Environmental Impact Significance Determination

CONSTRUCTION PHASE

Activity, Phase and Impact					mitigation)							Impact Rating (after mitigation)						
Impacted Environment	Phase impact occurs (C, O, D, PC)	Activity No.	Activity	Summary of Impact	Nature of Impact (positive / Negative	Spatial Scale (7)	Duration (7)	Severity (7)	Probability (7)	Consequence	Significance (147)	Nature of Impact (Positive / Negative/ Neutralising)	Spatial Scale (7)	Duration (7)	Severity (7)	Probability (7)	Consequence	Significance (147)
Biophysical Impacts																		
Soil	C	1	Stripping of topsoil	Soil is stripped in order to make way for return water dam and settling dam. Soils will then be used to create earth walls surrounding the dams.	N	1	5	2	7	8	56	Neu	1	1	2	5	4	20
	C			Possible contamination through hydrocarbon spillages from heavy machinery.	N	1	5	2	7	8	56	Neu	1	1	1	2	3	6
	C,O,D	2	Construction of borehole and infrastrucuture	Possible contamination through hydrocarbon spillages from heavy machinery.	N	1	1	2	3	4	12	Neu	1	1	2	2	4	8
Ground Water	C,O,D	2	Construction of borehole and infrastrucuture	Possible contamination through hydrocarbon spillages from heavy machinery.	N	2	2	2	3	6	18	Neu	1	1	2	3	4	12
Surface Water	C,O,D	2	Construction of borehole and infrastrucuture	Possible contamination through hydrocarbon spillages from heavy machinery.	N	1	2	2	3	5	15	Neu	1	1	2	3	4	12
Land Capability	C	2	Construction of borehole and infrastrucuture	Detrioration of land capability	N	1	2	1	4	4	16	Neu	1	1	2	1	4	4
Land Use	C	2	Construction of borehole and infrastrucuture	Altering the land use	N	1	2	1	4	4	16	Neu	1	1	2	1	4	4
Air Quality	C,O,D	3	Vehicular movement	Increase in dust pollution	N	2	5	2	6	9	54	Neu	2	3	2	6	7	42
Noise	C,O,D	2	Construction of infrastructure	Increase in noise pollution	N	3	5	2	6	10	60	Neu	2	5	1	3	11	33
Flora	C	2	Construction of infrastructure	Habitat destruction	N	1	5	2	7	8	56	Neu	1	4	2	2	9	18
	C,O,D			Dust pollution will affect transpiration and photosynthesis, thereby inhibiting plant growth	N	3	5	2	5	10	50	Neu	3	3	1	3	10	30
Fauna	C,O	2	Construction of infrastructure	Habitat destruction will result in species migration from the area	N	2	5	2	6	9	54	Neu	2	4	1	4	11	44
Social Impacts																		

Regional and Socio-Economic Structure	C,O,D	2	Construction of infrastructure	Temporary employment for local contractors	P	3	2	1	3	6	18						0	0
Interested and affected parties	C,O,D			Increase in air and noise pollution, as well increase in traffic and illegal trespassing of private property	N	3	5	1	4	9	36	Neu					0	0

Environmental Impact Significance Determination

OPERATIONAL PHASE

Activity, Phase and Impact					Impact Rating (before							Impact Rating (after mitigation)						
Impacted Environment	Phase impact occurs (C, O, D, PC)	Activity No.	Activity	Summary of Impact	Nature of Impact (positive / Negative	Spatial Scale (7)	Duration (7)	Severity (7)	Probability (7)	Consequence	Significance (147)	Nature of Impact (Positive / Negative/Netralising)	Spatial Scale (7)	Duration (7)	Severity (7)	Probability (7)	Consequence	Significance (147)
Biophysical Impacts																		
Soil	O	4	Washing Plant Operation	Processing sand to eliminate unwanted material	N	2	5	2	6	9	54	Neu	1	1	1	1	3	3
	C,O,D			Exposure to erosion by wind and water	N	3	5	4	3	12	36	Neu	3	3	2	2	8	16
	C,O,D	3	Vehicular movement	Possible contamination through hydrocarbon spillages from heavy machinery.	N	1	1	4	3	6	18	Neu	1	1	2	3	4	12
	O			Compaction of soil	N	2	5	3	4	10	40	Neu	1	5	2	2	10	20
	O,D	5	Temporary stockpiling of rinsed product	Compaction of soil	N	2	5	3	4	10	40	Neu	1	5	2	2	10	20
Ground Water	O	4	Washing Plant Operation	Decrease groundwater table	N	2	5	4	3	11	33	Neu	2	4	2	2	10	20
	C,O,D	3	Vehicular movement	Possible contamination through hydrocarbon spillages from heavy machinery.	N	3	2	3	3	8	24	Neu	2	1	2	2	7	14
	C,O,D	6	Abstraction of water (borehole)	Decrease groundwater table	N	2	4	3	5	9	45	Neu	2	3	2	4	11	44
	O	7	Storing & disposing of water	Decrease groundwater table	N	2	4	3	5	9	45	Neu	2	3	2	4	11	44
Surface Water	C,O,D	4	Washing Plant Operation	Removal of vegetation leaves soil exposed to surface water erosin	N	1	1	2	2	4	8	Neu	1	1	1	1	4	4
	O	7	Storing & disposing of water	Disruption of natural drainage lines	N	2	4	2	3	11	33	Neu	1	2	1	2	6	12
Air Quality	C,O,D	4	Washing Plant Operation	Increase in dust pollution	N	2	5	2	4	9	36	Neu	1	3	1	3	8	24
	C,O,D	3	Vehicular movement	Increase in dust pollution	N	3	5	2	4	10	40	Neu	2	4	1	3	10	30
Noise	C,O,D	4	Washing Plant Operation	Increase noise pollution	N	2	5	2	5	9	45	Neu	2	4	1	3	10	30
	C,O,D	3	Vehicular movement	Increase noise pollution	N	2	5	2	5	9	45	Neu	2	4	1	3	10	30
Flora	C,O,D	4	Washing Plant Operation	Dust pollution will affect transpiration and photosynthesis, thereby inhibiting plant growth	N	2	5	2	4	9	36	Neu	1	3	1	3	8	24

Flora	C,O,D	3	Vehicular movement	Dust pollution will affect transpiration and photosynthesis, thereby inhibiting plant growth	N	2	5	2	4	9	36	Neu	1	3	1	3	8	24
Fauna	C,O	4	Washing Plant Operation	Noise pollution will result in species migration from the area	N	2	5	4	5	11	55	Neu	1	3	3	4	11	44
	C,O,D	3	Vehicular movement	Noise pollution will result in species migration from the area	N	2	5	4	5	11	55	Neu	2	4	1	3	10	30
Social Impacts																		
Regional and Socio-Economic Structure	C,O,D	4	Washing Plant Operation	Increase in employment opportunities	P	2	5	2	3	9	27						0	0
Interested and affected parties	C,O,D	4	Washing Plant Operation	Increase in air and noise pollution, as well increase in traffic and illegal trespassing of private property	N	2	5	2	4	9	36	Neu	1	3	1	3	8	24
	C,O,D	3	Vehicular movement	Increase in air and noise pollution, as well increase in traffic	N	2	5	3	4	10	40	Neu	1	3	2	3	9	27

Environmental Impact Significance Determination

DECOMMISSIONING PHASE

Activity, Phase and Impact					Impact Rating (before							Impact Rating (after mitigation)						
Impacted Environment	Phase impact occurs (C, O, D, PC)	Activity No.	Activity	Summary of Impact	Nature of Impact (positive / Negative	Spatial Scale (7)	Duration (7)	Severity (7)	Probability (7)	Consequence	Significance (147)	Nature of Impact (positive / Negative/Neutralising)	Spatial Scale (7)	Duration (7)	Severity (7)	Probability (7)	Consequence	Significance (147)
Biophysical Impacts																		
Soil	D		Decommissioning of Infrastructure	Exposure to wind and water erosion	N	1	2	4	6	7	42	Neu	1	1	1	5	3	15
	D	8		Possible contamination through hydrocarbon spillages from heavy machinery.	N	1	2	3	3	6	18	Neu	1	1	2	2	4	8
	D	9	Rehabilitation of Area	Soil to be ripped - exposure to wind and water erosion	N	1	2	4	7	7	49	Neu	1	1	3	5	5	25
Surface Water	O,D	8	Decommissioning of Infrastructure	Possible contamination through hydrocarbon spillages from heavy machinery.	N	1	2	3	3	6	18	Neu	1	1	2	2	6	12
Ground Water	D			Possible contamination through hydrocarbon spillages from heavy machinery.	N	3	2	3	3	8	24	Neu	2	1	2	2	7	14
Air Quality	D	8	Decommissioning of Infrastructure	Increase in dust pollution	N	3	1	3	6	7	42	Neu	2	1	2	4	9	36
Noise	D	8	Decommissioning of Infrastructure	Increase in noise pollution	N	3	1	3	6	7	42	Neu	2	1	2	4	9	36
Flora	D	8	Decommissioning of Infrastructure	Dust pollution will affect transpiration and photosynthesis, thereby inhibiting plant growth	N	3	3	4	5	10	50	Neu	1	2	2	3	8	24
	D	9	Rehabilitation of Area	New vegetation will be planted - possible ingress of alien vegetation	Neu	1	3	4	4	8	32						0	0
Fauna	D	9	Rehabilitation of Area	Will take months if not years for species to migrate and re-popultate the area	Neu	1	4	4	6	9	54						0	0
Visual	D	9	Rehabilitation of Area	Improve visual aesthetics to the area	Neu	3	1	2	6	6	36						0	0

Topography	D	9	Rehabilitation of Area	Re-shaping topography to reflect surrounding topography	Neu	1	1	2	6	4	24						0	0
Social Impacts																		
Regional and Socio-Economic Structure	D	8	Decommissioning of Infrastructure	Decrease in employment opporunities	N	3	1	2	7	6	42	Neu	2	1	2	5	10	50
Interested and affected parties	D	8	Decommissioning of Infrastructure	Decrease in air and noise pollution, as well decrease in traffic and illegal trespassing of private property	P	3	1	2	6	6	36						0	0
	D	9	Rehabilitation of Area	Decrease in air and noise pollution, as well decrease in traffic	P	3	1	2	6	6	36						0	0

Environmental Impact Significance Determination

POST CLOSURE PHASE

Activity, Phase and Impact					Impact Rating (before mitigation)							Impact Rating (after mitigation)						
Impacted Environment	Phase impact occurs (C, O, D, PC)	Activity No.	Activity	Summary of Impact	Nature of Impact (positive / Negative	Spatial Scale (7)	Duration (7)	Severity (7)	Probability (7)	Consequence	Significance (147)	Nature of Impact (positive / Negative/Neutralising)	Spatial Scale (7)	Duration (7)	Severity (7)	Probability (7)	Consequence	Significance (147)
Biophysical Impacts																		
Ground water	PC	10	Monitoring	None expected.	P	1	3	1	4	5	20						0	0
Flora	PC	10	Monitoring	None expected.	P	2	1	1	4	4	16						0	0