

Annexure J: Impact Assessment Criteria and Impact Significant Matrix

Many of the impacts associated with the surfacing of the road is experienced during the construction phase, while many of the impacts associated with gravel roads are experienced during the actual operational life of the road and during maintenance. In order to objectively evaluate development alternatives, use was also made of an overall impact significance, thus considering the long-term combined impact for construction, operation and maintenance phases.

The assessment of impacts and evaluation of development alternatives ar done in accordance with the criteria below:

Criteria for Impact Significance Rating and Ranking of Development Alternatives

Overall Impact Significance (mitigated combined impact for construction, operation and maintenance phases)								
High Negative Impact	Medium Negative Impact	Low Negative Impact	Very Low Impact	Neutral	Very Low Positive Impact	Low Positive Impact	Medium Positive Impact	High Positive Impact
Ranking of Development Alternatives								
Least Favourable								Most Favourable



The impact assessment methodology considered the nature, extent, duration, probability and significance of the anticipated impacts that each phase (construction, operation, decommissioning and closure and post closure) of the project (proposed mining operation and associated infrastructure) will have on the social, cultural and biophysical environment.

The assessment also assessed the likelihood that the mitigation proposed will successfully mitigate the anticipated incremental environmental impact for each project phase.

The qualitative assessment describes the impacts before and after mitigation for each project phase.

Impact Rating Criteria		Explanation of Impact Rating Criteria and Assessment Process
Nature of the Environmental Impact		Brief description of the effect of human actions and activities on the environment, and impacts of the environment on development.
Mitigation Measures		Measures designed to avoid, reduce or remedy potential adverse impacts, and compensate for residual adverse impacts (mitigation measures), and measures designed to expand and augment the effect of potential positive impacts (enhancement measures) for consideration during development of the final environmental management programme.
Impact Status	Negative	Impacts with a potential negative / adverse effect.
	Neutral	Neutral, no impact.
	Positive	Impacts with a potential positive / beneficial effect.
IAP Interest	Negative Very High	Widespread concern and/or specific concerns of very high importance. Concerns difficult to be addressed to satisfaction of authorities or concerned parties. Various substantiated appeals against project anticipated / highly likely if issues are not resolved and addressed to the satisfaction of the concerned parties.
	Negative High	Several concerns and/or specific concerns of high importance. Real and substantial appeals against project possible if not addressed.
	Negative Moderate	Limited concerns. All concerns addressed. Unsubstantiated appeals possible.
	Negative Low	Minor to notable concerns.
	Very Negative Low	Minor concerns.
	Neutral	No interest.
	Not defined	Level of interest has not been tested.
	Positive Very Low	Very little to no support for project.
	Positive Low	Little support for project.
	Positive Moderate	Limited support for project.
	Positive High	General support. May be associated with high community expectations.
Positive Very High	Widespread support. May be associated with extremely high community expectations.	

Impact Rating Criteria		Explanation of Impact Rating Criteria and Assessment Process			
Consequence (Severity + Extent)	Severity (Intensity + Duration + Frequency)	Intensity (Negative Impacts)	low	Slight change, disturbance or nuisance. Targets, limits and thresholds of concern never exceeded. Impacts are rapidly and easily reversible. Require no or only minor interventions or clean-up actions if these impacts occur. No complaints expected when the impact takes place.	
			moderate	Moderate change, disturbance or discomfort. Real but not substantial. Targets, limits and thresholds of concern may occasionally be exceeded. Impacts are reversible but may require some effort, cost and time. Sporadic complaints can be expected when the impact takes place.	
			high	Prominent change, disturbance or degradation. Real and substantial. May result in illness or injury. Targets, limits and thresholds of concern regularly exceeded. Regular complaints can be expected when the impact takes place.	
			very high	Severe change, disturbance or degradation. May result in illness, injury or death. Targets, limits and thresholds of concern continually exceeded. Interest group / community mobilisation against project can be expected when the impact takes place. May result in legal action if impact occurs.	
		Intensity (Positive Impacts)	low	Slight change or improvement. Minor benefits.	
			moderate	Moderate change or improvement. Real but not substantial benefits.	
			high	Prominent change or improvement. Real and substantial benefits. General community support.	
			very high	Considerable and large-scale change or improvement. Real and considerable benefit. Widespread support.	
		Duration	Refers to the total length of time (i.e. number of months or years) that the impact would or the impact source or risk will be present.		
			Short-term. May occur for weeks or a few months and are rapidly reversible.		
			Medium-term. May occur for the first few years of the project, during construction, up to three years. Impacts reversible within a three year period.		
			Long-term. May occur throughout the life of the mine, but will cease after operations ceases either because of natural processes or human intervention.		
	Permanent and irreversible. Residual impacts will remain after decommissioning and closure				
	Frequency	Refers to the time intervals and how often (i.e. number of days per year) the impact would manifest over the entire duration of the impact.			
		Seldom.	Impact would be intermitted, limited to a few days a year (occurs 0-10 % of the time).		
		Occasional.	Impact would occur now and again, not more than ten days a month (occurs 10 to 35% of the time).		
		Often	Impact would be present more than ten days a month (occurs >35% of the time).		
		Continuous.	Impact would occur all the time (occurs 100% of the time).		
	Extent / Scale	None.	Impact will not occur anywhere.		
		Site impact.	Small area. No sensitive receptors outside servitude / project area affected.		
Local.		May affect immediate neighbours, never nearby townships. Small area or small number of sensitive receptors affected.			
Widespread		Large area or large numbers of sensitive receptors affected. May affect nearby townships.			
National/international		Impacts over a vast area or over vast numbers of receptors.			
Probability (P)	Never (0 % likelihood).				
	Conceivable. Will only happen in exceptional circumstances (<10 % likelihood).				
	Plausible. Could happen and has occurred here or elsewhere (11 to 40 % likelihood).				
	Probable (>40-80 % likelihood).				
	Expected. Highly likely to happen (>80 % likelihood).				

Impact Rating Criteria	Explanation of Impact Rating Criteria and Assessment Process	
Significance (Consequence + Probability)	Impact significance represents the degree to which the impact may cause irreplaceable loss of a resource	
	Negative Very High	Widespread negative effect. Negative impact that is of the highest order. Potential fatal flaw. Unacceptable impact / loss of a resource will occur.
	Negative High	Substantial negative impact.
	Negative Moderate	Negative impact that is real but not substantial.
	Negative Low	Low negative impact with little real effect.
	Negative Very Low	Very low to negligible negative impact with little real effect.
	Neutral	Neutral / No Impact
	Positive Very Low	Very low to insignificant positive impact.
	Positive Low	Low positive impact.
	Positive Moderate	Positive impact that is real but not substantial.
	Positive High	Substantial positive impact.
	Positive Very High	Widespread/substantial beneficial effect. Alternative ways to achieve same benefits not possible.