

ACTIVITY <i>(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, ablation, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc. etc. etc.)</i>	POTENTIAL IMPACT <i>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc. etc. etc.)</i>	ASPECTS AFFECTED	PHASE In which impact is anticipated <i>(e.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)</i>	Size and Scale of Disturbance <i>(volumes, tonnages, and hectares, or m³)</i>	Magnitude	Duration	Scale	Probability	Significance	Significance without Mitigation	Magnitude	Duration	Scale	Probability	Significance	Significance with Mitigation	EMPR Ref. No.	Detailed Mitigation Measures	Mitigation Type <i>(Modify, remedy, control or stop) e.g. Modify through alternative method; Control through noise control; Control through management and monitoring; Remedy through rehabilitation</i>	Time period for implementation <i>(time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required)</i>	Standards to be Achieved <i>(Impact avoided, noise levels, dust levels, rehabilitation management standards or practices that have been identified by Competent Authorities)</i>	Compliance with Standards <i>(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)</i>	Responsible person
Construction Phase																							
Social																							
Infrastructure demolition	Increased local employment opportunities.	Socio-economic	Construction phase	EA Application area - 60ha	8	2	2	4	48	Positive	8	2	2	5	60	Positive	1.1	Where possible, skilled and unskilled labour must be sourced locally. Local recruitment must take place through the tribal recruitment office and with the knowledge of mutually agreed community structures and recruitment channels / mechanisms. Sub-contractors must sign a compliance agreement with regards to local employment. Sub-contractors must submit labour returns to verify local recruitment where possible.	Control through management	When required	Guidelines as outlined in SLP	With the recommended measures in place, compliance with the guidelines can be achieved	Stakeholder Manger, Human Resources, SBPM ECO, Appointed Contractors
Infrastructure demolition	Increased local business opportunities for small and medium enterprises.	Socio-economic	Construction phase	EA Application area - 60ha	6	2	2	4	40	Positive	6	2	2	5	50	Positive	1.2	Local entrepreneurs and previously disadvantaged contractors must be provided preferential opportunities to tender for contracts.	Control through management	When required	Guidelines as outlined in SLP	With the recommended measures in place, compliance with the guidelines can be achieved	Stakeholder Manger, SBPM ECO, Appointed Contractors
All project activities	Intrusion impacts such as air quality, dust and noise. These impacts may lead to health issues, including respiratory and related diseases.	Socio-economic	Construction phase	EA Application area - 60ha	8	2	2	4	48	Moderate	5	2	2	3	27	Low	1.3	Continuous air quality and dust monitoring must be undertaken. Results should be shared with the appropriate community structures and adjacent landowners and occupants. Air quality management and dust avoidance and suppression activities must be implemented diligently, and the results communicated to the affected stakeholders using the existing communication structures.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
All project activities	Vibration and blasting, causing houses to crack.	Socio-economic	Construction phase	EA Application area - 60ha	4	2	2	3	24	Low	4	2	2	2	16	Low	1.4	Least intrusive blasting practices should be implemented. Notification should also be provided before blasting activities commence. The relocation process will have a beneficial impact on this aspect, as households will be relocated at the appropriate times.	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors, Drill and Blast Manager/Contractor
Infrastructure demolition	Uncertainty regarding relocation procedures and timeframes for the New Pit and the affected mine houses.	Socio-economic	Construction phase	EA Application area - 60ha	6	2	2	4	40	Moderate	2	2	2	4	24	Low	1.5	Stakeholders must be informed of any changes regarding the relocation process. This information needs to be shared as soon as possible. Not sharing may lead to rumours and related social mobilisation.	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	Stakeholder Manger, SBPM ECO, Appointed Contractors
Noise																							
Infrastructure demolition	Construction phase impacts of noise on sensitive receptors SR1, SR2 and SR6	Noise	Construction phase	EA Application area - 60ha	4	3	2	2	18	Low	2	3	2	2	14	Low	2.1	Earth screening berms at least three metres high in the vicinity towards the residential areas located north of the New pit. Using the smallest/quietest equipment for the particular purpose. It is recommended that a maximum speed of 40-60 km/h should be set on all roads.	Control through management	Construction phase	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Infrastructure demolition	Construction phase impacts of noise on sensitive receptors SR3, SR4 and SR5	Noise	Construction phase	EA Application area - 60ha	8	3	2	4	52	Moderate	6	3	2	3	33	Moderate	2.1	Earth screening berms at least three metres high in the vicinity towards the residential areas located north of the New pit. Using the smallest/quietest equipment for the particular purpose. It is recommended that a maximum speed of 40-60 km/h should be set on all roads.	Control through management	Construction phase	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Blasting																							
Houses, L (Community Housing, Mini Substation, Office (Building), Tank	Ground vibration could possibly damage the houses or infrastructure, upset people and occupants of houses	Vibration	Construction phase	EA Application area - 42ha	8	3	1	4	48	Moderate	4	3	1	2	16	Low		To prevent the damage to houses or infrastructure not owned by the mine, upset people and occupants of houses, the following mitigation actions are to be applied: - Specific blast design and planning to be considered, use of specialist to assist with drilling and blasting mitigation - Possible relocation - Possible purchase.	Control through management	When required		With the recommended measures in place, compliance with the ambient standards and guidelines can be achieved	Drill and Blast Manager/Contractor
Sports terrain	Ground vibration could possibly upset the people and damage infrastructure	Vibration	Construction phase	EA Application area - 42ha	8	3	1	4	48	Moderate	4	3	1	2	20	Low	3.1		Control through management	When required		With the recommended measures in place, compliance with the ambient standards and guidelines can be achieved	Drill and Blast Manager/Contractor
ZCC (Building)	Ground vibration could possibly damage the buildings or infrastructure, upset people and occupants	Vibration	Construction phase	EA Application area - 42ha	8	3	1	4	48	Moderate	4	3	1	2	14	Low			Control through management	When required	-National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) • Mine Health and Safety Act, 1996 (Act No. 29 of 1996) • Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) • Explosives Act, 2003 (Act No. 15 of 2003)	With the recommended measures in place, compliance with the ambient standards and guidelines can be achieved	Drill and Blast Manager/Contractor
Houses	Air blast could possibly damage the houses or infrastructure not owned by the mine, upset people and occupants of houses	Air Blast	Construction phase	EA Application area - 42ha	8	1	2	5	55	Moderate	4	3	1	2	16	Low	3.2	To prevent the damage to houses or infrastructure not owned by the mine, upset people and occupants of houses, the following mitigation actions are to be applied: - Specific blast design and planning to be considered, use of specialist to assist with drilling and blasting mitigation - Possible relocation - Possible purchase.	Remedy	When required		With the recommended measures in place, compliance with the guidelines can be achieved	Drill and Blast Manager/Contractor
L (Community Housing, Mini Substation, Office (Building), reservoir, rugby club (sports terrain), stands (public), ZCC building)	Air blast could possibly damage the infrastructure not owned by the mine, upset people and occupants of houses	Air Blast	Construction phase	EA Application area - 42ha	8	1	2	4	44	Moderate	4	3	1	2	16	Low			Control through management	When required		With the recommended measures in place, compliance with the guidelines can be achieved	Drill and Blast Manager/Contractor
86kV (powerlines/pulons), conveyor, houses, L (Community Housing, Mini Substation, Monorail, Office (Building), reservoir, stands (public), tank, ZCC building)	Fly rock could cause possible damage to infrastructures, fatality or injury to people or animals	Fly rock	Construction phase	EA Application area - 42ha	8	1	2	4	44	Moderate	4	3	1	2	16	Low		To prevent the damage to informal houses or infrastructure not owned by the mine, upset people and occupants of houses, the following mitigation actions are to be applied: - Specific blast design and planning to be considered, use of specialist to assist with drilling and blasting mitigation - Evacuation within exclusion zone before blasting. - Possible relocation/purchase	Control through management	When required		With the recommended measures in place, compliance with the guidelines can be achieved	Drill and Blast Manager/Contractor
Pool (swimming pool), rugby club (sports terrain)	Fly rock could cause possible damage to pool or infrastructures, fatality or injury to people or animals	Fly rock	Construction phase	EA Application area - 42ha	8	1	2	4	44	Moderate	4	3	1	2	16	Low	3.3		Remedy	When required		With the recommended measures in place, compliance with the guidelines can be achieved	Drill and Blast Manager/Contractor
Decline No 1 (Shaft)	Fly rock could cause possible damage to pool or infrastructures, fatality or injury to people or animals	Fly rock	Construction phase	EA Application area - 42ha	8	1	2	4	48	Moderate	4	3	1	2	16	Low			Control through management	When required		With the recommended measures in place, compliance with the guidelines can be achieved	Drill and Blast Manager/Contractor
Geochemical																							
Mining Activities	Opencast mining at SBPM will start with the construction of a box cut. Ground water seeping into the open void, direct rainfall and runoff will be in contact with the different lithological material dominated by pyroxenite, norite and anorthosite as well as sulfide bearing ore. Exposure of sulfides in ore can cause acid generation and/or metal leaching with elevated salinity levels (total dissolved solids, sulfate) that could exceed the WUL limit and South African Water quality guidelines.	Groundwater	Construction phase	EA Application area - 60ha	6	3	1	4	40	Moderate	4	3	1	3	24	Low	3.1	Prevent the accumulation of excess water in open voids by pumping excess water from pit to the Pollution Control Dams.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Mining Activities	Chemical leaks/spills from mining vehicles and machinery resulting in contamination seepage into groundwater.	Groundwater	Construction phase	EA Application area - 60ha	8	3	1	4	48	Moderate	2	3	1	1	6	Low	3.2	Avoid leaks and spillages by maintaining mining vehicles and equipment. In case spills/leaks do occur, ensure they are cleared immediately, and contaminated soils disposed of following the Spill Prevention and Emergency Response Plan - Drip trace should be provided in heavy vehicle parking and maintenance areas.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Mining Activities	Seepage from the waste rock stockpiles due to rainfall recharge, and run-off is anticipated which might result in potential groundwater and surface water resources contamination	Groundwater	Construction phase	EA Application area - 60ha	4	3	1	4	32	Moderate	2	3	1	1	6	Low	3.3	Waste rock stockpiles must be within the draw/drop of depression of the New pit to ensure seepage reports to the pit where continuous pumping of the water should be maintained. Stormwater management system for collection of contaminated runoff from the waste rock stockpiles to the PCD's.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Air Quality																							
Infrastructure demolition	Fugitive dust emissions as a results of demolition of infrastructure	Air Quality	Construction phase	EA Application area - 60ha	4	1	1	2	12	Low	4	1	1	1	6	Low	4.1	—Use of water sprays during construction activities, thereby limiting the dispersion of particulate emissions; —Continuous wetting of the access road during vehicle transport.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Surface water																							
Vegetation clearance as project infrastructure is constructed	Disturbance of soil resulting in erosion and increased sedimentation to water resources.	Surface Water	Construction phase	EA Application area - 60ha	8	3	2	4	52	Moderate	4	3	1	3	24	Low	5.1	Avoid clearing during heavy rainfall periods (December, January, and February); try to do clearing during winter so that run-off will be limited. Minimize procedures on land clearance, soils handling and rehabilitation plan to be adhered to; Drainage channels and settling ponds (even temporary if needed in construction phase) must be developed, and direct runoff away from cleared areas, but not into streams or rivers. Rehabilitate all sediment deposited from erosion events needs to be placed on the topsoil stockpile(s).	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Soil stripping and stockpiling	Loss of soils through erosion, particularly for topsoil stockpiles with unvegetated steep slopes, resulting in increased sedimentation to water resources.	Surface Water	Construction phase	EA Application area - 60ha	8	3	2	4	52	Moderate	4	3	1	3	24	Low	5.2	Minimize Topsoil and subsoil stockpiles must be vegetated once the final stockpiles are constructed; Ripping, replacing soils and revegetating closed areas such as access roads and lay down areas following completion of construction works; Minimise stockpile height to <3 m. Re-use stockpiled soil within as short a period as possible (within 3-5 years). Rehabilitate Implement concurrent rehabilitation measures for soils and protect soil stockpiles from erosion by utilising soils erosion procedures.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Construction of project infrastructure	Increased run-off (and erosion) in compacted areas and modification of natural infiltration. Soil contamination from hydrocarbon and chemical spills including sterilisation by cement pollutants.	Surface Water	Construction phase	EA Application area - 60ha	8	3	2	4	52	Moderate	4	3	1	5	24	Low	5.3	Provide adequate stormwater drainage based on climate, road width, surface material, compaction, and maintenance. Limit access road gradients to reduce runoff-induced erosion. Clean up spillages immediately and dispose of contaminated materials to a permitted waste site.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Vehicles and use of equipment/ machinery	Contamination of soils and downstream water resources by hydrocarbon pollutants. Increased soil compaction and run-off at equipment and machinery laydown areas. Potential spills/ leakage of chemicals such as hydrocarbons.	Surface Water	Construction phase	EA Application area - 60ha	8	3	2	4	52	Moderate	4	3	1	3	24	Low	5.4	Maintain vehicles and equipment. Do not drain directly to water resources, create drains that will ensure clean and dirty water are kept separate. Clean up spillages immediately and dispose of contaminated materials to a permitted waste site.	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Biodiversity																							
Vegetation clearance, topsoil removal and Earthworks for the construction of the New Pit and Overburden stockpile.	Loss of natural habitat	Terrestrial habitat	Construction phase	EA Application area - 17.36ha	6	1	5	5	60	Moderate	4	1	5	5	50	Moderate	6.1	—Vegetation clearing should be restricted to the proposed Project footprints only, with no clearing permitted outside of these areas; and —The footprints to be cleared should be clearly demarcated prior to construction to —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: —Areas where vegetation cover is disturbed. —Areas where soils imported from external sources are applied. —All rehabilitated areas. —Areas within the development area that are already invaded by alien species. —Road fringes. —Overburden Stockpiles footprint —New Pit footprint	Rehabilitation	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
	Disturbance of natural habitat	Terrestrial habitat	Construction phase	EA Application area - 60ha	6	2	2	4	40	Moderate	4	1	2	3	21	Low			Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors

ACTIVITY <i>(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, pipelines, power lines, conveyors, etc. etc. etc.)</i>	POTENTIAL IMPACT <i>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc. etc. etc.)</i>	ASPECTS AFFECTED	PHASE <i>In which impact is anticipated (e.g. Construction, commissioning, operational, decommissioning, closure, post-closure)</i>	Size and Scale of Disturbance <i>(volumes, tonnages, and hectares, or m³)</i>	Magnitude				Significance without Mitigation	Significance with Mitigation				EMPR Ref. No.	Mitigation Type <i>(Modify, remedy, control or stop) e.g. Modify through alternative method; Control through noise control; Control through management and monitoring; Remedy through rehabilitation</i>	Time period for implementation <i>(time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required)</i>	Standards to be Achieved <i>(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc)</i>	Compliance with Standards <i>(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)</i>	Responsible person			
					Duration	Scale	Probability	Significance		Duration	Scale	Probability	Significance									
	Loss of flora species of conservation importance	Terrestrial habitat	Construction phase	EA Application area - 60ha	4	1	5	3	Moderate	2	1	5	2	16	Low	6.3	A grid survey of natural habitat patches within the proposed open pit footprint should be conducted during the wet/dry season prior to vegetation clearing to determine whether there are any flora species of conservation concern present, and mark them for	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
	Injury and mortality of fauna species	Terrestrial habitat	Construction phase	EA Application area - 60ha	6	2	4	3	Moderate	2	1	4	2	14	Low							
Wetlands																						
Vegetation clearance, topsoil removal and Earthworks for the construction of the New Pit and Overburden stockpile.	Alteration of sub-catchment hydrology	Wetland hydrology & Biodiversity	Construction phase	EA Application area - 60ha	6	4	2	3	Moderate	4	4	2	2	20	Low	7.1	Vegetation clearing should be restricted to the proposed infrastructure footprints only, with no clearing permitted outside of this area;	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
	Increased erosion and sediment movement into wetlands	Wetland hydrology & Biodiversity	Construction phase	EA Application area - 60ha	6	4	2	3	Moderate	4	4	2	2	20	Low	7.2	Installation of the sediment and solid waste trapping measures must be implemented during the construction and operational phases of the development (e.g. sediment fencing, litter traps or similar); Locate all stockpiles, laydown areas and construction infrastructure outside a minimum buffer distance of 46 m from the edge of delineated wetland	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
		Wetland hydrology & Biodiversity	Construction phase	EA Application area - 60ha	6	4	3	3	Moderate	4	4	3	2	22	Low	7.3	Pollution prevention measures must be installed for the protection of the wetlands and drainage lines from contamination with hydrocarbons, sediments and other chemicals; Appropriate land use management of the 46 m buffer zone will be integral to minimise the likelihood of increase degradation of the W01 throughout the construction and operational phase of the project. The following measures are recommended: Limit the amount of disturbance to the buffer zone by vehicles, foot traffic, or livestock; Manage alien plant encroachment through pro-active monitoring and clearing of the buffer zone; Where bare areas of soil or erosion is observed within the buffer zone, particularly in the wet season, these areas should be stabilized and reseeded to prevent further damage to the wetland.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
	Water quality impacts	Wetland hydrology & Biodiversity	Construction phase	EA Application area - 60ha	4	4	3	3	Moderate	4	4	3	2	22	Low	7.4	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: Areas where vegetation cover is disturbed; Areas where soils imported from external sources are applied; All rehabilitated areas; Areas within the development area that are already invaded by alien species; Road fringes; Overburden Stockpiles footprint New Pit footprint	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
	Establishment of alien invasive vegetation	Wetland hydrology & Biodiversity	Construction phase	EA Application area - 60ha	4	4	3	3	Moderate	4	4	3	2	22	Low	7.4	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: Areas where vegetation cover is disturbed; Areas where soils imported from external sources are applied; All rehabilitated areas; Areas within the development area that are already invaded by alien species; Road fringes; Overburden Stockpiles footprint New Pit footprint	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Operational Phase																						
Social																						
All project activities	Sustained local employment	Socio-economic	Operational phase	EA Application area - 60ha	4	4	2	2	Low	2	4	2	2	16	Low	8.1	Earth screening berms at least three metres high in the vicinity towards the residential areas located north of the New pit; A drop height policy should be implemented onsite to reduce the level of noise generation when handling materials. All equipment operators should be trained in the policy such that drop height reduction is implemented onsite; Using the smallest/quietest equipment for the particular purpose; It is recommended that a maximum speed of 40-60 km/h should be set on all roads.	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
All project activities	Intrusion impacts such as air quality, dust and noise. These impacts may lead to health issues, including respiratory and related diseases.	Socio-economic	Operational phase	EA Application area - 60ha	8	2	2	4	Moderate	5	2	2	3	27	Low	1.3	Continuous air quality and dust monitoring must be undertaken. Results should be shared with the appropriate community structures and adjacent landowners and occupants. Air quality management and dust avoidance and suppression activities must be implemented diligently, and the results communicated to the affected stakeholders using the existing communication structures.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
All project activities	Vibration and blasting, causing houses to crack.	Socio-economic	Operational phase	EA Application area - 60ha	4	2	2	3	Low	4	2	2	2	16	Low	1.4	Least intrusive blasting practices should be implemented. Notification should also be provided before blasting activities commence. The relocation process will have a beneficial impact on this aspect, as households will be relocated at the appropriate times.	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Noise																						
All project activities	Operational phase impacts of noise on sensitive receptors SR1, SR2 and SR6	Air Quality	Operational phase	EA Application area - 60ha	4	4	2	2	Low	2	4	2	2	16	Low	1.1	Earth screening berms at least three metres high in the vicinity towards the residential areas located north of the New pit; A drop height policy should be implemented onsite to reduce the level of noise generation when handling materials. All equipment operators should be trained in the policy such that drop height reduction is implemented onsite; Using the smallest/quietest equipment for the particular purpose; It is recommended that a maximum speed of 40-60 km/h should be set on all roads.	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
All project activities	Operational phase impacts of noise on sensitive receptors SR3, SR4 and SR5	Air Quality	Operational phase	EA Application area - 60ha	10	4	2	5	High	8	4	2	4	56	Moderate	8.2	Relocation of receptors, if not possible, the buffer should be increased and mitigation measures should be adhered to as outlined in EMPr	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Air Quality																						
All project activities	Operational impacts on surrounding receptors (R4, R8 and R11) are exceeding the prescribed PM10 24-hourly standard.	Air Quality	Operational phase	EA Application area - 60ha	10	3	3	5	High	8	2	2	4	48	Moderate	9.1	Buffer zone of 100 meters from the New pit is sufficient in minimising emissions on receptors. It is recommended that these receptors be relocated. Should these receptors be unable to be relocated, it is recommended that the current buffer zone be extended to the SBPM mining rights boundary, as the current 100m buffer zone is insufficient in minimising impacts on surrounding receptors	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
All project activities	Operational	Air Quality	Operational phase	EA Application area - 60ha	10	3	3	5	High	8	2	2	4	48	Moderate	9.2	Use of water sprays during crushing activities (given that crushing is the largest contributor of emissions to the atmosphere from the proposed New pit operations) and further, by creating a protective berm at the crushing area to serve as a barrier; Use of water sprays at crushing and transfer points; Wetting of exposed stockpiles to limit the dispersion of wind-blown dust and particulate emissions; Blasting should not occur after day-time hours; Wind direction must be determined before blasting. Blasting should be prevented at times when the wind direction is towards the community and during high wind speed events; Avoid dust generating works during the most windy conditions; and Prevent wetting of the access roads.	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Blasting																						
Houses, L (Community Housing, Mini Substation, Office (Building), Tank	Ground vibration could possibly damage the houses or infrastructure, upset people and occupants of houses	Vibration	Operational phase	EA Application area - 42ha	8	3	1	4	Moderate	4	3	1	2	16	Low	2.1	To prevent the damage to houses or infrastructure not owned by the mine, upset people and occupants of houses, the following mitigation actions are to be applied: - Specific blast design and planning to be considered, use of specialist to assist with drilling and blasting mitigation - Possible relocation - Possible purchase.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	Drill and Blast Manager/Contractor
Sports terrain	Ground vibration could possibly upset the people and damage infrastructure	Vibration	Operational phase	EA Application area - 42ha	8	3	1	4	Moderate	4	3	1	2	20	Low	2.1	To prevent the damage to houses or infrastructure not owned by the mine, upset people and occupants of houses, the following mitigation actions are to be applied: - Specific blast design and planning to be considered, use of specialist to assist with drilling and blasting mitigation - Possible relocation - Possible purchase.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	Drill and Blast Manager/Contractor
ZCC (Building)	Ground vibration could possibly damage the buildings or infrastructure, upset people and occupants	Vibration	Operational phase	EA Application area - 42ha	8	3	1	4	Moderate	4	3	1	2	14	Low	2.1	To prevent the damage to houses or infrastructure not owned by the mine, upset people and occupants of houses, the following mitigation actions are to be applied: - Specific blast design and planning to be considered, use of specialist to assist with drilling and blasting mitigation - Possible relocation - Possible purchase.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	Drill and Blast Manager/Contractor
Houses	Air blast could possibly damage the houses or infrastructure not owned by the mine, upset people and occupants of houses	Air Blast	Operational phase	EA Application area - 42ha	8	1	2	5	Moderate	4	3	1	2	16	Low	2.2	To prevent the damage to houses or infrastructure not owned by the mine, upset people and occupants of houses, the following mitigation actions are to be applied: - Specific blast design and planning to be considered, use of specialist to assist with drilling and blasting mitigation	Remedy	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	Drill and Blast Manager/Contractor
L (Community Housing, Mini Substation, Office (Building), reservoir, rugby club (sports terrain), stands (public), ZCC building	Air blast could possibly damage the infrastructure not owned by the mine, upset people and occupants of houses	Air Blast	Operational phase	EA Application area - 42ha	8	1	2	4	Moderate	4	3	1	2	16	Low	2.2	To prevent the damage to houses or infrastructure not owned by the mine, upset people and occupants of houses, the following mitigation actions are to be applied: - Specific blast design and planning to be considered, use of specialist to assist with drilling and blasting mitigation	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	Drill and Blast Manager/Contractor
RNAV (powerlines/pipes), conveyor, houses, L (Community Housing, Mini Substation, Monorail, Office (Building), reservoir, stands (public), tank, ZCC building	Fly rock could cause possible damage to infrastructures, fatality or injury to people or animals	Fly rock	Operational phase	EA Application area - 42ha	8	1	2	4	Moderate	4	3	1	2	16	Low	2.3	To prevent the damage to informal houses or infrastructure not owned by the mine, upset people and occupants of houses, the following mitigation actions are to be applied: - Specific blast design and planning to be considered, use of specialist to assist with drilling and blasting mitigation	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	Drill and Blast Manager/Contractor
Pool (swimming pool), rugby club (sports terrain)	Fly rock could cause possible damage to pool or infrastructures, fatality or injury to people or animals	Fly rock	Operational phase	EA Application area - 42ha	8	1	2	4	Moderate	4	3	1	2	16	Low	2.3	To prevent the damage to informal houses or infrastructure not owned by the mine, upset people and occupants of houses, the following mitigation actions are to be applied: - Specific blast design and planning to be considered, use of specialist to assist with drilling and blasting mitigation	Remedy	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	Drill and Blast Manager/Contractor
Decline No 1 (Shaft)	Fly rock could cause possible damage to pool or infrastructures, fatality or injury to people or animals	Fly rock	Operational phase	EA Application area - 42ha	8	1	2	4	Moderate	4	3	1	2	16	Low	2.3	To prevent the damage to informal houses or infrastructure not owned by the mine, upset people and occupants of houses, the following mitigation actions are to be applied: - Specific blast design and planning to be considered, use of specialist to assist with drilling and blasting mitigation	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	Drill and Blast Manager/Contractor
Groundwater																						
Mining Activities	Lowering of groundwater levels due to dewatering (results in a potential loss to groundwater in storage and may impact on existing groundwater users)	Groundwater	Operational phase	EA Application area - 60ha	6	3	2	5	Moderate	6	3	2	4	44	Moderate	10.1	Limited extent of the cone of dewatering Monitoring of the groundwater drawdown Calculate loss in catchment reserve and release water in all sub-catchments to make up for the loss in individual stream base flow	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Mining Activities	Change of the ambient water quality due to open pit	Groundwater	Operational phase	EA Application area - 60ha	6	3	2	5	Moderate	6	3	2	4	44	Moderate	10.2	Geochemical results indicate that the material to be exposed is non-acid generating Dewatering qualities must be measured at the transfer sumps Pits act as a sink (groundwater flows/plume migration towards and not away from the pits).	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Mining Activities	Diffuse pollution (seepage) from temporary stockpiles	Groundwater	Operational phase	EA Application area - 60ha	6	3	2	4	Moderate	6	3	2	2	22	Low	10.3	Handle all excess water as part of the operational phase Pit water balance. Waste rock (biologies tested are non-acid generating) Monitoring of pollution plume migration	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Geochemical																						
Mining Activities	Disturbance of more waste rock, wall rock and ore with an ARD and metal potential will likely result in pit water characterised by high sulfate and metal concentrations. Seepage is expected from the waste rock stockpiles during the operational mining phase which might impact the groundwater system, especially in a case of poor water quality seepage	Groundwater	Operational phase	EA Application area - 60ha	10	3	2	5	High	8	3	2	4	52	Moderate	11.1	Prevent the accumulation of excess water in open voids. Pump excess water from pit to the Pollution Control Dams.	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Mining Activities	Seepage with high concentrations of TDS and other constituents is expected due to the interaction of rainwater and inflowing groundwater with the backfilled material in the New Pit.	Groundwater	Operational phase	EA Application area - 60ha	6	3	2	4	Moderate	2	1	1	1	4	Low	11.2	Waste rock dump must be within the draw down/cone of depression of the New pit to ensure seepage reports to the pit and continuous pumping of the water from the pit should be maintained. Stormwater management for collection of contaminated runoff from the waste rock stockpiles to the PCD's.	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors
Mining Activities	Seepage with high concentrations of TDS and other constituents is expected due to the interaction of rainwater and inflowing groundwater with the backfilled material in the New Pit.	Groundwater	Operational phase	EA Application area - 60ha	10	5	2	4	High	8	4	3	4	60	Moderate	11.3	Prevent the accumulation of excess water in open voids. Pump excess water from pit to the Pollution Control Dams.	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors

ACTIVITY <i>(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, pipelines, power lines, conveyors, etc. etc. etc.)</i>	POTENTIAL IMPACT <i>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc. etc. etc.)</i>	ASPECTS AFFECTED	PHASE In which impact is anticipated <i>(e.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)</i>	Size and Scale of Disturbance <i>(volumes, tonnages, and hectares, or m³)</i>	Magnitude	Duration	Scale	Probability	Significance	Significance without mitigation	Magnitude	Duration	Scale	Probability	Significance	Significance with mitigation	EMPR Ref. No.	Detailed Mitigation Measures	Mitigation Type <i>(Modify, remedy, control or stop) e.g. Modify through alternative method; Control through noise control; Control through management and monitoring; Remedy through rehabilitation</i>	Time period for implementation <i>(time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required)</i>	Standards to be Achieved <i>(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc)</i>	Compliance with Standards <i>(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)</i>	Responsible person	
	Change of the ambient water quality due to open pit	Groundwater	Operational phase	EA Application area - 60ha	8	3	2	4	52	Moderate	2	1	1	1	4	Low	11.4	Geochemical results indicate that the material to be exposed is non-acid generating. Dewatering qualities must be measured at the transfer sumps. Pits act as a sink (groundwater flows/plume migration towards and not away from the pits).	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
Surface water																								
Infrastructure operations (including blasting)	Modification of natural soil hydrological regime. Loss/ change of current land use, including reduced area for run-off and hardening of surfaces.	Downstream water resources	Operational phase	EA Application area - 60ha	2	4	2	1	8	Low	2	4	2	1	8	Low	12.1	Ensure stormwater management system complies to GN 704 to separate clean and dirty water. Drainage channels, RWD and PCD must be developed as per the stormwater management plan and maintained, and clean run-off must be directed away from mine area to downstream water resources. Ensure hardened surfaces are revegetated to allow infiltration.	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
Hauling of ore, hauling of overburden for storage in respective dump facilities.	Water resource contamination from vehicles and equipment.	Downstream water resources	Operational phase	EA Application area - 60ha	8	3	2	4	52	Moderate	4	2	1	3	21	Low	12.2	Ensure stormwater management systems around the relevant storage facilities comply to GN 704. Drainage channels, RWD and PCD must be developed as per the stormwater management plan and maintained. Clean up spillages immediately and dispose of contaminated materials to a permitted waste site.	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
Operation of overburden dump.	Contamination of downstream water resources; blockage of stormwater management system in these areas.	Downstream water resources	Operational phase	EA Application area - 60ha	6	2	2	4	40	Moderate	4	2	1	3	21	Low	12.3	Ensure stormwater management system comply to GN 704.	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
Operation of RWDs	Contamination of water resources from overflow from RWDs	Downstream water resources	Operational phase	EA Application area - 60ha	6	2	2	3	30	Moderate	4	2	1	3	21	Low	12.4	Ensure adequate compliance to specifications provided, and to water use licence conditions. Clean up spillages immediately and dispose of contaminated materials to a permitted waste site.	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
Vehicles and use of equipment/ machinery	Contamination of soils and downstream water resources from chemical spills/ leaks.	Downstream water resources	Operational phase	EA Application area - 60ha	6	2	2	3	30	Moderate	4	2	1	3	21	Low	12.5	Ensure good housekeeping in areas where vehicles are parked and serviced. Maintain oil and water separators. Clean up spillages immediately and dispose of contaminated materials to a permitted waste site.	Control through management	Ongoing	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
Biodiversity																								
Operation of the Pit and Overburden stockpile		Terrestrial habitat	Operational phase	EA Application area - 60ha	8	2	4	3	42	Moderate	4	1	2	2	14	Low	13.1	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: -Areas where vegetation cover is disturbed. -Areas where soils imported from external sources are applied. -All rehabilitated areas. -Areas within the development area that are already invaded by alien species. -Road fringes. -Overburden Stockpiles footprint -New Pit footprint	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
	Spread of alien invasive species	Terrestrial habitat	Operational phase	EA Application area - 60ha	4	2	4	2	20	Low	2	1	4	2	14	Low	13.2	-Vegetation clearing should be restricted to the proposed infrastructure footprints only, with no clearing permitted outside of this area. -Maintain, as far as possible, natural habitat corridors and connectivity. -Movement across the Project area should be facilitated by providing suitably sized gaps in fencing and/or culverts/passageways under conveyors and roads for fauna.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
	Injury and mortality of fauna species	Terrestrial habitat	Operational phase	EA Application area - 60ha	4	2	4	2	20	Low	2	2	4	2	16	Low	13.3	-Vegetation clearing should be restricted to the proposed infrastructure footprints only, with no clearing permitted outside of this area. -Maintain, as far as possible, natural habitat corridors and connectivity. -Movement across the Project area should be facilitated by providing suitably sized gaps in fencing and/or culverts/passageways under conveyors and roads for fauna.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
	Loss and fragmentation of fauna habitat																							
Wetlands																								
Operation of the Pit and Overburden stockpile	Alteration of sub-catchment hydrology	Wetland hydrology & Biodiversity	Operational phase	EA Application area - 60ha	6	4	2	3	36	Moderate	4	4	2	2	20	Low	14.1	-The mine infrastructure and stormwater management has been planned in such a way that potential run-off that is generated is intercepted, and either redirected to the dirty water management circuit in the case of dirty water or released into the environment in a diffuse, low-energy manner in the case of clean water. This water management process is to be monitored to ensure its continued efficiency. -Installation of the sediment and solid waste trapping measures must be implemented during the construction and operational phases of the development (e.g. sediment fencing, litter traps or similar). -Installation of the sediment and solid waste trapping measures must be implemented during the construction and operational phases of the development (e.g. sediment fencing, litter traps or similar). -Locate all stockpiles, laydown areas and construction infrastructure outside a minimum buffer distance of 46 m from the edge of delineated wetland.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
	Increased erosion and sediment movement into wetlands	Wetland hydrology & Biodiversity	Operational phase	EA Application area - 60ha	6	4	2	3	36	Moderate	4	4	2	2	20	Low	14.2	-Pollution prevention measures must be installed for the protection of the wetlands and drainage lines from contamination with hydrocarbons, sediments and other chemicals. -Appropriate land use management of the 46 m buffer zone will be integral to minimise the likelihood of increase degradation of the W01 throughout the construction and operational phase of the project. The following measures are recommended: -Limit the amount of disturbance to the buffer zone by vehicles, foot traffic, or livestock. -Manage alien plant encroachment through pro-active monitoring and clearing of the buffer zone. -Where bare areas of soil or erosion is observed within the buffer zone, particularly in the wet season, these areas should be stabilized and reseeded to prevent further damage to the wetland.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
	Water quality impacts	Wetland hydrology & Biodiversity	Operational phase	EA Application area - 60ha	6	4	3	3	39	Moderate	4	4	3	2	22	Low	14.3	-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: -Areas where vegetation cover is disturbed. -Areas where soils imported from external sources are applied. -All rehabilitated areas. -Areas within the development area that are already invaded by alien species. -Road fringes. -Overburden Stockpiles footprint -New Pit footprint	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
	Establishment of alien invasive vegetation	Wetland hydrology & Biodiversity	Operational phase	EA Application area - 60ha	4	4	2	3	30	Moderate	4	4	2	2	20	Low	14.4	-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: -Areas where vegetation cover is disturbed. -Areas where soils imported from external sources are applied. -All rehabilitated areas. -Areas within the development area that are already invaded by alien species. -Road fringes. -Overburden Stockpiles footprint -New Pit footprint	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
Decommissioning and Closure Phase																								
Social																								
Rehabilitation	A decrease in local business opportunities.	Socio-economic	Decommissioning closure and post closure phase	EA Application area - 60ha	8	5	2	4	60	Moderate	5	2	2	3	27	Low	15.1	Implement closure plan. Implement social and labour plan to reduce negative impact of mine closure.	Remedy	Decommissioning period	Guidelines as outlined in the SLP & Closure Plan	With the recommended measures in place, compliance with the guidelines can be achieved	Stakeholder Manger, SBPM ECO, Appointed Contractors	
Rehabilitation	A decrease in local employment opportunities.	Socio-economic	Decommissioning closure and post closure phase	EA Application area - 60ha	8	5	2	4	60	Moderate	6	5	2	4	52	Moderate	15.2	Absorb the opencast contractors and employees into current operations or further future projects.	Remedy	Decommissioning period	Guidelines as outlined in the SLP & Closure Plan	With the recommended measures in place, compliance with the guidelines can be achieved	Stakeholder Manger, Human Resources, SBPM ECO, Appointed Contractors	
Geochemical																								
Rehabilitation	Due to cessation of dewatering, the pit water level will rise until it reaches pre-mining groundwater levels. The quality of pit water could deteriorate due to dissolution (in inflowing groundwater and rainfall recharge) of historical weathering products that will have been produced in backfill and wall rock during the life of mine, as well as leaching of backfill materials. Seepage of poor-quality water can occur from the pit to groundwater resource when the pit water level reaches its pre-mining water level.	Groundwater	Decommissioning closure and post closure phase	EA Application area - 60ha	8	5	2	5	75	High	8	4	2	3	42	Moderate	15.3	Backfilled areas should be evenly compacted during placement. Post closure the pit should be completely backfilled and rehabilitated by adding top soil to 300 mm as per current EMPr obligations, and revegetated to minimise oxygen and water ingress. The final backfilled pit profile should allow drainage of rainwater away from the pit.	Control through management	Closure	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
Rehabilitation	Leaching of contaminants from remnant waste rock and soil within footprint area	Groundwater	Decommissioning closure and post closure phase	EA Application area - 60ha	4	3	1	4	32	Moderate	4	3	1	2	16	Low	15.4	All waste rock should be removed and backfilled in the pit final void, topsoil added, and vegetation planted on the footprint area. The final topography of the area should be free draining.	Control through management	Closure	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
Groundwater																								
Water Management	Re-establishment of groundwater levels, flow directions and flow gradients to near pre-mining levels	Groundwater	Decommissioning closure and post closure phase	EA Application area - 60ha	6	3	2	4	44	Moderate	4	3	2	3	27	Low	16.1	Implement closure plan. Monitoring of water qualities and water levels (quarterly for 5 years), thereafter annually until stabilised.	Remedy	Decommissioning period	Guidelines as outlined in the SLP & Closure Plan	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
Water Management	Diffuse seepage of groundwater potentially contaminated	Groundwater	Decommissioning closure and post closure phase	EA Application area - 60ha	6	3	2	4	44	Moderate	6	3	2	3	33	Moderate	16.2	Implement closure plan. Monitoring of water qualities and water levels (quarterly for 5 years), thereafter annually until stabilised.	Remedy	Decommissioning period	Guidelines as outlined in the SLP & Closure Plan	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
Biodiversity																								
Earthworks involved in site rehabilitation		Terrestrial habitat	Decommissioning closure and post closure phase	EA Application area - 60ha	6	2	5	4	52	Moderate	4	1	4	3	27	Low	17.1	-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: -Areas where vegetation cover is disturbed. -Areas where soils imported from external sources are applied. -All rehabilitated areas. -Areas within the development area that are already invaded by alien species. -Road fringes. -Overburden Stockpiles footprint -New Pit footprint	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
	Smothering vegetation with dust	Terrestrial habitat	Decommissioning closure and post closure phase	EA Application area - 60ha	6	2	2	2	20	Low	4	1	2	2	14	Low	17.2	-Use of water sprays at crushing and transfer points; -Wetting of exposed stockpiles to limit the dispersion of wind-blown dust and particulate emissions; -Avoid dust generating works during the most windy conditions; and -Frequent wetting of the access roads.	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	

ACTIVITY <i>(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, pipelines, power lines, conveyors, etc... etc... etc.)</i>	POTENTIAL IMPACT <i>(e.g. dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc... etc...)</i>	ASPECTS AFFECTED	PHASE <i>In which impact is anticipated (e.g. Construction, commissioning, operational, Decommissioning, closure, post-closure)</i>	Size and Scale of Disturbance <i>(volumes, tonnages, and hectares, or m³)</i>	Magnitude	Duration	Scale	Probability	Significance	Significance without Mitigation	Magnitude	Duration	Scale	Probability	Significance	Significance with Mitigation	EMPR Ref. No.	Detailed Mitigation Measures	Mitigation Type <i>(Modify, remedy, control or stop) e.g. Modify through alternative method; Control through noise control; Control through management and monitoring; Remedy through rehabilitation</i>	Time period for implementation <i>(time period when the measures in the environmental management programme must be implemented. Measures must be implemented when required)</i>	Standards to be Achieved <i>(Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives etc)</i>	Compliance with Standards <i>(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)</i>	Responsible person	
Wetlands																								
Earthworks involved in site rehabilitation	Alteration of sub-catchment hydrology	Wetland hydrology & Biodiversity	Decommissioning closure and post closure phase	EA Application area - 60ha	6	4	2	4	48	Moderate	4	4	2	3	30	Moderate	18.1	j The rehabilitation of the site must be undertaken according to the site closure plan, with the best practice principle of hydrological 'flood neutrality' being the ultimate goal.	Rehabilitation	Required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
	Increased erosion and sediment movement into wetlands	Wetland hydrology & Biodiversity	Decommissioning closure and post closure phase	EA Application area - 60ha	6	4	2	4	48	Moderate	4	2	2	3	24	Low	18.2	j Installation of the sediment trapping measures must be implemented during the closure phase of the development while vegetation is allowed time to reestablish (e.g. geotextile or similar) j Locate all stockpiles, and perform all reshaping activities outside a minimum buffer distance of 46 m from the edge of delineated wetland.	Rehabilitation	Required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
	Water quality impacts	Wetland hydrology & Biodiversity	Decommissioning closure and post closure phase	EA Application area - 60ha	6	4	3	4	52	Moderate	4	2	4	3	30	Moderate	18.3	j Installation of the sediment trapping measures must be implemented during the closure phase of the development while vegetation is allowed time to reestablish (e.g. geotextile or similar). j Locate all stockpiles, and perform all reshaping activities outside a minimum buffer distance of 46 m from the edge of delineated wetland. 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 All rehabilitated areas. Areas within the development area that are already invaded by alien species. Road fringes. Overburden Stockpiles footprint New Pit footprint	Control through management	When required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	
	Establishment of alien invasive vegetation	Wetland hydrology & Biodiversity	Decommissioning closure and post closure phase	EA Application area - 60ha	4	4	3	3	33	Moderate	4	2	4	2	20	Low	18.4	Areas where vegetation cover is disturbed. Areas where soils imported from external sources are applied. All rehabilitated areas. Areas within the development area that are already invaded by alien species. Road fringes. Overburden Stockpiles footprint New Pit footprint	Rehabilitation	Required	Guidelines as outlined in Section 5 BA/ EMPr	With the recommended measures in place, compliance with the guidelines can be achieved	SBPM Environmental Manager, ECO, Appointed Contractors	