

APPENDIX K – IMPACT AND RISK ASSESSMENT with mitigation

C. ASPECT / ACTIVITY: Site establishment

No.	IMPACT	Pre-Mitigation Score (Baseline)					Post-Mitigation Score (Impact)					Short Description of Mitigation Measures	
		L/P	E/S	D/F	C: RE	C: T	L/P	E/S	D/F	C: RE	C: T		
1	Temporary roads for site establishment	1	1	1	1	1	1	1	1	1	1	1	Vehicles to be confined to roads and on site (not neighbouring open space areas). Utilisation of dust suppression on roads e.g. using chemical road sealers, if required. Fugitive particulate emissions minimised by enforcing speed limits on dirt roads.
2	Gaseous and particulate emissions due to use of heavy duty earth moving vehicles/machinery	32	32	32	1	32	25,8	32	16	32	1	32	Vehicles serviced regularly/well maintained. Vehicles not allowed to idle for extended periods. Routine site and vehicle checks.
3	Dust (particulate) emission generation	32	8	32	1	32	21	16	4	32	1	16	Utilisation of dust suppression on roads e.g. using chemical road sealers, if required. Fugitive particulate emissions minimised by enforcing speed limits on dirt roads. Vehicles confined to roads only. Vehicles serviced regularly/well maintained. Vehicles not allowed to idle for extended periods. Routine site and vehicle checks.
4	Poor access control/fencing	32	1	32	8	1	14,8	2	11	4	8	1	Secure fencing of site to take place before any materials/equipment brought to site. Access to be controlled via locked gate and security services.
5	Demarcation of lay down area	32	2	8	1	1	8,8	32	1	4	1	1	Lay down area clearly defined before any material/equipment arrives on site. Lay down area to be within development site. Routine site inspection for adherence to lay down area parameters.
6	Ablutions for site labour (non-adherence to designated areas)	32	2	32	1	8	15	32	1	16	1	1	Training and awareness regarding designated abluion areas and need for adherence. Provision of sufficient abluions area in line with legal requirements on site. Ad hoc site visits to check compliance in line with training.
7	Littering	32	16	16	8	1	14,6	16	2	16	2	1	Training and awareness regarding littering. Provision of sufficient rubbish bins on site. Ad hoc checks to ensure compliance in line with training.
8	Habitat loss (effect on fauna)	1	1	1	1	1	1	1	1	1	1	1	Due to the highly transformed and degraded nature of the site, the development will result in removal of alien invasive vegetation and overall positive habitat loss.

9	Animal interaction/fatalities	16	1	16	8	1	8,4	16	1	4	8	1	6	Designation of no-go areas on site to be defined at on-site start up meeting. Environmental awareness/training. Routine site compliance checks.
10	Visual impact of site clearance/dust	32	2	32	1	1	13,6	16	2	32	1	1	10,4	Utilisation of dust suppression on roads e.g. using chemical road sealers, if required. Fugitive particulate emissions minimised by enforcing speed limits on dirt roads. Vehicles confined to roads only. Vehicles serviced regularly/well maintained. Vehicles not allowed to idle for extended periods. Routine site and vehicle checks.
11	Resource use: water	32	1	32	2	1	13,6	32	1	32	2	1	13,6	Training and awareness regarding sound water use/management. Storm water management plan in place at on-site start up meeting. Ad hoc checks to ensure compliance in line with training and management plans/programmes.
12	Resource use: land	32	2	32	8	1	15	32	1	32	2	1	13,6	Training and awareness regarding land management on site. Ad hoc checks to ensure compliance in line with training and management plans/programmes.
13	Resource use: hydrocarbons/fuels	32	2	32	8	16	18	32	2	32	8	2	15,2	Training and awareness regarding efficient fuel/hydrocarbon use. Ad hoc checks to ensure compliance in line with training and management plans/programmes.
14	Recycling of waste products where possible													
15	Demarcation and preservation of heritage/culturally sensitive aspects on site for inclusion in development													No culturally/heritage sensitive aspects were observed on the proposed development site.
16	Storage of fuels/hazardous chemical substances	32	2	4	32	4	14,8	16	2	4	32	4	11,6	Training and awareness regarding use and storage of fuel/oil/HCSs. Adequate drip trays and spill clean up kits provided. HCSs and fuel stores stored in line with legal requirements. Routine monitoring of vehicle loads and vehicles for leaks.

D. ASPECT / ACTIVITY: Construction

No.	IMPACT	L/P	E/S	D/F	C: RE	C: T	Pre- Mitigation Score (Baseline)	L/P	E/S	D/F	C: RE	C: T	Post- Mitigation Score (Impact)	Short Description of Mitigation Measures
1	Poor access control/fencing	32	1	32	8	1	14,8	2	11	4	8	1	5,2	Secure fencing of site to take place before any materials/equipment brought to site. Access to be controlled via locked gate and security services.
2	Demarcation of lay down area	32	2	8	1	1	8,8	32	1	4	1	1	7,8	Lay down area clearly defined before any material/equipment arrives on site. Lay down area to be within development site. Routine site inspection for adherence to lay down area parameters.
3	Ablutions for site labour (non-adherence to designated areas)	32	2	32	1	8	15	32	1	16	1	1	10,2	Training and awareness regarding designated abluion areas and need for adherence. Provision of sufficient abluions area in line with legal requirements on site. Ad hoc site visits to check compliance in line with training.
4	Littering	32	16	16	8	1	14,6	16	2	16	2	1	7,4	Training and awareness regarding littering. Provision of sufficient rubbish bins on site. Ad hoc checks to ensure compliance in line with training.
5	Habitat loss (effect on fauna)	32	1	4	8	1	9,2	32	1	4	8	1	9,2	Due to the nature of the development, a small degree of habitat loss will take place irrespective of mitigation measures.
6	Animal interaction/fatalities	16	1	16	8	1	8,4	16	1	4	8	1	6	Designation of no-go areas on site to be defined at on-site start up meeting.Environmental awareness/training. Routine site compliance checks.
7	Gaseous and particulate emissions due to use of construction vehicles/machinery	32	32	32	1	32	25,8	32	16	32	1	32	22,6	Vehicles serviced regularly/well maintained. Vehicles not allowed to idle for extended periods. Routine site and vehicle checks.

8	Aesthetic impact during construction	32	2	2	1	1	7,6	16	2	2	1	1	4,4	Sympathetic building facades and design to avoid excessive visual impact. Park vehicles and store equipment at designated areas on site. Fugitive particulate emissions minimised by enforcing speed limits on dirt roads and using dust suppression on roads when/if required. Vehicles confined to roads around development site only. Routine site and vehicle checks.
9	Resource use: water	32	1	32	2	1	13,6	32	1	32	2	1	13,6	Training and awareness regarding sound water use/management. Storm water management plan in place at on-site start up meeting. Ad hoc checks to ensure compliance in line with training and management plans/programmes.
10	Resource rehabilitation, restoration and conservation: water													
11	Resource use: land	32	1	32	8	1	14,8	32	1	32	2	1	13,6	Training and awareness regarding land management on site. Ad hoc checks to ensure compliance in line with training and management plans/programmes.
12	Resource rehabilitation, restoration and conservation: land (biodiversity)													
13	Resource use: hydrocarbons/fuels	32	2	32	8	16	18	32	2	32	8	2	15,2	Training and awareness regarding efficient fuel/hydrocarbon use. Ad hoc checks to ensure compliance in line with training and management plans/programmes.
14	Recycling of waste products where possible													
15	Storage of fuels/hazardous chemical substances	32	2	4	32	4	14,8	16	2	4	32	4	11,6	Training and awareness regarding use and storage of fuel/oil/HCSs. Adequate drip trays and spill clean up kits provided. HCSs and fuel stores stored in line with legal requirements. Routine monitoring of vehicle loads and vehicles for leaks.
16	Noise from heavy vehicles	32	2	16	1	1	10,4	16	1	16	1	1	7	Ensure vehicle exhaust pipes in good condition. Vehicles not to be used outside of normal working hours.
17	Training/Skills transfer													
18	Local employment opportunities													
19	Inclusion of heritage/culturally sensitive aspects as part of development													No culturally/heritage sensitive aspects were observed on the proposed development site. Development aesthetic impact to be constructed in sympathy with surrounding structures.

E. ASPECT / ACTIVITY: Operation and Maintenance

No.	IMPACT	L/P	E/S	D/F	C: RE	C: T	Pre- Mitigation Score (Baseline)	L/P	E/S	D/F	C: RE	C: T	Post- Mitigation Score (Impact)	Short Description of Mitigation Measures
1	Poor access control/fencing	32	1	32	8	1	14,8	2	11	4	8	1	5,2	Secure fencing of site to take place before any materials/equipment brought to site. Access to be controlled via locked gate and security services.
2	Disturbance of no-go areas	1	2	32	1	1	7,4	1	1	8	1	1	2,4	No-go areas must be clearly defined and demarcated with information provided as to what is being achieved in terms of rehabilitation and/or conservation. Routine site inspection by maintenance or security personnel to ensure adherence to demarcated areas.
3	Ablutions on site (non-adherence to designated areas)	32	2	32	1	8	15	32	1	16	1	1	10,2	Provision of sufficiently accessible abluion areas in line with legal requirements for site.
4	Littering	32	16	16	8	1	14,6	16	2	16	2	1	7,4	Training and awareness regarding littering. Provision of sufficient rubbish bins on site. Ad hoc checks to ensure compliance in line with training.
5	Habitat/biodiversity restoration and conservation													
6	Gaseous emissions due to fuel storage tanks' vent to atmosphere	32	8	32	1	32	21	32	8	16	1	32	17,8	Fuel storage tanks' fitted with vent to atmosphere must be in line with safety regulations and at appropriate height above ground.
7	Aesthetic impact during normal operation	32	2	2	1	1	7,6	16	2	2	1	1	4,4	Sympathetic building facades and design to avoid excessive visual impact. Park vehicles and store equipment at designated areas on site. Fugitive particulate emissions minimised by enforcing speed limits on dirt roads and using dust suppression on roads when/if required. Vehicles confined to roads and development site only. Routine site and vehicle checks.
8	Resource use: water	32	1	32	2	1	13,6	32	1	32	2	1	13,6	Training and awareness regarding sound water use/management. Storm water management plan in place at on-site start up meeting. Ad hoc checks to ensure compliance in line with training and management plans/programmes.

