

PLANNING PHASE

Activity	Impact summary	Environmental Impact Significance Before Mitigation						Proposed mitigation	Environmental Impact Significance After Mitigation							
		Consequence			Probability	Frequency: Impact	Significance		Significance Rating	Consequence			Probability	Frequency: Impact	Significance	Significance Rating
		Severity	Spatial	Duration	Frequency: Activity					Severity	Spatial	Duration	Frequency: Activity			
Planning of infrastructure placement and design within sensitive habitat	<ul style="list-style-type: none"> Infrastructure placement and design leading to overall loss of protected floral species; and Poor planning leading to an increased footprint. 	2	1	3	1	2	18	Low (-)	<ul style="list-style-type: none"> The proposed development footprint shall be kept to a minimum. Prior to commencement of mine dump debris removal from the site and construction activities, the contractor and site manager will finalise the layout plan and indicate no-go areas. 	1	1	3	1	2	15	Low (-)

CONSTRUCTION PHASE

Activity	Impact summary	Environmental Impact Significance Before Mitigation							Proposed mitigation	Environmental Impact Significance After Mitigation						
		Consequence			Probability	Frequency : Impact	Significance	Significance Rating Severity		Consequence			Probability	Frequency : Impact	Significance	Significance Rating
		Severity	Spatial	Duration	Frequency: Activity					Severity	Duration	Frequency: Activity				
Recruitment and site clearance (removal of debris from the old mine dump)	Possible boost in short term employment and local small business opportunities.	1	1	2	3	5	32	Medium-Low (+)	<ul style="list-style-type: none"> Encourage the local employment for the following: <ul style="list-style-type: none"> Employment opportunities for local SMME contractors during site clearance, preparation and construction. Secondary service provision of food, toilet hires, and equipment, etc. Reduce speed limits to 40 km/h or less. No fires are allowed on the site, unless in areas demarcated and managed for this purpose. All workers will be made aware of fire risks. Limit the aerial extent of the disturbance to the footprint of the proposed development, including the laydown areas surrounding the primary footprint. 	3	2	3	3	3	48	Medium-High (+)
	Generation of dust potentially resulting in a health and nuisance impact.	3	2	2	2	2	28	Medium-Low (-)		2	1	2	2	2	20	Low (-)
	Potential impact on safety and security as a result of theft, the occurrence of additional trucks on the roads, uncontrolled lighting of fires on site, littering and driving irresponsibly.	3	2	2	2	2	28	Medium-Low (-)		2	1	2	2	2	20	Low (-)
	Visual impacts as a result of movement of vehicles in the project area.	2	1	3	1	2	18	Low (-)		1	1	3	1	2	15	Low (-)
	Potential squatting of job seekers.	2	1	3	1	2	18	Low (-)		1	1	3	1	2	15	Low (-)
Site Clearance and construction activities	Local spillages of oils from vehicles and machinery leading to groundwater contamination.	3	2	3	3	3	48	Medium-High (-)	<ul style="list-style-type: none"> No washing of vehicles shall be allowed outside demarcated areas. The bays will be clearly demarcated and will not be allowed to contaminate any surface runoff; Sufficient areas shall be provided for the maintenance and washing of vehicles; Refuelling of vehicles will only be allowed in designated areas; All construction equipment shall be parked in a demarcated area Drip trays shall be used when equipment is not used for some time; On surface bulk storage of hydrocarbons must be situated in a dedicated area which will include a bund or a drain where necessary to contain any spillages during the use, loading and off-loading of the material; Bund areas shall contain 110% of the stored volume; Bund areas must be impermeable; Bund areas must have a facility such as a valve/sump to drain or remove clean stormwater; Contaminated water shall be pumped into a container for removal by an approved service provider; Regular inspections shall be carried out to ensure the integrity of the bundwalls; All preventative servicing of earth moving equipment and construction vehicles shall be undertaken off site; Runoff from this area shall be contained; Spill kits shall be made available and all personnel shall be trained on how to use the kits and training records shall be made available on request. 	2	1	2	2	2	20	Low (-)
	Improper storage and handling of hazardous materials leading to groundwater contamination.	3	2	3	3	3	48	Medium-High (-)		2	1	2	2	2	20	Low (-)
	Potential deterioration in water quality as a result of accidental spillages of hazardous substances such as hydrocarbons from vehicles and machinery.	3	2	2	2	3	35	Medium-Low (-)		2	1	2	2	2	20	Low (-)
	Possible contaminated dirty water runoff to surrounding	3	2	2	2	3	35	Medium-Low (-)		2	1	2	2	2	20	Low (-)

Activity	Impact summary	Environmental Impact Significance Before Mitigation						Proposed mitigation	Environmental Impact Significance After Mitigation							
		Consequence			Probability	Frequency : Impact	Significance		Significance Rating Severity	Consequence			Probability	Frequency : Impact	Significance	Significance Rating
		Severity	Spatial	Duration	Frequency: Activity					Severity	Duration	Frequency: Activity				
	areas resulting in the impact on local surface water quality.							<ul style="list-style-type: none"> No direct discharge of polluted water to the environment is permitted. Ensure that topsoil is properly stored, away from the streams and drainage areas. No construction activities are allowed within 100 metres from the nearby streams without consent from the DWS. Vehicle and personnel movement within watercourses/wetland areas/riparian areas shall be strictly prohibited. Ensure that topsoil is properly stored, away from sensitive environmental areas; Vehicle and personnel movement within watercourses and drainage areas shall be strictly prohibited; Adequate stormwater management must be incorporated into the design of the project in order to prevent contamination of water courses and wetlands from dirty water. 								
	Debris from poor handling of materials and/or waste blocking watercourses may result in flow impediment and pollution.	2	2	2	2	2	24		Low (-)	1	1	3	1	2	15	Low (-)
	Increase in silt load in runoff due to movement of vehicles on site.	2	3	2	3	2	35		Medium-Low (-)	2	2	2	2	2	24	Low (-)
	Deterioration of water quality as a result of improper handling/ of chemicals.	2	3	2	3	2	35		Medium-Low (-)	2	2	2	2	2	24	Low (-)
	Poor stormwater management leading to runoff from stockpiled material removed causing sedimentation of the water resources.	2	3	2	3	2	35		Medium-Low (-)	2	2	2	2	2	24	Low (-)
	Increase of surface runoff and potentially contaminated water that needs to be contained in the areas where site clearing occurred.	2	3	2	3	2	35		Medium-Low (-)	2	2	2	2	2	24	Low (-)
	Loss of archaeological resources from the site	3	3	2	2	2	32		Medium-Low (-)	2	1	2	2	2	20	Low (-)
	Although no graves were found during the HIA, chance finds of graves in the project area cannot be excluded.	2	1	2	2	2	20		Low (-)	1	1	3	1	2	15	Low (-)
	Impact on the cultural landscape in the area	2	1	2	2	2	20		Low (-)	1	1	3	1	2	15	Low (-)
	Cumulative Impacts: The proposed project will result in a cumulative impact on the loss of archaeological resources in the region	2	1	2	2	2	20		Low (-)	1	1	3	1	2	15	Low (-)
	According to the South African Heritage Resources Agency Information System (SAHRIS) Palaeo Map, portions of the project area fall within a sensitive fossiliferous zone	2	1	2	2	2	20		Low (-)	1	1	3	1	2	15	Low (-)
	Localised chemical pollution of soils as a result of vehicle hydrocarbon spillages and compaction.	3	2	2	2	3	35		Medium-Low (-)	2	2	2	2	2	24	Low (-)
	Localised clearing of vegetation and compaction of the construction footprint will result in the soils being particularly more vulnerable to soil erosion.	3	2	2	2	3	35		Medium-Low (-)	2	2	2	2	2	24	Low (-)

Activity	Impact summary	Environmental Impact Significance Before Mitigation						Proposed mitigation	Environmental Impact Significance After Mitigation							
		Consequence			Probability	Frequency : Impact	Significance		Significance Rating Severity	Consequence			Probability	Frequency : Impact	Significance	Significance Rating
		Severity	Spatial	Duration	Frequency: Activity					Severity	Duration	Frequency: Activity				
	Localised loss of soil resource and its utilisation potential due to compaction over unprotected ground/soil.	3	2	2	2	3	35	Medium-Low (-)	<ul style="list-style-type: none"> Drip trays shall be used when dispensing fuel or oils from the earthmoving equipment outside designated areas. Drip trays shall only be emptied into a dedicated container. Dedicated containers must be emptied into containers for removal by an approved contractor. 	2	2	2	2	2	24	Low (-)
	Localised loss of soil and land capability due to reduction in nutrient status - de-nitrification and leaching due to stripping and stockpiling footprint areas.	3	2	2	2	3	35	Medium-Low (-)	<ul style="list-style-type: none"> Waste manifests and safe disposal certificates must be filed as proof of safe disposal from site. Erosion control measures shall be implemented where deemed necessary. Prevent erosion from stockpiles to prevent increase in turbidity of watercourses. All erosion damage must be repaired as soon as possible. 	2	2	2	2	2	24	Low (-)
	The construction of the infrastructure will result in loss of and damage to degraded habitats. Rehabilitation of some of these areas would be possible and should be adhered to. Most habitat destruction will be caused during the construction of the infrastructure.	3	3	2	2	2	32	Medium-Low (-)	<ul style="list-style-type: none"> The proposed development footprint shall be kept to the minimum; All disturbed areas must be concurrently rehabilitated during construction; Prohibit the collection of any plant material for firewood or medicinal purposes; The existing integrity of flora surrounding the study area shall be upheld and no activities shall be carried out outside the footprint of the construction areas; 	2	1	2	2	2	20	Low (-)
	The construction will lead to the loss of individual plants such as grasses, forbs, trees and shrubs that will be cleared on the footprint area. This will mostly occur during the construction phase.	3	3	2	2	2	32	Medium-Low (-)	<ul style="list-style-type: none"> Edge effect control shall be implemented to avoid further habitat degradation outside of the proposed footprint area; All sensitive open space areas will be demarcated and access into these areas shall be prohibited; Protected floral species occurring within the vicinity of the study area, but outside the disturbance footprint shall be fenced for the duration of the construction activities; 	2	1	2	2	2	20	Low (-)
	Loss of threatened, near threatened and endemic taxa: The anticipated loss of some of the natural habitats that support endemic species will result in the local displacement of endemic listed flora.	3	3	2	2	2	32	Medium-Low (-)	<ul style="list-style-type: none"> Monitoring of relocation success will be conducted during the operational phase; Construction related activities shall be kept strictly within the development footprint; Construction vehicles shall only be allowed on designated roadways to limit the ecological footprint of the project. 	2	1	2	2	2	20	Low (-)
	Due to habitat loss and construction activities animals will migrate from the construction area and animal numbers will decrease	3	3	2	2	2	32	Medium-Low (-)	<ul style="list-style-type: none"> Alien Invasive Plant Species Management plan to be implemented; Edge effects of activities including erosion and alien/ weed control will be strictly managed in the riparian area; All sites disturbed by construction activities shall be monitored for colonisation by exotic or invasive plants; 	2	1	2	2	2	20	Low (-)
	Changes in the community structure: It is expected that the faunal species composition will shift, due to an anticipated loss in habitat surface area. In addition, it is predicted that more generalist species (and a loss of functional guilds) will dominate the study area. Attempts to rehabilitate will attract taxa with unspecialised and generalist life-histories. It is predicted that such taxa will persist for many years before conditions become suitable for succession to progress	3	3	2	2	2	32	Medium-Low (-)	<ul style="list-style-type: none"> Exotic or invasive plants shall be controlled as they emerge; An alien vegetation control program must be developed and implemented within all disturbed areas. After removal of alien vegetation, the affected areas must be re-assessed to determine the success of the program and any follow up measures that may be required; The eradicated plant material must be disposed of at an approved solid waste disposal site; During post-construction, an alien vegetation removal and monitoring plan must be compiled for those areas which were not effectively rehabilitated; The extent of invasion must be established through investigation to identify priority areas; 	2	1	2	2	2	20	Low (-)

Activity	Impact summary	Environmental Impact Significance Before Mitigation						Proposed mitigation	Environmental Impact Significance After Mitigation								
		Consequence			Probability	Frequency : Impact	Significance		Significance Rating Severity	Consequence			Probability	Frequency : Impact	Significance	Significance Rating	
		Severity	Spatial	Duration	Frequency: Activity					Severity	Duration	Frequency: Activity					
	Habitat Fragmentation: The construction of buildings, fences and roads will inevitably result in natural movement patterns being disrupted and, to a varying degree depending on how different species react to these barriers will result in the fragmentation of natural populations. The development will have a low impact in fragmenting the habitats on the property.	3	3	2	2	2	32	Medium-Low (-)	<ul style="list-style-type: none"> Priority species shall be identified to control and develop protocols for the removal of all alien species e.g. mechanical removal, herbicidal treatment etc. Mechanical methods must be favoured for the removal of alien invasive species. Chemical removal shall only be undertaken by a suitably qualified and approved person; and As much vegetation growth as possible must be promoted in order to protect soils. In this regard, special mention is made of the need to use indigenous vegetation species where hydro seeding, rehabilitation planting (where applicable) are to be implemented. 	2	1	2	2	2	2	20	Low (-)
	Spread and establishment of alien invasive species: The construction of the infrastructure almost certainly carries by far the greatest risk of alien invasive species being imported to the site, and the high levels of habitat disturbance also provide the greatest opportunities for such species to establish themselves, since most indigenous species are less tolerant of disturbance. The biggest risk is that seeds of noxious plants may be carried onto the site along with materials that have been stockpiled elsewhere at already invaded sites.	3	2	2	2	3	35	Medium-Low (-)		2	2	2	2	2	24	Low (-)	
	An increase in human activity on the site and surrounding areas is anticipated. The risk of wood harvesting, poaching and fires is increased which could have a definite impact on the flora and fauna of the larger area. If staff compounds are erected for construction workers, the risk of pollution because of litter and inadequate sanitation and the introduction of invasive flora are increased. The presence of many construction workers or regular workers during the construction phase on site over a protracted period will result in a greatly increased risk of uncontrolled fires arising from cooking fires, improperly disposed cigarettes etc.	3	2	2	2	3	35	Medium-Low (-)	<ul style="list-style-type: none"> Staff should not be accommodated on site. No temporary accommodation must be erected on the site. Adequate rubbish bins and sanitation facilities should be provided to construction workers; The ECO should regularly inspect the site, including storage facilities and compounds. A monitoring programme should also be implemented around these areas to detect alien invasive species early, before they become established and, in the case of weeds, before the release of seeds; Maintain proper firebreaks around entire development footprint. Educate construction workers regarding fire risks and the occurrence of important resources in the area and the importance of protection; Construction activities must remain within defined construction areas and the road servitudes. No construction / disturbance will occur outside these areas. Construction activities must be restricted to working hours Monday to Saturday, unless otherwise approved by the appropriate competent person in consultation with the affected residents. Instruct employees, contractors, and site visitors to avoid harassment and disturbance of wildlife, especially during reproductive (e.g. courtship, nesting) seasons. In addition, control pets to avoid harassment and disturbance of wildlife. Campfires at construction sites must be strictly controlled to ensure that no veld fires are caused. 	2	2	2	2	2	2	24	Low (-)

Activity	Impact summary	Environmental Impact Significance Before Mitigation							Proposed mitigation	Environmental Impact Significance After Mitigation						
		Consequence			Probability	Frequency : Impact	Significance	Significance Rating Severity		Consequence			Probability	Frequency : Impact	Significance	Significance Rating
		Severity	Spatial	Duration	Frequency: Activity					Severity	Duration	Frequency: Activity				
Transportation of material to and from the site	Visual intrusion as a result of the movement of machinery and the establishment of the required infrastructure.	2	1	2	2	2	20	Low (-)	<ul style="list-style-type: none"> The number of construction vehicles and machinery to be used shall be kept to a minimum; Movement of vehicles shall be kept to outside busy hours to minimise the visual impacts on the residents; Materials transported on public roads must be covered; and Where possible, rehabilitation of the work areas shall be undertaken in tandem with construction to ensure that areas stripped of vegetation are kept to a minimum. 	1	1	3	1	2	15	Low (-)
	Indirect Impacts Indirect visual impact due to dust generation as a result of the movement of vehicles and materials, to and from the site area.	2	1	2	2	2	20	Low (-)		1	1	3	1	2	15	Low (-)
	The movement of vehicles and machinery during the construction phase may result in possible increase in dust generation, PM ₁₀ and PM _{2.5} as a result of stockpiling material, use of heavy machinery, and material movement. Gaseous emissions derive from the haul trucks, mining equipment, public vehicles, biomass burning and domestic fuel burning. These gaseous emissions include primarily SO ₂ , CO, CO ₂ , NO _x and hydrocarbons. Vehicles on the roads in Kimberley, and on the national roads (N8, R64 and R357) will also contribute to these gaseous emissions but it is expected that it is not a busy road and therefore the contribution is negligible.	2	2	2	2	2	24	Low (-)	<ul style="list-style-type: none"> Dust suppression measures shall be implemented on dry weather days and periods of high wind velocities; Appropriate dust suppression measures may include spraying with water; Where practical rehabilitation of areas cleared of vegetation should be undertaken in tandem with the construction activities; A speed limit of 40 km/hr shall apply to limit vehicle entrained dust from the unpaved road; All construction equipment must be scheduled for preventative maintenance to ensure the functioning of the exhaust systems to reduce excessive emissions and limit air pollution; Dust control suppression shall be implemented on dry weather days and periods of high wind velocities; Appropriate dust suppression measures may include limiting the extent of open areas, reducing the frequency of disturbance and spraying with water; Where practical rehabilitation should be undertaken progressively; Materials transported on public roads must be covered; Odours: <ul style="list-style-type: none"> Putrescible waste must be handled, stored and disposed of before the probability of it generating odours; and Chemical toilets must be emptied / serviced on a regular basis. Proof of this must be provided to the site manager. 	1	1	3	1	2	15	Low (-)
	Increase in carbon emissions and ambient air pollutants (NO ₂ and SO ₂) as a result of movement of vehicles and operation of machinery/equipment.	2	2	2	2	2	24	Low (-)		1	1	3	1	2	15	Low (-)
	Cumulative Impacts: The project will contribute to cumulative air quality impact as there are already activities in the area contributing to air quality pollution.	2	2	2	2	2	24	Low (-)		1	1	3	1	2	15	Low (-)
	Emissions of Green House Gases as a result of the use of construction vehicles and machinery.	2	2	2	2	2	24	Low (-)		1	1	3	1	2	15	Low (-)
	The use of vehicles and machinery may generate nuisance noise in the immediate vicinity	2	2	2	2	2	24	Low (-)	<ul style="list-style-type: none"> Correct personal Protective Equipment (PPE) must be worn at all times by the personnel at the site. 	1	1	3	1	2	15	Low (-)

Activity	Impact summary	Environmental Impact Significance Before Mitigation						Proposed mitigation	Environmental Impact Significance After Mitigation							
		Consequence			Probability	Frequency : Impact	Significance		Significance Rating Severity	Consequence			Probability	Frequency : Impact	Significance	Significance Rating
		Severity	Spatial	Duration	Frequency: Activity					Severity	Duration	Frequency: Activity				
	Cumulative Impact: The project will contribute to the noise in the area, in addition to the noise already existing	2	2	2	2	2	24	Low (-)	<ul style="list-style-type: none"> All equipment should be provided with standard mufflers. Muffling units on vehicles and equipment must be kept in good working order. Vehicles with low noise levels to be used and the reverse signal to be replaced with a vibration type monitor. Machinery with low noise levels and maintained in a good order to be used and to comply with the IFC's Health and Safety Regulations. Machinery with low noise levels to be used and reverse siren to be replaced with a vibration type monitor. The calculated noise level at 25m from the road will be 52.3dBA which will be lower than the prevailing traffic noise levels along the identified hauling routes. Staff working on site should wear ear protection equipment where necessary. All equipment must be kept in good working order Equipment must be operated within specifications and capacity (e.g. no overloading of machines). Regular maintenance of equipment must be undertaken. 	1	1	3	1	2	15	Low (-)
	Increase in traffic volumes as a result of transportation of materials to site which may lead to an increase in traffic congestion on roads around the project area increasing the chances of road accidents.	3	3	2	2	2	32	Medium-Low (-)	<ul style="list-style-type: none"> Speed limits will be reduced to 40 km/h or less to reduce dust and noise generation and minimise the occurrences of accidents on public roads. All the vehicles shall undergo maintenance on a regular basis to ensure the combustion engine vehicle efficiency. The number of construction vehicles and trips shall be kept to a minimum. 	2	1	2	2	2	20	Low (-)
	The increase in vehicles results in an increased potential for road degradation of the road network in the vicinity of the project.	3	3	2	2	2	32	Medium-Low (-)	<ul style="list-style-type: none"> Where possible the transportation of construction materials and rubbish shall be undertaken outside traffic peak hours to minimise inconveniencing residents. 	2	1	2	2	2	20	Low (-)
Waste Management	Disposal of hazardous waste including hydrocarbon contaminated soils, rags etc. could result in the contamination of surface runoff	3	3	2	2	2	32	Medium-Low (-)	<p>Separation of waste:</p> <ul style="list-style-type: none"> All waste shall be separated into general waste and hazardous waste; Hazardous waste shall not be mixed with general waste and in doing so increase the quantities of hazardous waste to be managed; General waste can further be separated into waste that can be recycled and or reused; No littering shall be allowed in and around the site, a sufficient number of bins shall be provided for the disposal of waste; Where necessary dedicate a storage area on site for collection of construction waste. <p>Storage of waste:</p>	2	1	2	2	2	20	Low (-)
	Stockpiling material may result in secondary pollution and contamination of surface runoff.	3	3	2	2	2	32	Medium-Low (-)	<p>Storage of waste:</p>	2	1	2	2	2	20	Low (-)
	Cumulative impact: Contamination of surface water resources	2	2	2	2	2	24	Low (-)	<ul style="list-style-type: none"> General waste will be collected in an adequate number of litter bins located throughout the construction site; Bins must have lids in order to keep rainwater out; Bins shall be emptied regularly to prevent them from overflowing; All work areas shall be kept clean and tidy at all times; All waste management facilities will be maintained in good working order; Waste shall be stored in demarcated areas according to type of waste; 	2	1	2	2	2	20	Low (-)

Activity	Impact summary	Environmental Impact Significance Before Mitigation						Proposed mitigation	Environmental Impact Significance After Mitigation							
		Consequence			Probability	Frequency : Impact	Significance		Significance Rating Severity	Consequence			Probability	Frequency : Impact	Significance	Significance Rating
		Severity	Spatial	Duration	Frequency: Activity					Severity	Duration	Frequency: Activity				
								<ul style="list-style-type: none"> • Runoff from any area demarcated for waste will be contained, treated and reused; • Flammable substances must be kept away from sources of ignition and from oxidizing agents; • If construction rubble is not removed immediately it shall be stockpiled outside the any sensitive environmental areas; • Demolition waste and surplus concrete shall be disposed of responsibly; • Waste shall not be buried or burned on site; and • The maximum retention time for temporary storage of waste generated shall not exceed 30 days, provided the waste does not present a health hazard or risk of odour. <p><i>Disposal of hazardous waste:</i></p> <ul style="list-style-type: none"> • No dumping shall be allowed in or near the construction site; • Hazardous containers shall be disposed of at an appropriate licensed site; • Hazardous waste will be removed and managed by an approved service provider; • A safe disposal certificate will be provided by the approved service provider as proof of responsible disposal of hazardous waste; and • The safe disposal certificate shall be stored and provided on request. <p><i>Disposal of general waste:</i></p> <ul style="list-style-type: none"> • No dumping shall take place in or near the construction site; • All general waste shall be disposed of to the nearest licensed landfill site; • Demolition waste and builders rubble shall be disposed of to an appropriate licensed landfill site; and • The necessary permissions must be obtained to dispose of builders' rubble to the landfill site. 								

OPERATIONAL PHASE

Activity	Impact summary	Environmental Impact Significance Before Mitigation							Proposed mitigation	Environmental Impact Significance After Mitigation						
		Consequence			Probability	Frequency : Impact	Significance	Significance Rating		Consequence			Probability	Frequency : Impact	Significance	Significance Rating
		Severity	Spatial	Duration	Frequency: Activity					Severity	Duration	Frequency: Activity				
Operation of the housing development	Visual impact of the constructed double and three storey housing developments	2	2	2	2	2	24	Low (-)	<ul style="list-style-type: none"> Local speed limits and traffic laws shall apply at all times to minimise the occurrences of accidents on public roads. Where possible, the buildings must be painted using colours that blend in with the existing structures in the area. The number of vehicles on the roads shall be kept to a minimum. Traffic laws shall apply. Security and safety should be emphasized. No workers shall be allowed to access private properties without the owner's knowledge and consent. 	2	2	2	1	2	18	Low (-)
	Negative impact as a result of additional vehicles on the roads, impacting on local communities' health and safety.	2	2	2	2	2	24	Low (-)		2	2	2	1	2	18	Low (-)
	Boost in employment and local small business opportunities.	4	4	5	5	4	117	High (+)		4	4	5	5	4	117	High (+)
	The use of vehicles on site poses the risk of chemical spillages including fuel and oils, which may leach into the groundwater.	2	1	2	2	2	20	Low (-)		1	2	1	1	2	12	Low (-)
	Leaks of untreated water from pipelines may occur and also impact on the groundwater quality.	2	3	2	2	2	28	Medium-Low (-)		2	2	2	1	2	18	Low (-)
	The possible potential impacts on surface water during the operational phases of the proposed project may be due to increased urban runoff from the infrastructure and roads.	2	3	2	2	2	28	Medium-Low (-)		2	2	2	1	2	18	Low (-)
	Leaks from the proposed pipelines may occur and result in contaminated run-off from the site.	2	3	2	2	2	28	Medium-Low (-)		2	2	2	1	2	18	Low (-)
	Heavy rainfall events and associated sheet run-off towards the Vaal River has potential for contamination of off-site surface water due to uncontained on-site surface water run-off.	2	3	2	2	2	28	Medium Low (-)		2	2	2	1	2	18	Low (-)
	Accidental fires and extinguishing of on-site fires results in potential contamination of soil, groundwater, and surface water run-off during a fire event if contact fire-fighting water is not contained	2	1	3	2	2	24	Low		1	2	1	1	2	12	Low (-)
	Improper rehabilitation during and post construction can result in proliferation of alien invasive plant species and continued loss of vegetation and habitats.	2	1	3	2	2	24	Low		1	2	1	1	2	12	Low (-)
Run-off water from gardens typically contains seeds of exotic and garden-variety plants that pose a threat to	2	2	2	2	2	24	Low (-)	1	2	1	1	2	12	Low (-)		

Activity	Impact summary	Environmental Impact Significance Before Mitigation						Proposed mitigation	Environmental Impact Significance After Mitigation							
		Consequence			Probability	Frequency : Impact	Significance		Significance Rating	Consequence			Probability	Frequency : Impact	Significance	Significance Rating
		Severity	Spatial	Duration	Frequency: Activity					Severity	Duration	Frequency: Activity				
	indigenous vegetation and ecology.															
	The operational phase of the project will require vehicular movement which may result in possible increase in dust generation, PM ₁₀ and PM _{2.5} .	2	3	2	3	2	35	Medium Low (-)	<ul style="list-style-type: none"> Dust suppression must be conducted during the operational phase of the project. Appropriate dust suppression measures may include limiting the extent of open areas, reducing the frequency of disturbance and spraying with water. 	1	2	1	1	2	12	Low (-)
	Increase in carbon emissions and ambient air pollutants (CO ₂ , NO _x , HC, VOC and SO ₂) as a result of movement of vehicles and operation of machinery/equipment.	2	3	2	3	2	35	Medium Low (-)	<ul style="list-style-type: none"> Dust control suppression shall be implemented on dry weather days and periods of high wind velocities. Correct speed will be maintained at the proposed project site. Putrescible waste must be handled, stored and disposed of before the probability of it generating odours. 	1	2	1	1	2	12	Low (-)
	Cumulative Impacts Cumulative air quality impacts are anticipated during the operational phase.	2	1	3	2	2	24	Low (-)		1	2	1	1	2	12	Low (-)
	Cumulative Impacts Socio-economic impacts in terms of job creation and promotion of other related local businesses	4	4	5	4	4	104	High (+)	The positive impacts from the proposed project must be maximised and KRD must ensure that the local residents benefit from the project.	4	4	5	4	4	104	High (+)
Waste Management	The operational phase of the project will result in increased generation of domestic waste that will need to be handled and disposed of by the Sol Plaatje Local Municipality, increasing pressure on the municipality	2	2	3	1	2	21	Low (-)	<p>Storage of waste</p> <ul style="list-style-type: none"> General waste will be collected in an adequate number of litter bins; Bins must have lids in order to keep rainwater out; Bins shall be emptied regularly to prevent the bins from overflowing; Waste shall be stored in demarcated areas according to type of waste; Flammable substances must be kept away from sources of ignition and from oxidizing agents; Waste shall not be buried or burned on site; and The maximum retention time for temporary storage of waste generated shall not exceed 30 days, provided the waste does not present a health hazard or risk of odour. <p>Disposal of hazardous waste</p> <ul style="list-style-type: none"> No dumping shall be allowed on site; Hazardous containers shall be disposed of at an appropriate licensed site; <p>Disposal of general waste</p> <ul style="list-style-type: none"> All general waste shall be disposed of to the nearest licensed landfill site. 	1	1	1	1	1	6	Low (-)