised persons.
4) Fire prevention facilities must be present at all storage facilities.
5) 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.
6) 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.
7) Clear signage must be placed at all storage areas containing hazardous substances / materials. Staff dealing with these materials / substances must be aware of their potential impacts and follow the appropriate safety measures.

8) 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.

9) The contractor must ensure that its staff is made aware of the health risks associated with any hazardous substances used and has been provided with the appropriate protective clothing/equipment in case of spillages or accidents and have received the necessary training.

10) All excess cement and concrete mixes are to be contained on the construction site prior to disposal off site.

11) Any spillage, which may occur, shall be investigated and immediate action must be taken. This must also be reported to the ECO and DENC, as well as local authorities if so required.

6.7.3 Drainage of construction camp

1) Run-off from the camp site must not discharge into neighbours' properties.

6.7.4 End of construction

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.

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.

6.8 Trenching

1) Trenching for services shall be undertaken in accordance with the engineering specifications (SABS 1200DB) with the following environmental amplifications, where applicable:

   a. Trenching shall be kept to a minimum through the use of single trenches for multiple service provision.

   b. The planning and selection of trench routes shall be undertaken in liaison with the Engineer/ECO/EO and cognisance shall be given to minimising the potential for soil erosion.

   c. Trench routes with permitted working areas shall be clearly defined and marked with painted stakes prior to excavation.

   d. The stripping and separation of topsoil shall occur as stipulated by the Engineer/ECO/EO. Soil shall be excavated and used for re-filling trenches using the rollover method, i.e. soil from the first trench section shall be stockpiled. Thereafter, soil excavated from subsequent trench lengths shall be used to backfill the trench behind it once the services have been laid. The final trench length shall be re-filled using the soil stockpiled from the first length.

   e. Trench lengths shall be kept as short as practically possible before backfilling and compacting.

   f. Trenches shall be re-filled to the same level as (or slightly higher to allow for settlement) the surrounding land surface to minimise erosion. Excess soil shall be stockpiled in an appropriate manner.

   g. Immediately after re-filling, trenches and associated disturbed working areas shall be replanted or resurfaced to obtain the pre-trench conditions unless otherwise specified.

2) For trenching in ecologically sensitive environments on slopes or through wetlands the following must be implemented:

3) The upper 250 mm of soil (topsoil, which includes roots and leaf litter) shall be placed on one side of the trench within the specified working corridor.
4) The remainder of the soil shall be placed on the other side or kept separate as is practical.
5) Topsoil and subsoil must not be mixed at any time, since this impedes the restoration process following closure.
6) Following the cable/ pipe laying operation, soils are to be replaced in the order in which they were excavated, i.e. subsoil must be replaced first and capped with the topsoil; and, Brush-cut plant material is to be replaced (scattered) within the working corridor on either side of the closed trench. This method reduces erosion, protects the vegetation within the working corridor, and conserves the topsoil and seed-banks.

6.9 Tree protection

1) All trees, which are to be retained, are to be clearly indicated on a site plan and demarcated.
2) Trees to be demarcated shall be clearly marked under the supervision of the Engineer/ECO. Marking techniques include danger tape, paint (be aware of long term aesthetics), strapping and pegs. Tagging by exclusion shall be considered, i.e. where the number of trees to be cleared is fewer than those to be retained then marked trees for felling and all other trees shall automatically be retained.
3) Demarcation shall remain in place for the duration of works on site. If damaged, demarcation shall be repaired or replaced immediately.

6.10 Sensitive environments

6.10.1 Botanically

The following measures should be implemented:

- The principle mitigation measure would be to disturb any natural vegetation as little as possible. All areas of undisturbed vegetation in the vicinity of the new dam wall and streams should be cordoned off and observed as 'No Go' zones.
- A second mitigation measure would be to remove any natural vegetation from the construction zone prior to construction of the new dam wall. This material should be stockpiled and later mulched and used in rehabilitation of any areas not required for the dam which may be disturbed during construction.
- All alien species should be strongly discouraged from establishing in any disturbed areas.

6.10.2 Heritage

- No archaeological mitigation is required

6.10.1 Animals

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.

6.11 Cement mixing/batching plant

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.

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 effected 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 contamination associated with bulk cement silos, loading and batching.

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.

13) All visible remains of excess concrete shall be physically removed on completion of the plaster or concrete pour section and disposed off. 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.

14) During cement delivery boards or other protection material must be used to prevent spilling on the ground.

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.

6.12 Surface and groundwater pollution

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 catchpits 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 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.

7) The Contractor shall provide water and/or washing facilities at the construction camp for personnel.

8) In the event of any pollution entering any water body, the Contractor shall inform the RE/ECO/EO immediately.

9) The contractor will be responsible for any cleanup costs involved should pollution, erosion or sedimentation have taken place.

6.13 Air and noise pollution

5.16.1 Air Pollution

During the construction phase, and due to the nature of the project, a small amount of smoke (from machines) and dust could be generated. Dust pollution may have an impact on the operational workers.

Mitigation

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.

5.16.2 Noise Pollution

During the construction phase there may be minimal and sporadic incidents of air and noise pollution due to the construction activities such as dust and noise as a result of earthworks. Due to the fact that the area is situated within an agricultural environment, the impact is not expected to be severe.

Mitigation

The Contractor shall make adequate provision to prevent or minimize the possible effects of air and noise pollution. Should the noise from the construction 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.

6.14 Pipe testing and cleaning

1) Cleaning/flushing of pipelines shall not impair (down grade) downstream baseline water quality.

2) Materials used in the sterilisation of pipelines, viz. chlorine solutions shall be treated as hazardous substances and disposed of at an approved landfill site.

3) Litter traps shall be installed and maintained at the outflow of all pipelines.

6.15 Noise control

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 permissible noise levels for residential areas.
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.

6.16 Erosion control

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:

1) Brushcut packing
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
    a. Gabions & mattresses
    b. Geofabric
    c. Hessian cover
    d. Armourflex
    e. Log / pole fencing
    f. Retaining walls
10) The Contractor shall take reasonable measures to control the erosive effects of storm water runoff.
11) The Contractor shall use silt screens to prevent overland flowing water from causing erosion.
12) 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.
13) The ploughing-in of straw offers limited protection against storm water runoff induced erosion and shall be used as an erosion protection measure.

14) The Contractor shall be liable for any damage to downstream property caused by the diversion of overland storm water flows.

6.17 Dust control

DUST - generated by works

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 erodable 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.

Dust – generated by roads and vehicle movement

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.
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:
   2.1. Reduction of travelling speeds along the road.
   2.2. Restriction of vehicle or plant usage.
   2.3. Application of chemical soil binders.
   2.4. Application of a suitable sacrificial road surfacing.
   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.

6.18 Turbidity control

1) Silt/turbidity must be contained within the construction area using silt screens that are properly fixed to prevent lifting and damage (special care must be taken to ensure stable silt screens at the deeper water levels during high tides). The siting of the screens and their operation must be approved by the RE/ECO/EO.
2) Water generated from well-point dewatering, sumps or dredging must be contained in selected bunded areas within the construction area.
3) The bunded areas must be constructed with plastic liners (or similar) to ensure no leakage.
4) Only clean water may be released into the river/estuary and no erosion will be allowed.

6.19 Fire management

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.
2) 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.

3) The Contractor shall ensure that the basic fire-fighting equipment is to the satisfaction of the Municipal Fire Chief (where applicable).

4) 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 fire fighting equipment.

5) Fire and "hot work" shall be restricted to a site approved by the Engineer/ECO/EO

6) 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" fuels shall be used. Smoke free zoning regulations shall be considered.

7) Fires within National Parks, Nature Reserves and natural areas are prohibited.

8) 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.

9) 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.

10) 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 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.

11) Should a contractor be found responsible for the outbreak of a fire, he shall be liable for any associated costs.

6.20 Water management

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 will require a Method Statement for approval by the RE/ECO/EO.

6.21 Waste management

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.

2) The Contractor shall be responsible for the establishment of a refuse control and removal system that prevents the spread of refuse within and beyond the construction sites.

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).

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.

5) The Contractor shall provide labourers to clean up the Contractor's camp and Site on a weekly basis.

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.

6.22 Toilets

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.

2) The Contractor shall keep the toilets in a clean, neat and hygienic condition. The Contractor shall supply toilet paper at all toilets.

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.

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.

5) The Contractor shall ensure that no spillage occurs when chemical toilets are cleaned and emptied.

6) The Contractor shall supply a contingency plan for spills from toilets.

7) Performing ablutions in any other area is strictly prohibited.

8) The location for construction camps and toilets must be approved by the ECO.

6.23 Blasting and drilling

1) A current and valid authorisation shall be obtained from the relevant authorities and copied to the Engineer/ECO/EO prior to any blasting activity.

2) A Method Statement shall be required for any blasting or drilling related activities.

3) All Laws and Regulations applicable to blasting/drilling activities shall be adhered to at all times.

4) A qualified and registered blaster shall supervise all blasting and rock splitting operations at all times.

5) The Contractor shall ensure that appropriate pre blast monitoring records are in place (i.e. photographic and inspection records of structures in close proximity to the blast area).

6) The Contractor shall allow for good quality vibration monitoring equipment and record keeping on Site at all times during blasting operations.

7) The Contractor shall ensure that emergency services are notified, in writing, a minimum of 24 hours prior to any blasting activities commencing on Site.

8) The Contractor shall take necessary precautions to prevent damage to special features and the general environment, which includes the removal of flyrock. Environmental damage caused by blasting / drilling shall be repaired at the Contractors expense to the satisfaction of the Engineer/ECO/EO.

9) The Contractor shall ensure that no pollution results from drilling operations, either as a result of oil and fuel drips, or from drilling fluid.

10) Drill coring with water or coolant lubricants shall require a Method Statement approved by the Engineer/ECO/EO.

11) The Contractor shall ensure that adequate warning is provided immediately prior to all blasting/drilling. All signals shall also be clearly given.

12) The Contractor shall use blast mats for cover material during blasting.

13) During demolition the Contractor shall ensure, where possible, that trees in the area are not damaged.

14) Appropriate blast shaping techniques shall be employed to aid in the landscaping of blast areas, and a Method Statement to be approved by the Engineer/ECO/EO, shall be required in this regard.

15) At least one week prior to blasting or drilling/jack hammering, the relevant occupants/owners of surrounding land shall be notified by the Contractor and any concerns addressed. Buildings within the potential damaging zone of the blast shall be surveyed preferably with the owner present, and any cracks or latent defects pointed out and recorded either using photographs or video. Failing to do so shall render the Contractor fully liable for any claim of whatsoever nature, which may arise. The Contractor shall indemnify the Employer in this regard.

6.24 Borrow pit, quarries and crushers

1) All borrow pit, quarry and crusher sites shall be clearly indicated on a plan.

2) Prior to the onset of any quarrying or borrow pit activities the Contractor shall establish from the Engineer/ECO/EO whether authorisation has been obtained, both in terms of the most recent acts of Mineral and Petroleum Resources Development Act, (Act 28 of 2002), National Environmental Management Act (Act No. 107 of 1998) and the Environmental Impact Assessment Regulations, 2010 and Noise and Nuisance Regulations of the Environmental Conservation Act. No excavation or blasting activities shall commence before the necessary authorisations are in place.

3) Only single lane access for construction vehicles shall be provided at borrow pit and quarry sites. New access roads require approval by the Engineer/ECO/EO.

4) The site of the crusher shall be fenced and sign-posted, and access to all unauthorised persons and vehicles shall be strictly prohibited.

5) The positioning of the crusher plant shall take cognisance of noise nuisance.

6) Storm water and groundwater controls shall be implemented

7) Machinery, fuels and hazardous materials vulnerable to flooding shall be stored out of flood risk areas.

8) Vehicles leaving borrow pits shall not deposit/shed mud, sand and debris onto any public road.

9) All loads shall be covered with a tarpaulin or similar to prevent dangers and nuisance to other road users.

10) Trees and debris shall not be permitted to fall outside of the clearing limits. Trees shall be cleared or felled so as not to damage other trees or vegetation

11) Borrow pits shall be fenced to prevent unauthorised persons and vehicles from entering the area. Fences shall also be stock and game proof.

12) Rehabilitation and re-vegetation of borrow pits sites shall be as detailed in the relevant approvals.

13) The contractor shall ensure that blasted faces of the pit shall be shape-blasted to the approval of the Engineer/ECO/EO.

14) Where required, dust and fly-rock prevention methods shall be detailed in a Method Statement to be approved by the Engineer/ECO/EO.

15) Main crusher box and conveyor belt heads are to be fitted with fine jet sprinkler heads to minimise dust, and pre- and post- crush stockpiles shall be managed to minimise dust.

16) All crushing plant machinery shall have drip trays and all fuels and oils required for the crusher infrastructure shall be stored in the fuel store, if one is present on Site, or in an appropriately bunded and secured area.

17) Rehabilitation of borrow pits, quarries and crusher areas shall be as determined in the relevant approvals.

6.25 Fuel and chemical management

1) Fuel may be stored on site providing the following is strictly adhered to:

2) All necessary approvals with respect to fuel storage and dispensing shall be obtained from the appropriate authorities.

3) The Municipal Fire Chief (or as applicable) must be informed and consulted ito Fire Regulations.

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.

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.

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.

5) The contractor will be responsible for the cleaning up of any spill and associated costs.

6) 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.

7) 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:

8) 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.

9) The drawn plan shall be acceptable to the Municipal Fire Chief (in urban areas) or RE/ECO/EO and to contain the following information:

   a. the scale

b. the name and address of the premises,

c. the number and the quantity of the tanks,

d. the position of the tanks in relation to the boundary, other flammable or combustible materials, etc,

e. the size and construction materials used for the bund

f. the product to be kept in the tank, and

g. any other information relevant to the situation.

Location

1) The fuel storage area shall be located at one of the following locations: {provide a list of acceptable locations for the fuel storage area}.

2) The Engineer/ECO shall be advised of the area that the Contractor intends using for the storage of fuel.

3) The location of the fuel storage area will determined by the Municipal Fire Chief (in urban areas) and be approved by the Engineer/ECO/EO.

4) The tank shall be erected at least 3.5 meters from buildings, boundaries and any other combustible or flammable materials.

Signs/good practice/safety precautions

1) 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.

2) No smoking shall be allowed in the vicinity of the stores.

3) 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.

4) There shall be adequate fire-fighting equipment at the fuel storage and dispensing area or areas.

5) Fuel shall be kept under lock and key at all times.

Tanks

1) The storage tank shall be removed on completion of the works.

2) The storage tank shall be on the premises only for as long as the contract last.

3) All such tanks to be designed and constructed in accordance with a recognised code.

4) The rated capacity of tanks shall provide sufficient capacity to permit expansion of the product contained therein by the rise in temperature during storage.

Bunds/storage areas

1) 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 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.

2) A bacterial hydrocarbon digestion agent that is effective in water approved by the Engineer/ECO/EO shall be installed in the sump.

3) 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.

4) 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.

Empty containers

1) 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.

Filling/dispensing methods

1) Any electrical or petrol-driven pump shall be equipped and positioned so as not to cause any danger of ignition of the product.
2) 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.
3) Adequate precautions shall be provided to prevent spillage during the filling of any tank and during the dispensing of the contents.

Method statements

- A method statement is required for the filling of and dispensing from storage tanks.

6.26 Litter and oil traps

Refuse screens and oil traps shall be installed at runoff concentration points from large parking facilities, wash bays, storm water outlets, inlets to detention ponds, workshop forecourt drainage points, ablution and eating areas. These facilities shall be serviced and monitored at the discretion of the Engineer/ECO.

6.27 Contaminated water

General

1) The Engineer/ECO/EO's approval will be required prior to the discharge of contaminated water to the Municipal sewer system.
2) The Contractor shall prevent discharge of any pollutants, such as cements, concrete, lime, chemicals and fuels into any water sources.
3) Water from kitchens, showers, laboratories, sinks etc. shall be discharged into a conservancy tank for removal from the site.
4) Runoff from fuel depots/workshops/truck washing areas and concrete swills shall be directed into a conservancy tank and disposed off at a site approved by the Engineer/ECO and Local Authority.
5) The contaminated water, contaminated run-off, or effluent released into a water body requires analysis in terms of the National Water Act. Contaminated water must not be released into the environment without authorisation from the relevant authority.

Washing areas

1) Wash areas shall be placed and constructed in such a manner so as to ensure that the surrounding areas, which include groundwater, are not polluted.
2) A Method Statement shall be required for all wash areas where hydrocarbon and hazardous materials, and pollutants are expected to be used. This includes, but is not limited to, vehicle washing, workshop wash bays, paint wash and cleaning.
3) Wash areas for domestic use shall ensure that the disposal of contaminated "grey" water is sanctioned by the Engineer/ECO.

6.28 Vehicles and access roads

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 deposited through construction activities shall be cleared regularly.
8) Any materials used for layer works shall be approved by the Engineer/ECO prior to the activity commencing.
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
10) Traffic safety measures, to the satisfaction of the Engineer/ECO, shall be considered in determining entry / exit onto public roads.
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)
12) Appropriate traffic warning signs shall be erected and maintained.
13) Trained and equipped flagmen shall be used where the access road intersects with any public roads.
14) Attention shall be paid to minimising disruption of the flow of traffic and reducing the danger to other road users and pedestrians.
15) Method statements are required for the following:-
    a) Traffic safety measures with regard to entry and exit on public roads and the control of construction traffic.
    b) 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.

6.29 Fixing of surfaces

1) Over spray of bitumen products outside of the road surface and onto roadside vegetation shall be prevented using a method approved by the Engineer/ECO/EO.
2) Bitumen drums / products shall be stored in an area approved by the Engineer/ECO/EO. This area shall be indicated on the construction camp layout plan. The storage area shall have a smooth impermeable (concrete or thick plastic covered in sand) floor. The floor shall be bunded and sloped towards a sump to contain any spillages of substances.
3) When heating of bitumen products, the Contractor shall take cognisance of appropriate fire risk controls.

4) Stone chip / gravel excess shall not be left on road / paved area verges. This shall be swept / raked into piles and removed to an area approved by the Engineer/ECO/EO.
5) Milled or cut out bitumen shall be removed to an area approved by the Engineer/ECO/EO.
6) Water quality from runoff from newly /fresh bitumen surfaces shall be monitored by the Engineer/ECO/EO and remedial actions taken where necessary.
7) Heating of bitumen products shall only be undertaken using LPG or similar zero emission fuels.
8) Appropriate fire fighting equipment shall be readily available.

6.30 Stockpiling of materials

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.

6.31 Heritage remains

Should any heritage remains be exposed during excavations or any other actions on the site, these must immediately be reported to the Provincial Heritage Resources Authority of the Northern Cape. Heritage remains uncovered or disturbed during earthworks must not be further disturbed until the necessary approval has been obtained from the competent authority. Heritage remains include: meteorites, archaeological and/or palaeontological remains (including fossil shells and trace fossils); coins: indigenous and/or colonial ceramics; any articles of value or antiquity: marine shell heaps; stone artefacts and bone remains; structures and other built features with heritage significance; rock art and rock engravings and/or graves or unmarked human burials including grave goods and/or associated burial material.

A qualified archaeologist and/or palaeontologist must be contracted where necessary (at the expense of the holder) to remove any heritage remains.

6.32 Contingency planning

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.

6.33 Outdoor advertising

All outdoor advertising associated with this activity, whether on or off the property concerned, must comply with the applicable Local Authority By-Law for control of Outdoor Advertising or in the absence of local legislative controls, must comply with the South African Manual for Outdoor Advertising Control.

6.34 Energy Efficiency & Waste Minimization Measures

The following design measures will be considered for energy and water saving measures:

- 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.

6.35 Environmental Control Officer or Resident Engineer

An Environmental Control Officer (ECO) will implement 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.
- Visit the site regularly on at least a weekly basis.
- Prepare reports as required by mitigation measures or by the EA.
- Maintain a photographic record of the work and environmental issues.

6.36 Documentation control

The ECO will maintain a file containing the following:

1) Copy of the EMPr
2) Methodology statement(s) by the contractor(s)
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 should maintain a copy of the following documents on-site:
    - All methodology statements;
    - Emergency response and remedial action plan;
    - Environmental Management Plan (EMP) and other documents related to the operation on file.
8) Tracking table (see Appendix B)

7 Operational Management Programme

Note: All controls and regulations must be adhered too.

7.1 Contingency Planning

1) Contingency planning with respect to power failures, faulty equipment, leachate and run-off, has to be established once the sewage treatment plants and pump stations are fully operational. These contingency planning measures will have to be approved by the ECO.
2) All measures and monitoring included under the Water Affairs licenses must be implemented.
3) 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 operational phase), such incidents must be reported (within 14 days) to all the relevant Municipality 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.

7.2 Water Use Management

1) No additional abstraction or any use of surface water or groundwater shall be done without prior authorisation from the Department of Water Affairs, unless it is a Schedule 1 Use or an Existing Lawful Use if water is taken from a water resource.
2) All the requirements of the National Water Act, 1998 (Act 36 of 1998) regarding water use and pollution management must be adhered to at all times.
3) No pollution of surface water or ground water resources shall occur due to activities on the property

Appendix A: Environmental Authorisation

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 complaints register.	R500	R1000
Failure to comply with prescriptions regarding information boards.	R500	R1000
Failure to comply with prescriptions regarding site demarcation and enforcement of 'no go' areas.	R500	R5000
Failure to comply with prescriptions regarding site clearing.	R500	R5000
Failure to comply with prescriptions for supervision for loading and off-loading of delivery vehicles.	R500	R1000
Failure to comply with prescriptions for securing of loads to ensure safe passage of delivery vehicles.	R500	R1000
Failure to comply with prescriptions for the storage of imported materials within a designated contractor's yard.	R500	R1000
Failure to comply with prescribed administration, storage or handling of hazardous substances.	R500	R1000
Failure to comply with prescriptions regarding equipment maintenance and storage.	R500	R1000
Failure to comply with fuel storage, refuelling, or clean-up prescriptions.	R500	R1000
Failure to comply with prescriptions regarding procedures for emergencies (spillages and fires).	R1000	R5000
Failure to comply with prescriptions regarding construction camp.	R500	R5000
Failure to comply with prescriptions for the use of ablution facilities.	R500	R1000
Failure to comply with prescriptions regarding water provision.	R500	R1000
Failure to comply with prescriptions for the use of designated eating areas, heating source for cooking or presence of fire extinguishers	R500	R1000
Failure to comply with prescriptions regarding fire control.	R500	R5000
Failure to comply with prescriptions for solid waste management.	R500	R5000
Failure to comply with prescriptions regarding road surfacing.	R500	R5000
Failure to comply with prescriptions to prevent water pollution and sedimentation	R500	R5000

Failure to comply with prescriptions to the protection of natural features, flora, fauna and archaeology.	R500	R5000
Failure to comply with prescriptions regarding speed limits.	R500	R1000
Failure to comply with prescriptions regarding noise levels of construction activities.	R500	R5000
Failure to comply with prescriptions regarding working hours.	R500	R5000
Failure to comply with prescriptions regarding aesthetics.	R500	R1000
Failure to comply with prescriptions regarding dust control.	R500	R1000
Failure to comply with prescriptions regarding security and access onto private property	R500	R1000
Failure to comply with prescriptions regarding cement and concrete batching	R500	R5000

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

Appendix D: Method Statement Proforma

METHOD STATEMENT PROFORMA

METHOD STATEMENT FOR THE:

_____

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

DATE OF SUBMISSION: _____

LEAD CONTRACTOR: _____

OTHER CONTRACTORS AND/OR SUB-CONTRACTORS: _____

Describe in detail what work is to be undertaken?

_____

_____

_____

_____

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

_____

_____

_____

Lead supervisor/foreman name and contact details: _____

Number of personnel: _____

Construction activities: _____

Plant and machinery to be used: _____

_____

Other: _____

_____

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

Toilet facilities:

Litter:

Security:

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

Emergencies and fire:

Hazardous materials (handling, management, storage):

Have all personnel involved been through an environmental induction course:

Petrochemical spill remediation and containment measures:

Other:

DECLARATION BY PARTIES

Contractor:

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

_____ _____

Print Name *Date*

_____

Signed

Environmental Officer (EO):

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

_____ _____

Print Name *Date*

_____

Signed

Resident Engineer:

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

_____ _____

Print Name *Date*

_____

Signed

Appendix E: Method Statement Control Sheet

METHOD STATEMENT CONTROL SHEET

CONTRACT NO: _____

METHOD STATEMENT CONTROL SHEET

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

MS Number:

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

TITLE:
DESCRIPTION:
SUBMITTED BY:

Date requested by: _____ Date submitted: _____

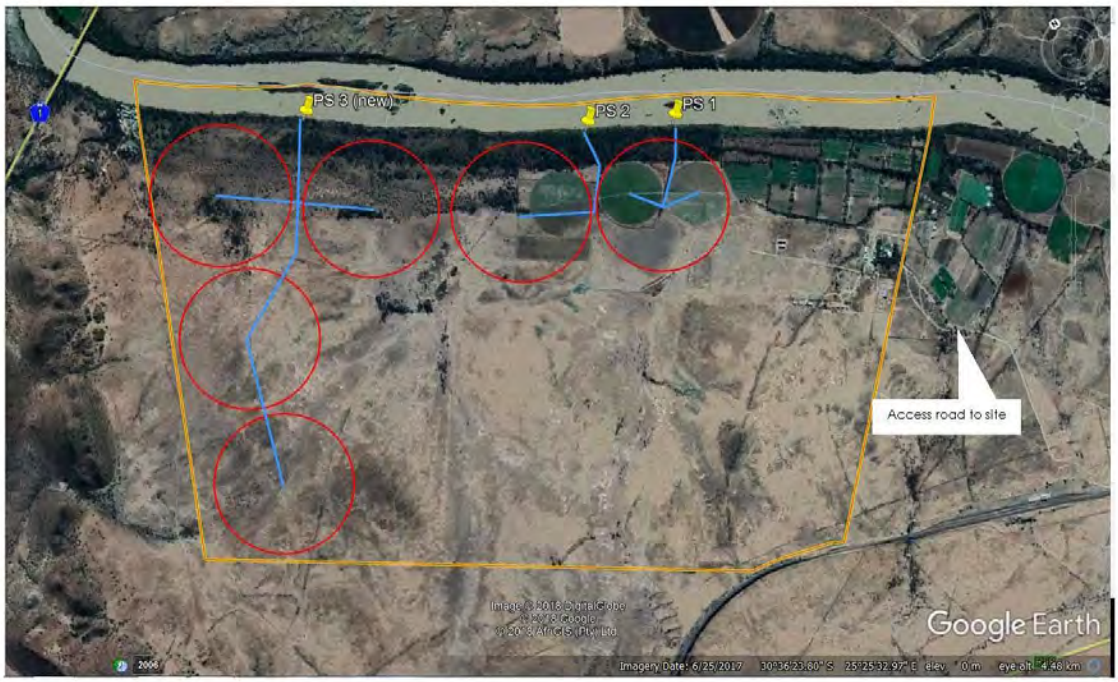
Date response required by: _____ Date work start: _____

REVIEW SCHEDULE		
Date	**Authority**	**Comments**

DISTRIBUTION AND AUTHORISATION			
	APPLICANT	**EO**	**CONTRACTOR**
Name			
Signature			
Date			

Appendix F: Super-imposed project map

Red areas indicate No-Go areas



Appendix G: EAP Curriculum Vitae

PB Professional Services CC
PO Box 1058
Wellington 7654

Phone: 021 873 7228
Cell: 0827763422
Fax: 0866721916
E-mail: pbps@iafrica.com

Pieter Badenhorst

Nationality	South African	
Date of birth	25 March 1951	
Qualifications	B.Sc. B.Eng. (Civil)	University of Stellenbosch 1973
	M.Eng. (Irrigation)	University of Stellenbosch 1977
	B.Hons. (B&A)	University of Stellenbosch 1992
	MBA	University of Stellenbosch 1993
Special courses	• 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 - Participlan (10/94), CSIR/Univ. Cape Town	
Professional membership	Professional engineer, member of the Engineering Council of South Africa Member of the South African Institute of Civil Engineers Member of International Association for Impact Assessment (South Africa)	
Career	**Since 1997**	Own consultancy
	1997	CSIR, Environmentek; Provincial Business Development Manager
	1995 - 1996	Gulf Petrochemical Services LLC; Business Development Engineer (Sultanate of Oman & UAE) and CSIR Marketing Manager Middle East (Sultanate of Oman, UAE & Qatar).
	1993 - 1994	CSIR, Ematek, Coastal Development Programme; Marketing Manager
	1992	Study for MBA
	1982 - 1991	CSIR, Ematek, Coastal Development Programme; Project Manager
	1981	Municipality of Somerset West; Deputy Town Engineer
	1979 - 1980	Municipality of Kuils River; Town Engineer
	1978	Municipality of Klerksdorp; Senior Engineer (water)
	1974 - 1977	Department of Water Affairs; Assistant Engineer
Current position	Owner of Pieter Badenhorst Professional Services CC. As a private consultant now provide consultancy services in Environmental/coastal Management, Environmental Engineering, Public Participation and Project Management.	
Professional experience	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 Kuils 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. 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. Presented a third year course in Coastal Management at Cape Technikon.	
Publications/ Contracts (A full list is available on request)	• 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	

Appendix H3: Requirements As Per Regulations Relating To The Procedure To Be Followed And Criteria To Be Considered When Determining An Appropriate Fine In Terms Of Section 24g

1. Section A: Directives

Section 24G(1) of 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 Environment Management: Waste Act, 2008 (Act 59 of 2008) ("NEM:WA") the Minister, the Minister responsible for mineral resources or the 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 representation into account a final directive may be issued.

Please Note:

Notwithstanding the above, subsequent to submission of the application form to the Department, you may be issued with a specific directive in terms of section 24G(1)(i) to (viii), and you will therefore be provided with an opportunity to make further representations as to the specific directive.

The appointed Environmental Assessment Practitioner, on behalf of the applicant, may be directed to compile and submit a report that meets the requirements of section 24G(vii)(aa)-(ee) as specified above.

NO DIRECTIVES HAVE BEEN ISSUED

2. Section B: Deferral Of The Application

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 a contravention of section 24F(1) of the NEMA in respect of a matter that is not subject to this application 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 not subject to this application 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 in terms of which this application directly relates?	*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 or uncertain 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).

3. Section C: Quantum Of The Section 24G Fine

In terms of section 24G(4) of the NEMA, it is 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 an *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, copies of which must be submitted with this completed application form.

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** **Description of variable**	**Place an "x" in the appropriate box**
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 negative socio-economic impacts.	
Motivation: The activity will in fact lead to positive socio-economic impacts which include employment opportunities, cultivation of maize which can be exported and Lucerne which can be sold locally and nationally	

Index **Biodiversity Impact** **Description of variable**	**Place an "x" in the appropriate box**
The activity is not giving, has not given and will not give rise to any impacts on biodiversity	
The activity is giving, has given or could give rise to localised biodiversity impacts	X
The activity is giving, has given or could give rise to significant biodiversity impacts	
The activity is, has or is likely to permanently / irreversibly transform/ destroy a recognised biodiversity 'hot-spot' or threaten the existence of a species or sub-species.	
Motivation: The entire area was cultivated more than 10 years ago which degraded the state of the biodiversity. A portion of the site was also cultivated within the last 10 years. The applicant will also only establish two of the 6 centre pivots immediately (64 ha), the remaining four will only be established at a later stage after this application has been finalised.	

Index **Sense of Place Impact and / or Heritage Impact** **Description of variable**	**Place an "x" in the appropriate box**
The activity is in keeping with the surrounding environment and / or does not negatively impact on the affected area's sense of place and /or heritage	X
The activity is not in keeping with the surrounding environment and will have a localised impact on the affected area's sense of place and/or heritage	
The activity is not in keeping with the surrounding environment and will have a significant impact on the affected area's sense of place and/ or heritage	

The activity is completely out of keeping with the surrounding environment and will have a significant impact on the affected area's sense of place and/ or heritage	
Motivation: The activity is agricultural in nature and will be completely in keeping with the surrounding environment and will not affect the sense of place. The HIA also indicated: *As far as the palaeontological heritage is concerned, the proposed development may proceed with no additional heritage assessments necessary, provided that all agricultural activities are restricted to within the boundaries of the development footprints. The terrain in general is regarded as of low archaeological significance and is assigned a rating of Generally Protected C.*	

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

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** **Description of variable**	**Place an "x" in the appropriate box**
	Administrative action was previously taken against the applicant in respect of the abovementioned provisions.	
	No previous administrative action was taken against the applicant but previous administrative action was taken against a firm(s) on whose board one or more of the applicant's directors sit or sat at the relevant time when the administrative action was taken.	
	Administrative action was **not** previously taken against the applicant in respect of the abovementioned provisions.	X
Explanation of all previous administrative action taken in respect of the above:		

Index	**Previous Convictions in terms of section 24F(1) of the National Environmental Management Act and/or section 20(b) of the National Environmental Management Waste Act** **Description of variable**	**Place an "x" in the appropriate box**
	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 at the relevant time; 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.		
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: The applicant is the Van der Merwe Boerdery Trust		

Index	Any other relevant information that the applicant would like to be considered.
Motivate and explain fully: Please take into consideration that the applicant will only establish two pivots, 64 ha in size (of which a large portion is currently already cultivated) while the S24G process is in process. The remaining 4 pivots will only be established after the S24G process has concluded.	

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.

4. Section D: Preliminary Advertisement

When submitting this application form, the applicant must attach proof that the application has been advertised in at least one local newspaper in circulation in the area in which the activity was commenced, 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 register as an interested and affected party and / or submit their comment. At least 20 days must be provided in which to do so.

This advertisement shall be considered as a preliminary notification and the competent authority may direct the applicant to undertake further public participation and advertising after receipt of this application form.

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).

A tricky encounter

On Saturday Union's first hockey team played Cradock in a tricky encounter on a grass surface. The team deserves much praise as they approached the game with complete professionalism, and thoroughly enjoyed the encounter. The girls dominated the game, but could not finish their opportunities, winning 1-0. Special mention must be made of Jenna McNaughton who played extremely well. In other results, Union's U.16 team beat Cradock's third team 12 - 0 and the second team won 3 - 0. Seen here is Union's first hockey team after their game on Saturday.

Union takes on Cradock

On Saturday, teams from Union High travelled to Cradock to play rugby and hockey matches against Cradock High and Marlow. The first team and U.16A rugby was cancelled due to an outbreak of flu in Cradock. In the rugby, Union's U.14A team lost 17-33, the U.15B team won 41-19, the U.15A team won 24-12, the second team won 20-10 and the third team lost against Marlow's fourth team 0-36. Seen here is Union's second team taking the field.

PRELIMINARY PUBLIC PARTICIPATION PROCESS AS PART OF A SECTION 24G APPLICATION PROCESS

Rectification Of Clearance and Cultivation Of Farmland On Portion 7 Of Farm Stockenstroms Kop No 77, Umsobomvu Local Municipality, Norvalspont

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 proposed development consists of the clearance and establishment of six new centre pivots with a total area of approximately 200ha on Portion 7 of Farm Stockenstroms Kop No. 77, outside of Norvalspont. This approximate 200ha clearance will entail the clearance of about 175 hectares of indigenous vegetation during 2018. This development also includes the construction of pipelines for irrigation by means of existing lawful water uses from the Orange River and gravel roads between pivots.

The development will be undertaken without Authorisation and therefore a S24G Process is being undertaken. The following Environmental Impact Assessment (EIA) listed activities apply to the application for rectification: GN R 327: Activity 12, 19; GN R 325: Activity 15; GN R 324: Activity 4,12, 14.

More information on the S24G Application and work undertaken will be available in the Draft Assessment Report (S24G) which will be made available for comment from www.pbps.co.za or the EAP in due course. Should you wish to register as an Interested and Affected Party (I&AP), please submit your name, contact information and interest in the matter as well as any comment to the EAP. The registration period is from 1 June 2018 until 21 June 2018.

Date of this notice: 31 May 2018

Details of EAP/OBP
Helene Botha
Pieter Badenhorst Professional Services;
P O Box 1058, Wellington, 7654
Cell: 0768004959; Fax: 0866721916;
E-mail: heleneb@iafrica.com
Website: www.pbps.co.za

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 21 June 2018.