PROJECT IMPACT ASSESSMENT, SIGNIFICANCE AND MITIGATION MEASURES SUMMARY

The following impact rating approach used by EnviroAfrica CC is a basic exponential rating system to assess actual and potential negative and positive environmental impacts.

Environmental activities or aspects are identified, based on:

- the phases of the project,
- the nature (or description) of the actual and potential impacts of the activities.

For every project activity or aspect, various environmental impacts are listed. Every negative impact is allocated a -value as per each of the following criteria:

- Probability (Likelihood)
- Extent
- Duration (Frequency)
- Consequence (Receiving Environment)
- Magnitude (Intensity/severity)

Every positive impact is allocated a +value as per each of the following criteria:

- Probability (Likelihood)
- Extent
- Duration (Frequency)
- Magnitude (Intensity/severity)

Once a value is allocated for each of the criterion, the scores are averaged to determine the final impact rating see Table 1 below.

EnviroAfrica then further assesses environmental significance, based on the nature of the impact, as per the score and colour key which forms part of Table 1 below. This results in impacts having either a low (indicated in green), medium (indicated in yellow) or high (indicated in orange and red) negative significance, and a low (light blue), medium (blue) or a high (dark blue) positive significance

Note: i. As a baseline, impact rating values/scores are allocated taking the **worst case** scenario into account i.e. with no mitigation. The baseline rating is compared with those after mitigation has been taken into account i.e. the post-mitigation rating. Post mitigation rating is used for the actual impact assessment.

APPENDIX J – IMPACT ASSESSMENT

SIGNIFICANCE CRITIERIA	Very High	High	Medium	Low	Negligible (very-low)
Value	**16**	**8**	**4**	**2**	**1**
Probability (likelihood) **(P)**	Definite. Impact will definitely occur (impact will occur regardless of any prevention measures)	Highly probable. Very likely for impact to occur.	Probable. Impact may likely occur.	Improbable. Impact may occur. Distinct Possibility	Improbable. Low likelihood/unlikely for impact to occur.
Extent (E)	Impact potentially reaches beyond national boundaries	Impact has definite provincial/potential national consequences	Impact confined to regional area/ town	Impact confined to local region and impact on neighbouring properties	Impact confined to project property / site
Duration (D)	Permanent The impact is expected to have a permanent impact, with very little to no rehabilitation possible	Long-Term The impact is expected to last for a long time after construction with rehabilitation expected to be 15-50 years. Impact is reversible but only with long-term mitigation	Medium-term The impact is expected to last for some time after construction with rehabilitation expected to be 5 - 15 years. Impact is reversible but only with on-going mitigation	Short-term The impact is expected to last for a relatively short time with rehabilitation expected to be 2-5 years. The impact is reversible through natural process and/or some mitigation.	Very short/ temporary The impact is expected to be temporary and last for a very short time with rehabilitation expected to be less than 2 years. The impact is easily reversible through natural process and/or some mitigation.
Magnitude (Intensity/ Severity) **(M)**	It is expected that the activity will have a very severe to permanent impact on the surrounding environment. Functioning irreversibly impaired. Rehabilitation often impossible or unfeasible	It is expected that the activity will have a severe impact on the surrounding environment. Functioning may be severely impaired and may be temporarily cease. Rehabilitation will be needed to restore system integrity	It is expected that the activity will have an impact on the surrounding environment, but it will maintain its function, even if moderately modified (overall integrity not compromised). Rehabilitation easily achieved	It is expected that the activity will have a perceptible impact on the surrounding environment, but it will maintain its function, even if slightly modified (overall integrity not compromised). Rehabilitation easily achieved	It is expected that the impact will have little or no effect on the integrity of the surrounding environment
Receiving environment (Consequence): **(RE)**	Very sensitive, pristine area – protected site or species permanently or seasonally present	Unused area containing only indigenous fauna / flora species	Unused area containing indigenous and alien fauna / flora species	Semi-disturbed area already rehabilitated / recovered from prior impact, or with moderate alien vegetation	Disturbed area/ transformed/ heavy alien vegetation

ENVIRONMENTAL RATING SIGNIFICANCE KEY:

Negative Impacts

SIGNIFICANCE	RATING	Final rating score / value range
Very Significant	Very High	-11 to -16
Significant	High	-7 to <-11
Increasing Significance	Medium	-4 to <-7
Insignificant	Low	-2 to <-4
	Very Low	-1 to <-2

Positive Impacts

SIGNIFICANCE	RATING	Final rating score / value range
Significant	High	10 to 16
Increasing Significance	Medium	4 to <10
Insignificant	Low	1 to <4

Table 1: **Environmental Significance Rating Methodology (rating criteria and significance key)**

Nature of Impact			Impact Assessment Ranking and Proposed Mitigation		
No.	**Aspect**	**Impact**	**Environmental Significance (without Mitigation)**	**Proposed Mitigation (i.e. Proposed mitigation to reverse/ avoid, manage or mitigate identified impacts associated with construction, operation, and decommissioning/ closure phases)**	**Environmental Significance (After Mitigation)**
CONSTRUCTION PHASE					
1	Impact on Cultural, Archaeological, and Heritage Resources	Loss and/or damage to potential archaeological and historical sites within the construction footprint	Low (Negative)	Indications are that the development of new agricultural fields for the cultivation of blue berries and upgrading of a small abandoned in-stream earth farm dam, will not impact on important archaeological resources. No mitigation required. However: - If any archaeological remains (including but not limited to fossil bones and fossil shells, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, stone artefacts and bone remains, structures and other built features, rock art and rock engravings) are discovered during construction they must immediately be reported to HWC and must not be disturbed further until the necessary approval has been obtained from HWC. - Should any human remains/burial or archaeological material be disturbed, exposed or uncovered during construction, these should immediately be reported to the South African Heritage Resources Agency (021 462 4502) and Heritage Western Cape (021 483 9685). The ECO and ER are also to be informed. An archaeologist will be required to remove the remains at the expense of the developer.	Negligible
2	Impact on Graves	Farm labourer graves in Area A may be negatively impacted by the proposed development.	Medium (Negative)	- The applicant *must* consult with family members regarding the protection of graves in Area A, prior to the development commencing. Graves are graded as having high (3A) local significance and must be protected throughout the Operational Phase of the project. - The graves must be fenced off, with gated access for family members. A 20m buffer around the informal cemetery is proposed. - The above recommendations must be included in the Environmental Management Plan (EMP) for the proposed development.	Negligible
3	Impact on Palaeontological Resources	Loss and/or damage to potential fossils within the construction footprint	Low (Negative)	Significant impacts on fossil heritage resources are not expected. The Fossil Find Procedure must be implemented. Should any fossil material be discovered during construction, this must be safeguarded (preferably *in situ*) and the Environmental Control Officer (ECO) should alert Heritage	Negligible

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				Western Cape so that appropriate mitigation (*e. g.* recording, sampling, or collection) can be taken by a professional palaeontologist.	
4	Botanical	Vegetation Status: Loss of vulnerable or endangered vegetation and associated habitat.	Medium (Negative)	Area 1: - Area 2 should be the first choice for further agricultural development (before considering Area 1); - If development in Area 1 is required, it should stay below the existing cut-off trench, which will allow for the protection of more than 50% of the remaining natural veld in this and adjacent areas (on the same property) - *Euclea undulata* (Gwarrie) trees must be protected. By staying beneath the cut-off trench all of these trees will remain well outside of the development footprint; - Ideally the area where the 2 heuweltjies were observed should also be protected, but since the fall within the most logical expansion area in this site, they were not excluded. It was taken into account that these heuweltjies are quite common just north of the site, as well as along the lower foothills in the eastern portion of this property. - A number of Botterboom (*Tylecodon paniculatus*) and *Cotyledon* plants where observed within the footprint. As many as possible of these plants (but all small plants) should be transplanted to adjacent disturbed areas (or could be used for rehabilitation of the dam wall). - Topsoil from this site could be used for the rehabilitation of the dam wall. Area 2: - The development footprint should aim to stay in the already disturbed northern section of this area or in the very least to the north of the small track running almost between these two areas; - Some of the Botterboom (*Tylecodon paniculatus*), but all of the *Cotyledon* and *Haworthia* individuals must be transplanted to surrounding disturbed areas, where they must be nursed for the time it take for them to settle. It is important that the *Haworthia* individuals are replanted in similar areas from where they were taken and protected by larger plants (nursery plants as described by Vlok& Schutte-Vlok, 2015); - Since the topsoil is already mostly disturbed (with the dominant plant now being *Galenia africana*, topsoil re-use for rehabilitation of other areas is not required; Dam Site: - A great number of Botterboom (*Tylecodon paniculatus*) plants where observed within the footprint. As many as possible of these plants (but all	Low (Negative)

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				small plants) should be transplanted to adjacent disturbed areas (or could be used for rehabilitation of the dam itself). - Topsoil from the less disturbed areas must be removed to be used for the rehabilitation of the excavations and the dam wall itself. General - All construction must be done in accordance with an approved construction and operational phase Environmental Management Plan (EMP), which must include the recommendations made in this report. - A suitably qualified Environmental Control Officer must be appointed to monitor the construction phase in terms of the EMP and any other conditions pertaining to specialist studies. - The layout of the development footprint should take the sensitivity map into account. - However, if for viable reasons, the layout could not be placed outside of the above mentioned green areas, the developments must aim at minimum disturbance of the remaining natural veld; - Search & rescue as described in the site specific recommendation above, must be done before construction may commence in each area; - Lay-down areas or construction sites must be located within already disturbed areas on the farm; - No unnecessary clearing of any area outside of the construction footprint may be allowed. - An integrated waste management approach must be implemented during construction. • Construction related general and hazardous waste may only be disposed of at suitably approved waste disposal sites.	
5		Conservation Priority: Potential impact on protected areas, CBA's, ESA's or Centre's of Endemism.	Medium-High (Negative)	See mitigation measures above	Low (Negative)
6		Connectivity: Potential loss of ecological migration corridors.	Medium-Low (Negative)	See mitigation measures above	Low (Negative)

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7		Protected and Endangered Plant Species: Potential impact on threatened or protected plant species	Medium (Negative)	See mitigation measures above	Low (Negative)
8		Invasive alien plant species: Potential invasive plant infestation as a result of the activities.	No impact	See mitigation measures above	No impact
9		Geology & soils: Potential impact on special habitats (e.g. true quartz or "heuweltjies")	Medium-Low (Negative)	- Ideally the area where the 2 heuweltjies were observed should also be protected, but since the fall within the most logical expansion area in this site, they were not excluded. It was taken into account that these heuweltjies are quite common just north of the site, as well as along the lower foothills in the eastern portion of this property.	Low (Negative)
10		Landuse and cover: Potential impact on socio-economic activities.	Low (Positive)		Low (Positive)
11		Veld fire risk: Potential risk of veld fires as a result of the activities.			
12		No-Go Alternative	Medium (Negative)		
13	Freshwater Resources	Construction vehicles and activities in upper sub-catchment Destruction of drainage lines in the upper sub-catchment	Medium (Negative)	- Keep vehicles and activities out the upper sub-catchment - Limit the construction footprint	Low (Negative)
14	Socioeconomic	Creation of short- term employment opportunities.	Medium-low (Positive)	Bass*Diii (Kenmoor farm) was purchased with residents which have previously lacked financial and social upliftment. Not only will farm residents benefit from employment and training (BEE skills development), but the local community will also have access to a further 65-75 permanent jobs across blueberries and stonefruit. An additional 300-500 of seasonal picking labour	

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				will be required for stonefruit and blueberries during the months of January-March and September-December. Local suppliers will be engaged wherever possible for the construction and operation phases for further upliftment of the community. The construction phases for stonefruit and blueberries taking place between 2021 and 2023 will employ a further 75-100 contractors for land preparation, building constructions, security and orchard/netting installation.	
15	Dust	Dust may be generated during the construction of the proposed development.	Low (Negative)	The Contractor must take all reasonable measures to minimize the generation of dust as a result of construction activities resulting from along-construction-route activities (but must also take into account possible water constrictions of the area). - The onsite construction site agent must take into account prevailing wind strength and wind direction and must have preventative measures on standby to minimize dust pollution that may cause damage to people and property. - The liberation of dust into the surrounding environment shall be effectively controlled by the use of, inter alia, water spraying and/or other dust-allaying agents. The speed of haul trucks and other vehicles must be strictly controlled to avoid dangerous conditions, excessive dust or excessive deterioration of the road being used. - Earth-works to take place after harvest season	Low (Negative)
16	Visual	Visual impact of construction activities and plant on site	Low (Negative)	- Construction activities limited to within the construction footprint - The contractor may not operate any machinery outside the demarcated area. - Appropriate machinery to be used	Low (Negative)
17	Traffic	Increase in trucks and construction plant	Very Low (Negative)	Cognisance of traffic and other road users	Very Low (Negative)
18	Noise	Noise will be generated during the construction phase.	Low (Negative)	Any noise generated by construction activities will be a temporary impact however, the following mitigation measures will be implemented: - A complaint register to be maintained on-site. Any complaints received must be responded to and rectified accordingly. The ECO must be notified of any complaints;	Very Low (Negative)

APPENDIX F – IMPACT ASSESSMENT

Nature of Impact			Impact Assessment Ranking and Proposed Mitigation		
No.	**Aspect**	**Impact**	**Environmental Significance (without Mitigation)**	**Proposed Mitigation (i.e. Proposed mitigation to reverse/ avoid, manage or mitigate identified impacts associated with construction, operation, and decommissioning/ closure phases)**	**Environmental Significance (After Mitigation)**
				- All construction vehicles must be fitted with standard silencers. All silencers must be maintained. All machinery used on site must have suppressors. - Working hours must be limited to and strictly adhered to standard daylight working hours (08h00-17h00).	

OPERATION PHASE					
19	Freshwater Resources	Abstraction of water out of the Breede River. Over-abstraction impinges on Ecological Reserve	Medium (Negative)	• Strictly stay within the License allocation	Very Low (Negative)
20	Freshwater Resources	Re-growth of invasive trees Continued growth of blue gum trees in the Breede River	Medium (Negative)	- Control invasive trees - Embark on a program to remove blue gum trees from Breede River banks	Low (Negative)
21	Freshwater Resources	Irrigation out of new dam Over-irrigation result in agricultural return flow Return flow into the Breede River	Medium (Negative)	- Prevent over-irrigation - Prevent agricultural return flow - Keep return flow out of Breede River	Low (Negative)
22	Visual	Visual impact of agricultural development with shade netting from town	Medium (Negative)	- Appropriate colour shade netting to be used where possible - Maintain and/or increase screening with trees (tree line along property boundary with dirt road)	Low (Negative)
23	Socio-economic	Creation of long-term employment opportunities.	Medium - Low (Positive)	Bass*Diii (Kenmoor farm) was purchased with residents which have previously lacked financial and social upliftment. Not only will farm residents benefit from employment and training (BEE skills development), but the local community will also have access to a further 65-75 permanent jobs across blueberries and stonefruit. An additional 300-500 of seasonal picking labour will be required for stonefruit and blueberries during the months of January-March and September-December. Local suppliers will be engaged wherever possible for the construction and operation phases for further upliftment of the community. The construction phases for stonefruit and blueberries taking place between 2021 and 2023 will employ a further 75-100 contractors for land preparation, building constructions, security and orchard/netting installation.	