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 negative 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.

SIGNIFICANCE CRITIERIA	**Very High**	**High**	**Medium**	**Low**	**Negligible (very-low)**	**Score**
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	Long-Term	Medium-term	Short-term	Very short/ temporary	
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	
FINAL RATING (average score)						

ENVIRONMENTAL RATING SIGNIFICANCE KEY:

Negative Impacts

SIGNIFICANCE	RATING	Final rating score / value range
Very Significant	Very High	-12 to -16
Significant	High	-9 to <-12
Increasing Significance	Medium	-6 to <-9
Insignificant	Low	-3 to <-6
	Very Low	-1 to <-3

Positive Impacts

SIGNIFICANCE	RATING	Final rating score / value range
Significant	High	10 to 16
Increasing Significance	Medium	5 to <10
Insignificant	Low	1 to <5

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

			WITHOUT MITIGATION						WITH MITIGATION						
No.	**ASPECT**	**IMPACT**	**Probability**	**Extent**	**Duration**	**Magnitude**	**Receiving Environment**	**Without Mitigation Score** (Baseline)	**Probability**	**Extent**	**Duration**	**Magnitude**	**Receiving Environment**	**With Mitigation Score** (Impact assessment)	**Short Description of some of the pertinent mitigation/ enhancement measures**
1	**Botanical**	Loss of Kathu Bushveld	-16	-1	-16	-16	-8	-11,4	-16	-1	-16	-8	-8	-9,8	Small mitigation measures can and should be implemented such as preservation of areas of open space e.g. around the seasonal pan but these would not necessarily conserve the nature of the Kathu Bushveld. - Acacia erioloba (camelthorn) trees should be observed as a protected tree species. A permit would be required for any disturbance of these trees. In addition, Aloe grandidentata was found in the eastern part of the site. These aloes should be collected and relocated to a safe site
2		No-go Option (Loss of Kathu Bushveld)	-1	-1	-8	-2	-8	-4						0	
3		Loss of Ecological Processes	-16	-1	-16	-8	-8	-9,8	-16	-1	-16	-8	-8	-9,8	No mitigation possible
4		No-go Option (Loss of ecological Processes)	-4	-1	-8	-2	-8	-4,6							
5	**Heritage**	Loss of archaeological resources	-2	-1	-8	-1	-2	-2,8	-2	-1	-8	-1	-2	-2,8	No archaeological mitigation is required. - Should any unmarked human burials/remains or ostrich eggshell water flask caches be uncovered, or exposed during construction activities, these must immediately be reported to the archaeologist (Jonathan Kaplan 082 321 0172), or the South African Heritage Resources Agency (021 462 4502). Burials must not be removed or disturbed until inspected by the archaeologist.

6	**Palaeontology**	Loss of Palaeontological heritage resources	-4	-1	-8	-4	-8	-5	-1	-1	-8	-1	-8	-3,8	ECO and / or the Site Engineer responsible for the development must remain aware that all sedimentary deposits have the potential to contain fossils. If any substantial fossil remains (*e.g.* vertebrate bones, teeth, horn cores) are found during construction SAHRA should be notified immediately. - A chance-find procedure should be implemented.
7	**Socio-economic**	Creation of employment and business opportunities during the construction phase	8	4	4	4		5	16	4	4	16		10	Where reasonable and practical the proponent should appoint local contractors and implement a „locals first" policy, especially for semi and low-skilled job categories. Where feasible, efforts should be made to employ local contactors that are compliant with Broad Based Black Economic Empowerment (BBBEE) criteria.
8		Potential impacts on family structures and social networks associated with the presence of construction workers	-4	-4	-4	-2		-3,5	-4	-4	-4	-2		-3,5	The developer should seek as far as is possible to appoint a local or regional contractor/s from the local area for the bulk services and housing contracts. The movement of construction workers on and off the site should be closely managed and monitored by the contractors.
9		Safety and security risk posed by presence of construction workers on site	-4	-4	-8	-8		-6	-4	-4	-8	-4		-5	No construction workers, with the exception of security personnel, should be allowed to stay on site overnight. Building contractors appointed by the developer must ensure that workers are transported to and from the site on a daily basis. Construction related activities should comply with all relevant building regulations. In this regard activities on site should be restricted to between 07h00 and 18h00 during weekdays and 08h00 and 13h00 on Saturdays

10		Potential noise, dust and safety impacts associated with construction related activities and the movement of construction traffic to and from the site	-4	-4	-4	-8	-8	-5,6	-4	-4	-4	-4	-8	-4,8	The proposed development should be phased and site clearing confined to the specific areas under construction. Dust suppression measures must be implemented. The movement of heavy construction vehicles along the Mapoteng and Kathu access road and the R 380 should be timed to avoid peak traffic hours.
11		Provision of housing, community facilities and public spaces	-16	-4	-8	-4		-8	16	4	16	8		11	The proposed development should ensure that the community facilities include the establishment of sufficient number of crèches, primary schools and community sports facilitiesA landscaping plan should be developed that makes provision for tree planting and creation of green open spaces as part of the urban design plan. A Management and Maintenance Plan and programme for the public open spaces should be developed and implemented.
12		Creation of employment and business opportunities during the operational phase	8	4	8	2		5,5	16	4	8	16		11	The proponent and the GLM should inform local community leaders, organizations and councillors of the potential job opportunities associated with the different components associated with the operational phase of the development. - The proponent, in consultation with the GLM, should establish a database of local service providers in the area, specifically SMME"s owned and run by HDI"s. These companies should be notified of the potential opportunities associated with the operational phase of the development. The proponent in consultation with the GLM should look to identify measures to maximize employment opportunities for members from the local HD communities.
13		Broadening the rates base	-8	-4	-8	-2		-5,5	8	4	8	2		5,5	
14		No-Go Option (Socio-economic impact)	-16	-4	-8	-4		-8	16	4	8	4		8	
15	**Traffic**	Potential impact on traffic	-4	-2	-2	-4	-2	-2,8	-4	-2	-2	-2	-2	-2,4	Provision of turning lanes

16	**Visual**	Potential visual impact on the area	-8	-2	-8	-4	-8	-6	-8	-2	-8	-4	-8	-6	Construction of development according to the EMP. Sensitive placement of houses. Design the final layouts of the residential area at Sims to cater for the loss of as few Acacia erioloba (camelthorn) trees as possible.
17	**Dust**		-4	-4	-4	-4	-8	-4,8	-4	-4	-4	-2	-8	-4,4	The proposed development should be phased and site clearing confined to the specific areas under construction. Dust suppression measures must be implemented. Construction in accordance with the EMP