

THE PROPOSED DEVELOPMENT OF A DAM ON FARM KLEINVLEI 209, PORTION 1, CERES, WESTERN CAPE



FINAL SCOPING REPORT AND PLAN OF STUDY

D:EADP REF: 16/3/3/2/B5/2/1029/21

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TSR BOERDERY (PTY) LTD

PROPOSED DEVELOPMENT OF A DAM ON FARM KLEINVLEI 209, PORTION 1, CERES, WESTERN CAPE

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ACRONYMS

BGIS	Biodiversity Geographic Information System
CBA	Critical Biodiversity Area
DEA	Department of Environmental Affairs
DEADP	Department of Environmental Affairs and Development Planning
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ECA	Environment Conservation Act (Act No. 73 of 1989)
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMP	Environmental Management Programme
ESA	Ecological Support Area
EWR	Environmental Water Requirements
HIA	Heritage Impact Assessment
HWC	Heritage Western Cape
I&APs	Interested and Affected Parties
NEMA	National Environmental Management Act (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act (Act No. 10 of 2004)
NHRA	National Heritage Resources Act (Act No. 25 of 1999)
NID	Notice of Intent to Develop
NWA	National Water Act
OESA	Other Ecological Support Area
SAHRA	South African Heritage Resources Agency
SANBI	South African National Biodiversity Institute
WULA	Water Use Licence Application

1. INTRODUCTION

1.1 BACKGROUND

Consideration is being given to the development of a new dam on Farm Kleinvlei 209, Portion 1, Ceres.

The applicant is TSR Boerdery (Pty) Ltd who will undertake the activity should it be approved. EnviroAfrica CC has been appointed as the independent Environmental Assessment Practitioner (EAP) responsible for undertaking the relevant EIA and the Public Participation Process required in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA).

This Scoping Report, which will be submitted to the Department of Environmental Affairs and Development Planning (D:EA&DP) for consideration, forms part of the EIA process.

The purpose of this Draft Environmental Scoping Report is to describe the proposed project, the process followed to date, to present alternatives and to list issues identified for further study and comment by specialists.

Should the EIA process be authorised by D:EA&DP, the Specialist Studies (noted in Section 8) will be undertaken and the significant issues (noted in Section 6) will be investigated and assessed during the next phase of this application.

1.2 DESCRIPTION OF THE PROPOSED ACTIVITY

TSR Boerdery (Pty) Ltd is proposing the development of a dam on Farm Kleinvlei 209, Portion 1, Ceres.

The proposed dam will have a total storage capacity of 235 000m³ and will be exclusively filled from an existing water use, namely, winter water from the Houdenbeks River, and from its own catchment. The proposed Kleinvlei dam will create the opportunity to store winter water for summer irrigation during times when the Houdenbeks River nearly runs dry.

The proposed Kleinvlei dam will be a zoned earthfill embankment across the valley including an open channel spillway provisionally against the northern bank plus a pipe outlet under the central embankment. The proposed dam is considered an in-stream dam with a straight alignment across the valley. The dam wall will have a maximum wall height of approximately 8.4m and a crest length of 154.3m and crest width of 4.0m. The maximum flooded area will be approximately 12ha, with a total footprint of 13ha. The dam will also include an outlet pipe with a ø250mm and ±55m long (through the damwall).

The site is located approximately 23km north of Prince Alfred Hamlet, 5km south of Op Die Berg, off the R303.

Site co-ordinates: Proposed dam wall: 33° 04' 02.50" S, 19° 19' 57.50" E.

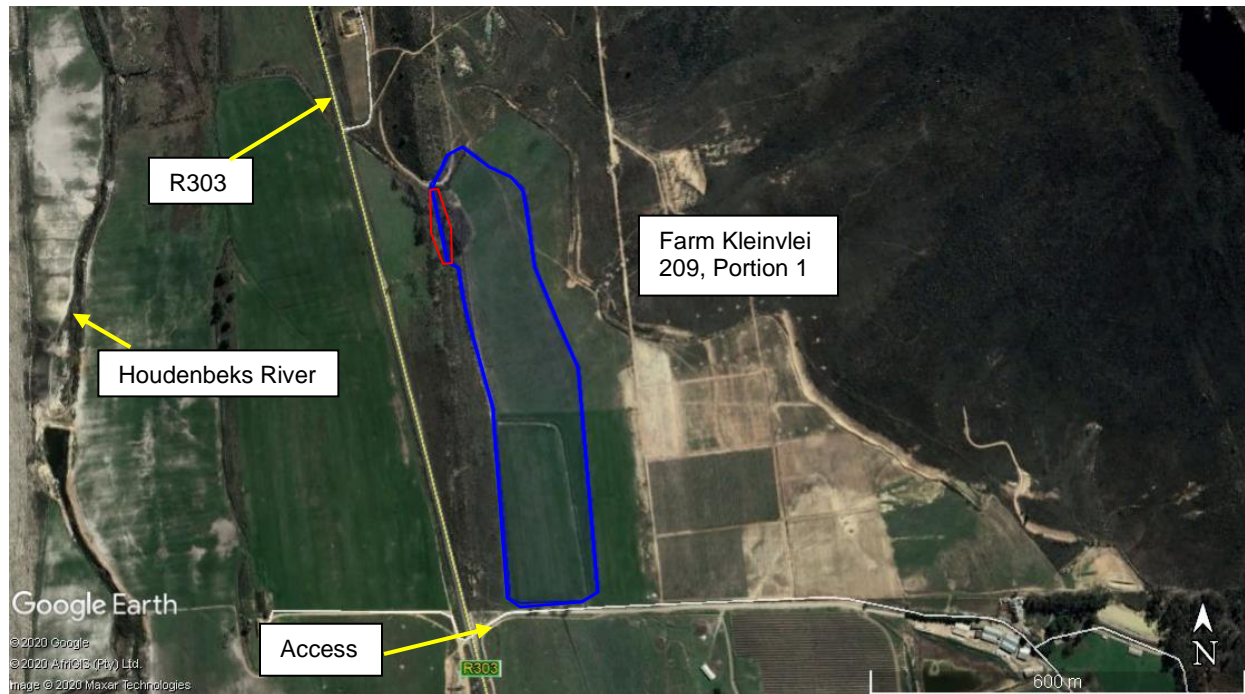


Figure 1: Google Earth image of the site. The blue polygon represents the approximate high-water mark of the dam. The red polygon the approximate dam wall/embankment footprint.

2. NEED AND DESIRABILITY

In terms of the National Environmental Management Act, as amended, EIA 2014 regulations the Scoping/EIA report must provide a description of the need and desirability of the proposed activity. The consideration of “need and desirability” in EIA decision-making requires the consideration of the strategic context of the development proposal along with the broader societal needs and the public interest.

While the concept of need and desirability relates to the *type* of development being proposed, essentially, the concept of need and desirability can be explained in terms of the general meaning of its two components in which *need* refers to *time* and *desirability* to *place* – i.e. is this the right time and is it the right place for locating the type of land-use/activity being proposed? Need and desirability can be equated to *wise use of land* – i.e. the question of what is the most sustainable use of land.

2.1 NEED

The Applicant, TSR Boerdery (Pty) Ltd, a 51% BEE owned entity, currently has summer water rights to abstract water directly from the Houdenberg River but would like to ensure the existing water use for permanent cultivars by creating winter storage.

According to the preliminary Design Report (**Appendix 5**), summer abstraction will be switched or exchanged for winter abstraction with the key motivation to store winter water for summer irrigation, also benefiting and ensuring the protection of the Houdenberg River during the dry summer months when the water levels fall drastically.

The dam will mainly be filled from the Houdenberg River via an existing pump and pipeline system while plantations will be irrigated directly from the dam during summer periods.

The proposed development is considered in line with the Witzenberg Municipality Amended Integrated Development Plan (IDP)(2017 – 2022) and the Spatial Development Framework (2020): Focus on Agriculture in the Witzenberg Area, in protecting food security while supporting sustainable diversification of the agricultural sector and encouraging more efficient methods and models.

It also supports the following key implications:

- Support private sector led institutional arrangements to enable joint planning and development of agriculture related activities.
- Enable the diversification of farmer income through enabling complimentary uses on farms in a manner which does not detract from the functionality and integrity of farming areas and landscapes.

According to the Witzenberg Municipality Amended Integrated Development Plan (IDP)(2017 – 2022) the agricultural sector comprised R1,2 billion (or 19,7 per cent) of the municipality’s GDP in 2015. It displayed steady growth of 2,5 per cent for the period 2005 – 2015, but growth has nevertheless become stagnant in the post-recessionary period (the sector experienced a growth rate of 0,3 per cent over the period 2010 – 2015). Agriculture employed 34,9 per cent of the municipality’s workforce.

According to the Witzenberg Municipality Spatial Development Framework (2020), the agricultural objective is to promote consolidation of farming landscapes and prevent their fragmentation, provide for

land and agrarian reform, improve the economic viability of farming by facilitating diversification of agricultural production, promote enterprise opportunities within the food system and promote sustainable farming practices. The proposed development is considered to be in line with these objectives.

The proposed site also appears to be in an area specified as Buffer/Agricultural in terms of the consolidated Municipal Framework Map for the Witzenberg Municipality (see Figure 2 below)

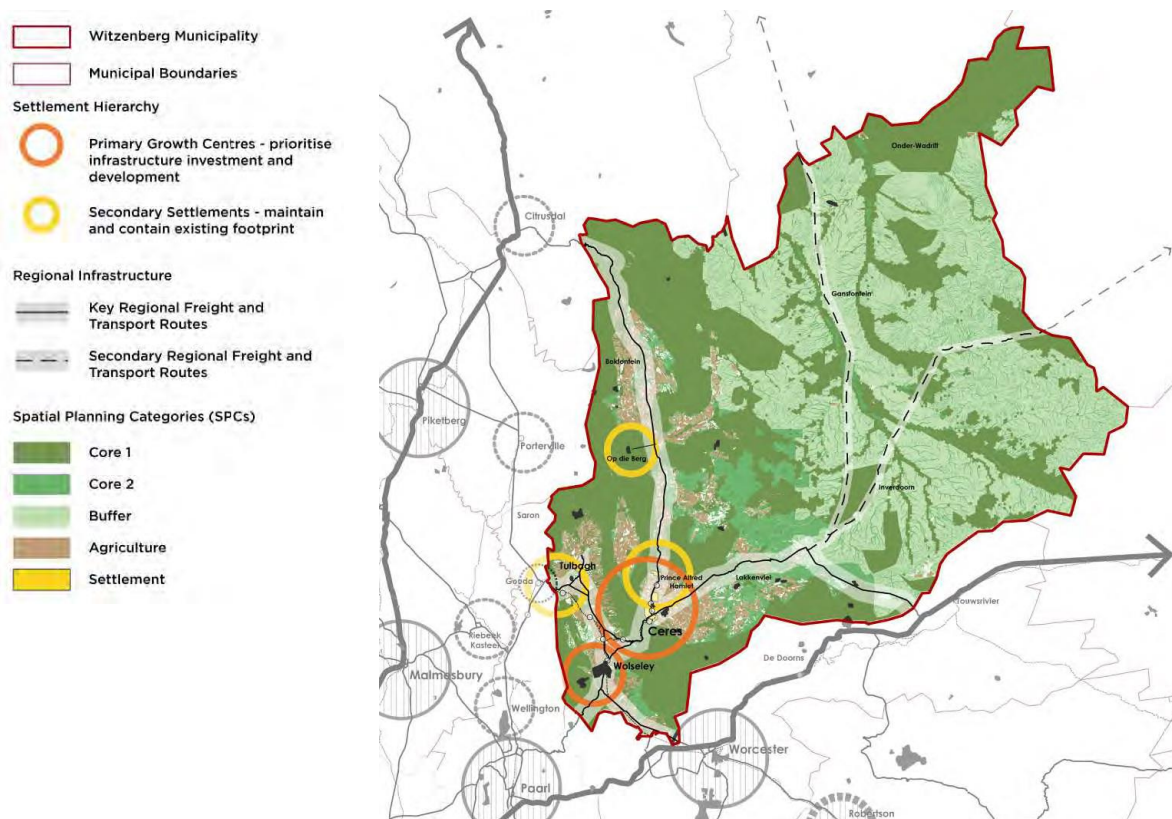


Figure 2: Consolidated Municipal Framework Map for the Witzenberg Municipality (Witzenberg Municipality Spatial Development Framework (2020).

No Environmental Management Framework relevant to the application was found.

2.2 DESIRABILITY

The following factors determine the desirability of the area for the proposed development.

2.2.1 Location and Accessibility

According to the preliminary Design Report (**Appendix 5**), the dam site is located within the Houdenberg River catchment being part of the larger Olifants-Doorn system. The use of the water as well as the construction of the proposed Kleinvlei dam should have no negative effect on the downstream users since it is based exclusively on an existing taking which was executed on the property.

The site is easily accessible from the R303, and is adjacent to TSR Boerdery's existing orchids.

The site is located on old cultivated fields, part of which has recently been used for orchids, limiting any loss of natural vegetation in the area.

The topography is also ideal, as the dam wall will be constructed between two existing ridges, limiting the amount of material required for the dam wall.

The proposed activity is also within the existing land use rights of the property. The property is zoned Agricultural. The proposed activity is the development of a new dam for agricultural purposes. The surrounding land-uses are also predominantly agricultural in nature.

2.2.2 Compatibility with the Surrounding Area

The proposed site is directly adjacent to the existing orchids of TSR Boerdery. The surrounding area is also generally agricultural in nature, with other farms dams in the area (the closest being approximately 2.2km south and 2.5km north of the proposed site). The proposed dam will therefore not be considered inappropriate for the area, and is compatible with the existing land-uses in the area.

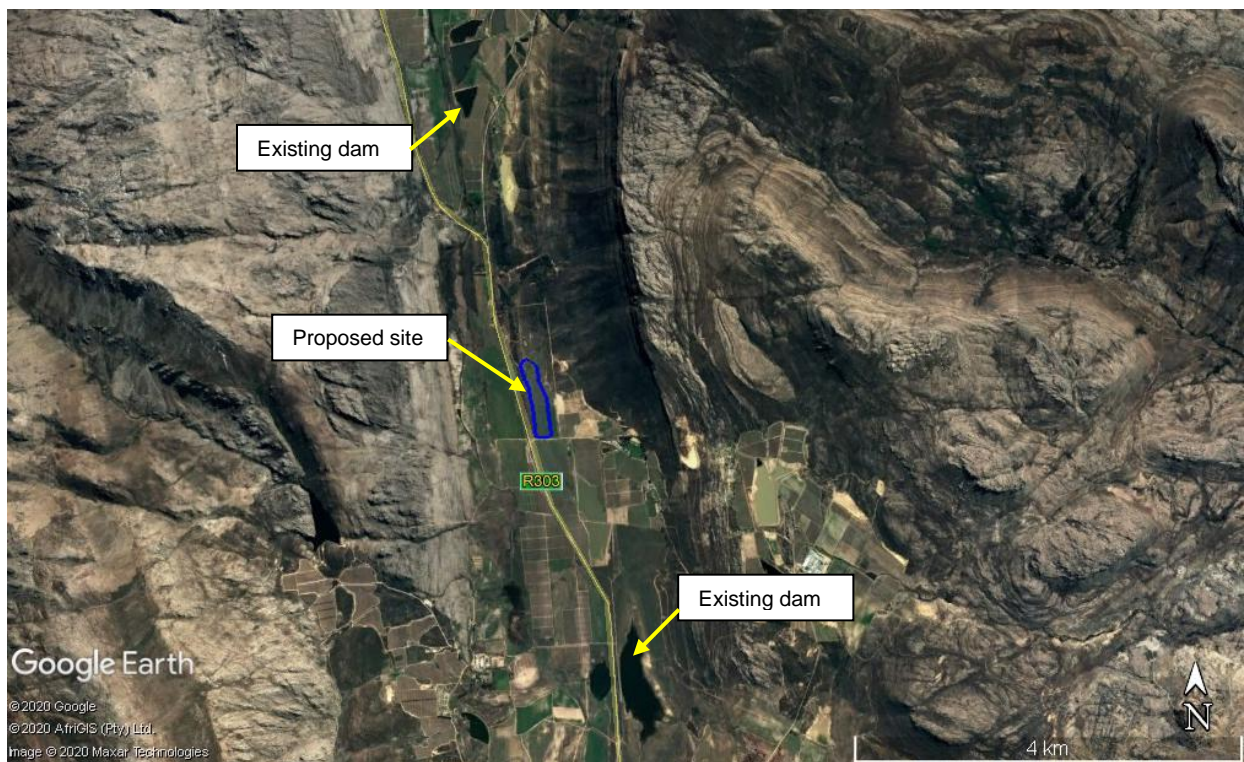


Figure 3: Google Earth image of the surrounding landscape. The proposed development will be in an agricultural area, with other similar farm dams to the south and to the north.

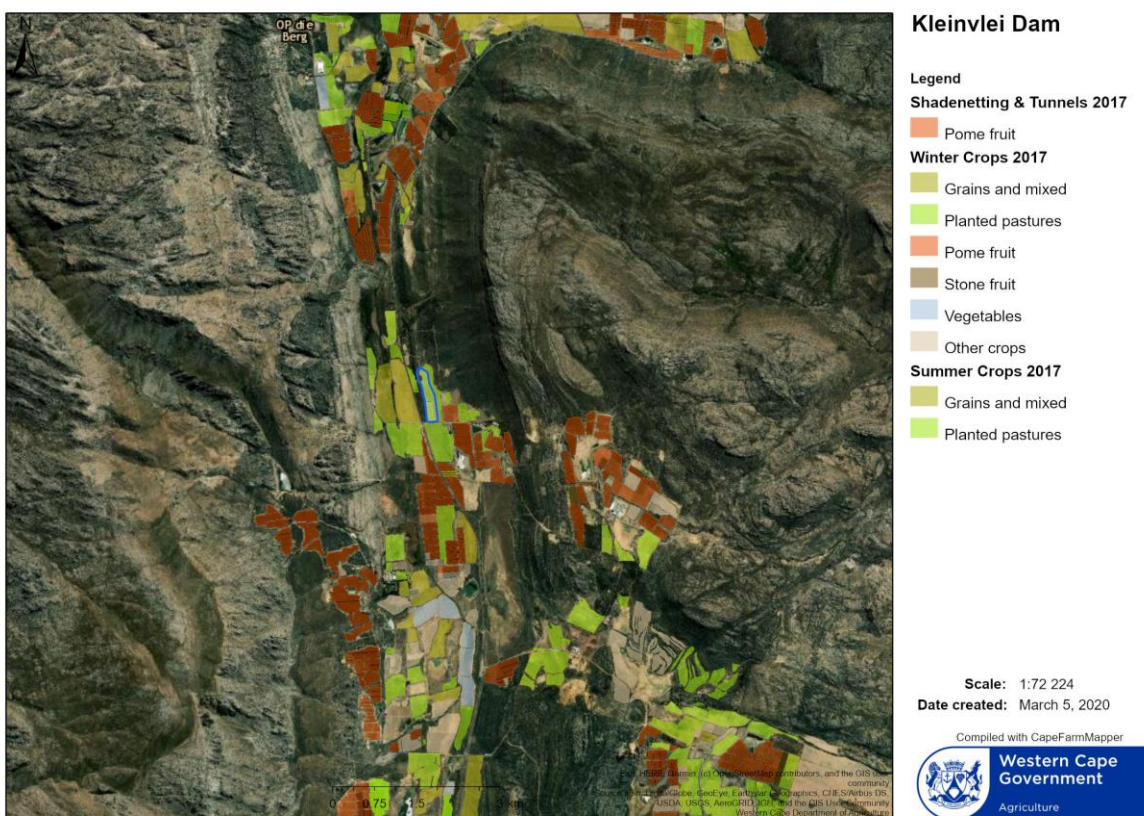


Figure 4: CapeFarmMapper image (Crop Census 2017) shows the surrounding area is mostly agricultural.

The proposed development is not expected to impact on people's health and well-being (e.g., in terms of noise, odours, visual character and 'sense of place', etc.). The proposed development will not produce noise, odours, and is expected to have a very low to negligible impact on the visual character and "sense of place", since, as described above, is an agricultural development within an agricultural area. There are also a number of other dams in the area.

The general objectives of Integrated Environmental Management have been taken into account through the following:

- The actual and potential impacts of the activity on the environment, socio-economic conditions and cultural heritage have been identified, predicted and will be evaluated, as well as the risks and consequences and alternatives and options for mitigation of activities, with a view to minimizing negative impact, maximizing benefits and promoting compliance with the principles of environmental management.
- The effects of the activity on the environment have been considered before actions taken in connection with them – *alternatives have been considered and will be investigated*.
- Adequate and appropriate opportunity for public participation is ensured through the public participation process.
- The environmental attributes have been considered in the management and decision-making of the activity – *an EMP will be compiled and included in the Environmental Impact Assessment*

Report for the proposed activity. The development must adhere to the requirements of all applicable state Authorities.

The principles of environmental management as set out in section 2 of NEMA have been taken into account. The principles pertinent to this activity include:

- People and their needs have been placed at the forefront while serving their physical, psychological, developmental, cultural and social interests – *the proposed activity will have a beneficial impact on people, especially to the agricultural industry.*
- Development must be socially, environmentally and economically sustainable. Where disturbance of ecosystems, loss of biodiversity, pollution and degradation, and landscapes and sites that constitute the nation's cultural heritage cannot be avoided, are minimised and remedied. - *Although the activity is expected to have little significant environmental impact, these impacts have been considered, and mitigation measures have been put in place. This will also be dealt with in the EMP*
- Where waste cannot be avoided, it is minimised and remedied through the implementation and adherence of EMP.
- The use of non-renewable natural resources is responsible and equitable – *water is considered a non-renewable natural resource, and a Hydrology and Environmental Water Requirements Assessment, as well as a Freshwater Assessment, have therefore been conducted.*
- The negative impacts on the environment and on people's environmental rights have been anticipated and will be prevented, and where they cannot be prevented, are minimised and remedied.
- The interests, needs and values of all interested and affected parties will be taken into account in any decisions through the Public Participation Process
- The social, economic and environmental impacts of the activity have been considered, assessed and evaluated, including the disadvantages and benefits – *will be addressed in the Environmental Impact Assessment Report.*
- The effects of decisions on all aspects of the environment and all people in the environment have been taken into account, by pursuing what is considered the best practicable environmental option – *the proposed activity is expected to have minimal/negligible environmental impacts, especially after mitigation measures as described in the specialist reports and in the EMP are implemented.*

3. LEGAL REQUIREMENTS

The current assessment is being undertaken in terms of the National Environmental Management Act (Act 107 of 1998, NEMA), to be read with section 24 (5): NEMA EIA Regulations 2014. However, the provisions of various other Acts must also be considered within this EIA.

The legislation that is relevant to this study is briefly outlined below.

3.1 THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA

The Constitution of the Republic of South Africa (Act 108 of 1996) states that everyone has a right to a non-threatening environment and that reasonable measures are applied to protect the environment. This includes preventing pollution and promoting conservation and environmentally sustainable development, while promoting justifiable social and economic development.

3.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998)

The National Environmental Management Act (Act 107 of 1998) (NEMA), as amended, makes provision for the identification and assessment of activities that are potentially detrimental to the environment and which require authorisation from the relevant authorities based on the findings of an environmental assessment. NEMA is a national act, which is enforced by the Department of Environmental Affairs (DEA). These powers are delegated in the Western Cape to the Department of Environmental Affairs and Development Planning (DEADP).

On the 04 December 2014 the Minister of Water and Environmental Affairs promulgated regulations in terms of Chapter 5 of the NEMA, namely the EIA Regulations 2014. These were amended on 07 April 2017 (GN No. 326, No. 327 (Listing Notice 1), No. 325 (Listing Notice 2), No. 324 (Listing Notice 3) in Government Gazette No. 40772 of 07 April 2017). Listing Notice 1 and 3 are for a Basic Assessment and Listing Notice 2 for a full Environmental Impact Assessment.

According to the regulations of Section 24(5) of NEMA, authorisation is required for the following listed activities for the proposed agricultural development:

Government Notice R327 (Listing Notice 1) listed activities:

- 12** The development of;
- (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres;
 - (ii) infrastructure or structures with a physical footprint of 100 square metres or more;
- where such development occurs;
- (a) within a watercourse;
 - (b) in front of a development setback; or
 - (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse;

- 19** The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;
- (a) will occur behind a development setback;
 - (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; or
 - (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies.
- 27** The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except 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.

Government Notice R325 (Listing notice 2) listed activities:

- 16** The development of a dam where the highest part of the dam wall, as measured from the outside toe of the wall to the highest part of the wall, is 5 metres or higher or where the high-water mark of the dam covers an area of 10 hectares or more.

An Application Form will be submitted to DEADP. On acknowledgment from DEADP, the Scoping Process will be undertaken to identify potential issues.

3.3 NATIONAL HERITAGE RESOURCES ACT

The protection and management of South Africa's heritage resources are controlled by the National Heritage Resources Act (Act No. 25 of 1999). Heritage Western Cape (HWC) is the enforcing authority.

Section 38(8) also makes provision for the assessment of heritage impacts as part of an EIA process and indicates that if such an assessment is found to be adequate, a separate HIA is not required.

The National Heritage Resources Act requires relevant authorities to be notified regarding this proposed development, as the following activities are relevant:

- *any development or other activity which will change the character of a site exceeding 5 000 m² in extent;*

Furthermore, in terms of Section 34(1), no person may alter or demolish any structure or part of a structure, which is older than 60 years without a permit issued by the SAHRA, or the responsible resources authority. Nor may anyone destroy, damage, alter, exhume or remove from its original position, or otherwise disturb, any grave or burial ground older than 60 years, which is situated outside a formal cemetery administered by a local authority, without a permit issued by the SAHRA, or a provincial heritage authority, in terms of Section 36 (3). In terms of Section 35 (4), no person may destroy, damage, excavate, alter or remove from its original position, or collect, any archaeological material or object, without a permit issued by the SAHRA, or the responsible resources authority.

In terms of Section 38(8) of the National Heritage Resources Act, a Notification of Intent to Develop (NID) was submitted to HWC on 17 January 2020 (Case Number: 19121213AS0117E). Final response was received from HWC (dated 30 January 2020)(see **Appendix 7**), stating that since there is no reason to believe that no heritage resources would be impacted by the proposed dam, no further action under Section 38 of the NHRA is required.

3.4 EIA GUIDELINE AND INFORMATION DOCUMENT SERIES

The following are the latest guidelines and information Documents that have been consulted:

- Department of Environmental Affairs and Development Planning's (DEA&DP) *Environmental Impact Assessment Guideline and Information Document Series (Dated: March 2013)*:
 - ✓ *Guideline on Transitional Arrangements*
 - ✓ *Generic Terms of Reference for EAPs and Project Schedules*
 - ✓ *Guideline on Alternatives*
 - ✓ *Guideline on Public Participation*
 - ✓ *Guideline on Exemption Applications*
 - ✓ *Guideline on Appeals*
 - ✓ *Guideline on Need and Desirability*
- Department of Environmental Affairs and Tourism (DEAT) *Integrated Environmental Management Information Series*

3.5 NATIONAL WATER ACT

Besides the provisions of NEMA for this EIA process, the proposed development will also require authorizations under the National Water Act (Act NO. 36 of 1998). The Department of Water and Sanitation (DWS), who administer that Act, will be a leading role-player in the EIA.

The Water Use Licence Application (WULA), in terms of Section 21 (b)(c) and (i), has been submitted to DWS. This application will run concurrently with the NEMA Application. See Appendix 9 for proof of WULA submission.

A Dam Safety Permit in terms of the Dam Safety Regulations in terms of Section 123(1) of the National Water Act is also required. An application has been submitted to the Dam Safety Office on 20 November 2019.

3.6 NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT

The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004) (NEMBA) is part of a suite of legislation falling under NEMA, which includes the Protected Areas Act, the Air Quality Act, the Integrated Coastal Management Act and the Waste Act. Chapter 4 of NEMBA deals with threatened and protected ecosystems and species and related threatened processes and restricted activities. The need to protect listed ecosystems is addressed (*Section 54*).

4. ALTERNATIVES

Alternatives to the proposed development are limited and have been considered below.

4.1 SITE ALTERNATIVES

The proposed site is the only viable site available at this stage and the only one that will be investigated in this application. The property is relatively small, and due to the topography, existing infrastructure and orchards on the property, the proposed site is the only feasible site. The rest of the property is either too mountainous and/or where natural vegetation would need to be removed.

4.2 ACTIVITY ALTERNATIVES

There are no feasible activity alternatives that would be provide summer irrigation for the farm. The proposed dam is the only alternative to storing winter water for irrigation during the dry summer months.

4.3 LAYOUT ALTERNATIVES

Three dam wall layouts were initially proposed and investigated by the engineers. Please refer to **Appendix 3**.

Option 1: This option has the same wall position as the preferred alternative (Option 2), but also has an additional saddle wall on the upstream side making it extremely difficult firstly to get flood water into the dam and then around it when its full. It will have a capacity of approximately 168 000m³. It has a storage ratio of +/- 5, which is considered economically viable.

Option 2 (preferred dam wall layout): This option is the preferred layout. It has the same dam wall position as Option 1, but does not have the second wall (saddle wall). It's capacity is larger than option 1 (~235 000m³ compared to 168 000m³) and has a better storage ratio (far exceeding 5) and is therefore more economical and financially viable than option 1.

Option 3: Although this option has a storage capacity of approximately 212 000m³, it has a lower storage ratio than both Option 1 and 2, and was therefore uneconomical and not financially viable. The dam would also cover more of the natural vegetation to the north, and is therefore also not desirable.

4.4 NO-GO ALTERNATIVE

This is the option of not developing the proposed dam.

Although the no-go development might result in no potential negative environmental impacts, the direct and indirect socio-economic benefits of not constructing the dam development will not be realised. The need for summer storage for irrigation purpose will not be realised. The potential negative and/or positive environmental impacts will be assessed in the Environmental Impact Report.

5. SITE DESCRIPTION

5.1 LOCATION

The proposed site is located on Portion 1 of Farm Kleinvlei 209, Ceres. The site is located approximately 23km north of Prince Alfred Hamlet, off the R303.

Site co-ordinates: Proposed dam wall: 33° 04' 02.50" S, 19° 19' 57.50" E.

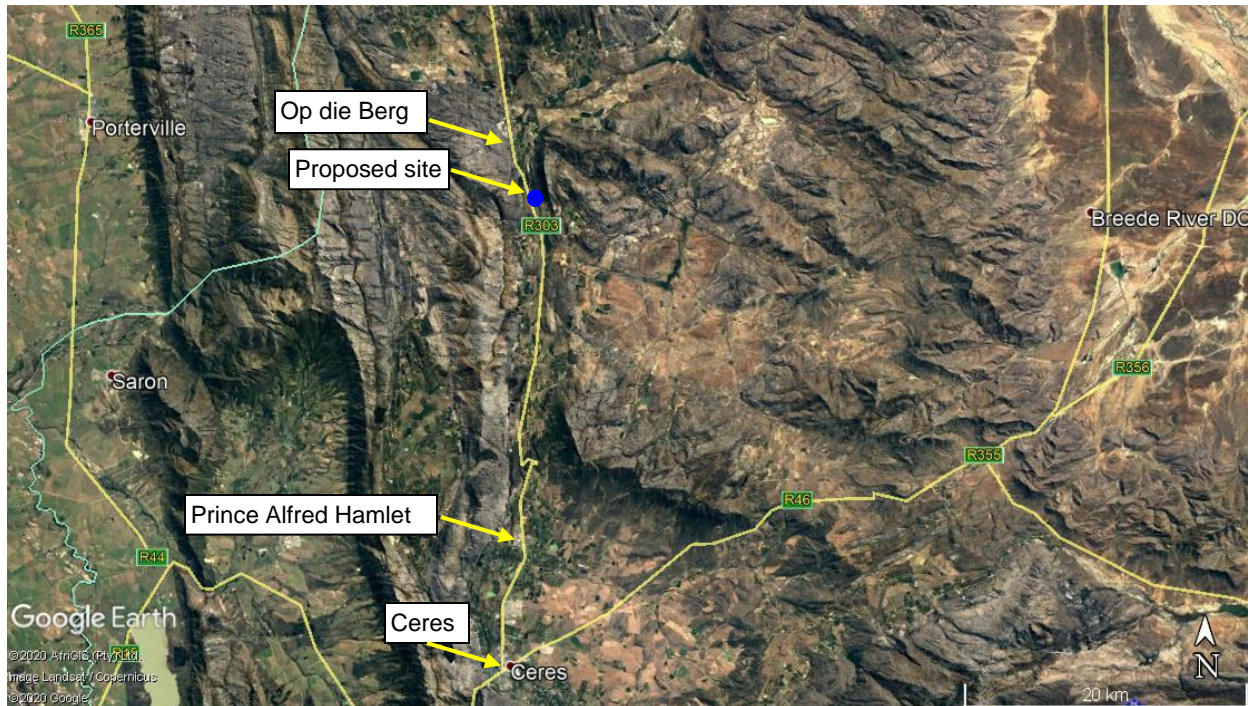


Figure 5: Google Earth Aerial image showing the locality of the site.



Figure 6: General view of part of the proposed site looking south-west. The approximate dam surface is indicated by the blue dashed line.

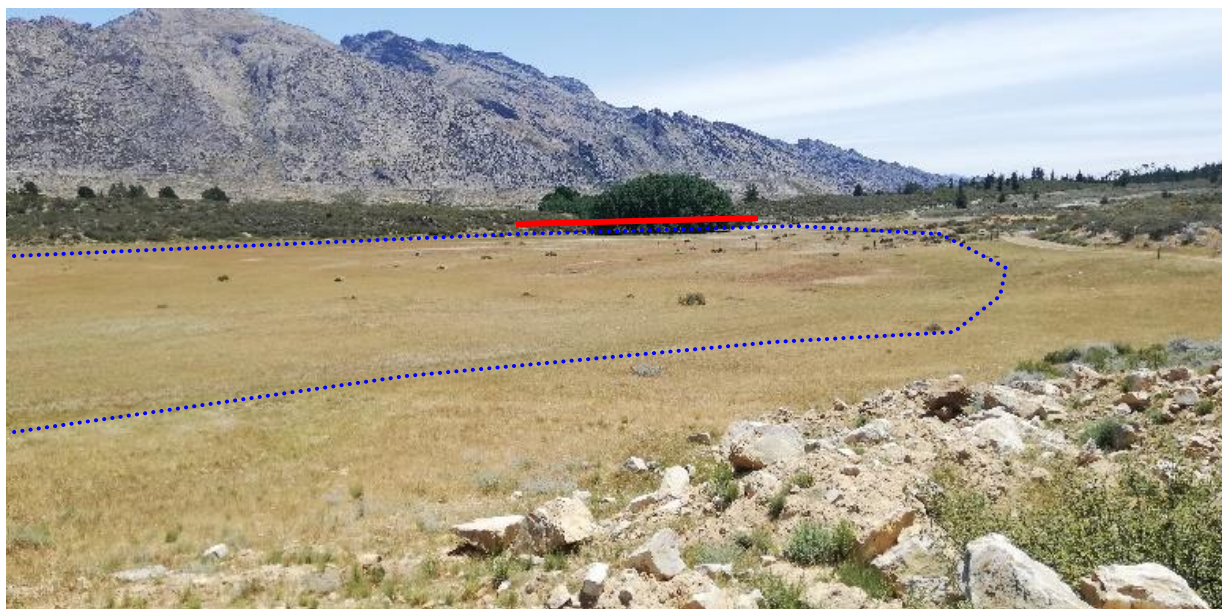


Figure 7: General view of part of the site, looking north-west. The approximate dam surface is indicated by the blue dashed line and the location of the dam wall is indicated by the red line.



Figure 8: General view of the dam area, looking east from the location of the dam wall. The approximate dam surface is indicated by the blue dashed line.



Figure 9: General view of the dam area, looking south-east from the location of the dam wall. The approximate dam surface is indicated by the blue dashed line

5.2 VEGETATION

The site is located on old cultivated fields, part of which has recently been used for orchids, as can be seen in Figures 6 – 9 above. There is a small patch of natural vegetation to the north of the proposed dam wall which may be inundated at the high-water mark of the dam, which will therefore be lost. A large, mature stand of Poplar Trees (*Populus x canescens*) is located on the location of the proposed dam wall, between the two ridges. Although the majority of the dam development footprint is within an area that has been previously cleared and cultivated, the construction of the dam and dam wall will involve the removal or inundation of some indigenous vegetation, and a large stand of poplar trees, which may exceed 1ha in extent.

According to the Vegetation map of South Africa, Lesotho and Swaziland (Mucina & Rutherford, 2006, as updated in the 2012 beta version) only one broad vegetation type is expected on the majority of the proposed site, namely Kouebokkeveld Shale Fynbos, which is classified as Vulnerable.

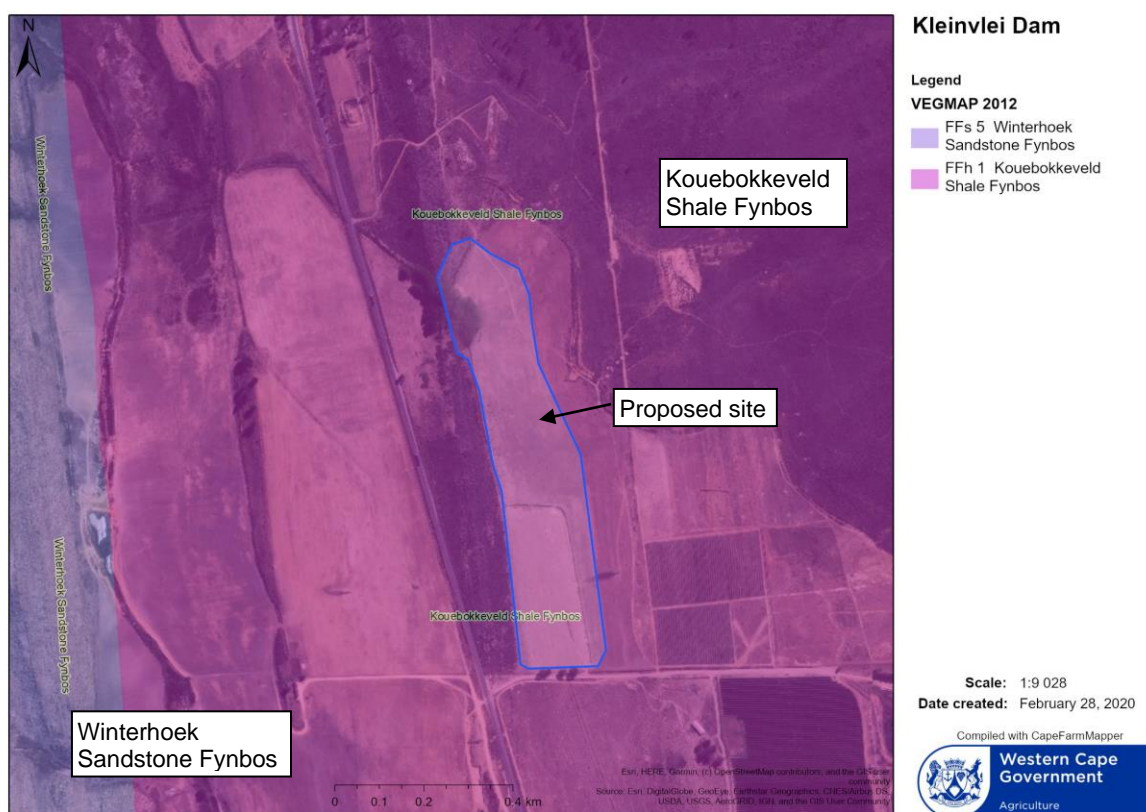


Figure 10: SANBI Vegetation map of the area (CapeFarmMapper).

According to biodiversity overlay maps from Cape Farm Mapper (**Figure 11**) the site partially falls within a Critical Biodiversity Area (CBA), as well as Ecological Support Areas (ESA & ESA2s).

CBAs are areas in a natural condition that are required to meet biodiversity targets, for species, ecosystems or ecological processes and infrastructure. The objective is to maintain these areas in a natural or near natural state, with no further loss of natural habitat. Degraded areas should be rehabilitated.

The proposed dam will fall in an Ecological Support Area (ESA), Category 1: Terrestrial & Aquatic. These areas are not essential for meeting biodiversity targets, but play an important role in supporting the functioning of protected areas and CBAs, and are often vital for delivering ecosystem services. The objective is to maintain a functioning, near natural state. Some habitat loss is acceptable, provided that underlying biodiversity objectives and ecological functioning are not compromised.

The proposed dam will fall in an ESA2. These areas are not essential for meeting biodiversity targets, but that play an important role in supporting the functioning of protected areas and CBA, the objective is to restore and manage to minimise impact on ecological processes and ecological infrastructure functioning, especially soil and water-related services, and allow for natural movement.

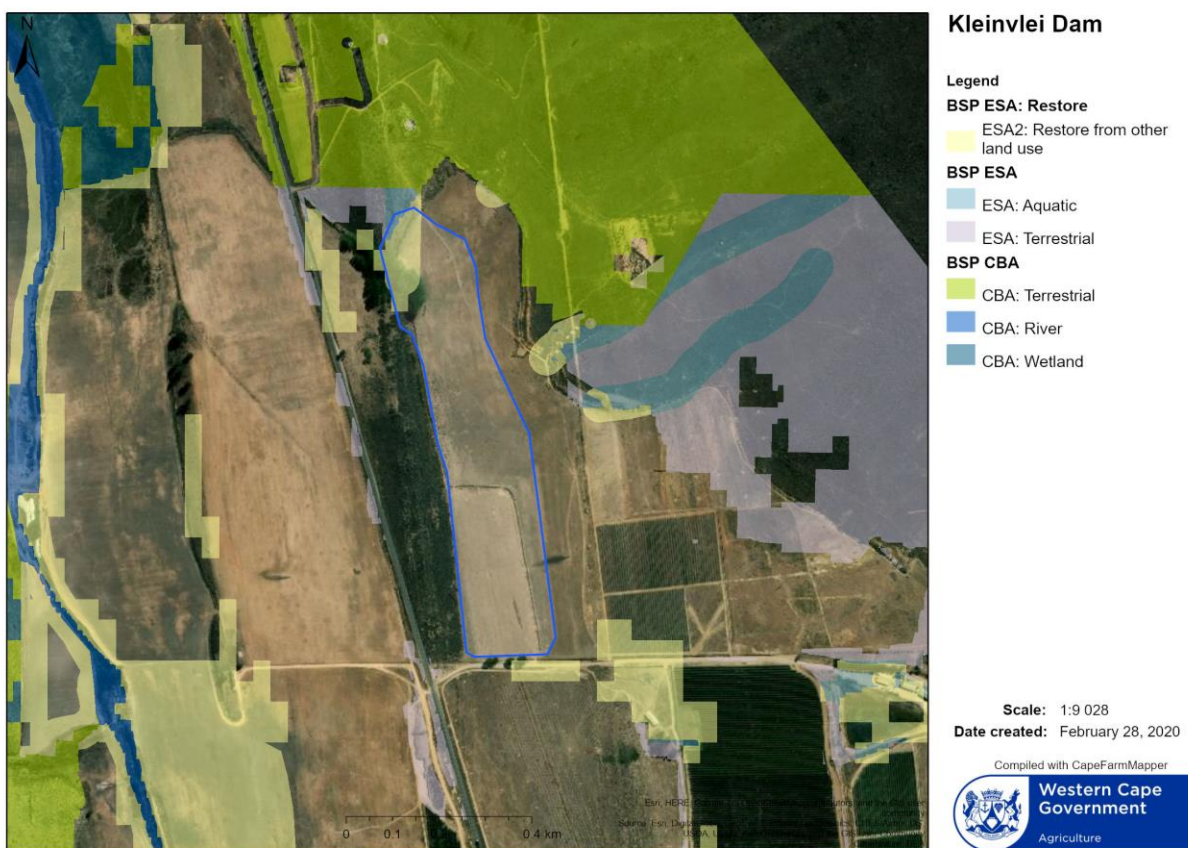


Figure 11: CBA Map of the site (CapeFarmMapper).

5.3 FRESHWATER

From the SANBI National Freshwater Ecosystem Priority Areas map (see Figure 12 below), there are a number of non-perennial rivers to the north and east of the site. These ephemeral drainage lines convey surface water into a number of excavated channels within, and adjacent to, the proposed site, and into the Houdenbek River, located approximately 590m to the west of the dam site.

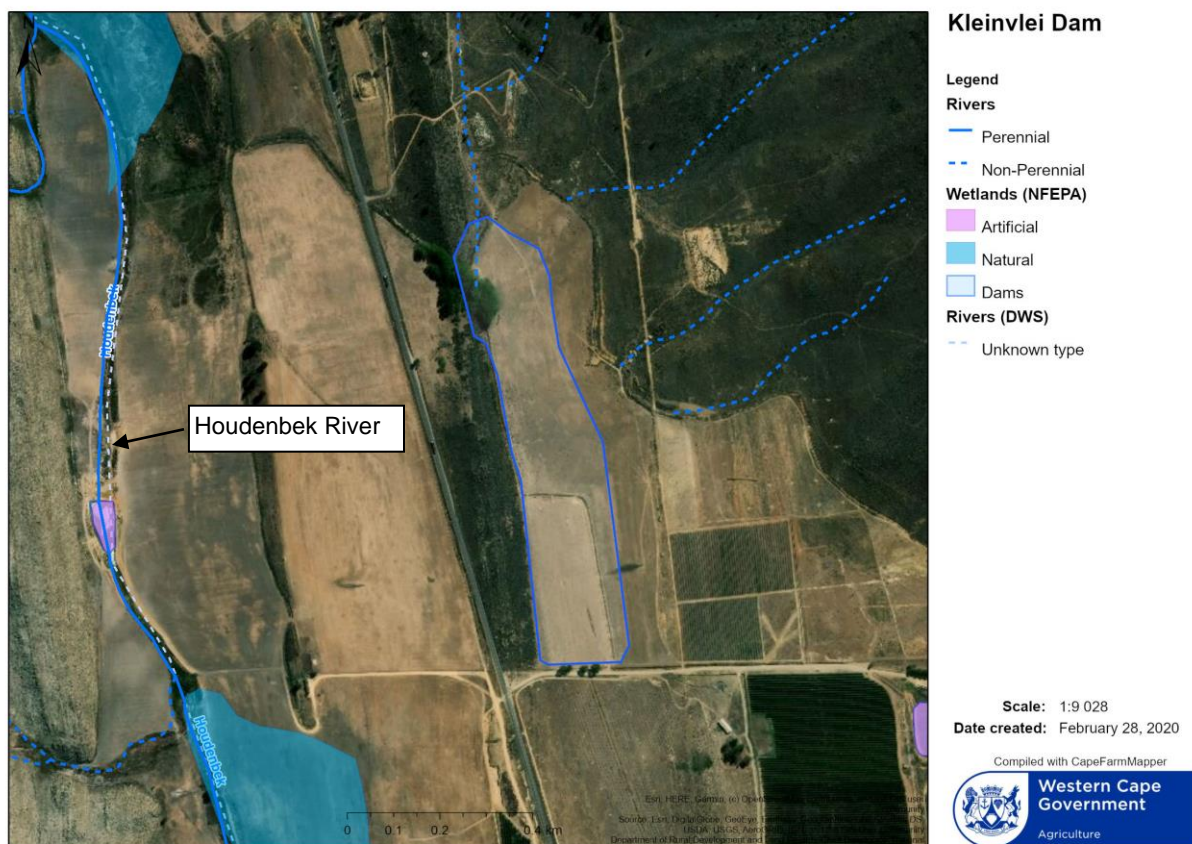


Figure 12: CapeFarmMapper map of the water resources in the area.

5.4 CLIMATE

The Ceres area climate is regarded as warm and temperate. According to the Koppen climate classification, the climate is classified as Csb (warm-summer Mediterranean). This area normally receives most of its rain during the winter months (May – August). It receives the least amount of rain in summer (December – February).

The average temperature in Ceres is 15.5 °, and the average yearly rainfall is 931 mm. Please refer to Figure 13 below.

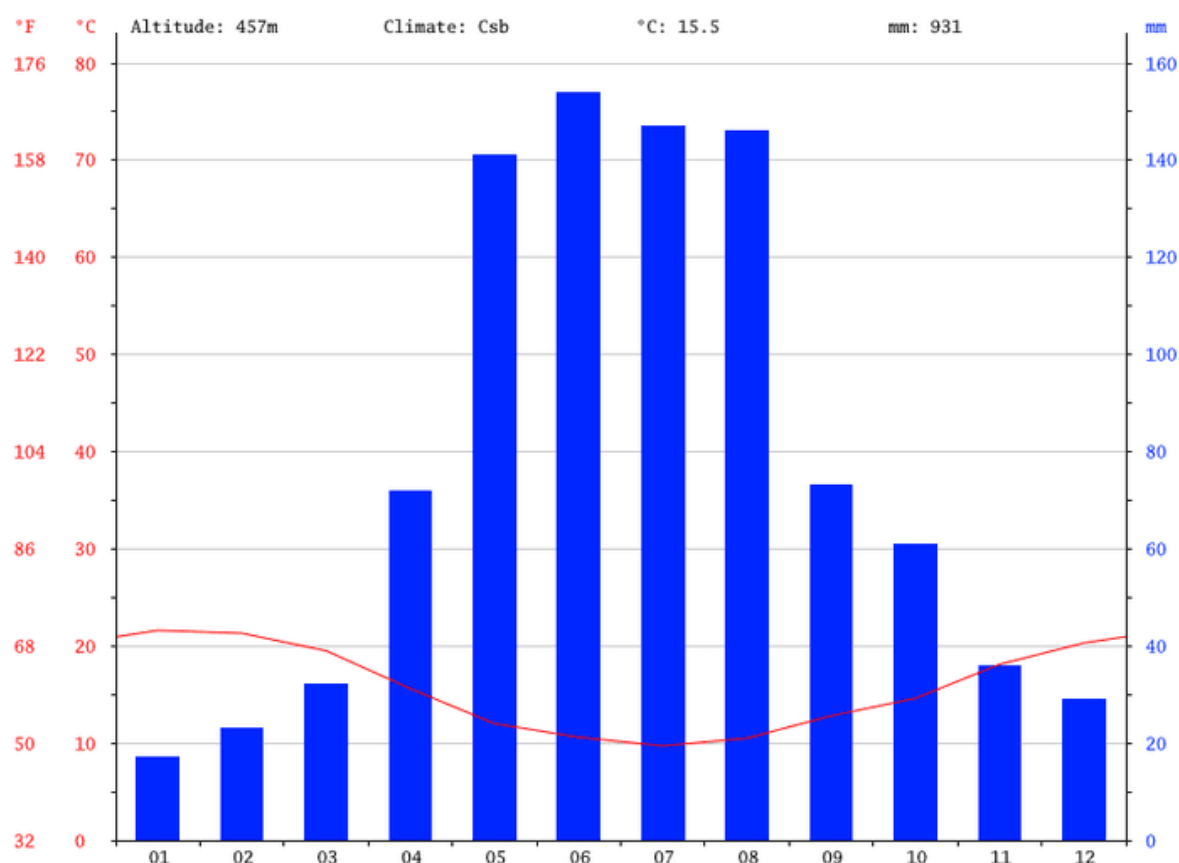


Figure 13: Climate data for Ceres (Source: <https://en.climate-data.org/africa/south-africa/western-cape/ceres-23232/>)

5.5 SOCIO-ECONOMIC CONTEXT

According to the Western Cape Socio-economic Profile for Witzenberg Local Municipality (2017), the Witzenberg municipal area is one of the smallest economies in the District (Cape Winelands District), contributing 13.9 per cent to the economy in terms of GDP and 16.8 per cent to employment. Over the last five years since 2010, Witzenberg's tertiary sectors have achieved above average growth rates in terms of GDP and has contributed significantly to employment. The local economy of the Witzenberg municipal area is driven by the agriculture, forestry and fishing sector (17.3 per cent), the wholesale and retail trade, catering and accommodation sector (16.9 per cent), the finance and business services sector (15.4 per cent) and the manufacturing sector (14.2 per cent). Combined, these sectors contribute more than R5.0 billion to the economy. In 2014, the agriculture, forestry and fishing sector's GDP growth rate was 8.5 per cent; this growth rate can be attributed to a significant increase in exports in pome fruits (apples and pears) in the period due to good weather, increased production and the depreciating Rand. The sector subsequently contracted by 2.8 per cent in 2015 with a more severe contraction predicted for 2016.

The sectors that contributed the most to the 63 361 jobs in the Witzenberg municipal area in 2015 were the agriculture, forestry and fishing sector (34.7 per cent) and the wholesale and retail trade, catering and

accommodation sector (18.4 per cent). Even though the manufacturing sector contributes R1.1 billion (14.2 per cent) to the GDP, this sector only employed 3 605 people (5.7 per cent of employment) in 2015 indicating that the manufacturing sector within the Witzenberg municipal area is less labour intensive and more dependent on mechanisation. The agriculture, forestry and fishing sector in the Witzenberg municipal area has shed 5 684 jobs between 2005 and 2015, however, it has experienced a significant increase in agricultural jobs in 2012, 2013 and 2015, which is in line with the change in employment in this sector for the District over the same period. Employment in this sector is volatile, with job losses in 2011, 2014 and 2016. Labour needs within the agricultural, forestry and fishing sector are seasonal i.e. not permanent, which depends on the harvest each year. Changes in the number of hectares under production will also have an impact on the demand for labour. Favourable economic conditions resulting in new investment from farmers to expand their orchards and vineyards will increase the demand for labour and vice versa.

According to the Draft Integrated Development Plan (2018-19), the number of poor people in the Witzenberg municipal area increased between 2011 and 2016. The poverty headcount increased from 1,8 per cent of Witzenberg's population in 2011 to 2,5 per cent in 2016.

5.6 HERITAGE FEATURES

Due to the nature and size of the proposed development, potential heritage resources may be affected by the development. Heritage resources include any of the following, as defined by the National Heritage Resources Act (Act 25 of 1999):

- living heritage as defined in the National Heritage Council Act No 11 of 1999 (cultural tradition; oral history; performance; ritual; popular memory; skills and techniques; indigenous knowledge systems; and the holistic approach to nature, society and social relationships);
- Ecofacts (non-artefactual organic or environmental remains that may reveal aspects of past human activity; definition used in KwaZulu-Natal Heritage Act 2008);
- places, buildings, structures and equipment;
- places to which oral traditions are attached or which are associated with living heritage;
- historical settlements and townscapes;
- landscapes and natural features;
- geological sites of scientific or cultural importance;
- archaeological and palaeontological sites;
- graves and burial grounds;
- public monuments and memorials;
- sites of significance relating to the history of slavery in South Africa;
- movable objects, but excluding any object made by a living person; and
- battlefields.

In terms of Section 38(8) of the National Heritage Resources Act, a Notification of Intent to Develop (NID) was submitted to HWC on 17 January 2020 (Case Number: 19121213AS0117E). Final response was received from HWC (dated 30 January 2020)(see **Appendix 7**), stating that since there is no reason to believe that no heritage resources would be impacted by the proposed dam, no further action under Section 38 of the NHRA is required.

6. ENVIRONMENTAL ISSUES AND POTENTIAL IMPACTS

Environmental issues were raised through informal discussions with the project team, specialists and authorities. All issues raised will be assessed in the specialist reports and will form part of the Environmental Impact Report. Additional issues raised during the public participation will be listed in the Final Scoping Report.

The following potential issues have been identified:

6.1 BOTANICAL

A botanical impact assessment will be conducted to determine if there is any sensitive or endangered vegetation on the proposed dam site. Although the majority of the site is old cropland, some natural vegetation is found to the north of the dam wall, and an area of approximately 0.4ha may be covered when the dam is full. In addition, a large stand of poplar trees is to be removed.

A Botanical impact assessment will be conducted, which will describe and assess the botanical sensitivity of the area. The terms of reference for this study required a baseline analysis of the flora of the property, including the broad ecological characteristics of the site.

The botanical assessment will include the following:

- The significance of the potential impact of the proposed project, alternatives and related activities – with and without mitigation – on biodiversity pattern and process at the site, landscape and regional scales.
- Recommended actions that should be taken to prevent or, if prevention is not feasible, to mitigate impacts.

6.2 FRESHWATER

A number of ephemeral streams are located to the north and east of the proposed dam. These ephemeral drainage lines convey surface water into a number of excavated channels within, and adjacent to, the proposed site, and into the Houdenberg River, located approximately 590m to the west of the dam site.

The terms of reference for the Freshwater assessment are as follows:

- Literature review and assessment of existing information
- Site Assessment of the proposed activities and impact on the associated freshwater systems. This will include an assessment of the freshwater ecological condition, using river health indices such as in-stream and riparian habitat integrity, aquatic macro-invertebrates and riparian vegetation to determine set back lines and geomorphological condition of the streams, which will then determine the overall Ecostatus of the streams and provide data that will inform the Water Use Licence Application of the project.
- Define areas of increased Ecological Importance and Sensitivity (EIS), and define the Present Ecological State (PES) of the watercourses associated with the study area.
- Describe ecological characteristics of freshwater systems and compile report based on the data and information collected in the previous two tasks, describe ecological characteristics of the

freshwater systems, comment on the conservation value and importance of the freshwater systems and delineate the outer boundary of the riparian zones/riverine corridors.

- Evaluate the freshwater issues on the site and propose mitigation measures to ensure the ongoing functioning of the ecosystems.
- Compilation of the documentation for submission of the water use authorisation application (WULA) to the Department of Water and Sanitation, including the Risk Assessment Matrix

6.3 HYDROLOGY AND ENVIRONMENTAL WATER REQUIREMENTS

The potential impact of the proposed dam on the catchment, as well as on other water users, lower downstream of the dam, was raised by CapeNature and the Department of Water and Sanitation. The Houdenbeks River is under stress, and run-off from the Houdenbeks River has decreased.

A Hydrological and Environmental Water Requirements (Ecological Flow Reserve) Assessment was therefore requested. This was conducted, and is included in Appendix 8.

The terms of reference for the Hydrological and EWR assessment are as follows:

- Re-establish the ACRU Model configuration of the Koue-Bokkeveld.
- Generate flows at both sites and the appropriate sub-catchments and generate daily flows at the proposed dam site as well as the diversion site where abstractions might be required.
- Establish the environmental flows (using the monthly inflow record) at both the proposed dam site and abstraction site.
- Quantify the proposed dam inflow and assess the additional transfers required.
- Report Writing

6.4 HERITAGE

The possible impact on heritage resources has been identified as a possible environmental impact as a result of the construction of the dam.

In terms of Section 38(8) of the National Heritage Resources Act, a Notification of Intent to Develop (NID) was submitted to HWC on 17 January 2020 (Case Number: 19121213AS0117E). Final response was received from HWC (dated 30 January 2020)(see **Appendix 7**), stating that since there is no reason to believe that no heritage resources would be impacted by the proposed dam, no further action under Section 38 of the NHRA is required.

Therefore, no heritage impact assessment will be conducted.

6.5 VISUAL IMPACT

The potential impact on the sense of place of the proposed development will also be considered. However, due to the nature of the activity, the surrounding land-uses, and that the sense of place is not expected to be significantly altered by the proposed development, no further studies are suggested.

6.6 OTHER ISSUES IDENTIFIED

Any further issues raised during the public participation process or by the Competent Authority not mentioned in this section, will be dealt with during the EIA phase.

7. DETAILS OF THE PUBLIC PARTICIPATION PROCESS

Interested and Affected Parties (I&APs) have been and will be identified throughout the process. Landowners adjacent to the proposed site, relevant organs of state, organizations, ward councillors and the Local and District Municipality were added to this database. A complete list of organisations and individual groups identified to date is shown in **Appendix 6D**.

Public Participation will be conducted for the proposed development in accordance with the requirements outlined in Regulation 41 of the NEMA EIA Regulations 2014. The issues and concerns raised during the scoping phase will be dealt with in the EIA phase of this application.

As such each subsection of Regulation 41 contained in Chapter 6 of the NEMA EIA Regulations 2014 will be addressed separately to thereby demonstrate that all potential Interested and Affected Parties (I&AP's) were notified of the proposed development.

R54 (2) (a):

R41 (2) (a) (i): A site notice (A2) was placed at the entrance to the farm from the R303, and A3 posters were placed at other locations including:

- Prince Alfred Public Library
- Community notice board at the Spar in Prince Alfred Hamlet
- Community notice board at the KaapAgri in Op die Berg
- Community notice board at the Spar in Op die Berg. (please refer to **Appendix 6B**)

The posters contained all details as prescribed by R41(3) (a) & (b) and the size of the on-site poster was at least 60cm by 42cm as prescribed by section R41 (4) (a).

R41 (2) (a) (ii): N/A. There is no alternative site.

R41 (2) b):

R41 (2) (b) (i): N/A. The Applicant is the landowner

R41 (2) (b) (ii): Initial notification letters was circulated to neighbouring landowners. **Appendix 6C**

R41 (2) (b) (iii): An initial notification letter was sent to the municipal Ward councillor at the Witzenberg Municipality and the Cape Winelands District Municipality, for the ward in which the site is situated (please refer to **Appendix 6C** for proof of notification letters sent).

R41 (2) (b) (iv): An initial notification letter was sent to the Witzenberg Municipality.

R54 (2) (b) (v): Initial notification letter (please refer to **Appendix 6C** for proof of notification letters sent) will be sent to the following organs of state having jurisdiction in respect of any aspect of the activity:

- Department of Water and Sanitation
- CapeNature
- Heritage Western Cape
- Department of Agriculture

R41 (2) (c) (i): An advertisement was placed in the local newspaper, Witzenberg Herald, on 15 November 2019 (please refer to **Appendix 6A** for proof of advertisement).

R41 (2) (d): N/A

R41 (6):

R41 (6) (a): All relevant facts in respect of the application were made available to potential I&AP's.

R41 (6) (b): I&AP's were given more than a 30-day registration and comment period on the proposed application during the first round of public participation.

R42 (a), (b), (c) and R43(2): A register of interested and affected parties was opened, maintained and is available to any person requesting access to the register in writing (please refer to **Appendix 1F** for the list of Interested and Affected Parties).

Please find attached in **Appendix 6**:

- Proof of Notice boards, advertisements and notices that were sent out
- List of potential interested and affected parties
- Summary of issues raised by interested and affected parties

8. PLAN OF STUDY FOR THE EIA

8.1.1 TASKS TO BE UNDERTAKEN

Due to the nature of the proposed development, there are a number of activities that will still need to be undertaken during the next phase of the project. The proposed process is as described as follows (This follows from a Scoping process to be accepted by the D:EA&DP):

The Pre-Application Scoping Report was made available to all registered Interested and Affected Parties for a 60-day comment period. Comments received during the Public Participation Process period have been incorporated into the “Post-Application” Draft Scoping Report (this report).

The NEMA Application Form will be submitted to D:EA&DP along with the “Post-Application” Draft Scoping Report which will also be made available for viewing and comment for a 30-day comment period. Comments received during the Public Participation Process will be incorporated into the Final Scoping Report, to be submitted to D:EA&DP for a decision.

The following is a list of tasks to be performed as part of the EIA Process. Should the process be modified significantly, changes will be copied to D:EA&DP.

EIA PROCESS	
TASK	TIMEFRAMES
Submit Pre-Application Draft Scoping Report (FSR) and Plan of Study for EIA to D:EA&DP and distribute to registered I&APs for comment	July 2020
Submit NEMA Application and Draft Scoping Report (FSR) and Plan of Study for EIA to D:EA&DP and distribute to registered I&APs for comment	June 2021
Submit Final Scoping Report and Plan of Study to D:EA&DP for a decision	July 2021
Receive approval for the FSR and the Plan of Study for EIA.	August 2021
Undertake specialist studies and compile the Draft Environmental Impact Report (EIR) for public comment based on specialist information.	September 2021
Submit Draft EIR for public comment.	September 2021
Receive responses to the Draft EIR.	October 2021
Preparation of a FINAL EIR and submission to D:EA&DP.	November 2021

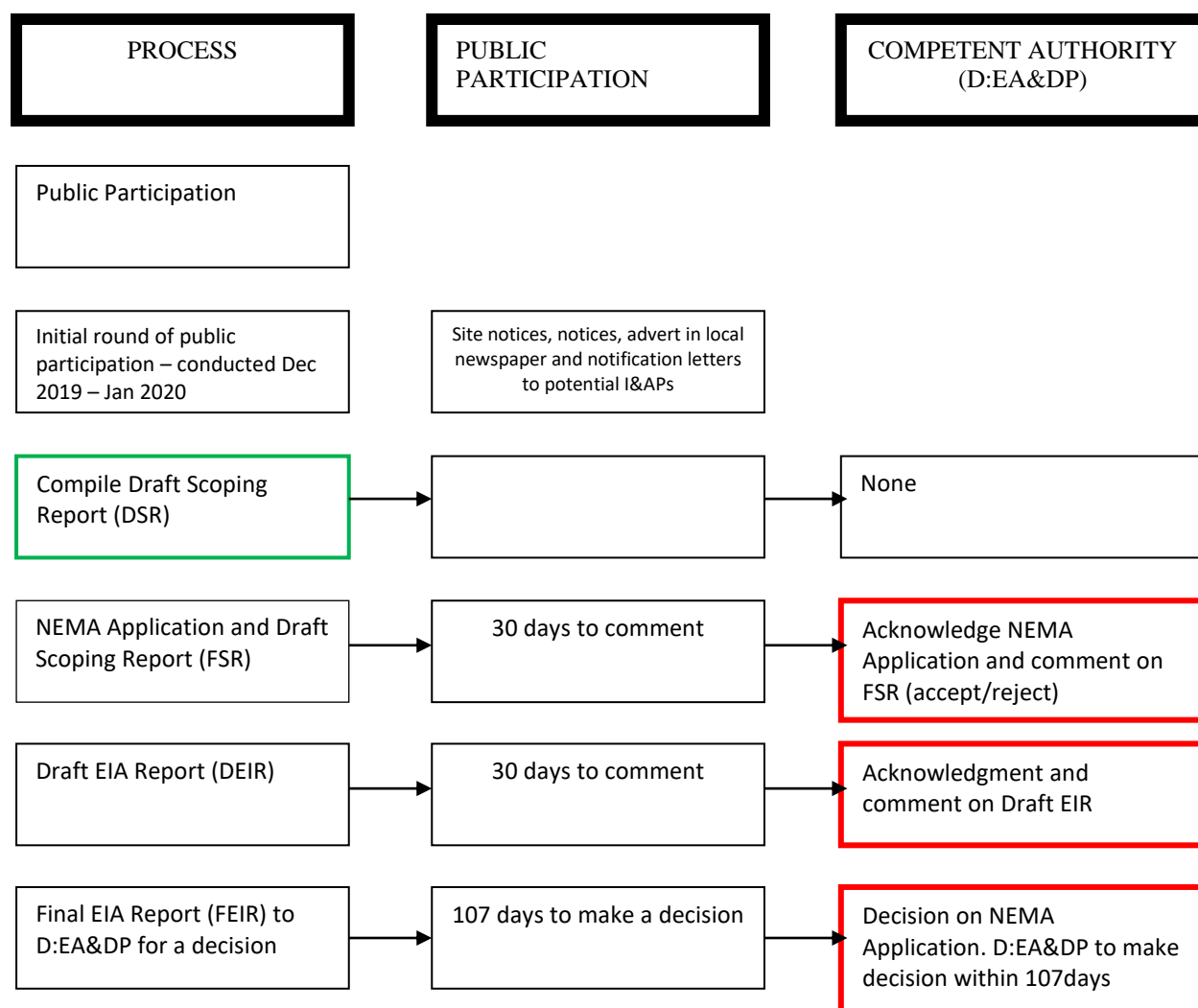


Figure 14. Summary of the EIA process and public participation process. The red indicates the stages where the competent authority will be consulted during the process.

8.2 PUBLIC PARTICIPATION AND INTERESTED AND AFFECTED PARTIES

Please refer to Figure 14 to see where the public participation process is present in the environmental impact assessment. The Interested and Affected Parties will have a chance to view and comment on all the reports that are submitted. The figures also indicated what timeframes are applicable to what stage in the process. If required, meetings with key stakeholders will be held.

At the end of the comment period, the EIR will be revised in response to feedback received from I&APs. All comments received and responses to the comments will be incorporated into the Final Environmental Impact Report (EIR). The Final EIR will then be submitted to D:EA&DP for consideration and decision-making.

Correspondence with I&APs will be via post, fax, telephone, email and/or newspaper advertisements.

Should it be required, this process may be adapted depending on input received during the on-going process and as a result of public input. D:EA&DP will be informed of any changes in the process.

8.3 CRITERIA FOR ASSESSMENT OF IMPACTS, INCLUDING SPECIALIST ASSESSMENTS

As a result of the environmental issues and potential impacts identified in *Section 6*, the need for the following specialist studies has been identified:

- Biodiversity Assessment
- Freshwater Assessment
- Hydrological and Environmental Water Requirements

The impacts of the proposed activity on the various components of the receiving environment will be evaluated in terms of duration (time scale), extent (spatial scale), magnitude and significance as outlined in Table 1. These impacts could either be positive or negative. This includes an assessment of the alternatives (layout alternatives), including the option of not proceeding with the proposed development (see Section 4 for the layout alternatives, and the no-go alternative to be assessed).

The magnitude of an impact is a judgment value that rests with the individual assessor while the determination of significance rests on a combination of the criteria for duration, extent and magnitude. Significance thus is also a judgment value made by the individual assessor.

Table 1: Criteria used for evaluating impacts.

Criteria	Category
Nature of impact	This is an evaluation of the effect that the construction, operation and maintenance of a proposed dam would have on the affected environment. This description should include what is to be affected and how.
Duration (Predict whether the lifetime of the Impact will be temporary (less than 1 year) short term (0 to 5 years); medium term (5 to 15 years); long term (more than 15 years, with the Impact ceasing after full implementation of all development components with mitigations); or permanent.	Temporary: < 1 year (not including construction) Short-term: 1 – 5 years Medium term: 5 – 15 years Long-term: >15 years (Impact will stop after the operational or running life of the activity, either due to natural course or by human interference) Permanent: Impact will be where mitigation or moderation by natural course or by human interference will not occur in a particular means or in a particular time period that the impact can be considered temporary
Extent (Describe whether the impact occurs on a scale limited to the site area; limited to broader area; or on a wider scale)	Site Specific: Expanding only as far as the activity itself (<i>onsite</i>) Small: restricted to the site's immediate environment within 1 km of the site (<i>limited</i>) Medium: Within 5 km of the site (<i>local</i>) Large: Beyond 5 km of the site (<i>regional</i>)
Intensity	Very low: Affects the environment in such a way that natural and/or social

(Describe whether the magnitude (scale/size) of the Impact is high; medium; low; or negligible. The specialist study must attempt to quantify the magnitude of impacts, with the rationale used explained)	functions/processes are not affected Low: Natural and/or social functions/processes are slightly altered Medium: Natural and/or social functions/processes are notably altered in a modified way High: Natural and/or social functions/processes are severely altered and may temporarily or permanently cease
Probability of occurrence Describe the probability of the Impact <u>actually</u> occurring as definite (Impact will occur regardless of mitigations)	Improbable: Not at all likely Probable: Distinctive possibility Highly probable: Most likely to happen Definite: Impact will occur regardless of any prevention measures
Status of the Impact Describe whether the Impact is positive, negative (or neutral).	Positive: The activity will have a social/ economical/ environmental benefit Neutral: The activity will have no affect Negative: The activity will be socially/ economically/ environmentally harmful
Degree of Confidence in predictions State the degree of confidence in predictions based on availability of information and specialist knowledge	Unsure/Low: Little confidence regarding information available (<40%) Probable/Med: Moderate confidence regarding information available (40-80%) Definite/High: Great confidence regarding information available (>80%)
Significance (The impact on each component is determined by a combination of the above criteria and defined as follows) The significance of impacts shall be assessed <u>with and without mitigations</u> . The significance of identified impacts on components of the affected biophysical or socio-economic environment (and, where relevant, with respect to potential legal requirement/s) shall be described as follows:	No change: A potential concern which was found to have no impact when evaluated Very low: Impacts will be site specific and temporary with no mitigation necessary. Low: The impacts will have a minor influence on the proposed development and/or environment. These impacts require some thought to adjustment of the project design where achievable, or alternative mitigation measures Moderate: Impacts will be experienced in the local and surrounding areas for the life span of the development and may result in long term changes. The impact can be lessened or improved by an amendment in the project design or implementation of effective mitigation measures. High: Impacts have a high magnitude and will be experienced regionally for at least the life span of the development, or will be irreversible. The impacts could have the no-go proposition on portions of the development in spite of any mitigation measures that could be implemented.

In addition to determining the individual impacts against the various criteria, the element of mitigation, where relevant, will also be brought into the assessment. In such instances the impact will be assessed with a statement on the mitigation measure that could/should be applied. An indication of the certainty of a mitigation measure considered, achieving the end result to the extent indicated, is given on a scale of 1-5 (1 being totally uncertain and 5 being absolutely certain), taking into consideration uncertainties, assumptions and gaps in knowledge.

Table 2: The stated assessment and information will be determined for each individual issue or related groups of issues and presented in descriptive format in the following table example or a close replica thereof.

Impact Statement:		
Mitigation:		
Ratings	Duration	
	Extent	
	Intensity	
	Probability of impact	
	Status of Impact (Positive/negative)	
	Degree of confidence	
Significances	Significance without Mitigation	
	Significance <u>WITH</u> Mitigation	
Indication of the certainty of a mitigation measure considered, achieving the end result to the extent indicated, is given on a scale of 1-5 (1 being totally uncertain and 5 being absolutely certain), taking into consideration uncertainties, assumptions and gaps in knowledge		
Legal Requirements (Identify and list the specific legislation and permit requirements which are relevant to this development):		

9. CONCLUSION AND RECOMMENDATIONS

A scoping exercise is being undertaken to present the proposed activities to the I&APs and to identify environmental issues discussed in this report and concerns raised as a result of the proposed development alternatives to date. The issues and concerns were raised by I&APs, authorities, the project team as well as specialist input, based on baseline studies undertaken.

This Draft Scoping Report, being undertaken in terms of NEMA, summarises the process undertaken, the alternatives presented, and the issues and concerns raised.

As a result of the above, the need for the following specialist studies, have been identified:

- Biodiversity Assessment
- Freshwater Assessment
- Hydrological and Environmental Water Requirements

Any further issues raised as a result of the Public Participation Process will be dealt with during the EIA phase.

The significance of the impacts associated with the alternatives proposed will be assessed in these specialist studies, as part of the EIA. Once the specialist studies have been completed, they will be summarised in an Environmental Impact Report (EIR), which integrates the findings of the assessment phase of the EIA.

Based on the significance of the issues raised during the ongoing Public Participation Process and Scoping Phase, it is evident that an Environmental Impact Assessment (EIA) is required. ***It is therefore recommended that authorisation for the commencement of an EIA for the proposed development is granted.*** Should the EIA process be authorised, the significant issues raised in the process to date will be addressed and the specialist studies noted in this report, will be undertaken.

10. DETAILS AND EXPERTISE OF THE EAP

This Draft Scoping Report was prepared by Clinton Geyser who has a MSc. Degree in Environmental Management. He has been working as an Environmental Assessment Practitioner since 2009 and is currently employed at EnviroAfrica CC.

Report compiled by Clinton Geyser -

Qualifications:

- BSc. Earth Sciences, Majors in Geology and Geography and Environmental Management (1998 – 2000) and;
- BSc. (hons): Geography and Environmental Management (2001) and;
- MSc. Geography and Environmental Management (2002), all from the University of Johannesburg.

Expertise:

Clinton Geyser has over ten years' experience in the environmental management field as an Environmental Assessment Practitioner and as an Environmental Control Officer, having worked on a variety of projects in the Western, Eastern and Northern Cape. Previous completed applications include, but not limited to:

- Civil engineering infrastructure including pipelines, Waste Water Treatment Works, and roads in the Western and Northern Cape.
- Agricultural developments, including reservoirs and dams, in the Western, Eastern and Northern Cape.
- Telecommunications masts in the Western and Eastern Cape
- Housing Developments in the Western and Northern Cape.
- Resort developments in the Western and Northern Cape.
- Cemeteries in the Western Cape
- Waste Management Licences in the Western Cape

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