2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Socio Economic																			
No-go option	Reduced period of development and upliftment of the surrounding communities and infrastructure.	N/A	Regional	4	Long term	4	High	4	Partly reversible	3	15	Medium	3	Medium	45	N/A	1	Medium	45
No-Go Option	Reduced period of development of the economic environment, by job provision and sourcing supplies for and from local residents and businesses.	N/A	Regional	4	Long term	4	High	4	Partly reversible	3	15	Medium	3	Medium	45	N/A	1	Medium	45
No-Go Option	**Positive:** No additional negative impacts on I&APs or surrounding land users	N/A	Regional	4	Long term	4	High	4	Partly reversible	3	15	Medium	3	Positive Medium	45	N/A	1	Positive Medium	45
Natural Environment and Wetlands																			
No-Go Option	**Positive:** No additional negative impacts on the environment	N/A	Regional	4	Long term	4	High	4	Partly reversible	3	15	Medium	3	Positive Medium	45	N/A	1	Positive Medium	45
Wetlands and Aquatics																			
Stripping of topsoil for river diversion	Sediment ingress into the aquatic ecosystem, clearing of vegetation	Construction	Site	2	Short term	2	High	4	Partly reversible	3	11	Medium	3	Low	33	Medium	0,6	Very Low	19,8

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
River diversion	Diversion of the Olifants River	Construction	Local	3	Permanent	5	Very High	5	Partly reversible	3	16	Definite	5	Very High	80	Medium	0,6	Medium	48
Stockpiling of topsoil for river diversion	Sediment releases, impact of area disturbed by stockpile	Construction	Local	3	Medium term	3	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Excavation of river diversion	Area impacted by placement of soils on surface next to excavation	Operational	Site	2	Medium term	3	High	4	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Excavation of river diversion	Sediment ingress	Operational	Site	2	Long term	4	High	4	Partly reversible	3	13	High	4	Medium	52	Medium	0,6	Low	31,2
Excavation of river diversion	Increased flow volumes	Operational	Local	3	Long term	4	Medium	3	Partly reversible	3	13	High	4	Medium	52	Medium	0,6	Low	31,2
Excavation of river diversion	Impact on long term ecosystem health	Operational	Local	3	Permanent	5	Medium	3	Partly reversible	3	14	High	4	Medium	56	Medium	0,6	Low	33,6
Excavation of river diversion	Reduced functionality of buffer	Operational	Local	3	Permanent	5	High	4	Partly reversible	3	15	Definite	5	High	75	Medium	0,6	Medium	45
Excavation of river diversion	Ecotone removal	Operational	Local	3	Permanent	5	High	4	Partly reversible	3	15	Definite	5	High	75	Medium	0,6	Very Low	45
Excavation of river diversion	Possible spillage into natural area	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	HIgh	4	Medium	48	Medium	0,6	Low	28,8
Excavation of river diversion	Refilling of machinery with hydrocarbons	Operational	Site	2	Medium term	3	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4
Excavation of river diversion	Stockpiling of soils	Operational	Footprint	1	Long term	4	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4
Excavation of river diversion	Physical excavation in soil	Operational	Footprint	1	Long term	4	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4
Transportation from site due to river diversion	Area impacted by waiting trucks and machinery	Operational	Footprint	1	Long term	4	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Transportation from site due to river diversion	Crossing of aquatic ecosystem on existing roads and bridges	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Hydrocarbon spill (river diversion)	Possible spillage into natural area	Operational	Site	2	Long term	4	High	4	Partly reversible	3	13	High	4	Medium	52	Medium	0,6	Low	31,2
Hydrocarbon spill (river diversion)	Refilling of machinery	Operational	Site	2	Long term	4	High	4	Partly reversible	3	13	High	4	Medium	52	Medium	0,6	Low	31,2
Access Road for river diversion	Crossing of aquatic ecosystem with machinery	Operational	Site	2	Medium term	3	Medium	3	Nearly completely reversible	2	10	Medium	3	Low	30	Medium	0,6	Very Low	18
Impoundment of water in excavation pit (river diversion)	During rainfall events the excavation pit can fill with water (unlikely but included)	Operational	Site	2	Long term	4	High	4	Partly reversible	3	13	High	4	Medium	52	Medium	0,6	Low	31,2
Alien vegetation spreading and establishment (river diversion)	Alien vegetation establishment and spread	Operational	Site	2	Long term	4	High	4	Partly reversible	3	13	Definite	5	High	65	Medium	0,6	Low	39
Post development/ rehabilitation (river diversion)	Decompaction of soil	Decommissioning and rehabilitation	Footprint	1	Medium term	3	Medium	3	Completely	1	8	High	4	Low	32	Medium	0,6	Very Low	19,2
Post development/ rehabilitation (river diversion)	Removal of crossings over aquatic ecosystem	Decommissioning and rehabilitation	Footprint	1	Medium term	3	Medium	3	Partly reversible	3	10	High	4	Low	40	Medium	0,6	Low	24
Removal of crossings over aquatic ecosystem (river diversion)	Altering of beds and banks	Decommissioning and rehabilitation	Footprint	1	Medium term	3	Medium	3	Partly reversible	3	10	Medium	3	Low	30	Medium	0,6	Very Low	18

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Removal of crossings over aquatic ecosystem (river diversion)	Sediment ingress	Decommissioning and rehabilitation	Site	2	Medium term	3	Medium	3	Partly reversible	3	11	Medium	3	Low	33	Medium	0,6	Very Low	19,8
Infilling of soil and or placement of topsoil (river diversion)	Replacement of soil into excavated area (unlikely)	Decommissioning and rehabilitation	Site	2	Medium term	3	Medium	3	Partly reversible	3	11	Medium	3	Low	33	Medium	0,6	Very Low	19,8
Infilling of soil and or placement of topsoil (river diversion)	Moving of topsoil from stockpile rehabilitated areas	Decommissioning and rehabilitation	Site	2	Medium term	3	Medium	3	Partly reversible	3	11	Medium	3	Low	33	Medium	0,6	Very Low	19,8
Infilling of soil and or placement of topsoil (river diversion)	Levelling of topsoil's	Decommissioning and rehabilitation	Site	2	Medium term	3	Medium	3	Partly reversible	3	11	Medium	3	Low	33	Medium	0,6	Very Low	19,8
Erosion of replaced soils (river diversion)	Replaced surface soils are washed away if not stabilised or planted before the first rainfall	Decommissioning and rehabilitation	Site	2	Medium term	3	Low	2	Nearly completely reversible	2	9	Medium	3	Low	27	Medium	0,6	Very Low	16,2
Alteration of soil chemical properties (river diversion)	Alteration of soil chemical properties reducing soil productivity	Decommissioning and rehabilitation	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium to low	0,8	Low	38,4
Alien vegetating eradication (river diversion)	Application of herbicides	Decommissioning and rehabilitation	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
New processing plant	Flood attenuation	Operational	Footprint	1	Short term	3	Medium	3	Partly reversible	3	10	Medium	3	Low	30	Medium	0,6	Very Low	18

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
New processing plant	Streamflow regulation	Operational	Footprint	1	Medium term	3	Medium	3	Partly reversible	3	10	Medium	3	Low	30	Medium	0,6	Very Low	18
New processing plant	Sediment trapping	Operational	Footprint	1	Medium term	3	Medium	3	Partly reversible	3	10	Medium	3	Low	30	Medium	0,6	Very Low	18
New processing plant	Phosphate assimilation	Operational	Footprint	1	Medium term	3	Medium	3	Partly reversible	3	10	Medium	3	Low	30	Medium	0,6	Very Low	18
New processing plant	Nitrate assimilation	Operational	Footprint	1	Medium term	3	Medium	3	Partly reversible	3	10	Medium	3	Low	30	Medium	0,6	Very Low	18
New processing plant	Toxicant assimilation	Operational	Footprint	1	Medium term	3	Medium	3	Partly reversible	3	10	Medium	3	Low	30	Medium	0,6	Very Low	18
New processing plant	Erosion control	Operational	Footprint	1	Medium term	3	Medium	3	Partly reversible	3	10	Medium	3	Low	30	Medium	0,6	Very Low	18
New processing plant	Carbon storage	Operational	Footprint	1	Medium term	3	Medium	3	Partly reversible	3	10	Medium	3	Low	30	Medium	0,6	Very Low	18
New processing plant	Alien vegetation establishment and spread	Operational	Footprint	1	Medium term	3	Medium	3	Partly reversible	3	10	High	4	Medium	40	Medium	0,6	Low	24
Decompaction, infilling of soil and or placement of topsoil due to processing plant	Ripping of area and access roads to reduce compaction	Decommissioning and rehabilitation	Footprint	1	Medium term	3	Medium	3	Nearly completely reversible	2	9	Medium	3	Low	27	Medium	0,6	Very Low	16,2
Decompaction, infilling of soil and or placement of topsoil due to processing plant	Replacement of soil	Decommissioning and rehabilitation	Footprint	1	Medium term	3	Medium	3	Nearly completely reversible	2	9	Medium	3	Low	27	Medium	0,6	Very Low	16,2
Decompaction, infilling of soil and or placement of	Moving of topsoil from stockpile rehabilitated areas	Decommissioning and rehabilitation	Footprint	1	Medium term	3	Medium	3	Nearly completely reversible	2	9	Medium	3	Low	27	Medium	0,6	Very Low	16,2

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
topsoil due to processing plant																			
Decompaction, infilling of soil and or placement of topsoil due to processing plant	Levelling of topsoil	Decommissioning and rehabilitation	Footprint	1	Medium term	3	Medium	3	Nearly completely reversible	2	9	Medium	3	Low	27	Medium	0,6	Very Low	16,2
Decompaction, infilling of soil and or placement of topsoil	Ripping of area and access roads to reduce compaction	Decommissioning and rehabilitation	Footprint	1	Long term	4	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4
Decompaction, infilling of soil and or placement of topsoil	Replacement of soil	Decommissioning and rehabilitation	Footprint	1	Long term	4	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4
Decompaction, infilling of soil and or placement of topsoil	Moving of topsoil from stockpile rehabilitated areas	Decommissioning and rehabilitation	Footprint	1	Long term	4	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4
Decompaction, infilling of soil and or placement of topsoil	Levelling of topsoil	Decommissioning and rehabilitation	Footprint	1	Long term	4	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4
Decompaction, infilling of soil and or placement of topsoil	Alien vegetation establishment and spread	Decommissioning and rehabilitation	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Very Low	48	Medium	0,6	Low	28,8
Contractor's yard	Flood attenuation	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Contractor's yard	Streamflow regulation	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Contractor's yard	Sediment trapping	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Contractor's yard	Phosphate assimilation	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Contractor's yard	Nitrate assimilation	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Contractor's yard	Toxicant assimilation	Operational	Site	2	Long term	4	Medium	3	Completely	1	10	High	4	Medium	40	Medium	0,6	Low	24
Contractor's yard	Erosion control	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Contractor's yard	Carbon storage	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Contractor's yard	Alien vegetation establishment and spread	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Contractor's yard	Ripping of area and access roads to reduce compaction	Decommissioning and rehabilitation	Footprint	1	Long term	4	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4
Contractor's yard	Replacement of soil	Decommissioning and rehabilitation	Footprint	1	Long term	4	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4
Contractor's yard	Moving of topsoil from stockpile rehabilitated areas	Decommissioning and rehabilitation	Footprint	1	Long term	4	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4
Contractor's yard	Levelling of topsoil	Decommissioning and rehabilitation	Footprint	1	Long term	4	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Contractor's yard	Alien vegetation establishment and spread	Decommissioning and rehabilitation	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Pollution Control Dams	Flood attenuation	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Pollution Control Dams	Streamflow regulation	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Pollution Control Dams	Sediment trapping	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Pollution Control Dams	Phosphate assimilation	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Pollution Control Dams	Nitrate assimilation	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Pollution Control Dams	Toxicant assimilation	Operational	Site	2	Long term	4	Medium	3	Completely	1	10	High	4	Medium	40	Medium	0,6	Low	24
Pollution Control Dams	Erosion control	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Pollution Control Dams	Carbon storage	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Pollution Control Dams	Alien vegetation establishment and spread	Operational	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	High	48	Low to medium	0,8	Medium	38,4
Pollution Control Dams	Ripping of area and access roads to reduce compaction	Decommissioning and rehabilitation	Footprint	1	Long term	4	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4
Pollution Control Dams	Replacement of soil	Decommissioning and rehabilitation	Footprint	1	Long term	4	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4
Pollution Control Dams	Moving of topsoil from stockpile rehabilitated areas	Decommissioning and rehabilitation	Footprint	1	Long term	4	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Pollution Control Dams	Levelling of topsoil	Decommissioning and rehabilitation	Footprint	1	Long term	4	Medium	3	Partly reversible	3	11	High	4	Medium	44	Medium	0,6	Low	26,4
Pollution Control Dams	Alien vegetation establishment and spread	Decommissioning and rehabilitation	Site	2	Long term	4	Medium	3	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Groundwater																			
Clearing topsoil from footprint areas will influence the rate of infiltration of water to the shallow groundwater system and/or baseflow component to shallow streams.	Water Quantity > Groundwater > Olifants River	Construction	Site	2	Short to medium term	2	Medium	3	Partly reversible	3	10	Medium	3	Low	30	Medium	0,6	Very Low	18
Diversion of the Olifants river to a new flow path will void the existing river segment and subsequent alluvium aquifer sone of groundwater baseflow.	Water Quantity > Groundwater > Olifants River	Construction	Site	2	Permanent	5	Very High	5	Irreversible	5	17	Definite	5	Very High	85	No mitigation possible			

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Handling of waste and transport of material can cause various types of spills (domestic waste, sewage water, hydrocarbons) which can infiltrate and contaminate the groundwater system. Poor quality mine drainage from material removed during the opencast development (i.e. from overburdened rock piles) may cause local soil and groundwater contamination. Oil and fuel spills and leakages at hard park areas, and in the mining pits, may cause poor quality seepage and soil contamination.	Water Quantity > Groundwater > Olifants River	Construction	Site	2	Medium term	3	High	4	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Stripping of the topsoil during the channel creation for the Olifants River diversion may cause temporary sedimentation as the river takes to the new flow path. There may be some bank erosion which could also lead to sedimentation and suspended solid transport. If vehicles and machines leak hydrocarbons during the diversion trenching, there may be local soil contamination that could impact the surface and groundwater quality.	Water Quantity > Groundwater > Olifants River	Construction	Site	2	Medium term	3	High	4	Partly reversible	3	12	High	4	Medium	48	Medium	0,6	Low	28,8
Opencast mining will result in groundwater inflows into the pits which need to be pumped out for mine safety and will lead to a	Water Quantity > Groundwater Level	Operational	Site	2	Medium term	3	Very High	5	Partly reversible	3	13	Definite	5	Medium	65	Low to medium	0,8	Medium	52

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
lowering of groundwater levels in the surrounding aquifers.																			
Dewatering activity may impact shallow baseflow to Olifants River and tributaries.	Water Quantity > Baseflow	Operational	Site	2	Medium term	3	High	4	Partly reversible	3	12	Definite	5	Medium	60	Medium	0,6	Low	36
Diversion of the Olifants river to a new flow path will void the existing river segment and subsequent alluvium aquifer sone of groundwater baseflow.	Water Quantity > Olifants River	Operational	Local	3	Permanent	5	Very High	5	Irreversible	5	18	Definite	5	Very High	90	No mitigation possible			

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Analyses showed that acid mine drainage (AMD) formation is expected and poor-quality leachate can occur based on the leaching potential of the material. This can influence the water quality in the surrounding aquifers. However, groundwater flow directions will be directed towards the opencast workings and contaminant migration away from the mining areas will be limited during active mining.	Water Quality > Soil water > Aquifer zones (water table)	Operational	Site	2	Long term	4	Very High	5	Partly reversible	3	14	High	4	Medium	56	Low to medium	0,8	Medium	44,8
Potentially contaminated groundwater ingress if fracture networks from underground workings are intercepted	Water Quality > Aquifer zones (water table)	Operational	Site	2	Long term	4	Very High	5	Partly reversible	3	14	Medium	3		42	Medium	0,6	Low	25,2

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
during opencast mining.																			
Coal transport via haulage roads.	Water Quality > Soil water > Aquifer zones (water table) > Dust fallout along the rivers and streams in the project area	Operational	Site	2	Long term	4	High	4	Partly reversible	3	13	Medium	3	Low	39	Medium	0,6	Low	23,4
Concurrent backfilling of opencast pits - poor quality seepages.	Water Quality > Aquifer zones (water table)	Operational	Site	2	Long term	4	High	4	Partly reversible	3	13	High	4	Medium	52	Medium	0,6	Low	31,2
Waste disposal on surface - poor quality seepages.	Water Quality > Aquifer zones (water table)	Operational	Site	2	Permanent	5	High	4	Partly reversible	3	14	High	4	Medium	56	Low to medium	0,8	Medium	44,8
Coal and ROM Stockpiles.	Water Quality > Soil water > Aquifer zones (water table)	Operational	Site	2	Long term	4	High	4	Partly reversible	3	13	High	4	Medium	52	Low to medium	0,8	Medium	41,6
Operation of the plant could lead to spillages/seepage	Water Quality > Soil water > Aquifer zones (water table)	Operational	Site	2	Medium term	3	High	4	Partly reversible	3	12	High	4	Medium	48	Low to medium	0,8	Medium	38,4
Workshops and spillages (hydrocarbons, sewage, domestic waste).	Water Quality > Soil water > Aquifer zones (water table)	Operational	Site	2	Medium term	3	High	4	Nearly completely reversible	2	11	High	4	Medium	44	Medium	0,6	Low	26,4
Pollution Control Dams (existing and proposed)-	Water Quality > > Soil water	Operational	Site	2	Long term	4	High	4	Partly reversible	3	13	Definite	5	High	65	Medium	0,6	Low	39

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
poor quality seepages.	> Aquifer zones (water table)																		
Infrastructure	Seepage that makes it from the plant areas PCD and ROM area and contractors' yard via the vadose and aquifer zones, and enters streams as baseflow.	Operational	Site	1	Short term	2	Medium	3	Completely	1	7	Medium	3	Low	21	Medium	0,6	Very Low	12,6
Infrastructure	Dewatering may impact groundwater table and groundwater uses	Operational	Site	1	Short term	2	Low	2	Completely	1	6	Low	2	Very Low	12	High	1	Very Low	12
Rehabilitated mining areas - rebounding water levels.	Groundwater Quantity > Groundwater Levels	Decommissioning and rehabilitation	Site	2	Short to medium term	2	Low	2	Partly reversible	3	9	Definite	5	Medium	45	Medium	0,6	Low	27
Rehabilitated mining areas - Migration of groundwater contaminant plume and contaminated groundwater seepage to streams and Olifants river (salt load).	Water Quality > Olifants River > Groundwater table	Decommissioning and rehabilitation	Local	3	Long term	4	High	4	Partly reversible	3	14	Definite	5	High	70	Medium	0,6	Medium	42

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Rehabilitated mining areas - depending on the pit water balance, the pit can decant at the lowest topographical area and negatively impact groundwater and stream quality. This is particularly probable for OC4A.	Water Quality > Olifants River > Groundwater table	Decommissioning and rehabilitation	Site	2	Long term	4	High	4	Partly reversible	3	13	Definite	5	High	65	Medium	0,6	Medium	39
Potentially contaminated groundwater ingress if fracture networks from underground workings were intercepted during mining.	Water Quality > Olifants River > Groundwater table	Decommissioning and rehabilitation	Site	2	Permanent	5	High	4	Partly reversible	3	14	Medium	3	Medium	42	Medium	0,6	Low	25,2
Seepage from plant area, ROM area, contractor's yard and PCD	Vadose zone soils and subsequent aquifer (groundwater table)	Decommissioning and rehabilitation	Site	2	Short term	2	Low	2	Completely	2	8	Medium	3	Low	24	Medium	0,6	Very low	14,4
Hydropedology																			
No River diversion	No change in flow is expected	Construction and operational	Project area	1	Medium term	3	Medium	3	Partly reversible	3	10	High	4	Medium	40	High	1	Medium	40

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
River diversion	OC4 could impact on the flow drivers of the wetland systems through interception systems such as dewatering, diversions, drainage systems and water quality changes.	Construction and operational	Project area	1	Medium term	3	Medium	3	Partly reversible	3	10	High	4	Medium	40	Low to medium	0,8	Low	32
Ecological																			
Construction (River diversion, opencast mine, Pollution Control Dams, Plant and ROM)	Development related activities will specifically lead to damage or degradation of highly sensitive habitats (VU3) and overall loss of biodiversity and ecosystem function within the clearance area. As a result of the construction of these additional activities further fragmentation, degradation or compression may occur.	Construction	Regional	3	Permanent	5	Medium high	4	Nearly irreversible	4	16	High	4	Medium to high	64	Low to medium	0,8	Medium	51,2

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Construction (River diversion, opencast mine, Pollution Control Dams, Plant and ROM)	Development and related activities could impact on the sensitive habitats (VU3) situated in and around the development footprint, including impacts from effluent discharge into the environment from the coal stockpiles, coal spillages and other contaminated areas.	Construction	Regional	3	Permanent	5	High	5	Nearly irreversible	4	17	High	4	High	68	Low to medium	0,8	Medium	54,4
Construction (River diversion, opencast mine, Pollution Control Dams, Plant and ROM)	Fragmentation of habitat areas due to possible fencing or the placement of boundary structures could lead to increased edge effects. Habitat that is not to be cleared, needs to be protected.	Construction	Regional	3	Permanent	5	Medium	4	Partly reversible	3	15	Medium	3	Medium	45	Medium	0,6	Low	27

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Construction and operation (River diversion, opencast mine, Pollution Control Dams, Plant and ROM)	Impacts may lead to the further increase of invasive species from the surrounding areas and may change the vegetation structure and composition of this unit. It may also result in the spread of the invaders already found on-site to other surrounding areas. Proliferation of AIP species in riparian areas are especially problematic due to the relative ease of AIP transport to downstream areas.	Construction and operational	Regional	3	Permanent	5	Medium	4	Partly reversible	3	15	Medium	3		45	Medium	0,6	Low	27

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Construction and operation (River diversion, opencast mine, Pollution Control Dams, Plant and ROM)	Anthropogenic influence stemming from employees, visitors and contractors that infiltrate the natural veld areas will damage and impact on species communities within certain areas. Effluent discharge into the environment from the coal stockpiles, coal spillages and other contaminated areas may negatively affect terrestrial ecosystems, especially sensitive habitats associated with riparian and wetland areas (VU3).	Construction and operational	Regional	3	Permanent	5	Medium	3	Partly reversible	3	14	High	4	Medium	56	Medium	0,6	Low	33,6

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Closure of opencast mine, plant and related infrastructure	Rehabilitation could be ineffective if measures are not appropriately complied to. Without the necessary mitigation measures, rehabilitation will be unsuccessful, and the environment will not be self-sustaining. Without mitigation the alien invasive species will increase and result in a degraded veld condition making the property less viable for post-closure land use activities such as wilderness, grazing and agriculture	Closure	Regional	3	Long term	4	Medium	3	Partly reversible	3	13	High	4	Medium	52	Medium	0,6	Low	31,2
Heritage and Palaeontological																			
Construction of infrastructure and opencast mine	No heritage features were found within the proposed amendment areas of the mining boundary	Construction and operational	Footprint	1	Short term	1	Minor	1	Nearly completely reversible	2	5	Improbable	1	Very low	5	High	0,2	Very Low	1
Construction of infrastructure and opencast mine	No fossils were found within the proposed amendment areas of the mining boundary	Construction and operational	Footprint	1	Short term	1	Minor	1	Nearly completely reversible	2	5	Improbable	1	Very low	5	High	0,2	Very Low	1
Closure and Rehabilitation	Graves to be protected in-situ	Closure Phase	Site	2	Short term	1	Low	2	Nearly completely	2	7	Medium	3	Low	21	Low	0,8	Very Low	16,8

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Soil and Agricultural																			
Construction of infrastructure and opencast mine	Loss of agricultural land for grazing and planting	Construction and operational	Footprint	1	Short term	2	Minor	1	Nearly completely reversible	2	6	Improbable	1	Very low	6	High	0,2	Very Low	1,2
Opencast Mining; Bulk earthworks including foundations, trenches, berms; Establishment of overburden stockpiles and backfilling of opencast with waste rock and tailings; Waste rock stockpiling, Tailings backfill into Carbonaceous layer, ROM Stockpiles - Waste Residue Deposits; Hauling and Transporting on new roads; Dust suppression; Removal of indigenous vegetation.	Soil compaction by heavy duty vehicles.	Construction & Operational Phase	Site	2	Long term	4	Low	2	Partly reversible	3	11	Medium	3	Low	33	High	0,2	Very Low	6,6

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Opencast Mining; Bulk earthworks including foundations, trenches, berms; Establishment of overburden stockpiles and backfilling of opencast with waste rock and tailings; Waste rock stockpiling, Tailings backfill into Carbonaceous layer, ROM Stockpiles - NEW Waste Residue Deposits; Hauling and Transporting on new roads; Dust suppression; Removal of indigenous vegetation.	Contamination of soils through:	Construction & Operational Phase	Site	2	Long term	4	Low	2	Partly reversible	3	11	Medium	3	Low	33	High	0,2	Very Low	6,6
Closure and Rehabilitation of infrastructure areas	Soil compaction by heavy duty vehicles.	Closure Phase	Site	2	Short term	1	Low	2	Nearly completely	2	7	Medium	3	Low	21	High	0,2	Very Low	4,2
Closure and Rehabilitation of infrastructure area	Contamination of soils through: - Indiscriminate disposal of waste; and	Closure Phase	Site	2	Short term	1	Low	2	Nearly completely	2	7	Medium	3	Low	21	High	0,2	Very Low	4,2

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
	- Accidental spillage of chemicals such as hydrocarbon-based fuels and oils or lubricants spilled from vehicles and other chemicals from operational and maintenance activities e.g. paints.																		
Visual																			
Construction of additional mining infrastructure and opencast mine and diversion of river	Visibility from sensitive receptors / visual scarring of the landscape and impact on 'Sense of Place' as a result of the visibility of the mining site including the waste management facilities and mining activities.	Construction and operational	Footprint	1	Medium term	3	Minor	1	Partly reversible	3	8	Low	2	Very low	16	Medium to high	0,4	Very Low	6,4
Closure and Rehabilitation	Visibility from sensitive receptors / visual scarring of the landscape as a result of the closure and rehabilitation activities.	Closure Phase	Local	3	Short term	1	Low	2	Nearly completely	2	8	High	4	Low	32	Low	0,8	Low	25,6
Closure and Rehabilitation	Visibility of solid domestic and operational waste.	Closure Phase	Local	3	Short term	1	Low	2	Nearly completely	2	8	High	4	Low	32	Low	0,8	Low	25,6
Traffic																			

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
All	Continued change in the traffic patterns as a result of increased traffic entering and exiting the operations on the surrounding road infrastructure and existing traffic.	Construction & Operational Phase	Regional	3	Long term	4	Low	2	Nearly completely	2	11	High	4	Medium	44	Low	0,8	Low	35,2
Construction of additional infrastructure and opencast mining	Nuisance, health and safety risks caused by increased traffic on an adjacent to the study area including cars and heavy vehicles.	Construction and operational	Local	3	Long term	4	Medium	3	Partly reversible	3	13	High	4	Medium	52	Medium	0,6	Low	31,2
Air Quality																			
Construction of surface infrastructure	Activities of vehicles on access roads, levelling and compacting of surfaces, as well localised drilling and blasting will have implications on ambient air quality. The above-mentioned activities will result in fugitive dust emissions containing TSP (total suspended particulate, giving rise to nuisance impacts as fallout dust).	Construction	Site	2	Medium term	3	High	4	Nearly Irreversible	4	13	Definite	5	Medium	65	Low	0,8	Medium	52

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
General transportation, hauling and vehicle movement on site	Transportation of the workers and materials in and out of mine site will be a constant feature during the construction phase. This will however result in the production of fugitive dust (containing TSP, as well as PM10 and PM2.5) due to suspension of friable materials from earth roads. Substantial secondary emissions may be emitted from material moved out from the site during grading and deposited adjacent to roads. Passing traffic can thus loosen and re-suspend the deposited material again into the air. In order to minimize these impacts the stockpiles should be vegetated for the duration that it is exposed.	Construction	Local	3	Long term	4	High	4	Partly reversible	3	14	Definite	5	High	70	Medium	0,6	Medium	42

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Use and maintenance of the access road. Dust from material handling and wind erosion from stockpiles.	Use and maintenance of the access road. Dust from material handling and wind erosion from stockpiles may result in increased fugitive emission sources and may impact on the ambient air quality specifically an increase in daily PM10 concentrations and TSP concentrations	Operational	Regional	4	Long term	4	High	4	Nearly irreversible	4	16	Definite	5	Very high	80	Low to medium	0,8	Medium	64
Closure and Rehabilitation	Dust (soil and ore fines) pollution due to rehabilitation activities and heavy-duty vehicles.	Closure Phase	Site	2	Long term	4	Low	2	Nearly completely	2	10	Medium	3	Low	30	Medium	0,6	Very Low	18
Closure and Rehabilitation	Windborne dust (soil and ore fines) and vehicle fumes and particulate matter PM10, altering air quality.	Closure Phase	Site	2	Long term	4	Low	2	Nearly completely	2	10	Medium	3	Low	30	Medium	0,6	Very Low	18
Noise and Lighting																			
Closure and Rehabilitation	Nuisance and health risks caused by an increase in the ambient noise level as a result of noise impacts associated with the operation of heavy-duty vehicles and equipment.	Closure Phase	Site	2	Short term	1	Medium	3	Nearly completely	2	8	Medium	3	Low	24	Low	0,8	Very Low	19,2

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Closure and Rehabilitation	Disturbance due to vibrations caused by heavy duty vehicles.	Closure Phase	Site	2	Short term	1	Low	2	Nearly completely	2	7	Medium	3	Low	21	Low	0,8	Very Low	16,8
Closure and Rehabilitation	Impact of security lighting on surrounding landowners and animals.	Closure Phase	Site	2	Short term	1	Low	2	Nearly completely	2	7	Medium	3	Low	21	Low	0,8	Very Low	16,8
Blasting																			
Opencast Mining, Drilling and Blasting	Blasting hazard, specifically - Ground vibration	Construction & Operational Phase	Local	3	Long term	4	Medium	3	Partly reversible	3	13	Medium-High	4	Medium	52	Medium	0,6	Low	31,2
Opencast Mining, Drilling and Blasting	Blasting hazard, specifically - Air Blasting	Construction & Operational Phase	Local	3	Long term	4	Medium	3	Partly reversible	3	13	Medium-High	4	Medium	52	Medium	0,6	Low	31,2
Opencast Mining, Drilling and Blasting	Blasting hazard, specifically - Fly Rock	Construction & Operational Phase	Local	3	Long term	4	Medium	3	Nearly completely	2	12	Medium	3	Low	36	Medium	0,6	Low	21,6
Opencast Mining, Drilling and Blasting	Blasting hazard, specifically on sensitive close by receptors	Construction & Operational Phase	Local	3	Long term	4	Medium	3	Partly reversible	3	13	High	4	Medium	52	Medium	0,6	Low	31,2
Socio-Economic																			
All	Possibility of mining activities and workers causing veld fires, which can potentially cause injury and or loss of life to mine workers and surrounding landowners, visitors and workers.	Construction & Operational Phase	Regional	3	Long term	4	Medium	3	Nearly completely	2	12	Medium	3	Low	36	Medium	0,6	Low	21,6

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
All	Increased risk to public health and safety: Dangerous areas including the waste management activities and waste poses health risks and possible loss of life to mine workers and visitors to the site.	Construction & Operational Phase	Site	2	Long term	4	Medium	3	Partly reversible	3	12	Medium	3	Low	36	Medium	0,6	Low	21,6
All	Increased risk to public and worker health and safety	Construction & Operational Phase	Site	2	Long term	4	Medium	3	Partly reversible	3	12	Medium	3	Low	36	Medium	0,6	Low	21,6
All	Socio-economic impact on farmers, labourers and surrounding landowners and residents due to negative impacts on groundwater, dust pollution, noise pollution etc.	Construction & Operational Phase	Regional	4	Long term	4	Low	2	Nearly irreversible	4	14	Medium	3	Medium	42	Medium	0,6	Low	25,2
All	Socio-economic impact on farmers, labourers and surrounding landowners specifically the close-by receptors such as Mr Swanepoel, the Gogo identified by the community and the Potgieter farmers	Construction & Operational Phase	Regional	4	Long term	4	Medium	3	Nearly irreversible	4	15	Definite	5	High	75	Medium	0,6	Medium	45

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
All	Extended employment provision due to the implementation of the mining activities, allowing mining activities to commence.	Construction & Operational Phase	Regional	4	Long term	4	High	4	Partly reversible	3	15	Medium	3	Medium	45	N/A	1	Medium	45
All	Sourcing supplies from local residents and businesses boosting the local economy for an extended period of time.	Construction & Operational Phase	Regional	4	Long term	4	High	4	Nearly irreversible	4	16	Medium	3	Medium	48	N/A	1	Medium	48
Closure and Rehabilitation	Possibility of closure activities and workers causing veld fires, which can potentially cause injury and or loss of life to workers and surrounding landowners and visitors.	Closure Phase	Site	2	Short term	1	Medium	3	Partly reversible	3	9	Medium	3	Low	27	Medium	0,6	Very Low	16,2
Rehabilitation of site, removal of infrastructure, closure of waste management facilities (including Stormwater)	Increased risk to public health and safety: Dangerous areas including the waste management facilities poses health risks and possible loss of life to mine workers and visitors to the site.	Closure Phase	Site	2	Short term	1	Medium	3	Partly reversible	3	9	Medium	3	Low	27	Medium	0,6	Very Low	16,2

2 Seam: Impact Assessment Table

ACTIVITY	POTENTIAL IMPACT	PHASE	Extent		Duration		Intensity		Reversibility		Irreplaceability (Extent + Duration +	Probability		Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Rehabilitation of site, removal of infrastructure, closure of waste management facilities (including Stormwater)	Socio-economic impact on farmers, labourers and surrounding landowners and residents due to negative impacts on groundwater, dust pollution, noise pollution etc.	Closure Phase	Regional	4	Short term	1	Low	2	Nearly irreversible	4	11	Medium	3	Low	33	Medium	0,6	Very Low	19,8
Closure and Rehabilitation	Economic impact should there be an incident of public health and safety.	Closure Phase	Regional	4	Long term	4	High	4	Partly reversible	3	15	Medium	3	Medium	45	Low	0,8	Low	36
Closure and Rehabilitation	Sourcing supplies from local residents and businesses boosting the local economy for an extended period of time.	Closure Phase	Regional	4	Short term	1	High	4	Nearly irreversible	4	13	Medium	3	Low	39	Low	0,8	Low	31,2
Closure and Rehabilitation	Reduced period of providing employment for local residents and skills transfer to unskilled and semi-skilled unemployed individuals.	Closure Phase	Regional	4	Short term	1	Medium	3	Nearly completely	2	10	Medium	3	Low	30	Medium	0,6	Very Low	18