ACTIVITY *whether listed or not listed.* *(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads,*	POTENTIAL IMPACT *(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc…etc…)*	ASPECTS AFFECTED	PHASE In which impact is anticipated *(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)*	Magnitude	Duration	Scale	Probability	Significance	Significance without Mitigation	Magnitude	Duration	Scale	Probability	Significance	Significance with Mitigation	EMPr Ref no.	Detailed Mitigation Measures	Mitigation Type (Modify, remedy, control or stop) *e.g. Modify through alternative method; Control through noise control; Control through management and monitoring; Remedy through rehabilitation*	Time period for implementation *(time period when the measures in the environmental management programme must be implemented Measures must be implemented when required)*	Standards to be Achieved *(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc)*	Compliance with Standards *(A description of how each of the recommendations made, will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)*	Responsible person
Construction Phase																					
Terrestrial Ecology																					
North access Road:																					
Vegetation clearance	Direct loss and disturbance of natural habitat and associated flora for species of conservation consern (SoCC)	Terrestrial habitat	Construction Phase	6	4	1	5	55	Moderate	4	3	1	3	24	Low	1,1	- Vegetation clearing should be restricted to the proposed Project footprints only, with no clearing permitted outside of these areas - The footprints to be cleared should be clearly demarcated prior to construction to prevent unnecessary clearing outside of this area; - A search and rescue survey for all flora SoCC (see Appendix C of the terrestrial biodiversity report) should then be conducted within these marked footprints prior to the commencement of construction to determine the number of potentially impacted plant species of conservation concern. Based on the findings of the survey, clearing and/or relocation permits should be obtained from the relevant authority to clear or rescue and relocate potentially impacted plant SCC; and - Exposed soils along the road servitude should be seeded with indigenous grasses, to promote revegetation of disturbed areas, once construction is complet	Rehabilitation	When required	National Environmental Management: Biodiversity Act; Removal of trees in accordance with the requirements of DAFF	With the recommended measures in place, compliance with the guidelines can be achieved	MPM Environmental Leader, ECO, Appointed Contractors
Vegetation clearance	Establishment and spread of alien and invasive species (AIS)	Terrestrial habitat	Construction Phase	6	4	2	4	48	Moderate	4	3	1	3	24	Low	1,2	- An alien invasive species control programme must be developed (or any existing AIS management programmes expanded) to include the active control of alien invasive species that may establish/spread as a result of proposed Project activities. - Alien and invasive species management to be prioritised for the following alien and invasive species control areas: i. Areas where vegetation cover is disturbed; ii. Areas where soils imported from external sources are applied; iii. All rehabilitated areas; iv. Areas within the development area that are already invaded by alien species; v. Road fringes.					
Vehicle and use of equipment/machinery	Injury and mortality of fauna SoCC	Terrestrial habitat	Construction Phase	6	3	1	3	30	Moderate	4	2	1	3	21	Low	1,3	- An Environmental Control Officer (ECO) should be on-site during vegetation clearing to monitor and manage any necessary movement/relocations of fauna SoCC, should the be encountered. The ECO should be trained in inter alia, snake handling and species identification; - A low-speed limit (recommended 20 km/h in areas of highest risk e.g. where roads traverse woodland or riparian/wetland habitat) should be enforced on site to reduce wildlife collisions; - A search and rescue survey for herpetofauna species should be done immediately in advance of site clearance activities. Any observed individuals should be relocated to nearby areas of natural habitats.Where snakes require relocation, this should be done by a certified snake handler for health and safety reasons; - The handling, poisoning or killing of on-site fauna by mine workers and contractors must be strictly prohibited; and - Employees and contractors should be made aware of the presence of, and rules regarding fauna through suitable induction training and on-site signag					
South access Road:																					
Vegetation clearance	Direct loss and disturbance of natural habitat and associated flora SCC	Terrestrial habitat	Construction Phase	4	4	1	5	45	Moderate	4	3	1	3	24	Low	2,1	- Vegetation clearing should be restricted to the proposed Project footprints only, with no clearing permitted outside of these areas - The footprints to be cleared should be clearly demarcated prior to construction to prevent unnecessary clearing outside of this area; - A search and rescue survey for all flora SCC (see Appendix C of the terrestrial biodiversity report) should then be conducted within these marked footprints prior to the commencement of construction to determine the number of potentially impacted plant species of conservation concern. Based on the findings of the survey, clearing and/or relocation permits should be obtained from the relevant authority to clear or rescue and relocate potentially impacted plant SCC; and - Exposed soils along the road servitude should be seeded with indigenous grasses, to promote revegetation of disturbed areas, once construction is complet	Control through management	When required	National Environmental Management: Biodiversity Act; Removal of trees in accordance with the requirements of DAFF	With the recommended measures in place, compliance with the guidelines can be achieved	MPM Environmental Leader, ECO, Appointed Contractorsager
Vegetation clearance	Establishment and spread of alien and invasive species	Terrestrial habitat	Construction Phase	8	4	2	5	70	High	4	3	1	3	24	Low	2,2	- An alien invasive species control programme must be developed (or any existing AIS management programmes expanded) to include the active control of alien invasive species that may establish/spread as a result of proposed Project activities. - Alien and invasive species management to be prioritised for the following alien and invasive species control areas: i. Areas where vegetation cover is disturbed; ii. Areas where soils imported from external sources are applied; iii. All rehabilitated areas; iv. Areas within the development area that are already invaded by alien species; v. Road fringes.					
Vehicle and use of equipment/machinery	Injury and mortality of fauna SoCC	Terrestrial habitat	Construction Phase	4	3	2	3	27	Low	2	2	1	3	15	Low	2,3	- An Environmental Control Officer (ECO) should be on-site during vegetation clearing to monitor and manage any necessary movement/relocations of fauna SoCC should they be encountered. The ECO should be trained in inter alia, snake handling and species identification; - A low-speed limit (recommended 20 km/h in areas of highest risk e.g. where roads traverse woodland or riparian/wetland habitat) should be enforced on site to reduce wildlife collisions; - A search and rescue survey for herpetofauna species should be done immediately in advance of site clearance activities. Any observed individuals should be relocated to nearby areas of natural habitats.Where snakes require relocation, this should be done by a certified snake handler for health and safety reasons; - The handling, poisoning or killing of on-site fauna by mine workers and contractors must be strictly prohibited; and - Employees and contractors should be made aware of the presence of, and rules regarding fauna through suitable induction training and on-site signag					
Heritage/ palaeontological resources																					
The potential to impact on local graves within the area and in particular unmarked graves associated with historic black homesteads	Some level of disturbance is expected to occur to site MPM 05 and MPM 03 during this phase	Heritage/ palaeontological resources	Construction Phase	8	5	2	4	60	Moderate	4	3	3	2	20	Low	3,1	- A 50 meter no-development buffer, as per SAHRA guidelines, must be in place for the burial ground a**MPM 05**, - If this is not possible the cemetery must be relocated following a full grave relocation process that must include at a minimum the following: i. A grave relocation process must be undertaken; ii. A detailed social consultation process, at least 60 days in length, comprising the attempted identification of the next-of-kin in order to obtain their consent for the relocation; iii. Bilingual site and newspaper notices indicating the intent of the relocation; iv. Permits from all the relevant and legally required authorities; v. An exhumation process that keeps the dignity of the remains and family intact; vi. An exhumation process that safeguards the legal rights of the families as well as that of the mining company; vii. The process must be done by a reputable company well versed in the mitigation of graves - Should the development footprints change or be altered in any way, these changes must be assessed in the field by a heritage specialist/archaeologist before construction commences; - In all cases where sites are located near existing tar roads, and on the condition that the proposed construction work will in no way expand wider than the existing road surface in these areas, the mitigation measures recommended for the sites identified in this report will not be required. However, should the proposed construction expand anything wider than the existing road surface, the mitigation measures outlined in this report for these sites would be required; - Contractors and personnel involved in clearing and earthworks should be required to participate in training and awareness programs to ensure that they are aware of work stoppage and reporting procedures should archaeological sites or graves be exposed during development activities; - All employees and contractors are required to stop work and report any additional heritage or archaeological site discovered in the vicinity of the construction activity, to a heritage practitioner so that an investigation and evaluation of the findings can be made. No heritage artefacts or graves may be destroyed or moved without the necessary permits.	Control through management	Throughout establishent and construction phase	Cultural/heritage aspects must be managed in accordance with the:National Heritage Resources Act, 1999	With the recommended measures in place, compliance with the guidelines can be achieved	MPM Environmental Leader, ECO, Appointed Contractors Leader, Site Manager
Aquatic Biodiversity																					
Clearing and disturbance of vegetation along road access footprint	Loss and disturbance of indigenous vegetation	Aquatic biodiversity	Construction Phase	4	4	1	3	27	Low	2	2	1	2	10	Low	4,1	- No maintenance of vehicles within 500m of regulated wetland boundary The construction vehicles must be inspected for possible oil leaks prior site access, during construction and when leaving site. The use of a drip tray under all stationary vehicles is mandatory within the regulated area.	Control through management	Throughout establishent and construction phase	Compliance with local legislation regulation guidelines, including NEMA, MPRDA and NWA	With the recommended measures in place, compliance with the guidelines can be achieved	MPM Environmental Leader, ECO, Appointed Contractors
Removal and levelling of topsoil in access road footprint	Direct loss of soils in footprint. Compaction of soils and increased surface water runoff during periods of high rainfall, leading to erosion of remnant soils in the watercourse catchment	Aquatic biodiversity	Construction Phase	6	4	1	3	33	Moderate	4	2	1	2	14	Low	4,2	- Construction activities must be undertaken during the dry season (May to September) as far as possible. Control existing stands of AIS vegetation in the road construction footprint and along access routes prior to construction commencement. Limit the movement of vehicles in the construction footprint to limit the spread of alien invasive species					
Removal and levelling of topsoil in access road footprint	Interruption/interference of hydrology (i.e. changes of surface water flows from catchment)	Aquatic biodiversity	Construction Phase	4	3	2	2	18	Low	2	2	1	2	10	Low	4,3	- Construction activities must be undertaken during the dry season (May to September) as far as possible - Where possible, construction activities must be completed within one month					
Set up of temporary construction laydown area	Loss and disturbance of indigenous vegetation, soil compaction	Aquatic biodiversity	Construction Phase	4	2	1	2	14	Low	2	1	1	2	8	Low	4,4	- Construction activities must be undertaken during the dry season (May to September) as far as possible - Where possible, construction activities must be completed within one month. - Limit the use of machinery movement within watercourses during road construction activities					
Transportation of construction material	Contamination of soil and downstream resources due to hydrocarbons and oil spillages from vehicle during site preparation	Aquatic biodiversity	Construction Phase	4	2	2	3	24	Low	2	1	1	2	8	Low	4,5	- Construction activities must be undertaken during the dry season (May to September)					
Transportation of construction material	Establishment and spread of AIS	Aquatic biodiversity	Construction Phase	4	2	2	2	16	Low	2	1	1	2	8	Low	4,6	- Make use of light grading machinery while working in the watercourse to limit compaction and soil erosior - Limit the use of equipment to one motor grader at a time. Grading activities must be undertaken during the dry seaso					
Construction of crossings within the 500 m buffer of watercourses (drainage lines / non-perennial watercourses)	Interruption/interference of hydrology due to presence of culverts	Aquatic biodiversity	Construction Phase	4	2	2	2	16	Low	2	1	2	2	10	Low	4,7	- Construction activities must be undertaken during the dry season (May to September) as far as possible - Topsoil replacement and revegetation must be limited to the affected footprint as possible. - Excavated soils will need to be replaced in the same order as removed, i.e. sub-soil must be replaced first and topsoil must be replaced last. This will maximize opportunity for swift re-vegetation of disturbed areas					
Placement and compaction of fill material	Soil compaction, surface water runoff leading to increased soil erosion	Aquatic biodiversity	Construction Phase	6	4	2	3	36	Moderate	4	2	1	2	14	Low	4,8	- Similarly, topsoil removal must be limited to the road footprint. Topsoil must be stored separately from subsoil and must be stored in a manner that it can be reused afte construction. - Any excavated soils should be offloaded at designated stockpile area situated well away from the watercourse					
Replacement of topsoil and rehabilitation of disturbed areas within the watercourse	Sediment displacement	Aquatic biodiversity	Construction Phase	4	3	2	3	27	Low	2	2	1	2	10	Low	4,9	- Exposed soils along the road servitude should be seeded with indigenous grasses, to promote revegetation of disturbed areas, once construction is complete.					
Replacement of topsoil and rehabilitation of disturbed areas within the watercourse	Contamination due to hydrocarbons and oil spillages from vehicle during rehabilitation	Aquatic biodiversity	Construction Phase	4	2	1	3	21	Low	2	1	1	2	8	Low	4,10	- No maintenance of vehicles within 500m of regulated wetland boundary. - The vehicles must be inspected for possible oil leak prior site access, during rehabilitation and when leaving site. - The use of drip tray under all stationery vehicles is mandatory within regulated area; however, it is recommended that no vehicles are parked overnight at the construction area, and are rather moved to secure mine facilities for longer term storage.					

ACTIVITY *whether listed or not listed.* *(E.g. Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads,*	POTENTIAL IMPACT *(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc…etc…)*	ASPECTS AFFECTED	PHASE In which impact is anticipated *(e.g. Construction, commissioning, operational Decommissioning, closure, post-closure)*	Magnitude	Duration	Scale	Probability	Significance	Significance without Mitigation	Magnitude	Duration	Scale	Probability	Significance	Significance with Mitigation	EMPr Ref no.	Detailed Mitigation Measures	Mitigation Type (Modify, remedy, control or stop) *e.g. Modify through alternative method; Control through noise control; Control through management and monitoring; Remedy through rehabilitation*	Time period for implementation *(time period when the measures in the environmental management programme must be implemented Measures must be implemented when required)*	Standards to be Achieved *(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc)*	Compliance with Standards *(A description of how each of the recommendations made, will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)*	Responsible person
Traffic																				
Construction of the activites for the project	- Increase in construction vehicles in the area; - Slow-moving construction vehicles on the surrounding roads may cause accidents.	Traffic	Construction Phase	4	2	1	3	21	Low	2	2	1	2	10	Low	5,1	- Speed limits will be reduced to 40 km/h to reduce dust and noise generation; - Where possible the transportation of construction materials and rubbish shall be undertaken outside traffic peak hours to minimise inconveniencing other road users; - The number of construction vehicles and trips shall be kept to a minimum; - All the construction vehicles shall undergo maintenance on a regular basis to ensure the combustion engine vehicle efficiency.	Control through management	Throughout establishent and construction phase	Compliance with MPM's traffic mangagement plan	With the recommended measures in place, compliance with the guidelines can be achieved	MPM Environmental Leader, ECO, Appointed Contractors
Waste																				
- Poor waste management will result in the contamination of surface runoff resulting in the deterioration of water quality of the watercourse; - Disposal of hazardous waste including hydrocarbon contaminated soils, rags etc. will result in the contamination of surface runoff resulting in the deterioration of water quality of the watercourse; - Stockpiling material resulting in secondary pollution and contamination of the watercourses.	- There is potential for the site and surrounding areas to become polluted if construction activities are not properly managed (e.g. o / bitumen spills, litter from personnel on-site, sewage from ablutions etc.); - Potential off-site pollution as a result of accidental spillages of petrochemicals or concrete; and - Waste generation could be created by the following: - Solid waste - plastics, metal, wood, concrete, stone; - Chemical waste- petrochemicals, resins and paints; and - Stockpiling material resulting in secondary pollution and contamination of the watercourses	Waste	Construction Phase	6	3	1	3	30	Moderate	4	2	1	3	21	Low	6,1	- All waste generated on-site during construction must be adequately managed. Separation and recycling of different waste materials is supporte - All solid waste should be disposed of at a registered landfill site and records maintained to confirm safe disposal; - Adequate scavenger-proof refuse disposal containers must be supplied to control solid waste on-site; - It must be ensured that existing waste disposal facilities in the area are able to accommodate the increased waste generated from the proposed construction; - Chemical waste must be stored in appropriate containers and disposed of at a licensed disposal facility; Hazardous Chemical Substances Regulations promulgated in terms of the Occupational Health and Safety Act (Act No. 85 of 1993) must be adhered to. This applies to solvents and other chemicals possibly used during the construction process; - Portable sanitation facilities must be erected for construction personnel. - Use of these facilities must be enforced (these facilities should be kept clean so that they are a desired alternative to the surrounding vegetation). These facilities must also be monitored and serviced regularly so as to prevent contamination of the water resources. - The construction site must be inspected for litter on a daily basis. Extra care should be taken on windy days. - Precautions should be taken to avoid litter from entering the drainage line; - Soil that is contaminated with, e.g. cement, petrochemicals or paint, must be disposed of at a registered waste disposal site and is not to be deposited into the drainage line; and - Hazardous substance storage must not take place within 50m of a watercourse or within the 1:100 year floodline; and; - Any significant spills on-site must be reported to the relevant Authority (e.g. Department of Water and Sanitation / Municipality / DMRE etc.) and must be remediated as per the EMPr	Control through management	All project phases	In compliance with principles contained in the MPRDA, 2002 and NEMA, 1998	With the recommended measures in place, compliance with the guidelines can be achieved	Site Manager to ensure compliance with the guidelines as stipulated in the EMPR. Compliance to be monitored by the Environmental Control Officer
Air Quality																				
Construction and utilisation of the access road.	Impact on surrounding sensitive receptors due to increased dust and particulate matter.	Ambient air quality	Construction Phase	6	3	2	3	33	Moderate	4	2	1	3	21	Low	7,1	- Modifying or ceasing loading activities during dry and high wind condition - Avoid double handling of material, where possible. - Minimising the drop height of the material from truck loads/transfer points. A drop height policy should be maintained on-site and all equipment operators should be trained in the policy such that drop height reduction is implemented during materials handling activities. - Using water carts with boom sprayers or wet suppression systems. - The height of existing berms at stockpiles must be increased, reducing the impact of winds on the stockpile. - Maintaining the stockpile moisture level to avoid further entrainment of particles. - Dust suppression along the gravel road, and other disturbed areas. - Effective maintenance of diesel driven vehicles to manage the greenhouse gases	Control: Dust suppression methods and proper housekeeping.	Throughout the site establishment and construction phase.	National Environmental Management: Air Quality Act, 2004; (Act No. 39 of 2004) National Dust Control Regulations: The dust deposition monitoring is based on the ASTM International standard method for collection and analysis of dustfall (ASTM D1739)	With the recommended measures in place, compliance with the guidelines can be achieved	Stakeholder Manger, MPM ECO, Appointed Contractors
Social																				
Construction activities	- Positive impact on livelihoods; - Positive impact on general transportation; - Generation of dust potentially resulting in a health and nuisance impact - Impact on safety and security as a result of theft, the occurrence of additional trucks on the roads, uncontrolled lighting of fires on site, littering and driving irresponsibly; - Health and safety risk as a result of the movement of vehicles increasing the risk of accidents.	Socio-economic	Construction Phase	8	2	2	4	48	Moderate	8	2	2	5	60	Moderate	8,1	- MPM to increase the probability of retaining staff by implementing the MPM policy of upskilling employee skills where necessary and possible, and aligning with the MPM SLP; - MPM must inform companies it procures goods and services from of any procurement gaps during the development of project, so that affected companies can plan accordingly; - To increase magnitude of the impact, increase the probability of retaining staff by implementing the MPM policy of upskilling employees where necessary, and aligning with the MPM's SLP; - Reduce speed limits to 40 km/h. Speed humps may be constructed to help slow vehicles; - The number of vehicles on the roads shall be kept to a minimum.	Control through management	When required	In compliance with MPM's SLP	With the recommended measures in place, compliance with the guidelines can be achieved	Stakeholder Manger, Human Resources, MPM ECO, Appointed Contractors
Noise																				
Construction of the gravel road	- Noise levels along the road will increase during the construction activities due to the use of heavy machinery and vehicles - Bulk Earthworks to achieve specified levels - Sourcing of construction materials	Noise	Construction Phase	4	3	2	3	27	Low	2	2	1	2	10	Low	9,1	- During construction keep noise levels within acceptable limits in compliance with all relevant guidelines and regulations such as SANS 10103: 2008. - All equipment and vehicles must be regularly serviced to prevent excessive noise. - Vehicles and equipment generating excessive noise should be fitted with appropriate noise abatement measures. - Personal Protective Equipment ("PPE") must be worn at all times during construction of the proposed activities. PPE register to be kept	Control: Noise suppression methods and proper housekeeping	Throughout the site establishment and construction phase.	Noise generation must be managed in accordance with the: - NEM:AQA. 2004 Regulation 6(1); - NRTA, 1996; - SANS 10103 - Acceptable Ambient Noise Levels	With the recommended measures in place, compliance with the guidelines can be achieved	MPM Environmental Leader, ECO, Appointed Contractors
Operational Phase																				
Air Quality																				
Operation of the north and south access roads	Increased levels of fugitive dust when utilising access roads	Ambient air quality	Operational Phase	6	3	1	3	30	Moderate	4	2	1	3	21	Low	10,1	- Dust suppression along the gravel road, and other disturbed areas. - Dust fallout monitoring plan must be developed and effectively implemented. - Effective maintenance of diesel driven vehicles to manage the greenhouse gases. - MPM must continue to monitor dust as per the MPM's dust monitoring programme.	Control through management	Ongoing	National Environmental Management: Air Quality Act, 2004; (Act No. 39 of 2004) National Dust Control Regulations: The dust deposition monitoring is based on the ASTM International standard method for collection and analysis of dustfall (ASTM D1739)	With the recommended measures in place, compliance with the guidelines can be achieved	MPM Environmental Leader, ECO, Appointed Contractors
Aquatic Biodiversity																				
Presence and maintenance of access road at watercourse crossings	Contamination due to hydrocarbons and oil spillages from vehicle during operation, soil erosion, and the spread of alien invasive species within the watercourse	Aquatic biodiversity	Operational Phase	4	4	2	2	20	Low	2	2	1	2	10	Low	11,1	- Culvert crossing must be maintained regularly, Mine vehicles must be inspected for possible oil leaks regularly.	Control through management	Ongoing	Compliance with local legislation regulation guidelines, including NEMA, MPRDA and NWA	With the recommended measures in place, compliance with the guidelines can be achieved	MPM Environmental Leader, ECO, Appointed Contractors
Presence and maintenance of access road at watercourse crossings	Interruption/interference of hydrology as a result of blockage of culverts with debris	Aquatic biodiversity	Operational Phase	4	3	2	3	27	Low	4	1	1	2	12	Low	11,2	- Inspect culverts after periods of high rainfall and remove any accumulated debris to ensure flow is not affected.					
Grading of access roads	Soil compaction, surface water runoff leading to increased soil erosion in catchment of watercourse	Aquatic biodiversity	Operational Phase	4	3	2	3	27	Low	4	1	1	2	12	Low	11,3	- Make use of light grading machinery while working in the watercourse to limit compaction and soil erosion. - Limit the use of equipment to one motor grader at a time. Grading activities must be undertaken during the dry season					
Social																				
Operation of the north and south access roads	- Positive impact on livelihoods - Positive impact on general transportation; - Generation of dust potentially resulting in a health and nuisance impact; - Impact on safety and security as a result of theft, the occurrence of additional trucks on the roads, uncontrolled lighting of fires on site, littering and driving irresponsibly; - Health and safety risk as a result of the movement of vehicles increasing the risk of accidents	Socio-economic	Operational phase	8	2	2	4	48	Moderate	5	2	2	3	27	Low	12,1	- MPM to increase the probability of retaining staff by implementing the MPM policy of upskilling employee skills where necessary and possible, and aligning with the MPM's Social and Labour Plan (SLP); - Reduce speed limits to 40 km/h. Speed humps may be constructed to help slow vehicles; - The number of vehicles on the roads shall be kept to a minimum.	Control through management	Ongoing	In compliance with MPM's SLP	With the recommended measures in place, compliance with the guidelines can be achieved	Stakeholder Manger, Human Resources, MPM ECO, Appointed Contractors
Terrestrial biodiversity (North and South Access Roads)																				
Vehicle movement	Spread of AIS	Terrestrial habitat	Operational Phase	6	4	2	3	36	Moderate	4	2	1	3	21	Low	13,1	- Habitat restoration through active revegetation should be undertaken to restore habitat connectivity where possible; - Adopt reduced impact clearing and construction techniques and time; - Rehabilitation through planting of appropriate plant community will enhance connectivity and prevent potential invasion of pioneer invasive species; - Rehabilitation of such areas should emphasize the use of species of the characteristic flora community; and - Site clearing should be done in the winter months when it is less vulnerable.	Control through management	As required	National Environmental Management: Biodiversity Act; Removal of trees in accordance with the requirements of DAFF	With the recommended measures in place, compliance with the guidelines can be achieved	MPM Environmental Leader, ECO, Appointed Contractors
On-site traffic	Injury and mortality of fauna SCC	Terrestrial habitat	Operational Phase	4	6	2	3	36	Moderate	2	6	1	2	18	Low	13,2	- An alien invasive species control programme must be developed (or any existing AIS management programmes expanded), to include the active control of alien invasive species that may establish/spread as a result of the Project activities; - Alien and invasive species management to be prioritised for the following alien and invasive species control areas: i. Areas where vegetation cover is disturbed. ii. Areas where soils imported from external sources are applied. iii. All rehabilitated areas. iv. Areas within the development area that are already invaded by alien species. v. Road fringes.	Control through management	Ongoing			
Presence the access road	Loss of Ecological connectivity	Terrestrial habitat	Operational Phase	6	5	2	3	39	Moderate	4	1	1	2	12	Low	13,3	- Habitat restoration through active revegetation should be undertaken to restore habitat connectivity where possible - Adopt reduced impact clearing and construction techniques and time; - Rehabilitation through planting of appropriate plant community will enhance connectivity and prevent potential invasion of pioneer invasive species; - Rehabilitation of such areas should emphasize the use of species of the characteristic flora community; and - Site clearing should be done in the winter months when it is less vulnerab	Control through management	Ongoing			
Vehicle movement	Increased dust deposition	Terrestrial habitat	Operational Phase	6	4	2	4	48	Moderate	2	3	1	3	18	Low	13,4	- Excavation activities should be done during calm weather conditions. This will reduce the extent of spread of the particulate matter in the project footprint; - Dust suppression methods such as use of the water bowser should be implemented in and around the construction site regularly, particularly during the dry season; - Speed limits of < 20 km/hour should be communicated via appropriate signage and enforced on all access roads to proposed new infrastructure locations; - Avoid dust generating works during the most windy conditions; and - Frequent wetting of the access roads	Control through management	Ongoing			
Traffic																				
Operation of the north and south access roads	- The movement of vehicles in the project area will result in an increase in traffic on the roads.	Traffic	Operational Phase	8	4	2	2	28	Low	6	4	1	2	22	Low	14,1	- Speed limits will be reduced to 40 km/h to reduce dust and noise generation - The number of hauling trips shall be kept to a minimum; - All the hauling vehicles shall undergo maintenance on a regular basis to ensure the combustion engine vehicle efficien	Control through management	Ongoing	Compliance with MPM's traffic mangagement plan	With the recommended measures in place, compliance with the guidelines can be achieved	MPM Environmental Leader, ECO, Appointed Contractors