

PROPOSED EXPANSION OF A DAM, CULTIVATION AREAS AND CONNECTING PIPELINE ON FARM VERGELEGEN (RE/767), EILANDIA, ROBERTSON

DEA&DP Reference Number: 16/3/3/6/7/2/B1/14/1321/21

EXECUTIVE SUMMARY

PROJECT DESCRIPTION

The landowner and Applicant (Imdawo-Ekuhle (Pty) Ltd) is proposing expansion of cultivation areas, enlargement of one of the existing farm dams and expansion of a pipeline on Farm Vergelegen (RE/767), in order to increase the economic viability of the farm.

The farming commercial fruit farming unit 'Vergelegen' comprise of two farms, namely Remainder 767, which is the subject of this application, and the adjacent Farm 823 (see **Error! Reference source not found.**). Operations on RE/767 currently comprise of cultivation areas (approximately 24 ha), 3 small dams and associated agricultural structures and infrastructure such as gravel farm roads, pipelines, workers cottages etc. Additional cultivation areas, two small dams, a farmstead and water abstraction infrastructure from the Breede River is located on Farm 823. While the two farms operate as one, this application is limited to Remainder 767 ("the property" / "the farm").

The farm is located along the Breede River in the Eilandia area. While the farm lies between the towns of Robertson and Worcester, the local municipality confirmed that it forms part of the Langeberg municipal area. The farm takes access off Eilandia Road, via access servitude through several other farms. Eilandia Road is a gravel road leads off the R60 which runs between Worcester and Robertson.

Farm Number	Remainder 767 (RE/767)
Size	250.59 ha
Zoning	Agriculture
Current use	Agriculture and vacant land
SG21 Digit code	C08500000000076700000
Central Co-ordinates	33° 47' 21.35" S 19° 41' 33.67" E
SG Region	Worcester
Municipal Area	Langeberg Municipality

The proposed expansion of agricultural components is detailed below.

Expansion of cultivation areas

Cultivation of virgin soil on a portion of vacant land on the farm. The 250 ha property currently only supports approximately 24 ha of cultivated land with the remainder being undeveloped / natural areas. Approximately 130 ha is unsuitable for cultivation as it comprises mountainous land on the north-western slopes of the Rooiberg Mountain. An opportunity was identified for additional cultivation in a ~47.2 ha portion that demonstrated good agricultural potential (figure 4). This area was subject to specialist investigations as part of this Scoping process

to determine the exact area to be cultivated. This is detailed in the Alternatives section of this report.

The area is particularly productive for export quality fruit. The new cultivations will therefore be to produce fruit (such as table grapes and citrus varieties). The new crops will be partially irrigated with water from an existing entitlement from the Breede River, but application is also being made for additional water abstraction rights.

Expansion of a dam

The proposal includes the expansion of an existing 3 400 m³ off-stream dam with a wall height of approximately 3 m. The proposed expansion will enlarge the dam to 350 000 m³ with a wall height of 17.6 m and a surface area of 5.3 ha at full-service level (Figure 4 **Error! Reference source not found.**). The dam will be unlined. Given that water is not available continually from the Breede River, the enlarged dam is required to store the bulk of the water from the existing water entitlement as well as the additional water (for which application is being made). Section 3.3 provides details on the water use rights.

Expansion of pipeline infrastructure

A connecting pipeline is required to transport water from the existing balancing dam to the new dam for storage purposes. The connecting pipeline will be laid underground within an existing roadway and will be 770 m in length with a diameter of 0.312 m. Figure 4. shows the route of this new portion of pipeline.

ALTERNATIVES

No site-, activity- or technology alternatives were considered for the reasons detailed in the report.

An alternative location was considered for the proposed dam, however, this fell largely into a terrestrial CBA and were therefore dismissed as a reasonable and feasible alternative. Two layout options were considered for the dam in a location that did not encroach into CBAs. From an engineering perspective, Dam Layout Option 2 was preferable over Option 1 given that it has a more economical water to wall ratio, as well as a wider basin from which to borrow embankment fill material that will secure a better cut-to-fill balance. The environmental specialists did not indicate any constraints in relation to Dam Layout Option 2.

In terms of the cultivation component, the environmental specialists identified several constraints to the full cultivation of the 47.2 ha (proposed as Cultivation Expansion Layout Alternative 1). As such, the EAP in consultation with the specialists conceived of Cultivation Expansion Layout Alternative 2 (Preferred) which responded to the constraints recorded by the specialists.

The combined Dam Layout Option 2 (Preferred) and Cultivation Expansion Layout Alternative 2 (Preferred) propose the following:

- Expansion of an existing small off-channel dam to a 350 000 m³ dam with a maximum wall height of 17.6 m.
- A catchment diversion berm with contour diversion channel to divert runoff from the upstream catchment around the dam to the spillway of the proposed dam. This will prevent runoff from the catchment entering the new dam and ensure that 100% of the Ecological Water Requirement releases to the watercourses downstream of the dam.
- Cultivation of virgin soil is reduced to approximately 40.9 ha (2 x areas respectively measuring 14 ha and 26.9 ha). These areas will have adequate sub-soil drainage to cater for sub-surface flows.
- An underground 0.312 m diameter, 770 m pipeline to connect an existing balancing dam to the proposed new dam.
- Exclusion of the 0.8 ha area immediately south of the northern watercourse buffer with conservation worthy *Euchaetis pungens*. Incorporation of this area into the buffer zone.
- The northern watercourse will remain in place with a 20m buffer on either side. Activities in this watercourse and related buffer must be limited to maintenance of this freshwater resource.
- Smaller drainage channels within the southern cultivation area will be infilled to allow for cultivation.
- A lined trapezoidal shaped cut-off drain (channel) with a 500 mm base width and 1:1 side slopes and a depth of 250 mm will be installed along the southeastern boundary of the southern cultivation area to assist with drainage in this portion and prevent erosion. This drain will divert runoff to the spillway channel of the proposed enlarged dam and allow for fruit production in the southern cultivation area.

- The existing small dam within the larger cultivation area will be retained and used to store water as needed.

The no-go alternative would see the continued use of the farm as per the status quo. With the information gathered to date, the no-go alternative is not deemed reasonable or feasible, however this recommendation will be reconsidered in the EIA phase when the significance of positive and negative impacts associated with the agricultural expansions have been rated.

AFFECTED ENVIRONMENT

The investigation of the baseline environmental conditions was informed by a botanist, freshwater ecologist, faunal specialist, heritage practitioner, agricultural soil professionals as well as an engineer.

The farm is zoned for agriculture and supports approximately 24 ha of existing cultivation areas. The remainder of the farm is vacant and constitutes approximately 47 ha of viable agricultural land (subject to this assessment) and mountainous areas on the north-western slopes of Rooiberg Mountain) which are unsuitable for agriculture. The proposed land use is consistent with that of its surrounds.

The majority of the proposed cultivation area has High and Medium High soil potential, suitable to establish permanent crops.

A geotechnical site investigation indicated that there are no significant fault zones mapped in the vicinity of the dam site and recommended that a geophysical investigation of potential fracture zones be undertaken.

Three watercourses were identified in the cultivation area. One prominent northerly drainage line that enters the site from the adjacent property to the north as a relatively wide channel and then exits the proposed site as a more confined channel created by rock deposits on its banks before discharging into the Breede River 800 m west of the cultivation area. A southern drainage line in the central part of the site which arise suddenly and then disappear again as flow becomes unconfined. Some alien invasive *Acacia cyclops* (rooikrans) have established along the northern drainage, however both the northern and southern drainage lines are lacking in distinct indigenous riparian vegetation. An existing dam in the easternmost section of the proposed cultivation area which, while it displays wetness and signs of organic debris (wetland indicators), is in fact more accurately described as an affected/impacted watercourse. Due to the artificial (man-made) nature of the dam, the specialist indicated that "it is best viewed as an impounded drainage line which has developed aquatic habitat due to the prolonged storage of surface water" (Steytler, 2021).

The proposed expanded dam footprint straddles another ephemeral drainage line, which is confined to a moderately incised, meandering valley in the undulated and rocky topography. "At the base of the valley there is evidence of ephemeral flow in the form of a mildly eroded channel. In the area where the dam is proposed there is also evidence of scattered, ad hoc dumping of various forms of solid waste. Downstream of the proposed dam site the drainage line is confined to a straightened channel which is defined by rock deposits on its banks" (Steytler, 2021).

From a hydrological perspective, the proposed dam and proposed cultivation area lie within small catchments. It was confirmed that major stormwater drainage problems are not experienced given the low annual rainfall (MAP of 293 mm), however sheet erosion is evident just east of a small dam in the eastern part of the site has occurred. This is consistent with gulleys noted by the freshwater ecologist.

The vegetation in the proposed cultivation footprint comprises Breede Sand Fynbos (a Vulnerable ecosystem) while vegetation in the proposed dam expansion footprint supports consists of Robertson Karoo (a Least Threatened ecosystem). The presence of the Breede Shale Renosterveld in the development footprint areas (as suggested in the SA Vegetation Map) have however been refuted by the botanist.

The proposed connecting pipeline will be located within an existing farm track with no vegetation cover. Despite evidence of intensive grazing (sheep and cattle) to areas east of a fence that cuts through the site, the botanist reported that the habitat remains in good condition. *Euchaetis pungens* (Rutaceae), a Vulnerable species, is the only plant species of conservation concern recorded in approximately 0.8 ha of the development footprint, immediately south of a prominent (northern) drainage line bisecting the cultivation area.

It was found that the eastern portion of the property is included in a natural landscape corridor connecting the Langeberg Mountain with lowland areas towards the Breede River in the south, and beyond towards the Riversonderend Mountains. Such corridors are important for habitat connectivity and movement of fauna in the landscape. The proposed dam and majority of the proposed cultivation footprint is excluded from this corridor, however the CBA area in the (~2 ha) easternmost section of the proposed cultivation area forms part of the northwestern edge of this corridor.

From a faunal perspective, it is unlikely that vertebrate species of conservation concern would naturally occur on the proposed project footprint given the available habitat. "Although it cannot be ruled out with high confidence that the Endangered Worcester russet butterfly (*A. lutescens*) could occur on the site, it was not recorded by the specialist after an active search during its known spring flight period. It has historically been recorded in a sandy area along a higher-lying North-facing slope of the Rooiberg, approximately 3 km east of the proposed development site. The proposed development site is, however, flatter and more exposed than the known Rooiberg site and not expected to provide as suitable a habitat compared to this known site" (Costandius, 2021).

The landscape, cultural heritage aspects, palaeontology and archaeology screening exercise concluded that it is unlikely that significant resources will be impacted and as such, no further studies were recommended in terms of Section 38 of the NHRA. These findings and recommendations were collated into a Notice of Intent to Develop and submitted to Heritage Western Cape. In response, HWC confirmed no further studies are required in this regard.

While the landscapes of cultural importance were considered by the heritage specialists, the following is noteworthy in relation to general visual aspects:

- The agriculturally related developments proposed is aligned with the agricultural zoning of the farm.
- The proposed agricultural expansions are congruent with the agricultural developments of the surrounding farmsteads along Eilandia Road. The proposals will therefore be substantially similar to the agricultural nature of activities in the surrounds and will not detract from the visual experience currently enjoyed in this area.
- The site is also not visible from public roads / areas frequented by the general public.

From a socio-economic perspective, the farm already contributes to employment, the economy, government revenue and household income. Skills development and corporate social investment offered to employees have also been detailed in the report. It was found that agriculture is an important contributor to the economy in the municipal area.

LEGISLATIVE REQUIREMENTS

A summary of the required approvals is tabled below.

LEGISLATION	ADMINISTERING AUTHORITY	AUTHORISATION TYPE	PROGRESS
NEMA	DEA&DP: Land Use Management	EA	In progress
NWA	Department of Water & Sanitation	WULA	In progress
CARA	Department of Agriculture	Ploughing permit	Yet to be submitted
NHRA	Heritage Western Cape	Comment	Received 1 June 2021
Langeberg: Municipal Planning By-law	Langeberg Municipality	Building Plan approval for netting to cover crops	Yet to be submitted

IDENTIFIED IMPACTS

The findings of the Scoping Report are tabled below.

ENVIRONMENTAL ASPECT AND RELATED IMPACTS CONSIDERED	FURTHER INVESTIGATION /ACTION NEEDED	REASON
<p><u>Terrestrial ecology:</u> Impacts on botanical or faunal resources, habitats or other areas of biodiversity significance, including the loss and disruption in connectivity or ecosystem functions</p>	Yes	<p>Seeing that the development will constitute the transformation of land supporting indigenous vegetation, 2 ha of which falls into a CBA, it is important for a Botanist to compile a full Botanical Impact Assessment to inform the EIA phase.</p> <p>The Faunal Specialist provided a Faunal Compliance Statement which is sufficient given the sensitivities found on site and the lack of faunal SCC.</p>
<p><u>Aquatic ecology:</u> Impacts on freshwater resources in the vicinity of the site, including its loss, disruption to ecosystem functionality and pollution</p>	Yes	<p>A freshwater specialist will compile a Freshwater Impact Assessment to inform the EIA phase given the presence of the watercourses on the property (which are mapped as aquatic ESAs and the impact of the proposed agricultural areas and the dam on these systems.</p> <p>In addition, the compilation of a MMP for approval will be valuable to the ongoing management of watercourses on the property. The specialist will provide the inputs required for the EAP to compile this report.</p>
<p><u>Cultural / heritage / palaeontological / archaeological aspects:</u> Impacts on cultural/heritage resources, artifacts of archaeological importance or fossils</p>	No	<p>The NID was compiled and submitted to HWC by a heritage practitioner. The heritage specialists concluded, based on the screening investigation, that no further studies are required as significant impacts on these resources are unlikely.</p> <p>HWC confirmed that no further studies are required.</p>
<p><u>Socio-economic aspects:</u> Impacts on the national and local economy, the social wellbeing of employees and the social fabric of the area</p>	Yes	<p>The EAP will assess the positive impacts on the economy, employment opportunities and related household income as well as government revenue associated with the proposal. These impacts are typically well understood for farming expansions, and therefore, there is no need to involve a socio-economic specialist.</p>
<p><u>Resource use – Water:</u> Impacts on the availability of water in the resource as a result of increased supply to the farm</p>	Yes	<p>The application for Water Use Authorisation will be undertaken in parallel to the EIA phase by a water use specialist. The freshwater ecologist will provide the necessary technical and ecological inputs to inform the process.</p> <p>Proof of the submission of the application for the Water Use Authorisation included in Appendix F2.</p>
<p><u>Resource use – Other:</u> Impacts on the available resources with supply to the facility</p>	No	<p>The proposal will not require any additional civil services as it will not require electricity and will not generate additional sewerage. Existing fuel sources on the farm will be used. This aspect therefore requires no further investigation in the EIA phase.</p>
<p><u>Stormwater management:</u> Impacts on the volume or quality of runoff and the drainage regime in the area</p>	Yes	<p>While no further investigations are required in this regard over and above the inputs received by the engineers to date, the EAP will include specifications into the EMP as it relates to the use and application of herbicides and pesticides to prevent this impacting on runoff quality and hence, downstream water sources.</p>

<u>Transport aspects:</u> Impacts on the movement of vehicles on the local road network	No	The remote rural nature of the site and few additional trips that will be generated, means that it will not impact on the movement of vehicles along the local farm roads or the R60 and beyond. No further actions/investigations warranted.
<u>Solid waste generation:</u> Impacts on available landfill airspace	Yes	Solid waste generated by the facility will be limited to additional organic waste from pruning, additional empty fertilizer / pesticide containers and additional broken netting etc. The current waste management practices of the farm will be utilized. This includes composting of organic waste and disposal of other general solid waste into the waste 'pit' ("asgat") which is subjected to periodic burning. This is typical on farms. No further investigation required, however the EMPr will include specifications for the handling and disposal of waste generated by the agricultural expansions.
<u>Need and desirability aspects:</u> Clarity on need and desirability of the facility	No	The need and desirability of the facility is clearly illustrated in the Scoping Report and warrants no further investigation/action.
<u>Nuisance aspects:</u> Factors such as noise, vibrations, dust etc. that could cause a nuisance to surrounding landowners / land users	Yes	In the agricultural context of the proposal and the site, issues such as noise and vibrations are irrelevant. The clearance of the site and movement of vehicles will however generate dust, but it is one of the key priorities of all fruit farmers to limit dust generation as far as possible to protect the quality of the fruit. This is especially true for export fruit growers. While no further investigation is required, the EMPr will include measures to limit dust, especially in the construction phase.
<u>Visual aspects:</u> Impacts on the sense of place of the area	No	The agriculturally related developments proposed is aligned with the agricultural zoning of the farm and the agricultural developments of the surrounding farmsteads along Eilandia Road. The proposals will therefore be substantially similar to the agricultural nature of activities in the surrounds and will not detract from the visual experience currently enjoyed in this area. The site is also not visible from public roads / areas frequented by the general public. Therefore, no further investigations / actions are required in this regard.
<u>Issues raised by I&APs:</u> Dependent on the nature of issues	Yes	Issues raised by I&APs will be recorded and considered in the process. Responses will be provided accordingly.

NEED AND DESIRABILITY

In summary, the following points are noteworthy:

- Only a small proportion of the farm are currently cultivated, limiting the economic value that can be derived from the agricultural potential of the farm. The proposed cultivation expansion will increase the cultivation on farm by 170% which will have a significant impact on the income generation capacity on the property. This will serve to improve the financial viability of the farming unit through economies of scale.
- The proposed dam is essential to the proposed cultivation as the current water storage capacity on the property is inadequate to accommodate additional irrigation.
- The market demand for export fruit is growing.

- Approximately 150 direct seasonal job opportunities will be generated. The introduction of new crop varieties will distribute the preparation, harvesting and packing times over a larger proportion of the year, meaning that seasonal workers will be employed for longer periods of time. This will translate to increased job security for existing workers and new workers.
- The property is already zoned for agriculture, and partially used for this purpose, albeit on a small scale. It is located next to Farm 823 (the other property in the farming unit), where the necessary administrative and commercial infrastructure (offices, packhouse, storage facilities, workers accommodation etc.) are housed which will support the proposed expansion of cultivation and a dam on RE/767.
- Furthermore, the proposed activities are consistent with surrounding the land use (in the immediate and greater area) and the proposal will therefore not impact on other land uses in the surrounds. This also eliminates social impacts such as noise, visual impacts etc.
- Currently, the farm is not utilizing the bulk of its agricultural potential. Soil suitability has been established on the area earmarked for cultivation. The proposed agricultural expansions therefore present appropriate utilization of arable land that is already set out for agriculture in terms of its zoning.
- The preferred Alternatives already took account of biophysical constraints as identified by respected specialists.
- There are no heritage, cultural, landscape, archaeological or palaeontological constraints to the proposal.
- The project will contribute to skills development, the national and local economy, government revenue and provide employment opportunities, as detailed.
- The Applicant is in the process of applying for an Integrated Water Use License to allow for additional water abstraction and storage as well as the encroachment into watercourses. The development can only proceed if the water rights are granted. This application process is currently underway.
- The project is not anticipated to cause pollution, and management / mitigation measures will be identified to this effect in the EIA phase.
- The project is aligned with the Provincial and Local Spatial Development Frameworks in that it proposes the utilization of arable land set out for agriculture and aims to secure the agricultural economy with the prudent use of agricultural resources, whilst minimizing impacts on the ecology.
- The proposal will not compromise the underlying biodiversity objectives and ecological functioning of the mapped aquatic ESAs and will not result in any obstruction of natural connectivity or compromise the functioning of the CBA corridor.
- The proposal is aligned with the principles of Environmental Management as well as the general objectives of Integrated Environmental Management as set out in Sections 2 and 23 of the NEMA.

With the available information at this point in the Scoping Phase, it is determined that the location is appropriate for the proposed land use. There is no unacceptable opportunity cost associated with the development that is evident at this point in time. Considering the information presented above, the proposed agricultural expansion is considered the best practicable environmental option on a site that is already zoned and partially used for this purpose.

PUBLIC PARTICIPATION PROCESS

The Scoping Phase includes the public participation activities listed below. Full details are provided in this report.

- Identification of Key I&APs;
- Notification of the Environmental Process via media notices in two newspapers, a letter mail-out, letter drop and signboard on the site; and
- Public review of the draft Scoping Reports.

The register of Interested and Affected Parties (I&APs) will be updated as parties register on the database. All comments received in response to the public review period will be captured and responded to by the EAP, Applicant or relevant project team member. Should the need for additional public participation activities arise, the most appropriate method will be determined and the necessary action taken to ensure that the process is open and transparent and provide ample opportunity for engagement with potentially affected parties.

PLAN OF STUDY FOR EIA AND CONCLUSION

A Plan of Study for the EIA phase was developed. In summary, the following activities are proposed during the EIA phase:

- Full botanical and freshwater impact assessments.
- Further consideration of alternatives (if any are identified during the remainder of the Scoping Phase);
- Compilation of a draft EIR, EMPr and MMP.
- Public participation which will include notifying I&APs of the commencement of the EIA phase and the availability of the draft EIR for review;
- Responding to issues raised on the draft EIR and compilation and submission of the final EIR;
- Submission to the competent authorities for decision-making;
- Notification to I&APs of the outcomes of the applications for EA.

The Scoping Phase was undertaken in accordance with the regulatory requirements stipulated in the 2014 EIA Regulations, as amended. The Scoping Report has described the need and desirability of the proposed agricultural expansions, the legal context and legal requirements of the project, the environmental setting of the farm and development areas, as well as the key environmental issues related to the proposal. Furthermore, it recorded the alternatives that were considered and reasons for the identified preferred alternatives in relation to the proposed dam expansion and cultivation expansions. The no-go alternative was also detailed.

Several specialists have provided inputs to inform this scoping study and the determination of the preferred Alternatives. These included:

- Botanical screening study
- Faunal Compliance Statement
- Freshwater screening study
- Heritage practitioner

In addition, the engineers provided technical inputs in respect of geotechnical conditions, a limited stormwater management plan and a dam engineering study.

Aspects that require further investigation have been identified and in line with the plan of study for EIA, these necessary actions will be undertaken in the next phase of the environmental process.

The scoping study did not reveal any fatal flaws in relation to the proposal. Noting the investigations required in the EIA phase, the only gap in knowledge for the Scoping Phase is the general sentiment of the I&APs and organs of state regarding the proposal.

Acceptance of the SR and approval of the Plan of Study for EIA by DEA&DP would mark the end of the Scoping Phase and the commencement of the EIA Phase.