

**AGRICULTURAL IMPACT ASSESSMENTS AND REHABILITATION MEASURES FOR A PROSPECTING RIGHTS APPLICATION ON THE FARMS KLEIN PELLA AND SANDFONTEIN, LOCATED APPROXIMATELY 45 KM NORTHWEST OF THE TOWN OF POFADDER IN THE KHAI-MA LOCAL MUNICIPALITY, NAMAKWA DISTRICT MUNICIPALITY, NORTHERN CAPE PROVINCE EACH APPROXIMATELY 20 000 HA IN EXTENT**

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# **1. INTRODUCTION AND BACKGROUND**

## ***1.1 The Objective***

The objective behind this assessment has been to determine what impact, if any, the prospecting right will have on the current activities at the farming undertaking generally known as Klein Pella

### **1.1.1 Some Background**

(Although it has no direct bearing on the outcome of this report, the specialist would at the very outset state that he has seldom had the pleasure and privilege of visiting such a well managed agricultural enterprise. Added to this was an extremely interesting historical background.

The name Klein Pella was derived from the nearby small town of Pella which began as a London Missionary Society mission in 1814, was abandoned during a prolonged drought and revived as a Roman Catholic mission in the mid-1870s. A short detour to view the cathedral is well worth while.

Klein Pella is the largest producer of Medjoul Dates in the southern hemisphere. The enterprise also grows table grapes and blueberries. All three commodities are supplied to both local and export markets. To have successfully established the latter two crops in this totally hostile environment demonstrates an unusual degree of lateral thinking and technical expertise).

## ***1.2 The Locality***

The target site is approximately 45 km northwest of Pofadder and north of the N14. The northern boundary of Sandveld abuts onto the southern bank of the Gariep River

### **1.2.1 Special Note**

The agriculturally productive portions of the target site have already been extracted from the application and the rest of the property has been registered as a conservation area. It therefore remains for this assessment to address the two vegetative units found at the site. Both are found within the Gariep Desert BioRegion of the Desert Biome.

### **1.2.2 The Eastern Gariep Plains Desert**

This habitat occurs from the entrance to Klein Pella until the start of the cultivated area. It is level, arid and carries little or no grasses, shrubs, or edible vegetation. The woody vegetation comprises markedly of the *Aloe dichotoma*, (Quiver Tree, Kokerboom).

### **1.2.3 The Eastern Gariep Rocky Desert**

This is made up almost exclusively of very shallow soils over shale and rock or large boulders or just solid rock, mainly on steep slopes. This reflects the area that has not been cultivated. It is totally hostile to any vegetative growth in any form whatsoever. Where alluvial deposits occur they are deep. Where these occur in the rocky desert is where the dates and grapes are being grown. Blueberries are grown in white 25 l bags of artificial medium.

## ***1.3 The Regulatory Framework***

The most important pieces of legislation effecting land use management are:

- Subdivision of Agricultural Land Act 70 of 1970 (SALA)
- Conservation of Agricultural Resources Act 43 of 1983 (CARA)
- The National Water Act 107 of 1998
- Mineral and Petroleum Resources Development Act 28 of 2002
- The Environmental Management Act (NEMA) and Government Notice 320 of 20 March 2020
- Planning regulations include The National Development Plan (NDP) and the Provincial Spatial Economic Development Strategies (PSEDS)

The assessment and documentation procedure followed in this report is primarily based on the KZN DARD 'Natural Resources and/or Agricultural Survey Specifications, Survey Standards', Version 3, January 2018. These standards reflect the Land Capability Classes (LCCs) detailed in the 2002 Land Capability Class (LCC) definitions published by the Institute for Soil Climate and Water (ISCW), a division of the Agricultural Research Council (ARC) in 2002.

In order to facilitate flow and avoid unnecessary clutter in the main report, technical data sets are included as technical addenda in the report.

## ***1.4 Local Knowledge***

John Phipson has previously successfully conducted agricultural potential assessments for the International Union for the Conservation of Nature (IUCN) in the Southern Kalagadi Province of Botswana as well as the ZF Mgcawu and John Taolo Gaetsewe District Municipalities in the Northern Cape Province. Although conditions are not quite so harsh, he has also completed

MRA and PRA exercises in the van Rhynsdorp area, which is virtually on the very boundary of the Namakwa District Municipality.

### ***1.5 Technical Competence***

Since 2008 John Phipson has successfully completed over 150 agricultural and agribusiness impact assessments in all 9 Provinces. These have addressed township developments, road upgrades, wind, photo-voltaic and gas to power alternate energy installations, mining and borrow pits, underground pipelines and overhead power transmission lines.

### ***1.6 Terms of Reference***

Site layout maps and similar datasets have been provided by the client.

### ***1.7 Use and Ownership of Land***

The Klein Pella Portion of the site from the entrance to the farm to the gate leading to offices, workshops and accommodation area is all unused arid rangeland with scattered outcrops of solid rock. From the office area to the boundary with Sandfontein it is mainly deep gravel planted up with date palm trees and blueberries, interspersed between hilly outcrops. From the Sandfontein entrance onwards strategic areas of deep gravel are interspersed between steep, rugged and inhospitable mountains

The entire site is owned by Karsten Boerdery (Edms) Bpk.

### ***1.8 Approach of the Study***

In order to facilitate flow and avoid unnecessary clutter in the main report, technical data sets are included as technical addenda to the report (Section 9).

The desktop assessment has relied mainly on data furnished by various organs of the Agricultural Research Council, the Council for Geo Science as well as own experience of the area. The Mucina and Rutherford publication "*The Vegetation of South Africa, Lesotho and Swaziland*" provided useful vegetative data and also geological and soils information for each ecosystem (vegetative unit) within the region.

This desk top study has been followed by a site verification process along the lines stipulated by the KZN DALRRD Land Use Regulatory Unit and Agricultural Resource Management Directorate's January 2018 Standards referred to above

## ***1.9 Summary of Findings***

The impact assessment has been carried out at two levels. Viz:

The desktop assessment has relied partly on data furnished by The Institute for Soil, Climate and Water (ISCW) and the Mucina and Rutherford publication mentioned above as well as the specialist's own experience of similar projects.

This was followed by a site verification process along the lines stipulated by the January 2018 Survey Standards and Government notice No. 320 of 20 March 2020.

### **1.9.1 Open Rangeland**

Open range land was arid to semi-arid.

### **1.9.2 Food Crops**

There was no evidence of arable food crops ever having been planted.

### **1.9.3 Industrial Crops**

There was no evidence of industrial crops ever having been planted.

### **1.9.4 Livestock**

There is no livestock on the site. Only goats were seen in the surrounding area.

### **1.9.5 Vegetation**

Vegetation was sparse and consistent with the desert and semi-desert ecosystem.

### **1.9.6 Water**

There was no evidence of other surface water or underground water at the site. Irrigation water was pumped from the Gariep River.

## ***1.10 Report Format***

For ease of readability and internal flow this report has been designed to be presented in ten chapters:

- An Introduction and Background
- A Desktop Study
- The Site Verification Process



- Access, Infrastructure and Municipal Services
- Ecosystem Services
- An Impact Assessment and Mitigation Measures
- Conclusions and Recommendations
- Useful References
- Appendices Containing Technical Data

## 2. METHODOLOGY: DESKTOP STUDY

### 2.1. Soils Data

Soils data was extracted from the two vegetative units identified in the Mucina and Rutherford study *The Vegetation of South Africa, Lesotho and Swaziland*. It was anticipated that where soils occurred they would be shallow and stony, interspersed between rocky hills and mountains.

### 2.2. Climatic Desktop Data; Target Site

The table below provides a useful description of the 8 Climate Capability Classes

**Table 1: Description of Climate Capability Classes**

Climate Capability Class	Limitation Rating	Description : Scotney et Al. UKZN 1987
C1	None to slight	Local climate is favourable for good yields for a wide range of adapted crops throughout the year.
C2	Slight	Local climate is favourable for a wide range of adapted crops and a year round growing season. Moisture stress and lower temperatures increase risk and decrease yields relative to C1.
C3	Slight to Moderate	Slightly restricted growing season due to the occurrence of low Temperatures and frost. Good yield potential for a moderate range of adapted crops.

C4	Moderate	Moderately restricted growing season due to low temperatures and severe frost.
C5	Moderate to Severe	Moderately restricted growing season due to low temperatures, frost and/or moisture stress. Suitable crops at risk of some yield loss.
C6	Severe	Moderately restricted growing season due to low temperatures, frost and/or moisture stress. Limited suitable crops which frequently experience yield loss.
C7	Severe to Very Severe	Severely restricted choice of crops due to heat, cold and/or moisture stress
C8	Very Severe	Very severely restricted choice of crops due to heat, cold and/or moisture stress. Suitable crops at high risk of yield losses.

**Table 2 Climatic Data for the Study Area:**

Climate Item	Incidence and Impact
Mean Annual Precipitation	57 mm
Annual Precipitation Coefficient of Variation	69%. Some years it does not rain at all
Mean Annual Temperatures	23,3 Deg C. Temperatures range from 45 Degrees C in February to 1,5 Degrees C in August. The low MAT is due to nights being relatively cool even in mid summer
Mean Frost Days	zero
Mean Annual Potential Evaporation	Off scale
Mean Annual Soil Moisture Stress	Off scale

The target area falls into Climate Capability Class C8

### ***2.3. Terms of Reference***

Terms of reference, site relevant site maps and similar data was provided by the client.

### 3. SITE VERIFICATION

#### 3.1. Methodology

The site verification exercise was carried out on 28 and 29 February March 2024 . The weather was hot and clear. The soil was dry.

The tool for profile observations was a Dutch Auger. Slope was measured using an Abne level

Soil texture was based on the ball and sausage method.

#### 3.2. Soils Data

Table 3 below provides a descriptive summary of the main features of the Soil Forms encountered at the site in layman's language. Corresponding technical details constitute Appendix 9.4 hereto

**Table3: Description of the Site Soil Family**

Soil Family	Features
Alluvium	<p>The specialist does not know of any specific soil form or family that will describe the soils being cultivated</p> <p>The profile is over 1500 m deep, consisting mainly of coarse sand and gravel</p> <p>The top 200 to 300 mm appears to have some organic matter content. Soil profiles may in fact be deeper but none were observed</p> <p>These soils have a high erosion risk. Because of the poor physical quality of the soils, the rooting zone is heavily mulched when crops are planted</p>

#### 3.3 Land Capability Class Determination

Once the relevant soil profile and topographic data had been recorded, the next step was to compile and record the Land Capability Class for the soil profile assessed.

This is the fundamental step in assessing all the individual components that determine the physical capability and thus crop yield potential of a particular soil at a particular site.

Examination and assessment of the individual components of the determination can also give valuable insights into the management practices that will be required during the construction and rehabilitation phases of a proposed development process.

The following determinants are then applied to a Land Capability Class determination flowsheet:

Soil texture (clay content)

Slope% of surrounding area Effective rooting depth

Moisture intake rate

Soil permeability

Soil wetness

Rockiness and crusting potential are sometimes a consideration. Aspect and location on the slope (terrain units) can sometimes also provide insight.

Table 4 overleaf defines the qualities of each of the eight internationally recognized Land Capability Classes.

The values attached to each determinant of an LCC also provide a useful management guide  
e.g. Texture, rooting depth, permeability etc.

Only soils complying with Land Capability Classes I to III (LCCI to LCCIII) are readily acceptable for arable crop cultivation. LCC IV soils may be cultivated under certain stringent and well managed conditions.

LCCV usually refers to wetlands and LCCVI to moderate to good yield potential land that cannot be cultivated as the slope is greater than 12% (A slope of 1 in 8) It can be used only for long term crops such as sugarcane, permanent pastures, orchards and timber plantations

LCC VII and VIII soils are limited to domestic livestock and wild game.

**Table 4: Description of Land Capability Classes**

Class	Concepts
I	Land in Class I has few limitations that restrict its use; it may be used safely and profitably for cultivated crops; the soils are nearly level and deep; they hold water well and are generally well drained; they are easily worked, and are either fairly well supplied with plant nutrients or are highly responsive to inputs of fertilizer; when used for crops, the soils need ordinary management practices to maintain productivity; the climate is favourable for growing many of the common field crops.
II	Land in Class II has some limitations that reduce the choice of plants or require moderate conservation practices; it may be used for cultivated crops, but with less latitude in the choice of crops or management practices than Class I; the limitations are few and the practices are easy to apply.
III	Land in Class III has severe limitations that reduce the choice of plants or require special conservation practices, or both; it may be used for cultivated crops, but has more restrictions than Class II; when used for cultivated crops, the conservation practices are usually more difficult to apply and to maintain; the number of practical alternatives for average farmers is less than that for soils in Class II.
IV	Land in Class IV has very severe limitations that restrict the choice of plants, require very careful management, or both; it may be used for cultivated crops, but more careful management is required than for Class III and conservation practices are more difficult to apply and maintain; restrictions to land use are greater than those in Class III and the choice of plants is more limited.
V	Land in Class V has little or no erosion hazard but has other limitations which are impractical to remove that limit its use largely to pasture, range, woodland or wildlife food and cover. These limitations restrict the kind of plants that can be grown and prevent normal tillage of cultivated crops; it is nearly level; some occurrences are wet or frequently flooded; others are stony, have climatic limitations, or have some combination of these limitations.
VI	Land in Class VI has severe limitations that make it generally unsuited to cultivation and limit its use largely to pasture and range, woodland or wildlife food and cover; continuing limitations that cannot be corrected include steep slope, severe erosion hazard, effects of past erosion, stoniness, shallow rooting zone, excessive wetness or flooding, low water-holding capacity; salinity or sodicity and severe climate.
VII	Land in Class VII has very severe limitations that make it unsuited to cultivation and that restrict its use largely to grazing, woodland or wildlife; restrictions are more severe than those for Class VI because of one or more continuing limitations that cannot be corrected, such as very steep slopes, erosion, shallow soil, stones, wet soil, salts or sodicity and unfavourable climate.
VIII	Land in Class VIII has limitations that preclude its use for commercial plant production and restrict its use to recreation, wildlife, water supply or aesthetic purposes; limitations that cannot be corrected may result from the effects of one or more of erosion or erosion hazard, severe climate, wet soil, stones, low water-holding capacity, salinity or sodicity.

In order to facilitate flow and avoid clutter, the flowsheets reflecting the key components of LCC determinations are relegated to Appendix 9.43 hereto.

### ***3.4 Soil Properties***

For the technically minded, physical and chemical properties of the soils encountered at the site are detailed in Appendix 9.4 hereto.

## **4. ACCESS, INFRASTRUCTURE AND SERVICES**

Access from the N14 is via good gravel road that travels westwards from the Pella Road a few hundred meters north of the N14, approximately 25km west of Pofadder. A 25 m wide gate

advertises the entrance to Korsten Boerdery. Infrastructure on the farms is good and very well maintained. Water is pumped from the Gariep River and power is supplied by strategically placed clusters of solar panels.

## 5. ECOSYSTEM SERVICES

The key ecosystem service is water from the Gariep River

## 6. IMPACT ASSESSMENT AND MITIGATION MEASURES

There are always two phases to any agricultural impact assessment:

The first phase is to determine the impact assessment on the soils themselves. At this site the arable land has already been removed from the application. The remaining land that surrounds the cultivated areas is made up of steep and rocky hills, some of them large enough to be described as mountains. These have no agricultural potential at all so there will be no impact. The effects of noise, dust etc will be addressed by others.

The second phase in an assessment is to determine the agribusiness impact. This evolves around whether or not the change in land use will increase the economic output of the land parcel.

### Table5: Impact Assessment:

Although there is no agricultural impacts, the regulations require that following tables must be completed.

The numerical values used in the table below are derived from the following formula

#### Ranking Scales

Occurrence	Duration:	Probability:
	5-Permanent	5-Definite/don't know
	4-Long-term (ceases with the operational life)	4-Highly probable
	3-Medium-term (5-15 years)	3-Medium probability

Severity	2 -Short-term (0-5years)	2– Low probability
	1–Immediate	1–Improbable
		0–None
	Extent/scale:	Magnitude:
	5–International	10-Very high/uncertain
	4–National	8–High
	3–Regional	6–Moderate
	2–Local	4–Low
	1– Site only	2–Minor

The significance of each impact is calculated using the following formula:

$$S=(E+D+M)P$$

The environmental significance of each identified potential impact is then rated as follows:

Significance Rating	Score
High	>60–100
Moderate	30–60
Low	<30-0

<b>The Nature of the Impact</b>  <b>As already explained above there will be no agricultural impact.</b>		
Defining the Impact	Without Mitigation	With Mitigation
Extent	0	0

Duration	0	0
Magnitude	0	0
Probability	0	0
Significance	0	0
Status	N/A	N/A
Reversibility	N/A	N/A
Irreplaceable Loss of Resources?	There will be no irreplaceable loss of resources	There will be no irreplaceable loss of resources
Can Impacts be Mitigated?	There is no impact	There is no impact
Mitigation: It should be noted any the mitigation measures recommended above will be at a civil engineering level and not an agricultural level		
Residual Impacts: There are no residual impacts		

**Table5.1: Cumulative Impact Assessment:**

<p>The Nature of the Cumulative Impact</p> <p>There are no cumulative impacts</p>
---



## **7. CONCLUSION AND RECOMMENDATIONS**

### ***7.1. Conclusion***

There is no agricultural impact. The economic output of the land parcel will be increased as it will provide income earning opportunities in an area where unemployment, particularly of young people, is virtually non-existent. If the outcome of the prospecting right application is positive it will not only provide long term employment but also make available minerals that are important to the economy. There will also be downstream employment in the form of transport that will be required to deliver the mined product to the processing plant and from there to the market.

### ***7.2. Recommendation***

Due to the factors taken into account in the conclusion above it is recommended that the project be approved.

## 8. USEFUL REFERENCE PUBLICATIONS

The following reference material was utilized during the assessment and verification process:

*Development and Application of a Land Capability Classification System for South Africa:* J L Schoeman et al, ARC-ISCW, 2002

*Identification and Management of the Soils of the South African Sugar Industry:* SA Sugar Research Institute. (Sugar book)

*KwaZulu-Natal Agricultural Land Categories:* Collett A (DAFF) and Mitchell FJ (KZN DARD), Version 1, 2012 and its Appendix:

KZN Natural Resources Soil Profile Data Sheets

*Land Assessment in KwaZulu-Natal:* Botha et al, Natural Resources Directorate, KZN DARD; Cedara

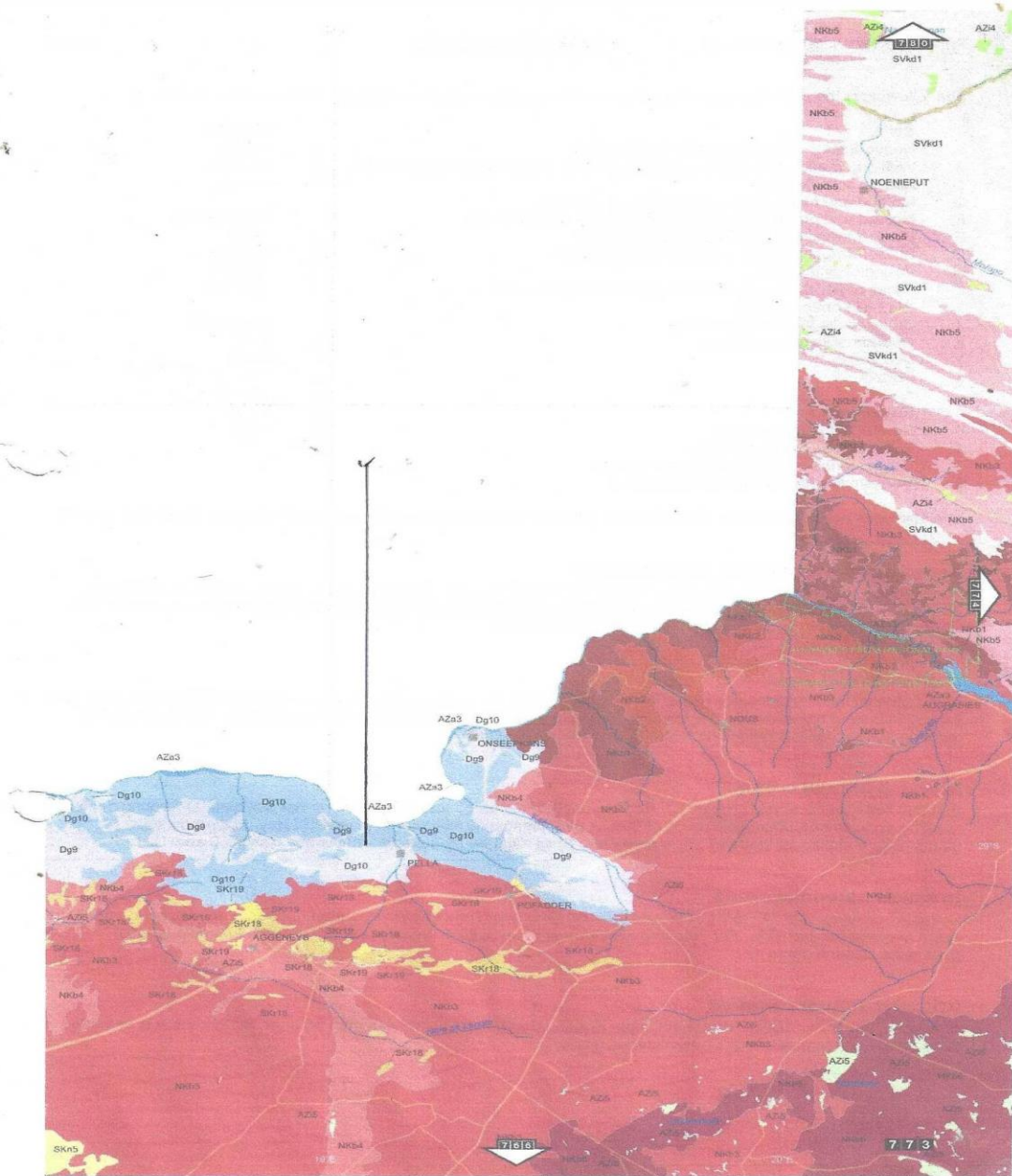
*Natural Resources and/or Agricultural Survey Specifications, Version 2 May 2015:* KZN DARD Natural Resources Directorate, Cedara

*Soil Classification: A Taxonomic System for South Africa:* CN MacVicar et Al, SIRI 1991 (Blue Book). This publication was produced by a working group of 30 scientists, written primarily for scientists

*Soils of South Africa:* Martin Fey, Cambridge University Press

## 9. APPENDICES

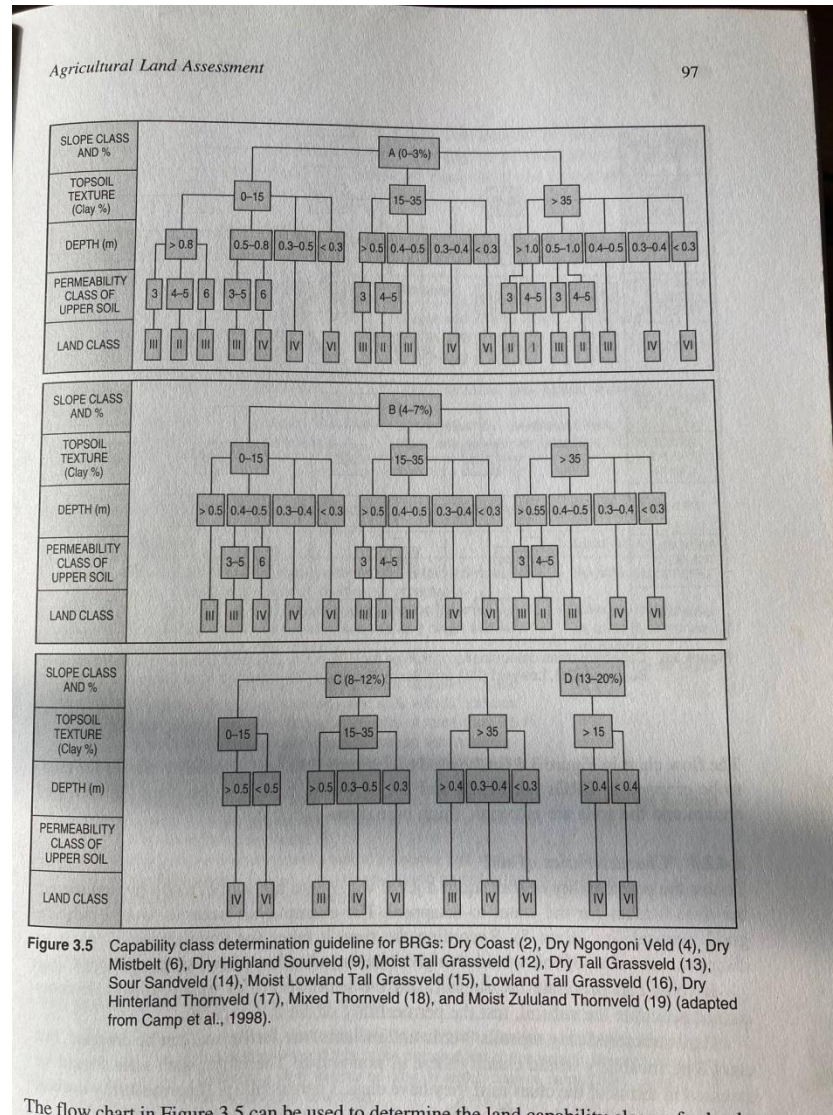
### *Appendix 9.1: Mucina and Rutherford Veg Map:773*



The arrow indicates the locality of the target site where two desert vegetative units meet

## Appendix 9.2: Definition and Determination of Land Capability Classes

The flowsheets below and over leaf detail the procedures used to determine Land Class Capability. This capability is closely allied to soil yield potential



**Figure 3.5** Capability class determination guideline for BRGs: Dry Coast (2), Dry Ngongoni Veld (4), Dry Mistbelt (6), Dry Highland Sourveld (9), Moist Tall Grassveld (12), Dry Tall Grassveld (13), Sour Sandveld (14), Moist Lowland Tall Grassveld (15), Lowland Tall Grassveld (16), Dry Hinterland Thornveld (17), Mixed Thornveld (18), and Moist Zululand Thornveld (19) (adapted from Camp et al., 1998).

The flow chart in Figure 3.5 can be used to determine the land capability classes for land

USE THE FOLLOWING LAND CHARACTERISTICS TO MODIFY THE LAND CLASS OBTAINED OPPOSITE, IF NECESSARY: The land capability class determined using the "flowchart" cannot be upgraded through consideration of wetness, rockiness, surface crusting or permeability classes given below, but it may be downgraded as indicated.

WETNESS		
Class	Definition	Land Class
W0	Well drained - no grey colour with mottling within 1.5 m of the surface. Grey colour without mottling is acceptable.	No change
W1	There is no evidence of wetness within the top 0.5 m. Occasionally wet - grey colours and mottling begin between 0.5 m and 1.5 m from the surface.	Downgrade Class I to Class II, otherwise no change
W2	Temporarily wet during the wet season. No mottling in the top 0.2 m but grey colours and mottling occur between 0.2 m and 0.5 m from the surface. Included are: soils with G horizons (highly gleyed and often clayey) at depths deeper than 0.5 m; soils with an E horizon overlying a B horizon with a strong structure; soils with an E horizon over G horizons where the depth in the G horizon is more than 0.5 m.	Downgrade to Class IV
W3	Periodically wet. Mottling occurs in the top 0.2 m, and includes soils with a heavily gleyed or G horizon at a depth of less than 0.5 m. Found in bottomlands.	Downgrade to Class Va
W4	Semi-permanently / permanently wet at or above soil surface throughout the wet season. Usually an organic topsoil or an undrained vlei. Found in bottomlands.	Downgrade to Class Vh

PERMEABILITY	
Permeability Class	Adjustment to be made
1 - 2	If in sub-soil, rooting is likely to be limited: Use the permeability of the topsoil in the flow chart. If this is the permeability of the topsoil, then the topsoil is probably a dark structured clay, in which case a permeability Class 3 can be used in the flow chart.
3 - 5	Classify as indicated in the flow chart.
6	Topsoil should have < 15% clay - use the flow chart.
7	Downgrade Land Classes I to III to Land Class IV.

ROCKINESS		
Class	Definition	Land Class
R0	No rockiness	No change
R1	2 - 10% rockiness	Downgrade Classes I to II, otherwise no change
R2	10 - 20% rockiness	Downgrade Classes I to II, otherwise no change
R3	20 - 30% rockiness	Downgrade to Class IV
R4	> 30% rockiness	Downgrade Classes I, II, III & IV to Class VI

SOIL SURFACE CRUSTING		
Class	Definition	Land Class
c0	No surface crusting when dry	No change
c1	Slight surface crusting when dry	Downgrade Class I to Class II, otherwise no change
c2	Unfavourable surface crusting when dry	Downgrade Classes I & II to Class III, otherwise no change

NB Any land not meeting the minimum requirements shown is considered non-arable (Class V, VI, VII or VIII).

Non-arable land in BRGs 2, 4, 6, 9, 12, 14, 15, 16, 17, 18 & 19 includes:

- \* all land with W3, W4 or R4;
- \* all land with slope exceeding 20%;
- \* land with slope 13-30%, if clay < 15% or depth < 0.4m;
- \* land with slope 8-12% and clay > 15%, if depth < 0.25m;
- \* land with slope 8-12% and clay < 15%, if depth < 0.5m; and
- \* land with slope 0-7%, if depth < 0.25m.

28 March 1996

## ***Appendix 9.3 Soil Properties at the Target Site***

### **9.3.1 Physical Properties**

Soil Form / Family	Clay % B and B2 Horizons *	Water Holding Capacity (mm/m)	Water Intake Rate	Drainage Capacity	Erosion Hazard	Tillage Constraints
Alluvium	<10%	<80	Rapid	Moderate	Moderate to high	Mw

Except where there is no B Horizon or the B Horizon is normally impermeable, in which case it is the clay % of the A Horizon

Tillage Code	Constraint	Tillage Constraint Risk
Cl		Clod Formation
Co		Compaction
Cr		Surface Crusting
Mw		Machine Wear
Sh		Subsurface Hindrance: Soils on hard Rock or Plinthite

### **9.4.2 Chemical Properties**

Soil Form	Base Status	Organic matter Content	N&S Mineralisa tion Capacity	K Reserves	Zn Reserves	Salinity / Sodicity Hazard



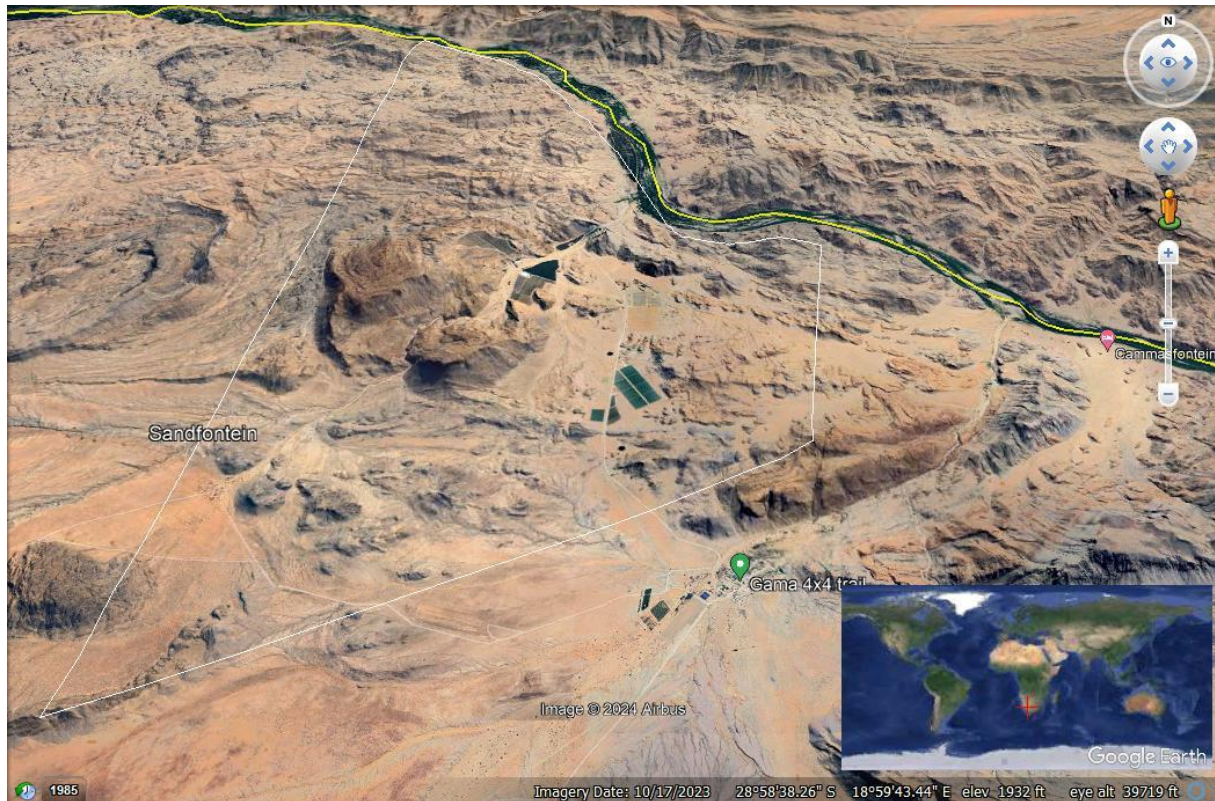
Alluvium	Low	Low	Low	Low	Low	Absent

### ***Appendix 9.4: The Locality Map***



The target site is located northwest of Pofadder and northeast of Aggeneys between the N14 and the Gariep River

## Appendix 9.5: The Site Map

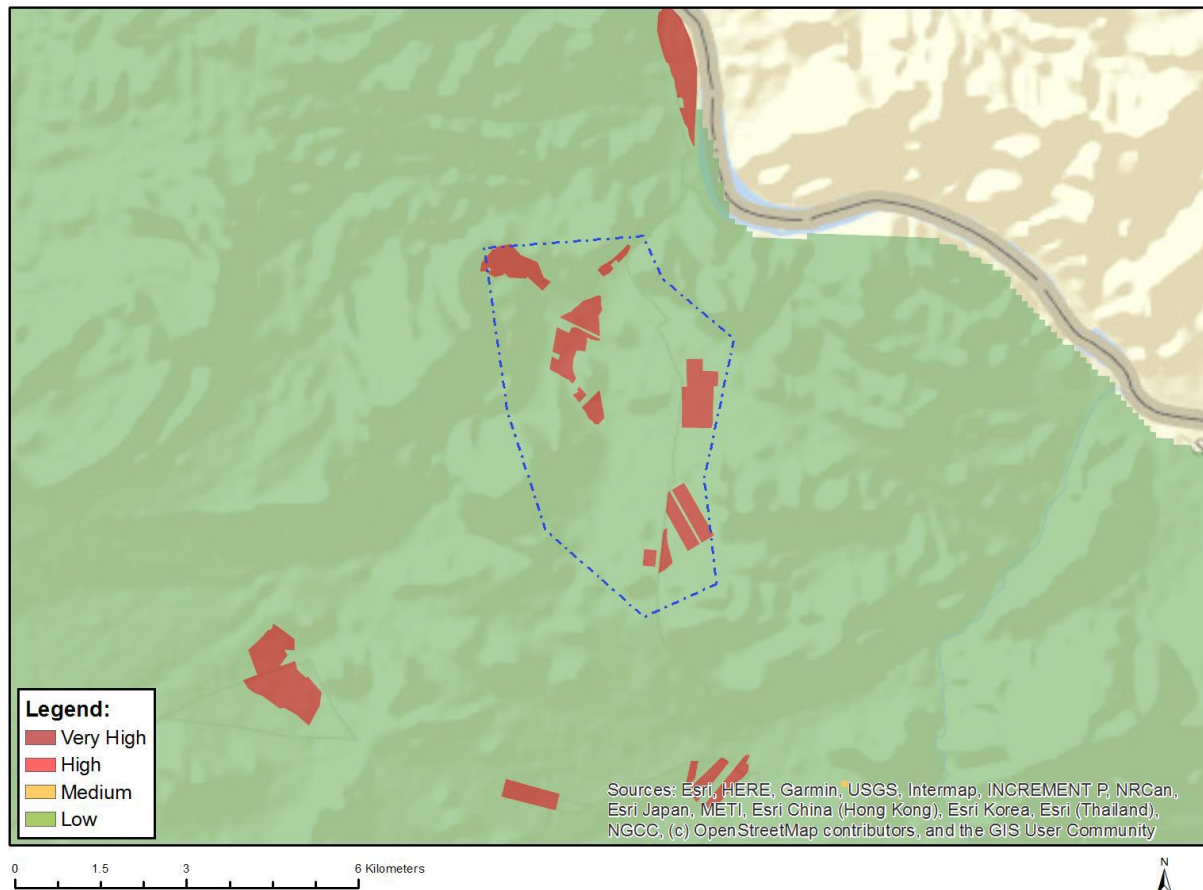


The Gariep River can be seen in the upper right hand portions of this photograph. The very dark blocks in the upper half of the photograph show the locality of date palm groves and table grape vineyards. The corresponding areas in the lower half show that locality of the Klein Pella cultivated area. The green patch is a location of the admin area, guest house and starting point for a number of highly varied 4x4 trails



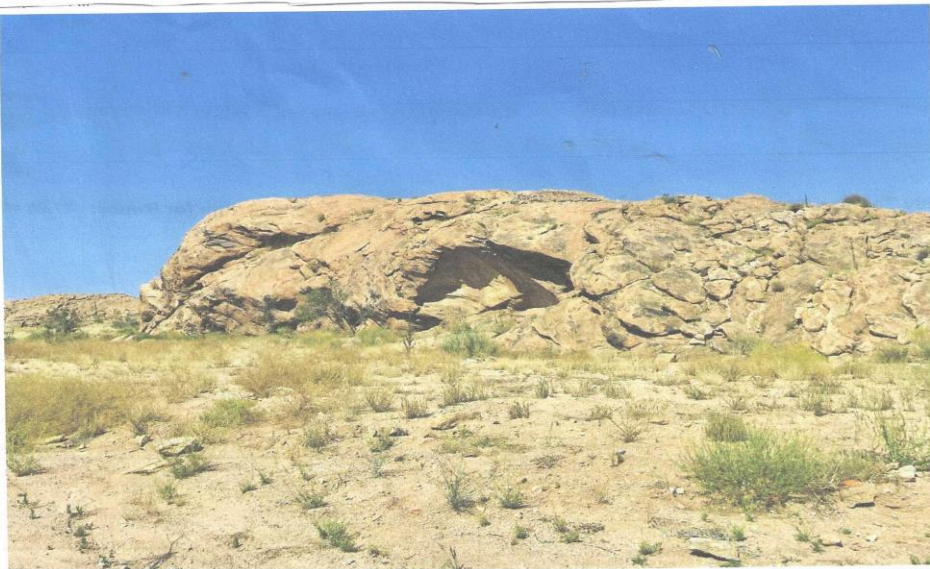
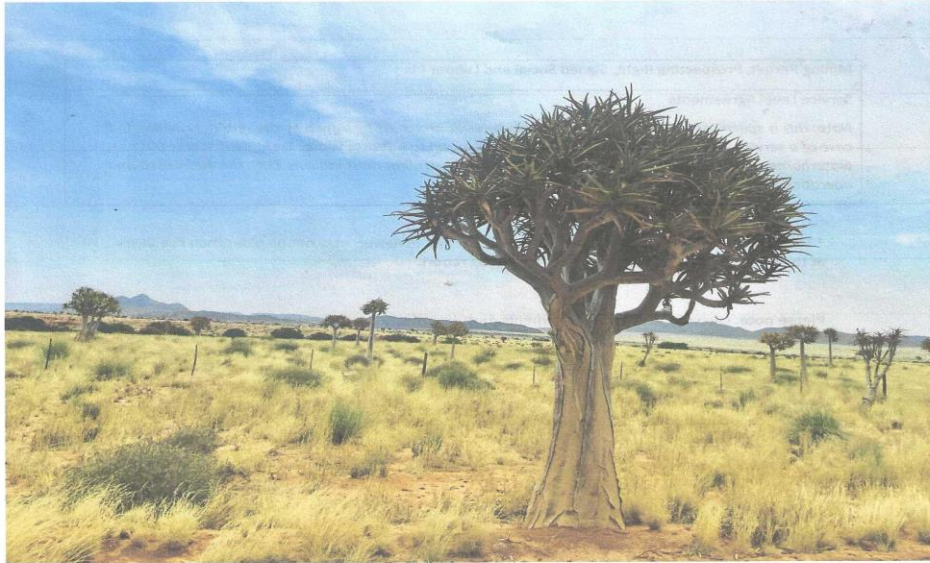
## ***Appendix 9.6: Agricultural Theme Sensitivity Map***

The sensitivity map correctly reflects that the major portion of the property is low sensitivity agricultural land. The high sensitivity areas reflect the irrigated portions that have already been excluded from this application



## 10. Picture Gallery

### *PG 10.1: Klein Pella Vegetative Units*



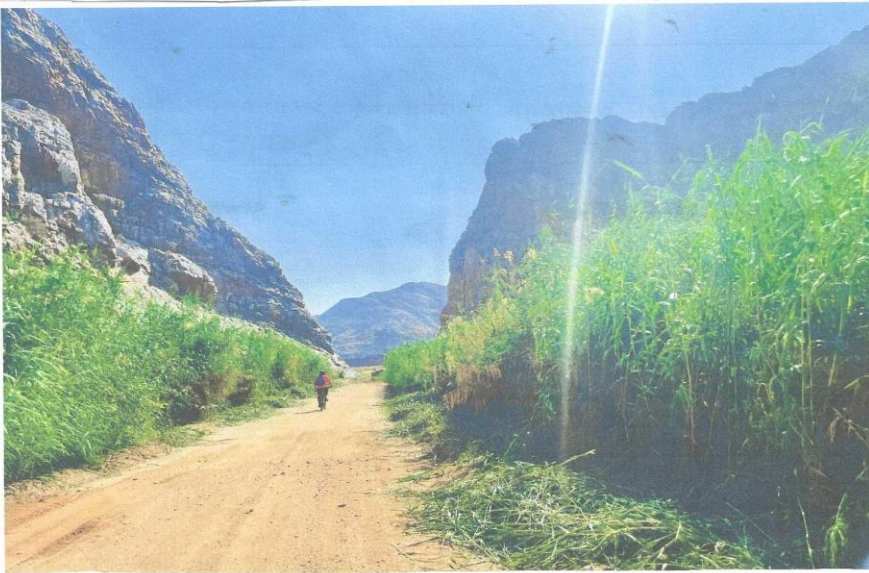
The photographs above illustrates the semi-arid and arid vegetation between the entrance to the property and the start of cultivated area



## ***PG 10.2: The Sandfontein Vegetative Unit***

3/15/24, 12:14 PM

Medjool Dates In Klein Pella



The upper photograph illustrates the gravelly nature of the soil in the foreground and also shows the extensive mulching over the root area of the palm trees. The lower photograph reflects not only the gravelly alluvium areas but also the rugged inhospitable mountains that cover the non arable portions of Sandfontein. This photograph shows the northern entrance from the Gariep River and also the high level of maintenance of basic infrastructure such as roads

***PG 10. 3: Medjoul Dates***



The two outer dates clearly illustrates the size of these specialties compared with a conventional date. The size is complemented by taste and texture. This specialist can vouch for this personally

Jp/nn/24 March 2024