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TOKICAP (PTY) LTD: DE ROODEPOORT MINE

SCOPING REPORT

REFERENCE NO.: ***PENDING***

FEBRUARY 2016

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mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

SCOPING REPORT

FOR LISTED ACTIVITIES ASSOCIATED WITH MINING RIGHT AND/OR BULK SAMPLING ACTIVITIES INCLUDING TRENCHING IN CASES OF ALLUVIAL DIAMOND PROSPECTING.

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 AND THE NATIONAL ENVIRONMENTAL MANAGEMENT WASTE ACT, 2008 IN RESPECT OF LISTED ACTIVITIES THAT HAVE BEEN TRIGGERED BY APPLICATIONS IN TERMS OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (MPRDA) (AS AMENDED).

NAME OF APPLICANT:	TOKICAP (PTY) LTD
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FILE REFERENCE NUMBER SAMRAD:	***To be confirmed.***

IMPORTANT NOTICE

In terms of the Mineral and Petroleum Resources Development Act (Act 28 of 2002 as amended), the Minister must grant a prospecting or mining right if among others the mining "will not result in unacceptable pollution, ecological degradation or damage to the environment".

Unless an Environmental Authorisation can be granted following the evaluation of an Environmental Impact Assessment (EIA) and an Environmental Management Programme report (EMPr) in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA), it cannot be concluded that the said activities will not result in unacceptable pollution, ecological degradation or damage to the environment.

In terms of section 16(3) (b) of the EIA Regulations, 2014, any report submitted as part of an application must be prepared in a format that may be determined by the Competent Authority and in terms of section 17 (1) (c) the Competent Authority must check whether the application has taken into account any minimum requirements applicable or instructions or guidance provided by the Competent Authority to the submission of applications.

It is therefore an instruction that the prescribed reports required in respect of applications for an environmental authorisation for listed activities triggered by an application for a right or permit are submitted in the exact format of, and provide all the information required in terms of, this template. Furthermore please be advised that failure to submit the information required in the format provided in this template will be regarded as a failure to meet the requirements of the Regulation and will lead to the Environmental Authorisation being refused.

It is furthermore an instruction that the Environmental Assessment Practitioner must process and interpret his/her research and analysis and use the findings thereof to compile the information required herein. (Unprocessed supporting information may be attached as appendices). The EAP must ensure that the information required is placed correctly in the relevant sections of the Report, in the order, and under the provided headings as set out below, and ensure that the report is not cluttered with un-interpreted information and that it unambiguously represents the interpretation of the applicant.

OBJECTIVE OF THE SCOPING PROCESS

The objective of the scoping process is to, through a consultative process—

a) Identify the relevant policies and legislation relevant to the activity;
b) Motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
c) Identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;
d) identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment;
e) Identify the key issues to be addressed in the assessment phase;
f) agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and
g) Identify suitable measures to avoid, manage, or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

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ACRONYM:	DESCRIPTION:
AEL	Air Quality License in terms of NEM:AQA
AMD	Acid Mine Drainage
ASTM	American Standard for Testing and Materials (followed by protocol number)
BA	Basic Assessment (process or report)
BID	Background Information Documents
CARA	Conservation of Agricultural Resources Act (Act 43 of 1983) as amended
CBD	Central Business District
COP	Codes of Practice
DMR	Department of Mineral Resources
DWS	Department of Water Affairs and Sanitation
EA	Environmental Authorisation in terms of NEMA
EAP	Environmental Assessment Practitioner
ECA	Environmental Conservation Act (Act 73 of 1989) as amended
EIA	Environmental Impact Assessment (process or report)
EIA Regs.	Environmental Impact Assessment Regulation published under NEMA
EIS	Ecological Importance and Sensitivity
EMF	Environmental Management Framework
EMPr	Environmental Management Programme Report
GDP	Gross Domestic Product
GIS	Geographical Information Systems
GN	General Notice (issued under an Act, providing notice or information)
GNR	General Notice Regulation (issued under an Act, providing instruction)
I&AP	Interested and Affected Parties
IAIA SA	International Association of Impact Assessment South Africa
IDP	Integrated Development Plan
IWUL	Integrated Water Use Licence
IWULA	Integrated Water Use Licence Application
IWWMP	Integrated Water and Waste Management Plan
LED	Local Economic Development
MHSA	Mine Health and Safety Act (Act 29 of 1996) as amended
MPRDA	Mineral and Petroleum Resources Development Act (Act 28 of 2002) as

ACRONYM:	DESCRIPTION:
	amended
MR	Mining Right in terms of the MPRDA
MRA	Mining Right Application in terms of the MPRDA
NAEIS	National Atmospheric Emissions Inventory System
NEA	National Energy Act, Act 34 of 2008
NEM:AQA	National Environmental Management: Air Quality Act (act 59 of 2008) as amended
NEM:BA	National Environmental Management: Biodiversity Act (Act 10 of 2004) as amended
NEM:PAA	National Environmental Management: Protected Areas Act (Act 57 of 2003) as amended
NEM:WA	National Environmental Management: Waste Act (Act 39 of 2004) as amended
NEMA	National Environmental Management Act (Act 107 of 1998) as amended
NFEPA	National Freshwater Ecology Priority Areas
NHRA	National Heritage Resources Act (Act No. 25 of 1999) as amended
NPAES	National Protected Area Expansion Strategy
NWA	National Water Act (Act 35 of 1998) as amended
O&AM Area	Operations, Administration and Maintenance Area
PCD	Pollution Control Dam
PDA	Potential Development Area (in terms of the SDF)
PES	Present Ecological State (usually followed by category A-F)
PM10/5/2.5	Particulate Matter up to 10/5/2.5 micrometres
PPP	Public Participation Process
RoD	Record of Decision (for specific application)
RoM	Run of mine (in terms of coal that is extracted but not yet processed)
RWD	Return Water Dam
RWQO	Resource Water Quality Objectives
S&EIR	Scoping and Environmental Impact Reporting process
S&LP	Social and Labour Plan
SACNASP	South African Council for Natural Scientific Professions
SAHRA	South African Heritage Resource Agency
SAMRAD	South African Mineral Resources Administration System
SANBI	South African National Biodiversity Institute

ACRONYM:	DESCRIPTION:
SANS	South African National Standard (followed by standard number)
SASS5	South African Scoring System version 5 (in terms of aquatic invertebrate assessments)
SAWIS	South African Waste Information System
SDP	Spatial Development Plan
SEMA	Specific Environmental Management Acts
SOP	Standard Operating Procedure
SPLUMA	Spatial Planning and Land Use Management Act (Act No.16 of 2013)
Stats SA	Statistics South Africa
WMA	Water Management Area
WML	Waste Management Licence in terms of NEM:WA

1 INTRODUCTION

Tokicap (Pty) Ltd recently acquired the prospecting rights over the farm De Roodepoort 435 IS, located near the town of Ermelo within the Mpumalanga Province (see Table 1), and has applied for a Section 11 transfer of rights.

Table 1: Prospecting rights

Prospecting Right #	Farm Portions
MP 2079PR	Portion 3
MP 4153PR	Portions RE0, RE1, RE2, RE4, 5, RE6, RE7, 8, RE9, 10, 11, 12, 13, 14 of De Roodepoort 435 IS

Tokicap (Pty) Ltd intends to develop the De Roodepoort Mine and as such has intends to submit an application for a Mining Right (MR) in terms of the Minerals and Petroleum Resources Development Act, Act No. 28 of 2002 (MPRDA).

An application for Environmental Authorisation (EA) will be submitted simultaneously, as per the requirements of the National Environmental Management Act, Act No. 107 of 1998 (NEMA) and the NEM: Waste Act, Act No. 59 of 2008 (NEM:WA); read with the requirements of the MPRDA.

South African Law requires that the environmental and social impacts associated with mining activities be assessed to identify any potential negative and / or positive consequences as result thereof. Following which measures must be proposed to avoid or minimise these impacts.

As the application relates to mining activities, a full Scoping and Environmental Impact Report (S&EIR) will be required as well as an Environmental Management Plan (EMP) report.

This report constitutes the Scoping Report and is the first phase in the environmental assessment process. The purpose of the Scoping Report is to identify key environmental issues for further investigation during the Environmental Impact Assessment (EIA) phase of the project; and to outline the plan of study / terms of reference for the preparation of the EIA and EMPr.

2 CONTACT PERSON AND CORRESPONDENCE ADDRESS

2.1 Item 2(a)(i): Details of the EAP who prepared the report

Name of the Practitioner: Jane Kennard & Barbara Kasl

Tel No.: 011 794 7534

Fax No. : 011 794 6946

E-mail address: Info@cabangaconcepts.co.za

2.2 Item 2(a)(ii): Expertise of the EAP

Expertise of the EAP:

- Jane Kennard holds a B.Sc. (Environmental Management & Botany) and a certificate in Project Management.
- Barbara Kasl holds a PhD in Animal, Plant and Environmental Sciences from the University of the Witwatersrand.

Proof of relevant qualifications is attached as Appendix 1.

Summary of EAP's past experience:

Jane Kennard has been working in the environmental field for approximately 10 years; and is a member of IAIA SA, the International Association for Public Participation and the Environmental Law Society South Africa.

Barbara Kasl has been an environmental practitioner for over 10 years and is a registered professional with SACNASP as an ecologist and environmental scientist and a member of the South African Entomological Society.

Both have worked on mineral and environmental applications under the MPRDA and ECA and have been involved with various NEMA, NEM:WA and NEM:AQA applications since the inception of these various acts for various mines and industries. Please refer to Appendix 1 for a list of work experience and past projects.

3 PROJECT DESCRIPTION

3.1 Item 2(b): Description of the property

Table 2: Property details

Farm Name:	De Roodeport 435 IS
Application area (Ha)	3258.9957 Ha
Magisterial district:	Msukaligwa Municipality
Distance and direction from nearest town	5km west of Ermelo
21 digit Surveyor General Code for each farm portion	TOIS00000000043500000 TOIS00000000043500001 TOIS00000000043500002 TOIS00000000043500003 TOIS00000000043500004 TOIS00000000043500005 TOIS00000000043500006 TOIS00000000043500007 TOIS00000000043500008 TOIS00000000043500009

	TOIS00000000043500010 TOIS00000000043500011 TOIS00000000043500012 TOIS00000000043500013 TOIS00000000043500014

3.2 Land tenure & use of adjacent land

The majority of the area is utilised for agricultural purposes, largely grazing with some cultivation. A small borrow pit is situated on the RE2 of De Roodepoort 435 IS; it is thought that this pit was excavated by Transnet however this is yet to be confirmed. The Weideman Aggregate Quarry is situated on the RE7 of De Roodepoort 435 IS.

The Richards Bay Coal Terminal rail line bisects the property, and a number of sidings are located within the area. The N17 connecting Bethal and Ermelo traverses the northern portions, whilst the Eskom power lines traverse the north eastern portion of the mining right area.

Table 3 lists the current surface right holders.

3.3 Surface Right Owners

Table 3: Surface right holders

Property	Portion	Deed of Transfer	Extent per WinDeed Report on 28 January 2016 in Ha	Registered Owner(s) as at 2 February 2016	Share Owned
De Roodepoort 435 IS	RE	T97153/2003	425.6601	Oosthuizen, Petrus Hendrikus Arnoldus	Undivided 50%
		T97153/2003		Oosthuizen, Lourensa	Undivided 50%
De Roodepoort 435 IS	RE 1	T14605/1982	796.9605	Van den Berg, Elsie Aletta	0.083333
		T14606/1982		Van der Merwe, Barbara Magdalena Louw	0.083333
		T26399/1985		Jacobsz, Jan Hendrik	0.333333
		T3804/1977		Bothma, Daniel Abraham Louw	0.166666
		T55110/1987		Van den Berg, Elsie Aletta	0.083333
		T55110/1987		Van der Merwe, Barbara Magdalena Louw	0.083333
		T5970/1930		Bothma, Jan Hendrik	0.166666
		T97153/2003		Oosthuizen, Petrus Hendrikus Arnoldus	Not stated in Windeed Report
De Roodepoort 435 IS	RE 2	T18250/1946	309.3937	Fourie, Maria Magdalena	Full

Property	Portion	Deed of Transfer	Extent per WinDeed Report on 28 January 2016 in Ha	Registered Owner(s) as at 2 February 2016	Share Owned
De Roodepoort 435 IS	3	T74509/1988	429.2867	Swart, Jacobus Albertus	Undivided 50%
		T74509/1988		Swart, Catharina Maria	Undivided 50%
De Roodepoort 435 IS	RE 4	T16382/2015	329.4229	Weideman, Jannie Jacobus	Full
De Roodepoort 435 IS	5	T2262/1941 and T1287/2015	3.4264	National Government of the Republic of South Africa	Full
De Roodepoort 435 IS	RE 6	T16382/2015	250.8868	Weideman, Jannie Jacobus	Full
De Roodepoort 435 IS	RE 7	T16382/2015	166.2230	Weideman, Jannie Jacobus	Full
De Roodepoort 435 IS	8	T15263/2003	354.1594	Oosthuizen, Petrus Hendrikus Arnoldus	Undivided 50%
		T15263/2003		Oosthuizen, Lourensa	Undivided 50%
De Roodepoort 435 IS	RE 9	T18912/2008	160.8571	Hamman Kinders Trust	Full
De Roodepoort 435 IS	10	T62089/1993	1.3501	Transnet Limited	Full
De Roodepoort 435 IS	11	T47481/1993	11.9454	Transnet Limited	Full
De Roodepoort 435 IS	12	T18795/1994	5.1383	Transnet Limited	Full
De Roodepoort 435 IS	13	T18795/1994	4.4588	Transnet Limited	Full

Property	Portion	Deed of Transfer	Extent per WinDeed Report on 28 January 2016 in Ha	Registered Owner(s) as at 2 February 2016	Share Owned
De Roodepoort 435 IS	14	T51055/1993	9.8265	Transnet Limited	Full
Total Extent of Mining Right Application Area			**3258.9957**		

3.4 Location of site

The proposed mining right area is located approximately 5km West of Ermelo / Wesselton within the Gert Sibande District Municipality, specifically the Msukaligwa Local Municipality in the Mpumalanga Province. The total extent of the proposed mineral area is 3,258.9957 hectares

3.5 Item 2(c): Locality Map

The regional and local settings are depicted in Plans 1 and 2 included in Appendix 2.

3.6 Item 2(d): Description of the proposed overall activity

3.6.1 Item 2(d)(i): Listed and specified activities

Table 4 details the main and listed activities proposed for the operations. The proposed infrastructure layout is indicated in Plan 3 included in Appendix 3. Plan 4 (of Appendix 3) indicates the aerial extent of the aforesaid activities, and infrastructure to be placed on site.

Table 4: Listed and specified activities

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)	WASTE MANAGEMENT AUTHORISATION
All infrastructure areas, development footprints and associated activities.	Mineral boundary: 3258.9957 ha (as per WINDEED) Approximate area of surface disturbance: 130ha	x	GNR983, Activity 12 & 28 GNR984, Activity 15 GNR985, Activity 12 & 14	
Boxcut excavation	3ha	x	GNR984, Activity 17	
Topsoil & subsoil stripping & stockpiling into berms	Maximum 130ha area			
Overburden stockpiles (non-carbonaceous)	1.5ha			
Overburden stockpiles (carbonaceous)	1.5ha	X	GNR984, Activity 6	
Blasting	Total underground mine area: 1230ha			
Ventilation shafts (x2)	200m^2 each			
Underground mining	Total underground mine area: 1230ha	x	GNR984, Activity 17	
RoM coal stockpiling	ROM Feed:1.5 ha for 14000 tons	X	GNR984, Activity 6	
Coal product stockpile and loading area	Product coal: 1.9ha for 15000-	X	GNR984, Activity 6	

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)	WASTE MANAGEMENT AUTHORISATION
	20000 tons			
Access and hauling along roads	2500m x 10m	x	GNR983, Activity 24 GNR985, Activity 4	
Crushing & Screening & Processing Plant	1ha	x	GNR983, Activity 22 GNR984, Activity 21	
Coal testing laboratory	Within Crushing & Screening & Processing Plant area			
Water supply and storage (potable & process)	Process water: 1ha for 180m^3/day Potable water: <1ha for 6m^3/day	X	GNR984, Activity 6 GNR985, Activity 2	
Mine water storage	PCD: 1.5ha	X	GNR984, Activity 6	
Integrated discard and slurry dump	30 ha	X	GNR984, Activity 6	GNR921, Activity B(11) & B(10)
Storm water runoff management features	Dirty water trenches: 3000m			
Water & slurry pipelines	<1000m			
Lighting	< 1ha cumulative			
Explosives magazine	0.5ha			

NAME OF ACTIVITY	Aerial extent of the Activity Ha or m²	LISTED ACTIVITY	APPLICABLE LISTING NOTICE (GNR 544, GNR 545 or GNR 546)	WASTE MANAGEMENT AUTHORISATION
Waste generation & storage	0.4 ha within O&AM area			Norms & standards for waste storage
Stores, workshops & washbays	0.6ha within O&AM area			
Ablutions & change house with sewage treatment plants	0.6ha within O&AM area	X	GNR984, Activity 6	
Fuel storage	0.2ha within O&AM area			
Hard park	1 ha			
Administration area (OA&M)	8ha			
Substation and power generation	0.7ha and <1ha cumulative for pylons			
Rehabilitation, including backfilling of boxcut adit	130ha		GNR983, Activity 22	GNR921, Activity A(14) & B(7)

3.6.2 Item 2(d)(ii): Description of the activities to be undertaken

- **Overall project description:**

The mineral to be mined is coal.

Locally the coal seams occur within the Vryheid Formation of the Ecca Group of which the Pietermaritzburg and Vryheid Formations are found in the Ermelo Coalfield. The Ermelo Coalfield stretches from Carolina to Standerton and Wakkerstroom in the Mpumalanga Province. Coal qualities in mineable seams are generally good.

The De Roodepoort Mining Right Area falls on the boundary of the Ermelo Coalfields. There are 4 identifiable coal seams named from top to bottom Seams B, Seam C Upper, Seam C Lower and Seam D. Seams B and D are generally thinner than 0.8 m and therefore omitted from the resources. Only C Seam has the potential to be economically extracted.

The C Seam depth ranges from 95m below surface in the North West and reaches depths of up to 160m at the deepest point on the property. The C Lower Seam is separated from the C Upper Seam by sandstone and shale parting ranging in thickness between 200mm and 1000mm. Thus the operation will be mined via underground, bord-and-pillar methods using continuous miners. The pillars are left behind as a primary roof support system, the safety factor and pillar dimensions will be determined by a rock mechanic for each of the mining blocks.

The underground will be accessed via a boxcut. The boxcut, plant and associated mine infrastructure will be located on portion RE 0 of the Farm De Roodepoort 435 IS. No surface disturbance is expected to occur on the remaining farm portions (these include RE1, RE2, 3, RE4, 5, RE6, RE7, 8, RE9, 10, 11, 12, 13, 14 of De Roodepoort 435 IS); with the exception of ventilation shafts.

Coal will be transferred from the underground to surface by means of a conveyor belt, whereby it will be sent to the plant area for processing (crushing, screening and washing). Mine residue from the plant will be disposed of onto an integrated disposal dump. The plant will run 24/7. Should it prove viable, a filter press will be installed to recover fines from the slurry, allowing dried fines to be mixed with product.

The primary product will be produced for the Eskom market and if export prices improve sufficiently then a dual product for the international export market and for the Eskom market will be produced.

The expected life of mine (LoM) is 20 years.

- **Infrastructure requirements:**

The mine's infrastructure will largely be located on Portion RE0. The proposed layout is indicated in Plan 3, included in Appendix 3. The proposed infrastructure for the operations includes:

Table 5: Proposed Infrastructure

FARM PORTION:	SURFACE INFRASTRUCTURE:
RE 0	Internal haul and access roads (in addition, it is anticipated that the intersection to the N17 will need to be upgraded) Underground Access Area: - Soil berms - Overburden stockpiles - Boxcut and shaft - Pollution Control Dam/s - Overland Conveyor to RoM feed Stockpile - Ventilators Plant Area: - Various feed conveyors - Coal stockpile and loading areas - Crushing, screening and wash plant - Water supply dam - Ablution facilities - Weighbridge - Topsoil and subsoil berms - Clean and dirty water trenches - Integrated discard and slurry disposal dump Mine operational, administration and maintenance area (O&AM area): - Security access and control - Parking - Administrative area and offices - Training facilities - Change house and ablution facilities - Lamp room and crush - Workshop and washbays - Diesel storage and handling area (max. 80m^3) - Hard park - Sewage treatment plant - Laboratory - Magazine - Power generation (power lines from substation) - Lighting - Salvage yard - Conveyor service yard - Contractors yard
RE1, RE2, 3, RE4, 5, RE6, RE7, 8, RE9, 10, 11, 12, 13, 14	Surface infrastructure limited to ventilators however, these properties will be undermined.

Plan 5, included in Appendix 3 is a close up of the infrastructure area to be located on Portion RE0. Plan 6, included in Appendix 3 further focusses on the operations, administration and maintenance area (O&AM).

- **Power supply:**

The total demand is expected to be 10MVA; this will comprise of 1MVA for the O&AM area, 2MVA for the plant and 7MVA for the underground.

An application will be made to connect to the local power grid. It is anticipated that a 132KVA substation will be constructed at the O&AM area.

- **Water supply:**

Water for domestic use will be sourced from boreholes and stored within a reservoir/tank at the O&AM area. It is anticipated that approximately 6,000m^3 per annum will be required for domestic and potable use; this is based on 70 litres per person per day.

Process water will initially be sourced form rain water and the borehole; once in steady state production this water will be pumped from the underground workings. Make water requirements are as follows: 65,900m^3 per annum for the plant and 276,500m^3 per annum underground.

- **Water management:**

The proposed mine falls within the C11F quaternary catchment of the Upper Vaal catchment management area. A number of streams and potential wetlands occur within the mining right area. Surface infrastructure has been positioned to avoid these as far as possible. No stream diversions are anticipated however, a number of these water resources will be undermined. The necessary water use license applications will be made to the Department of Water Affairs and Sanitation (DWS).

Berms, and if necessary, trenches will be constructed around areas of activity to divert upstream clean water runoff around the dirty water footprint area into natural drainage lines; flow dissipaters will be constructed where necessary. Dirty water from the plant area will be directed to the PCD.

Supernatant water from the integrated disposal dump will be piped to the PCD.

Water from the underground will be stored in underground dams, as well as within a surface dam / sump for use within the process.

Water for dust suppression will be sourced from the underground and / or the PCD; it is anticipated that between 20 – 30m^3 will be utilised for dust suppression per day.

Water will be recycled as far as possible, and the mine will implement a zero discharge policy.

- **Waste management:**

General and hazardous waste will be generated on site:

- General waste includes office and domestic waste; construction and building waste; scrap metal; old tyres and conveyor belts; scrap metal and wood.
- Hazardous waste includes mine residue; used hydrocarbons; contaminated construction and building waste.

No landfill site will be constructed on site. All waste will be separated and stored as per the relevant Norms and Standards where applicable. Waste will be recycled and sold/given to interested parties as far as possible. Waste for disposal will be collected by a reputable contractor for transport to a suitably licensed facility.

Mine residue will be disposed of at the integrated discard and slurry disposal site and will be managed according to GNR632 (2015) of NEM:WA regarding planning and management of residue stockpiles and deposits.

- **Employment requirements:**

It is anticipated that the operation will be owner run, with 325 permanent staff and approximately 12 contracted employees.

4 ITEM 2(e): POLICY AND LEGISLATIVE CONTEXT

Table 6 outlines the applicable legislation and guidelines that are considered to be applicable to the proposed project; and which were considered at the time of compiling this report

Table 6: Applicable legislation and guidelines

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED
Acts and Associated Regulations Pertaining to Mining and Environment	
The Constitution of South Africa, 1996 (Act 108 of 1996)	
Section 24: Everyone has the right to an environment that is not harmful to their health or well-being; to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that prevent pollution and ecological degradation; promote conservation; and secure ecological sustainable development and use of natural resources while promoting justifiable economic and social development.	Alternative activities have been considered that are less taxing on the environment and resources where possible. Will also be incorporated into the EMPr.
Section 32: Every person has a right to information held by the State and to information held by other people that is required in the exercise or protection of a right.	The Scoping Report & all other reports will be made available for public review as per the PPP section of this report.
Section 33: Everyone has a right to just and procedurally fair administrative action.	The Appeal Process will be described to all I&APs through the RoD notification described in the PPP section of this report.
Minerals and Petroleum Resources Development Act (MPRDA), Act No. 28 of 2002 as amended and associated regulations.	
The MPRDA and its Regulations (MPRDA Regulation GNR527, 23 April 2004 as amended by: GNR R1288 dated 29 October 2004; GNR1203 dated 30 November 2006; and GNR349 dated 18 April 2011) were	The process on SAMRAD is being followed & submission

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED
followed in terms of the mining right application process. The Act and Regulations will further be adopted in future for any amendments, transfers, renewals, etc. as may be needed with regards to the mining right. The Act and Regulations will further be adopted during application for a closure certificate on completion of mining activities at site. All requirements in terms of submission of documents to authorities as stipulated in the Act and its Regulations, or as stipulated in the Mining Right issued by the Department of Mineral Resources (DMR) will be adhered to in future. Due to the proximity of the mine to urban areas, it is expected that staff and contractors will have accommodations and no permanent living areas will be provided on site. Where relevant Regulations pertaining to living conditions of employees and contractors (Government Notice 445 in Government Gazette 32166 dated 29 April 2009) will be adhered to. Regulations pertaining to codes of conduct (Government Notice No. 446 in Government Gazette 32167 dated 29 April 2009) will be applied on site. Financial provision will be compiled using the DMR Quantum of financial provision for closure guideline document.	is being made online. Closure objectives that will be reported in the EMPr must be considered. Will be addressed in the monitoring section of the EMPr. Not applicable at this stage. This will be worked into the mine's Code of Practice (COP) and Standard Operating Procedures (SOPs) Estimated summary is provided in scoping and full assessment will be included in the EMPr.
<u>Mine Health and Safety Act (MHSA), Act 29 of 1996 as amended and its associated regulations:</u> The mine will operate in accordance to the MHSA and associated regulations. This includes creating a safe and healthy work environment and providing the necessary protection and training to staff to	Although not strictly addressed in the Scoping

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED
ensure their health and safety is not compromised. Hazardous substances will be adequately stored and labelled. All regulations pertaining to safe use, handling, processing, storage, transport and disposal of hazardous substances; explosives and mixing substances to make explosives; protection of equipment, structures and water sources and the surface of land; the making safe of undermined ground and dangerous excavations, tailings, dumps and structures connected to mining operations; the monitoring and control of those environmental aspects which may affect the health and safety of persons will be applied on site. Regulations pertaining to provision of water, ablution facilities and staff health and safety will be applied on site.	Report or EMPr, protecting the environment contributes to a safe working environment. MHSA regulations will be worked into the mine's Code of Practice (COP) and Standard Operating Procedures (SOPs).
National Environmental Management Act (NEMA), Act 107 of 1998 as amended and its associated regulations: NEMA and its Regulations (GNR982 – EIA Regulations; NEMA Regulation GNR983 – Listing Notice 1; NEMA Regulation GNR984 – Listing Notice 2; and NEMA Regulation GNR985 – Listing Notice 3) were followed in terms of identifying activities for which an Environmental Authorisation (EA) is required and for compiling the S&EIR reports (as per the template provided by the DMR) and the closure plan, which should be considered a draft plan. The closure plan will be finalised and submitted once application for a closure certificate is made on completion of mining. NEMA and its Regulations (GNR807 – PPP guideline) were followed in terms of Public Participation Process (PPP). NEMA principals were/will be considered in the compilation of the various environmental reports (incl. specialist studies) and have been considered in the overall environmental objectives. NEMA Regulations pertaining to the financial provision for prospecting, exploration, mining or production activities (GNR1147 –20 November 2015) will be followed when accessing the quantum for financial provision.	Regulations utilised to determine the listed scheduled activities requiring environmental authorisation (Item 2d). PPP completed in terms of the regulation. On-going consideration through EIA and EMPr. Will be incorporated into the EMPr.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED
The Act and Regulations will further be adopted during application for a closure certificate on completion of mining activities at site.	A draft closure report will be submitted with the EMPr as required under NEMA.
All requirements in terms of submission of documents to authorities (including but not limited to updated financial provision, and reports on monitoring and compliance of the EMPr and conditions of the EA) as stipulated in the Act and its Regulations, or as stipulated in the EA issued by the DMR will be adhered to in future.	Will be addressed in the monitoring section of the EMPr.
National Environmental Management: Waste Act (NEM:WA), Act 59 of 2008 as amended and its associated regulations.	
In terms of the Act, all mine residues are listed under the hazardous category in schedule 3 of NEM:WA. In terms of this application, non-carbonaceous rock and soils are considered inert as stipulated in Annexure 1 of the National Waste Information Regulation (GNR625, August 2012) as these materials contain no hazardous substances that will impair the environment.	Mine residues defined and handled accordingly.
The regulations and various addendums pertaining to scheduled waste activities (GNR921, November 2013) were consulted to determine the applicable waste activities that have been included in a combined application with the NEMA activities in terms of a Waste Management License (WML) application. Mine residue was very recently included (under GNR633 in GG 39020, July 2015) as Activity 11 under Category B.	Regulations utilised to determine the scheduled activities requiring licencing (Item 2d).
The regulation on planning and management of residue stockpiles (GNR632, July 2015) will be incorporated into the management plan for mine residue stockpiles.	Will be incorporated into the EMPr.
The National Waste Information Regulation (GNR625, August 2012) will be complied with once construction commences in terms of registering and reporting to the South African Waste Information System (SAWIS).	Tokicap (Pty) Ltd will register and report on SAWIS. This will be included in the EMPr.
The Waste Classification and Management Regulations (GNR634, August 2013) will be complied with in	This will be incorporated,

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED
terms of classification of relevant waste (excavated non-carbonaceous and non-hazardous earth material and domestic waste collected by the municipality is excluded) and record keeping and waste manifest systems.	where relevant, into the management plan.
The discard, coal and carbonaceous overburden will be assessed in terms of GNR635, August 2013 for Assessment of Waste for Landfill. The assessment completed with regards to this regulation will determine the type of barrier system that would be required for coal stockpiling areas, slurry dams, carbonaceous material stockpiles and PCDs as stipulated in GNR636, August 2013.	This will be completed during the EMPr phase.
The waste management plan has considered the norms and standards for the storage of waste on site as per GNR926, November 2013.	This will be incorporated, where relevant, into the management plan.
National Water Act (NWA), Act 36 of 1998 as amended and its associated regulations.	
The water use licence application (IWULA) will be completed in terms of the draft Regulation GN126, February 2015. Any additional PPP requirements as stipulated in the draft guideline will also be complied with.	Tokicap (Pty) Ltd has contracted consultants to complete the IWULA and IWWMP. A pre-application meeting will be scheduled.
The associated Integrated Water and Waste Management Plan (IWWMP) will be compiled as per the 2010 IWWMP guidelines and any other instruction received from Department of Water Affairs and Sanitation (DWS) during the pre-consultation process.	
GNR704 will be utilised to develop the storm water management plan and where needed, the relevant exemptions will be applied for with the IWULA.	This will be incorporated into the management plan of the EMPr.
National Environmental Management: Biodiversity Act (NEM:BA), Act 10 OF 2004 as amended and its regulations, including various regulations pertaining to protected species and to alien and invasive species.	
SANBI website and GIS tools were utilised to determine whether any nationally protected and threatened ecosystems occur on site. Therefore NEMA Listing Notice 3 activities have been included in the EA application.	Regulations utilised to determine the need for any listed scheduled activities under GNR 985 (Item 2d).

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED
Protected trees occur on site and the relevant applications, as needed under NEM:BA, will be made for the removal of such species in areas targeted for surface disturbance.	
The alien invasive management system has/will consider the listed alien and invasive species published under NEM:BA as well as CARA.	An initial management plan will be incorporated into the EMPr.
National Environmental Management: Air Quality Act (NEM:AQA), Act 39 of 2004 as amended and its associated regulations.	
GNR893, November 2013 was consulted regarding Scheduled Listed Activities. No Air Emissions Licence (AEL) is relevant to the proposed mine and no application is required.	No AEL is required for the proposed project.
The Air quality dispersion modelling will be conducted as part of the application. The dispersion modelling will take into account any requirements listed in Regulation GNR533, July 2014.	This will be completed during the EIA and EMPr phase.
As much as it is not a legal requirement for mines currently, dust monitoring will be included in the EMPr commitments due to the fact that mines are listed as Group C emitters (GNR283, April 2015). The dust monitoring will be conducted and measured against the dust fallout rates published in GNR827, November 2013.	Dust monitoring will be incorporated into the monitoring plan of the EMPr report.
As a Group C controlled emitter, the mine will be required to register and report to the National Atmospheric Emissions Inventory System (NAEIS) as per GNR283 and GNR284, April 2015.	Tokicap (Pty) Ltd will register and report on NAEIS.
The Municipality charged with the enforcement of NEM:AQA, will be included as an I&AP through the PPP. Any requirements made by the Air Quality Control Officer will be incorporated into the EMPr. If any additional monitoring is requested, such as PM10 or CO, then these will be measured against the National Ambient Air Quality Standards, published in Regulation GN1210, December 2009.	Any comments have been / will be incorporated into the PPP of this and future reports (Item h(iii)).
Regulations (GN541, July 2015) pertaining to greenhouse gas emissions reporting will be applied on site, if relevant, once the regulations are promulgated.	Draft regulation which will be applied if relevant.
National Environmental Management: Protected Areas Act (NEMPAA), Act 57 of 2003 as amended and its	

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED
associated regulations. SANBI website and GIS tools were utilised to determine that no protected areas occur on site. Therefore there is no restriction on mining in terms of protected areas.	Regulations utilised to determine the need for any additional listed scheduled activities under GNR 985 (Item 2d).
Conservation Of Agricultural Resources Act (CARA), Act 43 of 1983 and Regulation GNR 1048 relating to alien and invasive species. The alien invasive management system has/will consider the listed alien and invasive species published under CARA as well as NEM:BA.	An initial management plan will be incorporated into the EMPr.
Environment Conservation Act (ECA), Act 73 of 1989 as amended and its associated regulations. Much of the Act has been repealed by the various Specific Environmental Management Acts (SEMAs). The following is still relevant: The EIA and EMPr will assess the impacts associated with noise, as is necessary due to the change in land use. Noise management will consider ECA requirements.	Baseline readings will be taken and management measures will be incorporated into the EMPr.
National Heritage Resources Act (NHRA), Act No. 25 of 1999 A heritage impact assessment has been completed in terms of the prescribed requirements as the proposed project has a linear activity associated with the railway link of more than 300m, affects more than 5 000m^2; and requires re-zoning of a site of more than 10 00m2.	The findings will be incorporated in the EIA and EMPr.
Legislation not listed as a Specific Environmental Management Act (SEMA): May have implications on the environment	
Spatial Planning and Land Use Management Act (SPLUMA), Act No.16 of 2013, Promulgated 1 July 2015. The Act and Regulations feed into the DRAFT Listing Notice 4 (GN737, August 2014) activities under NEMA and may result in amendment to application process depending on the transitional arrangements provided for in the notice once promulgated.	Draft regulation which will be applied depending on final requirements.

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED
Land use schemes must be implemented within 5 years of the promulgation of the Act and will stipulate land use and development rights over targeted land. Until such time that land use schemes are developed, town planning schemes will determine land use and development rights. Where no town plan exists, only purposes listed in Schedule 2 of the Act can be carried out on the land, which includes mining purposes.	
Hazardous Substances Act, Act No. 15 of 1973 Hazardous substances handling on site will comply with the prescription of the Act.	This will be included in the management plan of the EMPr.
Explosives Act, Act 15 of 2003 The relevant permits will be obtained for storage of explosives as is necessary. Magazine sites will be inspected and approved by Chief Inspectorate as is necessary.	This will be included in the management plan of the EMPr.
Guidelines and Standards	
South African National Standard: SANS 10234:2008 - Globally Harmonized System of classification and labelling of chemicals (GHS). The SANS standard is specifically referred to in GNR634, August 2013 for waste classification and forms the basis for classification of relevant waste on site.	Used to determine thresholds and guide the management plan.
ASTM D1739, 1970 or equivalent approved protocol for dust monitoring. Sets the requirements for dust monitoring as specifically stipulated in GNR827 of November 2013.	Used to determine thresholds and guide the management plan.
South African National Standard: SANS 10228:2006 - The identification and classification of dangerous goods for transport The standard was consulted to determine which substances on site classified as dangerous goods in terms of the specific NEMA activities relating to storage of dangerous goods on site.	Used to determine thresholds and guide the management plan.
South African National Standard: SANS 241-1:2011 – Drinking Water Specification: Physical, aesthetic, operational and chemical & microbial determinants. SANS standard will be utilised for comparative purposes to determine the quality of water at site. Where Resource Water Quality Objectives (RWQOs) are provided by DWS, then these will also be utilised for comparative purposes to determine water acceptability for drinking, domestic, livestock watering and	Used to determine thresholds and guide the management plan

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED
irrigation purposes. Bacterial counts will in future also be compared to SANS standards.	
South African National Standard: SANS 10103:2004 The measurement and rating of environmental noise with respect to land use, health, annoyance and to speech communication.	Used to determine thresholds and guide the management plan
The Municipality's Spatial Development and Economic Development Plans: These will be incorporated primarily into the Social and Labour Plan.	Addressed in S&LP.
South African Biodiversity Institute website for various GIS tools including: Soil types; Vegetation types; Biomes; Threatened ecosystems; Water management area; FEPA wetlands; and Landcover.	Used to guide the application requirements and provide desktop information (Item h(iv)(1))

5 ITEM 2(f): NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES

The area falls within the Mpumalanga coal fields and as such the economy of the surrounding area is predominantly based on coal mining (and associated services such as coal hauling); agriculture; forestry and timber processing. Coal mining is the third biggest employer in South Africa (Stats S.A).

According to Census 2011 (Stats S.A.), the unemployment rate for the Msukaligwa Local Municipality is some 26.8%. The proposed mining operation will create employment for 325 permanent staff and approximately 12 contracted employees. The project will further create employment through obtaining supplies and services within the area.

South Africa's energy is predominately coal fuelled. According to the Department of Energy about 77% of South Africa's energy needs are provided by coal. The Camden power station falls within the Msukaligwa Municipality less than 20km from the proposed site, and thus the mining right is ideally situated to supply coal to the power station.

Apart from local markets, South Africa is the fourth largest coal producer in the world. Approximately 28% of South Africa's coal is exported (Stats S.A.). The Richards Bay coal line traverses the mining right area; and a number of sidings exist in the immediate vicinity.

The primary product will be produced for the Eskom market and if export prices improve sufficiently then a dual product for the international export market and for the Eskom market will be produced.

The project will contribute directly and indirectly to the Country's GDP, as well as provide employment to members of the surrounding communities.

As the operations will be mined via underground methods, the mine will not exclude other land uses from occurring.

6 ITEM 2(g): PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED

It is anticipated that construction activities will take approximately 1 year, the life of mine during operations is expected to be 20 years, followed by 3 years for decommissioning and closure activities.

Thus the EA and waste management license are being sought for a period of 24 years.

7 ITEM 2(h): DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED SITE

Site alternatives for the underground mine layout are limited by the extent of the coal resource. The type of mining (underground) to be conducted is limited by the depth of the coal resources.

The provisional layout of the surface infrastructure is depicted in Plans 3 to 6 of Appendix 3; the current layout is based on a high-level sensitivity analysis. Infrastructure has been placed to avoid water resources and their applicable buffers as far as possible.

It must be stressed that the location of the infrastructure may shift slightly (within the same property boundary) dependant on the findings of the specialist studies and input from Interested and Affected Parties (I&APs).

7.1 Item 2(i): Details of alternatives considered

7.1.1 The property on which or location where it is proposed to undertake the activity;

The properties selected for the overall mining right application are limited to those held under valid Prospecting Right(s) by the applicant; and finally the coal resource determination and the economic feasibility of mining the coal resource. No property alternatives are therefore relevant regarding the mining right area.

Access to the coal seam is planned via a box-cut from which portals will be driven, either via horizontal or inclined roadways. Thus property alternatives for the boxcut and associated infrastructure area were limited to areas where the coal seam was shallowest. Property alternatives for the boxcut and surface infrastructure area included:

- Portion 3 of De Roodepoort 435 IS; and
- RE of De Roodepoort 435 IS.

7.1.2 The type of activity to be undertaken;

The current land use is predominantly agriculture, mainly grazing (unimproved grasslands) with limited cultivation. Other land uses include those associated with borrow pits and quarrying. Servitudes are associated with the Richards Bay rail line and Eskom power lines which bisect the mining right area.

According to the Municipality's Spatial Development Framework (SDF) the following future land uses have been proposed for the properties (see Figure 1):

- The properties north of the N17, namely Portion 8 and a portion of the RE of De Roodepoort 435 IS have been demarcated for commercial agriculture, and as regional open space.
- The properties situated between the Richards Bay rail line and the N17 have been conceptually demarcated for land uses associated with the N17/N2 development corridor. The SDF recommends that development opportunities be linked to the adjacent transport routes and agricultural-based LED initiatives be pursued.
- The properties south of the Richards Bay rail line have been earmarked by the Municipality for land reform. According to the SDF most of this land is underlain by soils of intermediate suitability for arable agriculture.

Although mining is expected to have the greatest impact on the environment in terms of the other land uses, it will have the greatest positive contribution to socio-economics in the area. Underground areas will not impact on the surface and other existing/proposed land uses can continue concurrently to mining. Only the land use of the RE of De Roodepoort will be affected by the mining operation. The agricultural potential of this area will be evaluated in the final rehabilitation plan and the potential land use may still commence post mining.

The type of mining to be conducted is limited by the depth of the coal resource and has not been assessed further.

The quality of coal excavated from the properties has dictated the need for a full beneficiation plant in order to meet market requirements. The processing plant has been selected based on mineable tonnages and various coal types being mined as well as market requirements and no alternatives with regards to the beneficiation process have been assessed.

Transport alternatives for product coal are still being finalised, and include road hauling and rail transport. The mining right area is ideally situated for access to N17 as well as the Richards Bay rail line.

Remaining supporting infrastructure is needed in terms of the overall design of the mine and no further alternatives are discussed in terms of these. Best practices in the industry and, where applicable, SANS standards and legislative requirements will be followed in design, construction and management of infrastructure and activities on site.

7.1.3 The design or layout of the activity;

The mining layout is designed to optimise the recovery of coal.

The location of the box-cut and associated infrastructure area was based on the depth of the coal and a high-level sensitivity analysis. Infrastructure has been placed to avoid water resources and their applicable buffers as far as possible.

The alternatives considered included:

- **Alternative 1:** Box-cut and associated infrastructure to be located on the RE of De Roodepoort 435 IS (Preferred Option).
- **Alternative 2:** Box-cut and associated infrastructure to be located on Portion 3 of De Roodepoort 435 IS.
- **Alternative 3**: Box-cut to be established on Portion 3 of De Roodepoort, with the plant and infrastructure area located on the RE of De Roodepoort 435 IS. Coal to be conveyed from Portion 3 to the RE for beneficiation and transport.

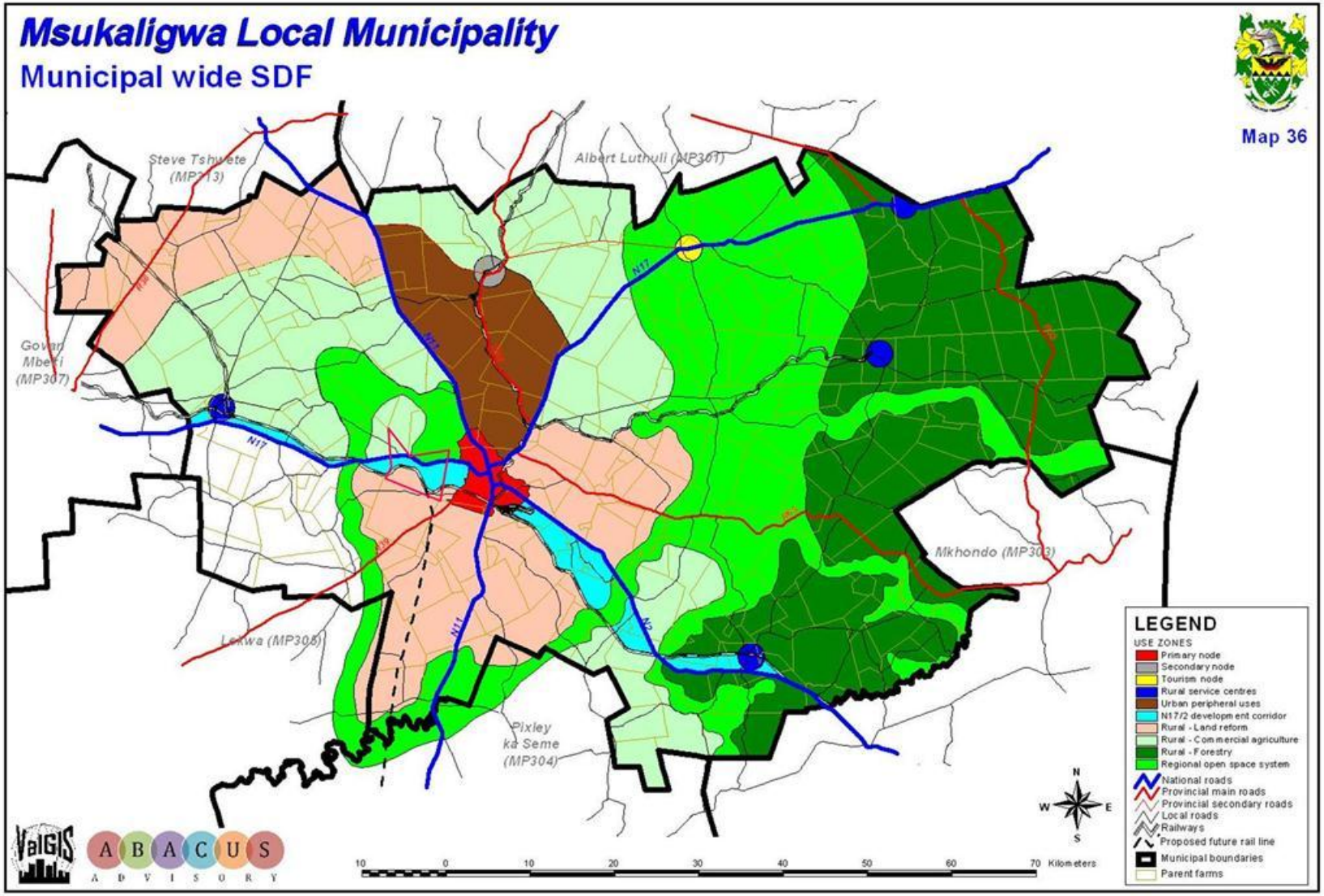


Figure 1: Municipal wide SDF (Source: http://www.msukaligwa.gov.za/SDF.htm)

7.1.4 The technology to be used in the activity;

De Roodepoort will be mined via mechanised bord-and-pillar methods, using continuous miners (specifically the CM 12HM31B machine).

Continuous miners will ensure a constant flow of ore from the working face of the mine and are different from conventional or cyclical mining methods which halt the extraction process in order to load ore. This will result in an optimal balance of production rate and cost per ton.

In mechanized bord-and-pillar mining, extraction is achieved by developing a series of roadways (bords) in the coal seam and connecting them by splits (cut-through) to form pillars. These pillars are left behind as part of a primary roof support system. The safety factor and pillar dimensions to support the overburden will be determined for each mining block.

In all other instances, best practices as utilised in the industry have been selected and, where applicable, SANS standards and legislative requirements will be followed in design, construction and management of infrastructure and activities on site. Technological alternatives have therefore not been further assessed.

7.1.5 The operational aspects of the activity; and

In all instances, common practices as utilised in the industry have been selected. Operational alternatives that are being / have been considered include:

- Integrated disposal versus separate discard and slurry handling:
    - Integrated disposal was opted for, as this would negate the need for separate handling facilities and thus reduce the overall area of disturbance. In addition to the above the fines (slurry) will settle in between the cavities within the discard making the dump more stable; and limiting the potential for spontaneous combustion.
    - The dump can be reclaimed in future as the slurry will increase the overall coal content of the dump.
- Installation of a filter press:
    - The viability of installing a filter press to dewater the slurry is being investigated. This would allow the mine to recover and reuse additional water that would otherwise be lost; furthermore the dried fines can be mixed in with the product for sale.

7.1.6 The option of not implementing the activity

The no-go option will result in the protection of the environment in situ and the continued use of the land for agricultural purposes. Not mining the area for coal will result in the sterilisation of the coal resource. This would reduce coal resources for power generation which is currently an issue in South Africa, as no viable baseload power generation alternatives exist. The no-go option would also prevent the socio-economic benefits, including the need for job creation, increased socio-economic activity and social upliftment.

As stated above the site will be within a power-generating and mining area. Underground areas will not impact on the surface and other existing/proposed land uses can continue concurrently to mining. Only the land use of the RE of De Roodepoort will be affected by the mining operation, which will be assessed as part of the final soil utilisation guide and rehabilitation plan.

If Tokicap (Pty) Ltd does not proceed with the Mining Right Application, another company is almost certain to apply for the rights.

8 ITEM 2(ii): DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED

The table below highlights the requirements for public participation as per NEMA.

The public participation process (PPP) aims to involve the authorities and I&APs in the project process, and determines their needs, expectations and perceptions which in turn ensures a complete and comprehensive environmental study. An open and transparent process has and will be followed at all times and will be based on reciprocal dissemination of information.

Table 7: NEMA minimum PPP requirements

Legal and Regulatory Requirement: NEMA Regulation 982, Section 41 – Public participation process	
1	This regulation only applies in instances where adherence to the provisions of this regulation is specifically required
Noted	
2	The person conducting a public participation process must take into account any relevant guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of an application or proposed application which is subjected to public participation b:
NEMA PPP Guidelines have been followed.	
a	fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of:
i	the site where the activity to which the application or proposed application relates is or is to be undertaken
ii	An alternative site
Notices were compiled in English, Afrikaans & Zulu and erected (5 February 2016) on the site boundary fence as well as other public locations, namely: • Msukaligwa Local Municipality; • Ermelo Public Library; • De Roodepoort 435 IS Portion RE boundary fence; • Wesselton Public Library; • Ermelo Post Office; • Khayelitsha Community Spaza Shop; • Entrance to the Wesselton Community; and • Main Intersection towards southern farms (R39). These posters informed the public of the proposed activities, invited (I&APs) to attend the scoping phase public meeting and requested people to register as I&APs for the project. Copies of the Posters and photographic evidence thereof have been included in the relevant Annexure of the PPP Report attached as Appendix 4.	
b	giving written notice, in any of the manners provided for in section 47D of the Act,

Legal and Regulatory Requirement: NEMA Regulation 982, Section 41 – Public participation process	
	to:
i	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 or to any alternative site where the activity is to be undertaken;
ii	owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken;
iii	the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
iv	the municipality which has jurisdiction in the area;
v	any organ of state having jurisdiction in respect of any aspect of the activity; and
vi	any other party as required by the Competent Authority.
A comprehensive database / I&AP register was compiled, this included various stakeholders, authorities, land owners, land users and associations within the area. Background Information Documents (BIDs) detailing the project were compiled in English, Afrikaans and Zulu. These were hand delivered to land owners / users and adjacent land owners / users on the 5th and 8th February 2016. In addition, copies were distributed to all I&APs on the database via e-mail, post and fax. Persons who did not have access to a computer, fax machine or postal service were notified via hand delivered documents, where possible, and/or SMS. The purpose of the BID was to: • Invite members of the public to register as I&APs; • Introduce the proposed project, and inform the public on the application / environmental process and their involvement; • Provide information on the proposed impacts the development may have on the environment which will be investigated further; • Initiate a process of public consultation to record perceptions and issues; and • Invite I&APs to attend the Scoping Phase Public Meeting. A copy of the BID and proof of delivery thereof is attached in the relevant Annexure of the PPP Report included as Appendix 4.	
c	Placing an advertisement in:
i	One local newspaper; or
ii	Any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations.
d	placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official Gazette referred to in paragraph

Legal and Regulatory Requirement: NEMA Regulation 982, Section 41 – Public participation process	
	(c)(ii)
Advertisements were placed in two (2) local newspapers, in both English and Afrikaans: • The Highvelder, publication date 04th February 2016 • The Highveld Tribune, publication date 09th February 2016 Copies of the Adverts are attached in the relevant Annexure of the PPP Report included as Appendix 4.	
e	Using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to- (i) illiteracy; (ii) disability; or (iii) any other disadvantage.
No issues in information dissemination have been noted to date. Any additional requirements made by the authorities will be applied during the PPP process.	
3	A notice, notice board or advertisement referred to in sub regulation (2) must –
a	Give details of the application which is subject to public participation
b	State -
i	whether basic assessment or S&EIR procedures are being applied to the application
ii	Whether basic assessment or scoping procedures are being applied to the application, in the case of an application for environmental authorisation
iii	The nature and location of the activity to which the application relates
iv	Where further information on the application or activity can be obtained
v	The manner in which and the person to whom representations in respect of the application may be made
These aspects are addressed in the BIDs, Notices and Adverts. Please see the relevant appendices in the PPP report included as Appendix 4.	
4	A notice board referred to in sub regulation (2) must -
a	be of a size at least 60cm by 42 cm
b	Display the required information in lettering and in a format as may be determined by the Competent Authority
Notices were A2 in size (42 x 60 cm).	
5	Where public participation is conducted in terms of this regulation for an application or proposed application, sub regulation (2)(a), (b), (c) and (d) need not be complied with again during the additional public participation process contemplated in regulations 19(1)(b) or 23(1)(b) or the public participation process contemplated in regulation 21(2)(d), on condition that : -
a	such process has been preceded by a public participation process which included compliance with sub regulation (2)(a), (b), (c) and (d); and
b	written notice is given to registered interested and affected parties regarding where the: -
i	revised basic assessment report or, EMPr or closure plan, as contemplated in regulation 19(1)(b) may be obtained, the manner in which and the person to whom representations on these reports or plans may be made and the date on which such representations are due;
ii	revised environmental impact report or EMPr as contemplated in regulation 23(1)(b)

Legal and Regulatory Requirement: NEMA Regulation 982, Section 41 – Public participation process	
	may be obtained, the manner in which and the person to whom representations on these reports or plans may be made and the date on which such representations are due; or
iii	environmental impact report and EMPr as contemplated in regulation 21(2)(d) may be obtained, the manner in which and the person to whom representations on these reports or plans may be made and the date on which such representations are due;
Noted. No deviation required.	
6	When complying with this regulation, the person conducting the public participation process must ensure that:
a	Information containing all the relevant facts in respect of the application is made available to potential interested and affected parties; and
b	Participation by potential interested and affected parties is facilitated in such a manner that all potential interested and affected parties are provided with a reasonable opportunity to comment on the application.
Noted. All environmental reports will be made available for public review for a minimum of 30 days.	
7	Where an environmental authorisation is required in terms of these Regulations and an authorisation, permit or licence is required in terms of a specific environmental management Act, the public participation process contemplated in this Chapter may be combined with any public participation processes prescribed in terms of a specific environmental management Act, on condition that all relevant authorities agree to such combination of processes.
The PPP has been combined for all the authorisations required from the DMR in terms of the MPRDA, NEMA and NEM:WA. The notices have also included information on the water use license application process through the DWS under the NWA.	

This section details the PPP initiated to date, and completed as part of the Scoping Phase of the project:

- **I&AP Consultation:**

As summarised in Table 7 above, I&APs for the project were identified using information from similar projects in the past, as well as from information and responses received from the press advertisements, notices and the BID's sent out.

The I&APs include a broad database of landowners, adjacent landowners, land users, communities, local authorities, ward councillors and other interest groups. A copy of the I&AP register and proof of notification (BIDs, notices, advertisements etc.) is included in the PPP report, attached as Appendix 4.

All comments, questions and/or concerns received in response to the various notices to date, have been summarised in the issues and response table below.

A Scoping Phase Public Meeting has been scheduled for 24th February 2016 at the Nooitgedacht Research Centre, Main Hall. The purpose of the meeting will be to introduce the

project to the I&APs; explain the application process to be followed; and to discuss the contents of the draft Scoping Report currently out for public review. All registered I&APs have been notified of the meeting's date through the BIDs, posters and adverts. In addition, a reminder SMS will be sent to all registered I&APs prior to the meeting. Copies of the minutes will be sent to all I&APs for review and comment.

All comments and / or issues raised during this meeting as well as during the review period of the draft Scoping Report will be included in the final Scoping Report submitted to the DMR for approval.

The Draft Scoping Report has been/will be made available to the public for review and comment over a period of thirty (30) days (15 February to 15 March 2016) at the following locations:

- Online at www.cabangaconcepts.co.za;
- The Ermelo Public Library; and
- The Wesselton Public Library.

All registered I&APs have been informed of the reports availability via e-mail, fax, post and SMS. In addition electronic copies (Adobe PDF and CD) will be made available to I&APs upon written request.

- **Authorities Consultation:**

A pre-application meeting has been scheduled with the DWS for the end of February, to discuss the proposed project and to clarify the way forward with regards to the content and submission of the water use license application.

No authorities meeting has yet been scheduled with the DMR however, it is anticipated that a meeting and site visit will be held with the Department following submission of the Scoping Report.

Other local and Regional authorities were identified and included in the I&AP register, and notified of the proposed project by means of the BID.

In addition, copies of the draft Scoping Report were circulated to the following authorities for review and comment:

- DMR;
- Mpumalanga Department of Economic Development, Environment and Tourism (MDEDET);
- DWS;
- Msukaligwa Local Municipality;
- Gert Sibande District Municipality;
- South African Heritage Resource Agency (SAHRA); and
- Mpumalanga Tourism and Parks Board.

Comments have been included in the I&AP issues and response table and also in the PPP Report attached as Appendix 4.

The Land Claims Commissioner was contacted to determine whether any land claims have been registered over the affected properties. To date no response has been forthcoming.

8.1 Item 2(iii): Summary of issues raised by I&APs

Table 8 below summarises the issues raised by the various I&APs and authorities to date, and the EAP's response/feedback thereto.

Table 8: NEMA minimum PPP requirements

Interested and Affected Parties List the names of persons consulted in this column, and Mark with an X where those who must be consulted were in fact consulted.	**Date Comments Received**		**Issues raised**	**EAP's response to issues as mandated by the applicant**	**Consultation Status (consensus dispute, not finalised, etc.)**
AFFECTED PARTY					
Landowner/s	**X**				
Petrus Hendrik Oosthuizen Farm De Roodepoort 435 IS Ptn RE & 8	X	05-02-2016	Stated that he is the owner of portions RE and 8 of De Roodepoort and all the infrastructure is proposed for his farm. Requested that we contact Mr Jan Jacobsz from Portion 1.	Noted. Mr Oosthuizen has been registered and will be informed throughout the process. Noted. Mr Jacobsz has been contacted.	Consultation to continue throughout the process.
Elsie van Den Berg Farm De Roodepoort 435 IS Ptn 1	X	05-02-2016	The contact person for this farm is Mr Jan Jacobsz, please contact him in future.	Noted. Mr Jacobsz has been contacted.	Consultation to continue throughout the process.

Johan Fourie Farm De Roodepoort 435 IS Ptn 2	X	05-02-2016	Stated that he is concerned with potential water loss. The water in the river is full of *E.coli* from the sewage works and cannot be used. Added that he has five boreholes on site. His land is both grazing and cropping use. Some graves are located near his house.	Noted. Various specialists will be visiting the farms as per the BID. These include a ground and surface water assessment. Various samples will be taken as part of these assessments. Noted. This will be captured in the reports. Noted. A Heritage specialist will also be visiting the farms to see these sites.	Consultation to continue throughout the process.
Jacob Durr Farm De Roodepoort 435 IS Ptn 3	X	05-02-2016	Stated that he is prepared to sell his farm, does not want to live next to a mine. Does not agree with the location of the proposed dump. Originally this was supposed to be on his farm, why has this changed? Added that Transnet is currently extending the railway line on De Roodepoort. How many people will be on the mine as this is a security issue for the farmers? Added that there are graves on	Noted. This will have to be negotiated directly with the mine, Cabanga are only involved with the environmental work. The preliminary designs changed due to various wetlands identified on Portion 3. This current design may change again following the specialist studies. Noted. Transnet will be contacted as part of the process. Unknown at this stage. More information will be given at the public meeting. Noted. Specialists will be visiting the	Consultation to continue throughout the process.

			his farm in the north. His farm is used for grazing and cropping. His farm extends 20m over the railway line.	farms to assess any environmental issues on site. Noted.	
Jannie Weideman Farm De Roodepoort 435 IS Ptn 4, 6 & 7	X	08-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
National Government of the Republic of South Africa Farm De Roodepoort 435 IS Ptn 5	X	05-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Rika Hamman Farm De Roodepoort 435 IS Ptn 9	X	08-02-2016	Stated that she will be opposing the mining right. She has a bad history with mines. Does not like underground mines as you cannot see what they are doing. Should the mine want to drill on her property, they will need to pay her up-front. Her farm is full of mielies, there is not much space to drill, only the small +-8ha north of the railway line is for grazing.	Noted. Unfortunately this application is for underground mining due to the deep levels of coal. Noted. The mine is aware of this request, but Cabanga is not involved in the drilling process. Noted, this will be captured in her report. The mine would have to negotiate drilling locations with Mrs Hamman prior to commencing.	Consultation to continue throughout the process.

			There are no graves on her farm. Please can the specialists contact her prior to visiting her farm.	Noted. The specialist will be visiting some of the farms to verify. Noted. All specialists will be informed that Mrs Hamman must be contacted prior to visiting the site.	
Transnet Freight Rail Ltd Farm De Roodepoort 435 IS Ptn 10, 11, 12, 13 & 14	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Lawful occupier/s of the land	**X**				
N/A					
N/A					
Landowners or lawful occupiers **on adjacent properties**	**X**				
Rowan Hirschowitz Farm Driehoek 273 IS Ptn 1	X	05-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Lucky Mavimbela	X	05-02-	Stated that the owner Mr	Noted. Additional documents were	Consultation to continue

Farm Driehoek 273 IS Ptn 1		2016	Hirschowitz lives in Johannesburg but he will pass on the information. When will the mine commence?	left for Mr Hirschowitz. The mine will only commence should all the necessary licenses be granted. This process can take up to three years.	throughout the process.
Jan Grey Farm Middelplaat 271 IS Ptn 1	X	05-02-2016	Main concern is water loss, water is already an issue with the municipality, also as a result of the old Ermelo mine.	Noted. Various specialists will be visiting the farms as per the BID. These include a ground and surface water assessment. Various samples will be taken as part of these assessments.	Consultation to continue throughout the process.
Jan Venter Farm Nooitgedacht 268 IS Ptn RE, 35 & 55	X	08-02-2016	Stated that there is a ring road proposed over these farms by SANRAL. Nooitgedacht has numerous heritage sites and the buildings are very old and are built by sandstone. Added that the railway line is a very busy one; will Tokicap be able to send coal by Rail? Please can the soil assessment be conducted in terms of the National DAFF standards?	Noted. SANRAL and AECOM (the company busy with the ring road application) will be contacted. Noted. This will be captured in the reports. Tokicap will have to negotiate railway options with Transnet directly. Cabanga is not involved in this process. Noted. The specialist will be informed of this request.	Consultation to continue throughout the process.

			Does not want the mine next to the research centre, the mine will have to seal off the fractures but this could stop some of the springs. All of the surface water here goes to the Vaal catchment.	Noted. Various specialists will be visiting the farms as per the BID. These include a ground and surface water assessment. Various samples will be taken as part of these assessments. Recommendations will also be made including mitigation measures. Noted.	
Job Maseko Farm Rietspruit 437 IS Ptn 2 and Uitgezocht 436 IS Ptn 2	X	08-02-2016	Will pass the information onto the owner of the farm (Mr Erasmus).	Noted.	Consultation to continue throughout the process.
Morne Labuschagne Farm Uitgezecht 436 IS Ptn 7	X	08-02-2016	Stated that he has an exotic game breeding camp on site, the site is only for grazing. Is concerned with water loss, dust and noise. They will be offering helicopter hunting; will the blasting have any affect the helicopter?	Noted. Various specialists will be conducting studies in the area including fauna and flora. More information will be included in the EIA / EMP report. These studies will be conducted as part of the process and more information will be given in the EIA / EMP report. A blast assessment will also be conducted. The specialist will have to give feedback on this issue.	Consultation to continue throughout the process.

Municipal councillor	**X**				
Clr Elizabeth Msezane Ward 2	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Clr Mavela Mhlanga Ward 9	X	05-02-2016	Stated that we must discuss the matter with the speaker and LED department.	Noted. These departments have been informed of the project.	Consultation to continue throughout the process.
Clr Sonto Nksoi Ward 10	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Municipality	**X**				
Bongani Zwane LED Msukaligwa Municiaplity	X	05-02-2016	Noted. The mine will have to discuss S&LP issues with the LED department.	Noted. Cabanga are not involved in the S&LP process.	Consultation to continue throughout the process.
C. Makhanye Msukaligwa Municipality	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Mr Thami Dlamini (Manager) Msukaligwa Municipality	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.

Mr Surprise Nkosi Msukaligwa Municipality	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Mr C.A Habile (Manager) Gert Sibande District Municipality	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Organs of state (Responsible for infrastructure that may be affected Roads Department, Eskom, Telkom, DWA etc.	**X**				
Mr Colin Pitso DWS	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Ms Tshikalange Nnzumbeni DWS	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Mr F Guma DWS	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.

Mr Samuel Maliaga DWS	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Ms Betty Mnguni DWS	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Vuledzani Thanyani Eskom	X	09-02-2016	Requested the property shapefiles to overlay with their infrastructure.	Shapefiles sent on the 15 February 2016.	Consultation to continue throughout the process.
Ernest Nqenqa SANRAL	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Andile Rashule Transnet	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Richard Law Transnet	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Rodney Murray Transnet	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Communities	**X**				
Watch M'Bwana Khayelisha Community	X	05-02-2016	Is interested in Jobs with the mine.	Noted. CV's can be forwarded to Cabanga; these will be given to the mine for consideration.	Consultation to continue throughout the process.

Mamsie Vilakazi Khayelisha Community	X	05-02-2016	Is interested in Jobs with the mine.	Noted. CV's can be forwarded to Cabanga; these will be given to the mine for consideration.	Consultation to continue throughout the process.
Gloria Shongwe Khayelisha Community	X	05-02-2016	Is interested in Jobs with the mine.	Noted. CV's can be forwarded to Cabanga; these will be given to the mine for consideration.	Consultation to continue throughout the process.
Nontotozo Nksoi Khayelisha Community	X	05-02-2016	Is interested in Jobs with the mine.	Noted. CV's can be forwarded to Cabanga; these will be given to the mine for consideration.	Consultation to continue throughout the process.
Nokuthula Mpofu Khayelisha Community	X	05-02-2016	Is interested in Jobs with the mine.	Noted. CV's can be forwarded to Cabanga; these will be given to the mine for consideration.	Consultation to continue throughout the process.
Ncami Mathathu Khayelisha Community	C	05-02-2016	Is interested in Jobs with the mine.	Noted. CV's can be forwarded to Cabanga; these will be given to the mine for consideration.	Consultation to continue throughout the process.
Lindiwe Buthelezi Khayelisha Community	X	05-02-2016	Is interested in Jobs with the mine.	Noted. CV's can be forwarded to Cabanga; these will be given to the mine for consideration.	Consultation to continue throughout the process.
Sibongile Maseko Khayelisha Community	X	05-02-2016	Is interested in Jobs with the mine.	Noted. CV's can be forwarded to Cabanga; these will be given to the mine for consideration.	Consultation to continue throughout the process.

Ntombikuona Maseko Khayelisha Community	X	05-02-2016	Is interested in Jobs with the mine.	Noted. CV's can be forwarded to Cabanga; these will be given to the mine for consideration.	Consultation to continue throughout the process.
Sibongile Nkosi Khayelisha Community	X	05-02-2016	Is interested in Jobs with the mine.	Noted. CV's can be forwarded to Cabanga; these will be given to the mine for consideration.	Consultation to continue throughout the process.
Tsepo Bulunga Khayelisha Community	X	05-02-2016	Is interested in Jobs with the mine.	Noted. CV's can be forwarded to Cabanga; these will be given to the mine for consideration.	Consultation to continue throughout the process.
Dept. Land Affairs	**X**				
Mr Bheki Nyathikazi	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Mr Sam Nkosi Land Restitution Support		09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Maximiliaan De Kock Provincial State Land Manager		09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.

Traditional Leaders	**X**				
Botshelo Rakate Traditional Affairs	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Lefentse Nkosi Traditional Affairs	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Bagudi Tolo Traditional Affairs	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Dr Nokuzola Mndende Traditional Affairs	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Shoky Mogaladi Traditional Affairs	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Josephine Appolus Traditional Affairs	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Abram Sithole Traditional Affairs	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Dr Wilson Makgalancheche	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.

Traditional Affairs					
Dept. Environmental Affairs	**X**				
Mr J Sikhosana	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
MEC Office	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Other Competent Authorities affected	**X**				
Department of Agriculture, Forestry and Fisheries	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Department of Energy	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Department of Health & Social Development	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Department of Human Settlement	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.

Department of Labour	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Department of Public Enterprises	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Department of Rural Development and Land Reform	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Department of Tourism	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Department of Trade and Industry	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Department of Transport	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
OTHER AFFECTED PARTIES	**X**				
Andre Hoffman Mpumalanga Parks Board	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Mazolo Dube AECOM	X	09-02-2016	No comments received to date.	None	Consultation to continue throughout the process.
Lucas Raath	X	09-02-2016	AECOM are planning the new Ermelo Ring Road on behalf of SANRAL. To ensure there is no	Noted. A BID was forwarded to AECOM, shape files are also	Consultation to continue throughout the process.

AECOM			conflict with your proposed mining rights application, please send us a locality plan showing the De Roodepoort farm in relation to Ermelo.	available if required.	
INTERESTED PARTIES	**X**				
Lehlohonolo Phamotse	X	09-02-2016	Requested to be registered as an I&AP and be kept informed.	Mr Phamotse has been registered and will be kept informed.	Consultation to continue throughout the process.
Natasha Ronquest	X	09-02-2016	Requested a copy of the BID.	A copy was forwarded to Mrs Ronquest on the 15 February 2016.	Consultation to continue throughout the process.

9 BASELINE ENVIRONMENT

9.1 Item 2(h)(iv): The Environmental attributes associated with the site

9.1.1 Type of Environment Affected by the proposed activity

- **Climate**

Mpumalanga experiences a sub-tropical climate with hot summers and mild to cool winters. The average midday temperatures for Ermelo range from 24 to 27°C in January and 15 to 17°C in June. Ermelo normally receives about 662 mm of rain per year (MAP), with most rainfall falling during summer. It receives the lowest rainfall in June and the highest in December / January. The mean annual evaporation at Ermelo is 1 518 mm.

- **Topography**

The topography of the mining right area is considered to be undulating, and elevations range from 1,737 mamsl (metres above mean sea level) at the Spitskop koppie located in the north of the mining right area, to 1,662 mamsl in the river valleys.

- **Geology**

This section has been extracted from the Mine Works Programme (RSV, 2016).

The mining right area falls within the Ermelo Coalfield. The Ermelo Coalfield is considered to be the fourth most important coalfield in South Africa, after the Witbank, Highveld and Waterberg Coalfields.

There are normally five major coal seams developed within the Ermelo Coalfield, which are from top to bottom as follows:

- Seam A,
- Seam B,
- Seam C,
- Seam D, and
- Seam E.

Although most of the coal seams (Seams B to E, Seam A absent) occur on De Roodepoort, only the Seam C package, consisting of Seam C-Upper, the in-seam parting and Seam C-Lower are considered to be of economic interest. The other seams are too thin to be economically extracted and in accordance with SAMREC, cannot be included in the resources.

Seam C-Upper and Seam C-Lower occur in variable proximity to one another, split by a fine grained to thinly laminated sandstone, known as "the parting". Both coal seams are too thin to be mined separately and the parting separating these seams varies in thickness from 200mm to 1000mm.

Seam B is consistently 18 to 20 m above Seam C-Upper while Seam D is 9 to 10 m below and Seam C-Lower.

There is a dolerite sill close to surface that is uninterrupted over the whole mining right area. Some thin dolerite stringers were intersected in two boreholes.

There is a large area of devolatilisation in the eastern parts of the mining right, normally associated with dolerite sills positioned close above or below coal seams. Further drilling is required to see if there is any mining potential in this area.

- **Soil, land use and capability**

The various soils forms of South Africa can be classed into 14 groups, namely: organic, humic, vertic, melanic, silicic, calcic, duplex, podzolic, plinthic, oxidic, gleyic, cumulic, lithic and anthropic.

According to AGIS, the following soil groups occur within the mining right area:

- Melanic A horizon: Dark, structure clay, with high base status (indicated in green in Figure 2 below);
- Vertic A horizon: Swelling, cracking clay, basic parent material, mainly dark coloured (indicated in teal in Figure 2 below); and
- Soils with marked clay accumulation strongly structured and non-reddish colour (indicated in grey in Figure 2 below).

The soil forms and capability will be confirmed by a specialist during the EIA phase of the project.

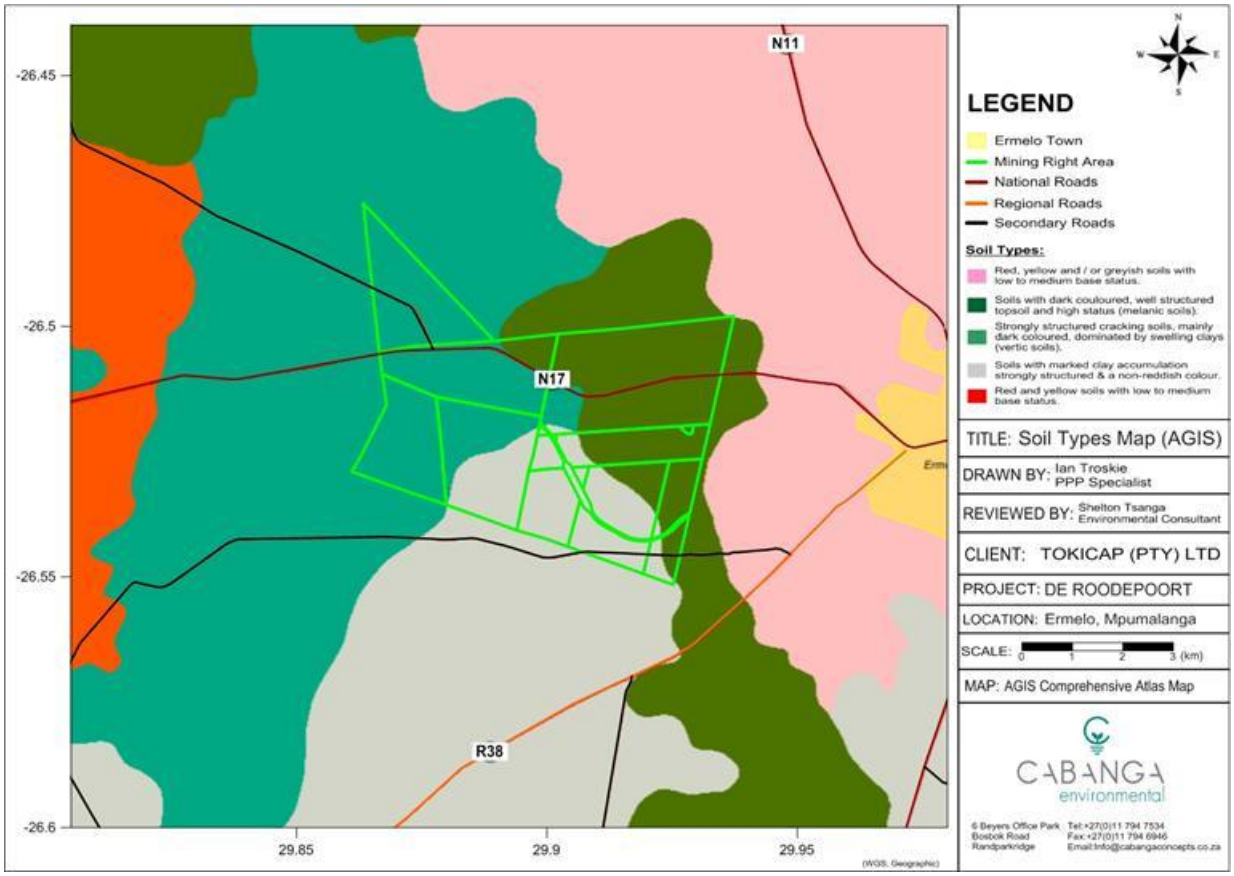


Figure 2: Soil type

- **Surface water**

Ermelo falls within the Upper Vaal Water Management Area (WMA), which includes the Vaal, Klip, Wilge, Liebenbergsvlei and Mooi Rivers and extends to the confluence of the Mooi and Vaal Rivers. The Upper Vaal Water Management Area covers a catchment area of 55 565 km^2 and includes the Vaal, Grootdraai and Sterkfontein Dams and extends over four provinces. The Upper Vaal is the uppermost WMA in the Vaal River catchment and one of five WMAs in the Orange River Basin.

The De Roodepoort Mine falls specifically within the quaternary catchment C11F (Figure 3) (DWS, 2003). The Klein-Drinkwaterspruit flows southwards through the mining right area - see Figure 4. The 1:50 and 1:100 year flood lines will be calculated during the hydrological assessment however, it is not expected that this will exceed 100m.

The quality of the surface water will be tested and analysed during the EIA phase of the project to establish a baseline.

It is anticipated that valley bottom wetlands will be associated with the Klein-Drinkwaterspruit and its tributaries, and thus wetland delineation and characterisation assessment will be undertaken for all areas of disturbance during the EIA phase.

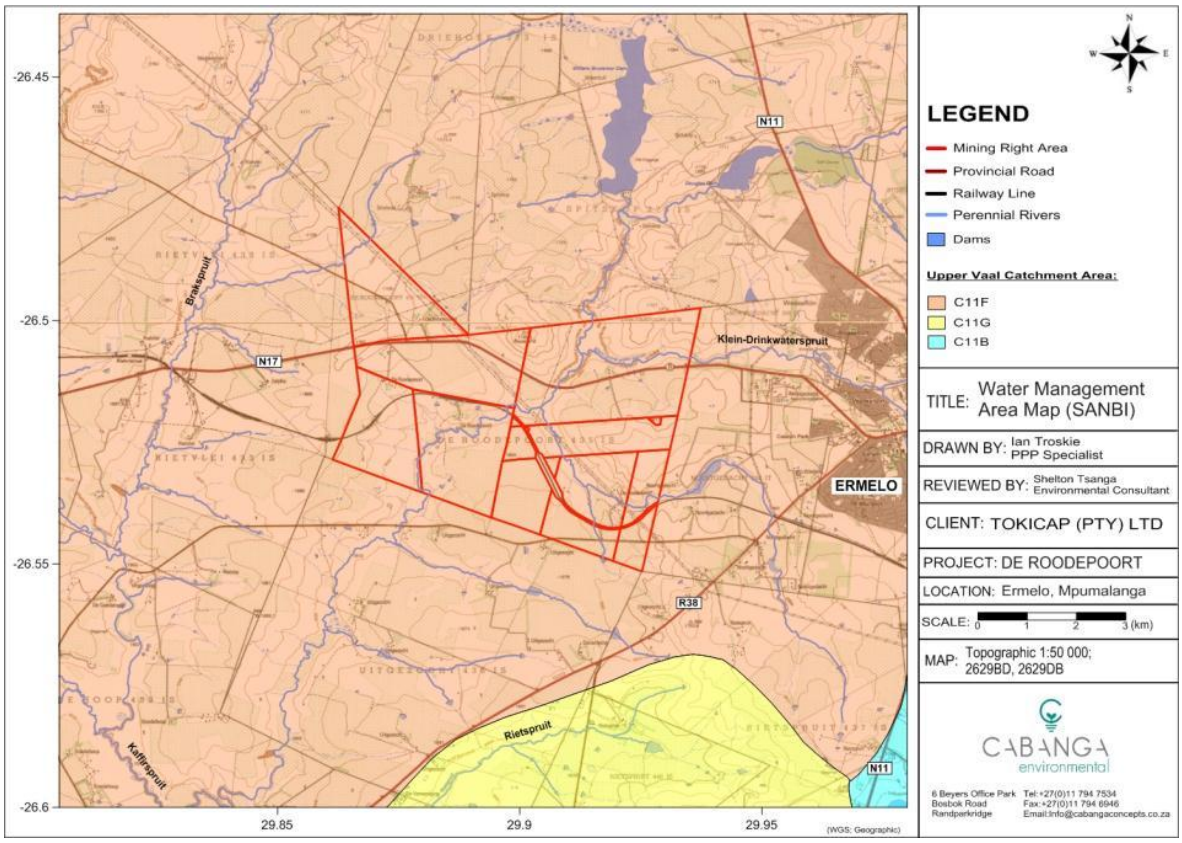


Figure 3: Water Management Area

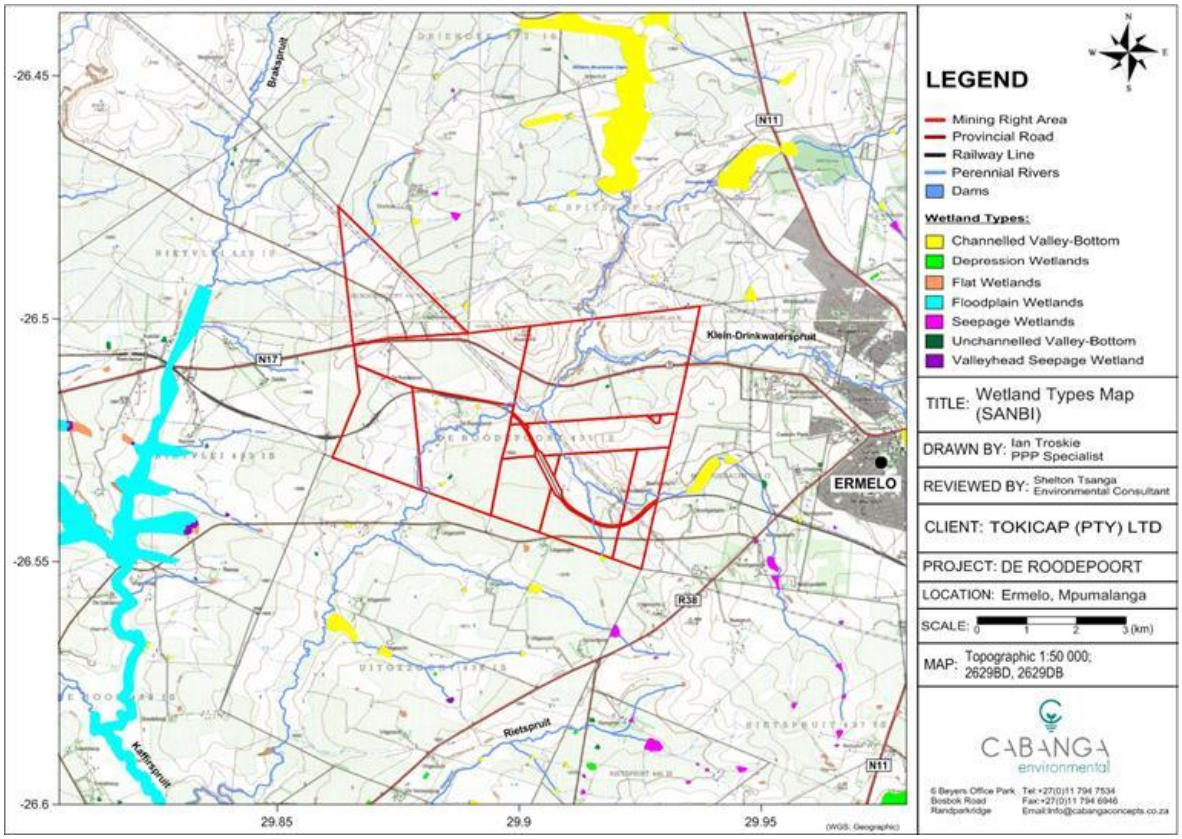


Figure 4: Water Resources

- **Groundwater**

Ermelo falls within the Eastern Highveld Hydrogeological Region, which covers virtually the whole southern portion of the Mpumalanga Province.

The area is mainly underlain by fractured rock aquifers with a low to medium development potential. Groundwater in the area is utilised for rural domestic water supplies and stock watering; no large scale irrigation is known (DWS, 2008).

The quality of the groundwater will be tested and analysed during the EIA phase of the project to establish a baseline. A hydrocensus will be undertaken to identify and characterise groundwater use within the immediate area of De Roodepoort.

- **Biodiversity**

The mining right area falls within the grassland biome (MP302), characterised as lands dominated by grasses and herbaceous vegetation of relatively short and simple structure (Mucina and Rutherford, 2006). The vegetation types naturally occurring in the area are classified as the Soweto Highveld Grassland (Gm8) and Amersfoort Highveld Clay Grasslands (Gm13) (Figure 5 below).

According to SANBI GIS (2015) the Soweto Highveld Grassland (Gm8) is currently listed as vulnerable (VU), see Figure 6. Dominant and diagnostic grass species associated with the Soweto Highveld Grassland are *Themeda triandra, Paspalum dilatatum, Eragrostis curvula, Cynodon dactylon, Hyparrhenia hirta* and *Sporobolus pyramidalis* (Mucina and Rutherford, 2006).

The Amersfoort Highveld Clay Grasslands (Gm13) is largely dominated by a dense *Themeda triandra sward (*Mucina and Rutherford, 2006).

A number of the farm portions included in the mining right area have been cultivated, and thus these vegetation types/species may not necessarily occur on site. All untransformed land within the study area should be considered of high biodiversity value in view of the VU conservation status of the Soweto Highveld Grassland. This will be confirmed by the specialist studies to be undertaken during the EIA phase. The presence of endangered and/or critical species will also be confirmed.

Fauna is largely reliant on the geomorphology and vegetation structure of the area to provide habitat, as each species has a range of conditions that it selects as an optimal habitat. A total of 153 Red Data animals (including mammals, birds, reptiles, frogs, butterflies, damselflies, dragonflies) are known to occur in Mpumalanga. A survey will be undertaken during the EIA phase of the project to confirm whether any of these animals occur on site.

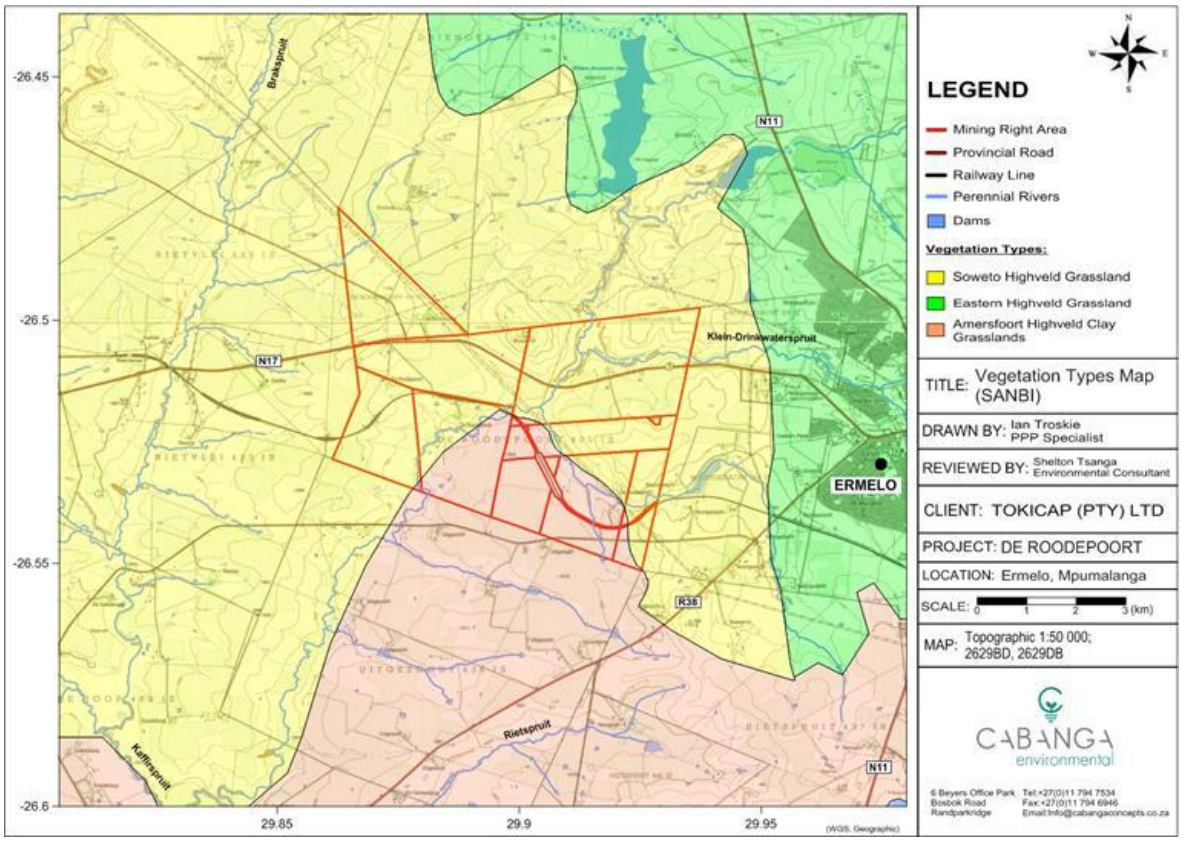


Figure 5: Vegetation type

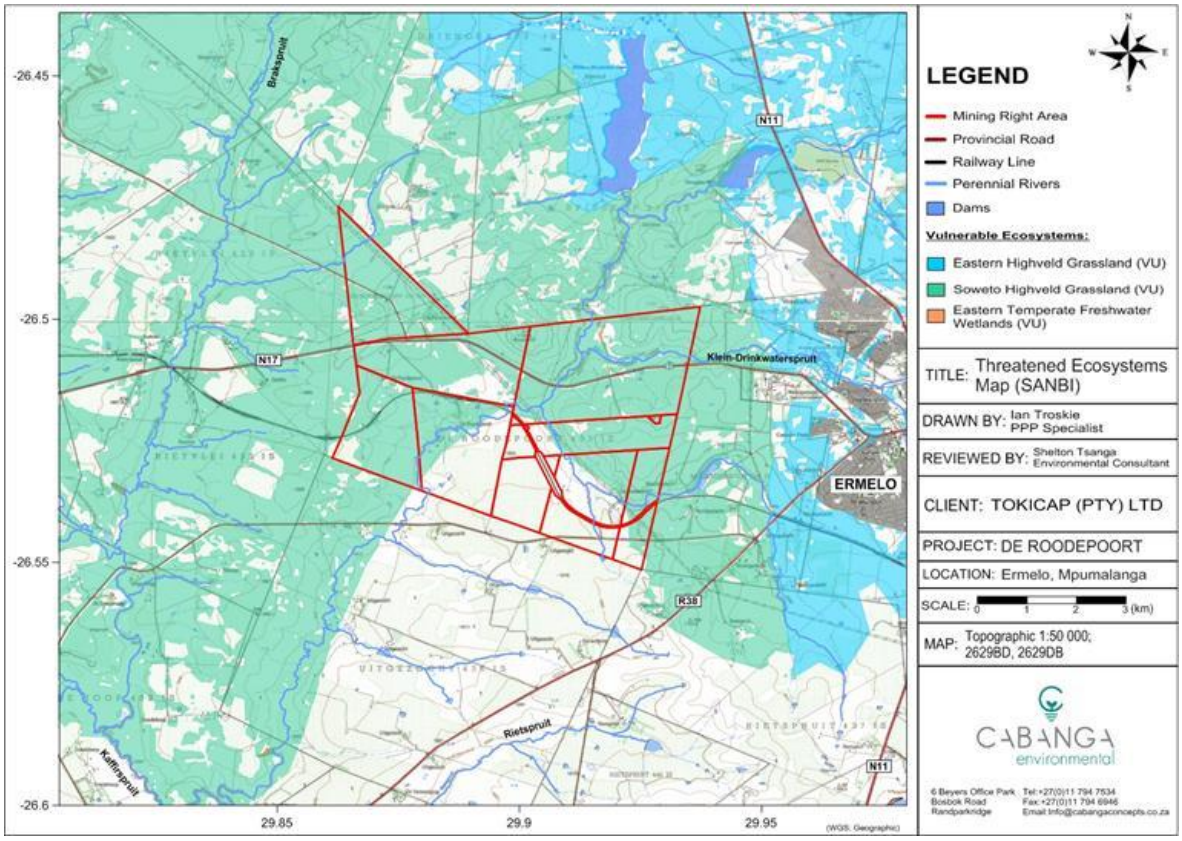


Figure 6: Threatened ecosystems

- **Social**

De Roodepoort falls within the Msukaligwa Local Municipality of the Gert Sibande District Municipality, of the Mpumalanga province. The information below is taken from Statistics South Africa (Census, 2011) and summarises the demographics of the Local Municipality:

- The Msukaligwa Municipality covers an area of 6 016km² and includes the Breyten, Chrissiesmeer, Davel, Ermelo, and Lothair towns.
- The Municipality has a population of 149 377 people, of which 88,1% are black African, 9,8% are white, 1,1% are Indian/Asian, and 0,6% are coloured. The other population groups make up the remaining 0,3%.
- Of those aged 20 years and older, 4,5% have completed primary school, 32,7% have some secondary education, 29,3% have completed matric, 9,6% have some form of higher education, and 12,3% have no form of schooling.
- 41 698 are employed whereas 5 311 are discouraged work-seekers.
- The unemployment rate is 26,8%. There are 15 267 unemployed people.
- 74,7% of households have access to electricity for lighting.
- 53% of households have access to piped water in their dwelling and 25% have access to piped water in the yard. Some 9,4% of households do not have access to piped water.

9.2 Description of the current land uses

According to the Municipality's SDF, the site is characterised as largely unimproved grassland with some cultivation.

Recent site visits confirm that the majority of the area is used for agricultural purposes, largely grazing with some cultivation. A small borrow pit is situated on the RE2 of De Roodepoort 435 IS, it is thought that this pit was excavated by Transnet however this is yet to be confirmed. The Weideman Aggregate Quarry is situated on the RE7 of De Roodepoort 435 IS.

The Richards Bay Coal Terminal rail line bisects the property, and a number of sidings are located within the area. The N17 connecting Bethal and Ermelo traverses the northern portions, whilst the Eskom power lines traverse the north eastern portion of the mining right area.

9.3 Description of specific environmental features and infrastructure on site

- **Environmental features:**

The major sensitive features within the proposed Mining Right area include:

  - Watercourses (Klein-Drinkwaterspruit and its tributaries);
  - Wetlands (mainly channel valley bottom wetlands associated with the water resources); and
  - Flora and fauna species.

Heritage site and graves are considered to be highly significant. The presence of these will be confirmed during the Heritage study, and will be incorporated in the EIA EMPr.

- **Existing infrastructure:**
  - A number of farm/gravel roads exist within the mining right area. These are associated with the various farmsteads, as well as the Weideman quarry.
  - A number of in-stream farm dams, and concrete reservoirs are located within the mining right area.
  - The N17 toll route connecting Bethal and Ermelo traverses the Northern portions of the mining right area.
  - The Richards Bay rail line bisects the property.
  - Servitudes are associated with the Eskom Powerline.

10 IMPACT ASSESSMENT

10.1 Item 2(h)(v): List of impacts identified

The proposed project is anticipated to impact on a range of biophysical and socio-economic aspects of the environment. Potential impacts identified for the project are summarised in the table below.

These impacts will be investigated further during the EIA phase of the project, and will be updated in the EIA EMPr based on the findings of the various specialist studies and input from I&APs.

Table 9: High level impact assessment

Activity	Impact	Applicable Mine Phase	STATUS	Magnitude	Extent	Duration	Reversibility	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	Mitigation	Degree of loss of resource
Aspect: Topography												
All infrastructure areas, development footprints and associated activities	Excavation and creation of infrastructure foundations will alter the topographical nature of the site and associated drainage.	Construction Operational Decommissioning	Neg	1	1	3	3	8	5	40	Y	-
Box-cut & incline shaft	Altered topographical nature and associated drainage.	Construction, Operation, Decommissioning	Neg	2	1	3	3	9	5	45	Y	-
ALL material stockpile areas	Stockpiles will change the topographical nature of the	Construction, Operation, Decommissioning	Neg	3	1	3	3	10	5	50	Y	-
Water storage (PCDs, Reservoirs & Tanks)	Excavation of dams will alter topography and drainage patterns.	Construction, Operation, Decommissioning	Neg	1	1	3	3	8	5	40	Y	-
Integrated disposal dump	Dump will change the topographical nature of the area.	Construction, Operation, Decommissioning, Closure, Post Closure	Neg.	5	1	5	3	14	5	70	N	-
Subsidence	Alteration of topography through potential subsidence of surface layers.	Operation, Decommissioning, Closure, Post Closure	Neg.	4	1	1	3	9	1	9	Y	-
Rehabilitation of all disturbed areas (incl. the sealing of underground workings, filling & profiling boxcut)	Eradication of stockpiles and replacement of material and profiling.	Decommissioning, Closure	Pos	4	1	5	1	11	4	44	N	-
Aspect: Geology												
Underground mining	Alteration of the geological nature and sequence.	Construction, Operation, Decommissioning	Neg	2	1	5	5	13	5	65	N	High

Activity	Impact	Applicable Mine Phase	STATUS	Magnitude	Extent	Duration	Reversibility	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	Mitigation	Degree of loss of resource
Blasting (applicable to box-cut)	Cracks and disruption to geological layers.	Construction	Neg	2	1	5	5	13	5	65	Y	Mod
Aspect: Soil & Land Capability												
All infrastructure areas, development footprints and associated activities	Loss in grazing potential, loss of soil and deterioration of soil characteristics.	Construction, Operation, Decommissioning, Closure	Neg	3	1	3	3	10	5	50	Y	High
Topsoil & subsoil stripping & stockpiling	Loss of fertile topsoil layer and loss through erosion.	Construction, Operation, Decommissioning	Neg	3	1	3	3	10	4	40	Y	Low
Topsoil & subsoil stripping & stockpiling	Compaction and alteration of physical characteristics of soil.	Construction, Operation, Decommissioning	Neg	3	1	3	3	10	4	40	Y	Low
ALL coal handling, storage, processing and conveyance areas, as well as ALL Water management / containment features.	Chemical soil pollution- as a result of mine water spills or irresponsible handling of coal or generation of coal dust and coal spillages.	Construction, Operation	Neg	3	1	2	1	7	5	35	Y	Low
Waste generation & storage	Potential contamination of soil with indiscriminately dumped waste.	Construction, Operation	Neg	3	1	2	1	7	4	28	Y	Mod
Stores, workshops, washbays, hard park & Fuel Storage (O&AM area)	Potential hydrocarbon contamination of soils. Potential contamination of soil with indiscriminate use of contaminating materials (cement, chemicals, etc.).	Construction, Operation	Neg	3	1	2	3	9	4	36	Y	Low

Activity	Impact	Applicable Mine Phase	STATUS	Magnitude	Extent	Duration	Reversibility	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	Mitigation	Degree of loss of resource
Ablutions & change house with sewage treatment plant	Potential contamination of soil with sewage.	Construction, Operation, Decommissioning	Neg	2	1	3	3	9	3	27	Y	Low
Rehabilitation of all disturbed areas (incl. the sealing of underground workings, filling & profiling boxcut)	Soil replacement and amelioration.	Decommissioning, Closure	Pos	4	2	1	3	10	4	40	N	-
Aspect: Surface Water & Associated Wetlands & Aquatic Ecosystems												
All infrastructure areas, development footprints and associated activities	Increased runoff and associated potential silt-loading and contamination of downstream water bodies and associated wetlands.	Construction, Operation, Decommissioning	Neg	4	3	3	3	13	4	52	Y	Mod
All infrastructure areas, development footprints and associated activities	Downstream water quantity of catchment reduced.	Construction, Operation, Decommissioning	Neg	3	3	3	3	12	5	60	N	Mod
All Material stockpiles	Increased runoff and associated potential silt-loading of downstream water bodies and associated wetlands.	Construction, Operation, Decommissioning	Neg	3	3	3	3	12	4	48	Y	Mod
ALL coal handling, storage, processing and conveyance areas	Generation of coal dust and coal spillages could contaminate water bodies in neighbouring areas.	Construction, Operation	Neg	4	3	3	3	13	4	52	Y	Mod
Crushing & screening & Processing Plant & Water supply	Irresponsible use of water and water wastage.	Construction, Operation	Neg	5	3	3	1	12	3	36	Y	Mod

Activity	Impact	Applicable Mine Phase	STATUS	Magnitude	Extent	Duration	Reversibility	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	Mitigation	Degree of loss of resource
Water storage (PCDs, Reservoirs & Tanks)	Contamination of surface water features with contaminated water runoff, ruptured dam walls.	Construction, Operation	Neg	5	3	3	3	14	4	56	Y	Mod
Water storage (PCDs, Reservoirs & Tanks)	Containment of contaminated water.	Construction, Operation	Pos	5	3	3	1	12	4	48	N	-
Water & slurry pipelines	Potential contamination of surface water features with burst pipelines.	Construction, Operation	Neg	3	3	3	3	12	3	36	Y	Mod
Waste generation & storage	Potential contamination of surface water with indiscriminately dumped waste.	Construction, Operation, Decommissioning	Neg	3	3	3	3	12	3	36	Y	Mod
Stores, workshops, washbays, hard park & fuel storage	Potential hydrocarbon contamination of surface water. Potential contamination of surface water with indiscriminate use of contaminating materials (cement, chemicals, etc.).	Construction, Operation	Neg	4	3	3	3	13	4	52	Y	Mod
Ablutions & change house with sewage treatment plant	Potential contamination of surface water bodies with sewage.	Construction, Operation	Neg	5	3	3	1	12	4	48	Y	Low

Activity	Impact	Applicable Mine Phase	STATUS	Magnitude	Extent	Duration	Reversibility	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	Mitigation	Degree of loss of resource
Rehabilitation of all disturbed areas (incl. the sealing of underground workings, filling & profiling boxcut)	Free drainage restored to area. Poor drainage if area is not adequately rehabilitated.	Decommissioning, Closure	Pos	4	1	5	1	11	4	44	N	-
Aspect: Groundwater												
All infrastructure areas, development footprints and associated activities (incl. integrated disposal dump)	Increased risk of contamination through seepage from any contaminating surface material.	Construction, Operation	Neg	5	2	4	3	14	4	56	Y	High
Underground mining	Potential damage to groundwater aquifers and alteration of groundwater flow	Construction, Operation, Decommissioning	Neg	5	2	5	5	17	4	68	N	High
Underground mining	Potential contamination plume of groundwater.	Operation, Decommissioning, Closure, Post-Closure	Neg	5	2	5	5	17	4	68	Y	High
Rehabilitation of all disturbed areas (incl. the sealing of underground workings, filling & profiling boxcut)	Groundwater levels will start to recover.	Operation, Decommissioning, Closure	Pos	1	1	5	1	8	5	40	N	-
Aspect: Flora & Fauna												
All infrastructure areas, development footprints and associated activities	Alien invasive establishment and bush encroachment.	Construction, Operation, Decommissioning, Closure	Neg	3	1	4	1	9	4	36	Y	Mod

Activity	Impact	Applicable Mine Phase	STATUS	Magnitude	Extent	Duration	Reversibility	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	Mitigation	Degree of loss of resource
All infrastructure areas, development footprints and associated activities & Opencast excavations	Loss of biodiversity through vegetation clearance.	Construction	Neg	5	2	3	5	15	3	45	Y	Mod
All infrastructure areas, development footprints and associated activities	Destruction of protected species.	Construction	Neg	5	2	5	5	17	2	34	Y	High
All infrastructure areas, development footprints and associated activities	Alienation of, and disturbance to, animals and loss of roost and foraging sites for birds and bats.	Construction, Operation, Decommissioning	Neg	3	2	3	1	9	4	36	Y	Low
All water management features	Potential harm to sensitive flora and fauna in the riparian habitats.	Operation, Decommissioning, Closure	Neg	5	2	5	5	17	3	51	Y	High
Lighting	Hindrance to nocturnal animals, including nocturnal birds and bats	Construction, Operation	Neg	3	2	3	1	9	5	45	Y	Low
Waste generation & storage	Potential harm to flora and fauna through littering and waste toxins.	Construction, Operation, Decommissioning	Neg	3	1	3	3	10	3	30	Y	Low
Stores, workshops, washbays, fuel storage & hard park	Potential hydrocarbon contamination will be source of toxin to flora and fauna.	Construction, Operation	Neg	4	1	3	3	11	2	22	Y	Low

Activity	Impact	Applicable Mine Phase	STATUS	Magnitude	Extent	Duration	Reversibility	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	Mitigation	Degree of loss of resource
Rehabilitation of all disturbed areas (incl. the sealing of underground workings, filling & profiling boxcut)	Lack of functional vegetation due to poor rehabilitation.	Decommissioning, Closure	Neg	3	1	5	1	10	4	40	N	-
Rehabilitation of all disturbed areas (incl. the sealing of underground workings, filling & profiling boxcut)	Seeding and vegetative cover and plant community succession. Influx of Animals to the area once vegetation establishes.	Decommissioning, Closure	Pos	4	1	5	1	11	4	44	N	-
Aspect: Air Quality												
All infrastructure areas, development footprints and associated activities	Emissions into the atmosphere through use of diesel powered equipment, machinery and vehicles.	Construction, Operation, Decommissioning	Neg	2	2	3	1	8	5	40	Y	Low
All infrastructure areas, development footprints and associated activities	Dust generation and particulate matter.	Construction, Operational Decommissioning	Neg	5	2	3	1	11	5	55	Y	Mod
Blasting	Dust generation.	Construction	Neg	5	2	1	3	11	5	55	Y	Mod
Coal handling (RoM & product coal stockpiling, Coal loading & conveyance, access and hauling, crushing and screening) & integrated dump disposal	Potential for spontaneous combustion and associated emissions.	Construction, Operation	Neg	5	2	3	1	11	3	33	Y	Mod

Activity	Impact	Applicable Mine Phase	STATUS	Magnitude	Extent	Duration	Reversibility	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	Mitigation	Degree of loss of resource
Rehabilitation of all disturbed areas (incl. the sealing of underground workings, filling & profiling boxcut)	Dust generation associated with material handling.	Decommissioning	Neg	4	2	2	1	9	5	45	N	Mod
Aspect: Noise												
All infrastructure areas, development footprints and associated activities. All activities on site.	Increased noise levels.	Construction, Operation, Decommissioning	Neg	2	2	3	1	8	5	40	Y	-
Aspect: Archaeological/Cultural Sites												
Box-cut & incline shaft	Loss of and disturbance to archaeological / heritage sites	Construction	Neg	4	1	5	5	15	2	30	Y	High
All infrastructure areas, development footprints and associated activities. All activities on site.	Loss of and disturbance to archaeological / heritage sites	Construction	Neg	4	1	5	5	15	2	30	N	High
Blasting (applicable to box-cut)	Vibrations may damage nearby heritage sites	Construction	Neg	4	1	5	5	15	2	30	Y	High
Aspect: Visual Aesthetic												
All infrastructure areas, development footprints and associated activities	Deterioration in visual aesthetics.	Construction, Operation, Decommissioning	Neg	5	1	3	3	12	5	60	Y	-

Activity	Impact	Applicable Mine Phase	STATUS	Magnitude	Extent	Duration	Reversibility	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	Mitigation	Degree of loss of resource
Integrated disposal dump	Deterioration in visual aesthetics.	Construction, Operation, Closure Decommissioning	Neg	5	1	5	5	16	5	80	Y	-
Lighting	Increased visibility of the site.	Construction, Operation	Neg	3	2	3	1	9	5	45	Y	-
Waste generation & storage	Deterioration in visual aesthetics.	Construction, Operation	Neg	3	1	3	3	10	3	30	Y	-
Rehabilitation of all disturbed areas (incl. the sealing of underground workings, filling & profiling boxcut)	Improved visual aesthetic.	Operation, Decommissioning, Closure	Pos	4	1	5	1	11	4	44	N	-
Aspect: Nearby Structures												
Blasting (applicable to box-cut)	Ground vibration and air blast impact on farmsteads	Construction	Neg	4	2	1	1	8	4	32	N	-
Blasting (applicable to box-cut)	Ground vibration impact on boreholes	Construction	Neg	5	2	3	1	11	4	44	N	-
Blasting (applicable to box-cut)	Ground vibration impact on Richards Bay rail line	Construction	Neg	4	5	1	1	11	4	44	N	-
Blasting (applicable to box-cut)	Ground vibration impact on roads	Construction	Neg	4	4	1	1	10	4	40	N	-
Blasting (applicable to box-cut)	Fly Rock Impact on farmstead houses	Construction	Neg	4	2	1	1	8	3	24	N	-
Blasting (applicable to box-cut)	Fly Rock Impact on Richards Bay rail line	Construction	Neg	3	5	1	1	10	5	50	N	-

Activity	Impact	Applicable Mine Phase	STATUS	Magnitude	Extent	Duration	Reversibility	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	Mitigation	Degree of loss of resource
Blasting (applicable to box-cut)	Fly Rock Impact on power line	Construction	Neg	3	5	1	1	10	5	50	N	-
Blasting (applicable to box-cut)	Fly Rock Impact on roads	Construction	Neg	3	4	1	1	9	3	27	N	-
Blasting (applicable to box-cut)	Fume impact on farmstead houses	Construction	Neg	3	2	3	1	9	2	18	N	-
Aspect: Land Use												
All infrastructure areas, development footprints and associated activities	Change in land use to mining.	Construction, Operation, Decommissioning	Neg	3	1	4	3	11	5	55	N	-
Aspect: Traffic & Safety												
Access and hauling	Increased potential for road incidences. Road degradation.	Construction, Operation, Decommissioning	Neg	5	3	3	5	16	3	48	Y	-
Aspect: Socio-economic, Health & Safety												
All footprints & All activities	Social ills - Disease	Construction, Operation, Decommissioning	Neg	4	4	5	5	18	3	54	Y	-
All footprints & All activities	Property damage	Construction, Operation	Neg	4	1	3	3	11	3	33	N	-
All footprints & All activities	Employment opportunities	Construction, Operation, Decommissioning	Pos	4	3	3	3	13	4	52	N	-

Activity	Impact	Applicable Mine Phase	STATUS	Magnitude	Extent	Duration	Reversibility	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	Mitigation	Degree of loss of resource
All footprints & All activities	Local / Regional business	Construction, Operation, Decommissioning	Pos	4	3	3	3	13	4	52	N	-
All footprints & All activities	Sense of Place	Construction, Operation	Neg	5	1	3	3	12	5	60	Y	-
Aspect: Additional I&AP Issues not addressed in the above aspects												
No additional impacts raised to date.												

10.2 Item 2(h)(vi): Methodology used in determining the significance of environmental impacts

Impact assessment methods were developed to: (1) identify the potential impacts of a proposed development on the social and natural environment; (2) predict the probability of these impacts and (3) evaluate the significance of the potential impacts.

The methodology used by Cabanga to assess the impacts identified in Table 9 above, are as follows:

The status of the impact		
Status		Description
Positive:		a benefit to the holistic environment
Negative:		a cost to the holistic environment
Neutral:		no cost or benefit
The magnitude (severe or beneficial) of the impact		
Score	Severe/beneficial effect	Description
1	Slight	Little effect – negligible disturbance/benefit
2	Slight to moderate	Effects observable – environmental impacts reversible with time
3	Moderate	Effects observable – impacts reversible with rehabilitation
4	Moderate to high	Extensive effects – irreversible alteration to the environment
5	High	Extensive permanent effects with irreversible alteration
The extent of the impact		
Score	Extent	Description
1	Site specific	Within the site boundary
2	Local	Affects immediate surrounding areas
3	Regional	Extends substantially beyond the site boundary
4	Provincial	Extends to almost entire province or larger region
5	National	Affects country or possibly world
The duration of the impact		
Score	Duration	Description
1	Short term	Less than 2 years
2	Short to medium term	2 – 5 years
3	Medium term	6 – 25 years
4	Long term	26 – 45 years
5	Permanent	46 years or more
The reversibility of the impact		
Score	Reversibility	Description
1	Completely reversible	Reverses with minimal rehabilitation & negligible residual affects
3	Reversible	Requires mitigation and rehabilitation to ensure reversibility
5	Irreversible	Cannot be rehabilitated completely/rehabilitation not viable
The Consequence		= Magnitude + Spatial Scale + Duration + Reversibility.

The probability of the impact		
Score	Rating	Description
1	Unlikely	Less than 15% sure of an impact occurring
2	Possible	Between 15% and 40% sure of an impact occurring
3	Probable	Between 40% and 60% sure that the impact will occur
4	Highly Probable	Between 60% and 85% sure that the impact will occur
5	Definite	Over 85% sure that the impact will occur
The Significance		= Consequence x Probability.
Score out of 100		Significance
1 to 20		Low
21 to 40		Moderate to Low
41 to 60		Moderate
61 to 80		Moderate to high
81 to 100		High
Is mitigation possible?		Yes or no?
Degree of loss of resource		
Low		Where the resource will recover

Note: this is a high level assessment, and impacts have been rated prior to any mitigation measures being proposed.

10.3 Item 2(h)(vii): The positive and negative impacts that the proposed activity (in terms of the initial site layout) and alternatives will have on the environment and the community that may be affected

As stipulated under Section 7 of this report the properties selected for the overall mining right application are limited to those held under valid Prospecting Right(s) by the applicant; and finally the coal resource determination and the economic feasibility of mining the coal resource.

Property alternatives for the boxcut and surface infrastructure area included:

- Portion 3 of De Roodepoort 435 IS; and
- RE of De Roodepoort 435 IS.

The location of the box-cut and associated infrastructure area was based on the depth of the coal and a high-level sensitivity analysis. Infrastructure has been placed to avoid water resources and their applicable buffers as far as possible.

The table below outlines the alternatives considered and lists the positive and negative impacts associated with these.

Table 10: Positive and negative impacts associated with the project alternatives

Alternative	Positive Impact	Negative Impact
Site Layout		
Alternative 1: Box-cut and associated infrastructure to be located on the RE of De Roodepoort 435 IS (Preferred Option)	All infrastructures can be located outside the 100m /1:100 year flood lines of the identified water resources. No stream crossings will be required. No rail crossings will be required. Access to the N17 is readily available. Area of disturbance is limited.	The depth of the coal is slightly deeper, and thus additional costs are associated with the construction of the box-cut and associated horizontal or inclined roadways.
Alternative 2: Box-cut and associated infrastructure to be located on Portion 3 of De Roodepoort 435 IS	The depth of the coal seam is shallowest on this property, making it ideal for the box-cut and associated horizontal or inclined roadways.	Due to the number of water courses and associated wetlands, limited space is available on this property; infrastructure would have to infringe on the 100m / 1:00 year floodlines of identified water resources. A number of stream crossings, as well as a rail crossing would be required in order to access the N17.
Alternative 3: Box-cut to be established on Portion 3 of De Roodepoort, with the plant and infrastructure area located on the RE of De Roodepoort 435 IS	The depth of the coal seam is shallowest on Portion 3, making it ideal for the box-cut and associated horizontal or inclined roadways.	Coal would need to be conveyed from Portion 3 to the RE. A number of stream crossings, as well as a rail crossing would be associated with the conveyor. Additional infrastructure would be required and this would result in an increased area of disturbance and increased costs.
Other alternatives proposed by I&APs		

Alternative	Positive Impact	Negative Impact
No alternatives have been proposed by I&APs to date	-	-

10.4 Item 2(h)(viii): The possible mitigation measures that could be applied and the level of risk

PPP has commenced for the project; where issues or comments have been received these have been incorporated into the Scoping Report. Table 11 below summarise the issues and concerns raised by I&APs and an assessment/discussion of the mitigation or site alternatives available to address their concerns, together with an assessment of the risks associated with the mitigation or alternative considered.

The provisional layout of the surface infrastructure is depicted in Plans 3 to 6 of Appendix 3, the current layout is based on a high-level sensitivity analysis. Infrastructure has been placed to avoid water resources and their applicable buffers as far as possible.

It must be stressed that the location of the infrastructure may shift slightly (within the same property boundary) dependant on the findings of the specialist studies and input from Interested and Affected Parties (I&APs).

Table 11: Issues and concerns raised and alternatives considered

Issue raised	Mitigation measures considered including alternatives	Risks associated with proposed mitigation measure
Potential water loss on farm properties.	A full groundwater assessment will be completed to determine the extent of dewatering. Mitigation measures will consider aspects such as additional or alternative water supply through drilling of additional boreholes or drilling to other aquifers but can only be finalised once the study is completed	Financial implication with sourcing other water sources for registered water users.
River water is contaminated by *E.coli*.	The mine will have its own dedicated sewage treatment facility and will not contribute to the overloaded municipal system and nor will it release sewage to the environment.	None. Already included within the scope of work.
Some grave sites located on the properties.	At this stage it is anticipated that heritage sites and graves	Unknown at this stage. Financial implications are

Issue raised	Mitigation measures considered including alternatives	Risks associated with proposed mitigation measure
	have been avoided by infrastructure, however this can only be finalised on completion of the heritage survey. May result in shifting the proposed infrastructure areas within the existing property boundaries.	assumed to be minimal at this stage, however if relocation of graves is required then this will bear additional significant financial and social implications.
Dump was originally proposed for portion 3. Why has this changed?	This was one option. The numerous wetlands and access issues would result in more environmental impact and greater financial costs and the preferred site is presented.	None. The current option as presented is the better option from a high-level environmental perspective.
Other proposed land uses and developments - Transnet is currently extending the railway line on De Roodepoort & There is a ring road proposed over these farms by SANRAL.	SANRAL and Transnet have been consulted and the details need to be finalised. May result in shifting the proposed infrastructure areas within the existing property boundaries.	Financial implications are assumed to be minimal at this stage, as infrastructure is likely to remain within the same farm portion.
Do not have confidence with underground mining as one cannot see what is being done.	The depth of coal makes underground mining the only viable alternative.	None. The depth of mining and geological nature means that the no surface impacts are expected, although this will be confirmed by a rock mechanics assessment.
Does not want the mine next to the research centre.	The distance from the research centre to the infrastructure on site is roughly 6km away and closest distance to underground mine is roughly 5.3km away. Negligible surface impacts are expected at this site. Dewatering impacts are also expected to be minimal but will be confirmed with groundwater study.	At this stage no additional financial implications or excessive are foreseen.

Issue raised	Mitigation measures considered including alternatives	Risks associated with proposed mitigation measure
Dust	Dust mitigation measures will be included in the EMP. Level of dust management required can only be finalised after the completion of the dust dispersion modelling.	At this stage there may be additional financial implications if additional or special dust mitigation measures are required, but this will only be finalised after completion of the specialist study.
Noise	Noise mitigation measures will be included in the EMP.	At this stage no additional financial implications or excessive noise issues are foreseen.
Blasting	Blasting will only take place during the excavation of the boxcut adit during construction. From the current data no blasting of sills or dykes will be required during operations underground. Blast specialists will advise as to the mitigation that will be required to reduce outward blast impacts where needed.	At this stage no additional implications or risks are identified.

10.5 Item 2(h)(ix): The Outcome of the Site Selection Matrix and Final Layout Plan

The provisional layout of the surface infrastructure is depicted in Plans 3 to 6 of Appendix 3, the current layout is based on a high-level sensitivity analysis. Infrastructure has been placed to avoid water resources and their applicable buffers as far as possible.

It must be stressed that the location of the infrastructure may shift slightly (within the same property boundary - RE) dependant on the findings of the specialist studies and input from Interested and Affected Parties (I&APs).

10.6 Item 2(h)(x): Motivation where no alternative sites were considered

As stipulated under Section 3.8. the properties selected for the overall mining right application are limited to those held under valid Prospecting Right(s) by the applicant; and finally the coal resource determination and the economic feasibility of mining the coal resource.

As much as it is a requirement under GNR632 of NEM:WA to complete an alternatives assessment for mine residue stockpiles, in this case the area is very limited due the various

water resources in the area, as well as the fact that the N17 and the Richards Bay rail line traverse the mining right area. The position of the integrated dump has been located close to the plant area to minimise material transport and handling over distances, and has been placed to avoid water resources and their applicable buffers as far as possible.

10.7 Item 2(h)(xi): Statement motivating the preferred site

The site layout is depicted in Plans 3 to 6 of Appendix 3, the current layout is based on a high-level sensitivity analysis. Infrastructure has been placed to avoid water resources and their applicable buffers as far as possible. No river crossings will be required, and thus the potential for coal spills into these water resources is greatly reduced.

No rail crossings will be required, and access to the N17 is readily available.

11 ITEM 2(i): PLAN OF STUDY FOR THE ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

11.1 Item 2(i)(i): Description of alternatives to be considered including the option of not going ahead with the activity

The site layout, as indicated in Plans 3 to 6 of Appendix 3, is the preferred alternative as it will have the least overall impact. Alternatives 2 and 3 have been ruled out, and will not be considered further during the EIA EMPr phase of the project.

However, the location of the infrastructure may shift slightly (within the boundary of the RE of De Roodepoort 435 IS) dependant on the findings of the specialist studies and input from Interested and Affected Parties (I&APs). This will be dependent on the presence and extent of sensitive features on site and legal options regarding the preservation or destruction of such sites or features. This will be finalised in the EIA and EMPr phase and reported within the EIA and EMPr.

The Final EIA and EMPr will include the following assessment:

- A final layout discussing any changes in proposed layout or processes as reported in the Scoping Report due to the findings of the specialist studies.
- The "no-go" alternative has been briefly stipulated within the Scoping Report and will be elaborated where relevant regarding any changes in layout or activities.

11.2 Item 2(i)(ii): Description of aspects to be assessed as part of the environmental impact assessment process

The following aspects will be assessed within the EIA EMPr:

- Biophysical:
    - Soils, land capability and land use
    - Biodiversity (fauna, flora)
    - Aquatic ecology and ecosystems
    - Surface water
    - Groundwater
    - Wetlands
    - Air Quality
    - Noise
- Cultural heritage
- Visual environment
- Socio-economic
- Traffic and safety
- Blasting
- Closure and Rehabilitation

The final impact table will incorporate additional impacts identified by I&APs and by specialists and include proposed mitigation measures, a post mitigation significance assessment, and monitoring and inspection details that need to be implemented to reduce probability or severity of the impact and to ensure mitigation measures are appropriate.

Item 2(i)(iii): Description of aspects to be assessed by specialists

A team of specialist Scientists and Engineers have been appointed to undertake the following specialist studies. These studies will investigate the baseline environment, potential impacts and provide management measures where applicable.

Table 12: Specialist studies to be undertaken

Specialist Study	**Conducted by:**
Groundwater assessment	Future Flow Groundwater & Project Management Solutions
Surface water assessment	Letsolo Water & Environmental Services
Fauna & Flora assessment	Dimela Eco-consulting
Wetland delineation & characterisation	Limosella Consulting
Biomonitoring (to establish baseline aquatic status)	Iggdrasil Scientific Services
Soils, land capability and land use assessment	Cabanga Environmental
Heritage and archaeological assessment (Phase 1)	Archaetnos
Baseline noise assessment	Cabanga Environmental
Visual assessment	Cabanga Environmental.
Air Quality assessment (and dispersion modelling)	Rayten Engineering
Blast and vibration assessment	Blast Management & Consulting
Socio-economic assessment	Zone Land Solutions
Traffic assessment	Sturgeon Consulting
Closure and rehabilitation	Cabanga Environmental

11.3 Item 2(i)(iv): Proposed methodology of assessing the environmental aspects including the proposed method of assessing alternatives

The following environmental aspects will be assessed in the following manner:

- Detailed site assessment of the hydrological characteristics at site, including:
    - Surface water (hydrology) assessment with surface water monitoring completed by a hydrological specialist.
    - Geohydrological assessment with groundwater monitoring, drilling and pump testing of boreholes completed by a geohydrological specialist.

- Detailed site assessment of flora completed by a floral specialist (one season only) over Portion 3 and the RE of De Roodepoort, with a high level reconnaissance assessment over the areas to be mined via underground.
- Detailed site assessment of fauna completed by a fauna specialist (one season only) over Portion 3 and the RE of De Roodepoort, with a high level reconnaissance assessment over the areas to be mined via underground.
- Detailed site assessment for wetland delineation and characterisation completed by a wetland specialist over Portion 3 and the RE of De Roodepoort, with a high level reconnaissance assessment over the areas to be mined via underground.
- Detailed site assessment on the aquatic ecology associated with local water bodies completed by an accredited SASS5 practitioner (two seasons).
- Detailed site assessment of soil, land capability completed by a specialist within the field of pedology over Portion 3 and the RE of De Roodepoort, with a high level reconnaissance assessment over the areas to be mined via underground.
- Detailed site assessment of heritage and archaeological sites completed by a registered heritage and archaeological specialist over Portion 3 and the RE of De Roodepoort, with a high level reconnaissance assessment over the areas to be mined via underground.
- Detailed desktop literary and dispersion modelling assessment of the atmospheric impacts completed by air quality experts.
- Air blast and vibration impact assessment completed by blasting specialists in association with rock engineers or geologists (relevant to the construction of the box-cut).
- Detailed desktop assessment of the existing socio-economic character which will be obtained largely from the S&LP in conjunction with municipal data where needed.
- Day-time baseline noise level readings will be undertaken by Cabanga at nearby sensitive receptors and at mineral boundary locations and compared to SANS noise level standards.
- Broad site assessment of the visual character of the site completed by Cabanga.
- The EMPr will include a closure liability assessment for the proposed mine as per the current Regulations for Assessing the Financial Provision for Prospecting, Exploration, Mining or Production Operations; as well as an initial rehabilitation plan.

11.4 Item 2(i)(v): Proposed method of assessing duration significance

This will be incorporated into the impact assessment as "degree of loss of resource" which is evaluated in terms of:

- Low degree of loss: where the resource will recover from the impact on its own with no/limited rehabilitation over an observable period of time;
- Moderate degree of loss: where the resource will recover from the impact over extended period or with rehabilitation or remedial measures to assist recovery of resource; and
- High degree of loss: Where the resource cannot recover from the impact or the resource will recover over very extended time periods.

11.5 Item 2(i)(vi): Stages at which the competent authority will be consulted

The DMR has received all the relevant documentation that would have been presented to registered I&APs during the scoping phase, including copies of the BID, invites to the scoping phase public meeting, review of minutes of the public meeting and the review of information presented in this Scoping Report.

The Competent Authority (DMR) will also be notified through the submission of documents in terms of the mining right application and the application for environmental authorisation.

This draft Scoping Report will be submitted to the DMR for comment and feedback. In addition, the final Scoping Report, incorporating all comments raised during the PPP review period, will be submitted to the DMR for approval.

Future stages of the consultation will include:

- The DMR will be invited to complete a site visit after submission of the Scoping Report.
- Notification of the EIA and EMPr phase public meeting, and the presentation of the meeting;
- Notification of the availability of the meeting minutes for public review and comment; and
- Notification of the availability of various environmental reports for public review, including the EIA and EMPr and the IWULA and associated IWWMP report.

The comments received from the public after the completion of the public review period will then be incorporated into the final EIA and EMPr which will be submitted to the DMR for approval.

The DWS (competent authority in terms of the water use license application) will be notified of the project by means of a pre-consultation meeting. The DWS will also be regarded as an I&AP through the PPP and receive all notifications relevant to the PPP as briefly stipulated above. The DWS will then also receive the final IWULA and IWWMP report for comment and approval.

11.6 Item 2(i)(vii): Particulars of the public participation process with regards to the impact assessment process that will be conducted

11.6.1 Steps to be taken to notify I&APs

Hand delivered notification has been completed as far as possible with land owners / users and adjacent land owners / users.

PPP during the EIA phase of the project involves the review of the EIA and EMPr as well as the findings of the various specialist studies. I&APs will be notified using the following:

- Advertisements
- Registered I&APs will be notified by order of preference (either: SMS, fax, e-mail, post or telephone call).

Registered I&APs will be invited to attend an EIA phase PPP meeting where the contents of the EIA EMPr will be presented and the I&APs will have the opportunity to comment.

The stages at which these will occur are detailed further below.

11.6.2 Details of the engagement process to be followed

All persons registered as I&APs and organs of state identified through the scoping phase PPP will be sent invites to attend the EIA and EMPr Phase PPP meeting. The meeting will address specialist findings, focussing on sensitive issues, and provide information on the impact probability and significance. Proposed mitigation measures will also be discussed.

The meeting will be recorded and minuted, and the minutes distributed to all attendees and I&APs for comment.

A Final Draft EIA and EMPr will be compiled.

I&APs will be notified of the availability of the EIA and EMPr and associated Appendices for public review and comment, the location where the hard copy and electronic copies can be viewed and the timeframe (30 calendar days, which will be extended if significant public holidays occur within this period as per NEMA EIA regulations) for comment.

All comments received from the review phase will be incorporated into the issues and response table and incorporated into the Final PPP Report and Final EIA and EMPr for submission to authorities.

During the EIA and EMPr phase, if the need is identified to have one-on-one micro-consultations, then these will be organised with the relevant I&AP.

Upon receipt of a RoD, all registered I&APs will be notified of the RoD, the final decision in the RoD and the appeal process they can follow under NEMA.

11.6.3 Description of the information to be provided to the I&APs

PPP during the EIA phase of the project will entail the review of the EIA EMPr and all the completed specialist studies. These reports will be provided to the public for a period of 30 days.

I&APs will be notified of the availability of the EIA and EMPr (and associated specialist studies) for public review. Hard copies will be placed at the Ermelo Public Library and the Wesselton Public Library. Electronic copies will be available for download from Cabanga's website (www.cabangaconcepts.co.za). Electronic copies will also be provided to any I&APs requesting these.

In addition to this registered I&APs will be invited to attend an EIA phase PPP meeting where the contents of the EIA EMPr will be presented and the I&APs will have the opportunity to comment.

As per NEMA, the I&APs will be notified of the RoD within the prescribed timeframes. This will include the outcome of the RoD and detail the appeal process that I&APs can follow. A copy of the RoD will be made available to any I&AP requesting such.

11.7 Item 2(i)(viii): Description of the tasks that will be undertaken during the Environmental Impact Assessment Process

The impact identification process will commence by identifying all environmental aspects on site, whether sensitive or not. General environmental aspects that will be considered include:

- Topography
- Geology
- Soil & Associated Land Capability
- Surface Water, Associated Wetlands and Aquatic Ecosystems
- Groundwater
- Floral and Faunal Ecosystems
- Air Quality
- Ambient Environmental Noise
- Archaeological and Cultural Sites
- Visual Aesthetics
- Land Use
- Socio-Economics, Health and Safety
- Blasting
- Closure and Rehabilitation

All potential impacts that may occur will be listed under each of the aspects.

As the specialist studies are completed, any additional impacts identified through the specialist investigations will be added. All specialists utilise some form of impact rating similar to the process detailed in Section 2(h) (vi). The impact rating completed by the specialists will as far as possible be translated into the impact assessment process detailed above to ensure that similar methodology are applied and comparable significances are obtained to allow for ranking of consolidated impacts.

As far as practically possible, considering variations in impact assessment methodology by different specialists, the specialist impact assessment will therefore be duplicated within a single unified impact assessment process. This will allow for all impacts to be assessed in the same way, reducing subjectivity and allowing for direct comparative ranking of all the impacts identified during the environmental process.

Through the PPP, any issues or potential impacts identified by the I&APs will be added to the list of potential impacts.

All these impacts will then be assessed as per the methodology described above and their significance determined.

Impact identification will therefore be a consolidated approach based on Cabanga's professional experience, specialist expertise and I&AP (including organs of state involved in the PPP) input.

The impact table formulated by Cabanga, which will be fully completed and detailed in the EIA and EMPr allows for inclusion of mitigation measures and a post-mitigation assessment of impact significance. In this way, the mitigation measures proposed by specialists can also be directly transferred to the impact assessment process.

11.8 Item 2(i)(ix): Measures to avoid, reverse, mitigate, or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored

Each impact identified within the impact assessment process will be evaluated in terms of whether mitigation measure can be applied or not, and what kinds of mitigation measures can be applied. This will be reported in the fully completed and detailed impact assessment table that will be completed for the EIA and EMPr. Therefore each impact, whether the significance is low or high, will have a mitigation measure stipulated where applicable. Furthermore, a post-mitigation assessment of the significance of the impact will also be completed, which will provide an indication of the effectiveness of said mitigation measure.

The preliminary summary is provided in the table below.

Table 13: Preliminary mitigation measures

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
All infrastructure areas, development footprints and associated activities. (Discussion of potential impacts due the mining operation as a whole. Specific impacts are discussed for each activity below)	Loss in grazing potential, loss of soil and deterioration of soil characteristics. Alien invasive encroachment. Alienation of, and disturbance to, animals. Loss of biodiversity, degradation of vegetation and loss of ecological function & associated loss of habitat, refuge and food for animals. Destruction of protected species. Change in land use to mining. Influx of unsuccessful job seekers. All environmental impacts can affect quality of life; mining activities carry inherent dangers which are a risk to health and safety. Change in land use. A **POSITIVE IMPACT**: Potential for more employment & multiplier effect.	**REMEDY** Rehabilitate all disturbed areas as soon as they are no longer required and cordon off areas until vegetation has established. Ameliorate soils as needed to establish stable vegetation communities on rehabilitated areas. Obtain permits to remove / destroy protected species or leave species in situ. **CONTROL** Compile and implement an alien and invasive species management plan. Do not hinder, harm or trap animals. Animals or protected flora under threat from the development will be relocated from site by specialists Noise control measures will be considered. Machinery and equipment will be	Species will take time to recover. Land capability may be altered. Alien and invasive species may become rampant if not adequately controlled during operations and rehabilitation.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
		regularly serviced. Labourers, contractors, service providers should initially be sought locally and only regionally if skills are not available. Employ as per S&LP. Ensure proper communication channels are in place with local businesses and I&APs. **STOP** Protected species cannot be removed unless the necessary permits are obtained under NEM:BA.	
Construction of box-cut and underground mining	Altered topographical nature and associated drainage through the construction of the boxcut. Alteration of topography through potential subsidence of surface layers. Alteration of the geological nature and sequence. Potential damage to groundwater aquifers and alteration of groundwater flow. Potential contamination plume of	**MODIFY** Treatment options for contamination plume: utilisation of a proposed water treatment plant; a pump and treat system to continuously pump the water from the mine to surface dams. **REMEDY** Fill all cracks and rehabilitate the area.	Subsidence may hinder drainage in the area.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
	groundwater. Loss of and disturbance to archaeological / heritage sites. Dust generation as earth material is mobilised.	Ensure registered affected water users are compensated in some way, either with alternative water supply or monetary equivalent. **CONTROL** Conduct pre-mining topographical surveys to inform the rehabilitation plan and post mining topographical environment. Compile a full rehabilitation model before any mining commences. Demarcate designated activity area. Conduct soil handling as per soil utilisation guide which will be included in the soil report. Rehabilitated areas must be contoured and free draining to prevent ingress and pooling of water. Topographical and visual surveys must be conducted of mined areas for differential settling of material. Proper sealing and rehabilitation of shafts and exploration boreholes will	

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
		prevent the establishment of decant points. Demarcate designated activity area and no-go areas. Dust alleviation through spraying **STOP** 100m buffer zones / 1:100 year floodlines will be demarcated as no-go areas. Sites identified in the HIA will be cordoned off as no go areas. Should other sites / graves be uncovered on site during activity progress then all activity should cease and the area demarcated as a no-go zone. A specialist will need to be consulted and responsible action considered.	
Blasting	Cracks and disruption to geological layers. Potential damage to groundwater aquifers and alteration of groundwater flow. Dust generation.	**MODIFY** Alternative blasting methods will be considered to reduce outward impact. **REMEDY** Ensure registered affected water users	No residual impacts expected if mitigation measures are continuously applied.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
	Increased noise levels. Vibrations may damage nearby structures. Danger of fly-rock to surrounding land/road users. Vibrations and fly-rock may damage local structures and pose risks to surrounding land users.	are compensated in some way, either with alternative water supply or monetary equivalent. Ensure procedures in place to compensate for damage. **CONTROL** Ensure baseline photographs are taken of all structures which may be impacted for photographic evidence prior to any blasting. Use quality explosives. Blasting specialists must be contracted. Blasts methods used to reduce outward impact radius. Stemming control and audit, use proper stemming materials. Consider wind direction when blasting. Evacuate 500m radius prior to blasting. Ensure all local land users / owners are provided with blasting schedule so that they are prepared for blasts. Also communicate steps to take that will reduce blast damage to structures.	

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
Integrated disposal dump & associated slurry pipelines	Dump will change the topographical nature of the area. Deterioration in visual aesthetics. Potential contamination of surface water features with burst pipelines. Increased risk of contamination to groundwater through seepage. Potential harm to flora and fauna through spills. Potential for spontaneous combustion and associated emissions.	**REMEDY** Inspect, maintain and repair pipelines and pumps. Follow emergency response plan for spills. Keep back-up pumps and pipes on site. Inspect for and treat spontaneous combustion by covering areas with fine subsoil to douse the combustion. Visual screens (vegetated berms, trees or wind breaks) will be considered where necessary. Clad and vegetate integrated dump. Apply dust control measures and other environmental measures to ensure impact area is contained. Apply good housekeeping practices. **CONTROL** Pipelines should be laid in paddocks which will serve to contain any leaks. Pipelines should have a series of shut-off valves which can prevent flow of	Potential increased contamination in groundwater plume. Groundwater monitoring will need to continue post closure.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
		contaminated water should leaks occur. Ensure the integrated dump is designed and appropriately lined to reduce seepage. Ensure water separation and dirty water containment on site as per GN704 requirements. **STOP** Dirty water pipelines will remain outside 100m buffer zones / 1:100 year floodlines.	
Topsoil & subsoil stripping & stockpiling	Stockpiles will change the topographical nature of the area. Compaction and alteration of physical characteristics of soil and potential loss of soil. Increased runoff and associated potential silt-loading of downstream water resources. Dust generation.	**REMEDY** Material stockpile and soil berm placement should consider remediation of other impacts, such as utilising material as a berm to shield visual impacts. As far as possible, plan soil stripping activities in the dry season. **CONTROL** Minimize the area of disturbance. Topsoil and underlying material should	Land capability may be altered.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
		be stored separately as per stripping guidelines which will be included in the soil report. All excavated topsoil will be stored for use during rehabilitation of the mine. Topsoil should be stripped and stockpiled with herbaceous vegetation to retain organic content. All stockpiles / berms which will be in place for more than 6 months must be vegetated to reduce risk of erosion. Topsoil stockpiled as perimeter berms must not exceed 2 m. Subsoil stockpiles must not exceed not exceed 6 m in height. All stockpiles must have an outer slope of approximately 1 V: 3 H (to limit the potential for erosion of the outer pile face). Construct top perimeter berms on subsoil stockpiles. Cut off drain must be constructed upslope of all stockpiles. Establish storm water control measures	

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
		before any other activities commence to ensure clean and dirty water separation and dirty water containment. Seed all stockpiles - Seeding must be completed within seven (7) days of stockpiling. Consider reducing construction activities when windy.	
All material stockpile areas	Stockpiles will change the topographical nature of the area. Increased runoff and associated potential silt-loading of downstream water bodies and associated wetlands.	**REMEDY** Material stockpile and soil berm placement should consider remediation of other impacts, such as utilising material as berms to shield visual impacts or divert clean water runoff from site. **CONTROL** Stockpile heights must not exceed 2m for topsoil, 3m for coal stockpiles, 6m for subsoil, and 25m for overburden. Demarcate stockpile areas and strip soil from these areas. Conduct soil handling as per soil utilisation guide which will be included	None expected, stockpiles will be removed during rehabilitation.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
		in the soil report. Manage dust through water carts or sprinklers. Ensure water separation and dirty water containment on site as per GN704 requirements.	
RoM & product coal stockpiling Coal handling & conveyance	Chemical soil pollution- as a result of mine water spills or irresponsible handling of coal or generation of coal dust and coal spillages. Generation of coal dust and coal spillages and potential for spontaneous combustion and associated emissions. Creation of and removal of stockpiles will continuously alter the topography. Generation of coal dust and coal spillages could contaminate neighbouring areas (soil, surface water and groundwater).	**REMEDY** Coal spillages must be cleared. Inspect for and treat spontaneous combustion by covering areas with fine subsoil to douse the combustion. **CONTROL** Coal stockpile and handling must be in designated areas with compacted base and must form part of the dirty water footprint. Move coal stockpiles on a first-in-first-out basis. Coal stockpile and handling must be in designated areas. Manage dust through water carts or sprinklers.	None expected; coal will be removed.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
		Trucks must not be overloaded and must be covered with tarpaulins when leaving the property. Ensure water separation and dirty water containment on site as per GN704 requirements. All dams will be constructed and lined as per designs and operated with a 0.8m freeboard.	
Crushing, screening & processing Plant	Generation of coal dust and coal spillages could contaminate neighbouring areas (soil, surface water and groundwater). Irresponsible use of water and water wastage.	**REMEDY** Inspection of water features for leaks and immediate repair. Coal spillages must be cleared. **CONTROL** Saving water initiatives will be included in the environmental awareness training. Utilise water on site responsibly. Record all water usage on site. Coal stockpile and handling must be in designated areas with compacted base and must form part of the dirty	None; facilities and coal will be removed from site.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
		water footprint.	
Water supply (potable & process)	Irresponsible use of water and water wastage.	**REMEDY** Inspection of potable water features for leaks and immediate repair **CONTROL** Saving water initiatives will be included in the environmental awareness training. Utilise water on site responsibly. Record all water usage on site.	Positive impact as water will be available for other users.
Water storage (PCDs / reservoirs / tanks) and associated storm water runoff management features	Excavation of dams will alter topography and drainage patterns. Contamination of soil with contaminated water runoff, ruptured dam walls. Contamination of surface water features with contaminated water runoff, ruptured dam walls. Downstream water quantity of catchment reduced. Necessary measure to contain mine water. Contamination of groundwater through seepage of contaminated water spills, or	**REMEDY** Ensure dams are adequately sized and inspect, maintain and repair all water management features. Follow emergency response plan for spills. Keep back-up pumps and pipes on site. Keep dirty water runoff areas as compact as possible to increase clean water runoff footprint area. **CONTROL**	None; features will eventually be rehabilitated and removed from site.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
	poorly lined dams. Potential harm to flora and fauna through spills. A **POSITIVE IMPACT**: Containment of contaminated water.	Necessary measure to ensure water separation and dirty water containment on site as per GN704 requirements. Establish storm water control measures before any other activities commence to ensure clean and dirty water separation and dirty water containment. All dams will be constructed and lined as per engineering designs and operated with a 0.8m freeboard. All pollution control facilities must be managed in such a way as to ensure that storage and surge capacity is available if a rainfall event occurs. Establish protective berms / fence outside wetland buffer zones between wetlands and active areas. Establish clean water diversion berms upslope of activity footprint to prevent clean water runoff flowing onto site. Drain all water runoff on activity area to PCDs and dirty water containment features.	

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
		STOP 100m buffer zones / 1:100 year floodlines will be demarcated as no-go areas.	
Access and hauling along roads	Generation of coal dust and coal spillages could contaminate neighbouring areas (soil, surface water and groundwater). Generation of coal dust and coal spillages and potential for spontaneous combustion and associated emissions. Increased potential for road incidences and road degradation.	**REMEDY** Coal spillages must be cleared. **CONTROL** Coal stockpile and handling must be in designated areas. Manage dust on internal haul roads through water carts or sprinklers. Trucks must not be overloaded and must be covered with tarpaulins. Speed limits will be established on the dirt road. Drivers, contractors and visitors will enforce speed limits. Intersections with main tarred roads will be clearly signposted. Trucks will be in road-worthy condition with reflective strips.	None; traffic will cease and coal will be removed from site.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
Lighting	Hindrance to nocturnal animals. Increased visibility of the site. Potential nuisance to surrounding land/road users. Increase visibility of site.	**REMEDY** Utilise lights in the orange and yellow light ranges rather than white. This has the added benefit of reducing strong light and dark contrasts which also has safety benefits for staff. **CONTROL** Ensure directional floodlights are utilised to reduce light pollution to surrounds.	None; light masts will eventually be removed from site.
Waste generation & storage	Potential contamination of soil, surface water and groundwater with indiscriminately dumped waste. Potential harm to flora and fauna through littering and waste toxins. Deterioration in visual aesthetics.	**REMEDY** Inspect and clear all litter and waste. **CONTROL** Apply good housekeeping practices. Waste storage area will be treated as a dirty area and any runoff from site must be contained. Waste should be recycled as far as possible and sold/given to interested contractors.	None; waste will be cleared from site during decommissioning.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
		Waste will be stored according to the Norms and Standards for Storage of Waste. Recyclable waste should not be stored for excessive periods. Refuse bins will be placed around site to collect waste for separation, recycling and disposal.	
Stores, workshops, washbays, hard park & fuel storage area	Potential hydrocarbon contamination of soils, surface water and groundwater and potential contamination of soil with indiscriminate use of contaminating materials (cement, chemicals, etc.). Potential hydrocarbon contamination will be source of toxin to flora and fauna.	**REMEDY** Oil from oil traps will be removed to used hydrocarbon drums for removal from site by a reputable hydrocarbon waste contractor. Spill kits must be available on site and personnel trained to utilise these to clear spills. **CONTROL** Cement will be handled over protected ground or sheeting. Chemicals will be stored as per requirements with the MSDS.	None; will eventually be removed from site.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
		Wet and dry chemicals, reducing and oxidising agents, will be stored separately. All vehicles / machinery on site will be up-to-date with their service and maintenance plans. The use of persistently leaky equipment will be discontinued until repairs are made. Equipment will not be parked over bare ground; where unavoidable, drip trays will be placed under the equipment to collect potential leaks. Minimise direct spillages of oils or diesels as result of machinery use. Ensure action and emergency response plans are in place for all hydrocarbon spills. Spills must be reported and attended to immediately. Bunding / concrete flooring and oil traps must be constructed in areas of hydrocarbon storage and transfer and in workshop areas where diesel-driven	

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
		equipment is serviced. Bunds in workshop and washbays will be fitted with an outlet valve and drain to an oil trap.	
Ablutions & change house with sewage treatment plant	Potential contamination of soil, surface water and groundwater with sewage. Source of microbial contamination and health risk if sewage leaks occur.	**REMEDY** Ensure sewage treatment plant is adequately sized to prevent the need for additional construction and increasing developmental footprint. **CONTROL** Standard operating procedure (SOP) will be devised and implemented for the sewage treatment facility. Bacterial assessment of all monitoring points downstream of the sewage treatment plant.	None; will eventually be removed from site.
Rehabilitation	Groundwater levels will start to recover which will increase the potential for plume migration and decant. Dust generation associated with material handling. Lack of functional vegetation due to poor	**REMEDY** The utilizable soil removed during the construction phase shall be redistributed in a manner that achieves an approximate uniform stable thickness consistent with the approved post-mining land use, and will attain a	Groundwater monitoring, soil quality monitoring, topographical surveying, surface water monitoring and monitoring of vegetation cover and succession must be on-going after

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
	rehabilitation. **<u>POSITIVE IMPACTS</u>** include: Eradication of box-cut & stockpiles through replacement of material and profiling, soil replacement and amelioration, free drainage restored to area, groundwater levels will start to recover, seeding and vegetative cover and plant community succession, influx of animals to the area once vegetation establishes, improved visual aesthetic.	free draining surface profile. Fertilization and amelioration of rehabilitated areas will be undertaken as per soil fertility assessments. Seedbed preparation must be undertaken using agricultural equipment. Restriction of vehicle movement over rehabilitated areas and do not allow any grazing for the first two years. **MODIFY** Treatment options for decant and contamination plume will be finalised during decommissioning. **CONTROL** Compile a full rehabilitation model before any mining commences and apply this on site. Conduct soil handling as per soil utilisation guide which will be included in the soil report. Rehabilitated areas must be contoured and free draining to prevent ingress and pooling of water.	decommissioning to ensure site is stable. Post closure pollution plume.

ACTIVITY	POTENTIAL IMPACT	MITIGATION TYPE (modify, remedy, control, or stop)	POTENTIAL FOR RESIDUAL RISK
		Manage dust through water carts or sprinklers. Runoff from the rehabilitated areas must be allowed to flow naturally to the environment. Monitoring of the rehabilitation success should take place and include corrective follow-up action. It is recommended that Landscape Functional Analysis (LFA) forms part of the rehabilitation and monitoring process.	

12 ITEM 2(I): OTHER INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

12.1 Impact on the Socio-economic Conditions of any Directly Affected Person

No detailed studies have been completed at this stage. A socio-economic impact assessment will be undertaken during the EIA phase of the project.

The Department of Land Affairs has been consulted and specifically requested to provide information on any potential land claims or other property issues where known. No response has been forthcoming to date.

12.2 Impact on any National Estate referred to in Section 3(2) of the National Heritage Resources Act

SAHRA has been notified as an organ of state and has been notified of the project through the various PPP procedures described in this Scoping Report. A Phase I heritage assessment study is currently underway for the mining right area; and will be completed as part of the EIA and EMPr phase. These reports will be submitted to SAHRA for comment.

All outcomes will be reported in the EIA and EMPr.

12.3 Other matters required in terms of Section 24(4)(a) and (b) of the Act

Section 24(4) (b) (i) of the Act specifies "investigation of the potential consequences or impacts of the alternatives to the activity on the environment and assessment of the significance of those potential consequences or impacts, including the option of not implementing the activity"

This has been addressed in the relevant sections above. As stipulated, the site is delimited by the prospecting rights area and the extent of the resource. The type of mining to be conducted is limited by the depth of the resource. Processing requirements are limited to the in situ quality and market needs and demands.

Site layout alternatives are limited, but have been detailed in the Scoping Report. Any further changes will be described and motivated in the EMPr once the specialist studies are completed.

13 UNDERTAKING REGARDING CORRECTNESS OF INFORMATION

I, Jane Gayle Kennard, herewith undertake that the information provided in the foregoing report is correct, and that the comments and inputs from stakeholders and Interested and Affected parties have been correctly recorded in the report.

_____

Signature of the EAP

DATE:

14 UNDERTAKING REGARDING LEVEL OF AGREEMENT

I, Jane Gayle Kennard, herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with Interested and Affected Parties and stakeholders has been correctly recorded and reported herein.

_____

Signature of the EAP

DATE:

-END-

15 REFERENCES

Mucina, L. and Rutherford, M.C. (eds) 2006. *The vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19*. South African National Biodiversity Institute, Pretoria.

Department of Water Affairs, 2008. *Upper Vaal Water Management Area: Overview of water resources availability and utilisation.*

RSV Encho, 2016. *Mine Works Programme: De Roodepoort 435 IS.*

Department of Energy, publication date unknown. *Energy Sources: Coal*. [ONLINE] Available at: http://www.energy.gov.za/files/coal_frame.html. [Accessed 05 February 2016].

Statistics South Africa, 2011. *Msukaligwa Local Municipality*. [ONLINE] Available at:

http://www.statssa.gov.za/?page_id=993&id=msukaligwa-municipality [Accessed 05 February 2016].

Msukaligwa Local Municipality, 2015. Spatial Framework Final Report. Available at: http://www.msukaligwa.gov.za/SDF.htm. [Accessed on 05 February 2016].

Agricultural Geo-referenced Information System, 2016. [ONLINE].Available at: http://www.agis.agric.za/agisweb/agis.html. [Accessed on 28 January 2016].

Department of Water Affairs, 2008. Mpumalanga Groundwater Master Plan. [ONLINE]. Available at: https://www.dwa.gov.za/groundwater/documents/mpumalangamasterplanjun08.pdf. [Accessed on 9 February 2016].

APPENDIX 1: CURRICULUM VITAE OF EAP

JANE GAYLE KENNARD CURRICULUM VITAE

Postal address: Postnet Suite 470, P/Bag X3, Northriding, 2162, South Africa
Phone: +27 11 794 7534 (w) 083 236 0169 (C)
E-mail: jane@cabangaconcepts.co.za
Nationality: South African
Languages: English and Afrikaans
Date of Birth: 01 September 1981

QUALIFICATIONS

2015 **University of Cape Town**
Certificate in Advanced Project Management

2015 **Terra Firma Academy**
Certificate in Carbon Footprint Analyst

2013 **University of South Africa (completed part time)**
Bachelor of Science (B.Sc)

Majors: Environmental Management and Botany
Minors: Archaeology, Chemistry, Geology, Statistics, Terrestrial & Aquatic Ecology, Hydrology, GIS, Computer Skills, Environmental Law and Ethics
** All practical components were undertaken through the North-West University*

2001 **The Estate Agency Affairs Board South Africa**
South African Property and Real Estate Law (Certified Estate Agent)

1999 **John Ross College**
Matric with Exemption

AFFILIATIONS AND REGISTRATIONS:

Member of the Environmental Law Association, South Africa
Member of the International Association for Impact Assessment, South Africa
Member of the International Association for Public Participation, Southern Africa

SHORT COURSES AND WORKSHOPS

2015 **NEMA: One Environmental System**
Imbewu Sustainability Legal Specialists

2015 **NEMA: Environmental Impact Assessment Regulations**
Imbewu Sustainability Legal Specialists

2014 **NEMA: Environmental Impact Assessment Regime**
Gauteng Department of Agriculture and Rural Development

2014 **Waste Management Act Amendments**
Mac Roberts Attorneys

2013 **Environmental and Mining Law**
Mac Roberts Attorneys

2012 **Practical Implementation of BEE**
EconoBEE

2011 **Practical Understanding of South African Waste Legislation, Integrated Waste Management Planning & Waste Classification**
CBS Solution

2011 **National Environmental Management Act & NEM:Waste Act**
EcoLaw

WORK EXPERIENCE

2006 - Current **Cabanga Concepts Environmental Consultants**
Environmental Professional / Project Manager

- Project and account management
- Budget management
- Proposals
- Client liaison
- Undertake site investigations (greenfields and operational areas)
- Review of specialist studies
- Document quality control
- Compilation of environmental legal registers
- Environmental compliance audits specifically with regards to industry and mining
- Due diligence investigations in support of business merges and/or acquisitions within the mining industry
- Fatal Flaws Analysis for proposed projects
- Compilation of mining right and prospecting right applications in terms of the Mineral and Petroleum Resources Development Act
- Environmental licensing and permitting:
    - Section 102 applications (MPRDA)
    - General Authorisations & Water Use Licensing (NWA)
    - Integrated Water and Waste Management Plans
    - Atmospheric Emission License Applications (NEM:AQA)
    - Waste Management License (NEM:WA)
- Compilation of Scoping Reports, Impacts assessments and Management Plans
- Assisting with the compilation of documents for World Bank Projects (IFC Standards / Equator Principles)
- Compilation of emergency response and environmental handbooks
- Taking of water samples

- Undertaking the Public Participation Process for proposed and existing operations in industry and mining
- Liaison and follow up with licensing authorities
- Collaborating with mineral and environmental lawyers in responding to corrective notices and directives issued in terms of the various legislation
- Applications for permits in terms of the National Heritage Resources Act

2002 – 2006 **Digby Wells & Associates Environmental Consultants**
PA to the Executive Committee

- Assist EXCO board with administration duties, review and formatting of reports, general office management, authorities liaison, assist with public participation and other general ad hoc duties.

2000 – 2002 **Realty Executives**
Candidate Estate Agent

- Management of rental properties, general office management and administration

OTHER

- Proficient in Microsoft Office Suite (Excel, Word, Outlook etc.)
- Familiar with SANBI GIS and Land Use Decision Support Tool (LUDS)
- Proficient in the following South Africa Legislation:
  - The Constitution of South Africa, 1996 (Act 108 of 1996)
  - The Minerals and Petroleum Resources Development Act (Act 28 of 2002)
  - The National Environmental Management Act, 1998 (Act 107 of 1998)
  - The Environmental Conservation Act, 1989 (Act 73 of 1989)
  - The Conservation of Agricultural Resources Act (Act 43 of 1983)
  - The National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
  - The National Environmental Management: Protected Areas Act, 2004 (Act 31 of 2004)
  - The National Environmental Management: Air Quality Act (Act 39 of 2004)
  - The National Environmental Management: Waste Management Act (Act 59 of 2008)
  - The National Heritage Act, 1999 (Act 25 of 1999)
  - The National Water Act, 1998 (Act 36 of 1998)
  - The Water Services Act, 1997 (Act 108 of 1997)
  - The National Veld & Forest Fire Act,1998 (Act No 101 of 1998)
  - The National Road Traffic Act, 1996 (Act 93 of 1996)
  - The Hazardous Substances Act, 1973 (Act 15 of 1973)
  - The Petroleum Products Act, 1977 (Act 120 of 1977)
  - The National Nuclear Reactor Act, 1999 (Act 47 of 1999)
  - The Explosives Act, 1956 (Act 73 of 1989)
  - The Fencing Act, 1963 (Act 31 of 1963)
  - Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies Act, 1947 (Act 36 of 194 7)
  - The Occupational Health & Safety Act, 1993 (Act 85 of 1993)
  - The Mine Health & Safety Act, 1996 (Act 29 of 1996)

- The Consumer Protection Act, 2008 (Act 68 of 2008)
- The Second Hands Good Act, 2009 (Act 6 of 2009)

LIST OF PROJECTS:

The following is a list of projects which I have completed over the last few years:

- Eyethu Coal, Welgelegen Colliery, IWUL Audit, 2015.
- Eyethu Coal, Leeuwpoort Colliery, IWUL Audit, 2015.
- Shiva Uranium, Environmental Compliance Report, 2015.
- Exxaro, Tumelo Colliery, Water Balance Report, 2015.
- G&W Base Minerals, Prospect & Sahara Bentonite Prospecting, Basic Assessment and Environmental Management Plan, 2015.
- G&W Base Minerals, Prospect & Sahara Bentonite Prospecting, Prospecting Right Application and Prospecting Works Programme, 2015.
- IG Chem, Olifantsfontein Plant, 24G Application for Rectification & Continuation Impact Assessment & Management Plan, 2015.
- Pembani Coal Carolina, Water Use License Application and associated Integrated Water & Waste Management Plan, 2015.
- G&W Base Minerals, Koppies Bentonite Mine, Atmospheric Emission License Application, 2015.
- Eyethu Coal, Leeuwpoort Colliery, EMP Performance Assessment, 2014.
- Eyethu Coal, Mooifontein Colliery, EMP Performance Assessment, 2014.
- Eyethu Coal, Welgelegen Colliery, EMP Performance Assessment, 2014.
- G&W Base Minerals, Benadeplaats Limestone Mine, EMP Performance Assessment, 2014.
- G&W Base Minerals, Koppies Bentonite Mine EMP Performance Assessment, 2014.
- Vantage Goldfields, Barbrook & Lilly, Assessment on the Environmental Status, 2014.
- Transasia, Malonjeni Colliery, Water Use License Application, 2014.
- Pembani Coal Carolina, Environmental Compliance Audit, 2011 - 2014
- Sudor Coal, Halfgewonnen Colliery, NEMA Post Construction Audit, 2013.
- Droogvallei Rail Siding Company, Environmental Compliance Audit, 2013.
- Droogvallei Rail Siding Company, IWUL Audit, 2013.
- Overlooked Colliery, Section 8: Prospecting Progress Report, 2013.
- Umcebo, Kleinfontein Colliery, IWUL Audit, 2013.
- Overlooked Colliery, Monthly Monitoring & Inspections, 2012 – 2013.
- Sudor Coal, Halfgewonnen Colliery, IWUL Audit, 2012.
- Idwala, Vierfontein Colliery, Environmental Compliance Audit, 2012.
- Homelands Mining & Energy, Kendal Colliery, 24G Application for Rectification & Continuation Impact Assessment & Management Plan, 2012.
- Shanduka Coal, Kendal Siding, EMP Performance Assessment, 2012.
- Worldwide Coal Carolina, Road Deviation Basic Assessment and Environmental Management Plan, 2012.
- Norwesco Mining, Brakfontein Colliery, Environmental Compliance Audit, 2011.
- Miranda Coal, Sesikhona Colliery, Environmental Compliance Audit, 2011.
- Miranda Coal, Burnside Colliery, Environmental Compliance Audit, 2011.

- Homelands Mining & Energy, Northfields Slurry Dump, EMP Compliance Audit, 2011.
- Droogvallei Rail Siding Company, Integrated Water Use License Compliance Audit, 2011
- Worldwide Coal Carolina, Quarterly Report to the Board on the Environmental Issues, 2010 - 2011.
- Overlooked Colliery, Prospecting Environmental Management Plan, 2010.
- Homelands Mining & Energy, Kendal Colliery, EMP Compliance Audit, 2010.
- Worldwide Coal Carolina, Environmental Handbook & Training, 2010.
- Shanduka Coal, EMP Performance Assessment – *annually for various operations*, 2009 – 2012.
- Worldwide Coal Carolina, Environmental Compliance Audit and Performance Assessment, 2009 – 2012.
- Black Wattle Colliery, EMP Performance Assessment, 2009.
- Worldwide Coal Carolina, Water Use License Application and associated Integrated Water & Waste Management Plan, 2009.
- Galvrite Galvanising, Randfontein Plant, Environmental Audit, 2009.
- Droogvallei Rail Siding Company, Integrated Water Use License Application, 2009.
- Shanduka Coal, Monitoring & Compliance – *monthly* for *various operations*, 2008 – 2012
- Shanduka Coal, Uitkyk Siding, Environmental Management Plan, 2008.
- Shanduka Coal, Graspan Colliery, NEMA Authorisation & Basic Assessment for fuel storage, 2008.
- Badger Mining, Kiepersol Colliery, Liability Assessment, 2007.
- PMG, Postmasburg Manganese, Section 8: Prospecting Progress Report, 2007.
- Umcebo, Due Diligence Investigation, 2007.
- Harmony Gold, Randfontein, Rehabilitation and Liability Assessment, 2006.
- Mandorin Investments, Duration Projects Zimbabwe, Environmental Risk Assessment, 2006.
- Badger Mining, Maamba Collieries, Environmental Risk Assessment, 2006.
- BVI, Uitkomst Colliery Integrated Water Use License Application, 2006.
- Mashala Resources, Delta Colliery, Environmental Audit, 2006.
- *Confidential:* various due diligence investigations, 2006 – current.

In addition to the above, I have been involved in a long list of projects where I was the project mana ger involved with the planning, management and review of the reports and various specialists; but w as not directly responsible for the compilation of the various reports/studies.

REFERENCES

1. **Ken van Rooyen, Geologist and Environmental Scientist:** kenvr@telkomsa.net
2. **Dr. Barbara Kasl, Entomologist:** barbs@cabangaconcepts.co.za
3. **Esme Ferreira, Environmental Lawyer:** eferreira@tiscali.co.za

UNISA
UNIVERSITY OF SOUTH AFRICA

We certify that

JANE GAYLE KENNARD

having complied with the requirements of the Higher Education Act and the Institutional Statute, was admitted to the degree of

BACHELOR OF SCIENCE

in Environmental Management: Botany Stream

at a congregation of the University on 6 May 2014

Vice-Chancellor

Executive Dean

University Registrar

1020894583900G05021

BARBARA KASL CURRICULUM VITAE

Postal address: 49 Eagle Terrace, Apple Street, Randparkrif
Phone: +27 11 794 7534 (w) +27 (0) 71 988 6773 (C)
E-mail: barbs@cabangaconcepts.co.za
Nationality: Czech
Languages: English, Afrikaans and Czech
Date of Birth: 16 September 1976

EDUCATION

Tertiary Institute:

University of the Witwatersrand

- 2002-2004: PhD (Animal, Plant and Environmental Sciences)
- 1999-2001: MSc (upgraded to PhD)
- 1998: B.Sc. Hon. (Zoology and Botany)
- 1995-1998: BSc (Zoology and Botany)

PROFESSIONAL EXPERIENCE

01/2008 – Current: ENVIRONMENTAL SCIENTIST - Cabanga Concepts cc. Environmental consultancy and specialising in all environmental authorisation processes.

09/2004 – 11/2007: UNIT MANAGER FOR THE BIOPHYSICAL DEPARTMENT - Digby Wells and Associates. Specialising in Fauna and Flora Reports and also full environmental authorisation processes including EIA and EMP reports. International projects included Etoile Mine in DRC, Randgold Mine in Mali, Valencia uranium green-field mine in Namibia, Mmamabula coal mine and power plant in Botswana.

09/2003 – 11/2003: **VISITING POSTGRADUATE STUDENT RESEARCHER** - Pole de Protection des Plantes (CIRAD). Projects: to determine sugarcane borer (*Chilo Sacchariphagus*) neonate larval behaviour on two varieties of sugarcane plants and determine if SASEX rearing diet is adequate for *Chilo Sacchariphagus* rearing (Saint Pierre, Reunion Island, France).

1999 –2002: **MSc AND PhD STUDENT** - South African Sugar Experiment Station (SASEX)– On site research for MSc and PhD degrees to determine habitat management strategies to control sugarcane borer (*Eldana saccharina*) in South African sugarcane (Mnt. Edgecombe, R. S. A.).

1999-2000: **RESEARCH TECHNICIAN** - SASEX contract work for Deciduous Fruit Producers Trust (DFPT) (Mnt. Edgecombe, R. S. A.). To determine effects of temperature on fruit fly mortality in fruits.

1997-1999, 2001: **LABORATORY DEMONSTRATOR AND TUTOR** - University of the Witwatersrand (Johannesburg, R. S. A.).

- Teaching assistant for College of Science I and II (1998-1999, 2001)
- Teaching assistant for 1st year Medics (1998-1999, 2001)
- Tutor for College of Science (2001)
- Catering for 3rd year Zoology Field excursion (1999)
- Demonstrating to various age groups at the "Yebo Gogga" insect exhibition at the Johannesburg Zoo (1997-1999)

2001: **PRIVATE TUTOR** - Private tutoring for first year student.

1993-1998: **PART-TIME JOBS**

COURSES AND WORKSHOPS

21 October 2010: NEM: Air Quality Act course through IMBEWU Sustainability Legal Specialists (Pty) Ltd

August 2009: NEMA and NEMWA course through ECOLAW

14 Nov 2007: Environmental Impact Assessment Training

28 Feb – 2 Mar 2007: Project Management for Non-Project Managers Course through Astro Tech

29th Sep2006: Unilever Introduction to Managing Environmental Water Quality - Practical, Theoretical and Policy; through Institute for Water Research – RHODES University.

19-21 Sep 2005: Non-credited course in River health and SASS5 rapid methodology of water quality assessment through NEPID Consultants

20 May 2005: Snake Identification and Snakebite Treatment Course

AWARDS RECEIVED

2004: R 36 000 THRIP Student Bursary

2003: R 36 000 THRIP Student Bursary

2002: R 30 000 THRIP Student Bursary

2000: R 10 000 Merit Award Bursary – University of Witwatersrand

R 18 000 South African Sugar Association Experiment Station Student Bursary

1999: R 10 000 Merit Award Bursary – University of Witwatersrand

PROFESSIONAL MEMBERSHIPS

- **2008-CURRENT:** Entomological Society of South Africa
- **2008-CURRENT:** International Association for Impact Assessment
- **2001:** Entomological Society of South Africa
- **1999:** Entomological Society of South Africa
- **1998:** Zoological Society of Southern Africa

CONFERENCES, PUBLICATIONS & TALKS

Kasl, B.*; Conlong, D. E. and Byrne, M. J. (2003) Push-pull strategy to decrease *Eldana saccharina* Walker (Lepidoptera: Pyralidae) infestations in southern African sugarcane.

4 November 2003, Pole de Protection des Plantes, Saint Pierre, Reunion Island, France

Kasl, B.*; Conlong, D. E. and Byrne, M. J. (2003) Creating semiochemical diversions to control sugarcane borers. *Biocontrol News and Information* 24(2). **Article**

Conlong, D. E.; Kasl, B.* (2001) Stimulo-deterrent diversion, *Eldana saccharina* Walker (Lepidoptera: Pyralidae) and *Xanthopimpla stemmator* Thunberg (Hymenoptera: Ichneumonidae), preliminary results. *Proceedings of the South African Sugar Technologists' Association* 75. **Talk & Paper**

Kasl, B.*; Byrne, M. J. and Conlong, D. E. (2001) Towards a stimulo-deterrent strategy to control *Eldana saccharina* Walker (Lepidoptera: Pyralidae), a sugarcane borer of economic importance. Abstracted in the Proceedings of the 13th Entomological Society of Southern Africa, pg. 32. Pietermaritzburg, Kwa-Zulu Natal, R. S. A., 2-5 July 2001. ISBN: 0-620-27806-4. **Talk**

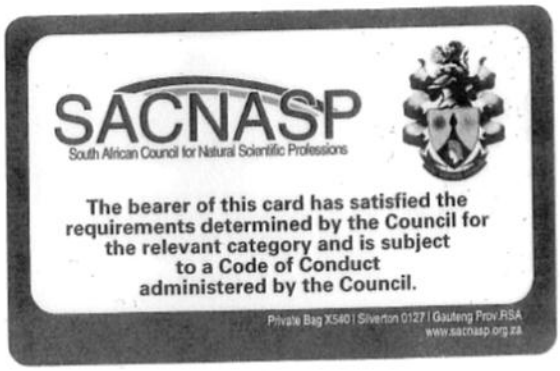
Conlong, D. E.* and Kasl, B. (2001) Stimulo-deterrent diversion as a control option for *Eldana saccharina* Walker (Lepidoptera: Pyralidae), an indigenous pest of sugarcane in southern Africa. 24th ISSCT conference, Brisbane, Australia, 16-20 September 2001. **Poster**.

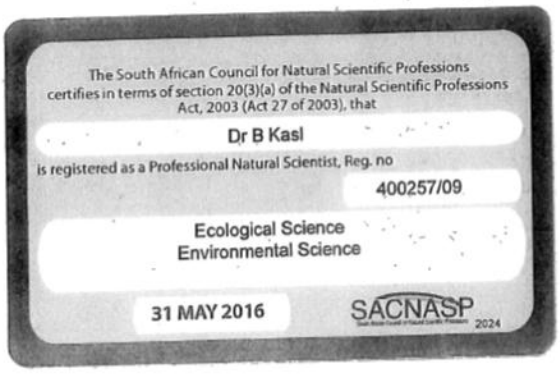
Conlong, D. E. *; Kasl, B. (2000) Stimulo-deterrent diversion to decrease infestation in sugarcane by *Eldana saccharina* (Lepidoptera: Pyralidae). *Proceedings of the South African Sugar Technologists' Association* 74. **Talk & Paper**

Kasl, B.*; Knell, R.; Byrne, M. J. (1999) Female mate choice in *Euoniticellus intermedius* (Reiche) (Coleoptera: Scarabaeidae). Abstracted in the Proceedings of the 12th Entomological Society of Southern Africa, pg. 64. Potchefstroom, North-Western Province, R. S. A., 12-15 July 1999. ISBN: 1-86849-122-6. **Talk**.

Kasl, B.*; Mason, M. C.; Passmore, N. I. (1998) The effects of male size and sociality on waving frequency in the fiddler crab, *Uca annulipes*. Abstracted in Zoological Society of Southern Africa (ZSSA) Symposium – African Trends and Future Perspectives, pg. 98. Durban, Kwa-Zulu Natal, R. S. A>, 6-10 July 1998. **Poster**.

(* - presenter)





THE INTERIM CERTIFICATION BOARD FOR ENVIRONMENTAL ASSESSMENT PRACTITIONERS OF SOUTH AFRICA

P.O. Box 1749, Noordhoek, 7979
Email: eacertify@intekom.co.za
Website: www.eapsa.co.za
Tel / Fax: 021 - 7891385

20 December 2014

Barbara Kasl
Postnet Suite 470
Private Bag X3
2162

Dear Barbara

CERTIFICATION AS AN ENVIRONMENTAL ASSESSMENT PRACTITIONER

The Interim Certification Board for Environmental Assessment Practitioners of South Africa have decided to approve your certification as an Environmental Assessment Practitioner (EAP).

We would like to remind you of your obligations (with reference to Section 7 of your Application Form) as a certified EAP to practice in accordance with Section 6 of our Information Booklet, namely "Conduct and Code of Ethics". You will be notified of any changes to the Code as and when appropriate. Please note that, as a certified EAP, you should abide by IAIA's draft Code of Practice.

We believe that strict application of these Codes is the best assurance for authorities, clients, interested and affected parties and other EAPs that certification helps to uphold professional standards, and provides some level of assurance about the quality of environmental assessment in South Africa.

Yours sincerely

MAITLAND SEAMAN
(CHAIRPERSON)

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

At a congregation of the University

held on 29 April 1999

Barbara Kasl

was admitted to the Degree of

Bachelor of Science with Honours

Zoology

EK SERTIFISEER DAT HIERDIE DOKUMENT 'N WARE AFDRUK (AFBEELDING) IS VAN DIE ORSPRONKLIKE DOKUMENT WAT AAN MY VIR WAARNEMING VOORGELÊ IS. EK SERTIFISEER VERDER DAT VOLGENS MY WAARNEMINGS DAAR NIE 'N WYSIGING OF VERANDERING OP DIE ORSPRONKLIKE DOKUMENT AANGEBRING IS NIE.

I CERTIFY THAT THIS DOCUMENT IS A TRUE REPRODUCTION (COPY) OF THE ORIGINAL DOCUMENT WHICH WAS HANDED TO ME FOR AUTHENTICATION. I FURTHER CERTIFY THAT FROM MY OBSERVATIONS, AN AMENDMENT OR A CHANGE WAS NOT MADE TO THE ORIGINAL DOCUMENT.

HANDTEKENING / SIGNATURE: ..... DATUM / DATE: 21.3.21

NAAM IN DRUKSKRIF / NAME IN CAPITALS: ..... RANK: .....

SUID-AFRIKAANSE POLISIEDIENS
KLIËNTE DIENS SENTRUM
2010 -03- 22
CLIENT SERVICE CENTRE
LINDEN
SOUTH AFRICAN POLICE SERVICE

Dean, Faculty of Sciences

Vice-Chancellor and Principal

Registrar (Academic)

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

At a congregation of the University

held on 25 November 2004

Barbara Kasl

was admitted to the Degree of

Doctor of Philosophy

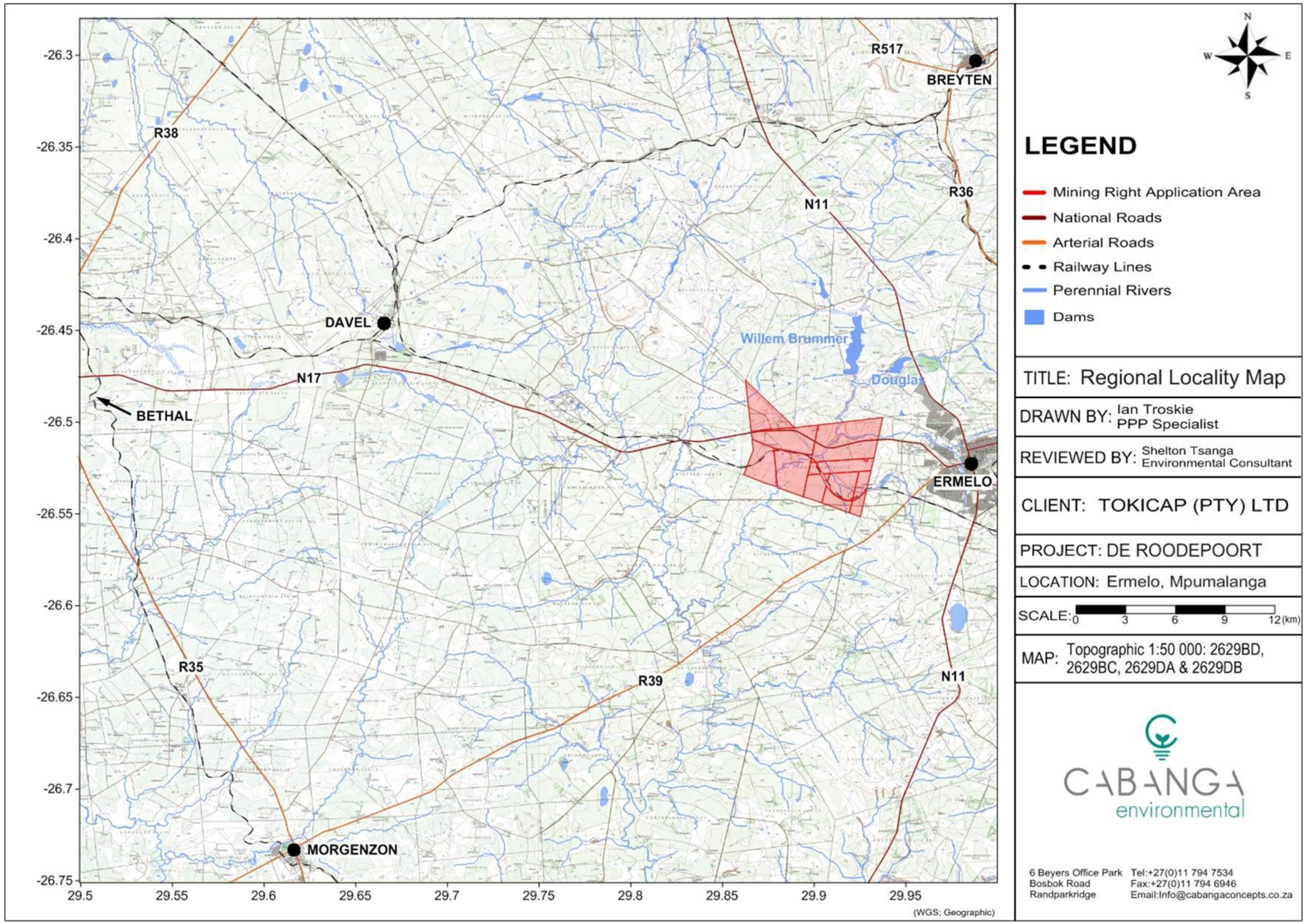
SUID-AFRIKAANSE POLISIEDIENS
KLIËNTE DIENS SENTRUM
2010 -03- 22
CLIENT SERVICE CENTRE
LINDEN
SOUTH AFRICAN POLICE SERVICE

Dean, Faculty of Science

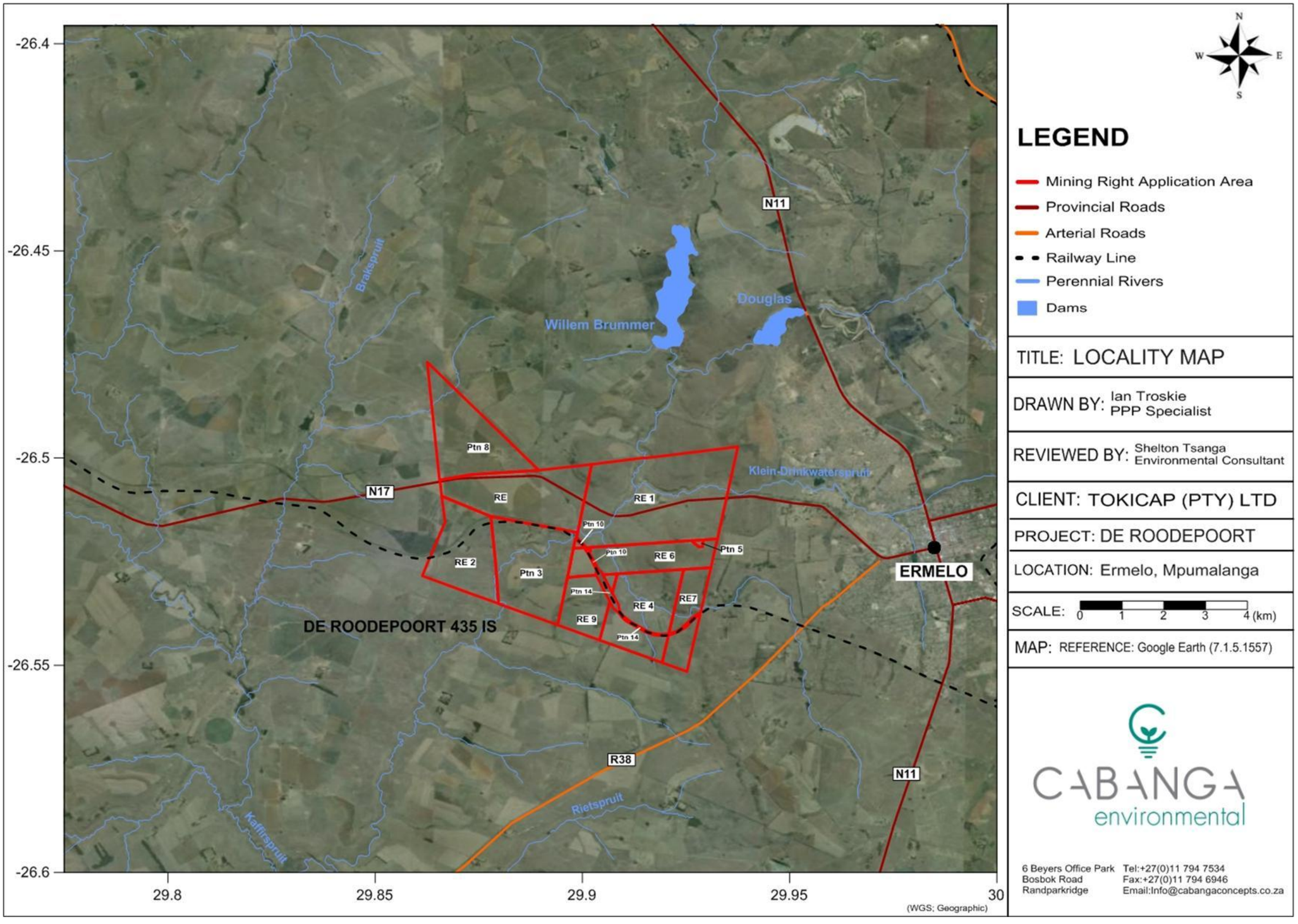
Vice-Chancellor and Principal

Registrar

APPENDIX 2: REGIONAL AND LOCAL SETTING

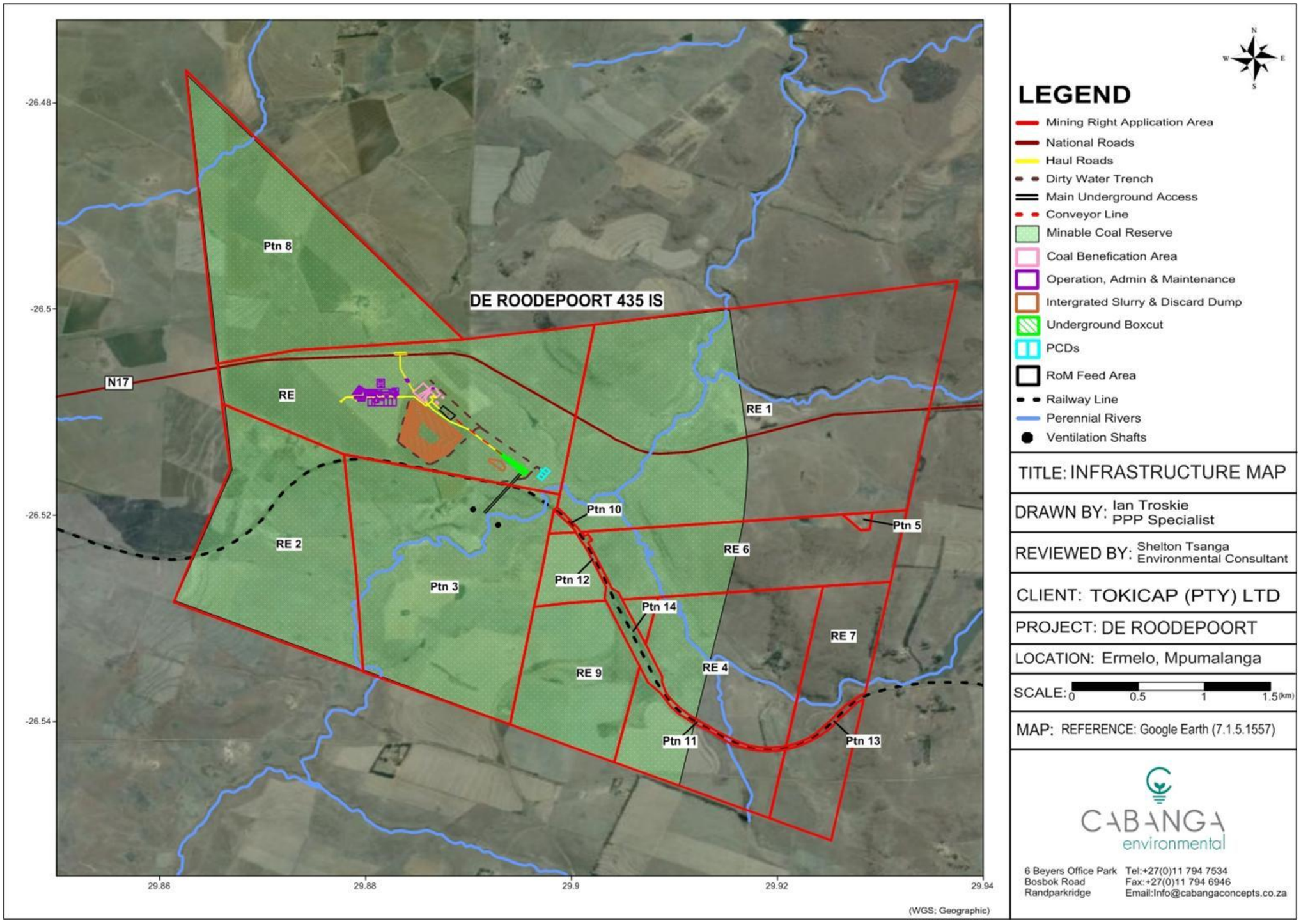


Plan 1: Regional Setting

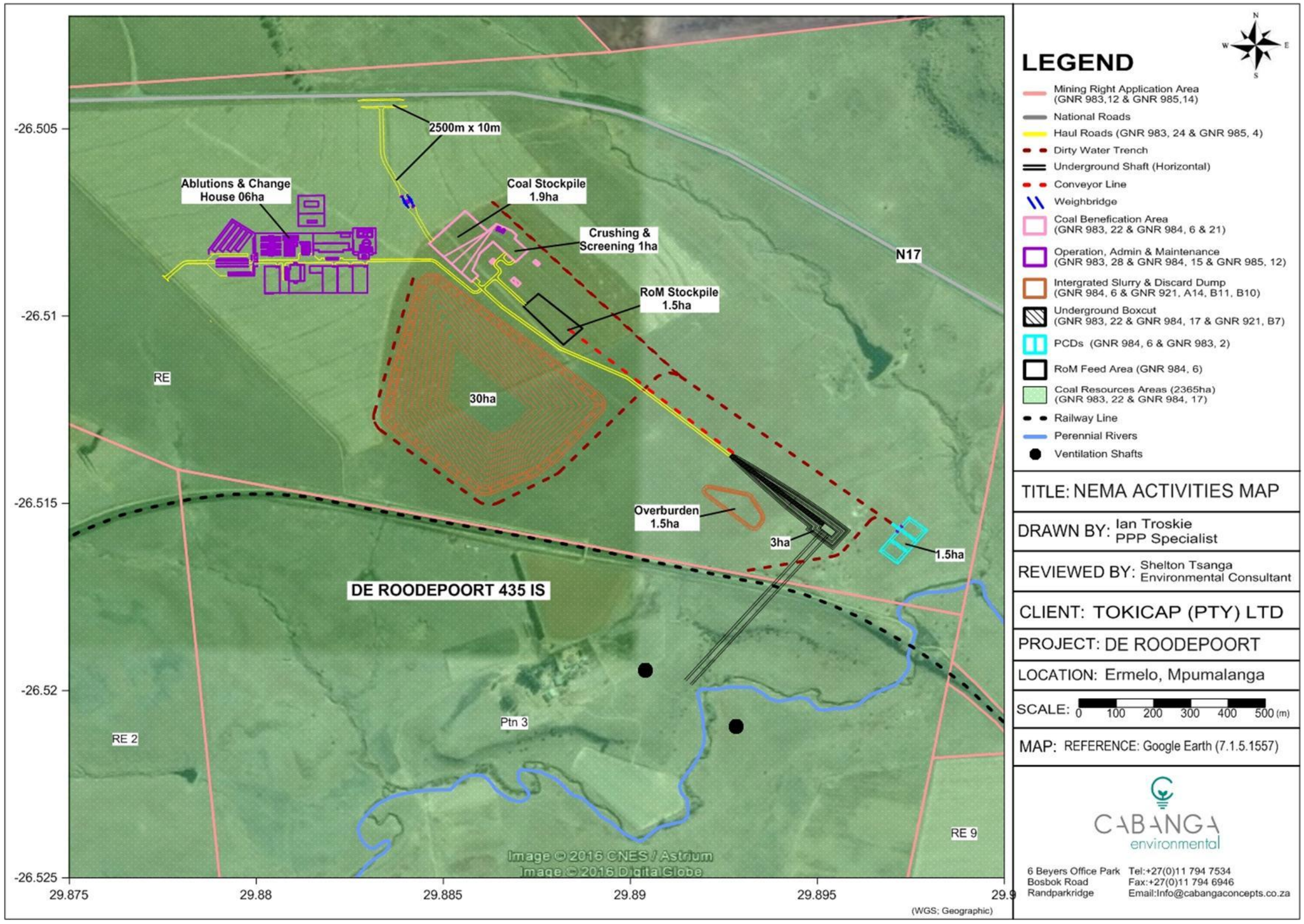


Plan 2: Local Setting

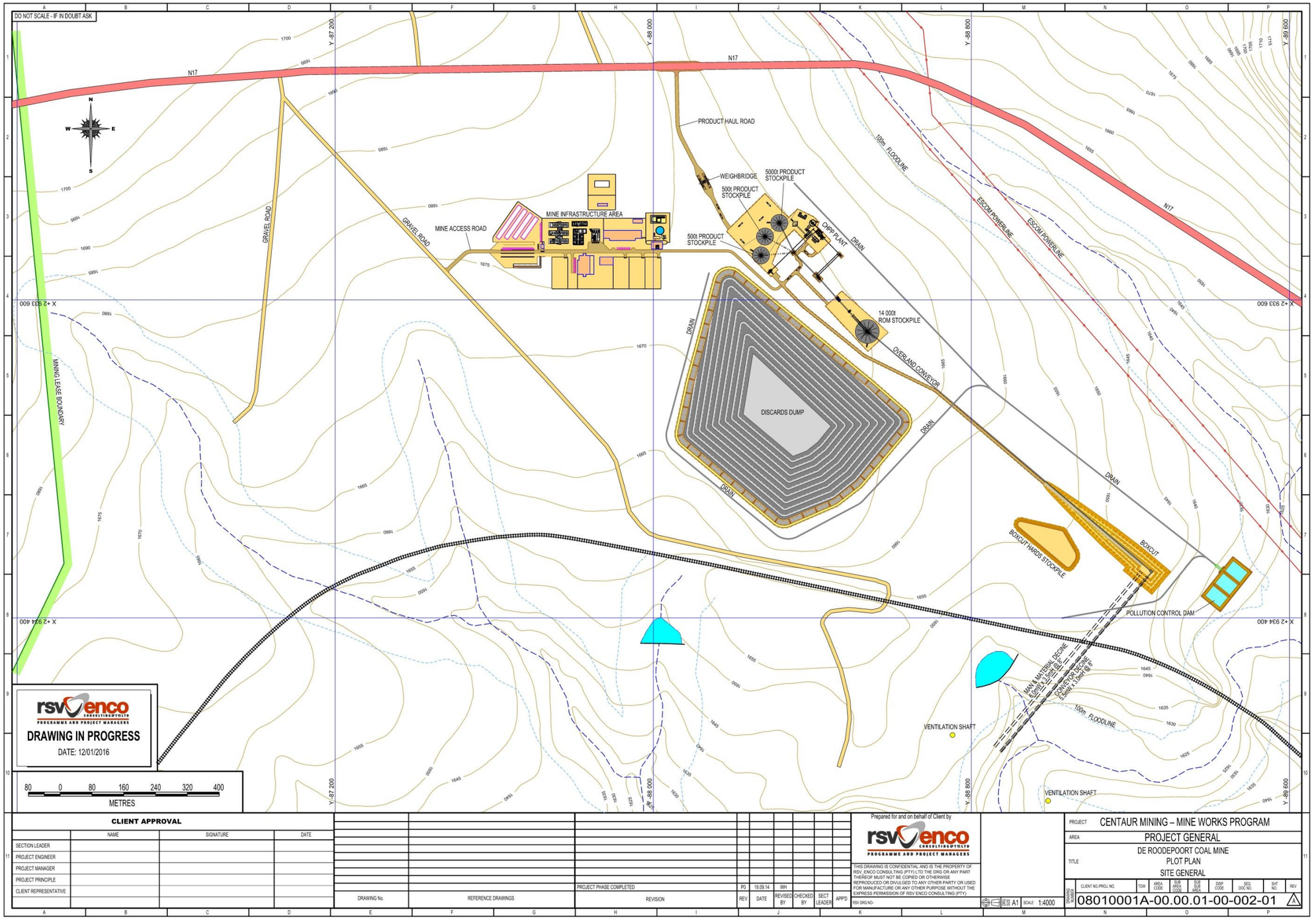
APPENDIX 3: INFRASTRUCTURE / ACTIVITY PLANS



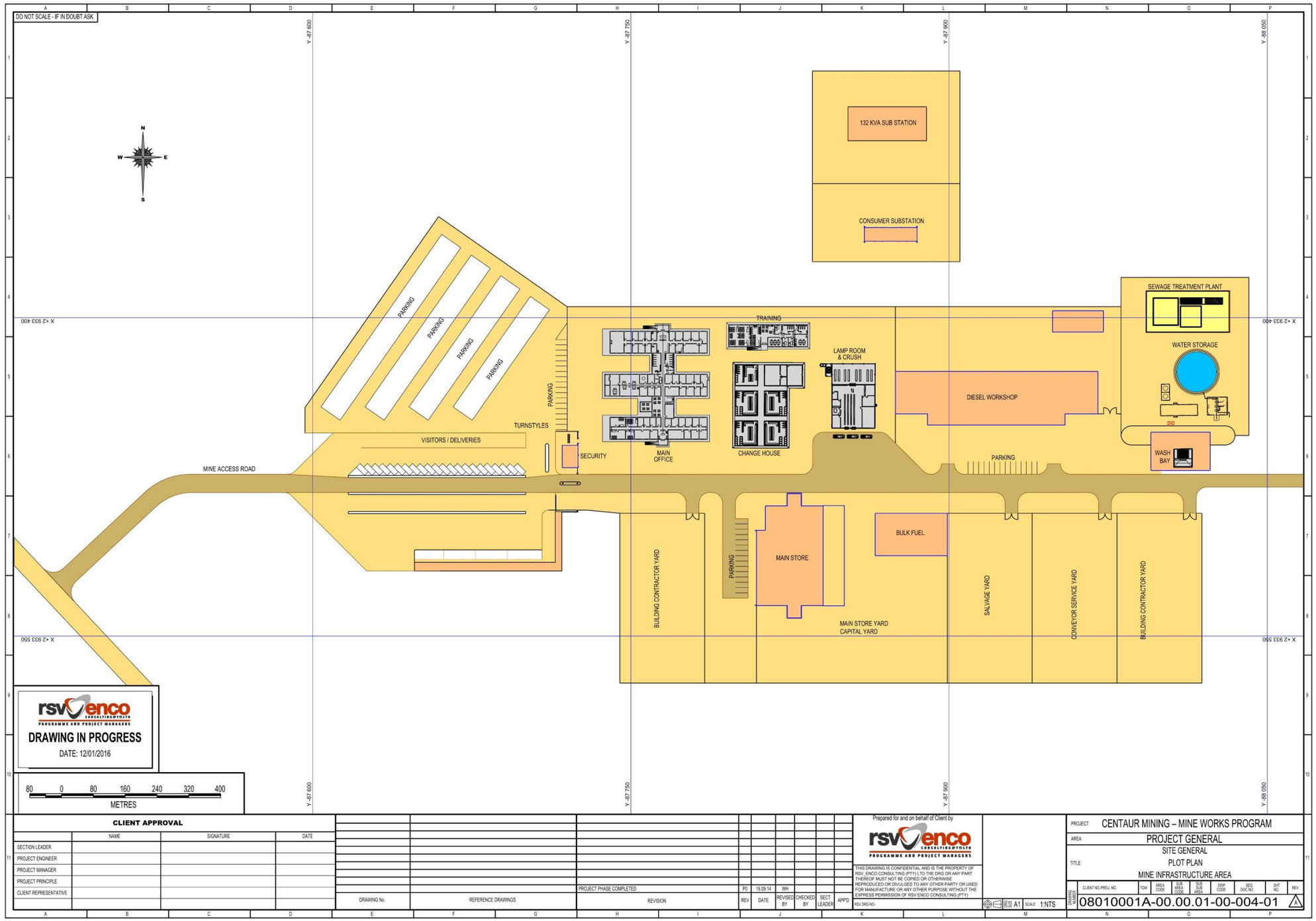
Plan 3: Infrastructure Layout Plan



Plan 4: NEMA Activity Plan



Plan 5: Close up of surface infrastructure area



Plan 6: Close up of O&AM area (Operations, Administration and Maintenance Area)

APPENDIX 4: PUBLIC PARTICIPATION