

**APPENDIX F**  
**IMPACT ASSESSMENT**



ANNEXURE G1

**IMPACT ASSESSMENT METHODOLOGY**

**REPORT**



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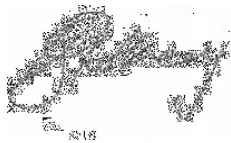


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## 1. Environmental Impact Assessment Methodology

A “**significant impact**” is defined as it is defined in the EIA Regulations (2010): “*an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect of one or more aspects of the environment*”. The objective of this EIA methodology is to serve as framework for accurately evaluating impacts associated with current or proposed activities in the biophysical, social and socio-economical spheres. It aims to ensure that all legal requirements and environmental considerations are met in order to have a complete and integrated environmental framework for impact evaluations.

The process of determining impacts to be assessed is one of the most important parts of the environmental impact assessment process. It is of such high importance because the environmental impacts identified can and are often linked to the same impact stream. In this method all impacts on the biophysical environment is assessed in terms of the overall integrity of ecosystems, habitats, populations and individuals affected. For example the removal of groundcover for the sloping or scraping of an embankment. This leads to higher amounts of water runoff which increases the rate of erosion. Further down in the river the amount of sediment increases because of the increased erosion. A number of fish species cannot endure the high amount of sediment and moves off. The habitat is thus changed or in the process of changing. Thus one needs to understand that the root of the problem (removal of groundcover) is assessed in terms of the degree of change in the health of the environment and/or components in relation to their conservation value. Thus if the impact of removal of groundcover of a definable system is high and the conservation value is also high then the impact of removal of groundcover is highly significant.

### 1.1 Environmental Impact Assessment (EIA) 2010 requirements

The Environmental Impact Assessment (EIA) 2010 Regulations promulgated in terms of Sections 24 (5), 24M and 44 of the National Environmental Management Act (NEMA) (Act 107 of 1998) requires that all identified potential impacts associated with the proposed project be assessed in terms of their overall potential significance on the natural, social and economic environments. The criteria identified in the EIA Regulations (2010) include the following:

- **Nature of the impact;**
- **Extent of the impact;**
- **Duration of the impact**
- **Probability of the impact occurring;**
- **Degree to which impact can be reversed;**
- **Degree to which impact may cause irreplaceable loss of resources;**
- **Degree to which the impact can be mitigated; and**
- **Cumulative impacts.**

ENVASS has developed an impact assessment methodology (as defined in point 2 below) whereby the **Significance** of a potential impact is determined through the assessment of the relevant temporal and spatial scales determined of the **Extent, Magnitude** and **Duration** criteria associated with a particular impact. This method does not explicitly define each of the criteria but rather combines them and results in an indication of the overall significance.

## 1.2 ENVASS IMPACT ASSESSMENT METHODOLOGY

### a) *Nature of the impact*

The NATURE of an impact can be defined as: “a *brief description of the impact being assessed, in terms of the proposed activity or project, including the socio-economic or environmental aspect affected by this impact*”.

### b) *Extent of the impact*

The EXTENT of an impact can be defined as: “a *brief description of the spatial influence of the impact or the area that will be affected by the impact*”.

<b>EXTENT</b> Extent or spatial influence of impact	<b>Footprint</b>	Only as far as the activity, such as footprint occurring within the total site area
	<b>Site</b>	Only the site and/or 500m radius from the site will be affected
	<b>Local</b>	Local area / district (neighbouring properties, transport routes and adjacent towns) is affected
	<b>Region</b>	Entire region / province is affected
	<b>National</b>	Country is affected

### c) *Magnitude of the impact*

The MAGNITUDE of an impact can be defined as: “a *brief description of the intensity or amplitude of the impact on socio-economic or environmental aspects*”.

<b>MAGNITUDE</b> Magnitude / intensity of impact (at the specified scale)	<b>Zero</b>	Natural and/or social functions and/or processes remain <i>unaltered</i>
	<b>Very low</b>	Natural and/or social functions and/or processes are <i>negligibly</i> altered
	<b>Low</b>	Natural and/or social functions and/or processes are <i>slightly</i> altered
	<b>Medium</b>	Natural and/or social functions and/or processes are

		<i>notably</i> altered
	<b>High</b>	Natural and/or social functions and/or processes <i>severely</i> altered

**d) Duration of the impact**

The DURATION of an impact can be defined as: “a short description of the period of time the impact will have an effect on aspects”.

<b>DURATION</b>  Duration of the impact	<b>Short term</b>	Construction phase up to 3 years after construction
	<b>Medium term</b>	Up to 6 years after construction
	<b>Long term</b>	More than 6 years after construction

**e) Probability of the impact occurring**

The PROBABILITY of an impact can be defined as: “the estimated chance of the impact happening”.

<b>PROBABILITY</b>	<b>Unlikely</b>	<i>Unlikely</i> to occur (0 – 25% probability of occurring)
	<b>Possible</b>	<i>May</i> occur (26 – 50% chance of occurring)
	<b>Probable</b>	<i>Likely</i> to occur (51 – 75% chance of occurring)
	<b>Definite</b>	Will <i>certainly</i> occur (76-100% chance of occurring)

**f) Degree to which impact can be reversed**

The REVERSABILITY of an impact can be defined as: “the ability of an impact to be changed from a state of affecting aspects to a state of not affecting aspects”.

<b>REVERSABILITY</b>	<b>Reversible</b>	Impacts can be reversed through the implementation of mitigation measures
	<b>Irreversible</b>	Impacts are permanent and can't be reversed by the implementation of mitigation measures

**g) Degree to which impact may cause irreplaceable loss of resources**

The IRRIPACIBILITY of an impact can be defined as:” the amount of resources that can(not) be replaced”.

<b>IRRIPLACABILITY</b>  Irreplaceable loss of resources	<b>No loss</b>	<i>No loss of any resources</i>
	<b>Low</b>	<i>Marginal loss or resources</i>
	<b>Medium</b>	<i>Significant loss of resources</i>
	<b>High</b>	<i>Complete loss of resources</i>

***h) Degree to which the impact can be mitigated***

The degree to which an impact can be MITIGATED can be defined as: "the effect of mitigation measures on the impact and its degree of effectiveness".

<b>MITIGATION RATING</b>	<b>MITIGATED</b>  Degree impact can be mitigated	<b>High</b>	<i>Impact 100% mitigated</i>
		<b>Medium</b>	<i>Impact &gt;50% mitigated</i>
		<b>Low</b>	<i>Impact &lt;50% mitigated</i>

***i) Confidence rating***

CONFIDANCE in the assessment of an impact can be defined as the: "level of certainty of the impact occurring".

<b>CONFIDENCE RATING</b>	<b>CONFIDENCE</b>	<b>Unsure</b>	Amount of information on and/or understanding of the environmental factors the potentially influence the impact is <i>unlimited and sound</i>
		<b>Sure</b>	Amount of information on and/or understanding of the environmental factors the potentially influence the impact is <i>reasonable and relatively sound</i>
		<b>Certain</b>	Amount of information on and/or understanding of the environmental factors the potentially influence the impact is <i>limited</i>

***j) Cumulative impacts***

The effect of CUMULATIVE impacts can be described as: "the effect the combination of past, present and "reasonably foreseeable" future actions have on aspects".

<b>CUMULATIVE RATING</b>	<b>CUMULATIVE EFFECTS</b>	<b>Low</b>	<i>Minor</i> cumulative effects
		<b>Medium</b>	<i>Moderate</i> cumulative effects
		<b>High</b>	<i>Significant</i> cumulative effects

### 1.3 SIGNIFICANCE OF IMPACTS

The SIGNIFICANCE can be defined as: "the combination of the duration and importance of the impact, in terms of physical and socio-economic extent, resulting in an indicative level of mitigation required".

<b>SIGNIFICANCE RATING</b>	<b>SIGNIFICANCE</b>	<b>Neutral</b>	<ul style="list-style-type: none"> <li>• Zero magnitude with any combination of extent and duration</li> </ul>
		<b>Very low</b>	<ul style="list-style-type: none"> <li>• Very low magnitude with any combination of extent and duration except regional and long term</li> <li>• Low magnitude with a site specific extent and construction period</li> </ul>
		<b>Low</b>	<ul style="list-style-type: none"> <li>• Very low magnitude with a site specific extent and long term duration</li> <li>• Low magnitude with any combination of extent and duration except site specific and construction period or regional and long term</li> <li>• Medium magnitude with a site specific extent and construction period duration</li> <li>• High magnitude with a site specific extent and construction period duration</li> </ul>
		<b>Medium</b>	<ul style="list-style-type: none"> <li>• Low magnitude with a regional extent and long term duration</li> <li>• Medium magnitude with any combination of extent and duration except site specific and construction period or regional and long term</li> <li>• High magnitude with either a local extent and construction period duration or a site specific extent and medium term duration</li> <li>• High magnitude with a regional extent and construction period or a site specific extent and long term duration</li> <li>• High magnitude with a regional extent and construction period or a site specific extent and long term duration</li> <li>• High magnitude with a local extent and medium term duration</li> </ul>
		<b>High</b>	<ul style="list-style-type: none"> <li>• Medium magnitude with a regional extent and long term duration</li> </ul>



			<ul style="list-style-type: none"><li>• High magnitude with either a regional extent and medium term duration or a local extent and long term duration</li></ul>
		<b>Very high</b>	<ul style="list-style-type: none"><li>• High magnitude with a regional extent and long term duration</li><li>• High magnitude with either a regional extent and long term duration</li></ul>

**IMPACT ASSESSMENT: PREFERRED ALTERNATIVE (OPERATIONAL PHASE)**

NATURE		IMPACT	EXTENT	DURATION	PROBABILITY	REVERSIBILITY	IRREPLACEABLE LOSS OF RESOURCES	CUMULATIVE IMPACTS	SIGNIFICANCE RATING PRE AND POST MITIGATION		MITIGATION MEASURES
Geology and Soils		Soil erosion through wind and storm water and soil compaction by heavy duty vehicles.	Site	Long term	Definite	Reversible	Low	Low	Low (-)	Very Low (-)	Refer to EMP section 4.1
Geology and Soils		Contamination of soils through indiscriminate disposal of waste and accidental spillage of petroleum products.	Site	Short term	Possible	Reversible	Low	Low	Low (-)	Very Low (-)	<ul style="list-style-type: none"> <li>A 'Hazardous materials spillage contingency plan' should be in place;</li> <li>All hazardous materials stored on site should also be stored in an appropriately banded and well-ventilated area;</li> <li>All contaminated soils should be immediately removed and placed within a hazardous skip located on site, for end disposal at an appropriately licensed hazardous waste disposal site by a reputable waste disposal contractor;</li> <li>All mining vehicles and plant machinery operating on site should be regularly serviced in order to prevent the potential for oil and fuel leaks to occur;</li> <li>Drip trays should be placed under vehicles that stand within the contractors yard for extended periods of time; and</li> <li>Vehicles should not be on the terrain, but only in designated workshops established for the purposes that are equipped with oil water separators and sumps for the collection of contaminated materials.</li> <li>Waste should be disposed of at a registered landfill site.</li> </ul>
Hydrological	Ground Water	Ground water pollution through seepage of coal stockpiles and potential leakage of the pollution control dams if not properly lined and / or maintained.	Local	Long term	Possible	Reversible	Low	Low	Low (-)	Very Low (-)	<ul style="list-style-type: none"> <li>Stockpiles must be lined;</li> <li>Pollution control dams to be upgraded where required and properly lined;</li> <li>Clean and dirty water must be separated. Dirty water must flow towards the pollution control dams and clean water above stockpiles to be directed towards the stream.</li> </ul>
		Depletion of the groundwater aquifer	Local	Long term	Possible	Reversible	Low	Low	Low (-)	Very Low (-)	<ul style="list-style-type: none"> <li>Should ground water be extracted, a water use license must be applied for and approved before the activity takes place</li> </ul>
	Stormwater and erosion	<ul style="list-style-type: none"> <li>Stormwater and erosion impacts due to uncontrolled and polluted runoff due to a lack of:                             <ul style="list-style-type: none"> <li>Management of storm water run-off</li> </ul> </li> </ul>	Site /Local	Short term	Probable	Reversible	Low	Low	Low (-)	Low (-)	<ul style="list-style-type: none"> <li>Erosion and subsequent siltation must be limited.</li> <li>Impedance of the flow of both surface and sub-surface water associated within the drainage</li> </ul>

NATURE		IMPACT	EXTENT	DURATION	PROBABILITY	REVERSIBILITY	IRREPLACEABLE LOSS OF RESOURCES	CUMULATIVE IMPACTS	SIGNIFICANCE RATING PRE AND POST MITIGATION		MITIGATION MEASURES
		<p>quality; and</p> <ul style="list-style-type: none"> <li>○ Management of storm water run-off quantity;</li> <li>• Change in the hydraulic characteristics of the area through: <ul style="list-style-type: none"> <li>○ Pollution of surface and groundwater through contaminated storm water run-off from site and sedimentation of natural water resources;</li> <li>○ Disruption of natural surface and sub-surface flow and</li> <li>○ Increased erosion and associated siltation on site.</li> </ul> </li> </ul>									<p>areas must be minimized.</p> <ul style="list-style-type: none"> <li>• Clean and dirty water must be separated. Dirty water must flow towards the pollution control dams and clean water above stockpiles to be directed towards the stream.</li> </ul>
Biological	Flora	Potential for spreading of alien and invasive species during the operational phase	Local	Long term	Probable	Reversible	Low	Medium	Low (-)	Very Low (-)	<ul style="list-style-type: none"> <li>• Care must be taken to avoid the introduction of alien plant species to the site and surrounding areas. Particular attention must be paid to imported material.</li> <li>• Alien invasive species must be removed on a regular basis.</li> </ul>
	Fauna	Loss of fauna when fauna have access to the operations and are killed by vehicles or people.	Local	Long term	Possible	Irreversible	Medium	Low	Low (-)	Very Low (-)	<ul style="list-style-type: none"> <li>• No fauna may be disturbed, hunted or killed.</li> <li>• Proper fencing should be installed and maintained to prevent animals from surrounding areas to access the site.</li> <li>• No domestic animals are allowed on site.</li> <li>• All vehicles to keep to the speed limit on and outside of the site.</li> <li>• Should a wild animal appear on site, it should be removed carefully and released outside of the site in a natural area.</li> </ul>
Archaeological		Possible Impact	Footprint	Short term	Possible	Reversible	Low	Low	Low (-)	Very Low (-)	<ul style="list-style-type: none"> <li>• No part of any heritage structure may be removed or altered during the construction period without a permit from the South African Heritage Resources Agency (SAHRA);</li> <li>• If hidden archaeological and historical finds are exposed during mining, they should immediately be reported to the authorities, so that an</li> </ul>

NATURE	IMPACT	EXTENT	DURATION	PROBABILITY	REVERSIBILITY	IRREPLACEABLE LOSS OF RESOURCES	CUMULATIVE IMPACTS	SIGNIFICANCE RATING PRE AND POST MITIGATION		MITIGATION MEASURES
										<p>investigation and evaluation of the finds can be made; and</p> <ul style="list-style-type: none"> <li>Should culturally significant material or skeletal remains be exposed during development and construction phases, all activities must be suspended pending further investigation by a qualified archaeologist (Refer to the National Heritage and Resources Act, 25 of 1999 section 36 (6)).</li> </ul>
<b>Visual</b>	Visibility from sensitive receptors / visual scarring of the landscape as a result of the additional stockpiles of coal.	Site /Local	Long term	Definite	Irreversible	No loss	Medium	Medium (-)	Low (-)	<ul style="list-style-type: none"> <li>The site shall be kept in a neat condition at all times; and</li> <li>No mitigation measures for coal stockpiles exists, however the activity is in line with surrounding land uses and the increased amount of stockpiles will not have a significant visual impact.</li> </ul>
<b>Dust</b>	<p>Decrease in air quality of the surrounding area associated with operational activities including:</p> <ul style="list-style-type: none"> <li><b>Wind erosion:</b> Significant emissions arise from the mechanical disturbance of granular material from open areas and storage stockpiles.</li> <li><b>Fugitive dust emissions from materials handling operations:</b> Materials handling operations associated with the activities at the Blinkpan coal siding include the transfer of material by means of tipping, loading and off-loading. Fine particulates are most readily disaggregated and released to the atmosphere during the material transfer process, as a result of exposure to strong winds.</li> <li><b>Vehicle entrained dust from roads:</b> Movement of material on site.</li> </ul>	Local	Long term	Definite	Irreversible	Low	Medium	Medium (-)	Low (-)	<p><b>Source extent reduction:</b></p> <p>Mass transfer reduction:</p> <p>The variation of the height from which stacking occurs to suit the height of the storage pile would limit drop heights and therefore reduce the potential for the entrainment of fines by the wind.</p> <p><b>Source improvement:</b> Drop height reduction, wind sheltering, moisture retention</p> <p><b>Wet suppression:</b></p> <p>Liquid and Foam spray Systems;</p> <p>Liquid spray suppression systems may use only water or a combination of water and a chemical surfactant as the wetting agent;</p> <p>The use of hollow cone nozzles are recommended;</p> <p>Optimal droplet size is 500µ. Application of water sprays to the underside of conveyor belts is recommended;</p> <p>Vegetation and wind breaks can be used for long term storage.</p>

NATURE	IMPACT	EXTENT	DURATION	PROBABILITY	REVERSIBILITY	IRREPLACEABLE LOSS OF RESOURCES	CUMULATIVE IMPACTS	SIGNIFICANCE RATING PRE AND POST MITIGATION		MITIGATION MEASURES
										<p>Wet suppressants and chemical suppressants for short storage pile durations.</p> <p><b>Surface treatment:</b></p> <p>Vehicle entrainment on haul roads – 75% control efficiency through effective water sprays on unpaved road surfaces to be achieved. Vehicles should keep to speed limits on all roads and especially bare areas.</p>
<b>Noise</b>	Noise impacts on surrounding environment associated with operational activities (heavy duty vehicles and equipment).	Site /Local	Long term	Definite	Reversible	Low	Low	Low (-)	Low (-)	<ul style="list-style-type: none"> <li>• Ensure that all machinery and vehicles are well maintained and road worthy;</li> <li>• Noise at equipment and machinery point source should be damped through acoustic treatment and applying silencing equipment;</li> <li>• Workers must be issued with the necessary protective equipment, including ear plugs, when working in conditions that may progressively have detrimental effects on their health. Ensure that all personnel have access to hearing protection equipment at site where the 85 dBA noise level is frequently recorded.</li> </ul>
<b>Waste (including hazardous materials)</b>	Generation of additional waste material during the operational phases.	Site /Local	Short term	Definite	Reversible	Low	Low	Low (-)	Low (-)	<ul style="list-style-type: none"> <li>• Domestic solid waste to be removed on a regular basis and disposed of at a registered landfill site.</li> <li>• Hazardous waste to be disposed of safely at an appropriate registered facility specifically catering for hazardous waste.</li> </ul>
<b>Traffic</b>	Increased traffic due to increased supply of coal to the siding to be transported further by trains. Damage to roads due to increased traffic.	Site /Local	Long term	Definite	Reversible	Low	Low	Low (-)	Low (-)	<ul style="list-style-type: none"> <li>• Only main roads should be used;</li> <li>• Where feasible vehicles should not operate on public roads during peak hours;</li> <li>• Vehicles should adhere to the speed limit of the road;</li> <li>• Heavy vehicles should always travel with their head lights switched on;</li> <li>• Heavy vehicles should not stop on the road to pick up hitchhikers;</li> </ul>
<b>Health and Safety</b>	Health and safety impacts associated with operational activities.	Site /Local	Long term	Probable	Reversible	Low	Low	Low (-)	Low (-)	The requirements of the Occupational Health and Safety Act (Act No. 93 of 1985) as amended and associated regulations and guidelines to be adhered to at all times.
<b>Socio-economic</b>	Positive impact of increased availability of electricity limiting load shedding.	Region	Long term	Definite	Irreversible	Medium	High	High (+)	High (+)	N/A

**IMPACT ASSESSMENT: PREFERRED ALTERNATIVE (DECOMMISSIONING AND CLOSURE PHASE)**

NATURE		IMPACT	EXTENT	DURATION	PROBABILITY	REVERSIBILITY	IRREPLACEABLE LOSS OF RESOURCES	CUMULATIVE IMPACTS	SIGNIFICANCE RATING PRE AND POST MITIGATION		MITIGATION MEASURES
Geology and Soils		Soil erosion through improper management of storm water and wind erosion. Soil compaction by heavy duty construction vehicles.	Site	Short term	Definite	Reversible	Low	Low	Low (-)	Very Low (-)	Same as decommissioning mitigation measures in EMP
		Contamination of soils through indiscriminate disposal of decommissioning waste and accidental spillage of petroleum products.	Site/Local	Short term	Probable	Reversible	Low	Low	Low (-)	Very Low	Same as decommissioning mitigation measures in EMP
Hydrology	Stormwater and erosion	<ul style="list-style-type: none"> <li>Stormwater and erosion impacts due to uncontrolled and polluted runoff due to a lack of:                             <ul style="list-style-type: none"> <li>Management of storm water run-off quality; and</li> <li>Management of storm water run-off quantity;</li> </ul> </li> <li>Change in the hydraulic characteristics of the area through:                             <ul style="list-style-type: none"> <li>Pollution of surface and groundwater through contaminated storm water run-off from site;</li> <li>Disruption of natural surface and sub-surface flow; and</li> <li>Increased erosion and associated siltation on site.</li> </ul> </li> </ul>	Site /Local	Short term	Probable	Reversible	Low	Low	Low (-)	Low (-)	Same as decommissioning mitigation measures in EMP
Biological	Flora	Potential loss of vegetation type, ecologically important species and species of conservation concern.	Footprint	Short term	Possible	Irreversible	Medium	Low	Low (-)	Low (-)	<ul style="list-style-type: none"> <li>Decommissioning workers and heavy vehicles should not have access to surrounding vegetated areas.</li> </ul>
		Potential for spreading of alien and invasive species during the operational phase.	Local	Short term	Probable	Reversible	Low	Medium	Low (-)	Very Low (-)	<ul style="list-style-type: none"> <li>Care must be taken to avoid the introduction of alien plant species to the site and surrounding areas. Particular attention must be paid to imported material; and</li> <li>Alien invasive species must be removed on a regular basis.</li> </ul>

NATURE		IMPACT	EXTENT	DURATION	PROBABILITY	REVERSIBILITY	IRREPLACEABLE LOSS OF RESOURCES	CUMULATIVE IMPACTS	SIGNIFICANCE RATING PRE AND POST MITIGATION		MITIGATION MEASURES
	<b>Fauna</b>	Loss of fauna when fauna have access to the operations and are killed by vehicles or people during the decommissioning phase.	Local	Short term	Possible	Irreversible	Medium	Low	Low (-)	Very Low (-)	<ul style="list-style-type: none"> <li>No fauna may be disturbed, hunted or killed;</li> <li>Proper fencing should be installed and maintained to prevent animals from surrounding areas to access the site;</li> <li>No domestic animals are allowed on site;</li> <li>All vehicles to keep to the speed limit on and outside of the site; and</li> <li>Should a wild animal appear on site, it should be removed carefully and released outside of the site in a natural area.</li> </ul>
	<b>Archaeological</b>	Damage to or destruction of archaeological resources that may be uncovered from below ground during decommissioning.	Footprint	Short term	Possible	Reversible	Low	Low	Low (-)	Very Low (-)	<ul style="list-style-type: none"> <li>No part of any heritage structure may be removed or altered during the construction period without a permit from the South African Heritage Resources Agency (SAHRA);</li> <li>If hidden archaeological and historical finds are exposed during mining, they should immediately be reported to the authorities, so that an investigation and evaluation of the finds can be made; and</li> <li>Should culturally significant material or skeletal remains be exposed during development and construction phases, all activities must be suspended pending further investigation by a qualified archaeologist (Refer to the National Heritage and Resources Act, 25 of 1999 section 36 (6)).</li> </ul>

NATURE	IMPACT	EXTENT	DURATION	PROBABILITY	REVERSIBILITY	IRREPLACEABLE LOSS OF RESOURCES	CUMULATIVE IMPACTS	SIGNIFICANCE RATING PRE AND POST MITIGATION		MITIGATION MEASURES
Visual	Visibility from sensitive receptors / visual scarring of the landscape as a result of the decommissioning activities.	Site /Local	Short term	Definite	Irreversible	No loss	Medium	Medium (-)	Low (-)	The site shall be kept in a neat condition at all times.
Dust	Dust impacts on the surrounding environment associated with decommissioning activities. <ul style="list-style-type: none"> <li>Wind erosion: Emissions arising from the mechanical disturbance of granular material from open areas and during the transfer of decommissioning waste and materials.</li> </ul>	Site /Local	Short term	Definite	Reversible	Low	Low	Low (-)	Low (-)	During dry periods (in winter) and windy conditions bare areas to be sprinkled with water at regular intervals as required.
Noise	Noise impacts on surrounding environment associated with decommissioning activities (heavy vehicles and equipment).	Site /Local	Short term	Definite	Reversible	Low	Low	Low (-)	Low (-)	<ul style="list-style-type: none"> <li>Ensure that all machinery and vehicles are well maintained and road worthy;</li> <li>Noise at equipment and machinery point source should be damped through acoustic treatment and applying silencing equipment;</li> <li>Workers must be issued with the necessary protective equipment, including ear plugs, when working in conditions that may progressively have detrimental effects on their health; and</li> <li>Ensure that all personnel have access to hearing protection equipment at site where the 85 dBA noise level is frequently recorded.</li> </ul>
Waste (including hazardous materials)	Generation of additional waste/ litter and building rubble/hazardous material during the construction phase.	Site /Local	Short term	Definite	Reversible	Low	Low	Low (-)	Low (-)	<ul style="list-style-type: none"> <li>Domestic solid waste to be removed on a regular basis and disposed of at a registered landfill site; and</li> <li>Hazardous waste to be disposed of safely at an appropriate registered facility specifically catering for hazardous waste.</li> </ul>
Traffic	Disruption of traffic due to heavy vehicles to transfer building waste/rubble associated with the decommissioning phase.	Site /Local	Short term	Definite	Reversible	Low	Low	Low (-)	Low (-)	<ul style="list-style-type: none"> <li>Only main roads should be used;</li> </ul>



NATURE	IMPACT	EXTENT	DURATION	PROBABILITY	REVERSIBILITY	IRREPLACEABLE LOSS OF RESOURCES	CUMULATIVE IMPACTS	SIGNIFICANCE RATING PRE AND POST MITIGATION		MITIGATION MEASURES
										<ul style="list-style-type: none"> <li>Where feasible vehicles should not operate on public roads during peak hours;</li> <li>Vehicles should adhere to the speed limit of the road;</li> <li>Heavy vehicles should always travel with their head lights switched on; and</li> <li>Heavy vehicles should not stop on the road to pick up hitchhikers;</li> </ul>
<b>Health and Safety</b>	Health and safety impacts associated with decommissioning activities.	Site /Local	Long term	Probable	Reversible	Low	Low	Low (-)	Low (-)	<ul style="list-style-type: none"> <li>The requirements of the Occupational Health and Safety Act (Act No. 93 of 1985) as amended and associated regulations and guidelines to be adhered to at all times.</li> </ul>
<b>Socio-economic</b>	Employment opportunities during the decommissioning and closure phase for the local people.	Region	Short term	Definite	Reversible	Low	Medium	Medium (+)	Medium (+)	N/A

**NO-GO ALTERNATIVE**

NATURE	IMPACT	EXTENT	DURATION	PROBABILITY	REVERSIBILITY	IRREPLACEABLE LOSS OF RESOURCES	CUMULATIVE IMPACTS	SIGNIFICANCE RATING PRE AND POST MITIGATION		MITIGATION MEASURES
<b>Socio-Economic</b>	No economic development for the applicant and resulting positive impacts on the local communities and society in general.	Region	Long term	Definite	Reversible	N/A	High (-)	High (-)	High (-)	Approve and implement proposed activity.