

**DRAFT**

# **BASIC ASSESSMENT REPORT**

**TRANSNET SOC LTD PROPOSED BOSHOEK RAILWAY  
LOOP, NORTH WEST PROVINCE**

Prepared for:



Prepared by:

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Coastal & Environmental Services

**Report Title: TRANSNET SOC LTD PROPOSED BOSHOEK RAILWAY LOOP,  
NORTH WEST PROVINCE**

**Report Version: Draft Report**

**EOH CES Project Number: P40700280**

<b>Name</b>	<b>Responsibility</b>	<b>Date</b>
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## SECTION A: ACTIVITY INFORMATION

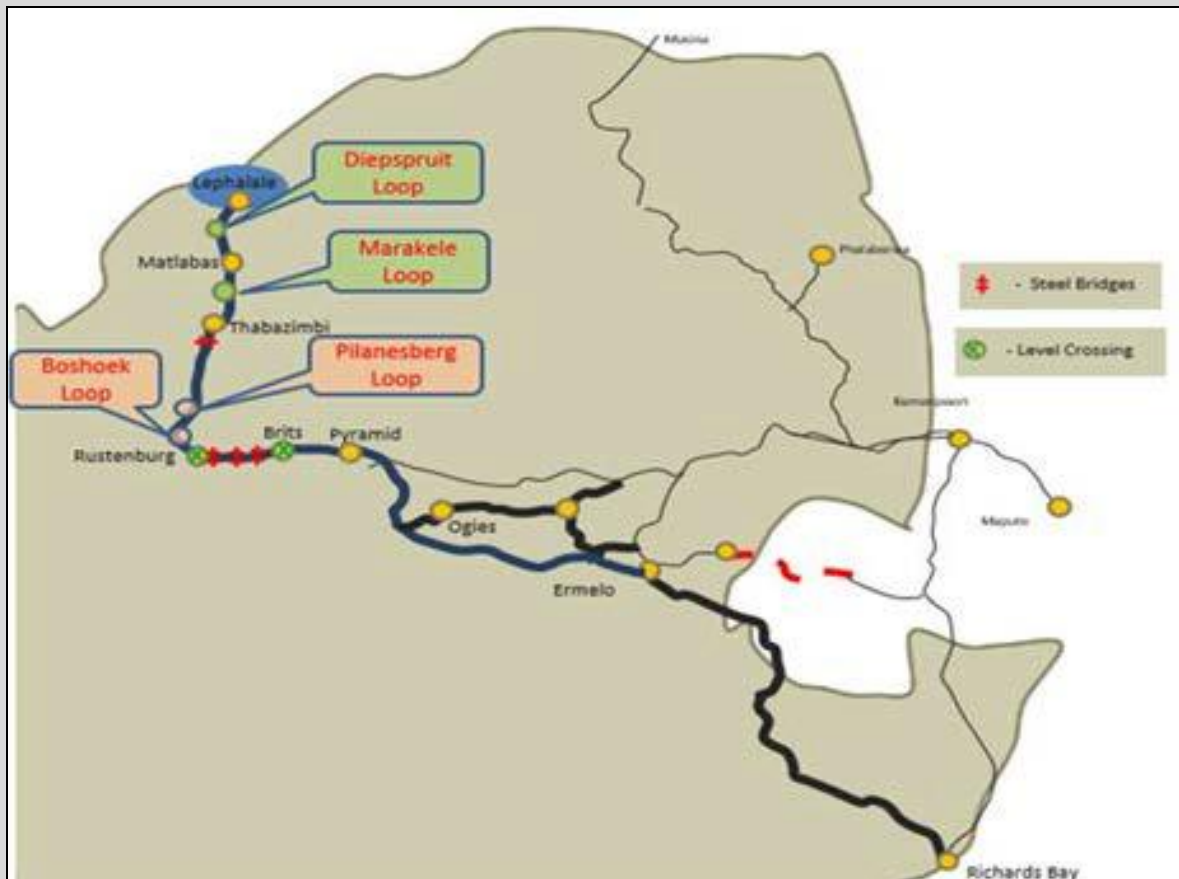
### 1. PROJECT DESCRIPTION

#### Introduction

Transnet SOC Ltd (Transnet) has proposed the construction of a new loop along the railway line between Boshhoek and Rustenburg, on a portion of the farm Boschhoek 103JQ in the Bojanala Platinum District Municipality, North West Province. EOH Coastal & Environmental Services (EOH CES) have been appointed to undertake the Basic Assessment process in terms of the National Environmental Management (NEMA 107 of 1998), Environmental Impact Assessment (EIA) Regulations (2014, as amended in 2017), for the proposed development.

#### Project Background

Transnet has commissioned the Waterberg rail corridor expansion programme following several requests from industry to increase the long-term rail network capacity from the Waterberg coal fields (Limpopo Province) to the Richards Bay Coal Terminal (Kwa-Zulu Natal Province) and the Port of Maputo (Mozambique). This entails the upgrade of the existing railway system including Lephalale to Thabazimbi, Rustenburg and Pyramid South which then joins the line extending to Ermelo and Richards Bay (Figure 1.1).



**Figure 1.1: Transnet railway network between Waterberg coal fields and the Richards Bay Coal Terminal.**

The Waterberg railway line is a key corridor for the transportation coal as well as various other export commodities, including chrome, ferrochrome, cement, lime, granite, iron ore,

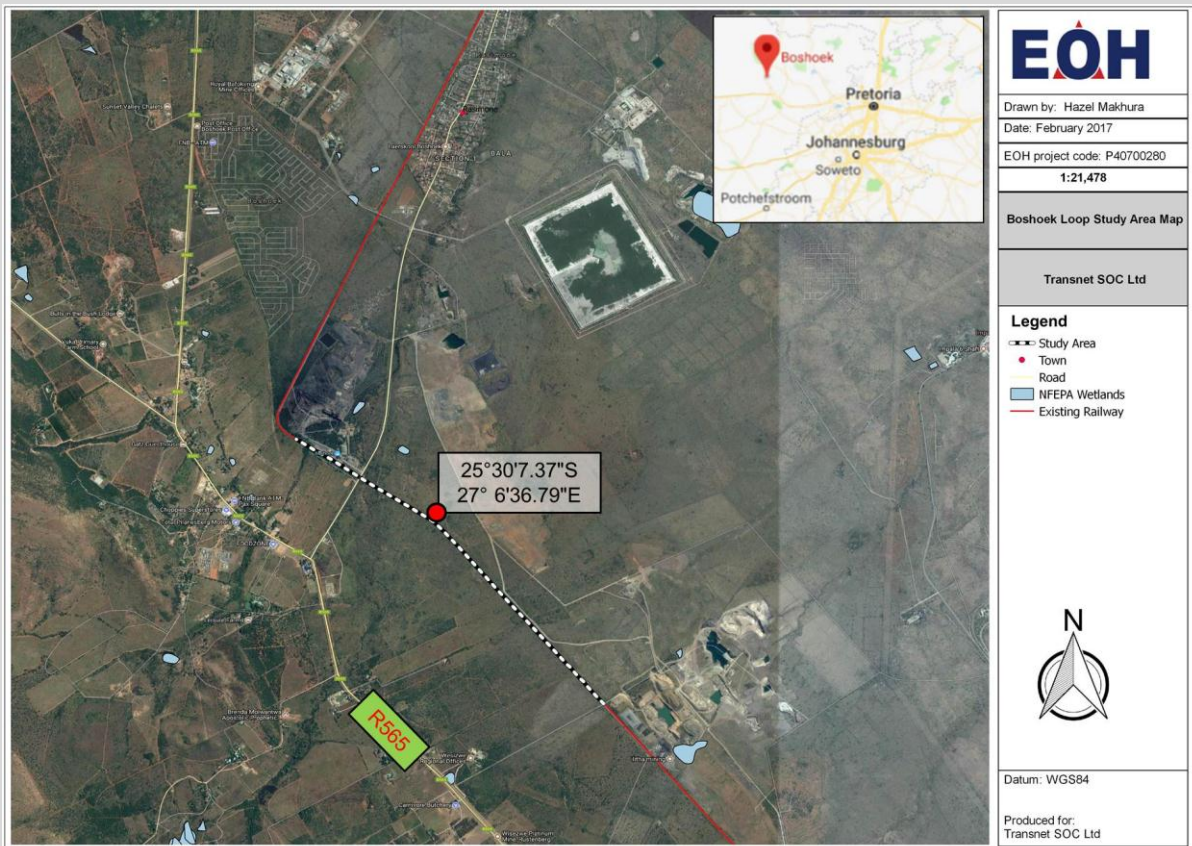
containers and general freight. It also serves several inland domestic markets and is thus currently fully utilized with an increase in demand expected over the next ten to twenty years. Transnet determined that 200-wagon trains need to be able to operate along the Waterberg line in order for the demand to be met. This was concluded through several feasibility studies which included a series of train capacity simulations resulting in the requirement of a five-stage upgrade to the line.

The 240km section of the Waterberg line between Thabazimbi and Pyramid South has been identified as a major bottleneck as it currently does not allow for the passing of 100-wagon trains, let alone 200-wagon trains. Stage 3 of the proposed Waterberg line upgrade includes the implementation of two railway loops (passing lanes) to be constructed at the following locations along this section of the line:

- Boshhoek (between Km 132.82 and 135.78)
- Pilanesberg (between Km 159.55 and 160.95)

**Project Location**

The activity falls within the jurisdiction of the Rustenburg Local Municipality, situated within the Bojanala District Municipality, North West Province. The project site can be accessed via the N4 from Pretoria to Rustenburg and then via the R565 from Rustenburg to Boshhoek (Figure 1.2).



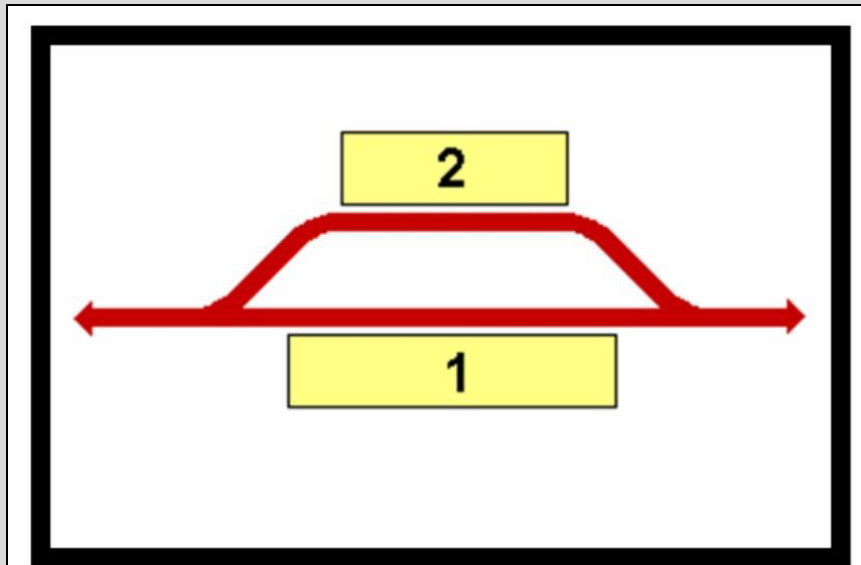
**Figure 1.2: Location of the proposed Boshhoek Railway Line project.**

**Project Description and Scope**

The construction work includes 1.67km of track work parallel along the northern side of the existing rail as well as moving the existing gravel service road to accommodate the new track. This will allow two trains to safely pass each other along the railway line (Figure 1.3).



Construction of the new loop will be undertaken within the Transnet servitude however, Transnet will acquire land (via a lease agreement) for the purpose of stockpiling and site camp areas. The loop will be constructed in line with Transnet's S410 Specification (March, 2006) which covers railway earthworks and service roads. The new loop traverses through fairly flat terrain from Km 132.82 to Km 134.80 and passes through an embankment approaching the Matlopyane river bridge at Km 134.97.



**Figure 1.3: Diagram illustrating a railway loop (Aerial view; courtesy of Transnet).**

The following items will form part of the construction works (Figure 1.4):

1. Perways (bridges and platforms):
  - 1,671 km of track comprising 60kg UIC60 rails on PY sleepers;
  - 1:20 RH tangential point set at Km 132.82;
  - 1:20 LH tangential point set at Km 135.78.
2. Signalling:

Install a localised remote control system to enable the Train Driver to remotely operate the 1:20 tangential point sets on both sides of the loop. The system makes use of a radio control system for operation.
3. Structures

There are five (5) box culverts (Table 1.1) which will be extended in order to accommodate the new loop. The culvert openings will be kept unchanged and the length of the culverts will be extended to the specification of the new loop line.
4. Bridge

The river bridge will be constructed at approximately Km 135.130. The size and shape of the bridge will be similar to the existing one on the main line.



Figure 1.4: An example of a railway perway (left) and typical railway signalling (right).

Table 1.1. Box culvert description and location.

Description	Km	DMS Coordinates
Culvert 1: 1.80 m x 4.90 m box culvert	133.10	Lat: -25°, 30', 37.3942"; Long: 27°, 07', 06.0789"
Culvert 2: 1.90 m x 4.90m box culvert	133.96	Lat: -25°, 30', 16.0228"; Long: 27°, 06', 46.2882"
Culvert 3: 1.90 m x 4.90m box culvert	134.41	Lat: -25°, 30', 05.4372"; Long: 27°, 06', 35.4205"
Culvert 4: 0.50m pipe culvert	134.82	Lat: -25°, 29', 58.0180"; Long: 27°, 06', 23.0570"
Culvert 5: 2.4/5m x 6.70m arched culvert	135.13	Lat: -25°, 29', 52.3852"; Long: 27°, 06', 13.6585"

### **Support Facilities**

The proposed railway loop alignment is situated within the existing Transnet railway servitude however a site camp will be required for the construction phase of the development. Transnet have agreed with Glencore, who currently operate a chrome smelter directly adjacent to the servitude, to make use of one of the existing transformed areas within their property.

**Access Road** - The site will be accessed via 'Main Road', which is a tarred road intersecting the R565 at a point located south of Boshhoek, and then via several existing un-tarred railway servitudes roads. As such, the development will not require any additional access roads to be constructed other than the new servitude which will be constructed north of the proposed new loop.

**Site Camp** - A construction site camp will be required during the construction phase of the proposed development. It will be located within an already-disturbed area near to the proposed development site, within the property currently utilized by the Glencore chrome smelter, immediately off Main Road towards the north of the Glencore Smelter. The site contains no vegetation, having been used as a turning zone for mining trucks.

**Water Supply** - Water required for the construction phase of the proposed development will be acquired from the Rustenburg Local Municipality as well as from several existing Transnet water depots within the vicinity of the existing railway line. Based on the proximity of nearby surface water resources, the proposed development will trigger Section 21c and 21i water uses, as set out in the National Water Act (NWA) (Act No. 36 of 1998, as amended), thus requiring a Water Use Authorisation (WUA) application to the Department of Water and Sanitation (DWS).

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Solid Waste, Wastewater and Sewage – The construction phase of the proposed development will include temporary onsite ablution facilities which will be emptied and serviced by an external service provider. Solid waste generated will be collected and stored in a designated area within the proposed site camp and will be removed to a licenced landfill facility by the contractor on a regular basis. There is no solid waste or sewerage associated with the operational phase of the proposed railway loop.

Electricity supply – Electricity supply will be obtained from the existing Eskom service lines located within the railway servitude and will be derived from the National Grid. The existing line is currently electrified at 25 kilovolts (kV) and the proposed loops will feed into this existing system.

### b) Listed activities associated with the project

Listed activity as described in GN 983 and 985	Description of project activity
<p><b>GNR 327, Listing Notice 1, Activity 14:</b> The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.</p>	<p>Operations of a siding include the temporary storage of moderate quantities of dangerous goods, which may exceed the threshold identified.</p>
<p><b>GNR 327 – Listing Notice 1, No. 19:</b> The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse</p>	<p>Due to the alignment of the proposed loop traversing the Matlopyane River, development within or near a watercourse will definitely occur.</p>
<p><b>GNR 327, Listing Notice 1, Activity 64:</b> The expansion of railway lines, stations or shunting yards where there will be an increased development footprint, excluding— (i) railway lines, shunting yards and railway stations in industrial complexes or zones; (ii) underground railway lines in mines; or (iii) additional railway lines within the railway line reserve.</p>	<p>Construction of the proposed loop comprises expansion of existing railway facilities by constructing a new 1.67km line adjacent to the existing line, which will increase the development footprint beyond that of the existing railway reserve, thus triggering this activity.</p>
<p><b>GNR 324, Listing Notice 3, Activity 12:</b> The clearance of an area of 300 square metres or more of indigenous vegetation except: where such clearance of indigenous vegetation is required for maintenance purpose undertaken in accordance with a maintenance management plan. h. North West: iv. Critical biodiversity areas as identified in a systematic biodiversity plan.</p>	<p>Construction of the proposed loop comprises clearance of approximately 1.6ha of indigenous vegetation, across regions classified as CBA 2.</p>

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<p><b>GNR 324, Listing Notice 3, Activity 14:</b>                  The development of—                  (ii) infrastructure or structures with a physical footprint of 10 square metres or more;                  where such development occurs—                  (a) within a watercourse;                  h. North West                  iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority.</p>	<p>Due to the alignment of the proposed loop, development within or near a watercourse will be definitely occur.</p>
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### 2. FEASIBLE AND REASONABLE ALTERNATIVES

**“alternatives”**, in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

The preferred alternative considered in this Basic Assessment involves placing a single rail line immediately adjacent to the existing rail line (to the northern side of the existing track). The preferred site alternative was determined by Transnet who conducted a simulation to determine the location for the railway loop in order to serve the needs of the Waterberg line. Only the preferred alternative will be assessed in this report as this alternative is the only reasonable and feasible means of meeting the requirements of the proposed railway loop.

#### a) Site alternatives

Non-linear Activities:

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Site camp location.	25° 29' 03.1" S	27° 06' 31.3" E

Linear Activities:

Alternative:	Latitude (S):	Longitude (E):
Alternative 1 (preferred)		
• Starting point of the activity	25° 29' 39.2" S	27° 05' 51.0" E
• Middle/Additional point of the activity	25° 30' 07.4" S	27° 06' 36.8" E
• End point of the activity	25° 30' 52.4" S	27° 07' 18.0" E

No site alternatives are deemed feasible for this particular project due to the positioning of the existing railway line. The preferred site alternative will be the only suitable site to serve the purposes of a railway loop.

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### b) Lay-out alternatives

Alternative 1 (preferred alternative)		
Description	Lat (DDMMSS)	Long (DDMMSS)
Please refer to Appendix C for the preferred layout of the proposed activity		

No layout alternatives have been proposed for this development. The preferred layout alternative satisfies the requirements of the applicant in term of the logistical needs of a railway loop and does not pose any additional environmental issues that another alternative layout could mitigate.

### c) Technology alternatives

Alternative 1 (preferred alternative)
As the activity is related to the construction of a railway loop, the most appropriate construction methods will be used based on what is available in terms of equipment as well as materials. During the construction phase, water will be obtained from the local municipal water supply systems. Where possible and practical, standard practices regarding energy efficiency during the construction and operational phases will be followed (i.e. energy saving light bulbs, recycling of waste, re-use of railway materials etc.).

There are no other technology alternatives proposed for this project as the preferred technology alternative is the only means of achieving the desired outcomes of the project and most feasible and practical options were chosen from an economical and environmental perspective.

### d) Other alternatives (e.g. scheduling, demand, input, scale and design alternatives)

There are no other alternatives relevant to this project as the preferred alternative is the only means of achieving the desired railway loop.

### e) No-go alternative

This alternative assumes that the status quo will remain unchanged and that there will be no railway loop constructed along the existing line. There will be no vegetation clearing required and the adjacent land will remain in its current state. However, under the No-go alternative, the absence of the railway loop would result in the continuation of increased rail congestion and delays in the transport of important commodities such as coal, chrome, iron ore, containers and general freight. The existing railway line cannot currently meet the requirements associated with railway transportation along the Transnet Waterberg rail corridor.

## 3. PHYSICAL SIZE OF THE ACTIVITY

### a) Physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

#### Alternative:

Alternative 1 (preferred activity alternative)

#### Size of the activity:

Approximately 0.5ha

and for linear activities:



**Alternative:**  
Alternative 1 (preferred activity alternative)

**Length of the activity:**  
1.67 km

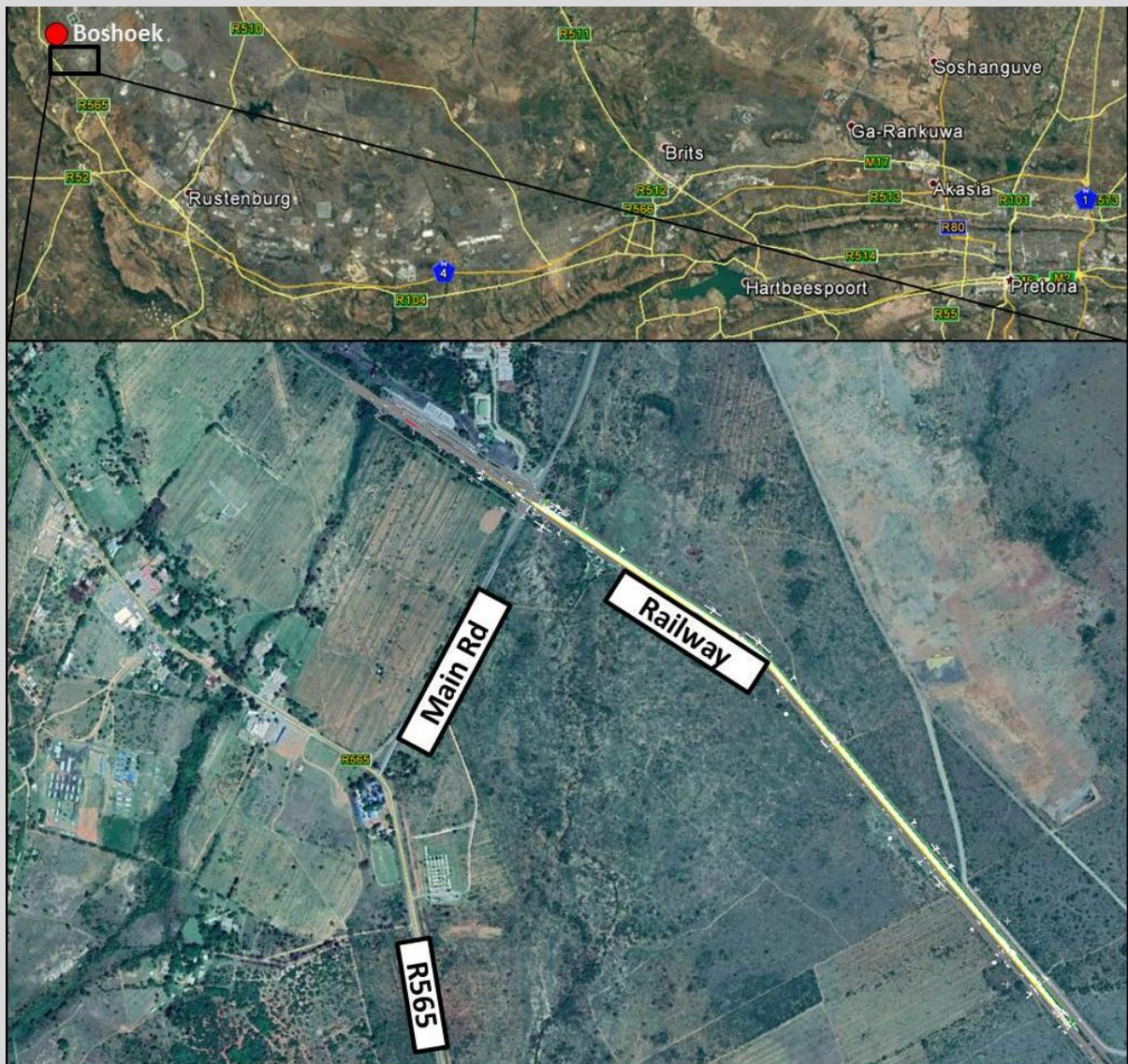
**b) Size of the alternative sites or servitudes (within which the above footprints will occur):**

**Alternative:**  
Alternative 1 (preferred activity alternative)

**Size of the site/servitude:**  
Approximately 1.6 hectares (1 600m<sup>2</sup>)

#### 4. SITE ACCESS

Boshoek is located approximately 140km west of Pretoria along the National Route 4 (N4) and R565 regional road. The site will be accessed via 'Main Road', which is a tarred road intersecting the R565 at a point located south of Boshoek, and then via several existing un-tarred railway servitudes roads. As such, the development will not require any additional access roads to be constructed other than the new servitude which will be constructed north of the proposed new loop (Figure 1.5).



**Figure 1.5: Locality map showing the access routes to and from the project site.**

**5. LOCALITY MAP**

Please refer to Appendix A.

**6. LAYOUT/ROUTE PLAN**

Please refer to Appendix A.

**7. SENSITIVITY MAP**

Please refer to Appendix A.

**8. SITE PHOTOGRAPHS**

Please refer to Appendix B.

**9. FACILITY ILLUSTRATION**

Please refer to Appendix C.

**10. ACTIVITY MOTIVATION**

The following section motivates and explains the need and desirability of the activity (including demand for the activity):

The proposed development forms part of the Waterberg rail corridor which provides access between Botswana and the Mpumalanga Province. The aim of the railway corridor is to increase the coal-carrying capacity and provide access to the neighbouring countries' coalfields, given that the Witbank coal mines in South Africa would eventually be depleted. The proposed railway loop will allow for more trains to utilize this section of the railway at any given point. This will serve the purpose of providing a passing lane along the existing line.

The National Development Plan (NDP) represents a new approach by Government to promote sustainable and inclusive development in South Africa, and involves, amongst others, the following key areas of focus:

- Creating jobs and livelihoods;
- Expanding infrastructure;
- Improving education and training.

The construction of the proposed railway loop will contribute in some way to all of these key areas. Unlocking the Waterberg area is a key priority in Government's National Development Plan and has been identified as part of Strategic Infrastructure Projects (SIP 1) by the Presidential Infrastructure Coordinating Commission (PICC). Expansion in rail capacity was identified as a strategic initiative and received much attention from Government as a key driver for the South African economy.

The Rustenburg Local Municipality Integrated Development Plan 2017 – 2022 (IDP, 2017) has a list of key outputs required by the municipality to meet National Outcome targets. One of these outputs is to “*maintain and expand road and rail network*” and improve their efficiency, capacity and effectiveness. In addition to this, the Bojanala Platinum District Municipality IDP (2011) has several transport planning objectives including “*to promote rail freight transport to ensure optimal balance between road and rail and cost-efficient transport.*” The proposed development will also create a number of temporary employment



opportunities during the construction phase which will contribute to the IDPs' job-creation objectives.

The construction of the new loop will be undertaken within the Transnet railway servitude, however Transnet will acquire land (in the form of a lease agreement) for the purpose of a stockpiling and site camp establishment area. Included in this servitude are a single-track rail and a 3.5m wide gravel road immediately adjacent to the rail. The remaining area is covered by natural vegetation. According to the 2006 North West Provincial Spatial Development Framework (SDF), the surrounding land is classified as 'Mining', (Figure 1.6). The 2013-2014 South African National Land-Cover Dataset defines the land use of the surrounding areas as 'Woodland/Open bush', 'Cultivation' and 'Mine', while the 2009 South African National Landcover database incorrectly classifies a section of the adjacent areas as 'cultivation' (Figure 1.7).

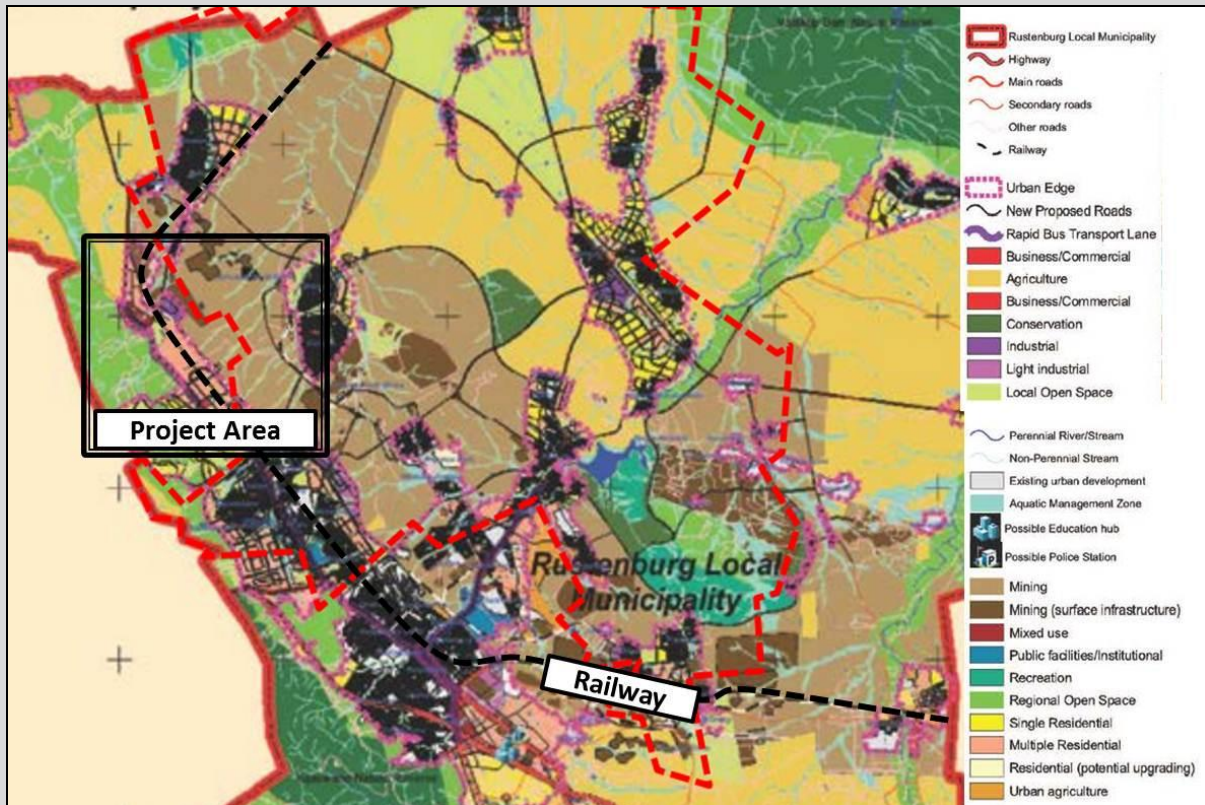
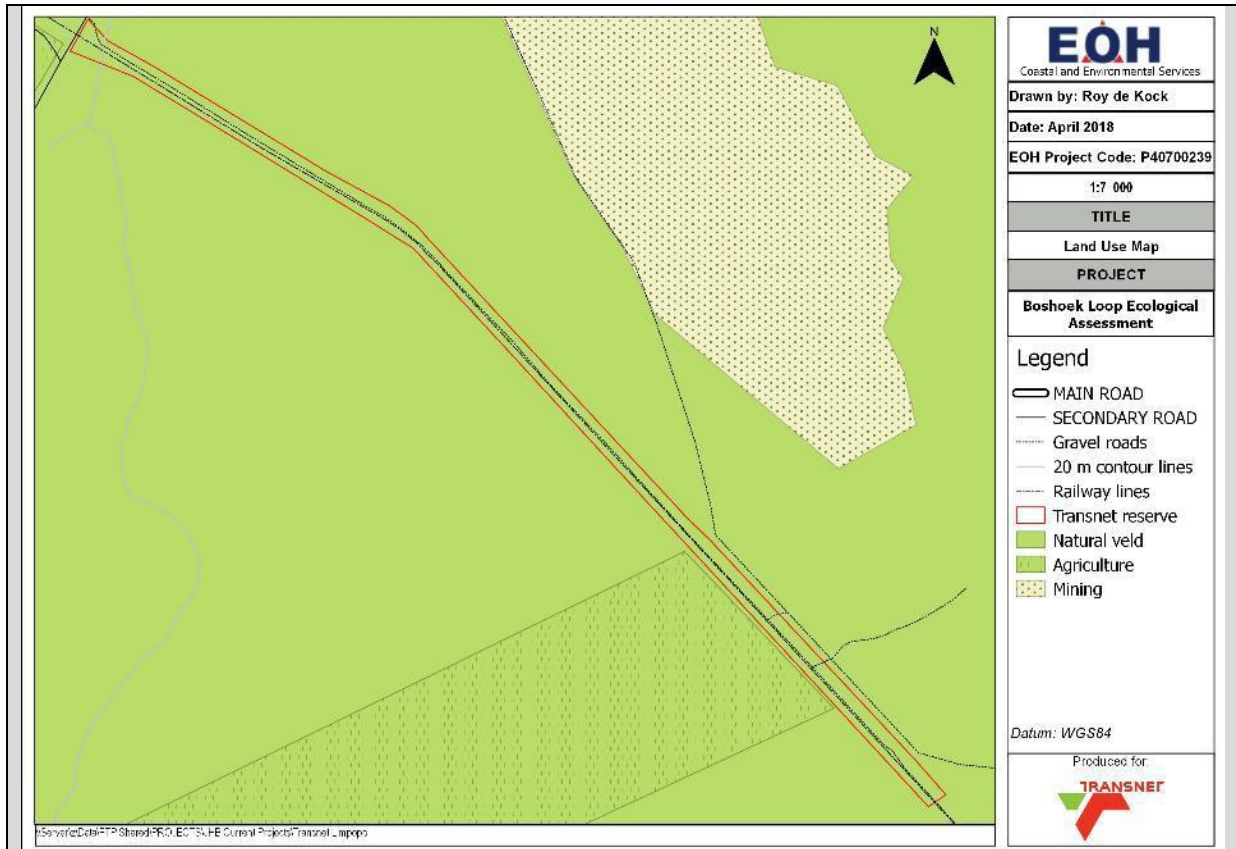


Figure 1.6: Zoom of the North West Provincial Spatial Development Framework (SDF) (from Surbana, 2006).



**Figure 1.7: Land use of the Boshhoek Loop and surrounding areas.**

The proposed development will not contravene any Environmental Management Framework (EMF) conditions adopted by the DEA and will not be in contravention of any other plans, frameworks or guidelines as set out by the local government. The proposed development is in line with the key focus areas of the IDP and the SDF and meets the land use requirements of the area in terms of providing a transportation infrastructure service within the Rustenburg Local Municipality. In addition to this, the proposed development is in line with Strategic Infrastructure Project (SIP) Number 4 – ‘Unlocking the economic opportunities in North West Province.’ The ability for South Africa to increase its exports is largely dependent of the production capacity of coal together with availability of the necessary transport infrastructure. This project will therefore indirectly contribute increasing South Africa’s export potential.

## 11. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
Constitution of the Republic of South Africa (108 of 1966)	Chapter 2 of the Constitution, includes an environmental right (Section 24): <ul style="list-style-type: none"> <li>• Obligation to ensure that the proposed development will not result in pollution and ecological degradation; and</li> <li>• Obligation to ensure that the proposed development is ecologically sustainable, while demonstrating economic and social development.</li> </ul>	National, Provincial and Local Government	1996
Environmental Impact	The activity triggers activities listed in NEMA GN R 327 and GN R 324.	Department of Environmental	2014

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Assessment Regulations (2014 as amended in 2017)		Affairs	
National Environmental Management Act No 107 of 1998 (as amended)	Listed activities require the submission of an EIA (Basic Assessment process) for the proposed development.	Department of Environmental Affairs	1998
Occupational Health & Safety Act (Act No. 85 of 1993)	The applicant must be mindful of the principles and broad liability and implications contained in the OH&S Act and mitigate any potential impacts. Compensation as a result of injuries and/or diseases will need to be addressed according to the Compensation for Occupation Injuries and Diseases Act (Act 130 of 1993) in the event of any legitimate matter arising.	Department of Labour	1993
National Environmental Management: Air Quality Act (39 of 2004)	The construction of the proposed railway loop will create limited dust and vehicle emissions which will need to be managed.	Department of Environmental Affairs	2004
National Environmental Management: Waste Act (Act No. 59 of 2008)	The proposed development will create general waste during the construction phase and will need to adhere to the waste management legislation.	Department of Environmental Affairs	2008
Hazardous Substances Act (15 of 1973)	The proposed development will involve the operation of a siding which includes the temporary storage of moderate quantities of potentially hazardous substances which will need to be correctly used and maintained	Department of Environmental Affairs	1973
National Environmental Management: Biodiversity Act (Act No. 10 of 2004) and the National Environmental Management: Biodiversity Act, 2004 (Act no. 10 of 2004) – Alien and Invasive Species (AIS) Regulations	<ul style="list-style-type: none"> <li>• The proposed development must conserve endangered ecosystems and protect and promote biodiversity and must assess the impacts of the proposed development on endangered ecosystems;</li> <li>• No protected species may be removed or damaged without a permit;</li> <li>• The proposed site must be cleared of alien vegetation using appropriate means;</li> <li>• An invasive species monitoring, control and eradication plan for land/activities under their control should be developed, as part of their environmental plans in accordance with section 11 of NEMA;</li> <li>• Please refer to the Ecological Specialist Report which includes lists of critical and endangered species (Appendix D).</li> </ul>	Department of Environmental Affairs	2004
National Water Act	<ul style="list-style-type: none"> <li>• Manage the use of water as well as</li> </ul>	Department of	1998



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36 of 1998	runoff in such a manner that it has limited pollution impacts; <ul style="list-style-type: none"> <li>Prevent the unauthorised use of water;</li> <li>Use water sparingly.</li> </ul>	Water and Sanitation	
National Forest Act 84 of 1998	If any protected trees in terms of this Act occur on site, the developer will require a licence from DAFF to perform any of the above activities.	Department of Agriculture, Forestry and Fisheries	1998
National Heritage Resources Act 25 of 1999	<ul style="list-style-type: none"> <li>No person may alter or demolish any structure or part of a structure, which is older than 60 years or disturb any archaeological or paleontological site or grave older than 60 years without a permit issued by the relevant provincial heritage resources authority.</li> <li>No person may, without a permit issued by the responsible heritage resources authority destroy, damage, excavate, alter or deface archaeological or historically significant sites.</li> </ul>	South African Heritage Resources Agency	1999
Municipal Bylaws	Certain activities related to the proposed development may, in addition to National legislation, be subject to control by municipal by-laws.	Rustenburg Local Municipality and Bojanala Platinum District Municipality	

### 12. WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

#### a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

If YES, what estimated quantity will be produced per month?

YES	<input type="checkbox"/>
✓	<input checked="" type="checkbox"/>
Unknown	

How will the construction solid waste be disposed of (describe)?

Solid waste produced during the construction phase of the proposed development will primarily consist of building rubble and litter (e.g. plastic, glass, etc.). Waste skips/bins will be provided throughout the construction site. These skips will be made scavenger proof. General construction waste will be removed by the by local municipality's waste removal services.

Where will the construction solid waste be disposed of (describe)?

The waste will be transferred by the removal services to a permitted landfill site, the nearest of which is the Waterval Landfill site (Licence No. 12/9/11/L726/7).

Will the activity produce solid waste during its operational phase?

<input checked="" type="checkbox"/>	NO ✓
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Can any part of the solid waste be classified as hazardous in terms of the NEM:WA?

YES ✓

Due to the nature of the development, there is the potential for limited hazardous waste to occur on site during the construction and operational phases however, the anticipated amounts would not trigger the requirement of a waste permit in terms of the NEM:WA. These may include hydrocarbon waste and hydrocarbon contaminated material. These wastes could either be recycled and or removed by a licenced service provider from site to one of the Hazardous Waste Disposal facilities located within the Rustenburg Local Municipality (Table 1.2).

**Table 1.2: List of Hazardous Waste Facilities within the Rustenburg Local Municipality.**

Province	Municipality	License number (version: license number linked to)	Facility name	Waste classification	Facility type	Date Awarded
North West	Rustenburg	12/9/11/L928/7	Bafokeng Rasimone Platinum Mine <a href="#">[Show description]</a>	Hazardous	Effluent, waste water or sewage treatment works	2013-09-18
North West	Rustenburg	12/9/11/L43389/7	GLENCORE MERAPE VENTURE OPERATION BOSHOEK SMELTER <a href="#">[Show description]</a>	Hazardous	Disposal of waste on land	2015-10-16
North West	Rustenburg	12/9/11/L43389/7	GLENCORE MERAPE VENTURE OPERATION- BOSHOEK SMELTER <a href="#">[Show description]</a>	Hazardous	Disposal of waste on land	2015-10-16
North West	Rustenburg	12/9/11/L806/7	Impala Platinum Limited Waste Management facility <a href="#">[Show description]</a>	Hazardous	Storage of waste	2012-12-12
North West	Rustenburg	12/9/11/R1161/7	KLIPFONTEIN <a href="#">[Show description]</a>	Hazardous	Remediation of contaminated land	2014-10-28
North West	Rustenburg	12/9/11/L724/7	KROONDAL CHROME MINE <a href="#">[Show description]</a>	Hazardous	Effluent, waste water or sewage treatment works	2013-12-18
North West	Rustenburg	12/9/11/L1380/7	KROONDAL PLATINUM MINE <a href="#">[Show description]</a>	Hazardous	Treatment of waste	2016-01-11
North West	Rustenburg	12/9/11/25/8	Oil Separation Rusternburg <a href="#">[Show description]</a>	Hazardous	Disposal of waste on land	2009-10-05
North West	Rustenburg	12/9/11/L25/8	OIL SEPARATION SOLUTION RUSTENBURG <a href="#">[Show description]</a>	Hazardous	Storage of waste	2009-10-10
North West	Rustenburg	12/9/11/L25/8/R1	OIL SEPARATIONS SOLUTIONS RUSTENBURG <a href="#">[Show description]</a>	Hazardous	Treatment of waste	2015-04-14
North West	Rustenburg	12/9/11/L25/8/V1	OSS SALES AND SERVICES RUSTENBURG <a href="#">[Show description]</a>	Hazardous	Storage of waste	2013-10-27
North West	Rustenburg	12/9/11/L725/7	RIETVLY SILICA MINE <a href="#">[Show description]</a>	Hazardous	Storage of waste	2013-01-11
North West	Rustenburg	12/9/11/ST129/7	RIVERSIDE PARK TRADING 232 (PTY) LTD <a href="#">[Show description]</a>	Hazardous	Storage of waste	2017-08-03
North West	Rustenburg	12/9/11/L53348/7/V	RUSTENBURG SMELTER DECOMMISSIONING <a href="#">[Show description]</a>	Hazardous	Remediation of contaminated land	2017-02-14
North West	Rustenburg	12/9/11/L53339/7/V	RUSTENBURG SMELTER- GLENCORE OPERATIONS <a href="#">[Show description]</a>	Hazardous	Disposal of waste on land	2017-02-02
North West	Rustenburg	12/9/11/L726/7	Waterval Chrome Mine <a href="#">[Show description]</a>	Hazardous	Storage of waste	2013-09-26
North West	Rustenburg	12/9/11/L295/7	Western Platinum Mine <a href="#">[Show description]</a>	Hazardous	Recycling and recovery of waste	2011-05-25

Is the activity that is being applied for a solid waste handling or treatment facility?

NO ✓

### b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

NO ✓

## BASIC ASSESSMENT REPORT

Will the activity produce effluent that will be treated and/or disposed of at another facility?

	NO ✓
--	------

Any waste water produced during the construction phase will be collected and disposed of at a licenced treatment facility, the nearest of which is the Rustenburg Waste Water Treatment Works (WWTW).

### c) Emissions into the atmosphere

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

	NO ✓
--	------

Atmospheric emissions are likely to consist of construction-related dust derived from cleared areas and movement of vehicles on site. The concentration of these emissions will vary, but are unlikely to be significant.

### d) Waste permit

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM:WA?

	NO ✓
--	------

### e) Generation of noise

Will the activity generate noise?

YES ✓	
-------	--

If YES, is it controlled by any legislation of any sphere of government?

	NO ✓
--	------

Noise will be generated during the construction phase where machinery required for the construction of the railway loop, as well as general construction plant, will be operating. The following mitigation measures will ensure that noise created during construction is managed adequately:

- Ensure that vehicles and equipment used on site are in good working order and are serviced properly;
- Limit construction activities to daylight hours i.e. 7am to 5pm;
- Apply applicable municipal by-laws with regards to noise control;
- The staff involved in the construction will not be housed on site and will also be informed as to how they can avoid any unnecessary noise pollution during working hours.

The operational phase of the development may cause an increase in noise as a result of increased railway use. The noise associated with all phases of the development is considered to be negligible due to the location away from any residential areas.

## 13. WATER USE

The source(s) of water that will be used for the activity:

Municipal ✓	<del>Water board</del>	<del>Groundwater</del>	River, stream, dam or lake	Other ✓	The activity will not use water
-------------	------------------------	------------------------	----------------------------	---------	---------------------------------

Water may also be obtained from Transnet water depots which are located within the vicinity of the existing railway line.

## BASIC ASSESSMENT REPORT

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Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

YES



The proposed railway loop will be constructed within the 500m buffer of a wetland identified in terms of the National Freshwater Ecosystem Priority Areas (NFEPAs) project. Two (2) additional wetlands were identified within the project area. An Aquatic and Wetland Assessment has been completed for the proposed project (please refer to Appendix D).

### 14. ENERGY EFFICIENCY

The design measures, if any, which have been taken to ensure that the activity is energy efficient:

Where possible, energy saving technology (e.g. energy-saving lighting etc.) will be used.

How alternative energy sources have been taken into account or been built into the design of the activity, if any:

No alternative energy sources will be utilised for this development.

**SECTION B: SITE/AREA/PROPERTY DESCRIPTION**

1. Has a specialist been consulted to assist with the completion of this section?

YES	<input checked="" type="checkbox"/>
-----	-------------------------------------

Please refer to Appendix I for the specialist declarations.

**Property description/physical address:**

<b>Province</b>	North West
<b>District Municipality</b>	Bojanala Platinum District Municipality
<b>Local Municipality</b>	Rustenburg Local Municipality
<b>Ward Number(s)</b>	6
<b>Farm name and number</b>	Please refer to Appendix J for a full list of the properties, portions and SG codes associated with the proposed development.
<b>Portion number</b>	
<b>SG Code</b>	

**Current land-use zoning as per local municipality IDP/records:**

The construction of the new loop will be undertaken within the Transnet railway servitude, however Transnet will acquire land (in the form of a lease agreement) for the purpose of a stockpiling and site camp establishment area. Included in this servitude is a single-track rail and a 3.5m wide gravel road immediately adjacent to the rail. The remaining area is covered by natural vegetation. According to the 2006 North West Provincial Spatial Development Framework (SDF), the surrounding land is classified as 'Mining', (Figure 1.6). The 2013-2014 South African National Land-Cover Dataset defines the land use of the surrounding areas as 'Woodland/Open bush', 'Cultivation' and 'Mine', while the 2009 South African National Landcover database incorrectly classifies a section of the adjacent areas as 'cultivation' (Figure 1.7).

Is a change of land-use or a consent use application required?

<input type="checkbox"/>	NO <input checked="" type="checkbox"/>
--------------------------	--

**1. GRADIENT OF THE SITE**

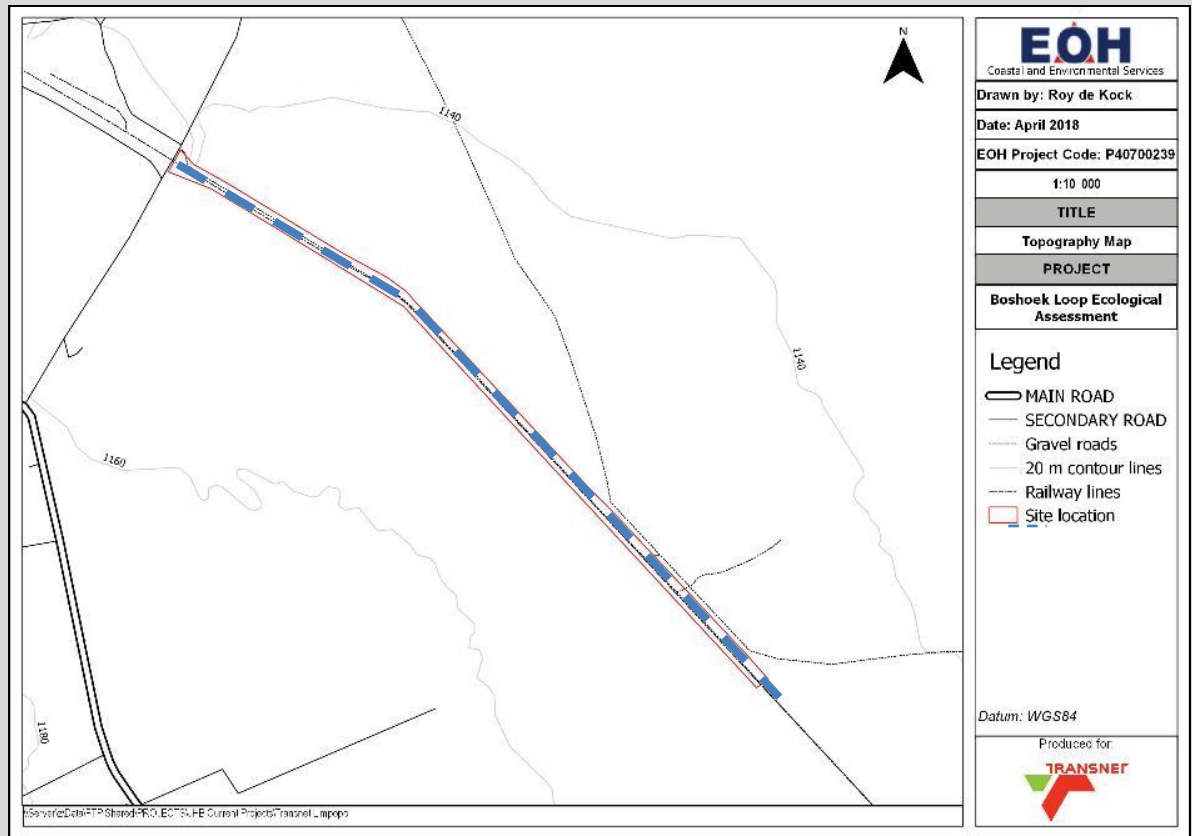
**Alternative S1:**

Flat <input checked="" type="checkbox"/>	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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# BASIC ASSESSMENT REPORT

The proposed new Boshhoek Loop is found on a level area at 1150 meter above sea level (Figure 2.1).



**Figure 2.1: Topography showing contours with height above sea level in meters.**

## 2. LOCATION IN LANDSCAPE

The landform(s) that best describes the site:

2.1 Ridgeline	<input type="checkbox"/>	2.4 Closed valley	<input type="checkbox"/>	2.7 Undulating plain / low hills	<input type="checkbox"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input type="checkbox"/>	2.8 Dune	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	<input checked="" type="checkbox"/>	2.9 Seafront	<input type="checkbox"/>
2.10 At sea	<input type="checkbox"/>				

3. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

The proposed new Boshhoek Loop falls within the Western Limb of the Rustenburg Layered Suite (RLS) of rocks that forms part of the Bushveld Complex (Figure 2.2). The mafic rocks of the Bushveld Complex constitute the most voluminous preserved mafic layered intrusion in the world underlying an area of 65 000 km<sup>2</sup>. Surface rocks consist of the Schilpadsnest Subsuite that constitutes the Critical Zone of the RLS in the Western Limb. The Critical Zone contains huge deposits of chromite and platinum and are locally mined in the area. Soils are mostly deep, red-yellow to black in colour, apedal and drains freely while have a high base status with some vertic or melanic clay (Figure 2.3). Erosion is considered very low to low.

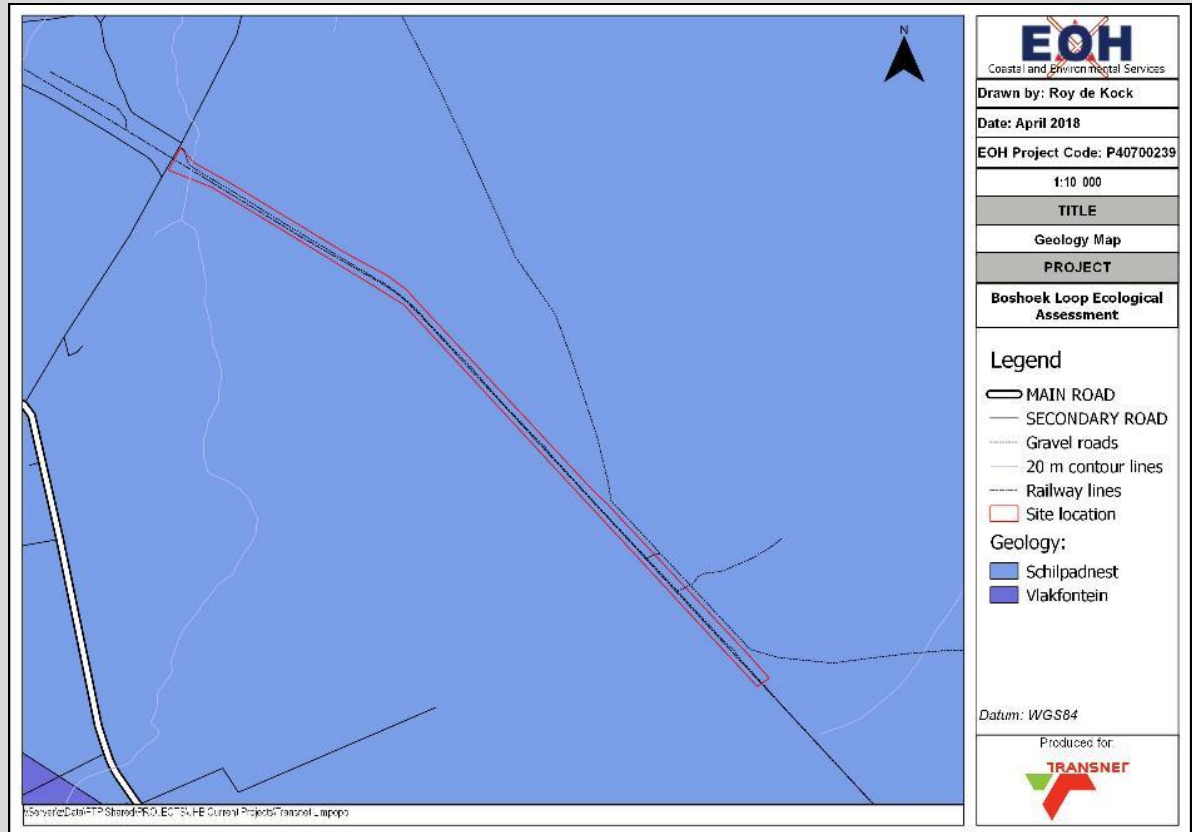


Figure 2.2: Regional Geology of the Boshhoek Loop and surrounding areas.

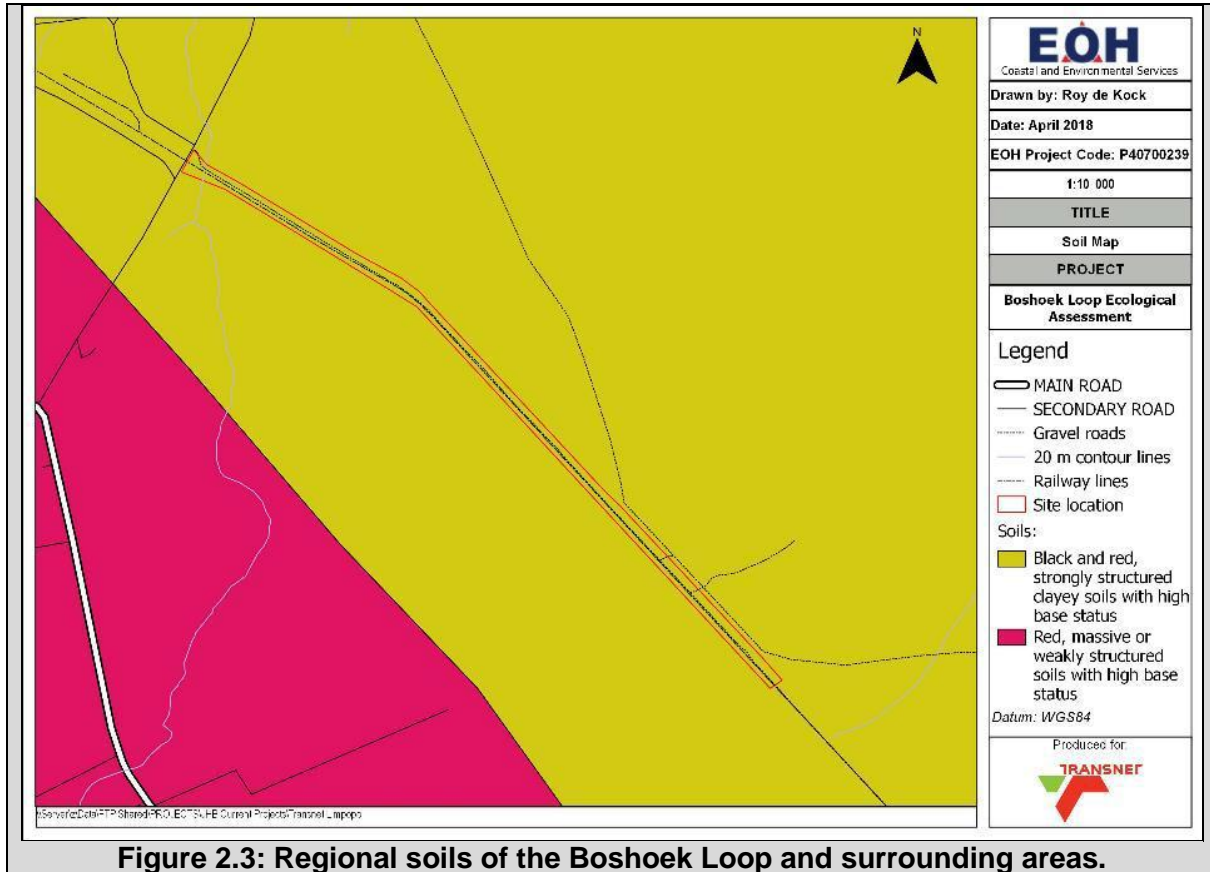
	Alternative S1:	Alternative S2 (if any):	Alternative S3 (if any):
Shallow water table (less than 1.5m deep)	YES ✓		
Dolomite, sinkhole or doline areas			NO ✓
Seasonally wet soils (often close to water bodies)	YES ✓		
Unstable rocky slopes or steep slopes with loose soil			NO ✓
Dispersive soils (soils that dissolve in water)			NO ✓
Soils with high clay content (clay fraction more than 40%)	YES ✓		

# BASIC ASSESSMENT REPORT

Any other unstable soil or geological feature

	NO ✓
	NO ✓

An area sensitive to erosion



**Figure 2.3: Regional soils of the Boshhoek Loop and surrounding areas.**

The proposed railway loop will be constructed within the 500m buffer of a wetland identified in terms of the National Freshwater Ecosystem Priority Areas (NFEPA) project. Two (2) additional wetlands were identified within the project area. An Aquatic and Wetland Assessment has been completed for the proposed project (please refer to Appendix D).

## 4. GROUNDCOVER

The proposed new Boshhoek Loop study area is almost entirely cleared of any vegetation as it is covered by either existing rail or a gravel road. Natural vegetation occurs on either sides of the railway track and is concentrated on the edges of the length of the site. The section that was covered by natural vegetation consists of mesic savanna in various degrees of degradation. As construction will occur on the northern side of the railway track some vegetation will be impacted by clearing. An Ecological Assessment has been completed for the proposed project (please refer to Appendix D).

## 5. SURFACE WATER

The proposed railway loop will be constructed within the 500m buffer of a wetland identified in terms of the National Freshwater Ecosystem Priority Areas (NFEPA) project. Two (2) additional wetlands were identified within the project area. An Aquatic and Wetland Assessment has been completed for the proposed project (please refer to Appendix D).

## BASIC ASSESSMENT REPORT

### 6. LAND USE CHARACTER OF SURROUNDING AREA

Land uses and/or prominent features that currently occur within a 500m radius of the site and description of how this influences the application or may be impacted upon by the application:

Natural area ✓	Dam or reservoir	Polo fields
Low density residential	Hospital/medical centre ✓	Filling station <sup>H</sup>
Medium density residential	School	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential <sup>A</sup>	Church	Agriculture ✓
Retail commercial & warehousing	Old age home	River, stream or wetland ✓
Light industrial	Sewage treatment plant <sup>A</sup>	Nature conservation area
Medium industrial <sup>AN</sup>	Train station or shunting yard <sup>N</sup> ✓	Mountain, koppie or ridge
Heavy industrial <sup>AN</sup> ✓	Railway line <sup>N</sup> ✓	Museum
Power station	Major road (4 lanes or more) <sup>N</sup>	Historical building
Office/consulting room	Airport <sup>N</sup>	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam <sup>A</sup>	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

Please refer to Figure 1.6 and Figure 1.7 which show the land cover and land use zoning for the study area.

**Hospital/medical centre:** The Moretelepsi Community Hospital is located approximately 270m north of the railway line and will have a positive impact on the proposed development as any construction workers involved in the proposed development who become ill or injured can be treated at the nearby hospital. The proposed development is unlikely to have any impact on the hospital.

**Natural Area:** There are some natural areas in close proximity to the proposed development site. These areas are unlikely to have any impact on the proposed development. The development will also have a negative impact on these areas due to the potential disturbance of natural ecosystems. Negligible negative impacts such as minor traffic and construction noise may be a result of the proposed development. An Ecological Assessment and Aquatic and Wetland Assessment have been completed for the proposed project (please refer to Appendix D).

**River Stream or wetland:** As per the above.

**Agriculture:** As per the above.

How the boxes marked with an "N" will impact / be impacted upon by the proposed activity

**Railway line, train station or shunting yard<sup>N</sup>:** The purpose of the development is to construct a new railway loop alongside the existing railway line and therefore these land uses form part of the proposed development. The existing train station and/or shunting yard(s) will not be impacted on by the proposed development.

## BASIC ASSESSMENT REPORT

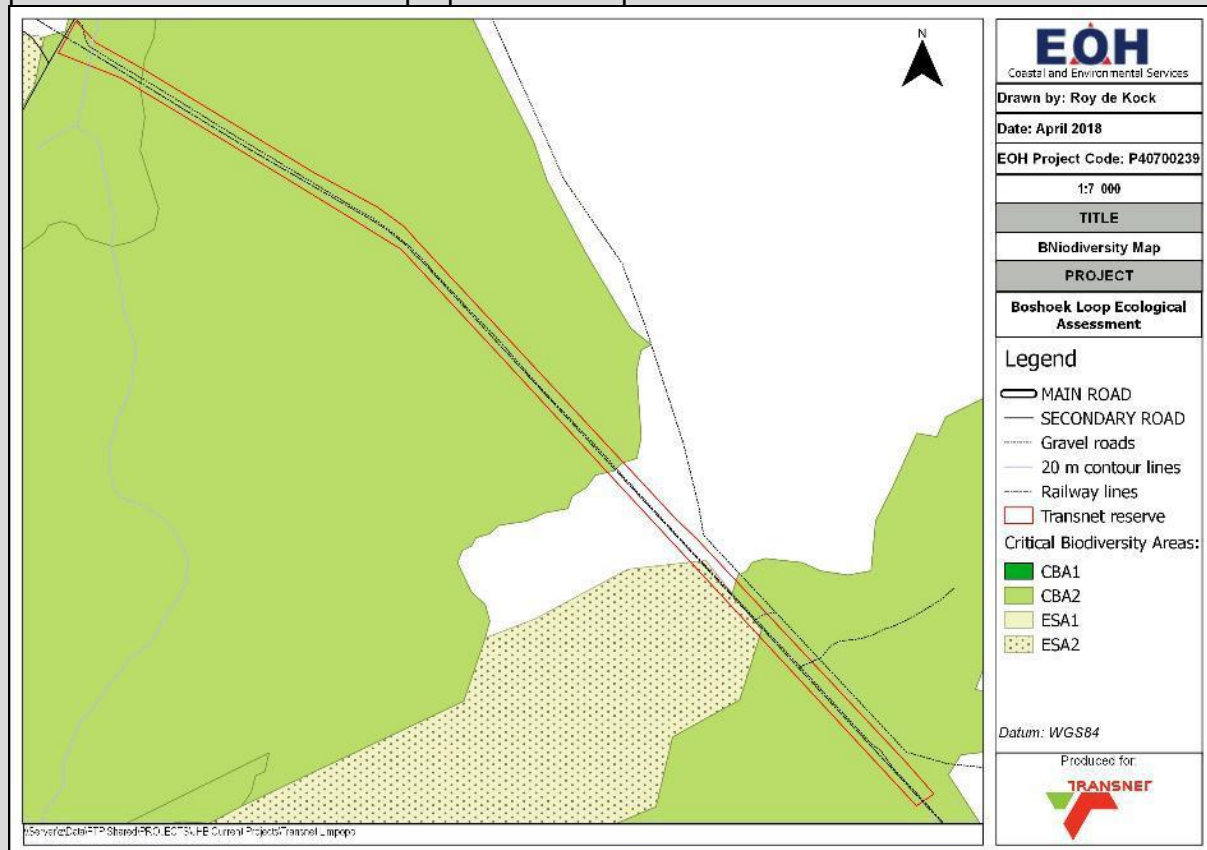
How the boxes marked with an "AN" will impact / be impacted upon by the proposed activity

**Heavy Industrial AN:** The Boshhoek Smelter is located directly north of the western section of the proposed development. This will have no impact on the proposed development. The construction of the railway loop will also have a positive impact on the Boshhoek Smelter as it will allow materials to be transported along the Transnet Waterberg rail corridor at more regular intervals.

The proposed site (including any alternative sites) fall within the following:

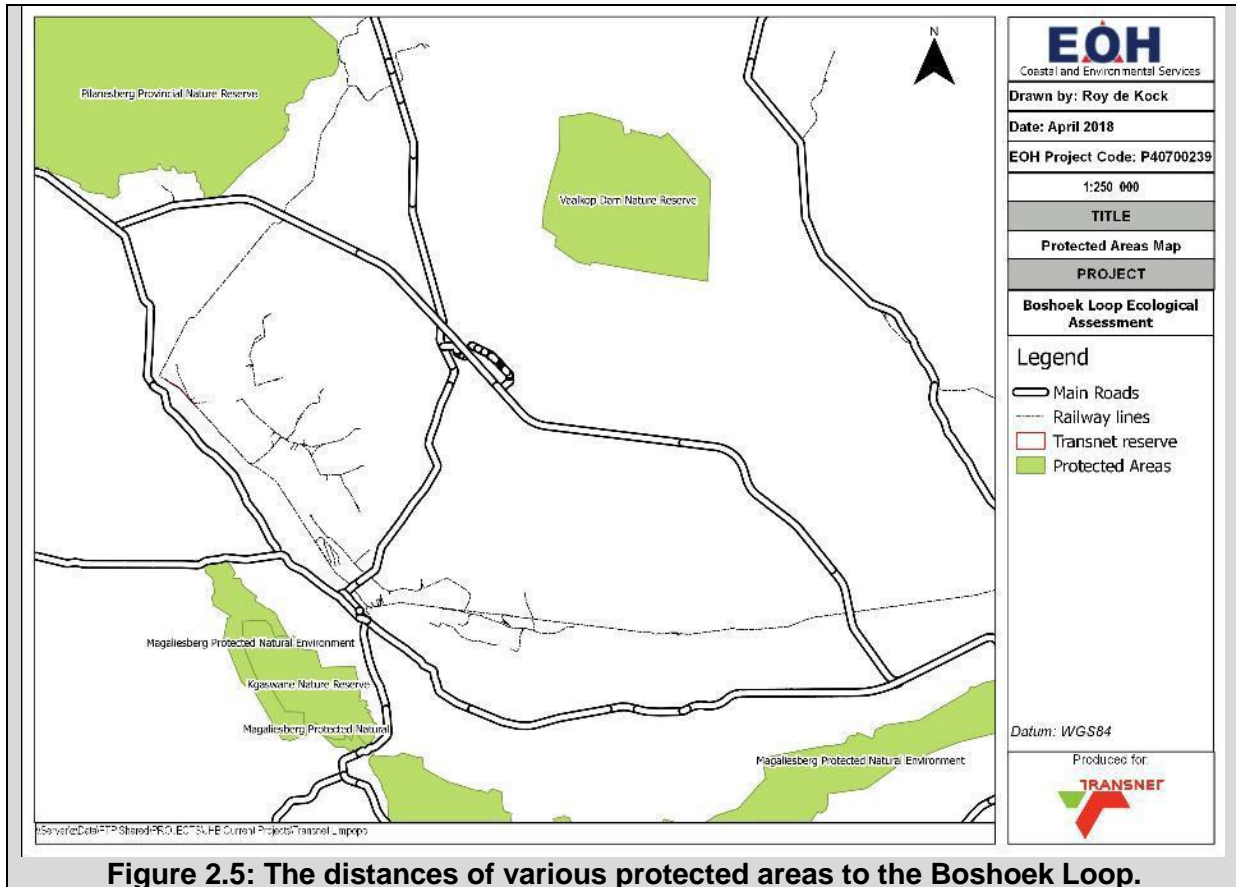
Critical Biodiversity Area (as per provincial conservation plan)	YES ✓	
Core area of a protected area?		NO ✓
Buffer area of a protected area?		NO ✓
Planned expansion area of an existing protected area?		NO ✓
Existing offset area associated with a previous Environmental Authorisation?		NO ✓
Buffer area of the SKA?		NO ✓

Please refer to Figure 2.4 and Figure 2.5 which show the critical biodiversity areas and protected areas relative to the proposed development area.



**Figure 2.4: North West Province Terrestrial CBA Map (2015) for the Boshhoek Loop site.**





**Figure 2.5: The distances of various protected areas to the Boshhoek Loop.**

**7. CULTURAL/HISTORICAL FEATURES**

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:

YES ✓	
Uncertain	

The railway bridge, five (5) box culverts and a burial site, which date back to the Late Historical Period, have been identified as significant elements in terms of the National Heritage Resources Act. Please refer to Archaeological Impact Assessment included in Appendix D.

Brief explanation of the findings of the specialist:

A number of sites of heritage value were documented in the proposed Transnet Boshhoek Railway Loop Project footprint but impact on these sites can be mitigated. In the opinion of the author of this Archaeological Impact Assessment Report, the proposed project should proceed from a culture resources management perspective, subject to the careful implementation of required mitigation measures and, provided that no previously undetected heritage remains are encountered during construction and development. Please refer to Archaeological Impact Assessment included in Appendix D.

Will any building or structure older than 60 years be affected in any way?  
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES ✓	
YES ✓	

Please refer to Appendix D for proof of submission of the permit application to SAHRA.

8. SOCIO-ECONOMIC CHARACTER

a) Local Municipality

Level of unemployment:

The unemployment rate in the Rustenburg Local Municipality is 26.4% and the youth (ages 15 to 34 years) unemployment rate is 34.7%. There are approximately 266 000 economically active individuals (i.e. people who are employed or unemployed but looking for work) living within the municipality. Approximately 142 000 of the people aged 15 to 34 years old are currently unemployed (StatsSA, 2011).

Economic profile of local municipality:

The main economic contributor in the Rustenburg Local Municipality is the mining sector, which contributes approximately 70% to the local Gross Domestic Product (GDP). Other significant contributors include the trade industry, transport, community service and finance (Figure 2.6). In terms of imports versus exports, the Rustenburg Local Municipality has had a positive trade balance between 1995 and 2009. Exports increased significantly during the 2002 to 2007 period with a decline in 2008 and 2009 (Figure 2.7). The main exports include platinum (in semi-manufactured form) and ferro-chromium. The main imports include copper wire, tools, motor vehicle parts and electrical ignition equipment (Rustenburg LM IDP, 2014).

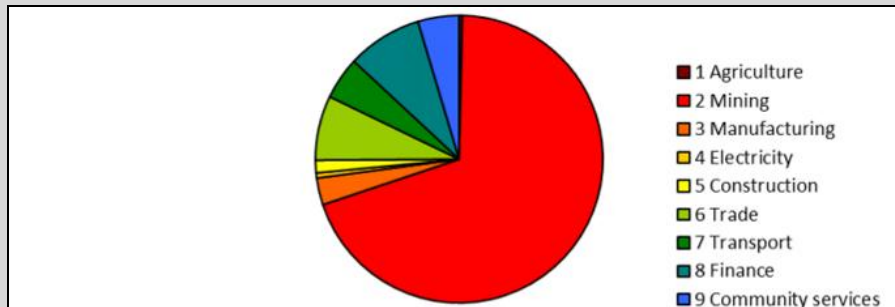


Figure 2.6: Contributions made by the various economic sectors within the Rustenburg Local Municipality (Rustenburg IDP, 2017).

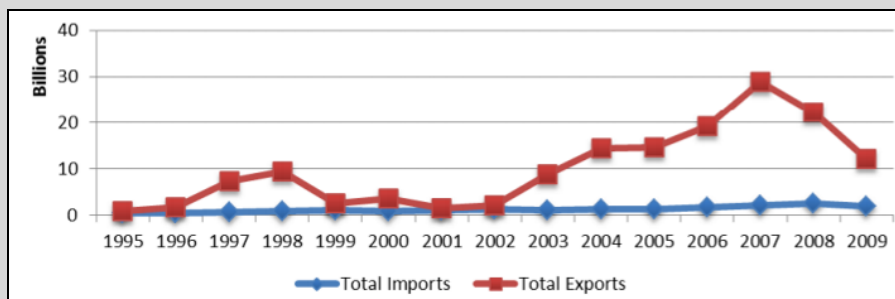


Figure 2.7: Trade Balance of the Rustenburg Local Municipality from 1995 to 2009 (Rustenburg IDP, 2017).

Level of education:

Approximately 5.4% of the total population of people aged 20 years or older living in the Rustenburg Local Municipality have not received any schooling. 31.7% have some secondary education, 17.8% have completed matric and only 2.1% have some form of higher education.

**b) Socio-economic value of the activity**

What is the expected capital value of the activity on completion?	R 45 million
What is the expected yearly income that will be generated by or as a result of the activity?	Not yet quantified.
Will the activity contribute to service infrastructure?	YES ✓
Is the activity a public amenity?	NO ✓
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	Unknown
What is the expected value of the employment opportunities during the development and construction phase?	Unknown
What percentage of this will accrue to previously disadvantaged individuals?	Unknown
How many permanent new employment opportunities will be created during the operational phase of the activity?	Unknown
What is the expected current value of the employment opportunities during the first 10 years?	Unknown
What percentage of this will accrue to previously disadvantaged individuals?	Unknown

At this stage, the socio-economic value of the specific railway loop development cannot be determined however, the Transnet Waterberg rail corridor expansion programme is expected to contribute over R 1 billion to the GDP (Table 2.1).

**Table 2.1: Socio-economic contribution of the overall Waterberg project.**

<b>The average construction impact for the Waterberg Stage 2 project</b>	<b>Direct Impact</b>	<b>Indirect Impact</b>	<b>Induced Impact</b>	<b>Total Impact</b>
Impact on GDP (R millions)	R 506	R 261	R 489	R 1 257
Impact on Capital Formation (R millions)	R 1 092	R 499	R 959	R 2 549
Impact on Employment (Numbers)	607	377	694	1677
- Skilled Impact on Employment	113	102	190	405
- Semi- Skilled Impact on Employment	272	166	320	758
- Unskilled Impact on Employment	221	148	289	658
Impact on Households (R millions)				R 831

9. BIODIVERSITY

a) The applicable biodiversity planning categories of all areas on site and the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA) ✓	Ecological Support Area (ESA) ✓	Other Natural Area (ONA)	No Natural Area Remaining (NNA)	<p><u>CBA 2:</u></p> <ul style="list-style-type: none"> <li>Ecosystems and species fully or largely intact and undisturbed;</li> <li>Areas with intermediate irreplaceability or some flexibility in terms of meeting biodiversity targets. There are options for loss of some components of biodiversity in these landscapes without compromising the ability to achieve biodiversity targets, although loss of these sites would require alternative sites to be added to the portfolio of CBAs;</li> <li>These are biodiversity features that are approaching but have not passed their limits of acceptable change.</li> </ul> <p><u>ESA 2:</u></p> <ul style="list-style-type: none"> <li>Ecosystem NOT in a natural or near-natural state;</li> <li>Ecosystem significantly disturbed but still able to maintain some ecological functionality;</li> <li>Individual species or other biodiversity indicators are severely disturbed or reduced and these are areas that have low irreplaceability with respect to biodiversity pattern targets only;</li> <li>These are areas with low irreplaceability with respect to biodiversity pattern targets only. These areas are required to maintain ecological processes especially landscape connectivity.</li> </ul> <p>An Ecological Assessment has been completed for the proposed project (please refer to Appendix D).</p>

**b) The habitat condition on site**

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (including additional insight into condition, e.g. poor land management practises, presence of quarries, grazing, harvesting regimes etc).
Natural	10 %	The proposed new Boshhoek Loop study area is almost entirely cleared of any vegetation as it is covered by either existing rail or a gravel road. Natural vegetation occurs on either sides of the railway track and is concentrated on the edges of the length of the site. The section that was covered by natural vegetation consists of mesic savanna in various degrees of degradation. As construction will occur on the northern side of the railway track some vegetation will be impacted by clearing. An Ecological Assessment has been completed for the proposed project (please refer to Appendix D).
Near Natural (includes areas with low to moderate level of alien invasive plants)	10 %	
Degraded (includes areas heavily invaded by alien plants)	10 %	
Transformed (includes cultivation, dams, urban, plantation, roads, etc)	70 %	

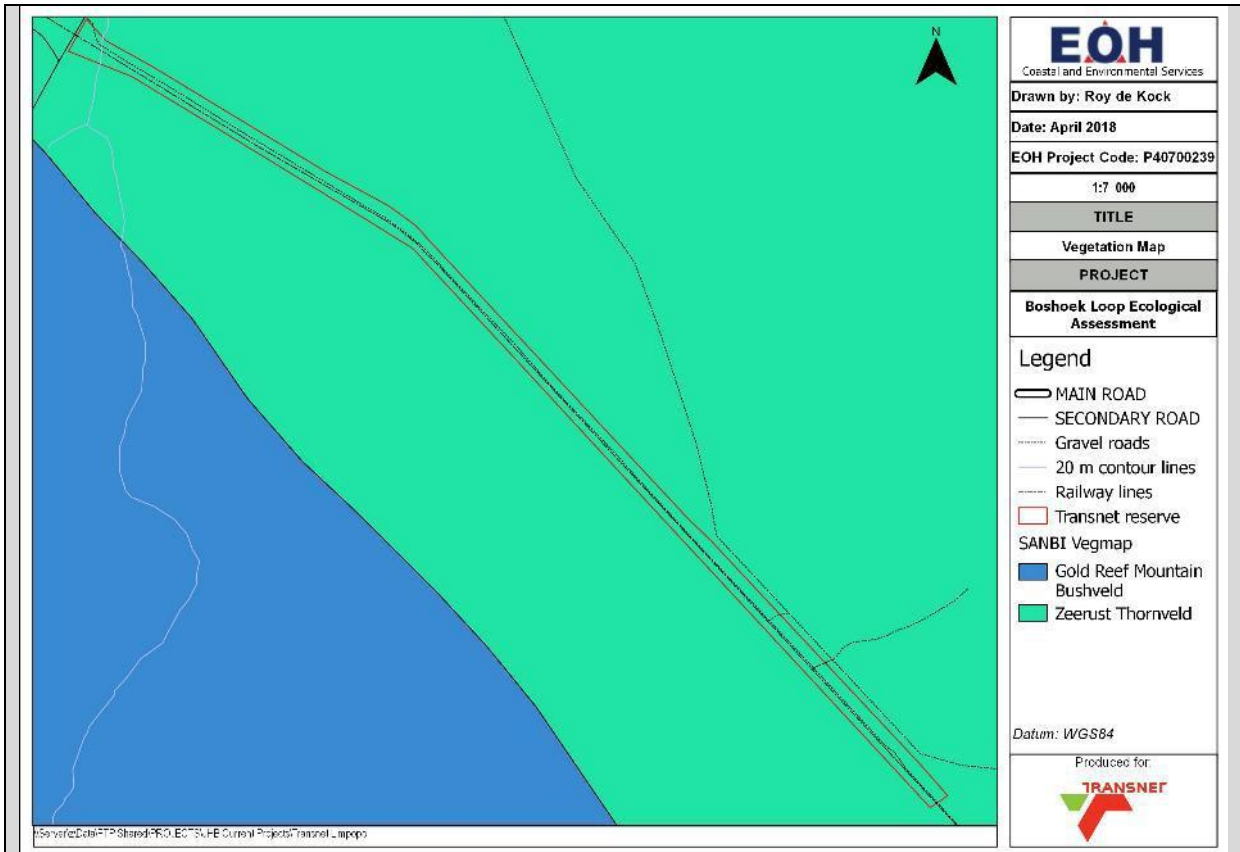
**c) Vegetation and Aquatic Ecosystems:**

Terrestrial Ecosystems		Aquatic Ecosystems						
<b>Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)</b>	Critical	Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seeps pans, and artificial wetlands)			Estuary		Coastline	
	Endangered							
	Vulnerable							
	Least Threatened ✓							
		YES ✓	NO	UNSURE	YES	NO ✓	YES	NO ✓

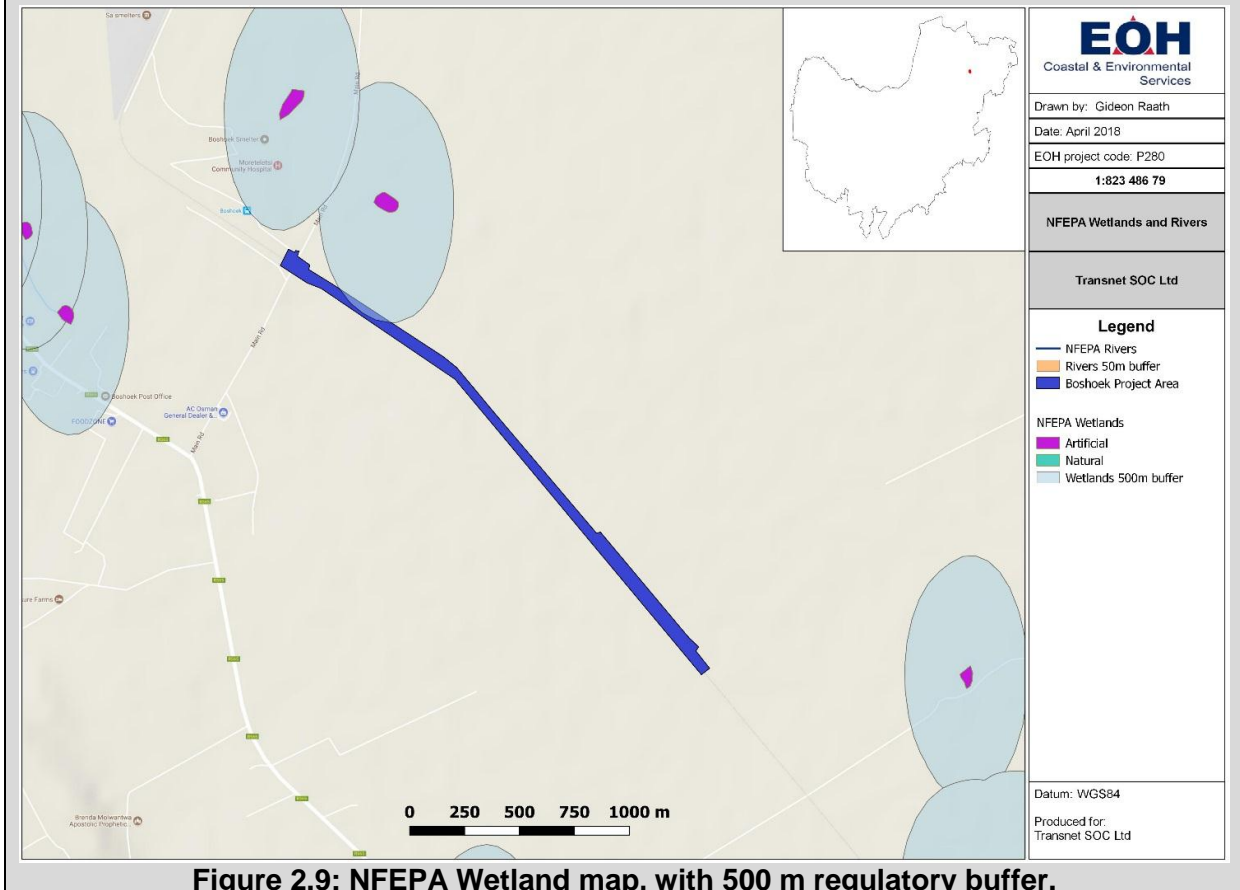
**d) Description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site**

According to the South African National Biodiversity Institute Map (Mucina and Rutherford; 2012) the proposed new Boshhoek Loop is located in the Savanna biome. This biome is defined by a herbaceous layer dominated by grass species and a discontinuous to sometimes very open tree layer. The proposed new Boshhoek Loop only occur on a single savanna vegetation type namely Zeerust Thornveld. Zeerust Thornveld is a deciduous, open to dense short thorny woodland dominated by Acacia species with an herbaceous layer consisting of mainly grasses (Figure 2.8). SANBI considers this vegetation type as Least Threatened although only 4% is statutory conserved (target is 19%). Some 16% has already been transformed by cultivation and to a lesser extent by urban built-up. The proposed railway loop will be constructed within the 500m buffer of a wetland identified in terms of the National Freshwater Ecosystem Priority Areas (NFEPA) project. Two (2) additional wetlands were identified within the project area (Figure 2.9). An Aquatic and Wetland Assessment has been completed for the proposed project (please refer to Appendix D).

# BASIC ASSESSMENT REPORT



**Figure 2.8: Vegetation found at the Boshhoek Loop site and surrounding areas.**



**Figure 2.9: NFEPA Wetland map, with 500 m regulatory buffer.**

## SECTION C: PUBLIC PARTICIPATION

### 1. ADVERTISEMENT AND NOTICE

<b>Publication name</b>	Rustenburg Herald	
<b>Date published</b>	23 May 2018	
<b>Site notice position</b>	<b>Latitude</b>	<b>Longitude</b>
	25°30'18.47"S	27° 5'54.24"E
	25°29'51.21"S	27° 6'10.77"E
<b>Date placed</b>	4 April 2018	
Please refer to Appendix E for proof of placement of the site notice. Proof of publication of the advertisement will be included in the Final Basic Assessment Report.		

### 2. DETERMINATION OF APPROPRIATE MEASURES

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

<b>Title, Name and Surname</b>	<b>Affiliation/ key stakeholder status</b>	<b>Contact details (tel number or e-mail address)</b>
A full I&AP list can be viewed in Appendix E of this report.		

In order to inform the public of the proposed project and to invite members of the public to register as Interested and Affected Parties (I&APs), the proposed project will be advertised in the Rustenburg Herald. A site notice was placed at the site and Background Information Documents (BIDs) distributed to the landowners, surrounding landowners and other identified I&APs via email. Notification emails have been sent out to relevant parties (Please refer to Appendix E). On submission of the Draft Basic Assessment Report (DBAR), another set of emails will be sent out to all registered I&APs and the relevant authorities.

### 3. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

<b>Summary of main issues raised by I&amp;APs</b>	<b>Summary of response from EAP</b>
Please refer to Appendix E for a summary of the issues raised and the EAP response.	

### 4. COMMENTS AND RESPONSE REPORT

Please refer to Appendix E for a summary of the issues raised and the EAP response.

### 5. AUTHORITY PARTICIPATION

A full I&AP list can be viewed in Appendix E of this report together with proof of notification of Organs of State.

### 6. CONSULTATION WITH OTHER STAKEHOLDERS

A full I&AP list can be viewed in Appendix E of this report with proof of notification of Organs of State. No meetings have been required to date. The minutes of any meetings held during the review period of the Draft Basic Assessment Report will be included in the Final Basic Assessment Report.



**SECTION D: IMPACT ASSESSMENT**

**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**

A summary of the identified impacts, the proposed mitigation measures and the significance of the impacts (before and after mitigation measures are implemented) is provided below. For a detailed impact assessment and associated methodology, please refer to Appendix F.

Activity	Impact summary	Significance	Proposed mitigation
<b>Alternative 1 (preferred alternative)</b>			
<b><i>Planning and Design Phase</i></b>			
Activities associated with the design and pre- construction phase pertains mostly to planning and design around the proposed development, and is done at a desktop level. In some cases, site visits need to take place but the impact of these visits is negligible, if any, e.g. photographs, GPS point's etc.			
<b><i>Construction Phase</i></b>			
Construction of the proposed Boshhoek railway loop	<p><b><u>Impact 1: Loss of Natural Vegetation</u></b>  <b>Cause and Comment:</b>                      During the construction phase the clearing of natural vegetation outside the approved development footprint will lead to the unnecessary loss of natural vegetation and habitat for other taxonomic groups.</p>	<p><b>Before Mitigation:</b> MOD –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>• The construction footprint must be surveyed and demarcated prior to construction commencing.</li> <li>• No construction activities will be allowed outside the demarcated footprint.</li> <li>• Where vegetation has been cleared, site rehabilitation in terms of soil stabilisation and vegetation must be undertaken.</li> <li>• Cleared vegetation must not be piled on top of natural vegetation but must be stockpiled temporarily on bare ground and used as ground cover during rehabilitation. Alternatively, the cleared vegetation can be given to local residents as a source of firewood.</li> </ul>
	<p><b><u>Impact 2: Loss of SCC</u></b>  <b>Cause and Comment:</b>                      During the construction phase the clearing of</p>	<p><b>Before Mitigation:</b></p>	<ul style="list-style-type: none"> <li>• All areas that will be impacted must be surveyed and demarcated by a suitably qualified specialist prior to</li> </ul>

BASIC ASSESSMENT REPORT

Activity	Impact summary	Significance	Proposed mitigation
	natural vegetation will lead to the destruction of habitats and identified and unidentified plant and animal SCC.	MOD –  <b>After Mitigation:</b> LOW –	vegetation and topsoil removal in order to locate and rescue any SCC within the area and relocate them.  <ul style="list-style-type: none"> <li>• The contractor’s staff must not poach or trap wild animals.</li> <li>• The contractor’s staff must not harvest any natural vegetation.</li> </ul>
	<p><b><u>Impact 3: Rehabilitation of Disturbed Areas</u></b>  <b>Cause and Comment:</b>                      During the construction phase poor rehabilitation of disturbed areas may lead to the permanent degradation of ecosystems as well as allow alien vegetation species to expand.</p>	<p><b>Before Mitigation:</b> MOD –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>• All temporarily impacted areas must be rehabilitated with indigenous vegetation as soon as construction in the particular area or phase of work is complete, i.e. rehabilitation is on-going throughout construction.</li> <li>• Restoration must be conducted as per the approved Rehabilitation Management Plan.</li> <li>• Only topsoil from the development site, which has been appropriately stored, must be used for rehabilitation.</li> </ul>
	<p><b><u>Impact 4: Control of Alien Species</u></b>  <b>Cause and Comment:</b>                      During the construction phase the removal of natural vegetation creates ‘open’ habitats that will favour the establishment of undesirable alien plant species in areas that are typically very difficult to eradicate and may pose a threat to neighbouring natural ecosystems.</p>	<p><b>Before Mitigation:</b> MOD –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>• The approved Alien Vegetation Management Plan must be implemented during the construction phase to reduce the establishment and spread of undesirable alien plant species.</li> <li>• Alien plants must be removed from the site through appropriate methods such as hand pulling, application of chemicals, cutting, etc. as in accordance to the NEMBA: Alien Invasive Species Regulations.</li> </ul>
	<p><b><u>Impact 5: Material Stockpiling</u></b>  <b>Cause and Comment:</b>                      During the construction phase stockpiling of construction material within 50 m of a watercourse / wetland could result in erosion and mobilisation of the materials into these systems, resulting in sedimentation and a decrease in water quality and aquatic habitat.</p>	<p><b>Before Mitigation:</b> MOD –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>• No construction material must be stored within 50 m of a watercourse.</li> <li>• Stockpiles within 100 m of watercourses must be monitored for erosion and mobilisation of materials towards watercourses. If this is noted by an ECO, suitable cut-off drains or berms must be placed between the stockpile area and the nearest</li> </ul>

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Activity	Impact summary	Significance	Proposed mitigation
	<p><b><u>Impact 6: Water Contamination (Cement / Concrete Material)</u></b>  <b>Cause and Comment:</b>                      During the construction phase, accidental contamination of wet concrete (highly alkaline) in the rivers/wetland systems could result in mortality of macro-invertebrates and fish species that may be present.</p>	<p><b>Before Mitigation:</b> MOD –</p> <p><b>After Mitigation:</b> LOW –</p>	<p>watercourse.</p> <ul style="list-style-type: none"> <li>• During the construction phase no concrete mixing must take place within 32 m of any river bank or wetland system.</li> <li>• A serviced fire extinguisher (to neutralise pH levels if a spill occurs) must be available on site in the event that wet concrete is accidentally spilled into the river.</li> <li>• The mitigation measures in Appendix B (concrete mixing) must be used in conjunction with this report.</li> </ul>
	<p><b><u>Impact 7: Water Contamination (Chemical Spills, sewage etc.)</u></b>  <b>Cause and Comment:</b>                      During the construction phase, accidental chemical spills or other spills (sewage, etc.) in the vicinity of the rivers/wetlands will result in water pollution, adversely affecting the aquatic ecosystem.</p>	<p><b>Before Mitigation:</b> HIGH –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>• During the construction phase no machinery must be parked overnight within 50 m of the rivers/wetlands.</li> <li>• All stationary machinery must be equipped with a drip tray to retain any oil leaks.</li> <li>• Chemicals used for construction must be stored safely on bunded surfaces in the construction site camp.</li> <li>• Emergency plans must be in place in case of spillages onto road surfaces or within water courses.</li> <li>• No ablution facilities should be located within 50 m of any river or wetland system.</li> <li>• Chemical toilets must be regularly maintained/serviced to prevent ground or surface water pollution.</li> </ul>
	<p><b><u>Impact 8: Stormwater Management</u></b>  <b>Cause and Comment:</b>                      During the construction phase the inappropriate routing of stormwater will lead to stream sedimentation, adversely affecting the aquatic environment.</p>	<p><b>Before Mitigation:</b> MOD –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>• Flood attenuation and storm water management plans must be drawn up and implemented.</li> <li>• An Erosion and Sediment Management Plan must be developed and implemented to minimize the ingress of sediment-laden stormwater into the rivers/ wetlands.</li> </ul>
	<p><b><u>Impact 9: Riparian Vegetation (River)</u></b>  <b>Cause and Comment:</b></p>	<p><b>Before</b></p>	<ul style="list-style-type: none"> <li>• During the construction phase all riparian vegetation</li> </ul>

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Activity	Impact summary	Significance	Proposed mitigation
	<p>During the construction phase, the removal of sensitive riparian vegetation for road/bridge widening and upgrading of culverts will adversely affect the aquatic environment (particularly if detours are used when widening bridges).</p>	<p><b>Mitigation:</b> MOD –</p> <p><b>After Mitigation:</b> LOW –</p>	<p>removal must take place under supervision of the Environmental Control Officer (ECO).</p> <ul style="list-style-type: none"> <li>• A Rehabilitation and Alien Vegetation Management Plan must be developed and implemented.</li> <li>• Banks should be artificially stabilized as soon as possible if significant riparian vegetation is removed.</li> </ul>
	<p><b><u>Impact 10: Riparian Vegetation (Wetland)</u></b> <b>Cause and Comment:</b> During the construction phase, indiscriminate removal of riparian vegetation at water crossing sites, within wetlands or encroachment into surrounding areas could lead to destabilisation of bank structures and an increase in erosion rates.</p>	<p><b>Before Mitigation:</b> HIGH –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>• During the construction phase removal of riparian vegetation must take place under the supervision of the ECO.</li> <li>• Removal of the alien invasive vegetation should be prioritised.</li> <li>• Banks should be artificially stabilized as soon as possible if significant riparian vegetation is removed.</li> <li>• Vehicles and machinery should not encroach into areas outside/surrounding the road upgrade footprint.</li> </ul>
	<p><b><u>Impact 11: Soil Compaction and Erosion</u></b> <b>Cause and Comment:</b> There is a possibility that soil may be compacted by the operation and parking of construction vehicles. Compacted soil results in the reduced ability for plant growth and water absorption. The clearing of vegetation will result in the exposure of soils. Exposed soils are easily susceptible to erosion by wind and water (i.e. run-off) during high wind or rainfall conditions.</p>	<p><b>Before Mitigation:</b> MOD –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>• Newly cleared and exposed areas must be promptly rehabilitated to avoid soil erosion;</li> <li>• Where necessary, temporary stabilization measures must be used;</li> <li>• Plan for the worst case, that is, for heavy rainfall and runoff events, or high winds;</li> <li>• Appropriate erosion control measures must be implemented and a monitoring programme established to ensure that no erosion is taking place. At the first sign of erosion the necessary remedial action must be taken;</li> <li>• Care must be taken to ensure that runoff is well dispersed so as to limit erosion.</li> </ul>
	<p><b><u>Impact 12: Solid Waste Generation</u></b> <b>Cause and Comment:</b> It is anticipated that the proposed development</p>	<p><b>Before Mitigation:</b></p>	<ul style="list-style-type: none"> <li>• Rubble and other construction waste produced should be re-used if possible and, where it is not possible,</li> </ul>

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Activity	Impact summary	Significance	Proposed mitigation
	<p>will produce solid waste in the form of building rubble, excavated soil, excess concrete and general waste, such as litter, during the construction phase.</p>	<p>MOD –</p> <p><b>After Mitigation:</b> LOW –</p>	<p>must be disposed of at the nearest registered waste disposal facility;</p> <ul style="list-style-type: none"> <li>• Rubble, which will not be reused, must be removed from site on a regular basis;</li> <li>• If rubble is stored on site, it should be stored on designated portions of land away from any sensitive areas;</li> <li>• Litter must be controlled during construction – adequate bins must be made available on site at all times. These must be made scavenger and weather proof and must be emptied on a regular basis;</li> <li>• Construction materials stored at the site camp must be secured – i.e. plastics must be covered to prevent being blown off site;</li> <li>• The construction area must remain litter free and regular inspections for litter must be conducted. The activity should not contribute to any surrounding windblown litter;</li> <li>• Waste skips must be covered and emptied regularly;</li> <li>• Waste manifests must be provided by the Contractor to prove legal disposal;</li> <li>• Empty cement bags must be kept in sealed waste containers;</li> <li>• Waste must not to be buried or burned.</li> </ul>

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Activity	Impact summary	Significance	Proposed mitigation
	<p><b><u>Impact 13: Impacts on Cultural Heritage, Archaeology and Palaeontology</u></b>  <b>Cause and Comment:</b>                      During the construction phase, features of cultural heritage, archaeological or paleontological importance may be damaged or destroyed. The railway bridge, five (5) box culverts and a burial site, which date back to the Late Historical Period, have been identified as significant elements in terms of the National Heritage Resources Act. Please refer to Archaeological Impact Assessment included in Appendix D.</p>	<p><b>Before Mitigation:</b> MOD –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>• Please refer to the Archaeological Impact Assessment included in Appendix D for detailed management and mitigation measures;</li> <li>• Should any additional archaeological or cultural sites or objects be located during the construction of the proposed project, it should immediately be reported to the South African Heritage Resources Agency (SAHRA). Failure to report a site or object of archaeological and/or cultural significance is a contravention of the National Heritage Act (Act No. 25 of 1999);</li> <li>• All construction site staff should be briefed to immediately report any sites or objects, which are located during the construction of the facility. In the event of finding what appears to be an archaeological site or a cultural and/or historic site or object, work should be terminated until a qualified archaeologist or historian can examine the item.</li> </ul>
	<p><b><u>Impact 14: Air Pollution</u></b>  <b>Cause and Comment:</b> During construction, dust may be generated, especially where there is exposed ground. Specific activities that may contribute to the release of dust include offloading and stockpiling of building materials such as sand, storage of excavated materials and movement of heavy vehicles. The generation of dust may be exacerbated during windy, dry periods. In addition to dust, air pollution may result from the exhaust fumes emitted by construction vehicles, especially if the vehicles have not been serviced correctly.</p>	<p><b>Before Mitigation:</b> MOD –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>• Topsoil should be cleared in a phased manner to avoid large areas of bare ground;</li> <li>• Employ dust suppression measures such as wetting of the project area during dry, windy periods (Only water from a licensed source will be used);</li> <li>• Where practical, do not leave large cleared areas exposed for longer than necessary;</li> <li>• The area of disturbance must be kept to a minimum at all times;</li> <li>• Vehicle speed should be limited to the lowest possible, and should not exceed 30km/h on the construction site, service road or gravel roads used to access the</li> </ul>



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Activity	Impact summary	Significance	Proposed mitigation
			site camp. <ul style="list-style-type: none"> <li>• Construction vehicles must be regularly maintained in order to ensure that no unnecessary exhaust fumes are being emitted.</li> </ul>
	<p><b><u>Impact 15: Noise</u></b>  <b>Cause and Comment:</b>                      Construction activities are associated with an increase in noise levels as a result of construction vehicles, plant generators and various other equipment being used on site. While these activities will produce noise, it is unlikely to have a significant impact on the surrounding area which includes an existing railway station as well as the Boshhoek Smelter.</p>	<p><b>Before Mitigation:</b>                      LOW –</p> <p><b>After Mitigation:</b>                      Negligible</p>	<ul style="list-style-type: none"> <li>• No construction activities may take place between sunset and sunrise;</li> <li>• Machinery that generates noise must be regularly maintained in order to ensure that no unnecessary additional noise is produced;</li> <li>• Equipment with lower sound levels should be selected where feasible.</li> </ul>
	<p><b><u>Impact 16: Visual Impacts</u></b>  <b>Cause and Comment:</b>                      Construction vehicles and equipment will be evident in the existing landscape. Generation of dust will increase the visibility of the project and may become an eyesore if not managed correctly.</p>	<p><b>Before Mitigation:</b>                      LOW –</p> <p><b>After Mitigation:</b>                      Negligible</p>	<ul style="list-style-type: none"> <li>• Employ techniques to suppress dust and smoke generation during construction;</li> <li>• The contractor should maintain good housekeeping on site to avoid litter and minimise waste;</li> <li>• Night lighting of the construction sites should be minimised within requirements of safety and efficiency of the Environmental Regulations for Workplaces in terms of the Occupational Health and Safety Act (Act No. 85 of 1993);</li> <li>• Fires and fire hazards need to be managed appropriately.</li> </ul>
	<p><b><u>Impact 17: Traffic Impacts</u></b>  <b>Cause and Comment:</b>                      During the construction phase of the proposed development, construction vehicles will be utilizing the existing road network. This may result in the impeding of traffic and damage to existing</p>	<p><b>Before Mitigation:</b>                      LOW –</p> <p><b>After</b></p>	<ul style="list-style-type: none"> <li>• Large construction vehicles must not be permitted to utilize public roads during peak hours (AM: 06:30 – 08:30 and PM: 16:00 – 18:30);</li> <li>• Any damage to public roads directly caused by large construction vehicles operating on this project must be</li> </ul>

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Activity	Impact summary	Significance	Proposed mitigation
	roads.	<b>Mitigation:</b> Negligible	repaired immediately.
	<p><b><u>Impact 18: Health and Safety Risks</u></b>                      The use of construction machinery during the construction phase poses a potential risk to the health and safety of people working at the construction site as well as to commuters passing the site. The movement of construction vehicles also increases the risk of road accidents. The risk of accidents, fires and explosions must be mitigated effectively.</p>	<p><b>Before Mitigation:</b> MOD –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>• All relevant Health and Safety legislation as required in South Africa should be strictly adhered to, including but not limited to the Occupational Health and Safety Act, 1993 (No. 85 of 1993);</li> <li>• Smoking should be prohibited in the vicinity of flammable substances;</li> <li>• Any welding or other sources of heating of materials should be done in a controlled environment and under appropriate supervision;</li> <li>• Ensure availability of fire extinguishers;</li> <li>• All employees must be aware of emergency/ contingency plans to ensure an understanding of the hazards and procedures required during an emergency situation;</li> <li>• An emergency preparedness and response plan must be implemented for the duration of construction;</li> <li>• Records of environmental and/or health and safety related incidents should be maintained and communicated to the relevant persons;</li> <li>• The Contractor shall ensure that signage, which should be pictorial and in the vernacular, is erected to warn against entering the construction area;</li> <li>• Traffic calming and speed control measures for access to construction sites shall be instigated in consultation with the local authorities.</li> </ul>
	<p><b><u>Impact 19: Employment Creation</u></b>  <b>Cause and Comment:</b>                      The construction phase of the proposed development will create a number of temporary jobs for locals within the area.</p>	MOD +	None required

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	<p><b><u>Impact 20: Purchasing of Materials from Local Businesses</u></b>  <b>Cause and Comment:</b>                  Where possible, materials will be sourced from local businesses and this will result in a boost of the local economy of the immediate vicinity and surrounding areas.</p>	MOD +	None required
<b>Operational Phase</b>			
Operation of the proposed Boshhoek railway loop	<p><b><u>Impact 21: Rehabilitation of disturbed areas</u></b>  <b>Cause and Comment:</b>                  During the Operational Phase, poor rehabilitation of disturbed areas may lead to the permanent degradation of ecosystems as well as allow alien vegetation species to expand.</p>	<p><b>Before Mitigation:</b> MOD –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>• All cleared areas must be continuously rehabilitated with indigenous vegetation post-establishment.</li> <li>• The site will be considered as rehabilitated when 75% or more of the impacted areas are covered by primary growth (grasses and/or scrubs)</li> </ul>
	<p><b><u>Impact 22: Invasion of Alien Species</u></b>  <b>Cause and Comment:</b>                  During the operational phase the loss of natural vegetation will increase the potential invasion by alien plant species. This, coupled with the lack of implementation of the Alien Vegetation Management Plan may result in large scale alien plant invasion.</p>	<p><b>Before Mitigation:</b> MOD –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>• The approved Alien Vegetation Management Plan must be implemented during the operational phase to reduce the establishment and spread of undesirable alien plant species.</li> <li>• Alien plants must be removed through appropriate methods such as hand pulling, application of chemicals, cutting, etc. as in accordance to the NEMBA: Alien Invasive Species Regulations.</li> </ul>
	<p><b><u>Impact 23: Hazardous Waste Generation</u></b>  <b>Cause and Comment:</b>                  Hazardous waste is likely to occur as a result of an increased number of trains passing through the area on a weekly basis. Due to the nature of a freight railway line, leaking oil or fuel may enter or flow into the adjacent areas. In addition to this, operations of a siding include the temporary</p>	<p><b>Before Mitigation:</b> HIGH –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>• Hazardous substances should be disposed of at an appropriate classified waste site (unless it is to be recycled by approved methods), as per the National Environmental Management Waste Act 59 of 2008;</li> <li>• All contaminated spill fighting material such as fibres, soil, sandbags, etc. must be disposed of in an appropriate hazardous waste landfill site. Proof of this</li> </ul>

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	<p>storage of moderate quantities of dangerous goods, which, if not properly stored and contained, may accumulate and result in hazardous waste entering the surrounding environment.</p>		<p>must be made available upon request;</p> <ul style="list-style-type: none"> <li>The transportation, handling and storage of hazardous and flammable substances must comply with all the provisions of the Hazardous Substances Act 1973, (Act No. 15 of 1973) associated regulations as well as a SANS 10228 and SANS 10089 codes.</li> </ul>
	<p><b><u>Impact 24: Increased Stormwater Runoff and Erosion Potential</u></b>  <b>Cause and Comment:</b>                  The proposed development will consist of more impervious surfaces than what currently exists on site and this will result in increased runoff and potentially increased erosion.</p>	<p><b>Before Mitigation:</b> MOD –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>A site-specific stormwater management plan must be implemented to manage the increased stormwater runoff;</li> <li>Storm-water structures need to be implemented as part of the development and must link up with the current storm-water infrastructure in order to navigate stormwater and minimise soil erosion;</li> <li>At the first signs of erosion, the correct procedures must be undertaken to manage, resolve and prevent it from occurring.</li> </ul>
	<p><b><u>Impact 25: Noise</u></b>  <b>Cause and Comment:</b>                  The operation of a railway loop in the area may result in a slight noise increase due to a higher number of trains passing through the area. The overall noise level should not be any more than what is currently experienced on site.</p>	<p><b>Before Mitigation:</b> LOW –</p> <p><b>After Mitigation:</b> Negligible</p>	<ul style="list-style-type: none"> <li>The siding infrastructure must be well maintained in order to avoid unnecessary noise produced near the site;</li> <li>The Rustenburg Local Municipality by-laws relating to noise must be adherer to at all times.</li> </ul>
	<p><b><u>Impact 26: Traffic Impacts</u></b>  <b>Cause and Comment:</b>                  The operation of the proposed railway loop will allow for additional use of the Waterberg railway line. This could result in an increase in potential accidents in along the line however, this is unlikely. With the correct management of railway traffic, the proposed railway loop will prevent</p>	<p><b>Before Mitigation:</b> LOW –</p> <p><b>After Mitigation:</b> MOD +</p>	<ul style="list-style-type: none"> <li>The proposed railway loop must be operated in line with the relevant Transnet rail standards and train schedules.</li> </ul>

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	delays along the railway route and will have an overall positive impact on railway traffic.		
	<p><b>Impact 27: Health and Safety Risks</b></p> <p>The operation of a railway siding poses a potential fire and explosion risk due to the storage of a number of potentially dangerous goods. In addition to this, health and safety risks occur with regards to onsite train arrivals and departures.</p>	<p><b>Before Mitigation:</b> HIGH –</p> <p><b>After Mitigation:</b> LOW –</p>	<ul style="list-style-type: none"> <li>• All relevant Health and Safety legislation as required in South Africa should be strictly adhered to, including but not limited to the Occupational Health and Safety Act, 1993 (No. 85 of 1993);</li> <li>• Smoking should be prohibited in the vicinity of flammable substances;</li> <li>• Ensure availability of fire extinguishers;</li> <li>• An emergency preparedness and response plan must be implemented for the operational phase;</li> </ul>
	<p><b>Impact 28: Economic Benefits</b></p> <p><b>Cause and Comment:</b></p> <p>The railway loop will contribute to increasing, amongst others, the coal-carrying capacity of the Waterberg railway line. This will contribute to the overall transport and delivery of economically valuable goods and facilitate a positive influence on the Gross Domestic Product.</p>	HIGH +	None required
<b>Decommissioning Phase</b>			
At this stage it is unclear whether the proposed project will be decommissioned. Should decommissioning be required, the impacts would be similar to those listed for the construction phase.			

Activity	Impact summary	Significance	Proposed mitigation
<b>No-Go Alternative</b>			
<b>NB:</b> This identifies and rates the impacts associated with the status quo of the study area. The location of the proposed development within an existing railway servitude, together with the pressure placed on the existing capacity of the railway line, has negative impacts which are currently relevant. The impacts associated with No-Go Alternative are provided in Appendix F (Impact Assessment).			

A complete impact assessment in terms of Regulation 19(3) of GN 982 must be included as Appendix F.

Please refer to Appendix F for a detailed impact assessment.

2. ENVIRONMENTAL IMPACT STATEMENT

The table below shows the significance of the impacts before and after mitigation is taken into account together with the impact of the No-Go alternative:

IMPACT	WITHOUT MITIGATION	WITH MITIGATION	NO-GO
<i>Construction Phase</i>			
1. Loss of Natural Vegetation	MOD –	LOW –	N/A
2. Loss of SCC	MOD –	LOW –	N/A
3. Rehabilitation of Disturbed Areas	MOD –	LOW –	MOD –
4. Control of Alien Species	MOD –	LOW –	MOD –
5. Material Stockpiling	MOD –	LOW –	N/A
6. Water Contamination (Cement / Concrete Material)	MOD –	LOW –	MOD –
7. Water Contamination (Chemical Spills, sewage etc.)	HIGH –	LOW –	MOD –
8. Stormwater management	MOD –	LOW –	LOW –
9. Riparian vegetation (river)	MOD –	LOW –	N/A
10. Riparian vegetation (wetland)	MOD –	LOW –	N/A
11. Soil Compaction and Erosion	MOD –	LOW –	LOW –
12. Solid Waste Generation	MOD –	LOW –	LOW –
13. Impacts on Cultural Heritage, Archaeology and Palaeontology	MOD –	LOW –	LOW –
14. Air Pollution	MOD –	LOW –	LOW –
15. Noise	LOW –	Negligible	LOW –
16. Visual Impacts	LOW –	Negligible	N/A
17. Traffic Impacts	MOD –	LOW –	LOW –
18. Health and Safety Risks	MOD –	LOW –	N/A
19. Employment Creation	MOD +	MOD +	LOW –
20. Purchasing of Materials from Local Businesses	MOD +	MOD +	LOW –
<i>Operational Phase</i>			
21. Rehabilitation of disturbed areas	MOD –	LOW –	MOD –
22. Invasion of Alien Species	MOD –	LOW –	MOD –
23. Hazardous Waste Generation	HIGH –	LOW –	N/A
24. Increased Stormwater Runoff and Erosion Potential	MOD –	LOW –	MOD –
25. Noise	MOD –	LOW –	LOW –
26. Traffic Impacts	MOD –	LOW –	LOW –
27. Health and Safety Risks	HIGH –	LOW –	N/A
28. Economic Benefits	HIGH +	HIGH +	HIGH –



**Alternative A (preferred alternative)**

Twenty-eight (28) impacts have been identified as a result of the preferred and only alternative for the proposed project. This consists of 20 construction phase impacts and 8 operational phase impacts. Without mitigation, there will be 3 negative impacts of high significance, 20 of moderate significance and 2 of low significance. There will also be 1 positive impact of high significance and 2 of moderate significance. With the implementation of mitigation measures, there will be 23 negative impacts of low significance and 2 negligible impacts. There will also be 1 positive impact of high significance and 2 of moderate significance which will result from the development. Although there are a greater number of negative impacts, the significance of the positive impacts outweighs the significance of the negative impacts. This is the only reasonable and feasible alternative considered in this application and, considering the result of the impact assessment, this preferred alternative is recommended.

**No-go alternative (compulsory)**

This alternative assumes that the status quo will remain unchanged and that there will be no railway loop constructed along the existing line. There will be no vegetation clearing required and the adjacent land will remain in its natural state. However, under the No-go alternative, the absence of the railway loop would result in the continuation of increased rail congestion and delays in the transport of important commodities such as coal, chrome, iron ore, containers and general freight. There will be 1 negative impact of high significance, 7 of moderate significance and 11 of low significance. There are no positive impacts associated with the No-go alternative. For this reason, the No-go alternative is not recommended.

## 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  
✓

List of 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:

### **OPINION OF THE EAP:**

It is the opinion of the EAP that no fatal flaws are associated with the proposed development and that all impacts can be adequately mitigated to reduce the risk or significance of impacts to an acceptable level. The significance of the benefits associated with the proposed development outweighs the significance of the negative aspects. It is the opinion of the EAP that this Basic Assessment Report contains sufficient information to allow the Department of Environmental Affairs (DEA) to make an informed decision. It is therefore recommended that the application for Environmental Authorisation should be approved on condition that the recommended mitigation measures stated herein are effectively implemented.

### **RECOMMENDATIONS OF THE EAP:**

All mitigation measures, which have been outlined in this report as well as in the Environmental Management Programme (EMPr), must be fully adhered to. In addition, the following recommendations have been made:

#### **Pre-Construction:**

- The EMPr must form part of the contractor's tender documentation prior to appointment;
- Notice must be given to surrounding land owners and businesses informing them of the intended date of commencement of construction;

#### **Construction Phase:**

- An ECO must be employed to ensure that the construction activities remain within the designated area and that no unauthorised activities occur;
- The ECO should submit site audits detailing the applicant's compliance with the EMPr;
- An efficient stormwater management system must be implemented during construction;
- Workers must be educated on environmental management aspects;

#### **Operational Phase:**

- Health, Safety and Environmental monitoring should take place regularly and reports compiled on an annual basis.

Please refer to Appendix G for the Environmental Management Programme (EMPr).

Please refer to Appendix H for the relevant curriculum vitae of the EAP and the project participants as well as Appendix I for specialist's declaration of interest.

**SECTION F: APPENDIXES**

The following appendixes must be attached:

Appendix A: Maps

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports (including terms of reference)

Appendix E: Public Participation

Appendix F: Impact Assessment

Appendix G: Environmental Management Programme (EMPr)

Appendix H: Details of EAP and expertise

Appendix I: Specialist's declaration of interest

Appendix J: Additional Information

**APPENDIX A**

**MAPS**

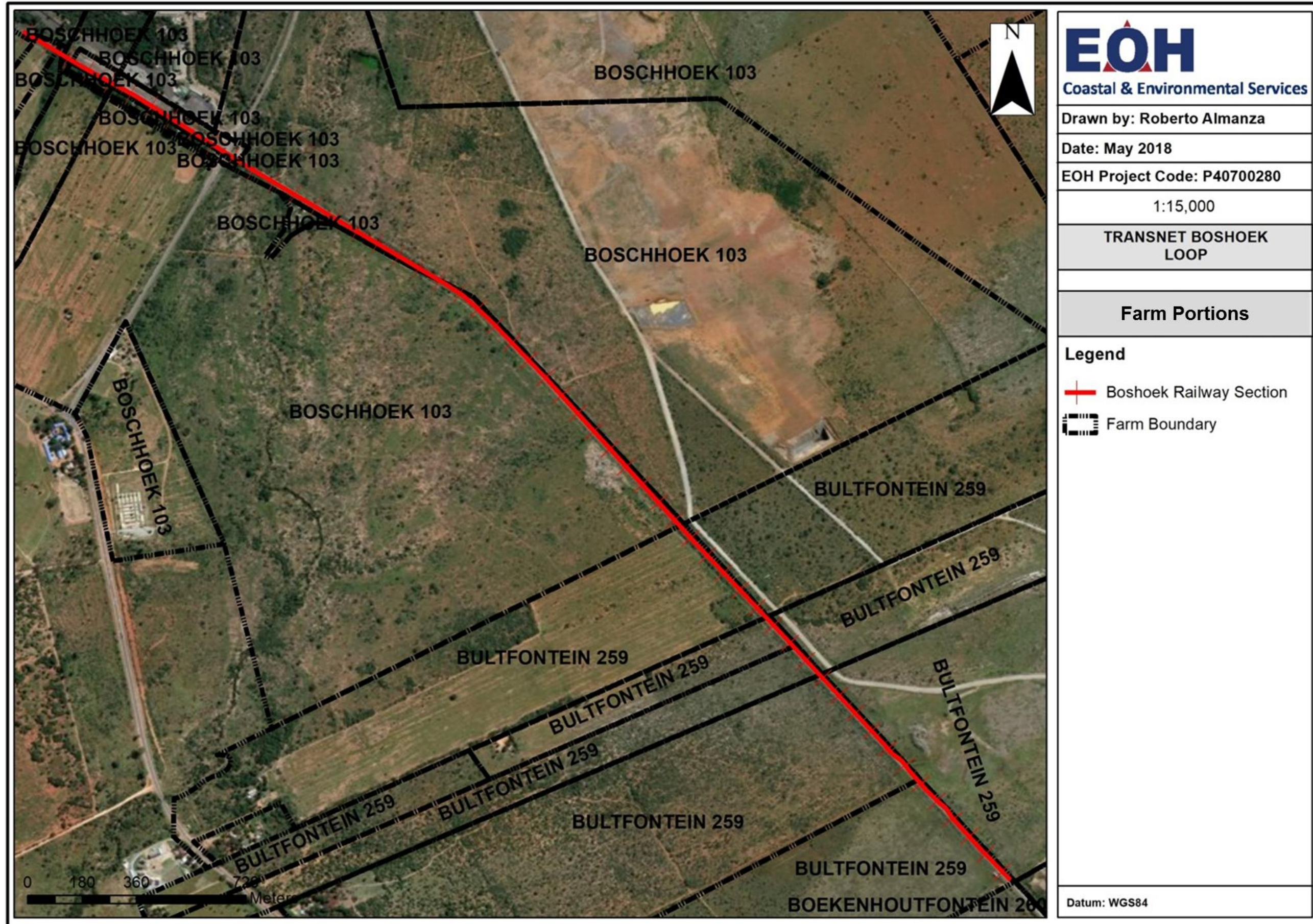


LOCALITY MAP



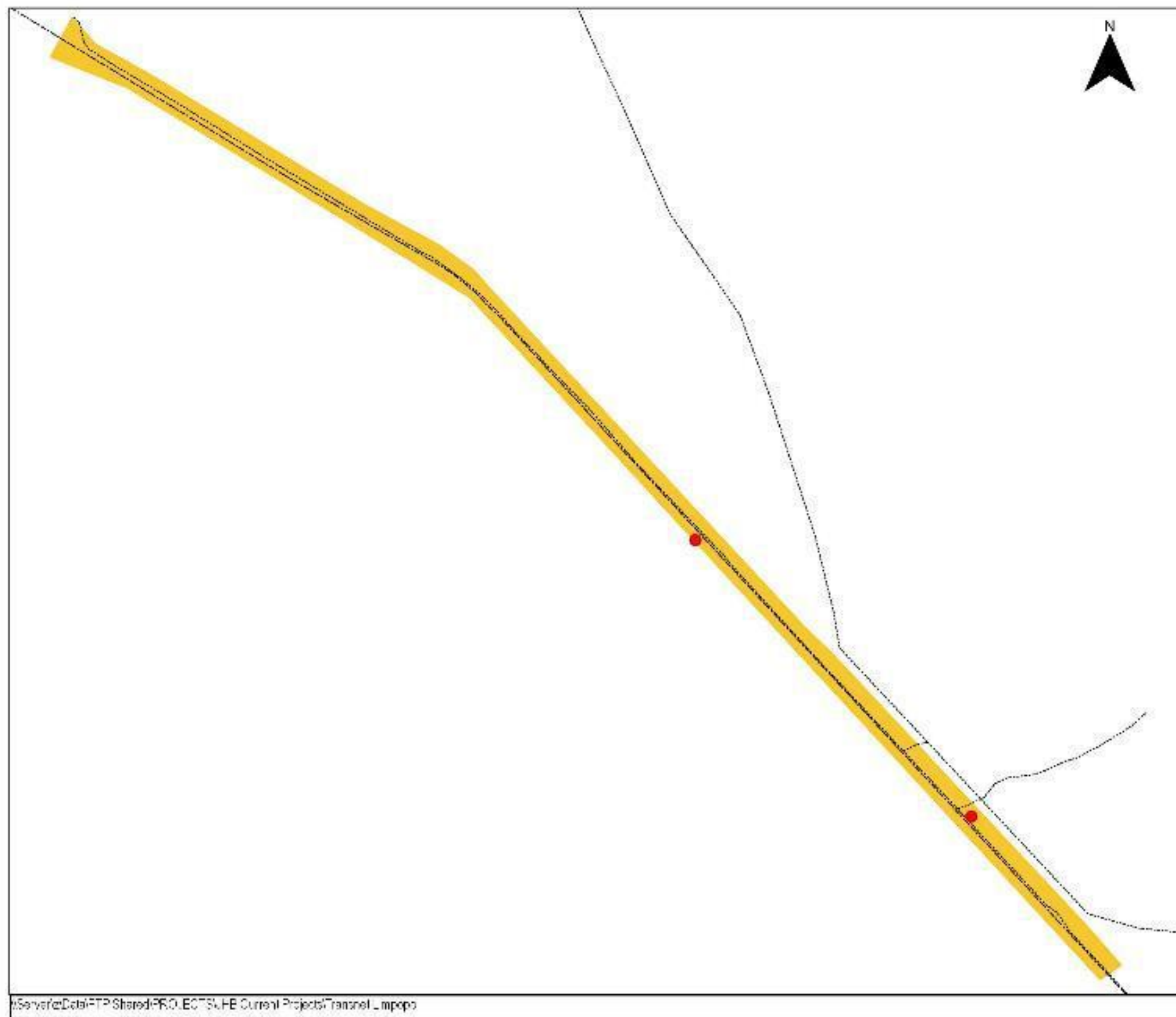






PROPERTY MAP





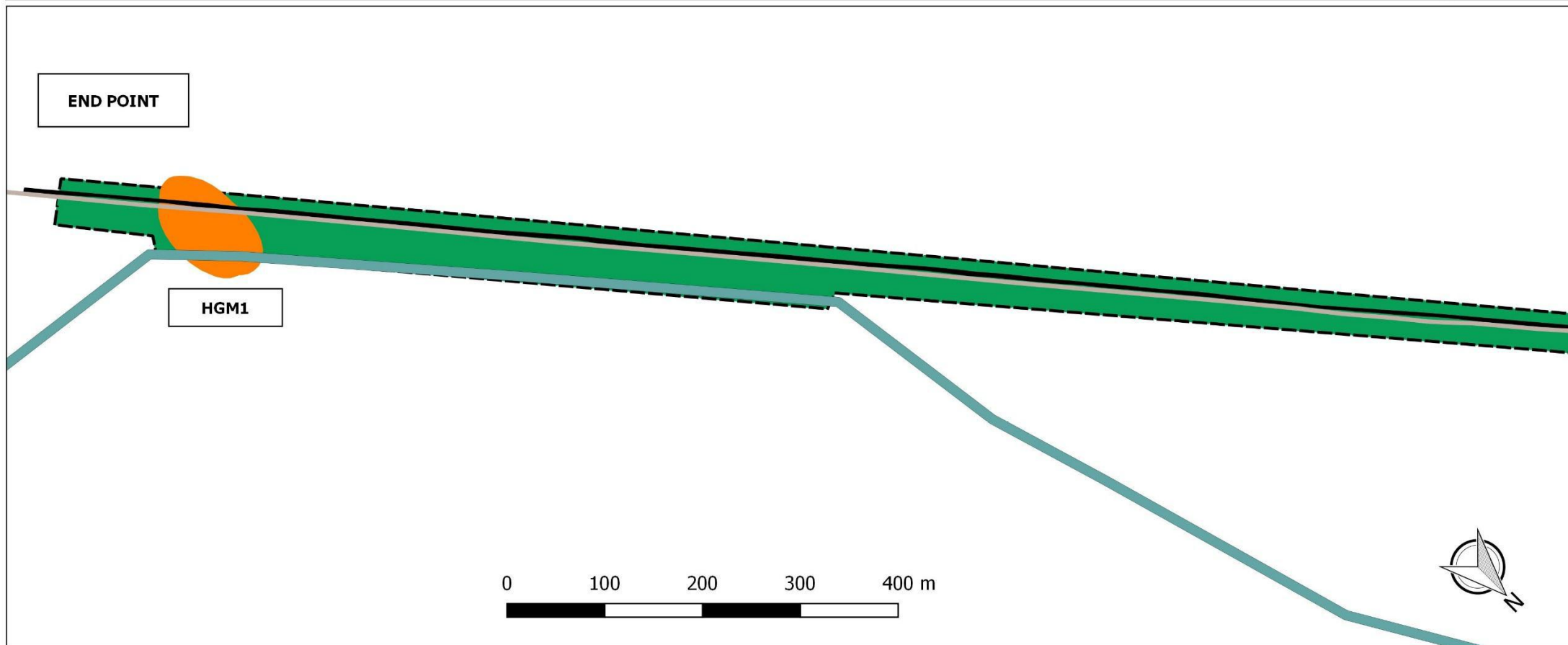
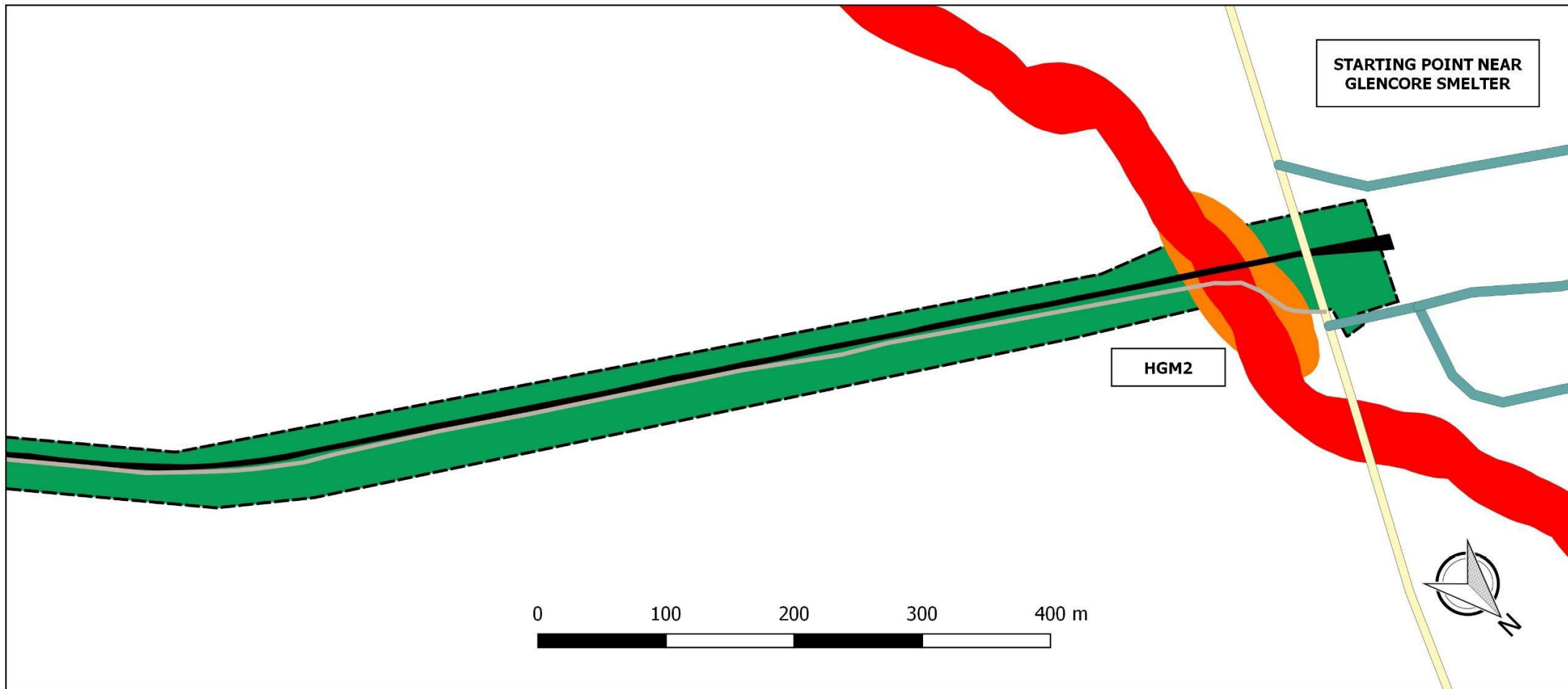
ECOLOGICAL SENSITIVITY MAP













 Coastal and Environmental Services	
Drawn by: Roy de Kock	
Date: April 2018	
EOH Project Code: P40700239	
1:7 000	
<b>TITLE</b>	
Sensitivity Map	
<b>PROJECT</b>	
Boshhoek Loop Ecological Assessment	
<b>Legend</b> --- Railway lines --- Gravel roads  High sensitivity  Moderate sensitivity	
Datum: WGS84	
Produced for 	



AQUATIC SENSITIVITY MAP










 Coastal & Environmental Services
Drawn by: Gideon Raath
Date: April 2018
EOH project code: P280
1:418 592 83
<b>Transnet Boshhoek Sensitivity map</b>
<b>Transnet SOC Ltd</b>
<b>Legend</b>
 Existing Rail
 HIGH Sensitivity
 MODERATE Sensitivity
 LOW Sensitivity
Roads (LOW Sensitivity)
 Primary
 Private
 Secondary
 Service Road
 Project Area Boundary
Datum: WGS84
Produced for: Transnet SOC Ltd



HERITAGE SENSITIVITY MAP



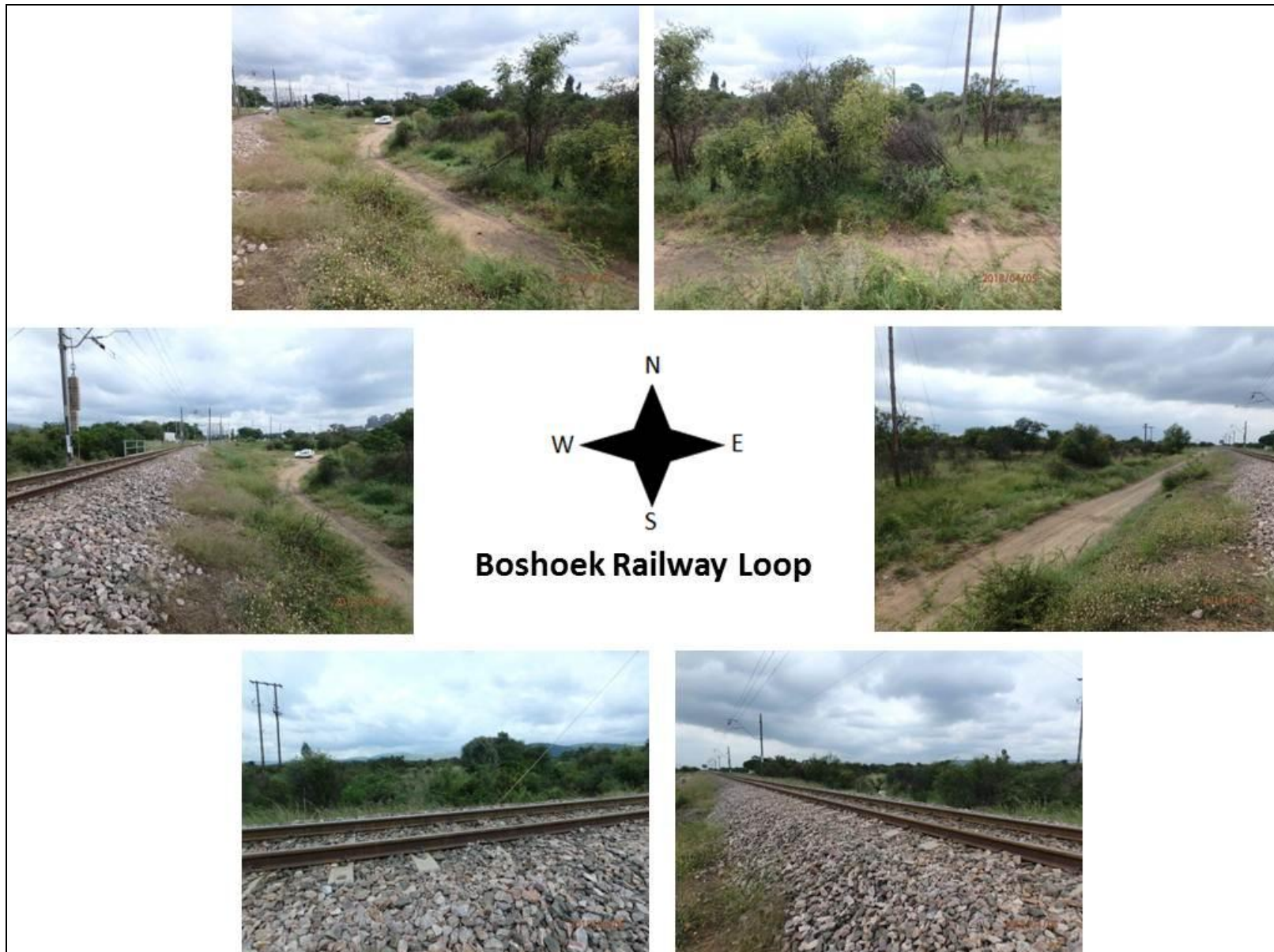
<b>Transnet Boshhoek Railway Loop Project Heritage Buffer Map</b>	
<b>LEGEND</b>	
	50m conservation buffer
	10m conservation buffer
	Project Infrastructure
	Grave (EXIGO-THL-BP01)
Client: AGES Limpopo	
 6                      12                      meters	
 Eulophia Corner Building 1 38 Gen Van Reyneveld St Persequor Park Pretoria 0020 Tel: +27 12 751 2160 Fax: +27 86 607 2406	
Project Transnet Boshhoek Railway Loop Project	
Date 2018-05-09	
Compiled by N.Kruger	Version 1
Datum WGS 84	Projection
 N	

**APPENDIX B**

**PHOTOGRAPHS**



SITE PHOTOS



**APPENDIX C**

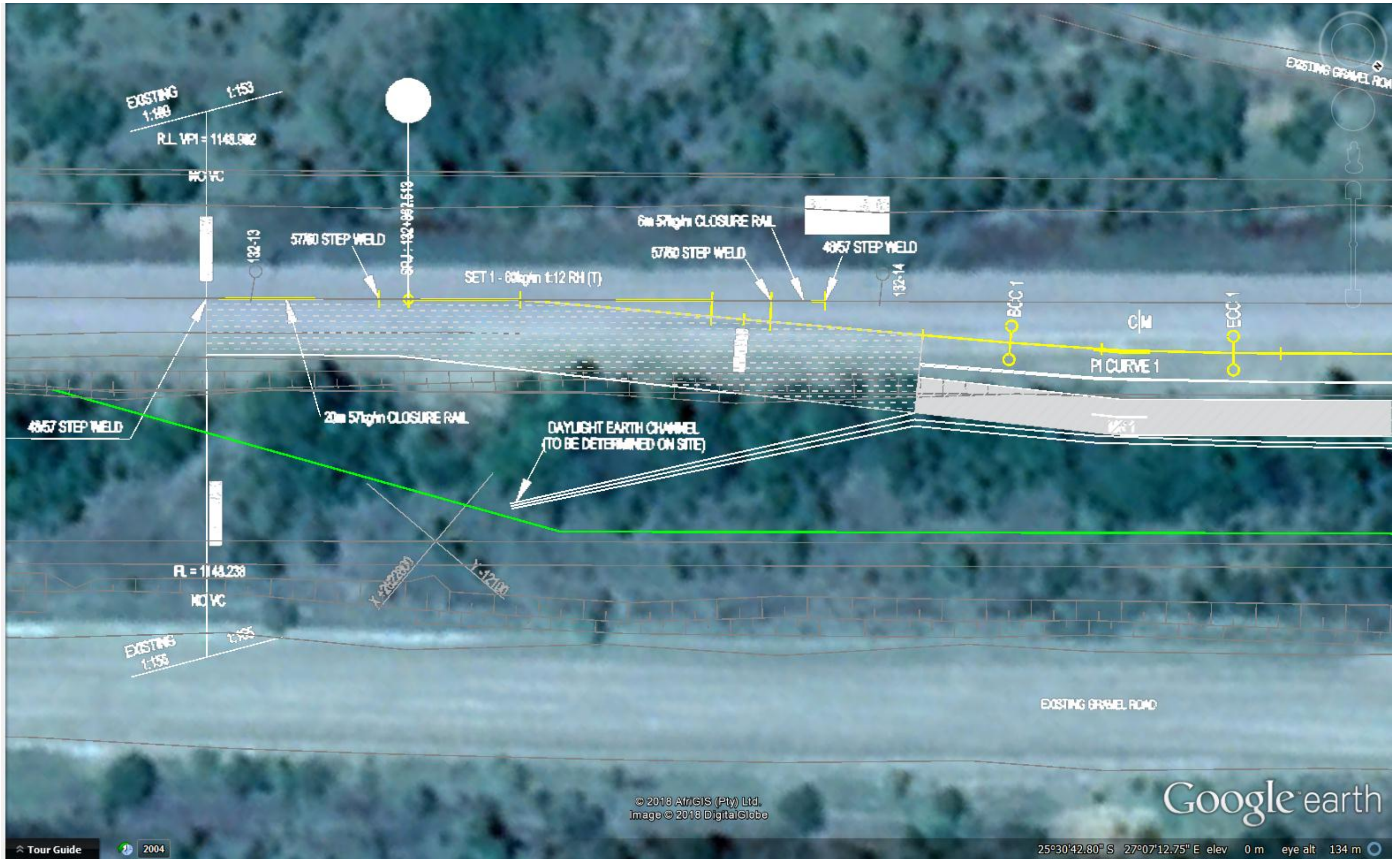
**FACILITY ILLUSTRATIONS**



DESIGN/LAYOUT DRAWING









**APPENDIX D**

**SPECIALIST REPORTS**

**APPENDIX E**

**PUBLIC PARTICIPATION**

**PROOF OF ADVERTISEMENTS**

Site Notice:



Site notice placed at the the entrance to the Boshhoek Smelter.





Site notice placed near the existing railway line.



Newspaper Advertisement – To Be Published on 23 May 2018:

TRANSNET SOC LTD PROPOSES THE EXPANSION OF RAILWAY LINES BY CONSTRUCTING A NEW LOOP AT THE BOSHOEK LINE, IN THE RUSTENBURG LOCAL MUNICIPALITY, AND AT THE HEYSTERKRAND LINE, IN THE MOSES KOTANE LOCAL MUNICIPALITY, NORTH-WEST PROVINCE.

**ENVIRONMENTAL IMPACT ASSESSMENT: INCEPTION NOTICE AND PUBLIC REVIEW NOTICE OF THE DRAFT BASIC ASSESSMENT REPORTS AND ENVIRONMENTAL MANAGEMENT PROGRAMMES.**

Notice is issued in terms of Regulation 41 of the Environmental Impact Assessment (EIA) Regulations, published in Government Notice No. 326 in Government Gazette No. 40772 of 07 April 2017, under the National Environmental Management Act 1998 (Act No. 107 of 1998), for the intent to undertake EIA processes for the abovementioned projects. Basic Assessment (BA) processes are required for the expansion of the railway line. This advert further serves as notice for the release of the Draft Basic Assessment reports for public review, to ensure participation by potential or registered interested and affected parties (I&APs) is facilitated in such a manner that all potential or registered I&APs are provided with a reasonable opportunity to comment on the proposed applications.

**Proposed Project:** The proposed development will entail the expansion of railway lines by constructing new loops at the Boshhoek Line and the Heysterkrand Line. The strategic importance of this rail section is highlighted by the large volume and variety of commodities currently being transported, such as coal, chrome, iron ore, containers and general freight. The proposed project will involve the construction of track work (20t axle loading formation layers), required for doubling of the existing line and expansion of the bridge; installation of a localised remote control system to enable the train driver to remotely operate the tangential point sets of both sides of the loop, using a radio control; the extension several box culverts to accommodate the new loops; and the construction of a river bridge (near Boshhoek), similar to the existing bridge on the main line.

As per the EIA regulations, the proposed developments will require Basic Assessments (BAs) for the expansion of the railway line. Transnet SOC Ltd has appointed EOH Coastal and Environmental Services (EOH CES), to conduct and submit the BA applications, to the Department of Environmental Affairs (DEA), and to function as the Environmental Assessment Practitioner (EAP) for the projects.

All Interested and Affected Parties are hereby notified of the availability of the Draft Basic Assessment Reports (BARs) and Environmental Management Programme Reports (EMPRs) for public review and comment. The 30 day review period is from 22 May 2018 – 22 June 2018.

Copies of the Draft BARs and EMPRs will be available for review and comment at the following locations:

- Rustenburg Public Library, Corner of Heystek St and President Mbeki Dr, Rustenburg;
- On request from EOH CES

A public meeting will be held at the Afri-Chic Guesthouse at 35 Boyen St, Rustenburg, on 6 June 2018, at 11h00.

For further information and submission of comments, or registration as interested and affected party, please do not hesitate to contact:

**Mr Gideon Raath or Mr Roberto Almanza**

Block D, Gillooly's View Office Park

1 Osborne Lane, Bedfordview, Johannesburg, 2007.

Tel: 011 607 8389 or 041 585 1715;

Email: gideon.raath@eoh.co.za or roberto.almanza@eoh.co.za

**EOH**

Coastal & Environmental Services

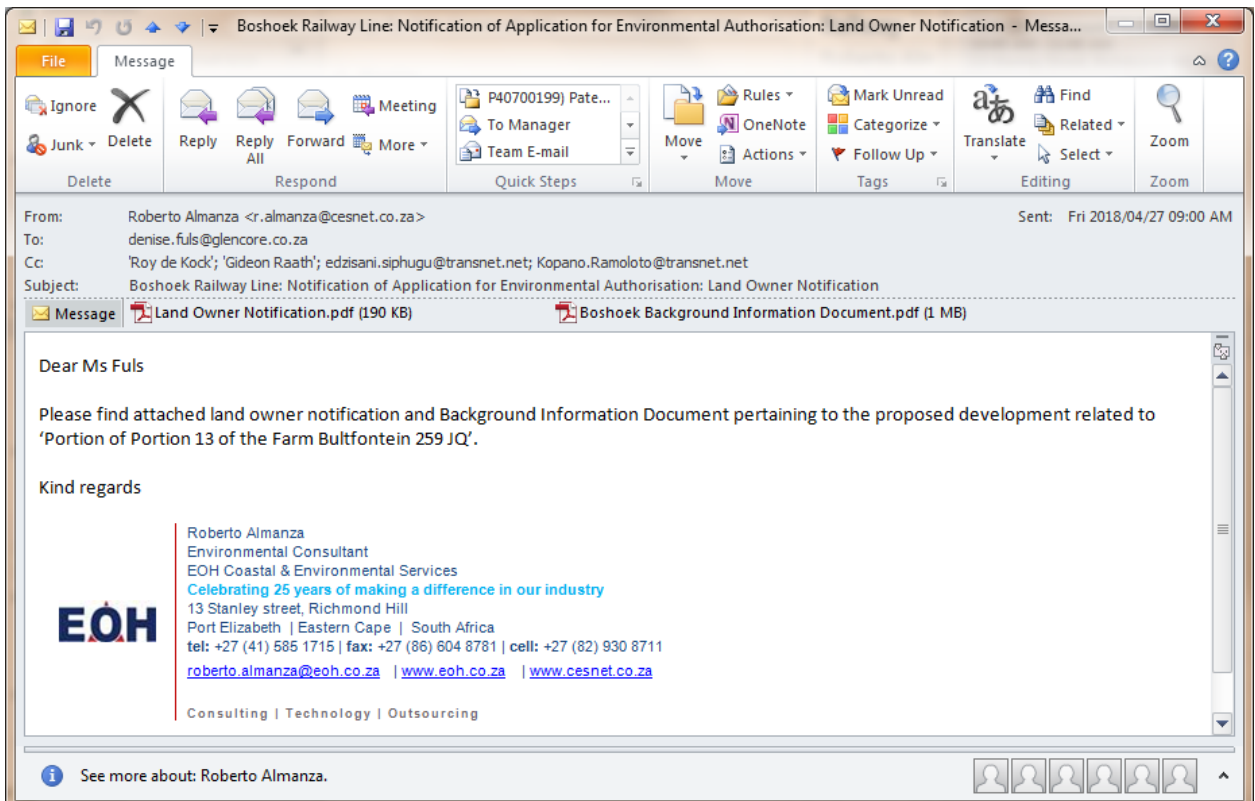
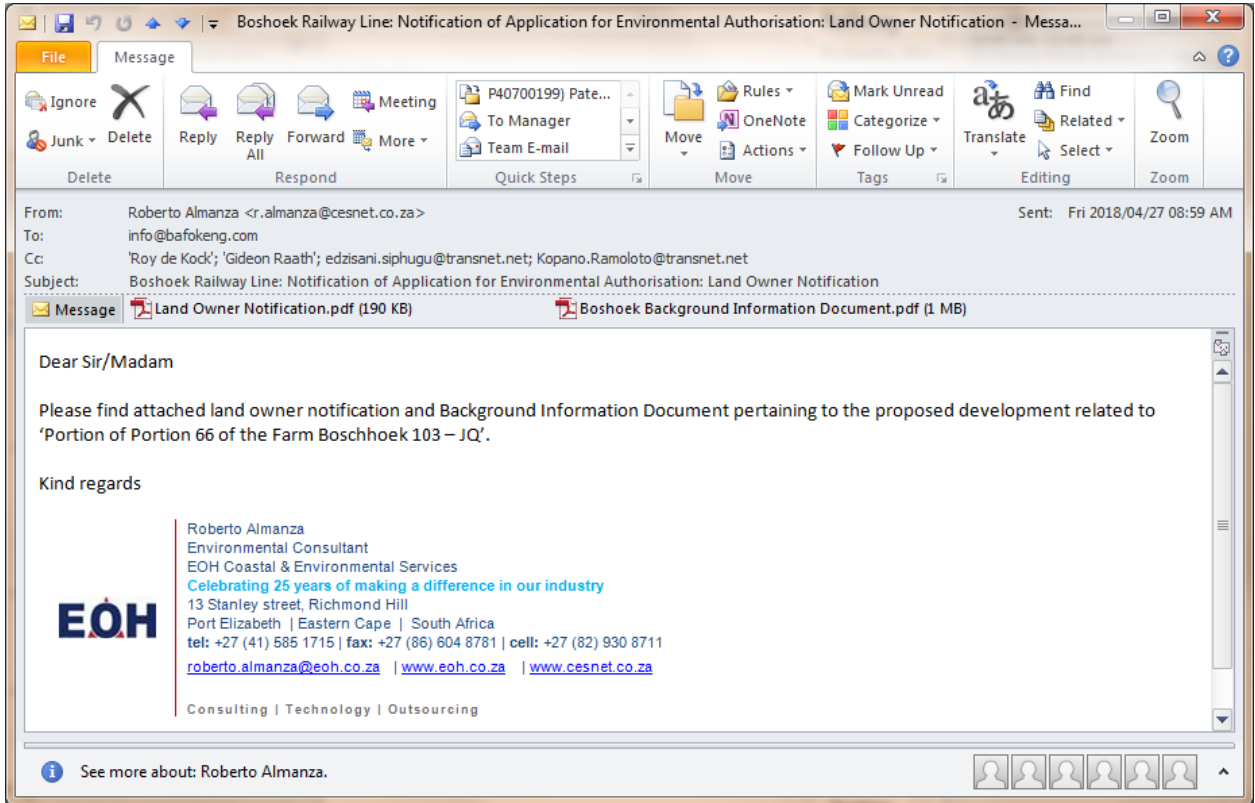
Proof of advertisement to be included in the Final Basic Assessment Report.

# BASIC ASSESSMENT REPORT

## PROOF OF NOTIFICATION OF AUTHORITIES AND KEY STAKEHOLDERS

Land Owner:

*Notifications Sent on 27 April 2018:*



Attachment to Notification ('Land Owner Notification'):



Coastal & Environmental Services

26 April 2018

Dear Sir/Madam,

**ATTENTION:**

OWNER OR PERSON IN CONTROL OF THE LAND WHERE THE ACTIVITY IS TO BE UNDERTAKEN

**NOTIFICATION: BASIC ASSESSMENT FOR THE PROPOSED EXPANSION OF THE BOSHOEK RAILWAY LINE, NORTH-WEST PROVINCE, SOUTH AFRICA**

In accordance with the requirements of Section 41 (2) (b) (ii) of the Environmental Impact Assessment (EIA) Regulations (2014), as amended in 2017, made in terms of Section 24 of the National Environmental Management Act (Act No 107 of 1998, as amended), we are required to notify, "the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken". In accordance with this requirement, please find herewith a letter of notification for a Basic Assessment (BA) process being conducted by EOH Coastal & Environmental Services (EOH CES) in respect of the abovementioned project.

The proposed development will entail the expansion of railway lines by constructing a new loop at the Boshhoek Line. The project will involve the construction of track work (20t axle loading formation layers), required for doubling of the existing line and expansion of the bridge; installation of a localised remote control system to enable the train driver to remotely operate the tangential point sets of both sides of the loop, using a radio control; the extension of 5 box culverts to accommodate the new loop; and the construction of a river bridge, similar to the existing bridge on the main line.

In accordance with the Amended EIA Regulations of 2017, the proposed development will require a BA process. The Department of Environmental Affairs (DEA) will be the decision-making authority for this application. Please note the following:

- EOH CES have been appointed by Transnet SOC Ltd to conduct the BA for the proposed development;
- Following the release of the draft Basic Assessment Report (BAR), a public meeting will be held to present the project and to give the public an opportunity to comment on the proposed development. You will be notified of the date, time and venue for the public meeting accordingly;
- EOH CES would appreciate it if you could kindly confirm your receipt of this notification via email, fax, phone or post.

For more information, please feel free to contact:  
Mr. Gideon Raath and/or Mr Roberto Almanza  
Tel: (011) 607 8389 (Extension 8389) | (041) 585 1715  
E-mail: [gideon.raath@eoh.co.za](mailto:gideon.raath@eoh.co.za) | [roberto.almanza@eoh.co.za](mailto:roberto.almanza@eoh.co.za)

Yours sincerely,

Gideon Raath  
Environmental Consultant

Coastal and Environmental Services (Pty) Ltd  
T +27 11 807 8389 | F +27 11 816 9929  
EOH Business Park, Gillooly's View, 1 Osborne Lane, Bedfordview, 2007 | PO Box 59, Bruma 2026  
Reg no: 2012/151672/07 | a member of the EOH Group of Companies  
[www.eoh.co.za](http://www.eoh.co.za) | [www.cesnet.co.za](http://www.cesnet.co.za)

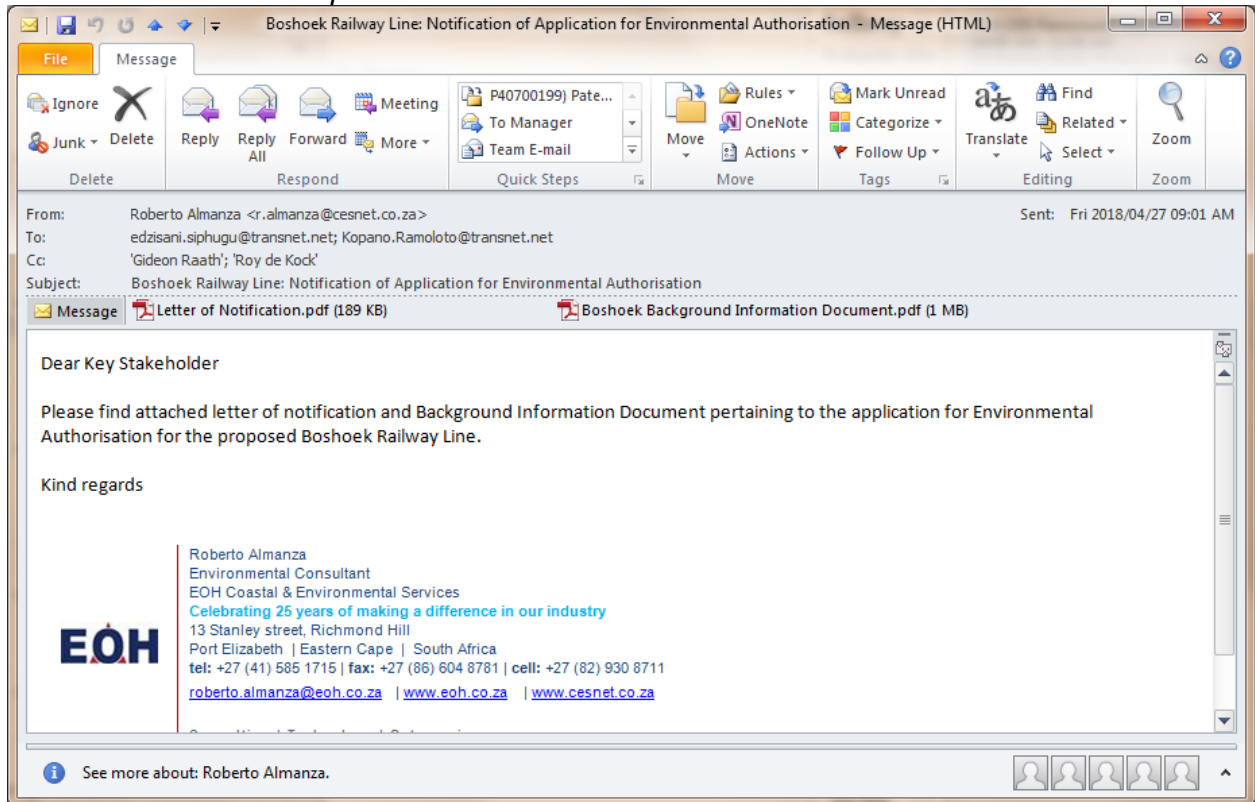
Directors: Z Mayet, JW King, and AM Avis.



# BASIC ASSESSMENT REPORT

## Key Stakeholders and Authorities:

### *Notification Sent on 27 April 2018:*



Attachment to Notification ('Letter of Notification'):



26 April 2018

Dear Interested and Affected Party,

**ATTENTION:**

**OWNER OR PERSON IN CONTROL OF THE LAND WHERE THE ACTIVITY IS TO BE UNDERTAKEN**

**NOTIFICATION: BASIC ASSESSMENT FOR THE PROPOSED EXPANSION OF THE BOSHOEK RAILWAY LINE, NORTH-WEST PROVINCE, SOUTH AFRICA**

In accordance with the requirements of Section 41 of the Environmental Impact Assessment (EIA) Regulations (2014), as amended in 2017, made in terms of Section 24 of the National Environmental Management Act (Act No 107 of 1998, as amended), we are required to notify all Interested and Affected Parties (I&APs) of the proposed new development. In accordance with this requirement, please find herewith a letter of notification for a Basic Assessment (BA) process being carried out by EOH Coastal & Environmental Services (EOH CES) in respect of the abovementioned project.

The proposed development will entail the expansion of railway lines by constructing a new loop at the Boshhoek Line. The project will involve the construction of track work (20t axle loading formation layers), required for doubling of the existing line and expansion of the bridge; installation of a localised remote control system to enable the train driver to remotely operate the tangential point sets of both sides of the loop, using a radio control; the extension of 5 box culverts to accommodate the new loop; and the construction of a river bridge, similar to the existing bridge on the main line.

In accordance with the Amended EIA Regulations of 2017, the proposed development will require a BA process. The Department of Environmental Affairs (DEA) will be the decision-making authority for this application. Please note the following:

- EOH CES have been appointed by Transnet SOC Ltd to conduct the BA for the proposed development;
- Following the release of the draft Basic Assessment Report (BAR), a public meeting will be held to present the project and to give the public an opportunity to comment on the proposed development. You will be notified of the date, time and venue for the public meeting accordingly;
- EOH CES would appreciate it if you could kindly confirm your receipt of this notification via email, fax, phone or post.

For more information, please feel free to contact:  
Mr Gideon Raath and/or Mr Roberto Almanza  
Tel: (011) 607 8389 (Extension 8389) | (041) 585 1715  
E-mail: [gideon.raath@eoh.co.za](mailto:gideon.raath@eoh.co.za) | [roberto.almanza@eoh.co.za](mailto:roberto.almanza@eoh.co.za)

Yours sincerely,

Gideon Raath  
Environmental Consultant


Coastal and Environmental Services (Pty) Ltd  
T +27 11 607 8389 | F +27 11 616 9929  
EOH Business Park, Gillooly's View, 1 Osborne Lane, Bedfordview, 2007 | PO Box 59, Bruma 2028  
Reg no: 2012/151872/07 | a member of the EOH Group of Companies  
[www.eoh.co.za](http://www.eoh.co.za) | [www.cesnet.co.za](http://www.cesnet.co.za)

Directors: Z Mayet, JW King, and AM Avis.

# BASIC ASSESSMENT REPORT


## Background Information Document Sent to All I&APs:

**BASIC ENVIRONMENTAL IMPACT ASSESSMENT  
FOR THE  
TRANSNET SOC Ltd BOSHOEK LOOP**



**BACKGROUND INFORMATION DOCUMENT  
&  
INVITATION TO COMMENT:**

Return address for comments:  
EOH Coastal & Environmental Services  
Gideon Raath  
Block D, Gilbody's View Office Park  
(EOH Business Park),  
1 Osborne Lane, Bedfordview,  
Johannesburg, 2007  
Tel: 011 907 6369 (Extension 6369)  
Email: [gideon.raath@eoh.co.za](mailto:gideon.raath@eoh.co.za)



EOH Coastal & Environmental Services 1 Transnet SOC Ltd ED

**AIM OF THIS DOCUMENT**

The purpose of this document is to ensure that people interested in or affected by the proposed project are provided with information about the proposal, the process being followed and provided with an opportunity to be involved in the environmental assessment process.

Registering as an Interested and/or Affected Party (I&AP) allows individuals or groups the opportunity to contribute ideas, issues, and concerns regarding the project. I&APs also have an opportunity to review all reports and submit comments on those reports. All comments received are included in the reports submitted to the Competent Authority (The national Department of Environmental Affairs).

**THE PROPONENT**

Transnet SOC Limited is a South African parastatal that provides freight transport and handling services in South Africa. The company operates through five divisions: Freight Rail, Engineering, National Ports Authority, Port Terminals, and Pipelines. The Freight Rail maintains the rail network across South Africa and it connects with other rail networks in the sub-Saharan region. It also transports automotive products, containers, lime and cement, coal, grains, agricultural fuels, chemicals, fertilizers, chrome and manganese, and granules for mining. The project forms part of the Transnet Waterberg rail corridor expansion between Ermelo and Lephalale located in Mpumalanga and Limpopo respectively.

**THE ENVIRONMENTAL ASSESSMENT PRACTITIONER**

EOH Coastal and Environmental Services (EOH CES) is specialised in environmental and social impact assessments and environmental management and has been appointed by Transnet SOC Ltd to conduct the required Basic Assessment for the proposed project.

**PROJECT DESCRIPTION**

Transnet SOC Ltd has proposed the expansion of the railway lines by constructing a new loop at the Boshhoek line. The strategic importance of this rail section is highlighted by the large volume and variety of commodities currently being transported, such as coal, chrome, iron ore, containers and general freight.

The new Boshhoek Loop will be 1.6km long, between Boshhoek and Iltha mining, in the Rustenburg Local Municipality, Bojanala Platinum District Municipality of the North West Province (Figure 1).

The scope of works includes the following activities:

- i. Construction of track work (20t axle loading formation layers), required for doubling of the existing line and expansion of the bridge;
- ii. Installation of a localised remote control system to enable the train driver to remotely operate the tangential point sets of both sides of the loop, using a radio control;
- iii. The extension of 5 box culverts to accommodate the new loop. Only the length of the culverts will be extended, not the existing design type or location; and
- iv. A river bridge will be constructed at approximately km 135.130, the size and shape of which will be similar to the existing one on the main line.

EOH Coastal & Environmental Services 2 Transnet SOC Ltd ED

Based on the proximity of nearby surface water resources (Figure 2), the contents of which is explained in more detail below, the proposed development will trigger Section 21(c) and 21(i) water uses, as set out in the National Water Act (NWA - Act 36 of 1996), thus requiring a Water Use Licence (WUL), or General Authorisation (GA), depending on the risk assessment conducted by the Aquatic and Wetland Assessment specialist.

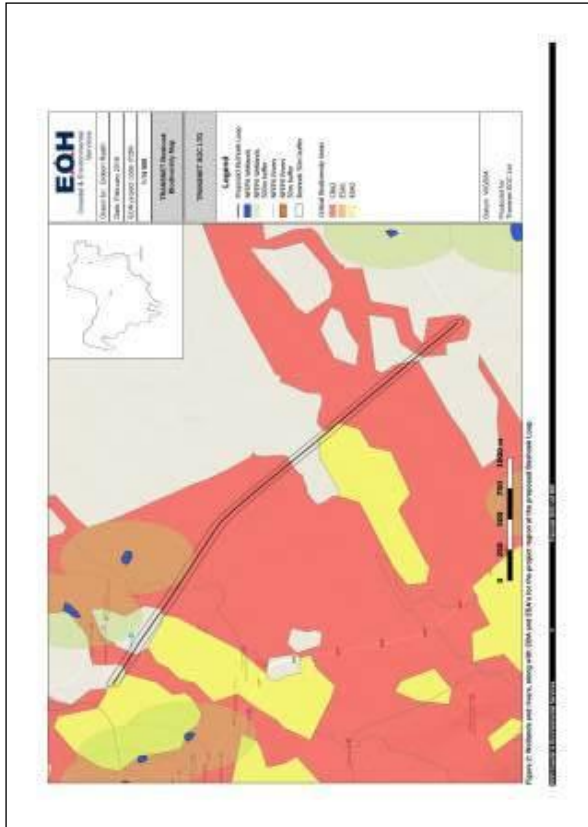
The National Freshwater Ecosystem Priority Areas (NFEPA, 2011) project was a partnership and collaborative process led by the CSIR with the South African National Biodiversity Institute (SANBI), Department of Water Affairs (DWA), the Water Research Commission (WRC), WWF South Africa, as well as expertise from South African National Parks (SANParks) and the South African Institute for Aquatic Biodiversity (SAIAB). The aim was to provide a strategic layout of all national rivers, wetlands and estuaries that should remain healthy. These NFEPA rivers and wetlands are mapped in Figure 2, along with a 500m boundary around wetlands, and a 32m boundary around rivers, in order to show how the project may influence these resources.

Furthermore, the North West Biodiversity Sector Plan (2015) provided input into this project. The purpose of this project was to finalize the biodiversity conservation assessment for the province, which will be used to inform the development of the Provincial Biodiversity Sector plans and bioregional plans. This will also be used to inform Social Development Frameworks (SDFs), Environmental Management Frameworks (EMFs), Strategic Environmental Assessments (SEAs) and in the Environmental Impact Assessment (EIA) process in the province. A Critical Biodiversity Area (CBA) map was developed for the province (which includes Ecological Support Areas (ESA). The CBA map is intended to act as the biodiversity sector's input into multi-sectoral plans and assessments (e.g. SDF, EMF EIA, IDP, etc.). The CBA map product is aligned with national standards for bioregional plans in terms of terminology and methods. These regions have thus also been mapped in Figure 2, to show the relative sensitivity of the different ecological zones applicable to the project.

EOH Coastal & Environmental Services 3 Transnet SOC Ltd ED



# BASIC ASSESSMENT REPORT



### RELEVANT LEGISLATION

The Environmental Impact Assessment (EIA) Regulations, made in terms of Section 24 of Chapter 5 of the National Environmental Management Act (Act No 107 of 1998), and the related Lists of Activities (Government Notices (GN) R. 326, issued on the 07<sup>th</sup> April 2017), specify the activities that require either a Basic Assessment, or a full Scoping and EIA respectively.

The proposed project is subject to a Basic Assessment Report in terms of the following activities, which are likely to be triggered:

Activity Number (2017)	Activity Description	Identification of Component Authority
<b>Listing Notice 1 (GNR 327)</b>		
GN R. 327- No. 12	The development of (i) infrastructure of structures with a physical footprint of 100 square metres or more; Where such development occurs – (a) within a watercourse; (c) if no development setback exists, within 10 metres of a watercourse, measured from the edge of a watercourse; - Excluding – (ii) where such development occurs within existing roads, road reserves or railway line reserves	While the proposed loop construction will occur within the railway line reserve, provision must be made for laydown and construction camp areas, which will not be located within the railway reserve, and will thus trigger this activity
GN R. 327- No. 14	The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres, or more but not exceeding 500 cubic metres.	Operations of a siding include the temporary storage of moderate quantities of dangerous goods which may exceed the threshold identified.
GN R. 327- No. 19	The infilling or depositing of any material of more than 10 cubic metres, into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres, from a watercourse	Due to the alignment of the proposed loop, development within or near a watercourse will definitely occur.
GN R. 327- No. 40	The expansion of – (i) infrastructure or structures where the physical footprint is expanded by 100 square metres or more; or where such expansion occurs – (a) within a watercourse; excluding – (ii) where such expansion occurs within existing roads, road reserves or railway line reserves or moving – (a) will occur behind a development setback; (b) is for maintenance purposes	While the proposed loop construction will occur within the railway line reserve, provision must be made for laydown and construction camp areas, which will not be located within the railway reserve, and will thus trigger this activity.

	undertaken in accordance with a maintenance management plan; (c) falls within the ambit of activity 21 in the Notice, in which case that activity applies; (d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or (e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.	
<b>GN R. 324- No.10(i)(iv)</b>	<b>Listing Notice 3 (GNR 324)</b>	<b>h. North West</b>
GN R. 324- No.12(i)(v)(Appendix 1)	The clearance of an area of 300 square metres or more of indigenous vegetation except; where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.	i. Critical biodiversity areas as identified in a systematic biodiversity plan.
GN R. 324- No.14	The development of – (i) infrastructure	Due to the alignment of the proposed loop, development within or near a watercourse will be definitely occur.

	or structures with a physical footprint of 10 square metres or more; (a) within a watercourse;	plans adopted by the competent authority; vi. Areas within a watercourse or wetland, or within 100 metres from the edge of a watercourse or wetland.
--	--	--

**Please note:** Only summary descriptions are included here for the sake of brevity. Please consult the Government Notices (GN) R.327, 325 and 326, of the EIA Regulations (7<sup>th</sup> April 2017) for a complete listing and description of each activity mentioned here.



# BASIC ASSESSMENT REPORT

## APPROACH TO THIS BASIC ASSESSMENT REPORT

The BA for the proposed project is presently in the planning phase. This phase serves primarily to inform the public and relevant authorities about the proposed project and to determine any impacts. Those impacts will then be extensively addressed during the environmental impact assessment studies. Only after the full Basic Assessment Report has been submitted will the relevant authorities make a decision.

A Draft Basic Assessment Report (dBAR) will be compiled which will comprehensively describe the activities and impacts that the project may have on the receiving environment, including specialist reports and details from the PPP process. The dBAR and Environmental Management Programme (EMP) will be submitted for a 30 day public comment period.

Subsequent to the review and commenting period, a Final BAR will be compiled for submission to Department of Environmental Affairs (DEA). This will include all public comments and response to issues raised by ISAPs.

Should the authorities grant approval via an environmental authorisation, all registered ISAPs will be notified accordingly and given the opportunity to appeal against the decision, should they so wish.



Figure 2: Proposed Basic Assessment Process Including Public Participation.

## POTENTIAL IMPACTS AND BENEFITS

The following general impacts are anticipated from the rail upgrade works:

- Alteration of hydrological regime of rivers
- Light pollution
- Hazardous spillage
- Dust generation
- Soil erosion
- Noise increase
- Heritage impacts
- Vegetation and faunal impacts
- Traffic impacts
- Sedimentation of rivers
- Water contamination
- Social impacts
- Invasive alien species spread
- Stormwater impacts
- Loss of habitat and ecosystem quality
- Loss of soil fertility
- Waste creation and storage

The following specialist studies will be conducted to ascertain any potential impacts, positive and negative, that may occur as a result of the potential authorization of the project, and to propose mitigation measures for the construction and operation phases:

- Phase I Heritage Impact Assessment;
- Ecological Impact Assessment; and
- Aquatic and Wetland Assessment (inclusive of Present Ecological State (PES) and Ecological Importance and Sensitivity (EIS) and risk assessment – in order to satisfy WUL requirements).

## HOW CAN YOU BE INVOLVED?

A Public Participation Process (PPP) is being conducted as part of the BAR. The aim of the PPP is to allow everyone who is interested in, or likely to be affected by, the proposed development to provide input into the process.

The Public Participation Process will include:

- Advertisements in the local newspapers;
- Notice Boards on site;
- Circulation of the BID (this document) to all ISAPs and stakeholders;
- Registration of all ISAPs and stakeholders;
- Community and focus group meetings; and
- Review of all comments by registered ISAPs and stakeholders.

If you consider yourself an interested and/or affected person/party, it is important that you become and remain involved in the public participation process. In order to do so please follow the steps below in order to ensure that you are continually informed of the project developments and will ensure your opportunity to raise issues and concerns pertaining to the project.

**STEP 1:** Please register by responding to our notification and invitation, with your name and contact details (details provided on cover page and below). As a registered ISAP you will be informed of all meetings, report reviews and project developments throughout the EIA process.

**STEP 2:** Please send us any comments, concerns or queries you may have in relation to the proposed rail upgrade activities.

**STEP 3:** Attend meetings that will be held throughout the BAR process. As a registered ISAP, you will be invited to these meetings.

ECHO CES is required to engage with all private and public parties that may be interested and/or affected by the proposed rail upgrade BAR, in order to distribute information for review and comment in a transparent manner.

In the same light, it is important for ISAPs to note the following:

1. In order for ECHO CES to continue engaging with you, please **ENSURE** that you register on our database by contacting the person below.
2. As the BAR process is regulated by specific review and comment timeframes, it is your responsibility to submit your comments within these timeframes.

**I hereby wish to register as an Interested and Affected Party (ISAP) for the Transnet SOC Ltd railway line expansion at the Boshoek Line.**

Name: \_\_\_\_\_

Organization: \_\_\_\_\_

Postal address: \_\_\_\_\_

Email: \_\_\_\_\_

Mobile #: \_\_\_\_\_ Fax #: \_\_\_\_\_

Landline #: \_\_\_\_\_

My initial comments, issues or concerns are: \_\_\_\_\_

Other individuals, stakeholders, organisations or entities that should be registered are:

Name: \_\_\_\_\_

Organization: \_\_\_\_\_

Postal address: \_\_\_\_\_

Email: \_\_\_\_\_

Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_

Landline #: \_\_\_\_\_

Please return details to: Gideon Raath: Block D, Gilbody's View Office Park (ECHO Business Park), 1 Customs Lane, Bedfordview, Johannesburg, 2007.

Tel: (011) 607 8389 (ext: 8388) Email: [gideon.raath@eoch.co.za](mailto:gideon.raath@eoch.co.za)

## BASIC ASSESSMENT REPORT

### APPENDIX E: COMMENTS AND RESPONSES REPORT

The following communication from I&APs has been received to date.

I&AP DETAILS	COMMENT	EAP RESPONSE
<b>Comments Received Following Notification of Intent to Apply for Environmental Authorisation</b>		
<b>Alan Agaienz (NR)</b> Project Manager Design & Construction, The South African National Roads Agency (SOC) Limited 012 426 6211 079 502 3700 <a href="mailto:agaienza@nra.co.za">agaienza@nra.co.za</a>	I will see whether our Planning department have comments.	Noted, thank you.
<b>Cllr Mpho Njikelane</b> Ward 6 Councilor, Rustenburg Local Municipality 076 289 9076 <a href="mailto:letlotlo.bb@gmail.com">letlotlo.bb@gmail.com</a>	I went through your correspondence and take note of it nonetheless how will this be of beneficial to the effected stakeholders. Your expeditious response to the above question will be greatly appreciated but do not be hesitant to give me a shout for any further seeking clarity.	Thank you for your email. We are currently in the process of completing the Environmental Basic Assessment report, which includes a section detailing the positive and negative impacts on the environment, including the relevant/effected stakeholders. This report, when completed, will be made available to all Interested and Affected Parties, including yourself, for comment. You will be notified when the report is made available for public review. Please refer to Section A.10 of this report.
<b>Thato Mjona</b> Department of Water and Sanitation 012 392 1499 083 488 0655 <a href="mailto:mjonat@dws.gov.za">mjonat@dws.gov.za</a>	Reference is made to the Basic Environmental Impact Assessment Report dated April 2018. The Department of Water and Sanitation has evaluated the document and would like the following issues to be addressed in terms of the National Water Act, 1988 (Act 36 of 1998).	Please note that the document dated April 2018 was not the Basic Environmental Impact Assessment Report, but was in fact the Background Information Document (BID) distributed to all I&APs.
	1. It is mentioned on page 3 of the report that based on the proximity of the nearby surface water resources, the proposed development will trigger section 21 (c) & (i) water uses which must be applied for, a risk matrix needs to be compiled in accordance with the General Authorization regulation (notice 509 of 2016) and submitted to the Department.	Please refer to Appendix D (Aquatic and Wetland Impact Assessment) which includes a Risk Matrix compiled in accordance with the General Authorization regulation (notice 509 of 2016) and submitted to the Department.

## BASIC ASSESSMENT REPORT

I&AP DETAILS	COMMENT	EAP RESPONSE
	2. Any oil spillages, diesel or any other hazardous substance should be treated and disposed of at a permitted hazardous landfill site and the Department must be notified within 24 hours.	Noted. This condition has been included in Section D.1 of this report as well as in the Environmental Management Programme (EMPr) included in Appendix G.
	3. No construction or development should take place within the scale of 1:100 year flood line, riparian area or 500m from boundary of wetland without an authorization from this Department.	Noted. Based on the proximity of nearby surface water resources, the proposed development will trigger Section 21c and 21i water uses, as set out in the National Water Act (NWA) (Act No. 36 of 1998, as amended), thus requiring a Water Use Authorisation (WUA) application to the Department of Water and Sanitation (DWS). This application will be submitted to DWS and no construction activities will occur until an authorisation is obtained.
	4. No activity should proceed prior to the necessary authorisation.	



# BASIC ASSESSMENT REPORT

## Comment dated 2 May 2018:

RE: Boshhoek Railway Line: Notification of Application for Environmental Authorisation - Message (HTML)

You replied to this message on 2018/05/02 02:15 PM.

From: Alan Agaienz (NR) <Agaienza@nra.co.za> Sent: Wed 2018/05/02 10:23 AM  
To: 'Roberto Almanza'  
Cc:  
Subject: RE: Boshhoek Railway Line: Notification of Application for Environmental Authorisation

Receipt confirmed.

I will see whether our Planning department have comments.

AA

Alan Agaienz (NR)  
Project Manager Design & Construction

The South African National Roads Agency (SOC)Limited (Reg No: 1998/009584/30) Northern Region 38 Ida Street, Menlo Park, Lynnwood Ridge, Gauteng, 0040.  
D: 012 426 6211 | M: 079 502 3700  
[agaienza@nra.co.za](mailto:agaienza@nra.co.za) | [www.sanral.co.za](http://www.sanral.co.za)

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Please consider the environment before printing.

See more about: Alan Agaienz (NR).

## EAP Response dated 2 May 2018:

RE: Boshhoek Railway Line: Notification of Application for Environmental Authorisation - Message (HTML)

From: Roberto Almanza <r.almanza@cesnet.co.za> Sent: Wed 2018/05/02 02:16 PM  
To: 'Alan Agaienz (NR)'  
Cc:  
Subject: RE: Boshhoek Railway Line: Notification of Application for Environmental Authorisation

Dear Mr Agaienz

Noted, thank you.

Kind regards  
Roberto

**EOH**

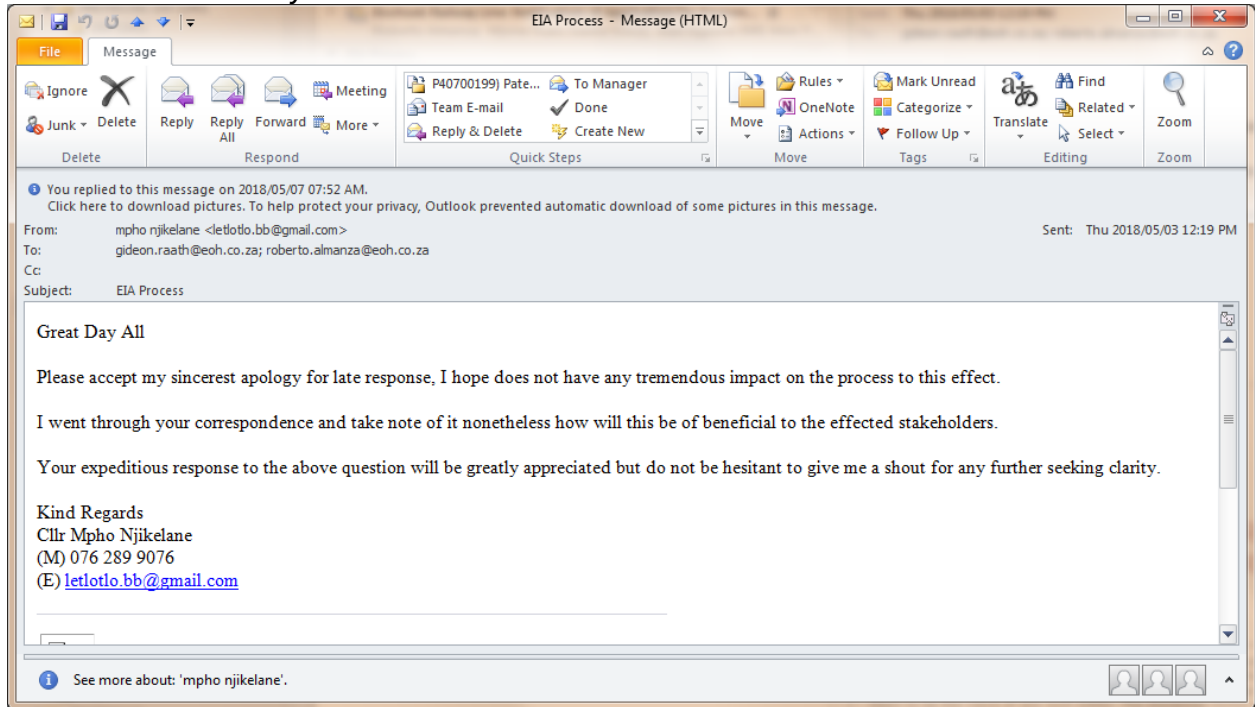
Roberto Almanza  
Environmental Consultant  
EOH Coastal & Environmental Services  
Leaders in environmental and social advisory services  
13 Stanley street, Richmond Hill  
Port Elizabeth | Eastern Cape | South Africa  
tel: +27 (41) 585 1715 | fax: +27 (86) 604 8781 | cell: +27 (82) 930 8711  
[roberto.almanza@eoh.co.za](mailto:roberto.almanza@eoh.co.za) | [www.eoh.co.za](http://www.eoh.co.za) | [www.cesnet.co.za](http://www.cesnet.co.za)

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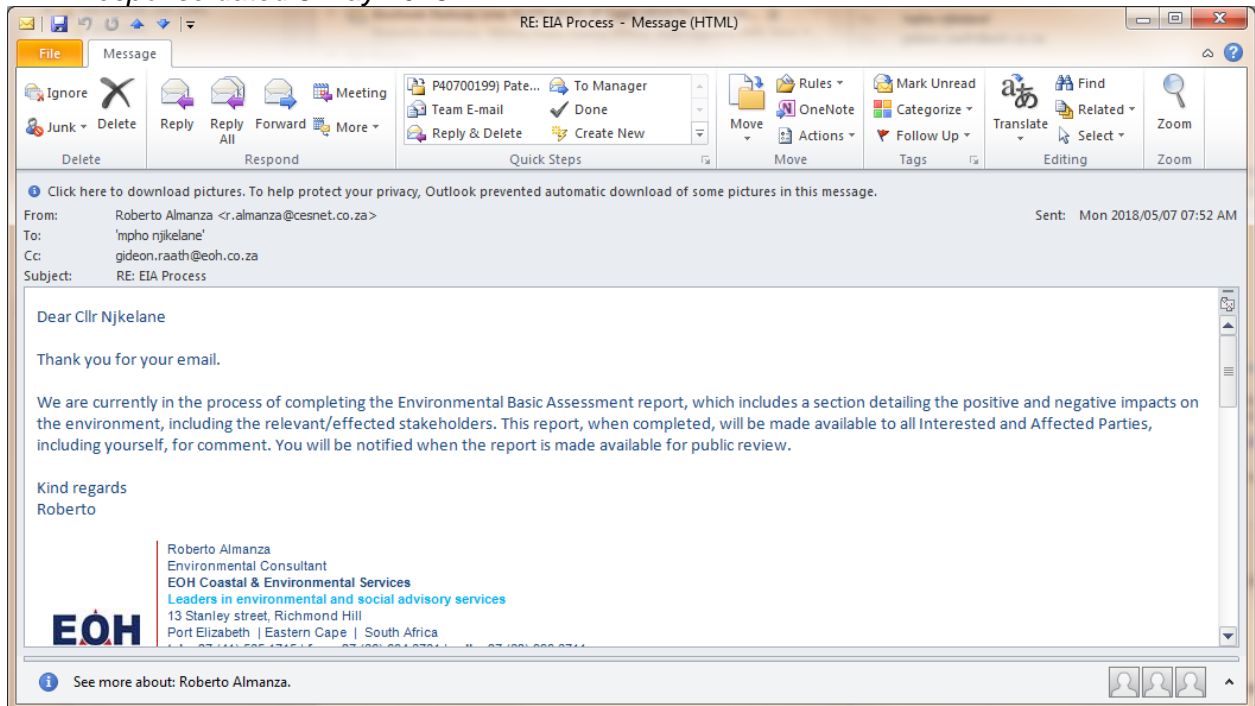
See more about: Roberto Almanza.

# BASIC ASSESSMENT REPORT

## Comment dated 3 May 2018:



## EAP Response dated 5 May 2018:



# BASIC ASSESSMENT REPORT

## Comment dated 3 May 2018:

RE: Boshhoek Railway Line: Notification of Application for Environmental Authorisation - Message (HTML)

You replied to this message on 2018/05/07 07:55 AM.

From: Mjona Thato Danny (GAU) <MjonaT@dws.gov.za> Sent: Thu 2018/05/03 02:42 PM  
To: Roberto Almanza; edzisani.siphugu@transnet.net; Kopano.Ramoloto@transnet.net  
Cc: 'Gideon Raath'; Roy de Kock; Mabitje Patience (GAU)  
Subject: RE: Boshhoek Railway Line: Notification of Application for Environmental Authorisation

Message: SKM\_C55818050314420.pdf (54 KB)

Good day.

Find the attached comments.

Regards

Thato Mjona  
Department of Water & Sanitation  
Private Bag X995, Pretoria, 0001  
15 th floor, Bothongo Plaza-east, 285 Francis Baard (Schoeman) Street  
Tel: +2712392-1499  
Fax: +2712392-1408  
Cell: +27834880655  
e-mail: [mjonat@dws.gov.za](mailto:mjonat@dws.gov.za)

**BEWARE OF FRAUD!**  
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A request for quotations | A request for goods or services | A purchase order that you received  
Verify any financial activity on our toll free number 0800 200 200 Or contact  
Thandi Plaatjie - 012 336 8364, Julia Dirane - 012 336 7780, Anelie Ndamase - 012 336 7432

WATER IS LIFE - SANITATION IS DIGNITY Toll-Free 0800 200 200 [www.dws.gov.za](http://www.dws.gov.za)

water & sanitation  
Department of Water and Sanitation  
REPUBLIC OF SOUTH AFRICA

NDP

See more about: 'Mjona Thato Danny (GAU)'.

## EAP Response dated 7 May 2018:

RE: Boshhoek Railway Line: Notification of Application for Environmental Authorisation - Message (HTML)

From: Roberto Almanza <r.almanza@cesnet.co.za> Sent: Mon 2018/05/07 07:56 AM  
To: 'Mjona Thato Danny (GAU)'  
Cc: 'Gideon Raath'; Roy de Kock; 'Mabitje Patience (GAU)'  
Subject: RE: Boshhoek Railway Line: Notification of Application for Environmental Authorisation

Dear Mr Mjona

Your email and attached letter is noted, thank you.

Kind regards  
Roberto

Roberto Almanza  
Environmental Consultant  
EOH Coastal & Environmental Services  
Leaders in environmental and social advisory services  
13 Stanley street, Richmond Hill  
Port Elizabeth | Eastern Cape | South Africa  
tel: +27 (41) 585 1715 | fax: +27 (86) 604 8781 | cell: +27 (82) 930 8711  
[roberto.almanza@eoh.co.za](mailto:roberto.almanza@eoh.co.za) | [www.eoh.co.za](http://www.eoh.co.za) | [www.cesnet.co.za](http://www.cesnet.co.za)

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See more about: Roberto Almanza.

Attachment to Comment:



water & sanitation

Department:  
Water and Sanitation  
REPUBLIC OF SOUTH AFRICA

North West Provincial Operations, 285 Francis Baard Street, Pretoria, Private Bag X995, Pretoria, 0001  
Tel (012) 3921300, Fax: 012 392 2998, [www.dwa.gov.za](http://www.dwa.gov.za)

Enquiries: P Mabitje  
Email: [MabitjeP@dws.gov.za](mailto:MabitjeP@dws.gov.za)

Tel: 012 392-1500  
Fax: 012 392-1408  
Ref no: 16/27/A220/B22

EOH Coastal & Environmental Services  
Block D, Gillooly's View Office Park  
1 Osborne Lane, Bedfordview  
Johannesburg  
2007

Attention: Gideon Raath

**BASIC ENVIRONMENTAL IMPACT ASSESSMENT FOR THE PROPOSED  
TRANSNET SOC LTD BOSHOEK LOOP IN NORTH WEST PROVINCE.**

Reference is made to the Basic Environmental Impact Assessment Report dated April 2018. The Department of Water and Sanitation has evaluated the document and would like the following issues to be addressed in terms of the National Water Act, 1988 (Act 36 of 1998).

1. It is mentioned on page 3 of the report that based on the proximity of the nearby surface water resources, the proposed development will trigger section 21 (c) & (i) water uses which must be applied for, a risk matrix needs to be compiled in accordance with the General Authorization regulation (notice 509 of 2016) and submitted to the Department.
2. Any oil spillages, diesel or any other hazardous substance should be treated and disposed of at a permitted hazardous landfill site and the Department must be notified within 24 hours.
3. No construction or development should take place within the scale of 1:100 year flood line, riparian area or 500m from boundary of wetland without an authorization from this Department.
4. No activity should proceed prior to the necessary authorisation.

For any enquiries on the above comments, do not hesitate to contact this office on the above indicated contacts.

Yours sincerely

**DIRECTOR: INSTITUTIONAL ESTABLISHMENT**

DATE: 03/05/2018

## BASIC ASSESSMENT REPORT

### APPENDIX E: REGISTERED I&APs

No I&APs have requested to be registered to date. Any I&APs who register during the review period of the Draft Basic Assessment Report will be included in the Final Basic Assessment Report. A full list of the current I&APs is included below.

Name	Affiliation	Email	Landline	Cell	Postal Address
<b>Royal Bafokeng Nation</b>		<b>info@bafokeng.com</b>	<b>014 566 1200</b>		
<b>Denise Fuls</b>	<b>Landowner: South African Ferrochrome &amp; Mining Pty Ltd</b>	<b>denise.fuls@glencore.co.za</b>	<b>014 573 1200</b>		
<b>Tsietsi Johannes Lechaba</b>	<b>Landowner: Tsietsi Johannes Lechaba</b>			<b>(083)6235124</b>	P O BOX 7337 RUSTENBURG 0300
Government	Organisation	Email	Landline	Cell	Postal
Mpho Monyai	Department of Environmental Affairs (DEA)	Mmonyai@environment.gov.za	0123999413		Private bag X 447 Pretoria, 0001. Environment House, 473 Steve Biko Road, Arcadia, Pretoria, 0001.
Dakalo Netshiombo	Department of Environmental Affairs (DEA)	DNetshiombo@environment.gov.za	0123998877		473 Steve Biko road, Arcadia, Pretoria.0083
Ms Rose Masela	Department of Environmental Affairs (DEA) - Biodiversity	rmasela@environment.gov.za	+27 12 399 9511		Department of Environmental Affairs, A2-2-14, 473 Steve Biko Rd, Environmental House, Pretoria.
Danie Smit	DEA: Integrated Environmental Authorisations (Protected Areas)	Dsmit@environment.gov.za	012 310 3659		Private Bag X447, Pretoria, 0001
Ms Toinette Van der Merwe	Department of Environmental Affairs (DEA)	<a href="mailto:tvandermerwe@environment.gov.za">tvandermerwe@environment.gov.za</a>	(012) 395 1782		
Ms Mmatlala Rabothata	Department of Environmental Affairs (DEA)	<a href="mailto:MRabothata@environment.gov.za">MRabothata@environment.gov.za</a>	012 399 9174		P/Bag x 447 Pretoria 0001
Mr Ernest Mokganedi	Department of Environmental Affairs (DEA) - Protected Areas Section	emokganedi@environment.gov.za	012 399 9522		Department of Environmental Affairs, A2-2-14, 473 Steve Biko Rd, Environmental House, Pretoria.
Ms Nozipho Khuzwayo	Department of Transport	KhuzwayoL@dot.gov.za	012 309 3091		
Ms Zandile Maseko	Department of Transport	MasekoZ@dot.gov.za	012 309 3433	082 410 4510	
Mr Khayaletu Matrose	Department of Mineral Resources (DMR)	khayaletu.matrose@dmr.gov.za	(012) 444 3308		



## BASIC ASSESSMENT REPORT

Organs of State	Organisation	Email	Landline	Cell	Postal
Mr Ndlelenhle Zindela	Department of Mineral Resources (DMR)- North West	<a href="mailto:ndlelenhle.zindela@dmr.gov.za">ndlelenhle.zindela@dmr.gov.za</a>	(018) 487 9830		Private Bag A 1, KLERKSDORP, 2570
Ms I Wesi	Department of Mineral Resources (DMR)-North West	<a href="mailto:lpeleng.Wesi@dmr.gov.za">lpeleng.Wesi@dmr.gov.za</a>	(018) 487 9831		
Thozama Basa	Department of Mineral Resources (DMR)-North West	<a href="mailto:thozama.basa@dmr.gov.za">thozama.basa@dmr.gov.za</a>	018 487 4325		
Mr T Phalala	Department of Mineral Resources (DMR)-North West	<a href="mailto:tshilidzi.phalala@dmr.gov.za">tshilidzi.phalala@dmr.gov.za</a>	018 487 9830		Private Bag A 1, KLERKSDORP, 2570
Phumudzo Nethwadzi	Department of Mineral Resources (DMR)-North West	<a href="mailto:phumudzo.nethwadzi@dmr.gov.za">phumudzo.nethwadzi@dmr.gov.za</a>	19 487 9830		Private Bag A 1, KLERKSDORP, 2571
Mr Ntlhopang Dikobe	Department of Community Safety & Transport Management	ndikobe@nwpg.gov.za	018200 8003/8020		
Ms Botlhale Mofokeng	Department of Community Safety & Transport Management	<a href="mailto:bmofokeng@nwpg.gov.za">bmofokeng@nwpg.gov.za</a>	018200 8001 / 8009		
Dr Tseliso Ntili	North West Department Water Affairs,	<a href="mailto:NtiliT@dws.gov.za">NtiliT@dws.gov.za</a>	(018) 387 9500	082 803 3204	Acting Chief Director: North West Private Bag X5 MMABATHO 2735
Ms Wendy Ralekoa	North West Department Water Affairs,	<a href="mailto:RalekoaW@dws.gov.za">RalekoaW@dws.gov.za</a>		082 875 4158	Private Bag X5, Mmabatho, 2735
Mr. J Maluleke	North West Department Water Affairs,	<a href="mailto:malulekej@dws.gov.za">malulekej@dws.gov.za</a>	012 392 1409		Private Bag X5, Mmabatho, 2736
	North West Department of Economic Development, Environment, Conservation & Tourism (NW DEDECT)				
Tshegofatso Lekgari	Department of Rural, Environment and agricultural and development	<a href="mailto:tshegolekgari@nwpg.gov.za">tshegolekgari@nwpg.gov.za</a>	014 597 3597		
Ms. Portia Krisjan	Department of Rural, Environment and agricultural and development	<a href="mailto:pkrijan@nwpg.gov.za">pkrijan@nwpg.gov.za</a>	018 389 5929	082 658 0159	AgriCentre Building Private Bag X2039 Mmabatho 2735
Percy Matlapeng	Department of Rural, Environment and agricultural and development	<a href="mailto:pmatlapeng@nwpg.gov.za">pmatlapeng@nwpg.gov.za</a>	014 597 3597	076 494 1012	
<b>Key Stakeholders</b>	<b>Organisation</b>	<b>Email</b>	<b>Landline</b>	<b>Cell</b>	<b>Postal</b>
Mr P Shwikwane	Bojanala Platinum District Municipality	<a href="mailto:pogisos@bojanala.go.za">pogisos@bojanala.go.za</a>	014 590 4502		
ClIr Nicholas	Bojanala Platinum District Municipality	<a href="mailto:nickrakolle@gmail.com">nickrakolle@gmail.com</a>		082 875 4158	

## BASIC ASSESSMENT REPORT

Rakolle					
Obert Mollele	Rustenburg Local Municipality	<a href="mailto:o.mollele@rustenburgrapidtransport.co.za">o.mollele@rustenburgrapidtransport.co.za</a>	<a href="tel:0145903692">014 590 3692</a>	794168954	
		<a href="mailto:o.molele@rusternburg.gov.za">o.molele@rusternburg.gov.za</a>			
	Rustenburg Local Municipality	<a href="mailto:pmongae@rustenburg.gov.za">pmongae@rustenburg.gov.za</a>	<a href="tel:0145903066">014 590 3066</a>		
A Malla	Rustenburg Local Municipality	<a href="mailto:a.malla@rusternburg.gov.za">a.malla@rusternburg.gov.za</a>	-	078 622 7901	
Mampho Njikelane	Rustenburg Local Municipality	<a href="mailto:m.njikelane@rusternburg.gov.za">m.njikelane@rusternburg.gov.za</a>	-	762899076	
		<a href="mailto:letlotlo.bb@gmail.com">letlotlo.bb@gmail.com</a>		076 289 9076	
Maria Mokgosi	Rustenburg Local Municipality	<a href="mailto:executive.mayor@rustenburg.gov.za">executive.mayor@rustenburg.gov.za</a>	<a href="tel:0145903004">014 590 3004</a>		
Mr Alan Againz	SANRAL SOC LTD	<a href="mailto:AgaienzA@nra.co.za">AgaienzA@nra.co.za</a>		012 426 6211	SANRAL Soc Ltd, 38 Ida Street, Menlo Park, 00817
Daniel Marnewick	BirdLife South Africa	<a href="mailto:daniel.marnewick@birdlife.org.za">daniel.marnewick@birdlife.org.za</a>	<a href="tel:0117891122">(0) 11 789 1122</a>		
Dr Hanneline Smit-Robinson	BirdLife South Africa	<a href="mailto:conservation@birdlife.org.za">conservation@birdlife.org.za</a>	<a href="tel:0117891122">(0) 11 789 1122</a>		
Jacob Madumo	Eskom: Region 2	<a href="mailto:MadumoJL@eskom.co.za">MadumoJL@eskom.co.za</a>	-		
Sibongo Simelane		<a href="mailto:Simelajs@eskom.co.za">Simelajs@eskom.co.za</a>	-		
Zanele Kamwendo		<a href="mailto:KamwenZ@eskom.co.za">KamwenZ@eskom.co.za</a>	-		
Ravi Moonsamy		<a href="mailto:MoonsaR@eskom.co.za">MoonsaR@eskom.co.za</a>	-		
Moreetsi Balepile		<a href="mailto:BalepiMA@eskom.co.za">BalepiMA@eskom.co.za</a>	-		
Lebohang Motai		<a href="mailto:MotoailS@eskom.co.za">MotoailS@eskom.co.za</a>	-		
Julia Swanepoel		Anglo American platinum	<a href="mailto:Julia.swanepoel@angloamerican.com">Julia.swanepoel@angloamerican.com</a>	<a href="tel:0116382210">(0)11 638 2210</a>	
K Phiri	Sedibelo Platinum Mines Limited	<a href="mailto:kphiri@sedibeloplatinum.com">kphiri@sedibeloplatinum.com</a>	<a href="tel:27145551800">27 14 555 1800</a>		
	Wesizwe Platinum	-	<a href="tel:27119944600">27 11 994 4600/</a> <a href="tel:0140041000">014 004 1000</a>		PO Box 343, Waterfall Mall, Rustenburg 0323
John Bolton	Total Pilanesberg Motors	<a href="mailto:pilanesbergmotors@gmail.com">pilanesbergmotors@gmail.com</a>	<a href="tel:0725147444">072 514 7444</a>		
	A. C. Osman General Dealer & Building Materials	-	<a href="tel:0833942634">083 394 2634</a>		

**APPENDIX F**

**IMPACT ASSESSMENT**

**IMPACT ASSESSMENT METHODOLOGY**

**Methodology for Assessing the Significance of Impacts**

**Positive or Negative:** The impact is first classified as a positive or negative impact. The impact then undergoes an evaluation according to a set of criteria.

**Evaluation Criteria:**

<b>Effect</b>	<b>Temporal Scale</b>		
	Short term	Less than 5 years	
	Medium term	Between 5 and 20 years	
	Long term	Between 20 and 40 years (a generation) and from a human perspective also permanent	
	Permanent	Over 40 years and resulting in a permanent and lasting change that will always be there	
	<b>Spatial Scale</b>		
	Localised	At localised scale and a few hectares in extent	
	Study Area	The proposed site and its immediate environs	
	Regional	District and Provincial level	
	National	Country	
	International	Internationally	
	<b>Severity</b>	<i>Severity</i>	<i>Benefit</i>
	Slight	Slight impacts on the affected system(s) or party(ies)	Slightly beneficial to the affected system(s) and party(ies)
	Moderate	Moderate impacts on the affected system(s) or party(ies)	Moderately beneficial to the affected system(s) and party(ies)
Severe/Beneficial	Severe impacts on the affected system(s) or party(ies)	Substantially beneficial to the affected system(s) and party(ies)	
Very Severe/ Beneficial	Very severe impacts on the affected system(s) or party(ies)	Very substantially beneficial to the affected system(s) and party(ies)	
<b>Likelihood</b>	<b>Likelihood</b>		
	Unlikely	The likelihood of these impacts occurring is slight	
	May Occur	The likelihood of these impacts occurring is possible	
	Probable	The likelihood of these impacts occurring is probable	
	Definite	The likelihood is that this impact will definitely occur	

**Description of Impact Significance:**

<b>Significance Rate</b>		<b>Description</b>
<b>Low</b>	<b>Low +</b>	An acceptable impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent the development being approved. These impacts will result in either positive or negative medium to short term effects on the social and/or natural environment
<b>Moderate</b>	<b>Moderate +</b>	An important impact which requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but which in conjunction with other impacts may prevent its implementation. These impacts will usually result in either a positive or negative medium to long term effect on the social and/or natural environment
<b>High</b>	<b>High +</b>	A serious impact, if not mitigated, may prevent the implementation of the project (if it is a negative impact). These impacts would be considered by society as constituting a major and usually long-term change to the (natural and/or social) environment and result in severe effects or beneficial effect.
<b>Very High</b>	<b>Very High +</b>	A very serious impact which, if negative, may be sufficient by itself to prevent implementation of the project. The impact may result in permanent change. Very often these impacts are immitigable and usually result in very severe effects, or very beneficial effects.



**IMPACT ASSESSMENT**

Construction Phase Impacts:

ISSUE	IMPACT	ALTERNATIVE	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (LIKELIHOOD)	SEVERITY/BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
Loss of Natural Vegetation	During the construction phase the clearing of natural vegetation outside the approved development footprint will lead to the unnecessary loss of natural vegetation and habitat for other taxonomic groups.	Preferred Alternative	Direct	Localised	Medium Term	May Occur	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>The construction footprint must be surveyed and demarcated prior to construction commencing.</li> <li>No construction activities will be allowed outside the demarcated footprint.</li> <li>Where vegetation has been cleared, site rehabilitation in terms of soil stabilisation and vegetation must be undertaken.</li> <li>Cleared vegetation must not be piled on top of natural vegetation but must be stockpiled temporarily on bare ground and used as ground cover during rehabilitation. Alternatively, the cleared vegetation can be given to local residents as a source of firewood.</li> </ul>	<b>LOW-</b>
Loss of SCC	During the construction phase the clearing of natural vegetation will lead to the destruction of habitats and identified and unidentified plant and animal SCC.	Preferred Alternative	Direct	Study Area	Medium Term	Definite	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>All areas that will be impacted must be surveyed and demarcated by a suitably qualified specialist prior to vegetation and topsoil removal in order to locate and rescue any SCC within the area and relocate them.</li> <li>The contractor's staff must not poach or trap wild animals.</li> <li>The contractor's staff must not harvest any natural vegetation.</li> </ul>	<b>LOW-</b>
Rehabilitation of Disturbed Areas	During the construction phase poor rehabilitation of disturbed areas may lead to the permanent degradation of ecosystems as well as allow alien vegetation species to expand.	Preferred Alternative	Direct	Localised	Medium Term	Probable	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>All temporarily impacted areas must be rehabilitated with indigenous vegetation as soon as construction in the particular area or phase of work is complete, i.e. rehabilitation is on-going throughout construction.</li> <li>Restoration must be conducted as per the approved Rehabilitation Management Plan.</li> <li>Only topsoil from the development site, which has been appropriately stored, must be used for rehabilitation.</li> </ul>	<b>LOW-</b>
	Due to the proximity of the existing Boshhoek smelter, there are a number of existing disturbed areas surrounding the site.	No-Go Alternative	Direct	Study Area	Long Term	Definite	Moderate	<b>MODERATE-</b>	Not Applicable.	<b>MODERATE-</b>
Control of Alien Species	During the construction phase the removal of natural vegetation creates 'open' habitats that will favour the establishment of undesirable alien plant species in areas that are typically very difficult to eradicate and may pose a threat to neighbouring	Preferred Alternative	Indirect	Study Area	Long Term	Probable	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>The approved Alien Vegetation Management Plan must be implemented during the construction phase to reduce the establishment and spread of undesirable alien plant species.</li> <li>Alien plants must be removed from the site through appropriate methods such as hand pulling, application of chemicals, cutting, etc. as in accordance to the NEMBA: Alien Invasive Species Regulations.</li> </ul>	<b>LOW-</b>

BASIC ASSESSMENT REPORT

	natural ecosystems. There are currently a number of alien species observed throughout the study area. If no development occurs, this vegetation will not be controlled.	No-Go Alternative	Direct Indirect Cumulative	Study Area	Long Term	Definite	Moderate	<b>MODERATE-</b>	Not Applicable.	<b>MODERATE-</b>
Material Stockpiling	During the construction phase stockpiling of construction material within 50 m of a watercourse / wetland could result in erosion and mobilisation of the materials into these systems, resulting in sedimentation and a decrease in water quality and aquatic habitat.	Preferred Alternative	Direct	Study area	Medium Term	May Occur	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>No construction material must be stored within 50 m of a watercourse.</li> <li>Stockpiles within 100 m of watercourses must be monitored for erosion and mobilisation of materials towards watercourses. If this is noted by an ECO, suitable cut-off drains or berms must be placed between the stockpile area and the nearest watercourse.</li> </ul>	<b>LOW-</b>
Water Contamination (Cement / Concrete Material)	During the construction phase, accidental contamination of wet concrete (highly alkaline) in the rivers/wetland systems could result in mortality of macro-invertebrates and fish species that may be present.	Preferred Alternative	Direct Cumulative	Study Area	Short Term	May Occur	Severe	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>During the construction phase no concrete mixing must take place within 32 m of any river bank or wetland system.</li> <li>A serviced fire extinguisher (to neutralise pH levels if a spill occurs) must be available on site in the event that wet concrete is accidentally spilled into the river.</li> <li>The mitigation measures in Appendix B (concrete mixing) must be used in conjunction with this report.</li> </ul>	<b>LOW-</b>
	There are currently a small number of existing developments occurring in close proximity to the rivers/wetlands which may be contaminating the water.	No-Go Alternative	Direct Indirect Cumulative	Study Area	Long Term	Probable	Severe	<b>MODERATE-</b>	Not Applicable.	<b>MODERATE-</b>
Water Contamination (Chemical Spills, sewage etc.)	During the construction phase, accidental chemical spills or other spills (sewage, etc.) in the vicinity of the rivers/wetlands will result in water pollution, adversely affecting the aquatic ecosystem.	Preferred Alternative	Direct Cumulative	Study Area	Short Term	May Occur	Severe	<b>HIGH -</b>	<ul style="list-style-type: none"> <li>During the construction phase no machinery must be parked overnight within 50 m of the rivers/wetlands.</li> <li>All stationary machinery must be equipped with a drip tray to retain any oil leaks.</li> <li>Chemicals used for construction must be stored safely on bunded surfaces in the construction site camp.</li> <li>Emergency plans must be in place in case of spillages onto road surfaces or within water courses.</li> <li>No ablution facilities should be located within 50 m of any river or wetland system.</li> <li>Chemical toilets must be regularly maintained/ serviced to prevent ground or surface water pollution.</li> </ul>	<b>LOW-</b>
	There are currently a small number of existing developments occurring in close proximity to the rivers/wetlands which may be contaminating	No-Go Alternative	Direct Indirect Cumulative	Study Area	Long Term	Probable	Severe	<b>MODERATE-</b>	Not Applicable.	<b>MODERATE-</b>

BASIC ASSESSMENT REPORT

	the water.									
Stormwater management	During the construction phase the inappropriate routing of stormwater will lead to stream sedimentation, adversely affecting the aquatic environment.	Preferred Alternative	Direct	Study Area	Long Term	Probable	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>Flood attenuation and storm water management plans must be drawn up and implemented.</li> <li>An Erosion and Sediment Management Plan must be developed and implemented to minimize the ingress of sediment-laden stormwater into the rivers/ wetlands.</li> </ul>	<b>LOW-</b>
	Due to the existing railway line and associated servitude, soil stormwater management is an existing issue requiring attention at the site.	No-Go Alternative	Direct	Study Area	Long Term	Probable	Slight	<b>LOW-</b>	Not Applicable.	<b>LOW-</b>
Riparian vegetation (river)	During the construction phase, the removal of sensitive riparian vegetation for road/bridge widening and upgrading of culverts will adversely affect the aquatic environment (particularly if detours are used when widening bridges).	Preferred Alternative	Direct	Study Area	Long Term	Probable	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>During the construction phase all riparian vegetation removal must take place under supervision of the Environmental Control Officer (ECO).</li> <li>A Rehabilitation and Alien Vegetation Management Plan must be developed and implemented.</li> <li>Banks should be artificially stabilized as soon as possible if significant riparian vegetation is removed.</li> </ul>	<b>LOW-</b>
Riparian vegetation (wetland)	During the construction phase, indiscriminate removal of riparian vegetation at water crossing sites, within wetlands or encroachment into surrounding areas could lead to destabilisation of bank structures and an increase in erosion rates.	Preferred Alternative	Direct	Study area	Medium Term	May Occur	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>During the construction phase removal of riparian vegetation must take place under the supervision of the ECO.</li> <li>Removal of the alien invasive vegetation should be prioritised.</li> <li>Banks should be artificially stabilized as soon as possible if significant riparian vegetation is removed.</li> <li>Vehicles and machinery should not encroach into areas outside/surrounding the road upgrade footprint.</li> </ul>	<b>LOW-</b>
Soil Compaction and Erosion	There is a possibility that soil may be compacted by the operation and parking of construction vehicles. Compacted soil results in the reduced ability for plant growth and water absorption. The clearing of vegetation will result in the exposure of soils. Exposed soils are easily susceptible to erosion by wind and water (i.e. runoff) during high wind or rainfall conditions.	Preferred Alternative	Direct	Study Area	Short Term	Probable	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>Newly cleared and exposed areas must be promptly rehabilitated to avoid soil erosion;</li> <li>Where necessary, temporary stabilization measures must be used;</li> <li>Plan for the worst case, that is, for heavy rainfall and runoff events, or high winds;</li> <li>Appropriate erosion control measures must be implemented and a monitoring programme established to ensure that no erosion is taking place. At the first sign of erosion the necessary remedial action must be taken;</li> <li>Care must be taken to ensure that runoff is well dispersed so as to limit erosion.</li> </ul>	<b>LOW-</b>
	Due to the existing railway line and associated servitude, soil compaction and erosion is currently occurring on site.	No-Go Alternative	Direct	Study Area	Long Term	Probable	Slight	<b>LOW-</b>	Not Applicable.	<b>LOW-</b>

BASIC ASSESSMENT REPORT

Solid Waste Generation	It is anticipated that the proposed development will produce solid waste in the form of building rubble, excavated soil, excess concrete and general waste, such as litter, during the construction phase.	Preferred Alternative	Direct	Study Area	Short Term	Definite	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>Rubble and other construction waste produced should be re-used if possible and, where it is not possible, must be disposed of at the nearest registered waste disposal facility;</li> <li>Rubble, which will not be reused, must be removed from site on a regular basis;</li> <li>If rubble is stored on site, it should be stored on designated portions of land away from any sensitive areas;</li> <li>Litter must be controlled during construction – adequate bins must be made available on site at all times. These must be made scavenger and weather proof and must be emptied on a regular basis;</li> <li>Construction materials stored at the site camp must be secured – i.e. plastics must be covered to prevent being blown off site;</li> <li>The construction area must remain litter free and regular inspections for litter must be conducted. The activity should not contribute to any surrounding windblown litter;</li> <li>Waste skips must be covered and emptied regularly;</li> <li>Waste manifests must be provided by the Contractor to prove legal disposal;</li> <li>Empty cement bags must be kept in a sealed waste containers;</li> <li>Waste must not to be buried or burned.</li> </ul>	<b>LOW-</b>
	Very little waste pollution is observed on site however, due to the extent of the site, wind-blown litter can accumulate within the site.	No-Go Alternative	Direct	Study Area	Long Term	Probable	Slight	<b>LOW-</b>	Not Applicable.	<b>LOW-</b>
Impacts on Cultural Heritage, Archaeology and Palaeontology	During the construction phase, features of cultural heritage, archaeological or paleontological importance may be damaged or destroyed. The railway bridge, five (5) box culverts and a burial site, which date back to the Late Historical Period, have been identified as significant elements in terms of the National Heritage Resources Act. Please refer to Archaeological Impact Assessment included in Appendix D.	Preferred Alternative	Direct	Study Area	Permanent	Definite	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>Please refer to the Archaeological Impact Assessment included in Appendix D for detailed management and mitigation measures;</li> <li>Should any additional archaeological or cultural sites or objects be located during the construction of the proposed project, it should immediately be reported to the South African Heritage Resources Agency (SAHRA). Failure to report a site or object of archaeological and/or cultural significance is a contravention of the National Heritage Act (Act No. 25 of 1999);</li> <li>All construction site staff should be briefed to immediately report any sites or objects, which are located during the construction of the facility. In the event of finding what appears to be an archaeological site or a cultural and/or historic site or object, work should be terminated until a qualified archaeologist or historian can examine the item.</li> </ul>	<b>LOW-</b>



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	Under the no-go option the archaeological and cultural heritage sites are unlikely to be disturbed, however the existing infrastructure within the immediate area may result in damage to these features.	No-Go Alternative	Direct	Study Area	Permanent	May Occur	Moderate	<b>LOW-</b>	Not Applicable.	<b>LOW-</b>
Air Pollution	During construction, dust may be generated, especially where there is exposed ground. Specific activities that may contribute to the release of dust include offloading and stockpiling of building materials such as sand, storage of excavated materials and movement of heavy vehicles. The generation of dust may be exacerbated during windy, dry periods. In addition to dust, air pollution may result from the exhaust fumes emitted by construction vehicles, especially if the vehicles have not been serviced correctly	Preferred Alternative	Direct	Study Area	Short Term	Definite	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>• Topsoil should be cleared in a phased manner to avoid large areas of bare ground;</li> <li>• Employ dust suppression measures such as wetting of the project area during dry, windy periods (Only water from a licensed source will be used);</li> <li>• Where practical, do not leave large cleared areas exposed for longer than necessary;</li> <li>• The area of disturbance must be kept to a minimum at all times;</li> <li>• Vehicle speed should be limited to the lowest possible, and should not exceed 30km/h on the construction site, service road or gravel roads used to access the site camp.</li> <li>• Construction vehicles must be regularly maintained in order to ensure that no unnecessary exhaust fumes are being emitted.</li> </ul>	<b>LOW-</b>
	Due to the proximity to the Boshhoek Smelter as well as the existing untarred servitude roads, dust is currently experienced on site.	No-Go Alternative	Direct	Study Area	Permanent	Definite	Slight	<b>LOW-</b>	Not Applicable.	<b>LOW-</b>
Noise	Construction activities are associated with an increase in noise levels as a result of construction vehicles, plant generators and various other equipment being used on site. While these activities will produce noise, it is unlikely to have a significant impact on the surrounding area which includes an existing railway station as well as the Boshhoek Smelter.	Preferred Alternative	Direct	Study Area	Short Term	Definite	Low	<b>LOW-</b>	<ul style="list-style-type: none"> <li>• No construction activities may take place between sunset and sunrise;</li> <li>• Machinery that generates noise must be regularly maintained in order to ensure that no unnecessary additional noise is produced;</li> <li>• Equipment with lower sound levels should be selected where feasible.</li> </ul>	<b>NEGLIGIBLE</b>
	Noise is currently experienced on site due to the proximity of the existing Boshhoek Smelter and railway line.	No-Go Alternative	Direct	Study Area	Permanent	Definite	Slight	<b>LOW-</b>	Not Applicable.	<b>LOW-</b>
Visual	Construction vehicles	Preferred	Direct	Study Area	Short Term	Probable	Low	<b>LOW-</b>	<ul style="list-style-type: none"> <li>• Employ techniques to suppress dust and</li> </ul>	<b>NEGLIGIBLE</b>

BASIC ASSESSMENT REPORT

Impacts	and equipment will be evident in the existing landscape. Generation of dust will increase the visibility of the project and may become an eyesore if not managed correctly.	Alternative	Cumulative							<ul style="list-style-type: none"> <li>smoke generation during construction;</li> <li>The contractor should maintain good housekeeping on site to avoid litter and minimise waste;</li> <li>Night lighting of the construction sites should be minimised within requirements of safety and efficiency of the Environmental Regulations for Workplaces in terms of the Occupational Health and Safety Act (Act No. 85 of 1993);</li> <li>Fires and fire hazards need to be managed appropriately.</li> </ul>	
Traffic Impacts	During the construction phase of the proposed development, construction vehicles will be utilizing the existing road network. This may result in the impeding of traffic and damage to existing roads.	Preferred Alternative	Direct Indirect Cumulative	Study Area	Short Term	Definite	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>Large construction vehicles must not be permitted to utilize public roads during peak hours (AM: 06:30 – 08:30 and PM: 16:00 – 18:30);</li> <li>Any damage to public roads directly caused by large construction vehicles operating on this project must be repaired immediately</li> </ul>	<b>LOW-</b>	
	Minor traffic is currently experienced in the area due to the existing Boshhoek Smelter and proximity to the town of Boshhoek	No-Go Alternative	Direct Indirect Cumulative	Study Area	Permanent	Definite	Slight	<b>LOW-</b>	Not Applicable.	<b>LOW-</b>	
Health and Safety Risks	The use of construction machinery during the construction phase poses a potential risk to the health and safety of people working at the construction site as well as to commuters passing the site. The movement of construction vehicles also increases the risk of road accidents. The risk of accidents, fires and explosions must be mitigated effectively.	Preferred Alternative	Direct Indirect	Study Area	Short Term	May Occur	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>All relevant Health and Safety legislation as required in South Africa should be strictly adhered to, including but not limited to the Occupational Health and Safety Act, 1993 (No. 85 of 1993);</li> <li>Smoking should be prohibited in the vicinity of flammable substances;</li> <li>Any welding or other sources of heating of materials should be done in a controlled environment and under appropriate supervision;</li> <li>Ensure availability of fire extinguishers;</li> <li>All employees must be aware of emergency/ contingency plans to ensure an understanding of the hazards and procedures required during an emergency situation;</li> <li>An emergency preparedness and response plan must be implemented for the duration of construction;</li> <li>Records of environmental and/or health and safety related incidents should be maintained and communicated to the relevant persons;</li> <li>The Contractor shall ensure that signage, which should be pictorial and in the vernacular, is erected to warn against entering the construction area;</li> <li>Traffic calming and speed control measures for access to construction sites shall be instigated in consultation with the local authorities.</li> </ul>	<b>LOW-</b>	

**BASIC ASSESSMENT REPORT**

Employment Creation	The construction phase of the proposed development will create a number of temporary jobs for locals within the area.	Preferred Alternative	Direct Indirect Cumulative	Study Area	Short Term	Definite	Moderate Beneficial	<b>MODERATE+</b>	• None required.	<b>MODERATE+</b>
	Under the no-go option a number of employment opportunities will be lost.	No-Go Alternative	Direct Indirect Cumulative	Study Area	Permanent	Definite	Slight	<b>LOW-</b>	Not Applicable.	<b>LOW-</b>
Purchasing of Materials from Local Businesses	Where possible, materials will be sourced from local businesses and this will result in a boost of the local economy of the immediate vicinity and surrounding areas.	Preferred Alternative	Direct Indirect Cumulative	Regional	Short Term	Probable	Moderate Beneficial	<b>MODERATE+</b>	• None required.	<b>MODERATE+</b>
	Under the no-go option a number of business opportunities will be lost.	No-Go Alternative	Direct Indirect Cumulative	Study Area	Permanent	Definite	Slight	<b>LOW-</b>	Not Applicable.	<b>LOW-</b>

**Operational Phase Impacts:**

ISSUE	IMPACT	ALTERNATIVE	NATURE OF IMPACT	SPATIAL SCALE (EXTENT)	TEMPORAL SCALE (DURATION)	CERTAINTY SCALE (LIKELIHOOD)	SEVERITY/BENEFICIAL SCALE	SIGNIFICANCE PRE-MITIGATION	MITIGATION MEASURES	SIGNIFICANCE POST-MITIGATION
Re-habilitation of disturbed areas	During the Operational Phase, poor rehabilitation of disturbed areas may lead to the permanent degradation of ecosystems as well as allow alien vegetation species to expand.	Preferred Alternative	Direct	Study Area	Long Term	May Occur	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>All cleared areas must be continuously rehabilitated with indigenous vegetation post-establishment.</li> <li>The site will be considered as rehabilitated when 75% or more of the impacted areas are covered by primary growth (grasses and/or scrubs).</li> </ul>	<b>LOW-</b>
	Due to the proximity of the existing Boshhoek smelter, there are a number of existing disturbed areas surrounding the site.	No-Go Alternative	Direct	Study Area	Long Term	Definite	Moderate	<b>MODERATE-</b>	Not Applicable.	<b>MODERATE-</b>
Invasion of Alien Species	During the operational phase the loss of natural vegetation will increase the potential invasion by alien plant species. This, coupled with the lack of implementation of the Alien Vegetation Management Plan may result in large scale alien plant invasion.	Preferred Alternative	Direct	Study Area	Long Term	May Occur	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>The approved Alien Vegetation Management Plan must be implemented during the operational phase to reduce the establishment and spread of undesirable alien plant species.</li> <li>Alien plants must be removed through appropriate methods such as hand pulling, application of chemicals, cutting, etc. as in accordance to the NEMBA: Alien Invasive Species Regulations.</li> </ul>	<b>LOW-</b>

BASIC ASSESSMENT REPORT

	There are currently a number of alien species observed throughout the study area. If no development occurs, this vegetation will not be controlled.	No-Go Alternative	Direct Indirect Cumulative	Study Area	Long Term	Definite	Moderate	<b>MODERATE-</b>	Not Applicable.	<b>MODERATE-</b>
Hazardous Waste Generation	Hazardous waste is likely to occur as a result of an increased number of trains passing through the area on a weekly basis. Due to the nature of a freight railway line, leaking oil or fuel may enter or flow into the adjacent areas. In addition to this, operations of a siding include the temporary storage of moderate quantities of dangerous goods, which, if not properly stored and contained, may accumulate and result in hazardous waste entering the surrounding environment.	Preferred Alternative	Direct	Study Area	Long Term	Definite	Severe	<b>HIGH-</b>	<ul style="list-style-type: none"> <li>Hazardous substances should be disposed of at an appropriate classified waste site (unless it is to be recycled by approved methods), as per the National Environmental Management Waste Act 59 of 2008;</li> <li>All contaminated spill fighting material such as fibres, soil, sandbags, etc. must be disposed of in an appropriate hazardous waste landfill site. Proof of this must be made available upon request;</li> <li>The transportation, handling and storage of hazardous and flammable substances must comply with all the provisions of the Hazardous Substances Act 1973, (Act No. 15 of 1973) associated regulations as well as a SANS 10228 and SANS 10089 codes.</li> </ul>	<b>LOW-</b>
Increased Stormwater Runoff and Erosion Potential	The proposed development will consist of more impervious surfaces than what currently exists on site and this will result in increased runoff and potentially increased erosion.	Preferred Alternative	Direct	Study Area	Long Term	Definite	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>A site-specific stormwater management plan must be implemented to manage the increased stormwater runoff;</li> <li>Storm-water structures need to be implemented as part of the development and must link up with the current storm-water infrastructure in order to navigate stormwater and minimise soil erosion;</li> <li>At the first signs of erosion, the correct procedures must be undertaken to manage, resolve and prevent it from occurring.</li> </ul>	<b>LOW-</b>
	There is currently stormwater runoff occurring as a result of the existing railway servitude.	No-Go Alternative	Direct	Study Area	Permanent	Definite	Moderate	<b>MODERATE-</b>	Not Applicable.	<b>MODERATE-</b>
Noise	The operation of a railway loop in the area may result in a slight noise increase due to a higher number of trains passing through the area. The overall noise level should not be any more than what is currently experienced on site.	Preferred Alternative	Direct	Study Area	Long Term	Definite	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>The siding infrastructure must be well maintained in order to avoid unnecessary noise produced near the site;</li> <li>The Rustenburg Local Municipality by-laws relating to noise must be adherer to at all times.</li> </ul>	<b>LOW-</b>
	Noise is currently experienced on site due to the proximity of the existng Boshhoek Smelter	No-Go Alternative	Direct	Study Area	Permanent	Definite	Slight	<b>LOW-</b>	Not Applicable.	<b>LOW-</b>



BASIC ASSESSMENT REPORT

	and railway line.									
Traffic Impacts	The operation of the proposed railway loop will allow for additional use of the Waterberg railway line. This could result in an increase in potential accidents in along the line however, this is unlikely. With the correct management of railway traffic, the proposed railway loop will prevent delays along the railway route and will have an overall positive impact on railway traffic.	Preferred Alternative	Direct Indirect Cumulative	Study Area	Long Term	Definite	Moderate	<b>MODERATE-</b>	<ul style="list-style-type: none"> <li>The proposed railway loop must be operated in line with the relevant Transnet rail standards and train schedules;</li> <li></li> </ul>	<b>LOW-</b>
	Minor traffic is currently experienced in the area due to the existing Boshhoek Smelter and proximity to the town of Boshhoek	No-Go Alternative	Direct Indirect Cumulative	Study Area	Permanent	Definite	Slight	<b>LOW-</b>	Not Applicable.	<b>LOW-</b>
Health and Safety Risks	The operation of a railway siding poses a potential fire and explosion risk due to the storage of a number of potentially dangerous goods. In addition to this, health and safety risks occur with regards to onsite train arrivals and departures.	Preferred Alternative	Direct Indirect	Study Area	Long Term	May Occur	Severe	<b>HIGH-</b>	<ul style="list-style-type: none"> <li>All relevant Health and Safety legislation as required in South Africa should be strictly adhered to, including but not limited to the Occupational Health and Safety Act, 1993 (No. 85 of 1993);</li> <li>Smoking should be prohibited in the vicinity of flammable substances;</li> <li>Ensure availability of fire extinguishers;</li> <li>An emergency preparedness and response plan must be implemented for the operational phase;</li> </ul>	<b>LOW-</b>
Economic Benefits	The railway loop will contribute to increasing, amongst others, the coal-carrying capacity of the Waterberg railway line. This will contribute to the overall transport and delivery of economically valuable goods and facilitate a positive influence on the Gross Domestic Product.	Preferred Alternative	Direct Indirect Cumulative	National	Long Term	Definite	Beneficial	<b>HIGH +</b>	<ul style="list-style-type: none"> <li>None required</li> </ul>	<b>HIGH +</b>
	Under the No-Go option, all economic benefits arising from the proposed development will be lost.	No-Go Alternative	Direct Indirect Cumulative	National	Permanent	Definite	Severe	<b>HIGH-</b>	Not Applicable.	<b>HIGH-</b>

**APPENDIX G**

**ENVIRONMENTAL MANAGEMENT  
PROGRAMME (EMPr)**

## **APPENDIX H**

### **DETAILS OF THE EAP AND EXPERTISE**

DETAILS AND DECLARATION OF THE EAP



**environmental affairs**

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA


**DETAILS OF EAP AND DECLARATION OF INTEREST**

File Reference Number:	(For official use only)
NEAS Reference Number:	12/12/20/ or 12/3/11/L
Date Received:	DEA/EIA

Application for integrated environmental authorisation and waste management licence in terms of the-

- (1) National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014; and
- (2) National Environmental Management Act: Waste Act, 2008 (Act No. 59 of 2008) and Government Notice 921, 2013

**PROJECT TITLE**

Expansion of the Boshhoek Rail Loop from 132.82km to 135.78km, North West Province.

Environmental Assessment Practitioner (EAP):	Mr Roy de Kock		
Contact person:	Mr Roy de Kock		
Postal address:	25 Tecoma Street, Berea, East London		
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Professional affiliation(s) (if any)	SACNASP		

Project Consultant:	Mr Gideon Raath		
Contact person:	Mr Gideon Raath		
Postal address:	1 Osborne Lane, EOH Business Park, Bedfordview, Johannesburg		
Postal code:	2007	Cell:	
Telephone:	011 807 8389	Fax:	011 616 9929
E-mail:	g.raath@cesnet.co.za		



4.2 The Environmental Assessment Practitioner

I, \_\_\_\_\_, declare that –

General declaration:

I act as the independent environmental practitioner in this application;  
I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;  
I declare that there are no circumstances that may compromise my objectivity in performing such work;  
I have expertise in conducting environmental impact assessments, including knowledge of the Act, regulations and any guidelines that have relevance to the proposed activity;  
I will comply with the Act, Regulations and all other applicable legislation;  
I will take into account, to the extent possible, the matters listed in regulation 8 of the Regulations when preparing the application and any report relating to the application;  
I have no, and will not engage in, conflicting interests in the undertaking of the activity;  
I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;  
I will ensure that information containing all relevant facts in respect of the application is distributed or made available to interested and affected parties and the public and that participation by interested and affected parties is facilitated in such a manner that all interested and affected parties will be provided with a reasonable opportunity to participate and to provide comments on documents that are produced to support the application;  
I will ensure that the comments of all interested and affected parties are considered and recorded in reports that are submitted to the competent authority in respect of the application, provided that comments that are made by interested and affected parties in respect of a final report that will be submitted to the competent authority may be attached to the report without further amendment to the report;  
I will keep a register of all interested and affected parties that participated in a public participation process;  
I will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not;  
all the particulars furnished by me in this form are true and correct;  
I will perform all other obligations as expected from an environmental assessment practitioner in terms of the Regulations; and  
I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Disclosure of Vested Interest (delete whichever is not applicable)

I do not have and will not have any vested interest (either business, financial, personal or other) in the proposed activity proceeding other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014;

I have a vested interest in the proposed activity proceeding, such vested interest being:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

  
\_\_\_\_\_  
Signature of the environmental assessment practitioner.

*Earth Care of Environmental Services*  
\_\_\_\_\_  
Name of company.

*15 May 2018*  
\_\_\_\_\_  
Date:

**CURRICULA VITAE OF THE PROJECT TEAM**

**APPENDIX I**

**SPECIALIST'S DECLARATION OF  
INTEREST**



**environmental affairs**

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA


**DETAILS OF SPECIALIST AND DECLARATION OF INTEREST**

	(For official use only)
File Reference Number:	12/12/20/ or 12/9/11/L
NEAS Reference Number:	DEA/EIA
Date Received:	

Application for integrated environmental authorisation and waste management licence in terms of the-

- (1) National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014; and
- (2) National Environmental Management Act: Waste Act, 2008 (Act No. 59 of 2008) and Government Notice 921, 2013

**PROJECT TITLE**

Expansion of the Boshhoek Rail Loop from 132.82km to 135.78km, North West Province.

Specialist:	Ecological specialist		
Contact person:	Roy de Kock		
Postal address:	PO Box 8145 Nahoon		
Postal code:	5210	Cell:	0762819660
Telephone:	043 726 7809	Fax:	
E-mail:	Roy.dekock@eoh.co.za		
Professional affiliation(s) (if any)	SACNASP: 400216/16		

Project Consultant:	EOH Coastal and Environmental Services		
Contact person:	Mr Gideon Raath		
Postal address:	1 Osborne Lane, Bedfordview, Johannesburg		
Postal code:	2007	Cell:	
Telephone:	011 607 8389	Fax:	011 616 9929
E-mail:	g.raath@cesnet.co.za		



4.2 The specialist appointed in terms of the Regulations...

I, Ruy de Kock, declare that --

General declaration:

I act as the independent specialist in this application;

I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;

I declare that there are no circumstances that may compromise my objectivity in performing such work;

I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;

I will comply with the Act, Regulations and all other applicable legislation;

I have no, and will not engage in, conflicting interests in the undertaking of the activity;

I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;

all the particulars furnished by me in this form are true and correct; and

I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

Signature of the specialist:

ECH Coastal and Environmental Services

Name of company (if applicable):

15 May 2018

Date:



**environmental affairs**

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA


**DETAILS OF SPECIALIST AND DECLARATION OF INTEREST**

	(For official use only)
File Reference Number:	12/12/20/ or 12/9/11/L
NEAS Reference Number:	DEA/EIA
Date Received:	

Application for integrated environmental authorisation and waste management licence in terms of the-

- (1) National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014; and
- (2) National Environmental Management Act: Waste Act, 2008 (Act No. 59 of 2008) and Government Notice 921, 2013

**PROJECT TITLE**

Expansion of the Boshhoek Rail Loop from 132.82km to 135.78km, North West Province.

Specialist:	Ecological Specialist (Wetland Assessment)		
Contact person:	Kim Brent		
Postal address:	13 Stanley Street, Richmond Hill, Port Elizabeth		
Postal code:	6001	Cell:	079 5111032
Telephone:	041 585 1715	Fax:	
E-mail:	kim.brent@eoh.co.za		
Professional affiliation(s) (if any)	SACNASP Professional: 116766 SAAB: 565		

Project Consultant:	Dr Alan Carter		
Contact person:	Mr Gideon Raath		
Postal address:	1 Osborne Lane, Bedfordview, Johannesburg		
Postal code:	2007	Cell:	
Telephone:	011 607 8389	Fax:	011 616 9929
E-mail:	g.raath@cesnet.co.za		

4.2 The specialist appointed in terms of the Regulations\_

I, Kim Beent, declare that -

General declaration:

I act as the independent specialist in this application;  
I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;  
I declare that there are no circumstances that may compromise my objectivity in performing such work;  
I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;  
I will comply with the Act, Regulations and all other applicable legislation;  
I have no, and will not engage in, conflicting interests in the undertaking of the activity;  
I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;  
all the particulars furnished by me in this form are true and correct; and  
I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.



Signature of the specialist:

ECH CES

Name of company (if applicable):

15 May 2018

Date:



**environmental affairs**

Department:  
Environmental Affairs  
REPUBLIC OF SOUTH AFRICA


**DETAILS OF SPECIALIST AND DECLARATION OF INTEREST**

	(For official use only)
File Reference Number:	12/12/20/ or 12/9/11/L
NEAS Reference Number:	DEA/EIA
Date Received:	

Application for integrated environmental authorisation and waste management licence in terms of the-

- (1) National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended and the Environmental Impact Assessment Regulations, 2014; and
- (2) National Environmental Management Act: Waste Act, 2008 (Act No. 59 of 2008) and Government Notice 921, 2013

**PROJECT TITLE**

Expansion of the Boshhoek Rail Loop from 132.82km to 135.78km, North West Province.

Specialist:	Neels Kruger	
Contact person:	Neels Kruger	
Postal address:	Postnet Suite 74, Private Bag x07, Arcadia	
Postal code:	0070	Cell: 0629672131
Telephone:	012 751 2160	Fax: 0666072406
E-mail:	neels@erigo3.com	
Professional affiliation(s) (if any)	Association of Southern African Professional Archaeologists (ASAPA): Registered Archaeologist & Culture Resources Management Practitioner	

Project Consultant:	Dr Alan Carter	
Contact person:	Mr Gideon Raath	
Postal address:	1 Osborne Lane, Bedfordview, Johannesburg	
Postal code:	2007	Cell:
Telephone:	011 607 8389	Fax: 011 616 9929
E-mail:	g.raath@cesnet.co.za	

# BASIC ASSESSMENT REPORT

4.2 The specialist appointed in terms of the Regulations,

I, Neels Kruger \_\_\_\_\_, declare that --

General declaration:

I act as the independent specialist in this application;  
I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant;  
I declare that there are no circumstances that may compromise my objectivity in performing such work;  
I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;  
I will comply with the Act, Regulations and all other applicable legislation;  
I have no, and will not engage in, conflicting interests in the undertaking of the activity;  
I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority;  
all the particulars furnished by me in this form are true and correct; and  
I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

  
\_\_\_\_\_  
Signature of the specialist:

Exigo Sustainability

\_\_\_\_\_  
Name of company (if applicable):

2018-05-15

\_\_\_\_\_  
Date:

 15/5/2018  
**DENISE SHELLAINE FOUCHE**  
COMMISSIONER OF OATHS / KOMMISSARIS VAN EDE  
HOPANE ATTORNEYS / HOPANE PROKUREURS  
2 EULOPHIA CORNER / 26 GENERAL VAN RYNEVELD ST  
PERSEQUOR PARK, PRETORIA, 0020  
PRACTISING ATTORNEY / PRAKTYSERENDE PROKUREUR  
Republic of South Africa / Republiek van Suid-Afrika



## **APPENDIX J**

### **ADDITIONAL INFORMATION**

## FARM PORTION DETAILS

21DigitKey (SG Code)	Parcel Type	PARCEL_NO	PORTION	FARM_NAME
T0JQ00000000025900009	FP	259	9	BULTFONTEIN
T0JQ00000000008500000	FP	85	0	
T0JQ00000000025900004	FP	259	4	BULTFONTEIN
T0JQ00000000025900015	FP	259	15	BULTFONTEIN
T0JQ00000000025900007	FP	259	7	BULTFONTEIN
T0JQ00000000010300009	FP	103	9	BOSCHHOEK
T0JQ00000000010300011	FP	103	11	BOSCHHOEK
T0JQ00000000010300146	FP	103	146	BOSCHHOEK
T0JQ00000000010300012	FP	103	12	BOSCHHOEK
T0JQ00000000010300046	FP	103	46	BOSCHHOEK
T0JQ00000000010300138	FP	103	138	BOSCHHOEK
T0JQ00000000010300140	FP	103	104	BOSCHHOEK
T0JQ00000000010300054	FP	103	54	BOSCHHOEK
T0JQ00000000010300052	FP	103	52	BOSCHHOEK
T0JQ00000000010300066	FP	103	66	BOSCHHOEK
T0JQ00000000025900002	FP	259	02	BULTFONTEIN,
T0JQ00000000025900013	FP	259	13	BULTFONTEIN,
T0JQ00000000025900010	FP	259	10	BULTFONTEIN,
T0JQ00000000025500000	FP	255	0	STELLITE
T0JQ00000000026000009	FP	260	09	BOEKENHOUTFONTEIN

## BASIC ASSESSMENT REQUIREMENTS AS PER THE NEMA AMENDED EIA REGULATIONS (2017)

(a)	details of- (i) the EAP who prepared the report; and (ii) the expertise of the EAP, including a curriculum vitae;	Refer to Appendix H of the BAR
(b)	the location of the activity (i) the 21 digit Surveyor General code of each cadastral land parcel;	Refer to Section B, Property description/physical address, in the BAR, as well as Appendix J.
	(ii) where available, the physical address and farm name;	
	(iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	
(c)	a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale;	Refer to Appendix A of BAR.
	or, if it is- (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or (ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	
(d)	a description of the scope of the proposed activity, including (i) all listed and specified activities triggered and being applied for; and (ii) a description of the activities to be undertaken including associated structures and infrastructure;	Refer to Section A, 1. Project Description, in the BAR.
(e)	a description of the policy and legislative context within which the development is proposed including- (i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and (ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments;	Refer to Section A, 11. Applicable Legislation, Policies and/or Guidelines, in the BAR.
(f)	a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Refer to Section A, 10. Activity Motivation, in the BAR.
(g)	a motivation for the preferred site, activity and technology alternative;	Refer to Section A, 2. Feasible and Reasonable Alternatives, in the BAR.
(h)	a full description of the process followed to reach the proposed preferred alternative within the site, including –	
	(i) details of all the alternatives considered;	Refer to Section A, 2. Feasible and Reasonable Alternatives.

	(ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	Refer to Section C and Appendix E of the BAR.
	(iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	Refer to Section C and Appendix E of the BAR.
	(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Refer to Section B of the BAR.
	(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts- (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated;	Refer to Section D and Appendix F of the BAR.
	(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;	Refer to Appendix F of the BAR.
	(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Refer to Section D and Appendix F of the BAR.
	(viii) the possible mitigation measures that could be applied and level of residual risk;	Refer to Section D, Section E, Appendix F and Appendix G, of the BAR.
	(ix) the outcome of the site selection matrix;	No site selection matrix was used, as the site was defined by feasibility studies and simulations carried out by the applicant.
	(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and	Refer to Section A, 2. Feasible and Reasonable Alternatives, in the BAR.
	(xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;	Refer to Section E, Opinion of the EAP, in the BAR.
(i)	a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including- (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or	Refer to Section D and Appendix F of the BAR.

	addressed by the adoption of mitigation measures;	
(j)	an assessment of each identified potentially significant impact and risk, including- (I) cumulative impacts; (ii) the nature, significance and consequences of the impact and risk; (iii) the extent and duration of the impact and risk; (iv) the probability of the impact and risk occurring; (v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided, managed or mitigated;	Refer to Section D and Appendix F of the BAR.
(k)	where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;	Refer to Appendix D of the BAR
(l)	an environmental impact statement which contains- (i) a summary of the key findings of the environmental impact assessment;	Refer to Section D, 2. Environmental Impact Statement, in the BAR.
	(ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and	Refer to Appendix A of BAR.
	(iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	Refer to Section D, 2. Environmental Impact Statement.
(m)	based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management outcomes for the development for inclusion in the EMPr;	Refer to Appendix G of the BAR.
(n)	any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	Refer to Section E and Appendix G of the BAR.
(o)	a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	This report is based on currently available information and, as a result, the following limitations and assumptions are implicit in it: – i) Descriptions of the natural and social environments are based on fieldwork and available literature. Detailed information provided in this report are largely the outcomes of the specialist studies and any methodological or



		<p>knowledge limitations on their behalf are applicable to the findings of this report.</p> <p>ii) It is anticipated that this preliminary layout will be further refined as per the outcomes of these studies and overall BAR findings. A revised layout already taking into account areas identified as sensitive by the specialists should be submitted to the authorities once the Applicant intends to begin construction.</p>
(p)	(p) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	Refer to Section E in the BAR.
(q)	(q) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	Refer to Appendix G of the BAR
(r)	<p>an undertaking under oath or affirmation by the EAP in relation to –</p> <p>(i) the correctness of the information provided in the reports;</p> <p>(ii) the inclusion of comments and inputs from stakeholders and I&amp;APs;</p> <p>(iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and</p> <p>(iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; and</p>	Refer to Appendix H, Appendix D and Appendix E of the BAR.
(s)	where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	Not applicable.
(t)	any specific information that may be required by the competent authority; and	None requested to date.
(u)	any other matters required in terms of section 24(4)(a) and (b) of the Act.	It is the opinion of EOH CES that the procedures for assessment of the environment and the potential impacts the proposed activities may have on the environment are adequate and comply with the requirements of Section 24(4)(a) and (b) of the Act.