

SECTION C: PUBLIC PARTICIPATION

The initial public notification period which preceded the release of this BAR included the following:

- Site notices and notices placed in nearby towns;
- Newspaper adverts;
- Distribution of a Background Information Document (BID); and
- One-on-one interviews with stakeholders (landowners and Local Municipality Community Development Workers, mainly).

The public participation activities during the BAR comment period will include newspaper adverts, written notification to I&APs as well as public and focus group meetings.

1. ADVERTISEMENT AND NOTICE

See Appendix E

Publication name and Date published	Somerset Budget – 4 October 2012 Volksblad – 4 October 2012 Kathu Gazette – 5 October 2012 Die Burger- 15 October 2012	
Site notice position	Latitude	Longitude
	S 30° 49' 15.79"	E 24° 17' 18.77"
Date placed	29 September 2012 (Burgervilleweg)	
Site notice position	Latitude	Longitude
	S 33° 5' 17.23"	E 25° 51' 35.00"
Date placed	26 September 2012 (Ripon)	
Site notice position	Latitude	Longitude
	S 32° 44' 55.69"	E 25° 48' 23.18"
Date placed	26 September 2012 (Road Runner – Cookhouse)	
Site notice position	Latitude	Longitude
	S 32° 44' 40"	E 25° 48' 27"
Date placed	27 September 2012 (Cookhouse Station)	
Site notice position	Latitude	Longitude
	S 32° 44' 44.68"	E 25° 48' 27.11"
Date placed	26 September 2012 (Cookhouse Town Hall)	
Site notice position	Latitude	Longitude
	S 32° 44' 45.66"	E 25° 48' 26.76"
Date placed	26 September 2012 (Cookhouse Library)	
Site notice position	Latitude	Longitude
	S 32° 26' 28.37"	E 25° 44' 29.03"
Date placed	27 September 2012 (Drennan)	
Site notice position	Latitude	Longitude
	S 32° 48' 43.16"	E 25° 47' 19.48"
Date placed	26 September 2012 (Golden Valley Siding)	
Site notice position	Latitude	Longitude
	S 32° 48' 45.21"	E 25° 47' 23.98"
Date placed	26 September 2012 (Golden Valley BKB)	
Site notice position	Latitude	Longitude
	S 32° 48' 32.25"	E 25° 47' 20.96"
Date placed	26 September 2012 (Golden Valley Station)	
Site notice position	Latitude	Longitude
	31° 3' 52.99"S	24° 26' 33.76"E
Date placed	29 September 2012 (Hanover Police Station)	
Site notice position	Latitude	Longitude
	S 31° 4' 4.13"	E 24° 26' 32.22"
Date placed	29 September 2012 (Hanover Library)	
Site notice position	Latitude	Longitude
	S 31° 57' 18.21"	E 25° 30' 24.66"
Date placed	28 September 2012 (Knutsford Station)	
Site notice position	Latitude	Longitude
	S 31° 57' 6.61"	E 25° 30' 7.73"
Date placed	28 September 2012 (Knutsford Siding)	
Site notice position	Latitude	Longitude

	S 33° 7' 3.97"	E 25° 53' 43.78"
Date placed	26 September 2012 (Kommadagga)	
Site notice position	Latitude	Longitude
	S 30° 59' 24.48"	E 24° 38' 16.09"
Date placed	29 September 2012 (Linde)	
Site notice position	Latitude	Longitude
	S 31° 29' 44.08"	E 25° 0' 15.05"
Date placed	28 September 2012 (Middleburg Municipality)	
Site notice position	Latitude	Longitude
	S 31° 29' 24.70"	E 25° 7' 6.10"
Date placed	28 September 2012 (Rosmead Station)	
Site notice position	Latitude	Longitude
	S 31° 37' 3.79"	E 25° 14' 24.53"
Date placed	28 September 2012 (Tafelburg Station)	
Site notice position	Latitude	Longitude
	S 31° 36' 47.59"	E 25° 14' 16.96"
Date placed	28 September 2012 (Tafelburg Siding)	
Site notice position	Latitude	Longitude
	S 32° 39' 52.67"	E 25° 49' 49.48"
Date placed	27 September 2012 (Thorngrove)	
Site notice position	Latitude	Longitude
	S 33° 26' 44.98"	E 25° 58' 20.97"
Date placed	26 September 2012 (Paterson Town Hall)	
Site notice position	Latitude	Longitude
	S 33° 26' 27.87"	E 26° 0' 29.47"
Date placed	27 September 2012 (Verby Station)	
Site notice position	Latitude	Longitude
	S 33° 26' 14.53"	E 25° 57' 38.35"
Date placed	27 September 2012 (Paterson Municipality)	

Include proof of the placement of the relevant advertisements and notices in [Appendix E1](#).

2. DETERMINATION OF APPROPRIATE MEASURES

Provide details of the measures taken to include all potential I&APs as required by Regulation 54(2)(e) and 54(7) of GN R.543.

Key stakeholders (other than organs of state) identified in terms of Regulation 54(2)(b) of GN R.543:

Title, Name and Surname	Affiliation/ key stakeholder status	Contact details (tel number or e-mail address)
See Appendix E1		

Include proof that the key stakeholder received written notification of the proposed activities as [Appendix E2](#). This proof may include any of the following:

- e-mail delivery reports;
- registered mail receipts;
- courier waybills;
- signed acknowledgements of receipt; and/or
- or any other proof as agreed upon by the competent authority.

3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summary of main issues raised by I&APs	Summary of response from EAP
<p><u>Construction related issues</u></p> <ul style="list-style-type: none"> • Stock theft by construction workers. • Construction workers not staying within the demarcated construction site. • Construction workers negatively influencing farm workers in terms of alcohol abuse. • Construction workers leaving the gates open which leads to cattle loss. • Loss of agricultural land in the Eastern Cape. • Loss of grazing land in Eastern and Northern Cape. • Loss of land reserved for future agricultural purposes. • Loss of land that could be utilised for renewable energy facilities. • Compromising of existing underground water infrastructure used for irrigation in the Eastern Cape. • High water table in Craddock increasing susceptibility to possible contamination of groundwater (Cookhouse - Golden Valley Loop). • Encroachment of the rail reserve onto private land • Query around the length of the construction period. • Construction workers committing crimes. • Recognition for any training received during the construction phase by way of certification • Queries with regards to the number of jobs that will be created. <p><u>Operational related issues</u></p> <ul style="list-style-type: none"> • Lack of maintenance to fences which separate Transnet land and privately owned farm land. • Some landowners have options on their land for proposed renewable energy projects. • Upgrade of the railway line is seen as a positive measure as it means fewer trucks are on the roads. • Veld fires caused by sparks from train wheel friction on tracks. • Increased likelihood of animals being run over. • Queries with regards to the number of jobs that will be created. • Confusion of certain landowners who were involved in the previous environmental process as to why they are being approached again. • Queries with regards to the benefits accruing to the local community • Compensation for infrastructure that is to be moved to accommodate the upgrade of the railway line. • Grievance procedures pertaining to issues including veld fires, broken fences, and lack of security within railway reserves etc.) 	<p>The issues identified are assessed in the BAR where appropriate and/or addressed in the EMP. However, detailed responses will be included to all comments in the Comments and Responses (CRR) for inclusion in the Final BAR.</p>

4. COMMENTS AND RESPONSE REPORT

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as **Appendix E3**.

5. AUTHORITY PARTICIPATION

Authorities and organs of state identified as key stakeholders:

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	Fax No	e-mail	Postal address
See list in Appendix E1					

Include proof that the Authorities and Organs of State received written notification of the proposed activities as [Appendix E4](#).

In the case of renewable energy projects, Eskom and the SKA Project Office must be included in the list of Organs of State.

6. CONSULTATION WITH OTHER STAKEHOLDERS

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as [Appendix E5](#).

Copies of any correspondence and minutes of any meetings held must be included in [Appendix E6](#).

SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2010, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

1. IMPACTS THAT MAY RESULT FROM THE PLANNING AND DESIGN, CONSTRUCTION, OPERATIONAL, DECOMMISSIONING AND CLOSURE PHASES AS WELL AS PROPOSED MANAGEMENT OF IDENTIFIED IMPACTS AND PROPOSED MITIGATION MEASURES

Provide a summary and anticipated significance of the potential direct, indirect and cumulative impacts that are likely to occur as a result of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A(2) of this report.

IDENTIFICATION AND DESCRIPTION OF ISSUES

Table.11 Identification and description of issues

Impact	Description
<u>PLANNING AND DESIGN IMPACTS</u>	
No direct planning and design impacts are anticipated, however, some avoidance factors are listed below.	
Site selection of infrastructure	<p>The placement of associated infrastructure should be carefully considered to avoid potentially sensitive environments. Factors that were considered when assessing the suitability of a site includes but is not limited to:</p> <ul style="list-style-type: none"> - Location of nearby wetlands or bodies of water or environmentally sensitive areas; - Site contamination (obvious or hidden); - Commercial, industrial, and residential neighbours, including airports; - Layout (including allowing for future expansions) - Availability of land and site clearing requirements for construction staging; - Access to water and sewage; - Drainage patterns and storm water management; - Disturbance of archaeological, historical, or culturally significant sites; - Underground services and geology; - Accessibility; and - Aesthetic and screening considerations.
<u>CONSTRUCTION-RELATED IMPACTS</u>	
Biophysical and Social Impacts	
Impacts on Vegetation and Protected Plant Species	Some loss of vegetation through clearing is an inevitable consequence of the development. In addition some protected tree species were present at the majority of sites and some impact on these species is likely to occur through clearing
Alien Plant Invasion Risk	The disturbance created during construction will leave the disturbed areas vulnerable to alien plant invasion. The railway line forms a corridor for the dispersal of alien species many of which are common along the length of the railway line and would represent a ready source for the invasion of the disturbed areas.
Increased Erosion Risk	Increased erosion risk would result from soil disturbance and the loss of plant cover within cleared and disturbed areas. The rail loop sites are however largely flat and the erosion risk associated with the development would stem from wind rather than water erosion. Cleared and disturbed areas with loose exposed sand would be most vulnerable.
Direct Faunal Impacts	<p>Increased levels of noise, pollution, disturbance and human presence are likely to impact fauna. Sensitive and shy fauna would move away from the area during the construction phase as a result of the noise and human activities, while some slow-moving species would not be able to avoid the construction activities potentially resulting in fatality. Some mammals and reptiles such as tortoises would be vulnerable to illegal collection or poaching during the construction phase as a result of the presence of construction personnel. There are also a number of mammals of conservation concern which occur in the area and impacts on these species would be undesirable. Some habitat loss for these species is likely to occur, but would not be of high significance given the scale of the development relative to the distribution extent of these species.</p>
Impacts on Critical Biodiversity Areas	CBAs would be negatively impacted though the transformation of natural habitat. This impact is only relevant to the sites in the Eastern Cape, as no fine-scale conservation planning has been conducted in the Northern Cape sections.

Noise and Vibration Disturbance	Noise and vibration disturbance could result from the use of heavy machinery, blasting, drilling and general construction activities.
Loss of or Disturbance to Sites of Archaeological, Paleontological or Cultural Significance	Excavation activities during the construction phase may disturb, damage or destroy scientifically valuable fossil heritage exposed at the surface or buried below ground, historical structures, archaeological sites, cultural landscapes and palaeontological material... Expected impacts may occur on structures as a result of vibration, earthmoving activities may have a negative impact on stone age sites, rock art and scattered archaeological surface material.
Contamination of Soil, Groundwater Resources or Surface Water Features	Contamination of soil and groundwater or surface water due to potential fuel, chemicals or effluent spillage.
Dust Nuisance	The generation of dust through site clearance, earthworks and general construction activities could pose a nuisance to social receptors in proximity to the rail loop sites.
Traffic Disruption and Hazards	Construction materials and goods will be transported to the various sites by road. A total of four major roads will be affected, namely the National Road (N10) in the Eastern Cape, and the Regional Roads (R31, R325, and R385) in the Northern Cape. These roads play an important role in the transportation of goods and people between the Eastern and Northern Cape, and other Provinces. Currently these roads carry a significant number of heavy vehicles, and some of the roads undergo regular upgrades and maintenance. For instance, there are between three and four road work sites on each of these roads currently, each of which operates using a "stop-and-go" system. In the Northern Cape, the majority of the heavy vehicles transport minerals and agricultural products from the mines and farms to other Provinces.
Impact on the Local Economy	<p>The project is expected to contribute to the local economy in the following ways:</p> <ul style="list-style-type: none"> Increased exportation of manganese ore; Creation of direct and indirect employment which will lead to increased spending; and Procurement of local goods and services. <p>The capital investment required to expand the railway infrastructure and rolling stock is high at approximately R19.2 billion, which will be spent over the construction period. In addition, the increase in exportation of manganese ore is expected to generate an estimated annual income of R23.4 billion for the mines, rail and port components, should the proposed increase tonnage be met.</p> <p>The entire manganese ore expansion project is expected to create an estimated 12,171 employment opportunities, of which 9,128 will be indirect. Approximately 572 new permanent positions will be created by the project. The project will require highly skilled, semi-skilled and unskilled workers to undertake the construction. Due to the technical nature of the construction work required, a big proportion of the workforce will be skilled and semi-skilled employees. Transnet is planning to employ as many people from the local areas for each contract as is practicable; which will result in a large number of people benefiting from the project. The number of skilled and semi-skilled that can be employed locally will be dependent on the skill availability in the local communities.</p>
Disruption of Agricultural Activities	The majority of the affected farms are solely used for agricultural purposes, including both crop and livestock farming. The construction activities that are likely to disrupt agricultural activities include site clearance, irrigation schemes, road widening/construction, assembly and installation of rail and associated infrastructure. Construction phase employees may need to cross private land. However, this is to be discussed with private landowners prior to use of private land.

Change in Sense of Place

During the construction phase there will be increased traffic, dust, and construction workers on the sites and affected farms. Due to the remote sparsely populated nature of the site, these impacts will temporarily affect the sense of place. The construction phase activities will result in the creation of nuisance factors e.g. dust, noise, vibration and an increase in traffic. It is predicted that the impact of each of the aforementioned will be negligible as reported in the specialist studies. However, the cumulative effect on the sense of place is likely to be exacerbated.

Managing Stakeholder Expectations

During the 2009 EIA process for the railway upgrade to 12 Mtpa, stakeholder concerns centred on employment and procurement opportunities for the local communities. The same issues were raised as part of the initial stakeholder engagements for the current expansion project. It is therefore anticipated that similar issues will be raised again for the current project. There will be limited employment opportunities for unskilled labour; and the majority of the jobs that will be created will be temporary (mainly construction). As a result only a limited number of local people will receive jobs. Local construction and other business owners raised concerns regarding the awarding of tenders for such projects. They stated that businesses owned by previously disadvantaged people are often not awarded tenders as they lack experience in the construction/ supply chain.

OPERATIONS-RELATED IMPACTS

Increased Noise Generation	Noise impacts are associated with the status quo given the railway line in currently operational. However, impacts on sensitive receptors such as human settlements, schools and wildlife areas owing to an increase in the frequency of trains and the resultant increase in noise. For those social receptors close to the railway line, where no buffer noise buffer exists (e.g. steep or undulating topography), noise impacts are anticipated. It has been shown that for trains travelling at an average speed of 45km/hr past rural residential settlements at approximately 30m from the line, the acceptable noise limit of 45dBA (according to SANS10103) will be exceeded by 14dBA ¹ . The impact reduces to negligible approximately 380m (assuming speeds of 45km/hr).
Manganese Ore Dust	Manganese ore dust from open rail cars and emissions from locomotives are potential sources of air pollutants on the railway line. Little or no dust is expected to be blown from the wagons as the ore is wet when the wagon train departs. Similarly, the wagon has sealed bins so dust will not fall from them and deposit on the rail tracks. Analysis conducted on soil collected along the existing railway line did not show higher manganese pre content along the line than elsewhere (uMoya-NILU, 2008).
Increased Vibration Effects	Studies have found no adverse effects on built structures as a result of vibration effects associated with proximity to the railway line (40m or more). Although some informal dwellings occur closer than 40m, these structures are not considered to be at risk. An increase in the number of trains is expected to increase the vibration nuisance since more trains will pass over a given period, however the severity of the vibration per train would not increase unless train speeds increase.
Impact on Public Safety	There may be an impact on public safety resulting from higher train frequencies at the level crossings. Although no new level crossings will be constructed, existing crossings may be upgraded or moved a short distance. An increase in rail traffic combined with unfamiliar crossings may increase the risk of incidents if safety procedures are not followed.
Alien Plant Invasion Risk	The railway line forms a corridor for the dispersal of alien invasive plant species. As many alien species are common along the railway line, they would represent a ready source for the invasion of disturbed construction areas adjacent to the line especially if alien invaders are not cleared on occasion.
Change in Sense of Place	Issues such as noise and vibration are likely increase due to the increased number of train movements per day thereby impacting the sense of place. The visual impact of the additional infrastructure may impact sense of place. However, this is not considered to be significant.
Decrease in Road Traffic	Due to the low capacity of the railway line currently, the majority of the minerals being mined (including manganese ore, iron ore, and others) in the Northern Cape are being transported by road (using heavy vehicles). This has put a severe strain on the road infrastructure, especially the Regional Roads (R31, R325, and R385). It is expected that once the expansion process is completed, the railway line will be more fully utilised, thus taking some of the strain off the major roads currently used to transport minerals. This is considered to be a positive impact.

Table 12 Mitigation measures

Activity	Impact summary	Significance	Proposed mitigation
Alternative 1 (preferred alternative): Planning and design related impacts			
	Site Selection of Infrastructure	No rating as this is not an impact but rather an aspect.	The first step in any mitigation measure should be avoidance of particularly sensitive ecological or cultural heritage sites. These sites could be ear-marked and where possible avoided either by the loop itself or associated infrastructure.
Alternative 1: Construction related impacts			

¹ Jongens Keet and Associates (2008), Study Into The Potential Noise Impact Of The Proposed Upgrade Of The Transnet Railway Line Between Hotazel And The Port Of Ngqura

Activity	Impact summary	Significance	Proposed mitigation
	Alien Plant Invasion Risk	Minor negative	<p>The objective of mitigation is to minimise/control the spread/colonisation of invasive alien species and weed taxa within construction areas.</p> <p>Specific measures include:</p> <ul style="list-style-type: none"> • Soil disturbance and vegetation clearing should be kept to minimum. • Cleared areas that are not going to be used should be revegetated with locally-collected seed of indigenous species. • Regular post-construction monitoring should take place to ensure that alien plants are not increasing as a result of the disturbance that has taken place • All alien plants present at the site should be controlled annually using the best practice methods for the species present.
	Impacts on Vegetation and Protected Plant Species	Minor negative	<p>The objective of mitigation is to minimise the construction impacts on the vegetation communities at each site.</p> <p>Specific measures include:</p> <ul style="list-style-type: none"> • All areas to be cleared should be clearly demarcated. • A search and rescue operation for protected species within the final development footprint should be conducted prior to construction. • Cleared areas which are not being used should be revegetated using plants or seed of locally occurring species. • Where service roads or other infrastructure traverse sensitive areas, specific precautions to limit impacts should be undertaken. • Any vegetation clearing that needs to take place as part of maintenance activities, should be done in an environmentally friendly manner, including avoiding the use of herbicides and using manual clearing methods wherever possible.
	Increased Erosion Risk	Minor negative	<p>The objective of mitigation is to minimise and manage erosion at the construction site.</p> <p>Specific measures include:</p> <ul style="list-style-type: none"> • Service roads and tracks running down slope must be designed to limit erosion potential. • Any extensive cleared areas that are no longer required for construction activities should be re-vegetated using topsoil removed during site clearing or with locally-sourced seed of suitable species. Bare areas can also be packed with brush removed from other parts of the site to encourage natural vegetation regeneration and limit erosion. • No construction vehicles should be allowed to drive around the veld. All construction vehicles should remain on properly demarcated roads. • Regular post-construction monitoring for erosion to ensure that no erosion problems are occurring at the site as a result of the roads and other infrastructure. Erosion problems observed should be rectified as soon as possible.
	Direct Faunal Impacts	Minor negative	<p>The objective of mitigation is to minimise impacts on faunal species.</p> <ul style="list-style-type: none"> • Any fauna directly threatened by the construction activities should be removed to a safe location by the ECO, or other suitably qualified person. • The collection, hunting or harvesting of any plants or animals at the site should be strictly forbidden. • No fires are allowed on site. • No fuel wood collection should be allowed on-site. • No animals should be allowed on site. • All hazardous materials should be stored in the appropriate manner to prevent contamination of the site. Any accidental chemical, fuel and oil spills that occur at the site should be cleaned up in the appropriate manner as related to the nature of the spill.

Activity	Impact summary	Significance	Proposed mitigation
	Impacts on Critical Biodiversity Areas	Minor negative	<ul style="list-style-type: none"> • Preconstruction surveys to locate any listed plant species within the development footprint for translocation. • Actions to reduce the loss of vegetation at the site such as revegetation of disturbed areas after construction.
	Noise and Vibration Disturbance	Moderate negative	<p>The objective of mitigation is to minimise the impacts of noise and vibration disturbance on social and ecological receptors during construction. Specific measures include:</p> <ul style="list-style-type: none"> • Operate equipment within its specification and capacity so as not to overload them and cause them to operate ineffectively; • Regularly maintain equipment (particularly with regards to lubrication) and vehicles (exhausts) so that they operate efficiently; • Drive at the legal speed limit on public roads and at 40 km/hr on dirt or private roads to limit the noise generated; • Restrict construction activities to daylight hours where it is located near sensitive receptors; and • The site visits did not identify schools or sensitive receptors in close proximity to the loops. However if during construction any sensitive social receptors are identified, they will be given adequate notice of when noisy activities, such as blasting, will occur.
	Loss of or Disturbance to sites of Archaeological, Paleontological or Cultural Significance	Minor – Moderate negative	<p>It is recommended that a brief paleontological field assessment of the sedimentary rock units exposed the railway line before construction takes place to assess impacts of the proposed loop developments on local fossil heritage. Further paleontological studies should take place and mitigations recommended and these should form part of the EMP.</p> <ul style="list-style-type: none"> • Construction activities must remain within designated rail reserve construction areas. If any types of works are to take place outside of the reserve areas, the significance level will change and a different assessment approach will be required. Should this be necessary, a professional registered Archaeologist must survey these areas prior to site disturbance to supervise and provide guidance. • The historical structures identified at cultural resource areas mentioned above may not be destroyed, demolished, altered, collected or impacted upon unless a permit has been issued by SAHRA • During construction, if any heritage objects are discovered, a professional registered Archaeologist, SAHRA, Heritage Eastern Cape and Ngwao Boswa Kapa Bokoni (Northern Cape Heritage) must be informed. No work is allowed to proceed at the specific site of where the discoveries were made before a letter of approval has been issued by the relevant authorities. It is recommended that a professional registered Archaeologist be appointed on a contract basis to allow for continuous monitoring and sampling during the construction phase or where excavations are required • It is proposed that the professional registered Archaeologist comprehensively document and survey before construction where an indication of scattered stone tools exist. Sensitive heritage features, as identified by the appointed professional, should be fenced in situations where construction activities will occur within 50 metres • A built environment permit application must be submitted to Ngwao Boswa Kapa Bokoni (Northern Cape Heritage Department) and Heritage Eastern Cape who will determine if work may proceed at the cultural landscape areas and indicate what the requirements are. They will also provide the terms and conditions related to work allowed at the cultural landscapes that is positioned within and outside of the proposed impacted area • A heritage management plan must be completed to support the conservation of the historical structures, historical suburban area and historical diamond mining landscape as well as the associated heritage objects. This management plan must be

Activity	Impact summary	Significance	Proposed mitigation
			<p>approved and signed by the National and Provincial Heritage Authority before any construction activities may commence</p> <ul style="list-style-type: none"> • During construction it is recommended that identified historical features are buffered and fenced off • A monitoring program is proposed that will allow for regular inspections to ensure that terms and conditions stipulated in the Heritage Management Plan are adhered to • It is proposed that the professional registered Archaeologist apply for a sampling and monitoring permit that will allow for heritage resource rescue work if necessary. The permit will be used in the event that in situ archaeological material related to the South African War sites, stone tool material or any other type of heritage objects are uncovered during earthmoving activities • At Sishen a new loop is proposed. This area is highly disturbed because of the occurrence of intensive mining activities. In terms of previous heritage impact assessment reports a cluster of stone age sites occurs close to Kathu and the Sishen areas. It is therefore advised that monitoring occurs before and after construction. • The sections identified to include the doubling of an existing railway line fall within sensitive heritage resources landscapes. It is recommended that a Phase 2 Heritage Impact Assessment is completed at these areas. A Phase 2 Heritage Impact Assessment is inclusive of sampling (removal of stone age material that is located in the development areas) and further detailed documentation within the impacted area. Monitoring (Phase 3) is proposed to occur during the construction phases of the development <p>A chance-find procedure will be implemented so that in the event of graves or Stone Age artefacts/fossils being uncovered, the ECO/Site Engineer will take the appropriate action, which includes:</p> <ul style="list-style-type: none"> • Stopping work in the immediate vicinity and if possible, fencing off the area with tape to prevent further access; • Reporting the discovery to the provincial department of the South African Heritage Resources Agency; • Appointing a local archaeological/paleontological expert to inspect the discovery; • Implementing further mitigation measures proposed by the expert; and • Allowing work to resume only once clearance is given in writing by the expert. • Brief field assessment of loop development footprints and representative bedrock exposures in the region to assess likely palaeontological impacts based on levels of bedrock exposure, degree of weathering and deformation, and presence of near-surface fossils.
	Contamination of Soil, Groundwater Resources and Surface Water Features	Minor negative	<p>The objective of mitigation is to minimise potential impacts associated with spillages of fuel, oil and used oil during construction activities. Specific measures include:</p> <ul style="list-style-type: none"> • Fuel, oil and used oil storage areas will have appropriate secondary containment; • Spill containment and clean up kits will be available onsite and clean-up from any spill will be appropriately contained and disposed of; and • Construction vehicles and equipment will be serviced regularly and provided with drip trays, if required.
	Dust Nuisance	Moderate negative	<p>The objective of this mitigation is to minimise generation of dust.</p> <ul style="list-style-type: none"> • The removal of vegetation will be limited to the construction areas only. • Minimise disturbance of natural vegetation during right-of-way construction (e.g. erection of fences) to reduce potential erosion, run-off, and air-borne dust. • Apply dust suppression measures that are appropriate, reasonable and practicable to the scale of the stock piles (it is anticipated that these will be small) that are based on accepted

Activity	Impact summary	Significance	Proposed mitigation
			<p>principles such as wetting.</p> <ul style="list-style-type: none"> • Access roads should be wetted down where reasonable and practicable to limit dust generation. • Speed restrictions of 40km/h will be implemented on construction sites and access roads to limit dust entrainment by vehicles. • Verges, cuttings, lay-down areas and construction areas will be re-vegetated according to specific site conditions as soon as the construction activity is completed at each of the respective sites and in accordance with the operational or post-construction utilisation of that particular site. •
	The impacts of delivery trucks during construction	Minor negative	<ul style="list-style-type: none"> • The following mitigation is aimed at managing potential impacts associated with the movement of delivery truck to and from site. The impacts on the existing traffic can be reduced by scheduling the arrivals and departures of construction vehicles; • Educate both the construction crew and the local community on traffic safety and possible hazards arising from the construction activities; • All warning, regulatory and prohibition signs recommended by the National Department of Transportation, South African Roads Traffic Signs Manual (SARTSM) should be implemented; • All regulatory and warning signs recommended by the National Department of Transportation, South African Roads Traffic Signs Manual (SARTSM) should be adhered to; and • All plans and specifications should provide details on how the traffic control operations are to be carried out.
	Impact on Local Economy	Moderate positive	<p>The following measures will be implemented to ensure that employment of local people is maximised and procurement of local, regional and national services is maximised:</p> <ul style="list-style-type: none"> • Transnet's recruitment and procurement policy will set reasonable targets for the employment of local residents/suppliers (originating from the local municipalities) and promote the employment of women as a means of ensuring that gender equality is attained. Criteria will be set for prioritising, where possible, local (local municipal) residents/suppliers over regional or national people/suppliers. • All contractors will be required to recruit and procure in terms of Transnet's recruitment and procurement policy. • Transnet will work closely with relevant local authorities, community representatives and organisations to ensure that the use of local labour and procurement is maximised. This may include: <ul style="list-style-type: none"> ○ Sourcing and using available databases on skills/employment-seekers that local authorities may have. ○ Advertising job opportunities and criteria for skills and experience needed through local and national media. ○ Conducting an assessment of capacity within the Local Municipality and South Africa to supply goods and services over the operational lifetime of the project. • No employment will take place at the entrance to sites. Only formal channels for employment will be used. • Ensure that the appointed project contractors and suppliers have access to Health, Safety, Environmental and Quality training as required by the project. This will help to ensure that they have future opportunities to provide goods and services to the sector. • Transnet will implement a grievance procedure that is easily accessible to local communities, through which complaints related to contractor or employee behaviour can be lodged and responded to. Transnet will respond to such complaints. Key steps of the grievance mechanism include: <ul style="list-style-type: none"> ○ Circulation of public complaints procedure with public complaints register or key Transnet contact. ○ Awareness raising among local communities

Activity	Impact summary	Significance	Proposed mitigation
			<p>(including all directly affected and neighbouring farmers) regarding the grievance procedure and how it works.</p> <ul style="list-style-type: none"> ○ Establishment of a grievance register to be updated by Transnet, including all responses and response times.
	Change of Sense of Place	Minor negative	<ul style="list-style-type: none"> • Transnet will give adequate notice to the landowners and their neighbours before construction phase activities commences. • Notice will be given to surrounding landowners before construction begins such that they are aware of the impacts and may make the necessary changes.
	Managing Stakeholder Expectations	No rating	<ul style="list-style-type: none"> • All concerns regarding jobs and other expectation will be addressed in accordance to the grievance procedures. • Maximize local employment and procurement as far as practicable. • Work together with local farmer unions and landowners to clearly explain the increased waiting time that is expected at the different crossings. • Advertise job criteria, required skills and experience for available jobs through local and national media and local communication channels. • Advertise experience, quality and volume requirements for the supply chain needs. • Local residents' expectations of Transnet will continue to grow over time. It will not be possible for Transnet to deliver on all community and stakeholder expectations; hence a CSI Programme should be developed that clearly outlines the anticipated initiatives. These initiatives will need to be identified in consultation with the local communities. The plan should outline what the nature of the assistance will be and how the investment projects will be distributed through the project area. This strategy will be communicated to stakeholders/ local residents to ensure that their expectations remain realistic and are well-managed. Examples of potentially relevant programmes could include community policing, financial management, and drilling of boreholes.
	Cumulative impacts:		See description below.
Alternative 1: Operational related impacts			
	Direct impacts: Impact from Increased Noise Generation	Major negative	<p>The objective of mitigation is to minimise the impacts of noise disturbance on sensitive social and ecological receptors (i.e. residents near Postmasburg and Cookhouse-Golden Valley) during operations. Amongst others, some specific measures include:</p> <ul style="list-style-type: none"> • The need for noise barriers (in the form of walls or earth berms) at sites where the acceptable noise limits (45dBA according to SANS 10103) are exceeded at sensitive social receptors (such as human settlements or schools in close proximity to the railway line), will be investigated during the detailed design of the relevant loops, with the aim of reducing the noise impact caused by the additional trains. Barriers are usually erected as close to the railway line as possible and are a minimum of 3 m in height (generally 5-7 m); they need to extend at least 100 m beyond the receptor; (see sensitive receptors in Appendix F) • A noise monitoring program will be established at sensitive social receptors during the operational phase. The purpose of this program will be to establish a base level of the noise caused by the existing rail traffic; and • Should significant incremental increases in the noise levels be observed after operation has started, appropriate measures will be implemented to mitigate these using, amongst others, the noise attenuation strategies described above.

Activity	Impact summary	Significance	Proposed mitigation
	Impact of Manganese Ore Dust	Negligible	No additional mitigation measures are required.
	Impacts from Increased Vibration Effects	Negligible	No additional mitigation measures are required.
	Impact on Public Safety	Negligible	Rail crossings are to clearly marked and existing signage and safety procedures are to be maintained.
	Alien Plant Invasion Risk	Low negative	<p>The aim of the mitigation measures outlined below are to minimise and manage the spread of invasion of alien species.</p> <ul style="list-style-type: none"> Monitoring to ensuring alien plants are not increasing as a result of the disturbance caused during the construction phase. Alien plants at the sites should be controlled according to the management plan using the best practice methods for the species present.
	Change in Sense of Place	Low negative	<ul style="list-style-type: none"> Work together with local farmer associations and landowners to clearly explain the increased waiting time that is expected at the different crossings.
	Decrease in Traffic	Moderate positive	None required
	Indirect impacts: Economic opportunities	Moderate positive	<p>Positive impacts of the proposed line related to the beneficiation of valuable raw products, transportation of these products in-land and general assistance with the growth of the Eastern Cape, Metro, Industrial Development Zone and the South African economy.</p> <p>Increased rail capacity and transport efficiency is likely to result in reduction in long distance bulk commodity and container movements by road, which has a high negative impact on roads.</p>
No-go option			
	<p>Direct impacts: The no-go alternative (i.e. the maintenance of the status quo) involves not extending/constructing existing loops or installing new loops and therefore not refurbishing the railway line to allow for an increase in capacity up to 16Mtpa.</p> <p>The impact of not implementing the project can be viewed as both positive and negative. The positive consequences include not causing impacts to the biophysical and social environment, particularly to sensitive receptors, whereas the negative implications are associated with the direct loss of opportunities for employment and procurement of goods and services at a local level but also resulting in decreased growth potential, given the importance of the manganese ore industry, on a provincial and national scale. The key negative consequence would therefore be lost opportunities and revenue associated with reduced manganese export as well as increased heavy vehicle traffic on provincial roads. If the railway line and associated structures is not upgraded to handle the additional capacity, this would result in a negative, direct impact on generation of foreign income, which would affect the provincial and national economy. Negative, indirect impacts would also be experienced on the supply chain that services this sector of the economy.</p>		

Cumulative impacts in terms of the overall project:
<p>Cumulative impacts are regarded as the combined effects (whether positive or negative) of more than one development (past, present or in the foreseeable future) within the same geographical area or on the same receptor/resource.</p> <p>Other developments which may, therefore, be influenced by this project, include possible new mines or mining related developments in the Northern Cape which would place additional pressure on the railway line should the capacity needs exceed 16Mtpa. Increases in the frequency of trains along the line, would exacerbate the operational impacts, such as noise disturbance, vibration nuisance and potentially aspects of public safety.</p> <p>Although the additional land required at each loop is relatively small, especially in relation to the size of the farms, a number of farmers indicated that they had signed options with renewable energy developers (mainly for solar PV projects). The cumulative effects of loss of agricultural land, loss of or disturbance to sites of archaeological, palaeontological or cultural significance, faunal impacts etc would be high. The uncertainty around these developments must be highlighted, since the renewable energy project bidding process and the signing of power purchaser agreements has not been concluded.</p>

A complete impact assessment in terms of Regulation 22(2)(i) of GN R.543 must be included as **Appendix F**.

2. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that summarises the impact that the proposed activity and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account, with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

Alternative 1 (preferred alternative)

<u>Construction phase</u>	
<p>The identified impacts and ratings are summarized in the Table below (see also abbreviations for duration and likelihood):</p> <p>Duration Likelihood T – Temporary N – Negligible S – Short-term L – Low L – Long term M – Medium P - Permanent H - High</p>	
<u>Impact</u>	<u>Alternative 1 (Preferred)</u>
Impacts on Vegetation and Protected Plant Species	Duration: L: Invasive alien vegetation is highly likely to remain beyond the life of the project once established. Likelihood: L-M: It is highly likely that alien invasive vegetation will establish itself as a result of suitable conditions generated by construction activities. Pre-mitigation: Minor Post mitigation: Minor
Alien Plant Invasion Risk	Duration: S: With respect to the loops where habitat can re-establish itself. Likelihood: L: Some faunal loss/ disturbance will definitely occur. Pre-mitigation: Minor Post mitigation: Minor
Increased Erosion Risk	Duration: S: Any loss of endangered invertebrate species will be permanent. Likelihood: L: Some protected invertebrates will definitely be impacted upon. Pre-mitigation: Minor Post mitigation : Minor
Direct Faunal impacts	Duration: S: Invasive alien vegetation is highly likely to remain beyond the life of the project once established. Likelihood: M: It is highly likely that alien invasive vegetation will establish itself as a result of suitable conditions generated by construction activities. Pre-mitigation: Minor Post mitigation: Minor
Impacts on Critical Biodiversity Areas	Duration: L: Invasive alien vegetation is highly likely to remain beyond the life of the project once established. Likelihood: L: It is highly likely that alien invasive vegetation will establish itself as a result of suitable conditions generated by construction activities. Pre-mitigation: Minor Post mitigation: Minor
Noise and Vibration Disturbance	Duration: S: - Impact expected during the construction phase only. Likelihood: H: Owing to the remoteness of project area and topography, noise impacts will definitely be experienced, even though this will be over a short duration (3-5mth period) and affect few receptors. Pre-mitigation: Moderate (Medium magnitude, high likelihood) Post mitigation: Minor
Loss of or Disturbance to Sites of Archaeological, Paleontological or Cultural Significance	Duration :P: Loss of paleontological of vandalism of cultural heritage resources is expected to be permanent Likelihood: L: It is possible that archaeological, paleontological or cultural resources may be impacted during construction. Pre-mitigation: Minor (Medium magnitude, medium likelihood) Post mitigation: Negligible
Increased potential for Soil Erosion	Duration: S: Erosion may occur during the construction phase only. Likelihood: L: Soil erosion at loop sites is possible.

	Pre-mitigation: Minor (Medium magnitude, low likelihood) Post mitigation: Negligible
Contamination of Soil, Groundwater and Surface Water Resources	Duration: S to L: Soil can be remediated in the short-term, however, groundwater may take longer to naturally remediate or may require treatment. Likelihood: L: Contamination impacts are possible, especially at fuel/chemical handling and storage areas. Pre-mitigation: Minor (Medium magnitude, low likelihood) Post mitigation: Negligible
Dust Nuisance	Duration: S: - Impact expected during the construction phase only. Likelihood: M: Dust impacts are very likely to occur at all development sites, although in very small measures. Pre-mitigation: Minor (Low magnitude, medium likelihood) Negligible
Traffic Disruption and Hazards	Duration: S: Impact expected during the construction phase only. Likelihood: L: Impact possible where site is close to communities or high use public roads. For example Golden Valley, is located alongside national roads. Pre-mitigation: Negligible (Low magnitude, low likelihood) Post mitigation: Negligible
Impact on the Local Economy	Duration: positive impacts will be short-term as it relates to construction jobs, and some of the procurement, but it will be long-term for those permanently employed by Transnet. Likelihood: H Construction- Pre-mitigation: Moderate; post mitigation: Moderate (+ve) Operation: Pre-mitigation :Minor (+ve); post mitigation: Minor (+ve)
Disrupted Agricultural Activities	Duration: S: The impact is limited to the construction phase only. Likelihood: M: Some agricultural activities would be impacted. Pre-mitigation: Major negative Post mitigation: Minor negative
Change in Sense of Place	Duration: L: once developed the sense of place will be impacted long term. Likelihood: H: this will definitely occur Pre-mitigation: Minor Post mitigation: Negligible
Managing Stakeholder Expectations	No impact ratings

Operation phase

The identified impacts and ratings are summarized in the Table below:

Impact	Alternative 1 (Preferred)
Impact from Increased Noise Generation	Duration: L: Increased noise generation is associated with additional volumes of trains on the line, which will increase over time. Likelihood: M: Noise disturbance, above acceptable levels, will very likely be experienced at locations with settlements in close proximity to the line (30m – 100m). Pre-mitigation: Major (High magnitude, medium likelihood) Post mitigation: Major
Impact of Manganese Dust	Duration: L: It is expected that manganese ore will be transported on the line for the duration of its lifespan Likelihood: L: Although the manganese is transported as chunks of ore, some dust may possibly be dispersed off the open wagons, even though the quantities will be negligible. Pre-mitigation: Negligible (Low magnitude, low likelihood) Post mitigation: Negligible
Impacts from Increased Vibration Effects	Duration: L: Increased vibration effects are associated with additional volumes of trains on the line, which will increase over time. Likelihood: L: The effect of the vibration caused by one train is expected to be similar to the current situation, even though the frequency of the vibration disturbance will increase. Pre-mitigation: Negligible (Low magnitude, low likelihood) Post mitigation: Negligible
Impact on Public Safety	Duration: L: Risk will exist for the duration of the lines operation. Likelihood: L: The likelihood of level crossing incidents is considered to be negligible; it is possible that incidents may occur due to human error. Pre-mitigation: Negligible (Low magnitude, low likelihood) Post mitigation: Negligible
Change in Sense of Place	Duration: L: The impact may be experienced at various stages during the project lifetime Likelihood: M: It is very likely that the sense of place will be impacted on for some people/communities. Pre-mitigation: Moderate (Medium magnitude, medium likelihood) Post mitigation: Negligible
Decrease in Heavy Vehicle Traffic	Duration: L: Impact expected for the life span of the project. Likelihood: H: heavy vehicle traffic will decrease for the duration of the operation phase. Pre-mitigation: Moderate positive Post mitigation: Moderate positive

It can be seen from the Table above that although a number of impacts have been identified, the post-mitigation significance of these are not considered to be major. It is therefore recommended that the proposed expansions and new loops be authorized provided that the recommended mitigation measures are implemented.

No-go alternative (compulsory)

The no-go or do nothing alternative (i.e. the maintenance of the status quo) involves not extending/constructing the proposed loops.

The impact of not implementing the Project can be viewed as both positive and negative. The positive consequences include not causing impacts to the biophysical and social environment, particularly to sensitive ecological or social receptors, whereas the negative implications are associated with the direct loss of opportunities for local employment and procurement of goods and services at a provincial and national scale. The key negative consequence would, however, be lost opportunities and revenue associated with reduced manganese export and container handling. If the railway line and associated structures is not upgraded to handle the additional capacity, this would result in a negative, direct impact on generation of foreign income, which would affect the provincial and national economy. Negative, indirect impacts would also be experienced on the supply chain that services this sector of the economy.

Impact of not implementing the project:

- Extent: National
- Duration: Long term
- Likelihood: High
- Intensity: High
- Significance rating: Major (negative)

The no-go alternative is therefore not recommended.

Alternative A (preferred alternative)

Alternative B

Alternative C

No-go alternative (compulsory)

SECTION E. RECOMMENDATION OF PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the environmental assessment practitioner)?

YES	NO
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If "NO", indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

If "YES", please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

The EMP must be implemented and an ECO appointed during the construction phase of the project.

Key mitigation measures are highlighted below for inclusion in the environmental authorisation.

General Ecology

- A search and rescue operation for protected species within the final development footprint should be conducted prior to construction and the necessary permits for removal obtained.
- Cleared areas which are not being used should be revegetated using plants or seed of locally occurring species.
- Any vegetation clearing that needs to take place as part of maintenance activities, should be done in an environmentally friendly manner, including avoiding the use of herbicides and using manual clearing methods wherever possible.

Alien Plant Invasion Risk

- Soil disturbance and vegetation clearing should be kept to minimum.
- Biannual monitoring and clearing of alien vegetation during operational phase.

Increased Erosion Risk

- Service roads and tracks running down the slope must be designed to limit erosion, as far as possible.
- Any extensive cleared areas that are not required after construction activities are complete should be re-seeded with locally-sourced seed of suitable species. Bare areas can also be packed with brush removed from other parts of the site to encourage natural vegetation regeneration and limit erosion.
- All construction vehicles should remain on properly demarcated roads.
- Regular post-construction monitoring for erosion to ensure that no erosion problems are occurring at the site as a result of the roads and other infrastructure. Erosion problems observed should be rectified as soon as possible.

Loss of or Disturbance to Sites of Archaeological, Paleontological or Cultural Significance

- Construction activities must remain within designated rail reserve construction areas. Should it be necessary to undertake construction activities outside of the rail reserve, a professional registered Archaeologist must survey these areas prior to site disturbance to supervise and provide guidance
- The historical structures identified at cultural resource areas may not be destroyed, demolished, altered, collected or impacted upon unless a permit has been issued by SAHRA
- During construction, if any heritage objects are discovered, a professional registered Archaeologist, SAHRA, Heritage Eastern Cape and Ngwao Boswa Kapa Bokoni (Northern Cape Heritage) must be informed. No work is allowed to proceed at the specific site of where the discoveries were made before a letter of approval has been issued by the relevant authorities.
- A heritage management plan must be completed to support the conservation of the historical structures, historical suburban area and historical diamond mining landscape as well as the associated heritage objects. This management plan must be approved and signed by the National and Provincial Heritage Authority before any construction activities may commence
- A cluster of stone age sites is reported to occur close to Kathu and the Sishen areas. It is therefore advised that monitoring occurs before and after construction at these sites.
- It is recommended that a Phase 2 Heritage Impact Assessment is completed at the sites requiring doubling (i.e. Cookhouse - Golden Valley and Ripon-Kommadagga).
Monitoring (Phase 3) is proposed to occur during the construction phases of the development.

- A chance-find procedure will be implemented so that in the event of graves or Stone Age artefacts/fossils being uncovered, the ECO/Site Engineer will take the appropriate action.

Impact on Local Economy

- Transnet's recruitment and procurement policy will set reasonable targets for the employment of local residents/suppliers (originating from the local municipalities) and promote the employment of women as a means of ensuring that gender equality is attained. Criteria will be set for prioritising, where possible, local (local municipal) residents/suppliers over regional or national people/suppliers.
- All contractors will be required to recruit and procure in terms of Transnet's recruitment and procurement policy.
- Transnet will work closely with relevant local authorities, community representatives and organisations to ensure that the use of local labour and procurement is maximised.
- No employment will take place at the entrance to sites. Only formal channels for employment will be used.
- Ensure that the appointed project contractors and suppliers have access to Health, Safety, Environmental and Quality training as required by the Project. This will help to ensure that they have future opportunities to provide goods and services to the sector.
- Transnet will implement a public complaints procedure that is easily accessible to local communities, through which complaints related to contractor or employee behaviour can be lodged and responded to.

Increased Noise Generation

- The need for noise barriers (in the form of walls or earth berms) at sites where the acceptable noise limits (45dBA according to SANS 10103) are exceeded at sensitive social receptors (such as human settlements or schools in close proximity to the railway line ie Postmasburg and Cookhouse-Golden Valley), will be investigated during the detailed design of the relevant loops, with the aim of reducing the noise impact caused by the additional trains. Barriers are usually erected as close to the railway line as possible and are a minimum of 3 m in height (generally 5-7 m); they need to extend at least 100 m beyond the receptor.
- A noise monitoring program will be established at sensitive social receptors during the construction phase. The purpose of this program will be to establish a base level of the noise caused by the existing rail traffic.
- Should significant incremental increases in the noise levels be observed after operation has started, appropriate measures will be implemented to mitigate these using, amongst others, the noise attenuation strategies described above.

Is an EMPr attached?

YES

NO

The EMPr must be attached as [Appendix G](#).

The details of the EAP who compiled the BAR and the expertise of the EAP to perform the Basic Assessment process must be included as [Appendix H](#).

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in [Appendix I](#).

Any other information relevant to this application and not previously included must be attached in Appendix J.

Tania Swanepoel of Environmental Resources Management (Pty) Ltd

NAME OF EAP

SIGNATURE OF EAP

DATE

SECTION F: APPENDIXES

The following appendixes must be attached:

APPENDIX A LOCALITY MAP

APPENDIX B PHOTOGRAPHS

APPENDIX C FACILITY AND PROPERTY DESCRIPTIONS

- C1 Facility Illustrations
- C2 Property Descriptions
- C3 SG21 Digit Codes
- C4 Farm and Ward Numbers

APPENDIX D SPECIALIST STUDIES

- D1 Ecological Specialist Study
- D2 Paleontological Specialist Study
- D3 Heritage Study- Phase 1
- D4 Noise Specialist Study
- D5 Social Specialist Study
- D6 Air Quality Baseline

APPENDIX E PUBLIC PARTICIPATION

- E1 I&AP Database and Registrations
- E2 Proof of Notification
- E3 Proof of Authority Notification
- E4 Comments and Response Report
- E5 Comments Received

APPENDIX F IMPACT ASSESSMENT

APPENDIX G ENVIRONMENTAL MANAGEMENT PROGRAMME

APPENDIX H DETAILS AND EXPERTISE OF EAP

APPENDIX I SPECIALIST DECLARATIONS

APPENDIX J WASTE MANAGEMENT LICENCE APPLICATION