mineral resources & energy
Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

DRAFT BASIC ASSESSMENT REPORT

AND

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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: CONSTRUCTO CIVIL CONSTRUCTION AND MINING (PTY) LTD

CONTACT PERSON: CONSTRUCTO CIVIL CONSTRUCTION AND MINING (PTY) LTD

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FILE REFERENCE NUMBER SAMRAD: KZN/30/5/1/1/2/ 11284 PR

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 and an Environmental Management Programme report 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 a 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 BASIC ASSESSMENT PROCESS

The objective of the basic assessment process is to, through a consultative process─

(a) determine the policy and legislative context within which the proposed activity is located and how the activity complies with and responds to the policy and legislative context.

(b) identify the alternatives considered, including the activity, location, and technology alternatives.

(c) describe the need and desirability of the proposed alternatives,

(d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on these aspects to determine:
   (i) The nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
   (ii) The degree to which these impacts—
      (aa) can be reversed;
      (bb) may cause irreplaceable loss of resources; and
      (cc) can be managed, avoided or mitigated;

(e) Through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to—
   (i) Identify and motivate a preferred site, activity and technology alternative;
   (ii) Identify suitable measures to manage, avoid or mitigate identified impacts; and
   (iii) Identify residual risks that need to be managed and monitored.

EXECUTIVE SUMMARY

Introduction

Constructo Civil Construction and Mining (Pty) Ltd (the applicant) has applied for a Prospecting Right in terms of section 16 of the Mineral and Petroleum Resources Development Act (MPRDA), 2002 (Act No. 28 of 2002) and section 24 of the NEMA (Act 107 of 1998) to prospect for coal and pseudo coal. The proposed project is located on the Remainder of Farm Brackhoek 2271 HS &1/2271 HS, Lentevlei 16524 HS in Newcastle Local Municipality, Amajuba District Municipality.
Beyond Green Environmental Services (Pty) Ltd ((referred to BGES hereafter) has been appointed by Constructo to assist in preparing and submitting environmental reports, the EIA process and undertaking a Landowner and Public Consultation Process, in support of a Prospecting Right and Environmental Authorization application.

Project description

The extent of the area applied for covers approximately 1931.741 hectares. The project area is represented in the *figure 1* below.
To ascertain the prevalence of coal and pseudo coal, an exploration program must be implemented for the project, including detailed geological mapping, ground magnetic survey, core drilling and sampling. From the geological findings, a resource/reserve estimate will be calculated and finally a more realistic data will be obtained using polygon approach and with several considerations taken hence defining the estimate on the basis of three categories: measured, indicated, and inferred. The resource estimate will be further refined, and a mineable reserve will be quantified using geological reserve interpellation.

Baseline Environment and Sensitivities Identified

The proposed project is located at approximately 4.5km 5 North West of Newcastle town and falls within Mesic Highveld Grassland Bioregion.
The site sits within the quaternary drainage regions V31D and V31J, falling under the Buffalo management area. Watercourses (Wetlands (UVB, seep and depression) and two streams (Mbizana and Ngudumeni)) were identified within the proposed development area. The site is mainly cover by farms, unimproved grassland and agriculture. R34 passes through the proposed site.

The Basic Assessment Phase has been conducted (in terms of the National Environmental Management Act, Act of 107 of 1998 (NEMA) and its Environmental Impact Assessment Regulations, 2014) during which concerns, assessment of environmental impacts and programme for management of the impacts and recommendations are identified below. This document will be sent out to the public; stakeholders, landowners and any other interested & affected parties for comments for a period of 30 days. Public issues and concerns will be integrated in the final BAR.

Table 1:Summary of Impacts identified and significance

Impacts	Significance before mitigation	Significance after mitigation
Loss of fauna (and protected species)	Medium	Low
Fauna disturbance (and displacement)	Medium	Low
Loss of vegetation	Medium	Low
Surface water (river and wetlands) contamination	High	Low
Loss of habitat/Habitat fragmentation	Medium	Low
Reduction of surface water (surrounding water courses)	Medium	Low
Groundwater contamination/pollution	Medium	Low
Soil degradation	Medium	Low
Soil contamination	Medium	Low
Increase in noise	Medium	Low
Degradation of the air quality/Dust emission	Medium	Low
Destruction of heritage items/sites	Medium	Low
Loss of farm/agriculture	Medium	Low
Health impact assessment	Medium	Low
Accident/ Safety	Medium	Low
Positive impacts		
Job creation	Medium	Medium
Skill improvement	Medium	Medium

Recommendations

The following summarized EAP recommendations.

- The disturbed area and footprint for the prospecting operations must be kept as small as possible by mining strips.
- Drilling activities must not be taken early in the morning or at night. Landowners and/or any other affected party must be notified of the drilling times.
- No prospecting may take place within 500m of a watercourse or wetland.
- Appropriate waste and water management strategies must be implemented. The applicant must ensure that the water leaving the prospecting work area is not polluted.
- Before invasive activities commenced, an ecologist/Botanist must be appointed to identify protected plant species and indicate the wetland delineation.
- Rehabilitation should run concurrently with operations.
- Dust suppression must be regularly undertaken.
- Environmental risk awareness training should be undertaken.

Environmental statement

It is the opinion of the EAP and the specialist that the proposed project be authorized provided that mitigation measures implemented, potential positive impacts enhanced, and monitoring programme be executed.

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ACRONYMS:

BA	Basic Assessment (process or report)
BID	Background Information Documents
CARA	Conservation of Agricultural Resources Act (Act 43 of 1983) as amended
CBA	Critical Biodiversity Area
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)
EMPr	Environmental Management Programme report
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
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: Air Quality Act (act 59 of 2008) 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
NWA	National Water Act (Act 35 of 1998) as amended
PPP	Public Participation Process
PRA	Prospecting Right Application in terms of the MPRDA
PR	Prospecting Right in terms of the MPRDA
PWP	Prospecting Work Programme

Keywords:
Ecosystems, Vegetation, Development, Conservation, Sustainability, Environment, Legislation, Prospecting, Biodiversity.

1. DETAILS OF APPLICANT AND EAP TEAM

The details of the applicant and the EAP team are provided in the table below.

Table 2: Details of applicant and EAP team

	Environmental Assessment Practitioner (EAP)	**Holder**
Name	BGES (Pty) Ltd	Constructo Civil Mining (PTY) LTD
Contact person	Mitrance Nana Nonkululeko Mbasane	TSOTETSI, WILLIAM LESEGO
Tel no.	06 16 14 8272/ 0721728374	0670105655
Fax	0865156638	
Address	P O Box 68832 Highveld 0169	84 VAAL VRGIE CRESCENT, BESTWOOD, KATHU
Email	nanabeyondges.ca.za	lesego@constructo.co.za

2. LOCATION OF THE OVERALL ACTIVITY

Table 3: Location of the overall activity

Farm Name:	Remainder of Farm Brackhoek 2271 HS &1/2271 HS, Lentevlei 16524 HS.
Application area (Ha)	1931.741 Ha
Magisterial district:	Newcastle Local Municipality, Amajuba District Municipality
Distance and direction from nearest town	The site is located approximately 5 North West of Newcastle town.
21-digit Surveyor General Code for each farm portion	N0HS00000001652400000, N0HS00000000227100000
Locality map	Attach a locality map at a **scale not smaller than 1:250000 and attach as Appendix 2**
Description of the overall activity. **(Indicate Mining Right, Mining Permit,**	Prospecting right, The following activities will be undertaken: **Desktop study:** - Prefeasibility study - Obtain and interpret all relevant geological data.

Prospecting right, Bulk Sampling, Production Right, Exploration Right, Reconnaissance permit, Technical co-operation permit, Additional listed activity)	- Field Geological Mapping of all rock outcrops - Ground magnetic survey and interpretation of data - Data Interpretation and Planning - Develop conceptual geological model based on existing and acquired geological data., geological mapping, **Diamond core drilling:** - Drilling of ten core drill holes. - Logging of core and sampling of coal. - Downhole geophysical survey. - Laboratory analysis. - Rehabilitation of Drilling Sites by sealing of boreholes and clean-up and restoration.

Locality Area

The figures below provide the location map and application for the project site.

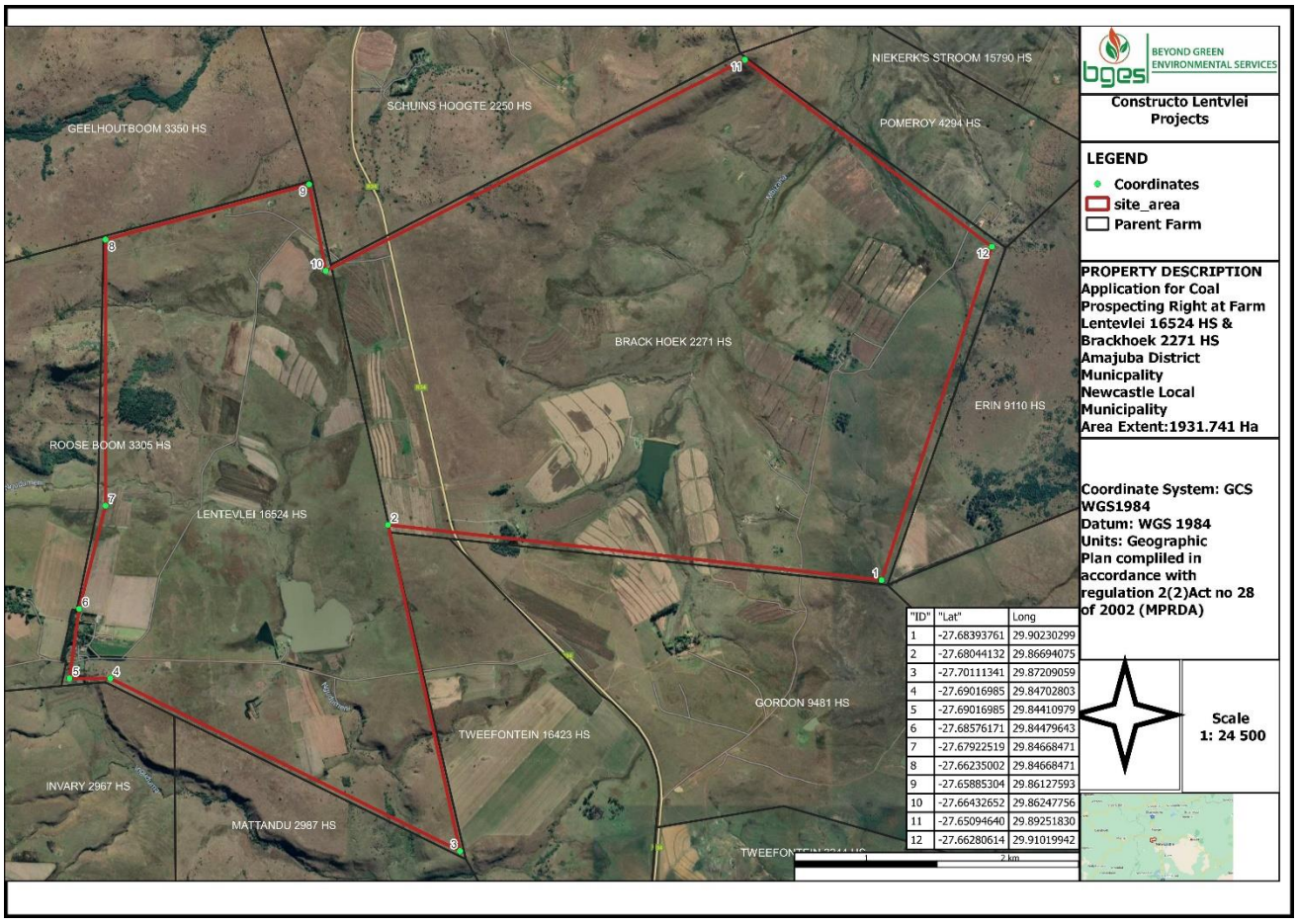


Figure 1:Application site

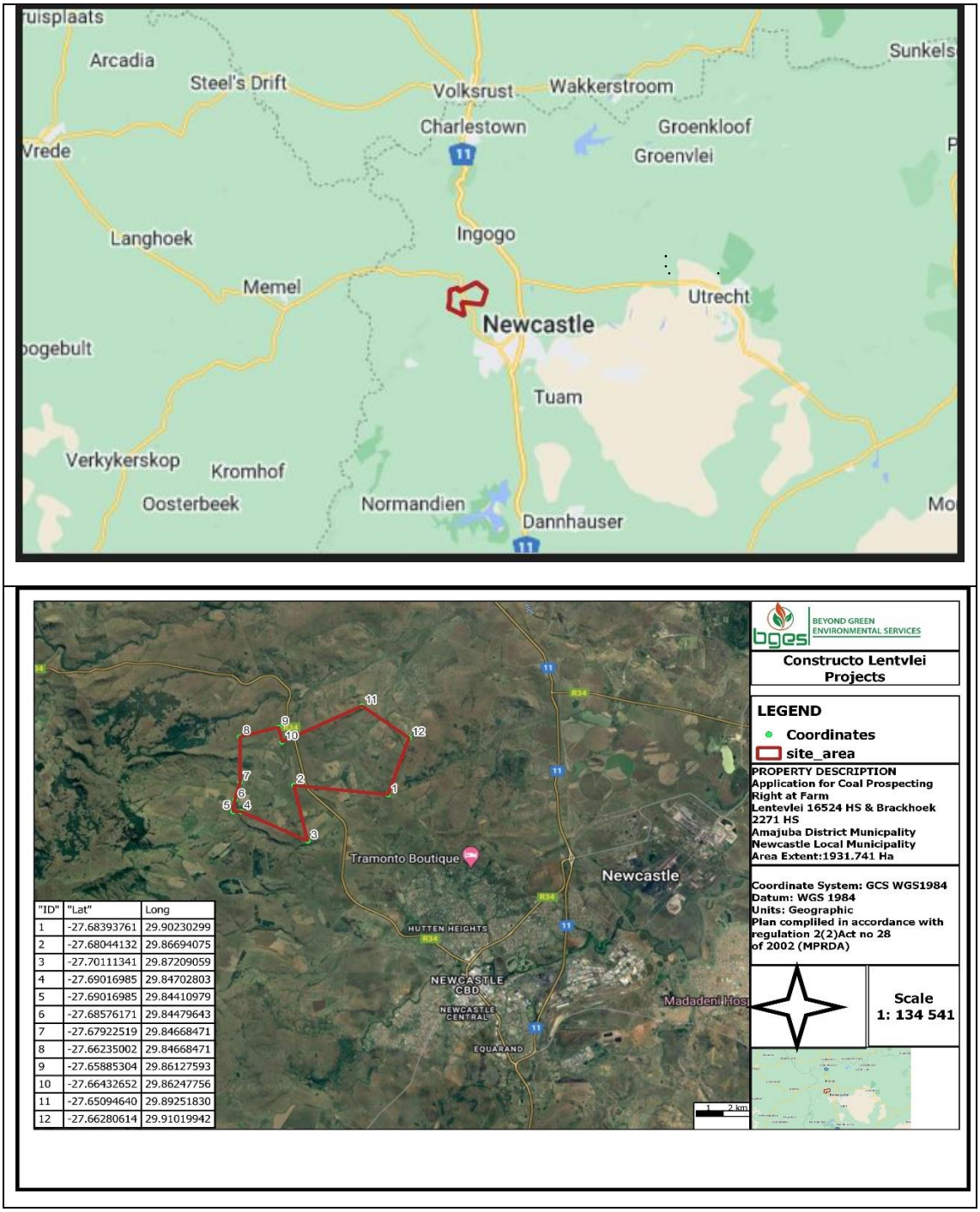


Figure 2:Locality Map- view of the surrounding environment

3. DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY

Table 4:Listed and specified activities

NAME OF ACTIVITY **(E.g., For prospecting -** drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route **etc…etc…etc**	**AERIAL EXTENT OF THE ACTIVITY**	**LISTED ACTIVITY**	**APPLICABLE LISTING NOTICE**	**WASTE MANAGEMENT AUTHORISATION**
Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).	10 boreholes will be drilled ≤0.5ha for each borehole	X	GNR 983, (as amended GNR 327) activity 20, Listing Notice 1	Not applicable
The decommissioning of any activity requiring - (i) a closure certificate in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002); or (ii) a prospecting right, mining right, mining permit, production right or exploration right, where the throughput of the activity has reduced by 90% or more over a period of 5 years excluding where the competent authority has in writing agreed that such reduction in throughput does not constitute closure.	≤0.5ha, on every borehole that would have been drilled	X	GNR 983 (as amended GNR 327), activity 22, Listing Notice 1	

4. DESCRIPTION OF THE ACTIVITIES TO BE UNDERTAKEN

The following section gives a comprehensive description of all the phases and specific activities that are associated with proposed project. The main activities of the project as provided in the prospecting Work Program entails the non-invasive and invasive activities. The non-invasive activities describe how the mineral resource and mineral distribution of the prospecting area will be determined through. The activities may include geochemical, geophysical and geobotanical survey, geological mapping, and aerial surveys.

Invasive activities describe the prospecting method or methods to be implemented. The activities include excavation, drilling, sampling and testing.

The activities can be subdivided in four phases which include the planning phase, construction phase, the operational phase and the decommissioning phase.

4.1. Planning phase

This phase consists of gather all vital project information, including necessary tasks and technical resource required. During this phase, information will be gathered on how to complete the project in a certain timeframe and designated resources. The planning phase also involve the desktop study, geological mapping, Geophysical surveying, and prefeasibility prospecting study.

Desktop studies to be undertaken over the area would include studying of all available geological maps/plans, aerial photographs, topography maps and any other related geological information about this area. Upon completion of the desktop study, field geological mapping of the area will be conducted A project GIS is established which includes regional and site-specific datasets of cadastral, geological, and geophysical data. The available literature, comprising technical papers in the academic literature, and all available reports pertaining to historical exploration are compiled and assessed. Data pertaining to the area under investigation, such as published geological maps, aerial photographs and orthophoto maps of 1:10 000 scale will initially be collated to facilitate a regional understanding of the geology. These data will also aid in the interpretation of the morphological and structural geological features.

The desktop study is followed by on the ground mapping programs would verify the geological and structural interpretations and assist in the extrapolation of the geological formations. Existing roads and tracks are used where access by vehicle is permitted, while foot accesses more remote areas. No disturbance of the vegetation or surface material occurs during geological mapping. Data obtained during this phase provides the groundwork for follow-up exploration work.

Geophysical surveys, which employ non-destructive techniques, may be used to better define anomalous areas. In many cases aeromagnetic data may be purchased from the government. However, where more detailed data are required, the surveys usually involve small field crews with sensitive instruments walking the grid lines and taking measurements. Geophysical prospecting techniques are non-harmful to the environment. Data obtained from geophysical equipment are manipulated using the latest computer software to generate targets and define anomalies for interpretation.

The pre-feasibility study entails the interpretation and modelling of all the data collected. Then a technical and economic appraisal of the project which will determine its economic viability will be done. If the result of the study proves that the project is economically viable, an application for a mining permit or right may be lodged at the DMR. If the results are negative, an application for decommissioning or closure will be lodged at the DMR.
The planning phase will take approximately 6 months to be completed.

4.2 Site establishment & construction phase

This phase includes the establishment of the campsite (construction of temporary Site camp and toilets), laydown areas and physical surveying of the site. The site camps and laydown areas should be located in low sensitivity areas and should be demarcated.

4.3 Operational phase

The operational phase mainly consists of drilling, logging and sampling. The operational phase (which include invasive phase) will last approximately 24 months. During this phase, the following activities, and aspects are involved: Diamond drilling, borehole, Infill drilling, excavation, core logging, sampling, and lab analysis.

Diamond drilling

Diamond drilling will be conducted. It is envisaged that approximately 10 boreholes with around 40m deep will be drilled in phases. The first phase will include drilling of widely spaced boreholes to confirm the occurrence of coal as well as to understand the stratigraphy of the project area. If the results

are positive, infill drilling will be done to upgrade the resource to an Indicated Resource or Measured Resource.

The boreholes will enable the determination of the depth to which suitable fresh material is available and as a result the true volume of coal available for mining. The time required for drilling, and thus the cost, will be determined by a number of variables that include access to site, water supply, number of boreholes and the depth of each borehole. Borehole positions will be determined by the preceding work conducted. All borehole cores are collected and transported to a core yard where it is geologically logged, and samples sent to accredited laboratories for analysis. These samples also serve as a record of lithological types and may be used to interpret the structure of the ore body. The company will utilise the service of experienced South African drilling contractors who are familiar with the strict environmental codes enforced by the DMR. Only non-toxic drilling fluids are used, and groundwater discharged from drill holes is re-circulated to avoid wastage. No contaminated water is allowed to flow into stream drainages. After the core is logged, sampled and captured, the data will be uploaded into 3D software for modelling using acceptable parameters on coal exploration. The results will then be uploaded to the model to determine areas of higher quality.

Core logging and Sampling

The retrieved core will be logged by a geologist. The intersected coal seams will be sampled, and the samples will be sent for analysis at an independent and certified laboratory. Most mineralisation that is exposed at the surface.

If the quality of information obtained from previous studies is suitable and available for use in the current evaluation, then such information will be utilized. This may result in some minor changes to some of the proposed activities, for example, if previous soil sample data can be sourced, these could possibly be verified with a smaller orientation study rather than a larger "new" study. It should also be emphasized that each subsequent phase of exploration is dependent on the results of the preceding phase, and that minor adjustments to the programme may be required as results are obtained.

4.4 Decommissioning phase

The decommissioning phase entails the Decommissioning of temporary infrastructure the removal of all equipment and personnel from site. The sump lining and drill spoil/sludge will be removed and disposed in an environmentally responsible manner in line with the waste management standards. The boreholes will be covered and made safe. Once all equipment has been removed the sump will be backfilled and the area leveled with the topsoil as stockpiled during the clearing activities. The

stored rocks and stones will be replaced evenly over site to prevent wind and water erosion, trap seeds and aid water retention and re-vegetation. This phase may take approximately 6 months to be completed. It should be noted that if the result of the prospecting proves that the project is economically viable, an application for mining permit or right will be lodged at the DMR.

5. EXISTING PRODUCTION INPUTS AND INFRASTRUCTURE

5.1. Access Roads

Existing access road (road tracks) will be used on site. The road will need to be properly cleared and upgraded. The preferred access to the site is via R34 by back road access.

5.2. Water Supply

Prospecting activities will not use a lot of water. Water will be used for drinking, bathing, during drilling activities, and for dust suppression.

During drilling, water is injected into the drill pipe, to wash out the rock cuttings produced by the bit. Process water supply for the operation will be sourced from an existing artificial dam near the study site and will be carted onto the site in a tanker. A 4000-liter water cart will be adequate for the size of this operation.

Dust suppression will be conducted when necessary.

Potable water required for the proposed operation is approximately 40 liters per day (ℓ/day). The water will be used for drinking purposes and will be sourced from local water vendors within Newcastle community. The water will be supplied in cooled water dispensers.

The water that will be used for the prospecting activities will be sourced on agreement from an existing authorized water user, which could be either the landowner or local municipality.

6. APPLICABLE LEGISLATIVE FRAMEWORK

Table 5: Applicable legislation and guidelines

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT (a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process	**REFERENCE WHERE APPLIED**	**HOW DOES THIS DEVELOPMENT COMPLIY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT?** (E.g., In terms of the National Water Act a Water Use License has/ has not been applied for)
National Environmental Management Act NEMA has been designated within the framework of the Constitution to promote sustainable development. It requires that development must be socially, environmentally and economically sustainable by taking measures to prevent pollution and ecological degradation; promote conservation and secure ecologically sustainable development while promoting environmental justice. It requires that social, economic and environmental impacts of activities are considered, assessed and evaluated and the impact on people must be anticipated and prevented.	EIA & EMPr	EA has been applied for

Section 28 of NEMA imposes the _polluter pays ‘principle whereas the person who causes the pollution must pay for its remediation. Section 24 (5) of NEMA provides for specific listed activities which require environmental authorisation prior to their commencement. Environmental impacts of such activities must be considered, assessed, evaluated and where possible managed, minimized or prevented. The EIA Regulations of 2014 (GNR 982) require authorisation. The regulations and list of activities were amended by GNR 324, 325, 326 and 327 of 7 April 2017. A prospecting right activity is subject to application for environmental authorisation. It triggers an activity under GNR 984 (as amended by GNR325) and is subject to a full Scoping and EIA Process. The applicant must submit the following to the authorisation authority for decision making: • Application for Environmental Authorisation • Conduct Public Participation Process • Submit a Draft BAR/EMP • Submit a Final BAR & Environmental Management Programme (BAR & EMPr).		
National Environmental Management: Biodiversity Act	Impact assessment of vegetation	Does not trigger the requirement for any NEMBA licence

Mineral Petroleum Development Resources Act Section 16 of Mineral and Petroleum Resources Development Act (Act 28 of 2002) (MPRDA) and its amendments in terms of the MPRDA all mining related activities require environmental authorisation, rights and or permits before any mineral is removed or activity commenced with. The proposed prospecting activities for various requires a prospecting right application in terms of Section 16 of the MPRDA. The MPRDA has also been amended to align with specific environmental legislation associated mining activities and NEMA has been aligned with the MPRDA to provide for one environmental system. The DMR is therefore the authorising authority for environmental authorisations.	EIA &EMPR	A prospecting right application has been submitted to the DMR. The application has been accepted.
National Heritage Resources Act	Structures	Does not trigger the requirement for any NHRA licence.

7. NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES

The prospecting programme proposed by Constructo will address the investigation of the availability of an economic mineral resource. Prospecting activities would therefore need to be undertaken through invasive prospecting methods to confirm historic information of the mineral resource, including occurrence of other viable mineral resources; and if a viable mineral deposit still exists within the project site.

Prospecting will confirm the information obtained through field mapping, desktop studies and literature review. It will allow the preparation of Geological Modelling and a resource estimation which confirms if the identified mineral resource/s can be feasibly mined in future in an environmentally, socially and economically viable manner. The applicant chose to prospect for coal in the local area which is known for having such mineral deposits.

If the prospecting activities prove that the mineral deposit can be optimally mined at the proposed site, it becomes a viable and prosperous land use option for the local community. A new mine may/could be developed with the potential to contribute to the local economy as well as generate much needed employment for the local community.

In addition to contributing to supply and employment, mineral exploration adds value to the geological and geoscientific database.

8. DESCRIPTION OF A PROCESS FOLLOWED TO REACH PROPOSED PREFERRED SITE

8.1. The location where it is proposed to undertake the activity Selected Application Area

The proposed site was selected based on extensive research and also following on information from previous prospecting activities in the area.

8.2. Preferred site targeted for invasive prospecting activities (identified target areas)

- The exact location of the proposed core drill sites on the proposed area depends on the planned non-invasive activities (geo-physical survey cannot be confirmed at this stage). However, the following provisions will be applicable to the final site layout plan for the prospecting programme:
- Infrastructure such as houses (including lodges, fences, electricity pylons, gates) will be avoided.

- No prospecting will take place at horizontal distance of 100 m from any infrastructure and 500 for water bodies.
- Constructo will use non-invasive methods within protected areas. These methods include surface mapping and applicable Geophysical methods.
- Any boreholes, sewer pipelines, etc will be marked-off prior to site establishment and avoided during operations.
- Where possible, existing access roads will be utilized to access the potential drill sites.

8.3. Design or layout of the activity / Phasing

Buffer zones will be applied to sensitive environmental, and heritage features where invasive prospecting methods would be applied and will include:

- Invasive activities are to avoid identified heritage resources at all other target areas.
- No invasive activities are to be placed within 50m from such heritage sites;
- A 500m buffer zone will be upheld to wetlands and riparian zones and be regarded as no go zones for invasive prospecting methods.
- Prospecting at rocky ridges would be avoided, if it cannot be avoided footprint areas will be limited to a minimum on rocky ridges;
- Disturbance through exploration in old river channels will be limited to an absolute minimum.
- Prospecting activities are to be located along existing access roads as far as possible.

8.4. Technology to be used

An alternative in technology / method is being considered for drilling of surface boreholes. Core drilling, reverse circulation or percussion drilling will be considered. Diamond/Core drilling has been chosen based on its known success of prospecting. This method gives more accurate profile of the mineral composition at each depth than any other style of drilling, and cause less environmental impacts (e.g, with the core drilling, one can get depths of 30 meters in 12 hours, compared to 150 meters with reverse circulation drilling).

8.5. Operation aspects of activity

The recognized invasive prospecting methods of drilling will be used within the application area with the exception of non-invasive exploration methods in the riparian area. These methods include surface mapping and applicable Geophysical methods. These methods include flying an airplane over the property to measure electromagnetic or sound anomalies. The surface mapping involves less than 10 prospecting crew walking and taking measurements.

8.6. Option of not implementing the activity

The no-go option will be to call off prospecting ideals in the application area. The potential environmental impacts would not take place and no mining activity would trail the prospecting. Communities will not benefit from the employment opportunities and royalties associated with development of a mine post positive prospecting results. The only land use option left for the community to pursue would be either agriculture, grazing or game farm ventures which may not be as prosperous as mining. The prospecting programme will confirm an available mineral resource and reserve. Without the implementation of prospecting a Bankable Feasibly study with the resource and resource statement cannot be prepared. There will be no detailed data to validate the economic feasibility to mine the available mineral resource. Also, no transformations of the current environment, no likely adverse impacts of the project on the environment

9. DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED

The public participation process (PPP), also known as the Stakeholders Engagement Process (SEP) is a fundamental component of the Environmental Impact Regulation (2014) Regulation 40, 41 - 44 of the EIA Regulations. Not only is public participation a statutory requirement in terms of Section 56 of the NEMA, but a process which is designed to lead a joint effort by interested and affected parties to evaluate all aspects and issues of the proposed development, with the ultimate goal of improving the project by minimizing adverse effects and maximizing the benefits of the project. Public participation is designed to provide sufficient and accessible information to Interested and Affected Parties (I&APs) in an objective manner to assist them to:

- Be acquainted with the proposed Constructo Prospecting Right application;
- Raise issues of concern and make suggestions for alternatives and enhanced benefits;
- Contribute local knowledge;
- To obtain stakeholder views and concerns, and;
- Verify and validate that their issues have been captured and considered in the Basic Assessment Report.

Regulation 2(4)f under the principles of NEMA further states that: the participation of all interested and affected parties in environmental governance must be promoted, and all people must have the opportunity to develop understanding, skills and capacity necessary for achieving equitable and effective participation, and participation by vulnerable and disadvantage persons must be ensured. The following media of communication with interested and affected parties (I & APs) will used:

- A newspaper advert will be placed in the local newspaper, giving notice to I & APs of the applicant`s intention to prospect the area as well as inviting all affected parties to a meeting where the applicant would provide full details of the project.

- Site notices written in English (A3 sized) and Zulu language will be placed in strategic areas such as Police Station, Schools, Public Clinics, Mall and Libraries.
- E-mail and telephonic communication with I & APs;
- Comment and registration sheet: I & APs will be requested to provide written comments, concerns and inputs that would be consolidated into the BAR;
- Questionnaires: Property owners will be provided with an environmental aspect questionnaire to complete to assist in identifying features on their respective farms that may require protection or special attention.
- A public meeting with interested and affected parties will be held.
- A register of I & APs is kept and as such the following information will be distributed to them:
- Background Information Document (BID). The BID is comprised of the following information:
- The description of the land concerned;
- The location of the project;
- The minerals applied for;
- The meeting schedule, time, venue

9.1. Identifying Regulatory Authorities:

The authorities for this project were identified from similar projects in the past. The authorities contacted with regards to this project include:

- Kwazulu Natal Department of Mineral Resources (DMR)
- Kwazulu Natal Department of Water & Sanitation
- Roads Agency Kwazulu Natal
- Kwazulu Natal Department of Economic Development, Environment & Tourism
- Kwazulu Natal Department of Rural Development and Land Reform
- Newcastle Local Municipality
- Amajuba District Municipality
- National Department of Public Work

9.2. Document Review:

In addition, this Report will be subjected to a 30-day comments period, and all registered I &AP's will be informed of its availability. All comments received during the draft phase will be incorporated within the Final Basic Assessment Report, which will be submitted to the competent Authority (DMR) for their decision.

The present Draft Basic Assessment Report and Draft Environmental Management Programme will be made available (this document).

A Register of interested and affected parties has been opened and will be maintained.

A fully detailed feedback report on the public participation activities will be undertaken to inform the public, stakeholders and Organs of State of the applications and availability of the Basic Assessment Report. This will be included in the Appendix of the Final Basic Assessment Report.

9.3 Summary of issues raised by interested and affected parties

Table 6: Issues raised by I&APs

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**	**EAPs response to issues as mandated by the applicant**	**Section and paragraph reference in this report where the issues and or response were incorporated.**
AFFECTED PARTIES					
Lawful occupier/s of the land	X				
Landowners or lawful occupiers on adjacent properties	X				
Municipal councillor	X				
Municipality	X				
Organs of state (Responsible for infrastructure that may be affected) Roads Department, Eskom, Telkom	X				
Communities	X				

Traditional Authorities	X				
Dept. of Economic Development Tourism & Environmental Affairs	X				
Dept. of Transport	X				
National Department of Agriculture, Fisheries and Forestry (DAFF)	X				
Dept. of Water and Sanitation (DWS)	X				
Land Claims Commissioners Office	X				
Dept. of Mineral Resources (DMR)	X				
Other Competent Authorities affected	X				
OTHER AFFECTED PARTIES					
INTERESTED PARTIES					

10. THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE ALTERNATIVES

This section describes the surrounding environment of the project, the environment that may be impacted by the project, the baseline conditions of the project site. This includes the regional site description, the biophysical environment (climate, temperature, precipitation, soil, geology, topography, water, wind), the acoustic environment (noise), the biological environment (fauna and flora), the socio-economic environment (demographic, occupation, education, quality of life, income) and the cultural environment (heritage, cultural, archaeology) and land use.

10.1 Regional site and land description

The proposed project is situated at Newcastle. Newcastle Local Municipality is demarcated as KZN272 by the Demarcation Board and is one of the 50 local municipalities that constitute KwaZulu-Natal Province. The municipality is one of five local municipalities within Amajuba District Municipality; located in the Northern Kwa-Zulu Natal and borders of Mpumalanga and Free State. The property is in a low to high lying plain which varies in width along the proposed site.

10.2 Description of the biophysical environment

10.2.1 Climate

Newcastle's climate is classified as warm and temperate. The study area is located on the outskirts of Newcastle and normally receives on average 895 mm of rain per year, with the most rainfall occurring during mid-summer of December (163mm) and its lowest rainfall in June (11mm). The site is characterised with a climate showing a slightly restricted growing season due to the occurrence of low temperatures and frost.

Temperature

The temperatures in the area are highest on average in January, at around 26.0 °C. The lowest average temperatures in the year occur in July, when it is around 16.1 °C. The mean annual temperature is approximately 20.1 ºC in summer and 10.2 ºC in the winter months. The following table indicates the monthly rainfall and temperature observed at Newcastle (derived from historical data).

Precipitation

Rainfall in the Newcastle region occurs in the summer months (mostly December to February), with a mean annual precipitation of 1 026 mm (observed from rainfall station 370407 W). The reference potential evaporation (ETo) is approximately 1 450 mm (A-pan equivalent, after Schulze, 2011) and the mean annual

evaporation is between 1200 – 1300 mm, which exceeds the annual rainfall. According to the geohydrological specialist report, rainfall in excess of 2 000 mm have been recorded in the area since 1979, indicating the variable nature of the rainfall in the area. The figure below indicates annual rainfall (annual above and monthly below) in the area.

Table 7: Mean monthly rainfall and temperature observed in Newcastle.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
Mean Rainfall (mm)	193.3	145.0	127.1	51.4	17.9	13.5	11.0	23.3	42.6	110.6	130.6	160.2	**1 026.6**
Max Temperature (°C)	26.37	25.61	24.26	22.02	19.60	16.74	16.80	19.67	23.19	24.13	25.59	26.66	**22.55**
Min Temperature (°C)	12.12	11.49	9.78	7.41	4.87	2.59	2.22	5.01	8.07	9.84	10.80	11.73	**7.99**

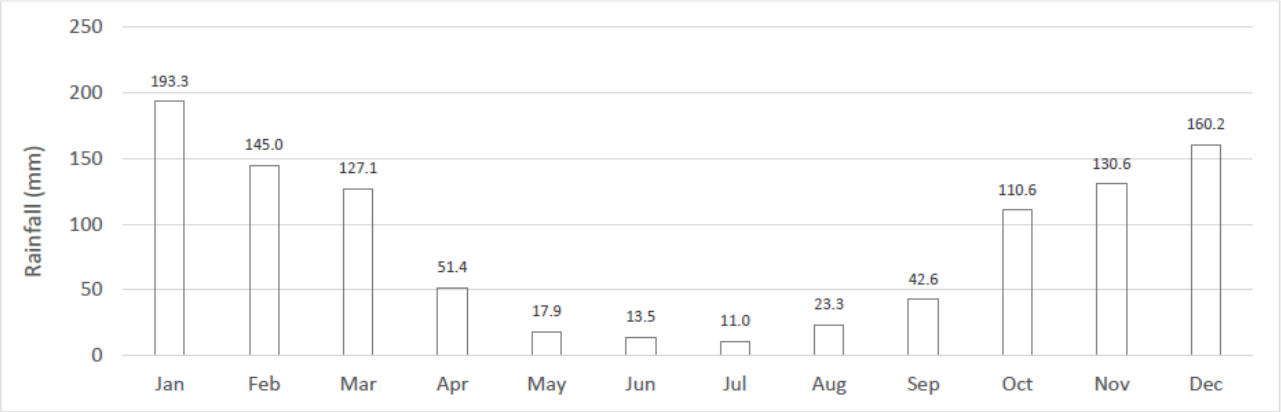


Figure 3: Annual rainfall (annual above and bonthly below) at Gardinia

Wind

Dust generation and its dispersion has been a concern in air quality in cavities such as open cast mining. Major mining activities has led to the problem of air pollution and health hazards. As a result, it is essential to analyse and characterize the wind flow pattern in mining area.

The wind experienced at any given location in Newcastle is highly dependent on local topography and other factors, and instantaneous wind speed and direction vary more widely than hourly averages.

The average hourly wind speed in Newcastle experiences *significant* seasonal variation over the course of the year.

The *windier* part of the year lasts for *5.9 months*, from *May 30* to *November 28*, with average wind speeds of more than *8.7 miles per hour*. The *windiest* month of the year in Newcastle is *September*, with an average hourly wind speed of *10.3 miles per hour*.

The *calmer* time of year lasts for *6.1 months*, from *November 28* to *May 30*. The *calmest* month of the year in Newcastle is *March*, with an average hourly wind speed of *6.9 miles per hour*.

The wind is most often from the *west* for *8.8 months*, from *March 27* to *December 21*, with a peak percentage of *60%* on *June 14*. The wind is most often from the *east* for *3.2 months*, from *December 21* to *March 27*, with a peak percentage of *36%* on *January 1*. The following figure indicate the wind direction in Newcastle.

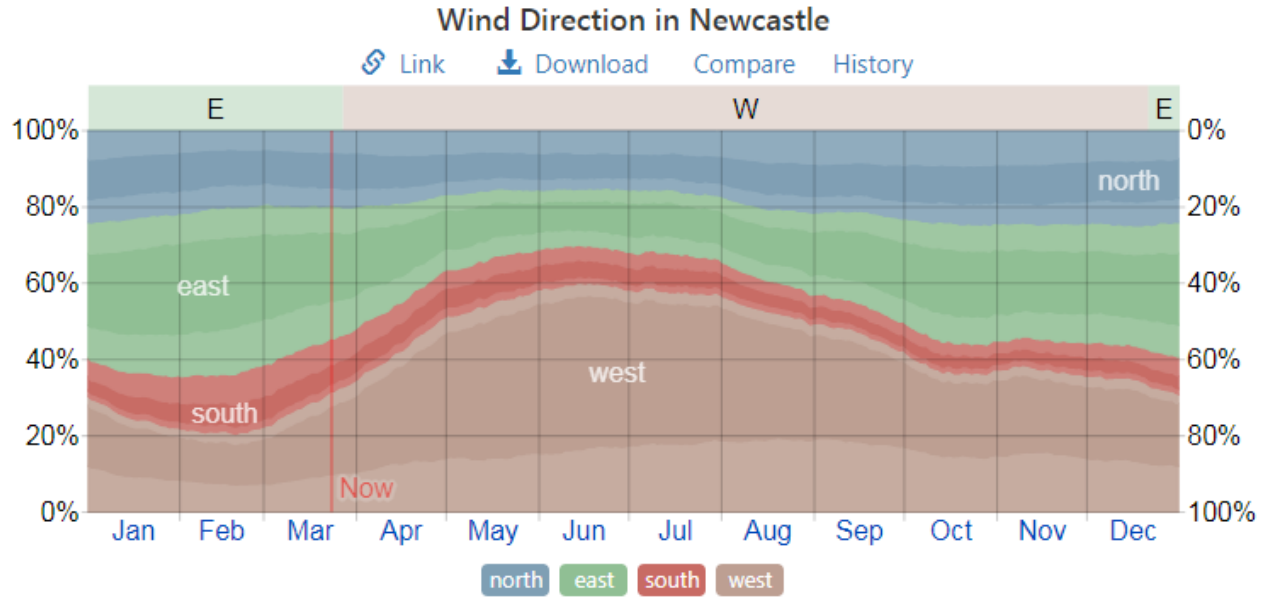


Figure 4: Wind direction in Newcastle

10.2.2 Geology

The foundations of KwaZulu-Natal comprise two distinct geological units; the Kaapvaal Craton and the Natal Metamorphic Province. The subsurface geology has a great influence on the terrain of Newcastle including the soil and vegetation cover which are essential to the conditions of development. The geological structure comprises four kinds of rock formations which includes Jurrasic age dolerite, Permian age mudstone and sandstone, Permian/carboniferous age shale of the Volkrust formation, and the carboniferous age sandstone of the Vryheid formation. The mineral potential of Newcastle is also closely related to the geological systems of the area. The minerals within the area contribute to the economic value of Newcastle. The underlying geology of the site is alluvial boulders along the watercourse and Ecca group shale as the primary bedrock.

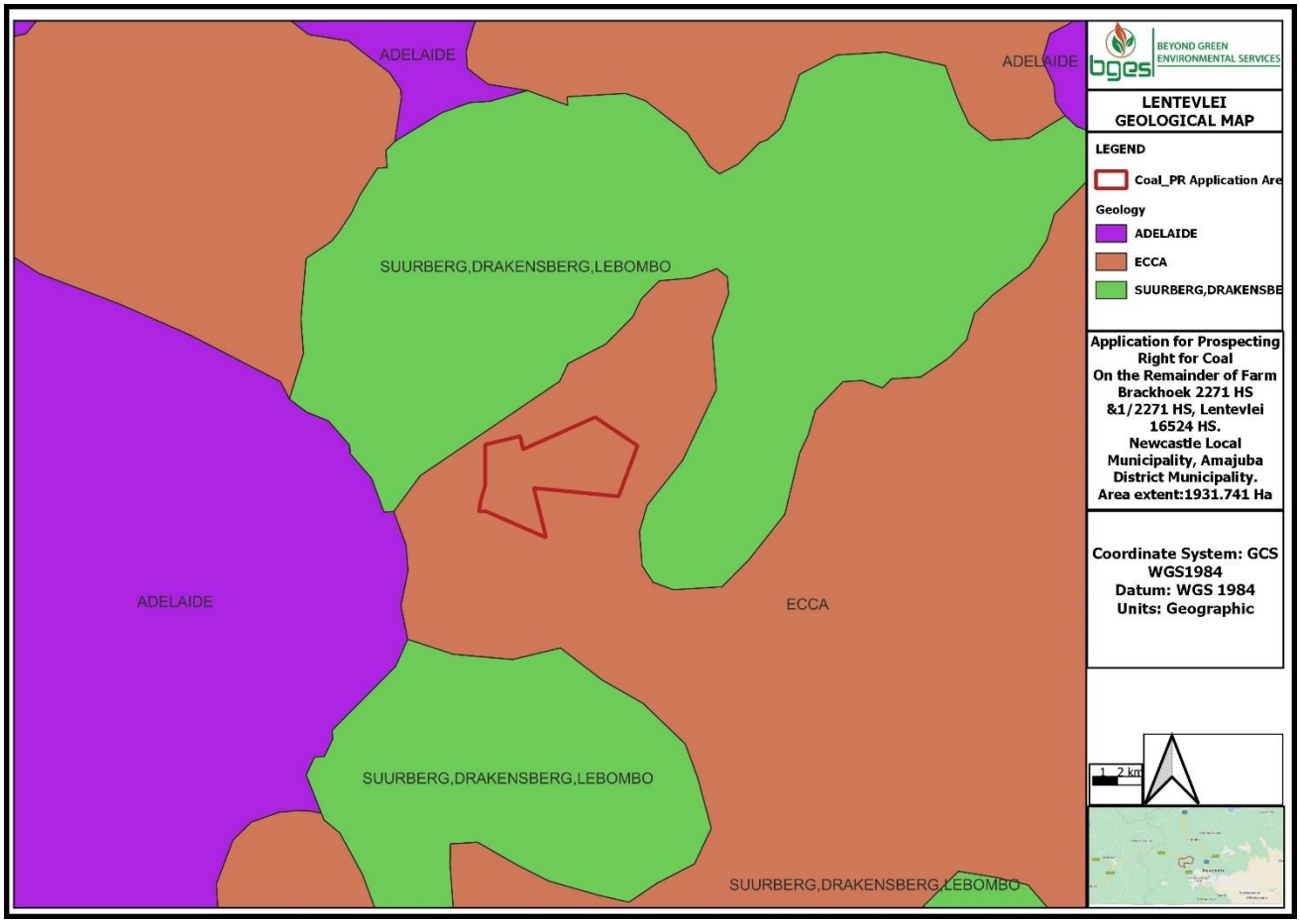


Figure 5:Typical Geology Cross Section in the proposed development area

10.2.3 Topography

The topography of the area consists of gently rolling hills and shallow, gently sloping valleys . The topography of the area is reasonably flat lying, gently undulating farmland, between elevations of about 1400 to 1500 metre above sea level (See figure below).

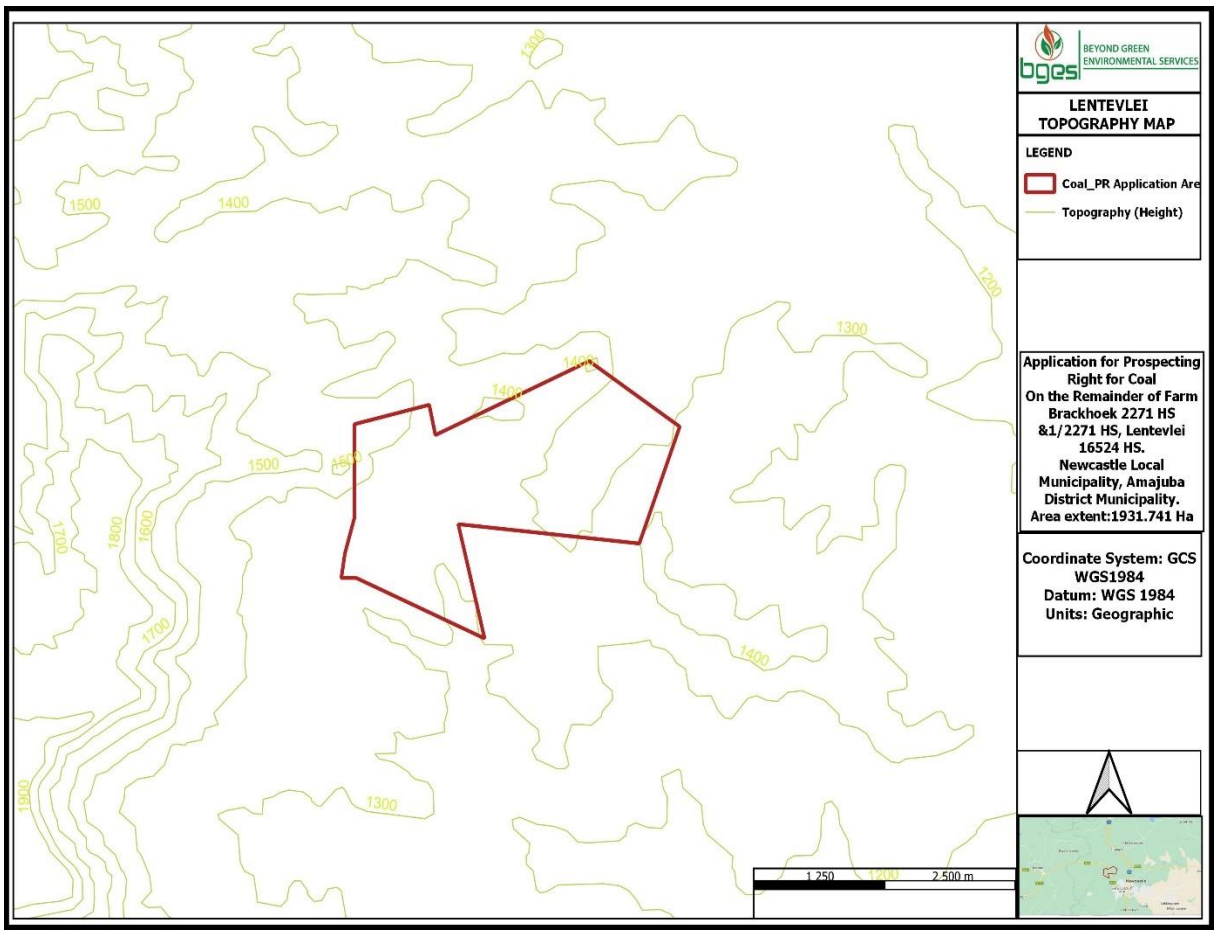


Figure 6: Topography within the proposed development area

10.2.4 Air quality

Air quality in the area may be slightly deteriorated due to moving vehicles (R34 and access roads passes through the project site).

10.2.5 Noise

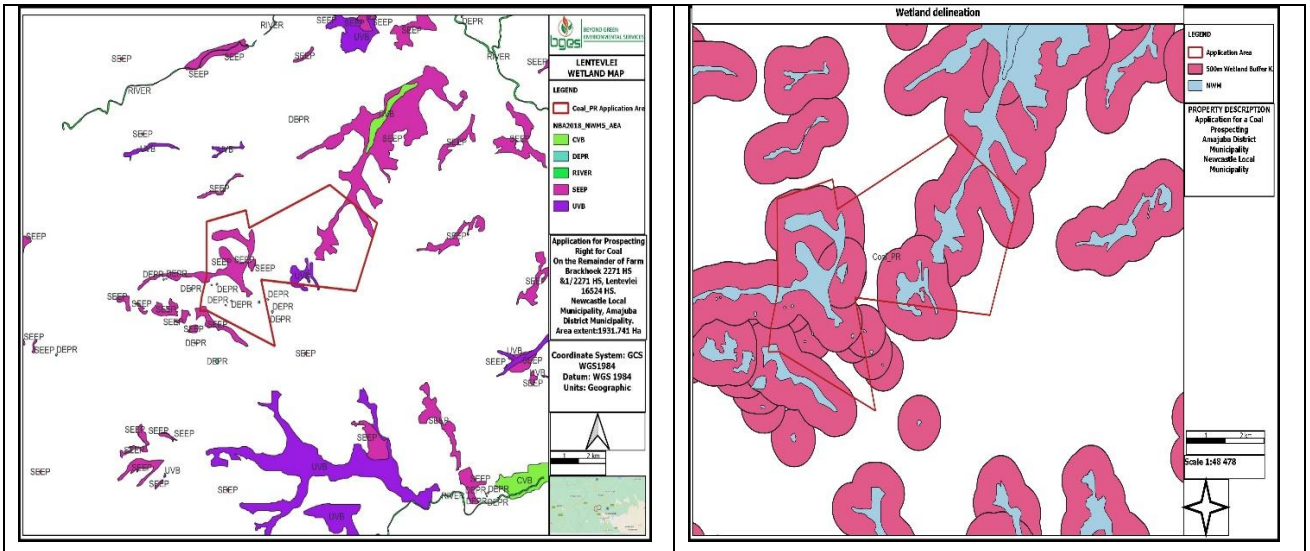
The project site is within a quiet and calm area. The average noise levels are often less well behind the 60 dB, the SANS noise levels. There are few habitations around and within the proposed project site. The noise emit during the project will negatively affect the surrounding and communities withing the proposed development area.

10.2.6 Hydrology

The development site is located within Quaternary Catchment V31D and V31J, falling under Buffalo water management area. The proposed area sits on a Ngudumeni and Mbizana streams, tributaries of the Buffel river.

10.2.7 Watercourses

Watercourse systems were identified within and around the study site (Figures 7). Watercourses identified within the project site included: Seep Wetland units, unchanneled valley, depressions, and drainage Lines, and streams (Mbizana sand Ngudumeni streams) As recommended in the mitigation measures 500 m buffer should be maintain around the watercourses.



a) Watercourses

b) Delineation 500 m buffer

Figure 7: watercourses associated with the proposed project

10.2.8 Groundwater

The aquifer underlying the study area is classified as a minor aquifer. This minor aquifer system can be fractured or potentially fractured rocks, which do not have a high primary permeability, or other formations of variable permeability. The lithology is mostly arenite underlain by shale underlain by coal. The aquifers seldom produce large quantities of water but are important both for local supplies and supplying base flow to rivers.

10.3 Biodiversity

General context of the biodiversity sensitivities of the area

The Red List Ecosystems protection level (2021), National wetland Map, Terrestrial ecosystems protection status level, South Africa Protected Areas (SAPAD, 2022), Draft KwaZulu-Natal Biodiversity Spatial Planning 2016 shapefiles obtained from SAMBI website and the screening tool were used to analyse the ecological sensitivities of the project site (Figure 8.9, 11), provide an illustration of the sensitivities of the site.

According to the screening tool, the project site does not intersect with any EMF areas.

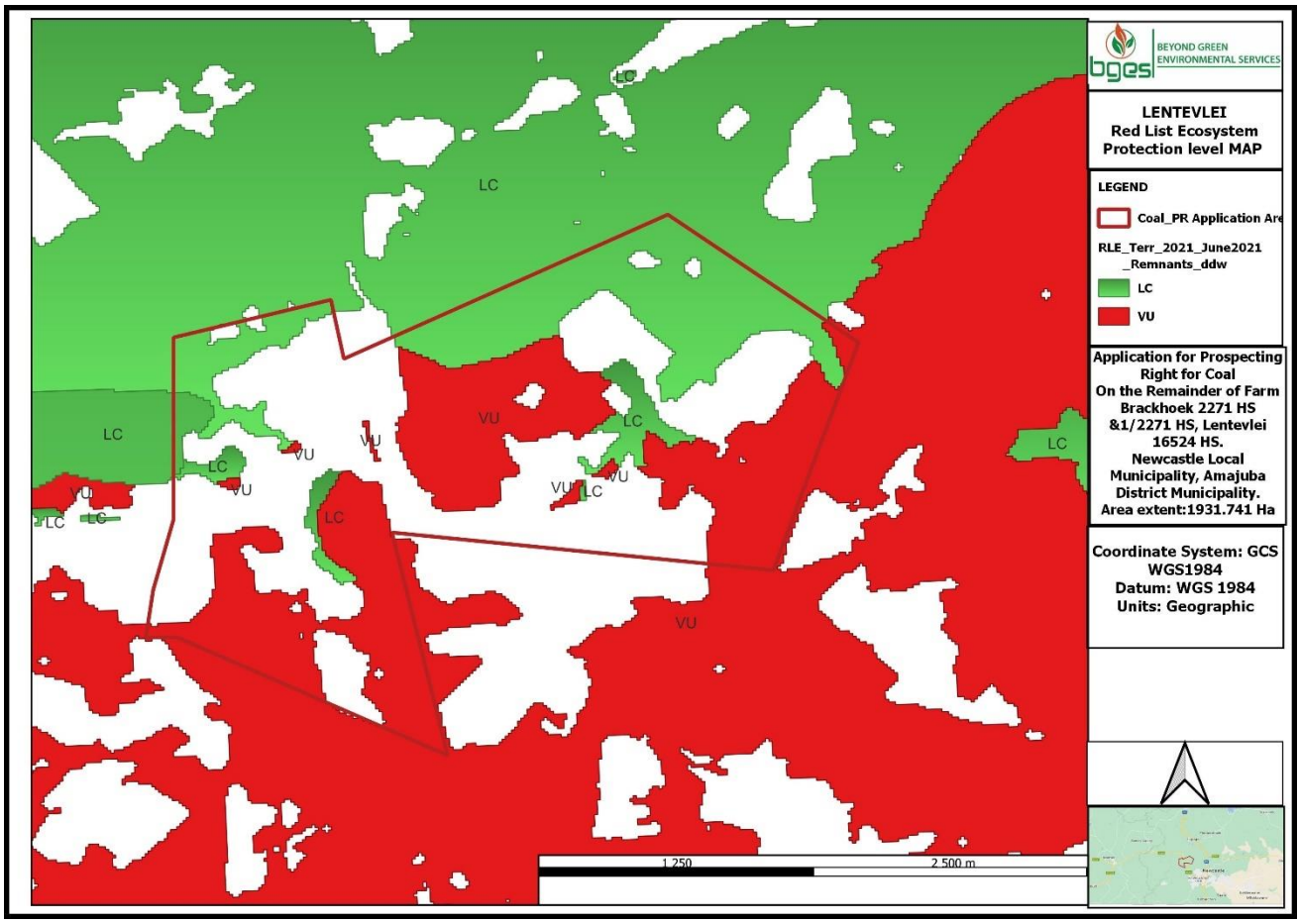


Figure 8:Ecosystem protection levels in the proposed site

Protected areas

The desktop study using SAPAD data indicated the repartition of protected areas around the proposed development Site (see figure below). The figure indicated nature reserve protected area in the proposed development. There are no protected areas within 10 km distance to the proposed project.

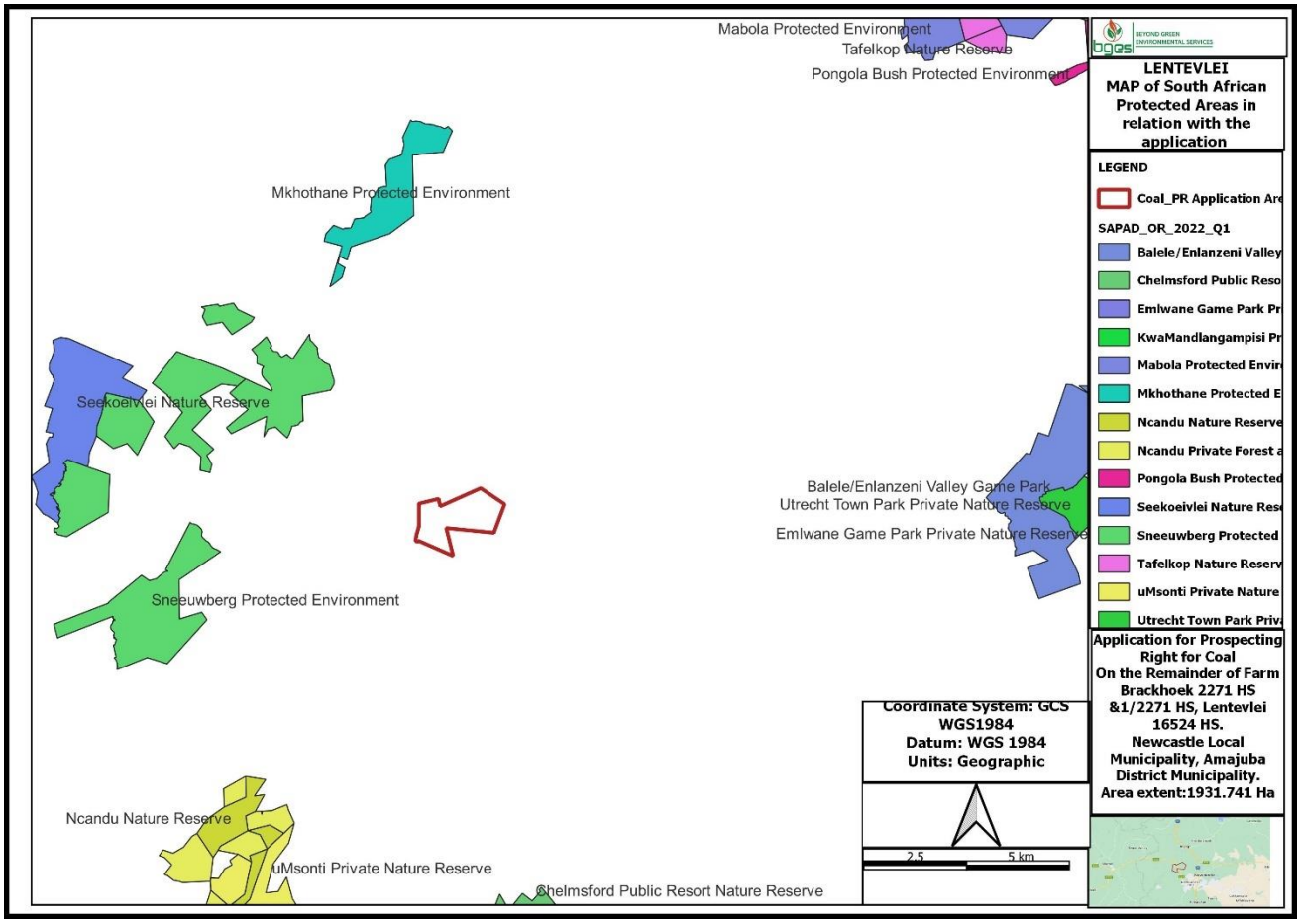


Figure 9:Protected Areas associated to the proposed development

10.3.1 Flora

The proposed project development area is within the KwaZulu-Natal Moist Grassland (Gs 4, Mucina and Rutherford, 2006). The project site falls within the Natal Central Bushveld and the North Eastern Mountain Grassland. Plant species within the proposed development area include Lotononis amajubica, Polygala praticola, *Themeda triandra* and *Hyparrhenia hirta, Acacia sieberiana var. woodii savannoid* woodlands encroach up the valleys, usually on disturbed (strongly eroded) sites. The area also contains pioneer and alien vegetation plant species interspersed. Vulnerable plants species may be found on site.

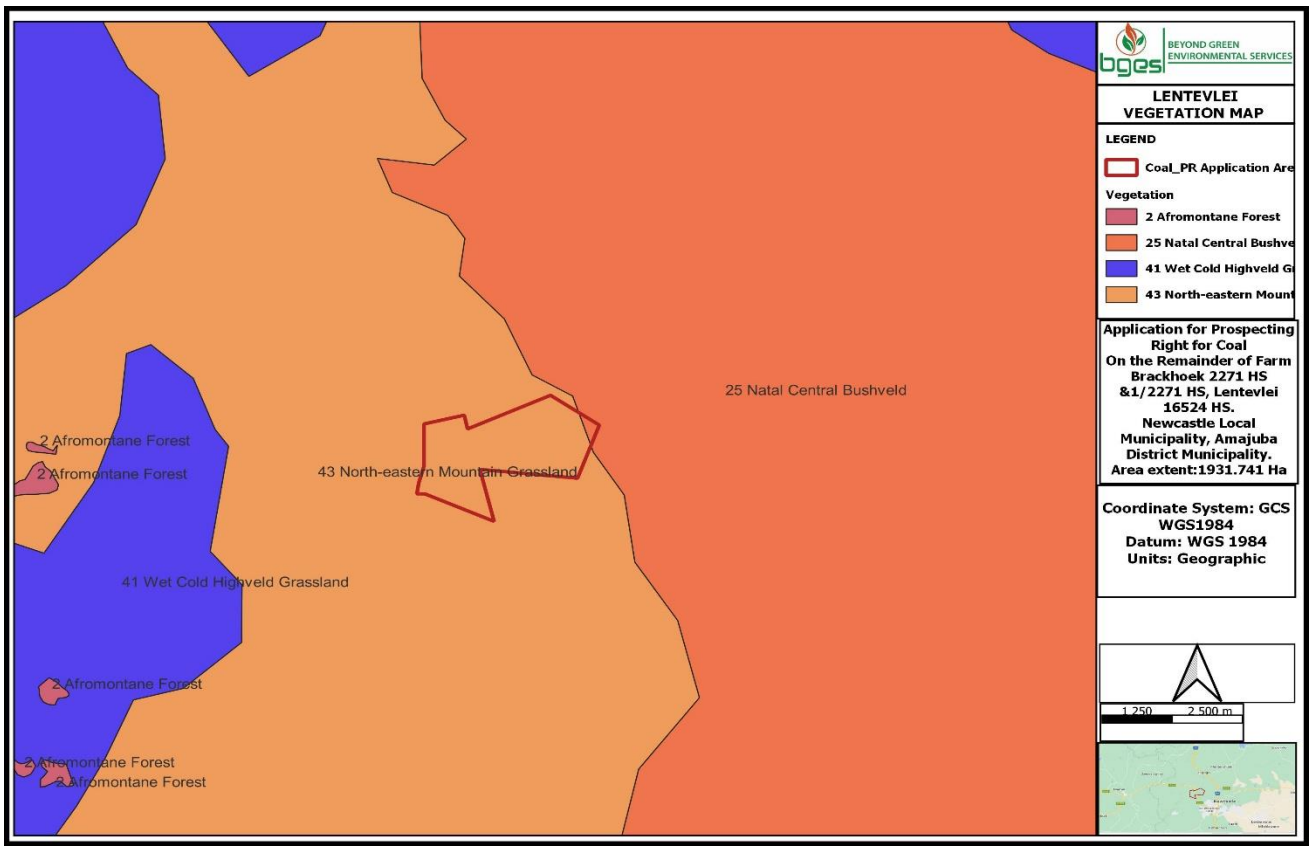


Figure 10:Vegetation Map for the proposed site

10.3.2 Fauna

Newcastle municipality comprises a diversity of animals which include mammalian, avifauna, and the amphibian species, reptiles, and butterflies. The following animals may occur in the vicinity, or within the proposed project site; Aves-Neotis denhami, Aves-Balearica regulorum , Aves-Geronticus calvus, Aves-Eupodotis senegalensis, Aves-Circus ranivorus, Aves-Sagittarius serpentarius, Aves-Neotis denhami, Aves-Circus ranivorus , Aves-Balearica regulorum, Aves-Podica senegalensis, Aves-Hydroprogne caspia, Aves-Tyto capensis, Mammalia-Chrysospalax villosus , Mammalia-Crocidura maquassiensis, Mammalia-Hydrictis maculicollis, Mammalia-Ourebia ourebi ourebi, Invertebrate-Clonia lalandei.

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10.4 Sensitive environment within and around the development area

The map below illustrates the sensitivities within and around the proposed project site.

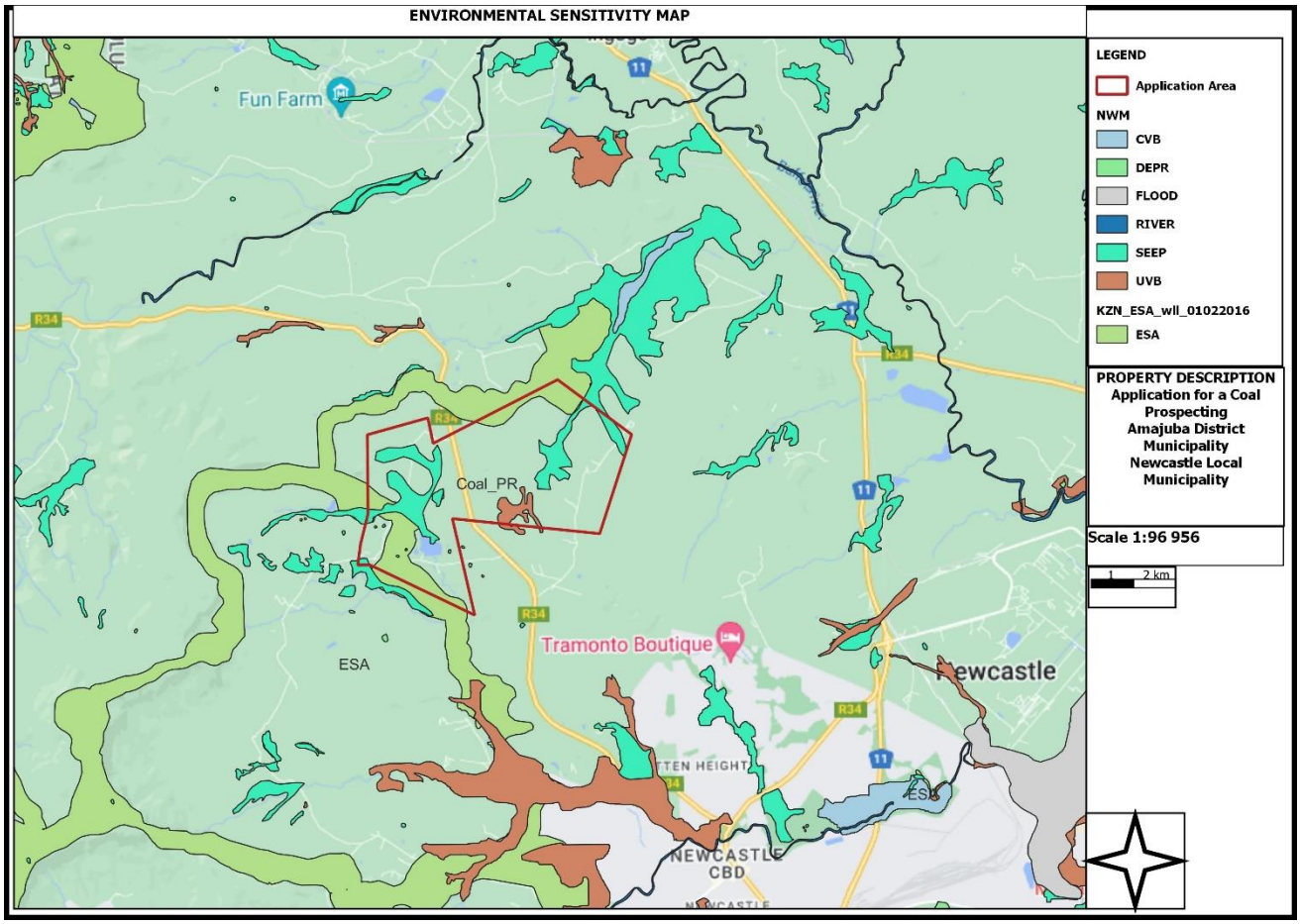
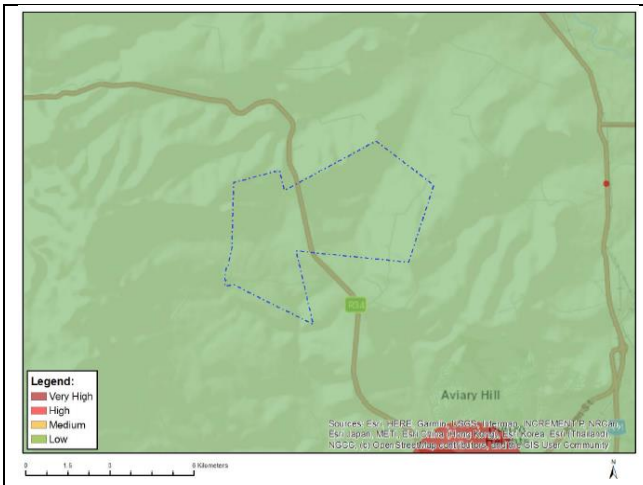


Figure 11: Sensitivity Map

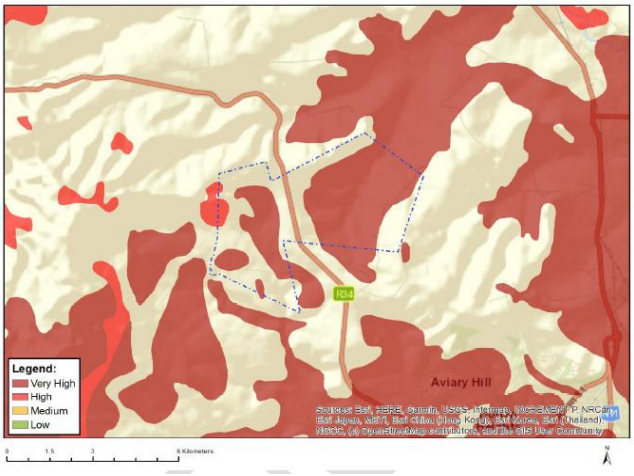
10.5 Sites of Cultural, Heritage and paleontological Significance

A screening study for the proposed development area showed the low sensitivity in terms of the importance of heritage site and items in the proposed mining area. The proposed site does not fall within 10km of a heritage site.

However, The Map of relative palaeontology theme sensitivity from the screening tool indicates ‘’very high sensitivity’’. There is a high possibility to find paleontological objects on some parts of the project site. The maps are indicated below:



a) Map of relative archaeological and cultural heritage theme sensitivity



b) Map of relative paleontology theme sensitivity

Figure 12: Heritage, archaeological and Palaeontology theme (Source: Screening tool)

10.6 Noise

The project site is within a quiet and calm area. The average noise levels are often less well behind the 60 dB, the SANS noise levels.

10.7 Socioeconomic environment

Demography

The proposed project is located within the local municipality of Newcastle, at approximately 4 km distant to the town. The Municipality counts approximately 389 117 inhabitants in total (Newcastle IDP Report, 2020) within 1855 km2 in size (Ngobese, 2015). The majority of the population is relatively young with almost 72% of people aged between 19 to 34 years.

Education

According to the Newcastle IDP report (June, 2020) the level of education in the area is fairly good. The area comprised a considerable number of education institutions.

Economic activities – Income and Quality of life

Newcastle is the main urban centre and economic hub of the Amajuba district which is among one of the major coal mining regions in South Africa. Livestock farming and crop production are the dominating activities in the area. The community in the area live below poverty line; only few are employed in the farms and Newcastle town. In 2020 the IDP numbered 5 Operating Mining Activities within the Newcastle Local Municipality's jurisdictional area and many others mining prospects. Mining and agriculture related

services as well as skilled and unskilled workmanship are available from all neighbouring townships around Newcastle.

Health situation

The municipality encountered approximately 10 permanent clinics and at least two hospitals. One if located in town while the other is in Madadeni Township. While Madadeni Hospital serves the district function, Newcastle Hospital is classified as a Provincial Hospital and provides service to the whole of Amajuba District and the surrounding areas.

According to the Newcastle IDP report (June, 2020) there is a need for interventions to address HIV/Challenges.

Institutions and social set up

The Newcastle Local Municipality is the third largest urban area within KZN, forming the border of KZN, with Phumelela in the Free State to the west and Pixley ka Seme in Mpumalanga to the north. The NLM area overs a total area of 1855 square kilometres and is made up of 31 wards. Newcastle is the main urban centre and economic hub, with an increase of households realised from previous surveys done. Average household size is about 4.3 people per dwelling unit.

Generally, the economy of the municipality has been dominated by three sectors namely manufacturing, mining and community services. However, the local economy is currently dominated by the services sector in terms of output and employment. The contribution of the manufacturing sector is large in terms of output but significantly lower in terms of employment, indicating to the capital intensity of the sub-sectors that dominate in the Newcastle economy, i.e., steel, rubber manufacturing, heavy engineering, cement, chemicals, textiles. The local municipality has been noted to have huge backlogs in the delivery of basic services (electricity, water, sanitation), despite being a hive for economic activity in KZN. The social institutions governing residents in the area include the local cooperative set ups, farming communities, local municipality, district municipality, national and international frameworks.

10.8 Description of the current land uses description of specific environmental features and infrastructure on site the most notable

Land uses in the proposed site mainly consists of farms, assortment of agriculture, transformed vegetation and grazing land for livestock and few trees. The figures below illustrate landcover in the area.

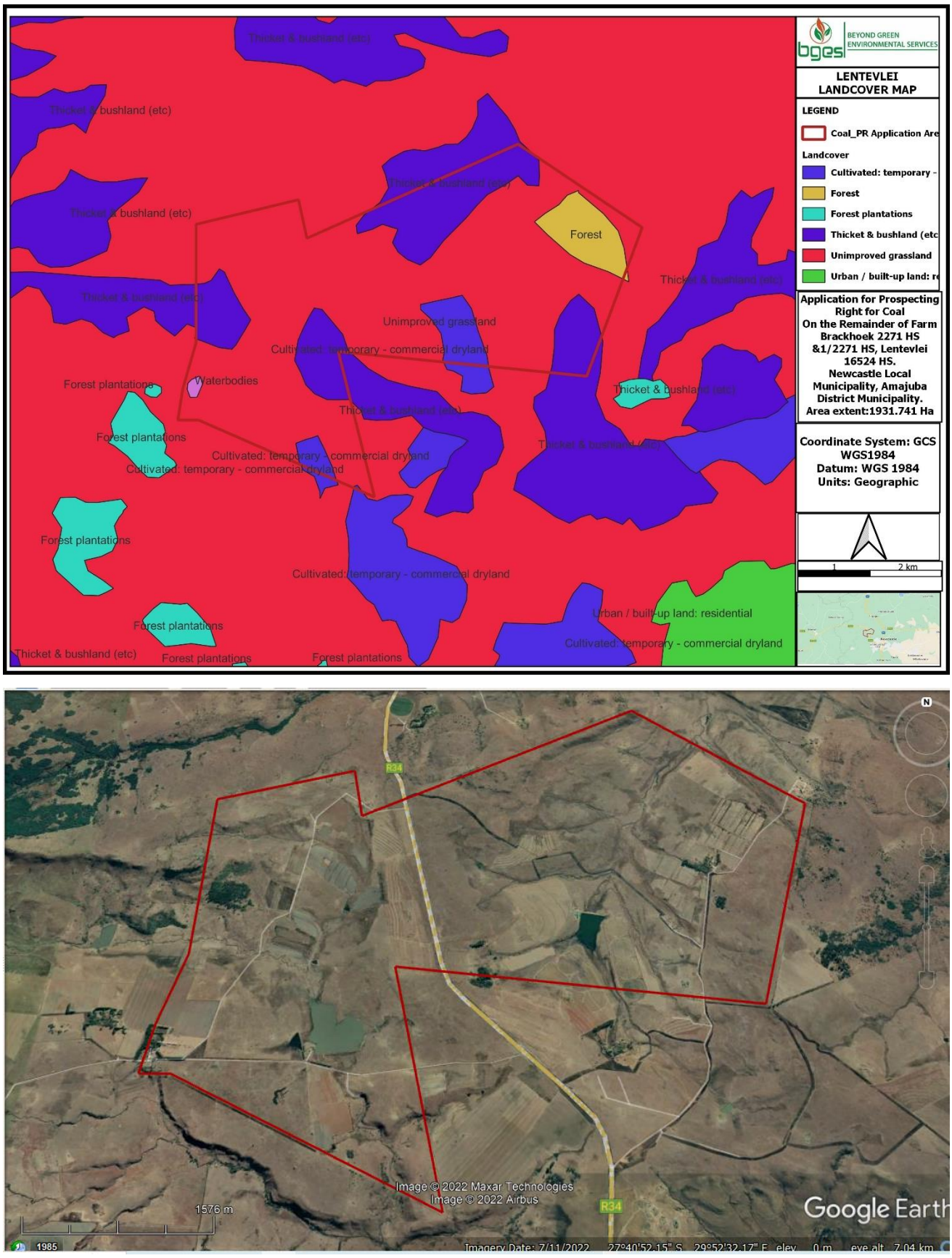


Figure 13: Land cover on the proposed site

11 IMPACTS AND RISKS IDENTIFIED FOR THE PROJECT

11.1 Risk Assessment

This section summarizes the potential impacts associated to the different phases of the proposed prospecting activities. Potential impacts and risks were explored by investigating each aspect associated with the proposed prospecting activities.

The different phases of the prospecting works include:

- Site planning & preparation: It involves, amongst others, site clearance to establish site camps and equipment onsite works, channel sampling. and finalising identification of target areas for prospecting (non-invasive). Site clearance will follow and establishment of site camps and equipment on site (invasive).
- Drilling, and logging (invasive)
- Alternative methods to be applied (non-invasive): surface mapping and applicable Geophysical methods (flying an aeroplane over the property to measure electromagnetic or sound anomalies, walking the areas)
- Decommissioning and Rehabilitation of prospecting infrastructure, excavations, and affected areas

Please refer to Table 9 which contain the Risk Assessment summary for the anticipated impacts during the site preparation and invasive prospecting as well as decommissioning and rehabilitation stage. Mitigation measures proposed in the risk assessment only summarises the approach to be taken to manage identified risks. Further a detailed mitigation plan forms part of Part B of this report.

11.2 Impacts and risks identified including the degree to which these impacts can be mitigated or avoided

Impacts identified below are identified after interaction of all activities of the project and the environment.

Impact list

- Soil contamination through fuel spills. The soil can be contaminated during all the phases of the project, particularly during the refuel and maintenance of vehicles and other equipment on site.
- Noise generated from the drilling activities, and movement of vehicles, and other equipment.
- Loss and disturbance of vegetation, animals
- Loss of species (animals and plants) of important concern

- Soil erosion - Impact on the soil viability during digging.
- Air pollution through dust and diesel fumes from the machines.
- Poor waster generation (solid and liquid)
- Land uses change (Drilling as an activity may impact on the natural and socio-economic environment).
- Crime (the security of the landowner / occupier might be at stake).
- Erosion/ soil degradation; The stockpiling of soils from the excavation of the water sumps may impact soil viability.
- Potential visual impacts caused by drilling activities and associated infrastructure.
- Water contamination during borehole drilling.
- Clearing the drilling site during rehabilitation may impact on the natural vegetation of the area.
- Work and roads accidents
- Increasing in disease (sexually transmissible disease) due to foreign people/employees in the project site.
- Increase traffic
- Risks of confits between communities.
- Waterborne diseases, cancers, and respiratory diseases
- Job creation - The proposed operation requires skilled and experienced people to carry out the drilling programme. If the people with the required skill are available locally, they will be given preference.
- Change of topography and soil degradation.

Table 8:RISK ASSESSMENT TABLE FOR POTENTIAL IMPACTS RELATED TO INVASIVE PROSPECTING															
	SIGNIFICANCE PRE-MITIGATION								**SIGNIFICANCE POST MITIGATION**						**MITIGATION TYPE**
Aspect, Activity & Potential Impact	**Status**	**Probability**	**Extent**	**Duration**	**Intensity**	**Significance Score**	**Rating**	**Status**	**Probability**	**Extent**	**Duration**	**Intensity**	**Significance Score**	**Rating**	**(Modify, Remedy, Control, Stop**
Impact on the geology															
Change of topography and geology Core sample collection and storage	N	3	1	1	2	8	Low	N	1	1	2	2	5	Low	Control
Impact on soils															
Loss of topsoil resource - Stockpiling of topsoil following site preparation (excavation) may result in loss of topsoil resource	N	2	1	2	1	8	Low	N	1	1	2	1	4	Very Low	Control
Soil degradation - Establishment of prospecting sites, site camp, vehicle traffic, compaction of soils by heavy machinery may result in soil erosion.	N	2	1	2	2	10	Low	N	2	1	2	1	8	Low	Remedy
Soil contamination Generation, storage, and disposal of waste	N	2	1	2	3	12	Moderare	N	1	1	2	2	5	Low	Control

can contaminate soil due to improper disposal and hydrocarbon spillages															
Impact on Fauna and Flora (Ecological Impact)															
Loss of Habitat due to clearing of vegetation and topsoil as site preparation for prospecting sites and site camp. Site clearance for drill, sampling and camp site will impact on Habitat Connectivity and Open Space.	N	2	1	3	6	20	Moderate	N	1	1	2	4	7	Low	Control
Loss of sensitive species (flora and fauna) due to site establishment for site camp and prospecting activities. Establishment of access tracks and driving off existing tracks may cause destruction and damage to flora & fauna	N	2	1	5	6	24	Moderate	N	1	1	5	2	8	Low	Control
Animal Disturbance - Noise from drilling equipment, machinery, vehicle movement, aeroplane flying over area may disturb fauna (wild animals, birds, large mammals, livestock) and result in it to vacate the area	N	2	2	2	6	20	Moderate	N	1	1	2	2	5	Low	Control
Loss of animal - Faunal fatalities from direct contact with	N	1	1	5	8	14	Moderate	N	1	1	2	2	5	Low	Control

prospecting equipment, supplies (vehicle, chemicals, waste)															
Disturbance of the ecological habitat - Overall impact from prospecting on ecologically	N	2	1	2	6	18	Moderate	N	1	1	2	4	7	Low	Control
IMPACT ON AQUATIC ECOSYSTEMS/ WETLANDS															
Contamination / degradation of the aquatic ecosystems - During establishment of site camp, and drilling activities, there is a risk of contamination from to hydrocarbon spillages, oil and of fuel, and organic waste.	N	2	2	1	8	22	Moderate	N	1	2	1	8	11	Low	Remedy
Sedimentation of the aquatic ecosystem - Creation and clearing of target areas including vehicle movement may cause erosion and sediment deposition into aquatic ecosystems	N	2	1	2	6	18	Moderate	N	1	1	2	4	7	Low	Control
HERITAGE AND CULTURAL IMPACT															
Potential impact on river and trees due site preparation and prospecting activities.	N	1	1	5	3	9	Low	Neutral	1	1	1	1	3	Very Low	Control
Damage to cultural and or heritage sites during prospecting activities may result in **conflict with local community**	N	1	2	2	4	8	Low	Neutral	0	2	2	0	0	Very Low	Control

Potential **unearthing of heritage resources** during prospecting excavations	N	1	1	5	4	10	Low	N	1	1	2	2	5	Low	Remedy
IMPACT															
Increased noise level - During drilling, and geophysical exploration methods (flying aeroplane over area) noise will be generated from an aeroplane flying in the area, use of drilling and excavation machinery and vehicles travelling in the project site causing a nuisance to surrounding communities.	N	3	2	2	2	18	Moderate	N	2	2	2	1	10	Low	Control
AIR QUALITY & DUST															
Dust emission - Site establishment and prospecting activities will result in windblown dust from bare target area surfaces and entrained dust from vehicles/machinery travelling on gravel roads.	N	3	1	2	2	15	Moderate	N	3	1	2	1	12	Low	Control
VISUAL IMPACT															
Site clearance and prospecting activities may result in unsightly views (**aesthetic degradation**) due to exposed surfaces and presence of machinery on site	N	3	1	2	1	12	Low	N	2	1	2	1	8	Low	Remedy
LAND USE IMPACT															

Prospecting proposed next to an aerodrome	N	3	1	2	8	33	High	N	2	1	2	6	18	Moderate	Control
Prospecting within protected area is prohibited and will impact on the nature reserve and biodiversity	N	2	1	2	6	18	Moderate	N	1	1	2	4	7	Low	Remedy
GROUNDWATER IMPACT															
Groundwater contamination from fuel and hydrocarbons spillages from vehicles and storages which infiltrate groundwater	N	2	1	3	3	14	Moderate	N	2	1	1	2	8	Low	Remedy
SURFACE WATER															
Contamination of surface watercourse -Quality of surface water may be impacted by poor storage of chemicals, fuel spills, inappropriate waste disposal, or dust.	N	2	2	2	3	14	Moderate	N	1	1	2	2	5	Low	Remedy
IMPACT ON TRAFFIC															
Increased traffic due to prospecting vehicles, machinery using local gravel roads.	N	3	2	2	2	18	Moderate	Neutral	1	2	2	1	5	Low	Control
SAFETY AND CRIME															
Safety risk to prospecting crew when undertaking prospecting activity (excavations and drilling)	N	2	1	2	4	14	Moderate	Neutral	1	1	2	2	5	Low	Control

Risk of increased crime due to presence of machinery, batteries, and fuel onsite which are resources that attract thieves.	N	1	1	2	3	6	Low	N	1	1	2	1	4	Very Low	Stop
External contractors may pose a risk for violent **crimes.**	N	2	1	2	2	10	Low	Neutral	1	1	2	1	4	Very Low	Stop
SOCIO-ECONOMIC IMPACTS															
Increased traffic and prospecting activities in livestock grazing areas may increase **the livestock mortalities** including livestock falling into, areas directly affecting community member livelihoods	N	1	1	5	4	10	Low	Neutral	0	1	2	0	0	Very Low	Control
Waterborne and /respiratory diseases Due to poor sewage waste management/and dust	N	2	1	4	3	16	Moderate	N	1	1	2	2	5	Low	Control & Remedy
Accidents roads/work accidents and fires	N	2	1	3	2	12	Moderate	N	1	1	2	2	5	Low	Control & Remedy
RISK ASSESSMENT TABLE FOR POTENTIAL IMPACTS RELATED TO DECOMMISSION AND REHABILITATION ACTIVITIES															
IMPACT ON SOILS, SURFACE AND GROUNDWATER POLLUTION															
Potential soil contamination from hydrocarbon spillages, waste disposal practice and open boreholes	N	2	1	2	4	14	Moderate	N	1	1	2	2	5	Low	Control & Remedy
Soil erosion from re-spreading of topsoil before vegetation has re-established	N	3	1	2	2	15	Moderate	N	1	1	2	2	5	Low	Control & Remedy

FAUNA AND FLORA IMPACT															
Destruction and or disturbance of onsite fauna and flora at disturbed areas to rehabilitate sites and decommission prospecting activities which include removal of drill pads, backfilling , areas, capping of boreholes, respreading of stockpiled topsoil over denuded areas	N	2	1	2	6	18	Moderate	N	1	1	2	4	7	Low	Remedy
Poor vegetation re growth post decommissioning and rehabilitation of target areas could lead to **degradation of the ecology**	N	2	1	3	6	20	Moderate	N	1	1	2	4	7	Low	Control & Remedy
Establishment of alien vegetation during re-vegetation of disturbed areas	N	2	1	3	6	20	Moderate	N	1	1	2	2	5	Low	Control & Remedy
NOISE IMPACT															
Decommissioning and rehabilitation of prospecting sites and the site camp will generate **noise** which would impact on the ambient **noise level.**	N	3	1	2	1	12	Low	N	2	1	2	1	8	Low	Control
AIR QUALITY & DUST															
Dust emissions from decommissioning and	N	3	1	2	1	12	Low	N	2	1	2	1	8	Low	Control

rehabilitation activities removal of drill pad, backfilling sites, capping of boreholes, ripping of disturbed areas (vehicle entrained dust)															
IMPACT ON TRAFFIC															
Increased traffic along main gravel route during decommissioning and rehabilitation of prospecting sites and increased traffic on P91 Road when equipment is removed and transported off site	N	2	3	1	1	10	Low	Neutral	1	3	1	1	5	Low	Control

11.3 Methodology used in determining and ranking the Nature, Significance, Consequences, Extent, Duration and Probability of Potential Environmental Impact Risks.

The impact significance rating methodology, as provided by Beyond Green, is guided by the requirements of the NEMA EIA Regulations (2014). The list of identified impacts for the proposed project have been evaluated by considering several rating scales as listed below. These ratings include extent, duration, intensity, significance, status of impact, probability. The significance of impacts was calculated as follows:

The rating system is described below.

'Extent' defines the physical extent or spatial scale of the potential impact

Table 9:Assessment Methodology

Criteria: EXTENT		
—Extent‖ defines the physical extent or spatial scale of the potential impact		
RATING		**DESCRIPTION**
1	Site specific	Impacts extending only as far as the activity, limited to the site and its immediate surroundings
2	Local	Impacts extending within 5km from site boundary
3	Regional	Impacts extending to the district (20km from boundary of the site)
4	Provincial	Impacts extending to provincial scale e.g., Gauteng Province
5	National	Impacts extending to within the country i.e., South Africa.
6	International	Impacts extending beyond international border / the borders of South Africa
Criteria: DURATION		
"Duration" defines the temporal scale		
RATING		**DESCRIPTION**
1	Immediate	Less than 1 year
2	Short term	1-5 years
3	Medium term	6-15 years
4	Long term	Between 16 – 30 years
5	Permanent	Over 30 years. Where mitigation either by natural processes or by human intervention will not occur in such a way or in such time span that the impact can be considered transient.

Criteria: INTENSITY			
"Intensity "establishes whether the impact would be destructive or benign.			
Status	**RATING DESCRIPTION**		
NEGATIVE	0	Negligible	Where impacts do not really affect the environment and no mitigation is required
	1	Low	Where impacts will result in short term effects on the social and/or natural environment. These impacts are not deemed largely substantial and are likely to have little real effect. (Marginally affected)
	2	Medium	Where impacts will result in medium term effects on the social and/or natural environment. These impacts will need to be considered as constituting a fairly important and usually medium-term change to the environment, these impacts are real but not substantial. Impacts are fairly easy to mitigate
	3	High	Whereby effects will be long term on social, economic and/or bio-physical environment. These will need to be considered as constituting usually long-term change to the environment. Mitigation is considered challenging and expensive
	4	Very High	Where impacts should be considered as constituting major and usually permanent change to the environment, and usually result in severe to very severe effects. Mitigation would have little to now effect on irreversibility
Criteria: INTENSITY			
Status	**RATING**		**DESCRIPTION**
	0	Negligible	Where impacts affect the environment in such a way that natural, cultural and social functions and processes are not greatly and in instances no mitigation measures will be required. (environment not really affected)
	1	Low	Minor improvement is anticipated over a short term on the social and/or natural environment.
	2	Medium	Where moderate improvements are anticipated over a medium- to long-term on the social and/or natural environment.
	3	High	Where large improvements are anticipated over a long term on social, economic and/or bio-physical environment.
	4	Very High	This results in permanent improvements of the social/or natural environment.

Criteria: STATUS		
"Status of impact" - describes whether the impact would have a negative, neutral or positive effect on the affected environment"		
+	Positive	Benefit to the environment
=	Neutral	Standard / impartial
-	Negative	cause damage to the environment
Criteria: PROBABILITY		
"Probability" describes the likelihood of the impact occurring."		
RATING		**DESCRIPTION**
0	Improbable	Where the possibility of the impact occurring is low.
1	Probable	Where there is a distinct possibility that the impact will occur.
2	Highly probable	Where it is most likely that the impact will occur.
3	Definite	Where the impact will occur regardless of any prevention measures.
The proposed method of assessing duration significance		
Criteria: SIGNIFICANCE		
"Significance"- attempts to evaluate the importance of an impact with mitigation measures included and also excluded. The significance was calculated using the following formula: Significance = (Extent + Duration + Intensity) X Probability.		
RATING		**DESCRIPTION**
0-4	Very Low	Where the impacts will not influence the development, social, cultural or natural environment
5 -12	Low	Where impacts will result in short term effects on the social and / or natural environment. The impacts merits attention however is not deemed largely substantial are likely to have little real effect
13-25	Medium	Where impacts will have a medium-term effect on the social and/or natural environment. These impacts need to be considered as constituting a fairly important and usually medium-term change to the environment, these impacts can be mitigated by implementing effective mitigation measures.
26-44	High	Whereby effects will be long term on social economic and or bio-physical environment. The impacts could have a major effect on the environment. This may bring forth the consideration of no-go areas/open areas on the development land regardless of mitigations implemented. Mitigation is however possible.
45	Very High	Whereby effects will be permanent on the social economic and or bio-physical environment. Such impacts cannot be mitigated.

11.4 Positive and Negative Impacts that the proposed activity (In Terms of Initial Site Layout) and Alternatives will have on the Environment and Community Affected.

No alternative layout has been identified for the application as the prospecting target areas are specific as well as the method to be applied in terms of Section 16 of the MPRDA. The majority of the prospecting activities are non-invasive and hence will have limited environmental and social impact. All of the identified impacts will occur for a limited time and the extent of the impacts will be localised. All of the identified impacts can be suitably mitigated with the residual impact ratings being of low significance. After drilling activities have been completed and the drill pads rehabilitated to predrilling status, the impacts will cease to exist. Impacts associated with the proposed prospecting activities have been identified and included in the Risk Assessment attached.

11.5 Description of significant impacts, mitigation measures that can be applied and the level of risk

(With regard to the issues and concerns raised by affected parties provide a list of the issues raised and an assessment/ discussion of the mitigations or site layout alternatives available to accommodate or address their concerns, together with an assessment of the impacts or risks associated with the mitigation or alternatives considered).

11.5.1 Measures to manage Noise

The proposed development is situated in a rural area. There are few houses within the proposed. The town is situated approximately more than 4 km away from the proposed site. The impacts of drilling will be on the communities within the proposed development, employees and animals. This includes impacts of the drilling activities on the employees. Impacts of noise on the receptors will be medium. Noise from drilling However, the risk of noise, generated from the proposed prospecting activities, having a negative impact on the surrounding environment can be reduced to being **low** through the implementation of the mitigation measures listed below:

- Employees operating the drilling and sampling equipment should use personal protective equipment (PPE) such as ear plugs to minimize exposure to the noise from machinery
- All prospecting vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act.
- The type, duration and timing of the drilling procedures must be planned with due cognizance of other land users and structures in the vicinity. The community / or any other affected party must be notified of the drilling times.
- Surrounding land owners must be notified in writing prior drilling occasions.

- The speed of vehicles around the project site should minimised at 40km. The Drilling activities and movement of vehicles into the site should be carried out during the day, the preference will be to start drilling around half past 1pm considering that there is a primary school closed to the development site.
- Directly affected, adjacent landowners in proximity to the site will be informed of the planned activities.

11.5.2 Palaeontology Impact Management

- Should any unknown fossils objects be identified during the drilling activities, all activities shall cease immediately and the SAHRA will be contacted, and an appropriate Impact Assessment will be undertaken on the site.

11.5.3 Socio-economic impact management

- Dust suppression and control of vehicle speed.
- Employment of local labour
- Landowner must be consulted, and compensation for damage to agriculture must be undertaken where relevant.
- Limit all activities to the development footprint of the proposed construction site.

11.5.4 Influx of Labour to site

- Casual labour will not be recruited at the site to eliminate the incentive for persons travelling to site seeking employment.
- If deemed necessary, the South African Police Service will be informed of unauthorised persons encountered on site.

11.5.5 Visual Impact mitigation

- Wet dust suppression will be undertaken to manage dust emissions from vehicle movement and other activities as and when needed.
- The portable ablution facilities, water tanks and any other infrastructure should be acquired with consideration for colour, natural earth, green and mat black options which will blend in with the surrounding area must be favoured.
- Waste management system should be implemented, and sufficient waste bins will be provided for on-site.
- Implement concurrent rehabilitation of drill sites

11.5.6 Soil Impact and Watercourse Management

- Existing roads must be used as far as is practicable to minimize the potential for soil erosion. In instances where access to drill sites is to be established, and if required, raised blade clearing will be undertaken with a view to maintain vegetation cover to limit soil erosion potential.
- Soil disturbances are to be limited as far as practicable to minimize the potential for soil erosion.
- When establishing the area, topsoil including the remaining vegetation, will be stripped and stockpiled up-slope of the pad. The stockpile will be shaped to divert stormwater around the drill pad to minimise soil erosion of the pad. Stockpiled topsoil will be used during rehabilitation activities.
- Topsoil will be stockpiled to a maximum height of 1.5m with a side slope of not more than 1:3.
- To reduce the potential for water pollution during the drilling activities, a sump will be constructed with sufficient capacity to receive drill fluids and allow for evaporation.
- The sump will be constructed to divert storm water away and/or around the sump to avoid storm water inflow.
- Topsoil should be handled only twice, when removing and during rehabilitation.
- The movement of the vehicles should be restricted to minimise soil compaction. In the morning all the equipment and materials to be exported should be delivered at once.
- No vehicle maintenance should be allowed on site. In case of breakdowns all efforts should be made to move the broken-down machine to a proper workshop.
- Waste separation will be undertaken at source and separate receptacles will be provided (i.e., general wastes, recyclables and hazardous wastes).
- Receptacles will be closed (i.e., fitted with a lockable lid) to eliminate the possibility of access by animals overnight.
- Wastes will be removed and disposed of at an appropriately licensed landfill and recyclables will be taken to a licensed recycling facility.
- Drill holes must be permanently capped as per legal requirement as soon as is practicable.
- Avoid fuel leakage from vehicles (avoid contamination of soil, watercourse and underground)
- Uphold a 500m buffer zone to identified watercourses

11.5.7 Mitigation to groundwater contamination and Surface & Groundwater reduced

Mitigation to groundwater contamination

- Storage fuel, oil and chemicals safely in designated areas
- Provide drip trays for standing equipment

- Clean up hydrocarbon spillages
- Inspect vehicles and machinery on a daily basis for fuel and oil leakages.

Surface & Groundwater reduced

No water may be abstracted from any surface water body unless permitted. A Water Use License will be required from DWS for any abstraction of water from a surface body.

- Monitor water consumption and ensure that all possible use is accounted for.
- Ensure water abstraction points do not degrade or erode

11.5.8 Protection of fauna and flora

The risk on the fauna and flora of the footprint area as well as the surrounding environment, because of the proposed prospecting activities, can be reduced to being **low** through the implementation of the mitigation measures listed below:

Flora

- Before invasive activities surveyed by botanist to identify protected plant species should be undertaken. In any species of conservation concern is encountered, the relevant conservationists of should be contacted for safely relocation. Tree cutting permit may be required.
- Kept the footprint activity to a minimum

Fauna

•The site manager should ensure that no fauna is caught, killed, harmed, sold or played with.

•Workers should be instructed to report any animals that may be trapped in the working area.

- Work should be restricted to one area at a time as this will provide fauna a change to endure the impact.

11.5.9 Management of Health and Safety Risks:

The health and safety risk, posed by the proposed prospecting activities can be reduced to being **low** through the implementation of the mitigation measures listed below:

- the type, duration and timing of the drilling procedures must be planned with due cognizance of other land users and structures in the vicinity,
- the surrounding landowners and communities must be informed in writing ahead of any drilling event,
- Workers must have access to the correct personal protection equipment (PPE) as required by law.

- There should be a regular maintenance of the equipment, trucks and vehicles used for the project.
- Signs must be put on the access roads to inform that there is an activity on the area.

11.5.10 Management of weed or invader plants

The risk of weeds or invader plants invading the disturbed area can be reduced to being low through the implementation of the mitigation measures listed below:

- A weed and invader plant control management plan must be implemented at the site to ensure eradication of all listed invader plants in terms of Conservation of Agricultural Act (Act No 43 1983).
- Management must take responsibility to control declared invader or exotic species on the rehabilitated areas. The following control methods can be used:
- "The plants can be uprooted, felled or cut off and can be destroyed completely."
- "The plants can be treated with an herbicide that is registered for use in connection therewith and in accordance with the directions for the use of such an herbicide."
- The temporary topsoil stockpiles must be kept free of weeds.

11.5.11 Dust emission

The risk of dust, generated from the proposed prospecting activities, having a negative impact on the surrounding environment can be reduced to being **medium to low** through the implementation of the mitigation measures listed below:

- The liberation of dust into the surrounding environment must be effectively controlled using, inter alia, water spraying and/or other dust-allaying agents.
- Speed on the access roads must be limited to 40km/h to prevent the generation of excess dust.
- Roads must be sprayed with water or an environmentally friendly dust allaying agent that contains no PCB's (e.g., DAS products) if dust is generated above acceptable limits.

11.6 MOTIVATE WHERE NO ALTERNATIVE SITES WERE CONSIDERED

No alternative application sites were considered due to the underlying geology of the current application area including its historic verified mineral deposit of the various viable minerals, e.g., Gold, coal, base metals and iron ore etc. The proposed prospecting right area is therefore regarded as the preferred site and alternative site have not been considered.

11.7 STATEMENT MOTIVATING THE PREFERRED SITE

The site was selected based on the underlying geology. Historic information indicates the presence of the proposed viable minerals. Based on the historic data and physical evidence of historic exploitation non-invasive activities will be applied to the entire prospecting right area under application. Invasive prospecting methods would be applied as documented in this BAR/EMP.

Constructo Mining wishes to prospect the application area to verify the available mineral resource in the application area, except for applying non-invasive prospecting methods to identified no-go areas for invasive prospecting.

12 FULL DESCRIPTION OF PROCESS UNDERTAKEN TO IDENTIFY, ASSESS, RANK IMPACTS AND RISKS THE ACTIVITY WILL POSE ON THE PREFERRED SITE (IN RESPECT OF THE FINAL SITE LAYOUT PLAN) THROUGH THE LIFE OF THE ACTIVITY)

All the potential impacts and risks that have been identified for the prospecting activities are included/provided under Section 10. A full Risk Assessment is included under Appendix 5. The methodology applied in assessing and ranking the impacts and risks of the preferred site is provided under Section 10 (subsection 10.2).

12.1 ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT AND RISK

Please refer to next page for a summary of each identified potentially significant impact and risk

Table 10:Summary of identified significant impacts						
ASPECT	**ACTIVITY**	**IMPACT DESCRIPTION**	**PHASE**	**SIGNFICANCE without mitigation**	**MITIGATION TYPE**	**SIGNFICANCE with mitigation**
Geology	Removal of geological samples	Loss of geology and soils	Invasive Prospecting	Moderate	None	Moderate
Impact on Soils	Stockpiling of topsoil following site preparation (excavation)	Loss of topsoil resource	Invasive Prospecting	Low	Control	Very Low
Impact on Soils	Establishment of prospecting sites, site camp, vehicle traffic, material storage	Result in soil erosion, compaction of soils by heavy machinery, contamination of soils due to hydrocarbon spillages	Invasive Prospecting Phase	Low	Control & Remedy	Low
Impact on soils	Generation, storage and disposal of waste	Contamination of soil due to improper disposal	Invasive prospecting Phase	Low	Control	Low
Fauna & Flora	Clearing of vegetation and topsoil as site preparation	Loss of Habitat	Invasive prospecting Phase	Moderate	Control	Low

	for prospecting sites, site camp and sampling will result in loss of habitat					
Fauna & Flora	site establishment for site camp and prospecting activities	Loss of sensitive species	Invasive prospecting Phase	Moderate	Control	Low
Fauna & Flora	Site clearance for drill, sampling sites as well as camp site establishment	Impact on Habitat Connectivity and Open Space	Invasive prospecting Phase	Moderate	Control	Low
Fauna & Flora	Establishment of access tracks and driving off existing tracks	Destruction and damage to fauna & Flora	Invasive prospecting Phase	Moderate	Control	Low
Fauna	Direct contact with prospecting equipment, supplies (vehicle,	Result in fauna fatalities	Invasive prospecting Phase	Moderate	Control	Low

	dozers, chemicals, waste)					
Aquatic Ecosystem	Establishment of site camp, drilling pads, and excavations	Result in impact on aquatic ecosystems due to risk of contamination from hydrocarbon spillages, oil and of fuel.	Invasive prospecting Phase	Moderate	Remedy	Low
Aquatic Ecosystem	Prospecting within unique habitat (wetland, possible forests)	Impact on wetland function	Invasive prospecting Phase	High	Stop	Very Low risk
Aquatic Ecosystems	Creation and clearing of target areas including vehicle movement	May cause soils erosion and sediment deposition into aquatic ecosystems	Invasive prospecting Phase	Moderate	Control	Low
Noise	During geophysical survey, drilling, and. noise will be generated from use of drilling and	Generation of noise by machinery, drilling, excavations, vehicle movement and use of	Invasive prospecting Phase Non-Invasive prospecting	Moderate	Control	Low

	excavation machinery and vehicles travelling in the project site	aeroplane to fly the area may cause a nuisance to communities,				
Air Quality	Site establishment through vegetation clearance, drilling, prospecting activities including entrained dust from vehicle movement on gravel roads	Result in wind-blown dust from bare target area surfaces and entrained dust from vehicles/machinery travelling on gravel roads	Invasive prospecting Phase	Moderate	Control	Low
Visual Impact	Site clearance, establishment of site camp and prospecting activities as well as presence of machinery	Result in unsightly views due to exposed soil surfaces and presence of machinery onsite	Invasive prospecting Phase	Low (due to remote nature of target sites to receptors)	Control & Remedy	Low
Impact on land use	Prospecting within a	Impact on the aquatic	Invasive prospecting Phase	High	Control and Remedy	Moderate

	wetland and river	species and biodiversity.				
Impact on land use	Prospecting activities within protected area	Impact on biodiversity and status of land	Invasive prospecting Phase	Moderate	Control and Remedy	Low
Groundwater	Use of fuel and hydrocarbons may result in spillages from vehicles and storages which infiltrate groundwater	Contamination of groundwater due to infiltration into groundwater system	Invasive prospecting Phase	Moderate	Remedy	Low
Surface water	Waste disposal, use of fuels, chemicals and hydrocarbons during prospecting activities and at site camp	Quality of surface water may be impacted by poor storage of chemicals, fuel spills, inappropriate waste disposal	Invasive prospecting Phase	Moderate	Remedy	Low
Surface and Groundwater	Abstraction of water for human consumption from existing boreholes	Depletion of nature resource	Invasive prospecting Phase	Low	Control	Low

	and for drill operations					
Traffic	Increased traffic due to prospecting vehicles, machinery using local gravel roads. Prospecting crew will set up site camp. This will restrict the need for excessive movement of vehicles and machinery in the study site	Result in increased traffic on main gravel road at study area.	Invasive prospecting Phase	Moderate	Control	Low
Crime	Risk of increased crime due to presence of machinery, batteries, and fuel onsite which are resources that attract thieves.	Increased crime on study site	Invasive prospecting Phase	Low	Stop	Very Low
Crime& Safety	Presence of external contractors	Violent crimes against woman	Invasive prospecting	Low	Stop	Very Low

	at site and within local communities					
Socio-economic	Increased traffic and prospecting activities in livestock grazing areas may increase the livestock mortalities including livestock falling into areas directly affecting community member livelihoods	Livestock mortalities due to livestock falling into excavated areas may affect community member livelihoods	Invasive prospecting Phase	Low	Stop	Very Low
Impact on soil, groundwater, and surface water	Use of fuel, chemicals, hydrocarbons, disposal practice and open boreholes as well as erosion from re-spreading of topsoil before vegetation	Contamination of soil, groundwater and surface water including soil erosion	Decommission & Rehabilitation Phase	Moderate	Control & Remedy	Low

	has re-established					
Fauna & Flora	Decommissioning and rehabilitation of prospecting target areas and infrastructure which include removal of drill pads, backfilling, and areas, capping of boreholes, re-spreading of stockpiled topsoil over denuded areas	Destruction and or disturbance of fauna and flora at disturbed target areas	Decommission & Rehabilitation Phase	Moderate	Remedy	Low
Fauna & Flora	Poor vegetation re-growth post decommissioning and rehabilitation of target areas. Establishment of alien	Degradation of the ecology	Decommission & Rehabilitation Phase	Moderate	Control & Remedy	Low

	vegetation during re-vegetation of disturbed areas.					
Noise	Decommissioning and rehabilitation of prospecting sites and the site camp will generate noise	Impact on the ambient noise level and may cause a nuisance to communities	Decommission & Rehabilitation Phase	Low	Control	Low
Air Quality & Dust	Dust emissions from decommissioning and rehabilitation activities such as removal of drill pad, backfilling of sites, capping of boreholes, ripping of disturbed areas	Dust emissions from decommissioning and rehabilitation activities (vehicle entrained dust)	Decommission & Rehabilitation Phase	Low	Control	Low
Traffic	Increased traffic along main gravel	Increase in traffic along the road	Decommission &	Low	Control	Low

	route during decommissioning and rehabilitation of prospecting sites and increased traffic on the Main Road when equipment is removed and transported off site		Rehabilitation Phase			

12.2 Cumulative impacts that may arise from the proposed project

Consideration must be given to the extent of any accumulative impact that may occur due to the proposed development. Such impacts are evaluated with an assessment of similar developments already in the environment. Such impacts will be either positive or negative, and will be graded as being of negligible, low, medium or high impact. Table below highlights an example of how cumulative impacts manifest in the environment due to the impacts resulting from numerous developments on given spatial scale.

The project development site is surrounded by many human activities which include grazing, agriculture, and mining operations. The impacts and or residual impacts of those projects when add with the residual impact of the proposed project would be more significant.

The cumulative impacts identified included:

- Water contamination (surface and underground)
- Loss of biodiversity
- Increased noise in the area
- Conflicts between communities
- Crimes
- Loss of Agricultural Grazing Farm land

The effect of those impacts might increase the significance of residual impacts of the project (impact after mitigation measures)

Cumulative Impacts which could result from the proposed project in addition to other projects in the area are described below:

Table 11:CUMULATIVE IMPACTS: PROPOSED OBOMBO GROUP ENTITIES PROSPECTING			
IMPACT	**SIGNIFICANCE BEFORE MITIGATION**	**PROPOSED MITIGATION** (Also See mitigations above)	**SIGNIFICANCE AFTER MITIGATION**
Increase job opportunities and boosting of local economy	Medium (positive)	Support local government in skills development and training initiatives. Implement employment policy prioritizing local employment Explore opportunities for mineral markets. - Development of skills in mining for Small-Medium Micro Enterprises (SMMEs) as part of Municipal Local Economic Development initiatives. - Development of contractual agreements to supply local construction markets.	Medium (positive)

Loss of Agricultural Grazing Farm land	Medium (negative)	Create local employment opportunities. Ensure land is returned to natural state after closure and enforce proper rehabilitation measures. Keep operations within the 36 457.31 ha boundaries of the site only. Maintain surrounding grasslands and monitor off site pollution.	Low (negative)
Water contamination (surface and groundwater)	Medium (Negative)	Subsistence agriculture is the main activities in and around the proposed development area. Water in the area might already be affected by fertilisers, and pesticides. The proposed development might increase the degradation of the quality of water in the area.	Low (negative)
Noise impact	Medium	There is already noise from the vehicles since a regional road crosses the proposed site.	Low (Negative)
Loss of biodiversity	Medium	The biodiversity in Newcastle Local Municipality is already affected due to agriculture and mining activities.	Low (Negative)

13. SUMMARY OF SPECIALIST REPORTS.

(This summary must be completed if any specialist reports informed the impact assessment and final site layout process and must be in the following tabular form): -

List of studies undertaken

LIST OF STUDIES UNDERTAKEN	RECOMMENDATIONS OF SPECIALIST REPORTS	SPECIALIST RECOMMENDATIONS THAT HAVE BEEN INCLUDED IN THE EIA REPORT (Mark with an X Where applicable)	REFERENCE TO APPLICABLE SECTION OF REPORT WERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
None,			

13. 1 DEA Screening Tool

Purpose of the Screening Tool

The Department of Environmental Affairs (DEA) Screening Tool allows to study the environmental sensitivities of a proposed development site, assist with the identification of specific zones, or plans such as industrial development zones or Environmental management Frameworks may be applicable to the proposed development site, and it acts as a guideline as to which specialist assessments may need to be undertaken as part of the environmental assessment process.

The DEA Screening Tool has identified the following environmental sensitivities for the proposed project

Table 12:Environmental sensitivity areas for the development site according to the screening tool (Prospecting Coal)

Development Area Themes	**Environmental Sensitivity**
Agricultural Theme	Very High sensitivity
Animal Species Theme	High sensitivity
Aquatic Biodiversity Theme	Very High sensitivity
Archaeological & Cultural	High sensitivity
Civil Aviation Theme	Medium sensitivity
Defence theme	Low sensitivity
Palaeontology Theme	Very High sensitivity
Plant Species Theme	Medium sensitivity
Terrestrial Biodiversity Theme	Very High sensitivity

Specialist Investigations

The DEA Screening Tool has identified that the following specialist investigations are potentially to be included in the environmental impact assessment process.

Table 13:Specialists assessments identified according to the screening tool

Recommended Assessment	**Status**	**Motivation for Inclusion/Exclusion of Assessments**
Agricultural Impact Assessment	Excluded	Technical desktop investigation did not indicate the need for this assessment.
Archaeological and Cultural Heritage Impact Assessment	Excluded	Technical desktop investigation does not indicate the need for this assessment. A small area (a point) was highlighted (within the proposed development) high sensitivity area in the screening tool. It is recommended in the report to appoint SAHRA competent authority if any heritage or archeological item is found on site.
Paleontological Impact Assessment	Excluded	Fossil resources are typically found in specific geographical areas, e.g., the Karoo and are embedded in ancient rock and limestone/calcrete formations.
Terrestrial Biodiversity Impact Assessment	Excluded	Technical desktop investigation does not indicate the need for this assessment. SAPAD 2022 shapefile were used to identify protected areas within and surrounding the proposed development. It is recommended that 5km buffer zone be implemented between Diane Private Nature Reserve any activities. EMF for the proposed area were also considered in the BAR.
Aquatic Biodiversity Impact Assessment	Excluded	Technical desktop investigation does not indicate the need for this assessment. NWM2018 and the screening tool were used identify the river, wetland within the proposed development. 500m buffer zone is recommended for riparian and wetland area.
Noise Impact Assessment	Excluded	However, the noise does not warrant for impact. The noise will not exceed 60 dB, the SANS noise levels.
Radioactivity Impact Assessment	Excluded	Technical desktop investigation does not indicate the need for this assessment.
Plant Species Assessment	Excluded	Technical desktop investigation does not indicate the need for this assessment. During the prospective activities vegetation clearance should be minimize. A search for important species plants must be carried out before any invasive activities, and appropriate measures thereto. Indigenous Floral should be maintained.
Animal Species Assessment	Excluded	Technical desktop investigation does not indicate the need for this assessment. Animals are transient. Appropriate measures are provided to limit/avoid the destruction and disturbance of animals.

14. ENVIRONMENTAL IMPACT STATEMENT

14.1 Summary of Key findings of EIA

The significance of potential environmental impacts can be reduced to Medium – Low with implementation of mitigation measures and monitoring. Cumulative noise and visual impacts are rated with a negligible significance. Likewise, potential impacts on the socio-economic environment and livelihoods can be mitigated to Medium – Low significance. There is a need for proper waste management for mud and other wastes generated during drilling activities and such wastes must not flow into the natural streams.

All of the identified impacts will occur for a limited time and the extent of the impacts will be localised. All of the identified impacts can be suitably mitigated with the overall residual impact ratings being Low. After exploration activities have been decommissioned, the prospecting area will be rehabilitated to pre-drilling conditions/status and the negative environmental and socioeconomic impacts will cease to occur. Prospecting at the site is feasible from a biophysical and social perspective. The predicted negative impacts can be minimized by implementation of recommended mitigation measures. Mitigation measures are formalised in the EMPr. Strict control measures are also to be implemented to key environmentally sensitive areas delineated on site. Refer to Table 14 for the negative and positive implications of approving the project.

Table 14:Positive and Negative Implications of the project

APPROVING THE PROJECT	
Positive Spinoffs	**Negative Implications**
• Prospecting will address the investigation of the availability of an economic mineral resource at on the local area. • If the mineral deposit can be optimally mined at the subject land it becomes a viable and prosperous land use option for the Community. • A new mine may/could be developed with the potential to contribute to the local economy as well as generate much needed employment for the local community.	• Application for Prospecting Right lodged within a wetland and river. • Impact on land use • Impacts on fauna and flora • Impacts on aquatic ecosystems (stream and wetlands) • Potential impact on heritage resources • Impact on soil resources

• The project could also contribute to upgrading some road around.	• Impact on biodiversity (loss of habitat, and loss plants and animals species of conservation concern)

The no-go option for the project would have (little) implications on the local Community socioeconomic conditions and no impact on the natural environment. The implications of the no-go option for the project are included in Table 15 below.

Table 15:Positive and Negative Implications of not approving the project

NO GO OPTION	
Positive Spinoffs	**Negative Implications**
No impact on wetlands and river. The potential negative and positive environmental and socio-economic impacts would not take place and no mining activity would trail prospecting. No groundwater resource would need to be shared between the community and prospecting crew; Newcastle Community can consider pursuing agriculture, grazing or game farming ventures on the awarded land.	No improvement for economic activity for Local community. Communities will not benefit from the employment opportunities and royalties associated with development of a mine post positive prospecting results. The only land use option left for the community to pursue would be either agriculture, grazing or game farm ventures which may not be as prosperous as mining. There will be no detailed data to validate the economic feasibility to mine the available mineral resource. Therefore, no new mine will be established. Constructo would forfeit the opportunity to generate a prosperous income from a potential mining operation;

14.2 Final Site Plan

The exact location of drilling points cannot be pinpointed as the prospecting activities are conducted in phases, and each phase depends on the success of the previous phase. The drill points will be identified after the geophysical surveys have confirmed the presence of the ore body. A detailed map can be produced after the geophysical surveys has been undertaken, although the map will be subjected

to changes depending on the results of the preliminary drilling and assaying. Refer to ***Appendix B*** Final Site Plan Map set.

14.3 Summary of the positive and negative implications and risks of the proposed activity and identified alternatives

Table 16:Summary of significant environmental impacts with mitigation

ACTIVITY	IMPACT DESCRIPTION	SIGNFICANCE with mitigation
Phase: Invasive Prospecting		
Geology:	Loss of geology and soils	Low
Soil: Stockpiling of topsoil following site preparation (excavation)	Loss of topsoil resource	Very Low
Soil: Establishment of prospecting sites, site camp, vehicle traffic, material storage, generation, storage and disposal of waste	Soil erosion, soil compaction by heavy machinery, contamination of soils due to hydrocarbon spillages and improper waste disposal	Low
Fauna & Flora: Clearing of vegetation, topsoil as site preparation for site camp and prospecting target areas and activities.	Loss of Habitat Loss of sensitive species Impact on Habitat Connectivity and Open Space	Low
Fauna & Flora: Establishment of access tracks and driving off existing tracks	Destruction and damage to fauna & flora	Low
Fauna: Direct contact with prospecting equipment, supplies (vehicle, dozers, chemicals, waste)	Result in fauna fatalities	Low
Aquatic Ecosystems: Establishment of site camp, drilling pads, excavations	Risk of contamination from hydrocarbon spillages, oil and of fuel.	Low
Aquatic Ecosystems: Prospecting within unique habitat	Impact on wetland function	Very Low risk
Aquatic Ecosystems: Creation and clearing of target areas including vehicle movement	Soil erosion and sediment deposition into aquatic ecosystems	Low

Heritage Sites: Site preparation, site camp establishment and prospecting activities	Damage or destruction of heritage sites	Low
Heritage Sites: Site preparation, vegetation clearing and prospecting activities.	Damage to cultural and or heritage sites during prospecting activities may result in conflict with local community	Very Low
Heritage Sites: Prospecting activities specifically excavations,	Potential unearthing of heritage resources resulting in damage to resources	Low
Noise: Noise will be generated from use of aeroplane, drilling and excavation machinery and vehicles travelling in the project site	Generation of noise by flying over the area with an aeroplane, machinery, drilling, excavations and vehicle movement may cause a nuisance to communities, and may result in fauna to vacate the area	Low
Air Quality & Dust: Site establishment through vegetation clearance, drilling, prospecting activities including entrained dust from vehicle movement on gravel roads	Wind-blown dust from bare target area surfaces and entrained dust from vehicles/machinery travelling on gravel roads	Low
Visual Impact: Site clearance, establishment of site camp and prospecting activities as well as presence of machinery	Unsightly views due to exposed soil surfaces and presence of machinery onsite	Low
Land Use: Prospecting within a wetland	Liability to Constructo, also would impact on river and wetland ecology.	Moderate
Land Use: Prospecting activities within protected area	Impact on biodiversity and status of land	Low
Surface & Groundwater: Improper waste disposal, use of fuel, oil and chemicals may result in spillages from vehicles and storages impact on water resources.	Contamination of groundwater due to infiltration into groundwater system. Quality of surface water may be impacted by poor storage of	Low

Water consumption at site camp and water requirements for drilling operations.	chemicals, fuel spills, inappropriate waste disposal Depletion of natural resources and availability to other users	
Traffic: Increased traffic due to prospecting vehicles, machinery using local gravel roads and road P39-1-1.	Increased traffic on main gravel road and R 567 road	Low
Crime: Crime due to presence of machinery, batteries and fuel onsite which are resources that attract thieves. Presence of external contractors at site and within local communities	Increased crime on study site Violent crimes against woman	Very Low
Socio-economic: Increased traffic and prospecting activities in livestock grazing areas	Livestock mortalities due to livestock falling into excavated areas may affect community member livelihoods	Very Low
DECOMMISSION & REHABILITATION PHASE		
Soil, Surface and Groundwater: Use of fuel, chemicals, hydrocarbons, disposal practice and open boreholes as well as erosion from respreading of topsoil before vegetation has re-established	Contamination of soil, groundwater and surface water including soil erosion	Low
Fauna & Flora: Removal of drill pads, backfilling areas, capping of boreholes, respreading of stockpiled topsoil over denuded areas	Destruction and or disturbance of fauna and flora at disturbed target areas	Low
Flora: Poor vegetation re growth post decommissioning and rehabilitation of target areas. Establishment of alien vegetation during re-vegetation of disturbed areas.	Degradation of the ecology	Low

Noise: Decommissioning and rehabilitation of prospecting sites and the site camp will generate noise	Impact on the ambient noise level and may cause a nuisance to communities	Low
Air Quality: Removal of drill pad, backfilling and sites, capping of boreholes, ripping of disturbed areas	Dust emissions (vehicle entrained dust)	Low
Traffic: Prospecting vehicles & machinery making use of gravel road and R 567 road for transportation of equipment offsite and removal.	Increase in traffic along main site gravel road and P39-1-1 Road	Low

15. IMPACT MANAGEMENT OBJECTIVES AND THE IMPACT MANAGEMENT OUTCOMES FOR INCLUSION IN THE EMPR

Table 17:Summary of management objectives and outcomes for inclusion in EMPR

ASPECT	OBJECTIVE	OUTCOME OF IMPACT MANAGEMENT
Fauna & Flora	Maintain Indigenous Floral and Faunal Biodiversity and conserve as much of the habitat and faunal structure as possible, further conserve conservation important fauna & flora species and maintain habitat connectivity. Avoid spreading of alien invasive species and encroachment into indigenous vegetation.	Appoint a qualified specialist prior to removal of any protected tree species, or fauna. Important ecological habitats are excluded from invasive prospecting activities and protected to maintain biodiversity. Non-invasive methods are to be applied. Minimise activity on rocky ridges, if not possible minimise the prospecting sites to narrow strips. Disturbed areas are promptly rehabilitated and planted with indigenous vegetation. Also, species flora and fauna) of conservation (concern are protected and or relocated with necessary permits/permission.

		Adherence to the Closure and Rehabilitation Plan.
Aquatic Ecosystems (wetland, riparian zones, sandy riverbeds)	Ensure that prospecting and later decommission and rehabilitation activities do not result in pollution or damage to aquatic ecosystems. Further to limit significance of impacts on the functionality of drainage lines, wetlands (sandy riverbeds). Implement stormwater management, erosion protect, control sediment migration from prospecting sites to riparian zones, wetlands, sandy riverbeds.	To exclude unique habitat (unmapped forests, wetlands) associated riparian zones and wetlands from invasive prospecting activities, protect the aquatic ecosystems and avoid pollution thereof. Commit to non-invasive prospecting methods in these areas. Uphold a 500m buffer zone to wetland and riparian zones which are regarded as no-go zones for invasive prospecting. Protect water sources/aquatic ecosystems in line with National Water Act of 1998 and Mine Water Regulations of GN 704.
Surface and Groundwater	Avoid contamination of water resources. Prevent/reduce spillages from fuel, oil and or chemicals. Monitor and minimise water consumption/usage during drilling operations.	Control erosion, runoff from prospecting sites. Store fuel, oil and chemicals in designated areas. Implement proper waste disposal. Control water usage/consumption. Committed to us water from existing boreholes in nearby communities. If at any stage surface water is to be abstracted from a surface water body, obtain Water Use License from DWS for such abstraction. Water management measures in compliance with NWA, 1998 and GN 704, 1999.
Soil Resources	Maintain good quality topsoil for successful rehabilitation. Ensure that	Enough soil, of adequate quality is available for rehabilitation to

	topsoil / soil not colonised with alien species and result in further erosion of soils. Protection of soil resources. Effective rehabilitation for post prospecting land use of conservation/grazing.	support vegetation grown to ensure successful rehabilitation. Indigenous vegetation will be re-instated on disturbed areas to curb erosion of soil and maintain biodiversity. Biodiversity and alien invasive management in accordance with NEM: BA 2004.
Cultural, Heritage & Paleontology Resources	To protect and conserve identified palaeontology, heritage and cultural sites within the study area and to avoid damage/destruction of sites also prevent conflict with local community in this regard. Protect and record any chance find heritage and cultural resources.	Uphold a 50m buffer zone to identified heritage sites. Consult SAHRA competent authority if any fossils found. Comply with the National Heritage Resources Act 25 of 1999 and follow procedures for chance finds.
Air Quality & Dust	Control and minimize dust emissions from prospecting activities including vehicle entrained dust	All prospecting activities must be within ambient air quality criteria: Comply with National Dust Control Regulations of 2013 (acceptable dust fall rate of <1200mg/m2/day).
Noise	Minimize noise levels to acceptable levels.	Maintain and implement a Complaint ‘s register. Prospecting activities are restricted to daytime periods from 07h00 – 17h00. Adherence to Closure and Rehabilitation Plan.
Traffic	Minimize traffic levels on main gravel road and P39-1-1 Road	Comply with 40km/hr speed limit along gravel road and with provincial road regulations.

16. ASPECT FOR INCLUSION AS CONDITIONS OF AUTHORISATION

The granting of an authorisation for the prospecting activities should be subject to the following:

- Consent must be obtained from the MEC of KwaZulu-Natal Department of Economic Development Environment & Tourism in order to undertake prospecting within any protected areas.
- A 50-metre buffer zone is to be upheld to wetland and riparian zones to be regarded as no-go zones for invasive prospecting activities and fenced off with appropriate material during the prospecting phase if nearby;
- Limit prospecting footprint areas to a narrow strip to have the least possible edge effects on ecosystems and limit footprint areas to a minimum at rocky ridges;
- The presence / absence of protected tree species. Avoid removal of large individuals of protected tree species at any prospecting site, where it cannot be avoided; a permit for removal needs to be obtained from DAFF under Section 15 (1) of the National Forest Act no 84 of 1998. No person may cut, disturb, damage or destroy any protected tree or possess, collect, remove, transport, export, purchase, sell, donate in any manner acquire or dispose of any protected tree, except under a license granted by the Minister.
- Planning of invasive prospecting target sites including design and siting of access routes at all other target areas must avoid heritage sites.
- General waste generated during prospecting must be disposed of at a registered landfill site. The applicant must confirm its general waste disposal methods with the Newcastle Local Municipality.
- The EMPr should be implemented by a senior qualified environmental practitioner credible to interpret the EIR & EMPr;
- The project must remain in full compliance with the requirements of the EMPR;
- Prospecting may only commence on approval of the Prospecting Right;
- Stakeholder engagement must be maintained throughout site planning & preparation, invasive and non-invasive prospecting and closure & rehabilitation phase.

17. DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE

Appendix 3 of the EIA Regulations of 2014 (GNR 982) states that the EAP must provide a description of any assumptions, uncertainties and gaps in the knowledge upon which the impact assessment has been based. The assumptions and limitations applicable to the specialist assessments include:

Limitations:

- Existing roads will be used where possible to minimise the disturbance
- Detailed site layout is not available due to the nature of the prospecting activities. The study is therefore undertaken as a holistic assessment of the overall site.

18. OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD /SHOULD NOT BE AUTHORISED

In terms of the Appendix 3 of the EIA Regulations of 2014 the EAP is to provide a reasoned opinion as to whether the activity should or should not be authorised. If it should be authorised state any conditions that should be made with respect of that authorisation.

BGES Consultants is of the submission that due process has been followed to form the findings of the EIA study in accordance with the EIA Regulations of 2014. The EIA process undertaken, includes an assessment of potential impacts identified, and desktop studies. Public Participation (continue during the whole EIA process) has been undertaken with interested and affected parties in accordance with the EIA Regulations of 2014 Regulations 40-44.

Potentially significant impacts have been identified, ranked and mitigation measures are proposed for its management and monitoring.

Several potential high and medium impacts have been identified associated with invasive prospecting and decommissioning of the activities. Based on the characteristics of the site risks of mention include impacts on fauna and flora, aquatic ecosystems, heritage resources, land use, safety risk as well as surface and groundwater. After applying the mitigation measures as proposed in the Risk Assessment majority of the impacts can either be controlled or remedied to low significance.

Prospecting at the site is feasible from a biophysical and social perspective. The predicted negative impacts can be minimized by implementation of recommended mitigation measures. Mitigation measures are formalised in the EMPr. Strict control measures are also to be implemented to key environmentally sensitive areas delineated on site.

In terms of the collective impacts considered the economic development is justifiable if prospecting activities prove that the mineral deposit can be optimally mined, then it becomes a viable land use option for the community and a new mine may/could be developed with the potential to contribute to the provincial and local economy as well as generate employment for the local communities.

Hence, after considering the positive and negative implications of approving the project and or going for the no-go option, the environmental assessment team is of the view that the issuing of a prospecting right to Constructo would enable Newcastle community, through Constructo to explore the land use option of mining. If the prospecting programme yields positive results, it will bring forth much need economic development in the Newcastle community area. Nevertheless, legal provisions in terms of the Protected Areas Act of 2003 prohibit prospecting activities at the study site due to its being a declared protected area as it is located within an important river.

19. SPECIFIC CONDITIONS TO BE INCLUDED INTO THE COMPILATION AND APPROVAL OF EMPR

- A 500-metre buffer zone is to be upheld to wetland and riparian zones to be regarded as no-go zones for invasive prospecting activities and fenced off with appropriate material during the prospecting phase if nearby;
- Limit prospecting footprint areas to a narrow strip to have the least possible edge effects on ecosystems and limit footprint areas to a minimum at rocky ridges.
- A map detailing the drilling locations should be submitted to the relevant landowners and the DWS and DMR prior to the commencement of these activities;
- The drilling activities should be restricted to daytime;
- All wastes generated must be disposed of at an appropriate registered landfill and disposal certificate be kept on site.

· Sealing of boreholes in the competent rock layer under the weathered zone for closure

· Sign-off must be obtained from landowners after rehabilitation that they are satisfied with the closure work.

· Agreeing compensation with landowners before any activity starts on their land.

20. REHABILITATION REQUIREMENTS

Rehabilitation actions for the proposed prospecting activities would be undertaken in two-fold namely concurrent rehabilitation and afterwards final decommissioning and rehabilitation. Concurrent rehabilitation would include:

- Drill holes will be sealed with cement and surface cap/covered;
- All excavations will be backfilled with overburden and topsoil and re-vegetated
- All disturbed areas and its direct surroundings will be cleaned up from pollution and waste materials
- Contaminated soil by fuel or oil will be removed to a depth of contamination and disposed of at a registered landfill site.
- Overburden and topsoil will be spread evenly over disturbed areas and re-vegetate to finalise the rehabilitation
- Areas prone to erosion will be appropriately shaped to mimic the surrounding landscape
- Rehabilitated areas will be inspected to monitor re-vegetation rate and alien invader species that may have establish in the area will be removed.

Final decommissioning and rehabilitation:

- All temporary infrastructure will be removed from the study site.

- Any access tracks created during prospecting (if any) will be rehabilitated
- Disturbed areas will be ripped and seeded
- Grazers will be kept out of the rehabilitated areas until suitable vegetation cover has established
- Rehabilitated areas will be inspected to monitor re-vegetation rate as well as an alien invader species will be removed if any established.
- Areas where erosion has occurred soil will be sourced and replaced and shaped to reduce the reoccurrence of erosion.

21. PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED

The prospecting programme would require 24 months to complete. Rehabilitation activities would be conducted concurrently where possible, but due to legislative issues that still need to be address, final rehabilitation and removal of prospecting infrastructure additional time may be required. The period for which the environmental authorisation should be valid is 5 years allowing for unexpected issues, rehabilitation, and closure activities.

22. UNDERTAKING

The undertaking required to meet the requirements of the BAR & EMPr is included in Part B of this document under Section 2.

23. FINANCIAL PROVISION

Constructo will ensure a fund is available, especially for the rehabilitation process.

Explain how the aforesaid amount was derived, R56699 as indicated in the figure below (See table below)

Table 18:Financial Provision

CALCULATION OF THE QUANTUM

Applicant: Constructo Civil Construction and Mining
Evaluators:

Ref No.: **GP 30/5/1/1/2 (10764) PR**
Date: **12/09/2022**

No.	Description	Unit	A Quantity	B Master Rate	C Multiplication factor	D Weighting factor 1	E=A*B*C*D Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	15,32	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	211	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	293,79	1	1	0
3	Rehabilitation of access roads	m	0	42,1	1	1	0
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	345,31	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	190,76	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	396,83	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	205247,46	0,1	0,1	0
7	Sealing of shafts adits and inclines	m3	0,5	115,7	1	1	57,85
8 (A)	Rehabilitation of overburden and spoils	ha	0	136833,4	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	170422,23	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	494976,85	1	1	0
9	Rehabilitation of subsided areas	ha	0	114578,23	1	1	0
10	General surface rehabilitation	ha	0,5	113924,13	1	0,1	5696,2065
11	River diversions	ha	0	108396,24	1	1	0
12	Fencing	m	0	123,94	1	0,1	0
13	Water management	ha	0	43320,5	1	0,1	0
14	2 to 3 years of maintenance and aftercare	ha	0,5	1521,33	0,1	0,1	7,60665
15 (A)	Specialist study	Sum	1	35005,3	1	1	35005,3
15 (B)	Specialist study	Sum					0
					Sub Total 1		40766,96315

1	Preliminary and General	4892,035578	**weighting factor 2** 1	4892,035578
2	Contingencies	4076,696315		4076,696315
			Subtotal 2	49735,70
			VAT (15%)	6963,00
			Grand Total	**56699**

The DMR Guideline format makes use of a set template for which defined rates and multiplication factors are used. The multiplication and weighting factors which ultimately define the rate to be used are determined by amongst others the topography, classification of the mine according to the mineral mined, the risk class of the mine and its proximity to built-up or urban areas.

The calculations of closure cost issued by DMR in 2014 were used to support the calculation of the closure cost.

The tariffs used included:

- Sealing of shafts and inclines
- General surface rehabilitation and grassing
- 2-3 years of maintenance and aftercare

Confirm if this amount can be provided for from operating expenditure

The financial provision will be made available to the DMR on the date on which the Prospecting Right is issued.

24. DEVIATIONS FROM THE APPROVED SCOPING REPORT AND PLAN OF STUDY

No specialist studies have been undertaken, prospecting activities has minimal environmental impact/s.

25. OTHER INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

Compliance with the provisions of Section 24(4)(a) and (b) read with Section 24(3)(a) and (7) of the National Environmental Management Act (Act 107 of 1998), the EIA Report must include the:

25.1 IMPACT ON THE SOCIO-ECONOMIC CONDITIONS OF ANY DIRECTLY AFFECTED PERSON

The prospecting activities are not foreseen to have a negative socio-economic impact on the local communities. Currently the socio-economic impact felt in the local area is unemployment due to no economic base. A full consultation process is being implemented during the environmental authorisation process. The purpose of the consultation is to provide affected persons the opportunity to raise any potential concerns. As part of the consultation process the land claims commissioner will be contacted to identify if there are any claims on land covered by this application. Concerns raised will be captured and addressed within the public participation section of this report once finalised and submitted to the authorities. As the final positioning of the drill sites cannot be

confirmed without completion of phase 1 of the prospecting programme, a recommendation has been made to ensure that the directly affected landowners are re-consulted prior to implementing invasive activities (drilling). The purpose of the re-consultation is to ensure that socio-economic impacts on directly affected persons can be raised and where possible addressed.

25.2 IMPACT ANY NATIONAL ESTATE REFERRED TO IN SECTION 3 (2) OF THE NATIONAL HERITAGE RESOURCES ACT

(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, or alluvial diamond prospecting on any national estate referred to in section 3(2) of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) with the exception of the national estate contemplated in section 3(2)(i)(vi) and (vii) of that Act, attach the investigation report as Appendix 2.19.2 and confirm that the applicable mitigation is reflected in 2.5.3; 2.11.6.and 2.12. herein).

As outlined in Section d (ii), of this report, prospecting will be undertaken in phases; the first phase being a desktop assessment, followed by ground and/or aerial magnetic survey and soil sampling Based on the outcome of these activities, soil sampling and potential drill sites will be determined. Potential heritage impact may only occur once soil sampling and geophysics have been used to identify sites for drilling, and it is therefore recommended that any Heritage Artefacts that may be encountered should be reported to SAHRA and at the mean time all the activities should cease.

26 OTHER MATTERS REQUIRED IN TERMS OF SECTION 24 (4) (A) AND (B) OF THE ACT

No further investigation or assessment of any environmental attributes of the study site is necessary. The significant identified impacts have been investigated by specialists who informed the EIR findings. The potential impacts from the proposed Constructo project on the environment have been assessed and its significance rated. Mitigations for management and monitoring have been captured in the EMPR. Any other potential impacts identified during the public participation period (by organs of state, public) of the Impact Phase, will be considered and the report would be updated accordingly.

PART B

DRAFT ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

CONSTRUCTO CIVIL CONSTRUCTION AND MINING SERVICES (PTY) LTD

FILE REFERENCE NUMBER SAMRAD: KZN/30/5/1/1/2/ 11284 PR

27 DETAILS OF THE EAP

The requirement for the provision of the details and expertise of the EAP are already included in PART A, section 1(a) herein as required.

28 DESCRIPTION OF THE ASPECTS OF THE ACTIVITY

The requirement to describe the aspects of the activity that are covered by the draft environmental management programme is already included in PART A, section (1)(h) herein as required.

29 COMPOSITE MAP

Due to the nature of the proposed activities, each phase of prospecting is dependent on the success of the previous. Thus, depending on the outcome of phase one, which entails desktop studies, the location and extent of the proposed boreholes will then be determined.

The exact location and the extent of the activities cannot be determined at this stage.

30 CLOSURE OBJECTIVES AND DESCRIPTION OF IMPACT MANAGEMENT OBJECTIVES INCLUDING MANAGEMENT STATEMENTS

Determination of closure objectives.

The closure objectives are:

- The main objective is to ensure that the existing ecosystem and current land use continue and function normally.
- Removal of the drilling rig, fencing and equipment, and cleaning up the site.
- Remove any safety risk that is associated with drill holes and sumps by backfilling, compacting and topdressing the water sumps as well as filling the cored borehole with concrete to approximately 300 mm from surface and top-dress to provide a level surface.
- Restore disturbed areas and re- vegetate these areas with grass naturally occurring in the area.

30.1 Volumes and rate of water use required for the operation.

Water will only be required during phase two which entails drilling.

A water use licence has not been applied for because the proposed activities require a small volume of water. Water would be required for domestic use and during phase two, the drilling phase. It is estimated that less than 8 people will be on the drill rig at any given point of operation. Water would be obtained from a water service provider or from a legal site, during that phase where an SLA will be

signed between the client and the Service Provider. An estimate of one water tank per day is required for the drilling operations.

31. IMPACTS TO BE MITIGATED IN THEIR RESPECTIVE PHASES

Measures to rehabilitate the environment affected by the undertaking of any listed activity

Table 19:Impacts management and time period for implementation

IMPACTS TO BE MITIGATED AND OR ENVIRONMENTAL COMPONENT AFFECTED	PHASE (Of operation in which activity will take place. Activities (E.g., For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc…etc…etc	SIZE AND SCALE of disturbance (volumes, tonnages and hectares or m^2)	MITIGATION MEASURES (describe how each of the recommendations in herein will remedy the cause of pollution or degradation and migration of pollutants)	COMPLIANCE WITH STANDARDS (A description of how each of the recommendations herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)	TIME PERIOD FOR IMPLEMENTATION Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required.
Soil Resources (soil erosion, compaction by heavy machinery	Establishment of prospecting sites, site camp, vehicle traffic, material storage	Site Preparation Prospecting Phase	- Use existing access roads (back roads) - Restrict vehicle access to designated areas	Rehabilitation of study site in terms of NEMA and MPRDA.	Invasive Prospecting Phase (implement continuously)

			- Provide drip trays for standing equipment - Clean up hydrocarbon spillages, contaminants must be properly disposed of using correct solid/hazardous waste facilities. - Contaminated soil must be removed and the affected area rehabilitated. - Do not place the site camp infrastructure where it can cause pollution to sensitive areas (drainage lines, steep slopes)		
Soil Resources (associated to visual impacts and accidents)	Site preparation. Stockpiling of topsoil and excavations for drilling	Site Preparation and Invasive Prospecting	- Topsoil is to be handled twice only-once to strip and stockpile, and once to replace and level. - Topsoil needs to be protected and returned for rehabilitation as soon as possible. - Implement good stockpiling practice and storm water control to avoid soil erosion	Rehabilitation of study site in terms of NEMA and MPRDA. Biodiversity and alien invasive management in accordance with the NEM: Biodiversity Act of 2004. Mine Water management in line with Mine Water	Site Preparation and Invasive Prospecting

			- Ensure that topsoil is at no time buried, mixed with spoil or subjected to compaction by vehicles or machinery. - Eradicate alien vegetation which colonise on topsoil stockpiles	Regulations- Regulation 7 of GNR 704 of 1999	
Fauna & Flora (Habitat)	Clearing of vegetation and topsoil as site preparation for prospecting sites, site camp will result in loss of habitat.	Invasive prospecting Phase	Non-invasive prospecting methods are to be applied. - Exotic and invasive plant species must not establish onsite; - Footprints at prospecting target areas need to be confined to a narrow strip to have the least possible edge effects on the ecosystem; - A 50 metre buffer zone must be upheld from wetland and riparian zones and regarded as no-go areas for any invasive prospecting; also needs to be fenced off with appropriate material;	An Ecologist / qualified specialist must be appointed before any site preparation or removal of vegetation. If necessary permit for removal of important species (tree cutting permit) might be required. Adherence to the Closure and Rehabilitation Plan. Biodiversity and alien invasive management in accordance with the NEM: Biodiversity Act of 2004, GN 78 of 2014 and GN	Site preparation Invasive Prospecting Phase

				37886 of 2014, GNR 598 of 2014.	
Fauna & Flora (Loss of Sensitive Species)	Site establishment for site camp and prospecting activities	Invasive prospecting Phase	- Appoint a qualified specialist prior to removal of any fauna or flora, protected tree species. - Footprints need to be kept to a minimum so larger mammals can roam freely. - Necessary caution must be adhered to due to large animals onsite to avoid conflict as a result of human activity.	Appoint a qualified specialist prior to removal of any fauna or flora, protected tree species. Adherence to the Closure and Rehabilitation Plan. Section 15 (1) National Forest Act, (Act 84 of 1998) Biodiversity management in terms of NEMBA of 2004- Section 56 LEMA Act 7 of 2003 –Section 8, 11 & 12	Invasive prospecting Phase
Fauna & Flora (habitat connectivity & Open Space)	Site clearance for drill, sampling sites as well as camp site establishment	Invasive prospecting Phase	- Exotic and invasive species of plants must not establish, so that quality and functionality of conservation corridors are enhanced. - Rubble and waste must be removed during and after prospecting.	Adherence to the Closure and Rehabilitation Plan. Biodiversity management in terms of NEMBA of 2004- Section 56	Invasive prospecting Phase

			- Confine footprint to narrow strip to have the least possible edge effects on ecosystems - A 50 metre buffer zone must be upheld from wetland and riparian zones and regarded as no-go areas for invasive prospecting; also needs to be fenced off with appropriate material; - Prospecting at rocky ridges should be avoided. If it cannot be avoided, footprints must be limited to a minimum on rocky ridges; - If necessary, investigation of important species on the drilling site might be undertaken, and tree cutting permit might be required.		
Fauna & Flora (Destruction & Damage to fauna & flora)	Establishment of access tracks and driving off existing tracks	Invasive prospecting Phase	- Use existing access roads - Restrict vehicle access to designated areas	Adherence to the Closure and Rehabilitation Plan. Rehabilitation in terms of MPRDA and NEMA.	Invasive prospecting Phase

Fauna (noise result in animals to vacate area, possible faunal fatalities	Direct contact with prospecting equipment, supplies (vehicle, dozers, chemicals, waste)	Invasive prospecting Phase	- A 500 metre buffer zone must be upheld from wetland and riparian zones and regarded as no-go areas for invasive prospecting methods; also needs to be fenced off with appropriate material. - Implement concurrent rehabilitation - No mammals species are to be disturbed, trapped, hunted or killed during prospecting. - Confine footprint areas - Avoid spills and infiltration of petroleum fuels, chemical pollutants into soils during prospecting.	Adherence to Closure and Rehabilitation Plan. Water management requirements with NW GN 704 of 1999. Biodiversity management in terms of NEMBA of 2004	Invasive prospecting Phase

Aquatic Ecosystems (risk of contamination)	Establishment of site camp, drilling pads, excavations sites as well as operation thereof.	Invasive prospecting Phase	- Proper storage and handling of hydrocarbons and chemicals need to be ensured. Fuel, oil and chemicals must be stored in designated areas outside wetland and riparian buffer zones - Storage containers for hydrocarbons and chemicals must be regularly inspected as to prevent leaks - Uphold a 500m buffer zone from riparian zones and wetlands; also needs to be fenced off with appropriate material. - Portable toilets must be placed on impervious level surfaces that are lipped to prevent spillages	Section 19 of NWA 36 of 1998 Water management in terms of GNR 704 of 1999 under NWA 36 of 1998. Operational Control Procedures Regular Environmental Inspection, Incident reporting and handling.	Invasive prospecting Phase
Aquatic Ecosystems	Prospecting within unique habitat (wetland, possible forests)	Invasive prospecting Phase	No prospecting activities within riparian zones and wetlands.	Comply with no-go areas for invasive prospecting methods as set out on Composite Map.	Invasive prospecting Phase

Aquatic Ecosystem (soil erosion, sediment deposition)	Creation and clearing of target areas including vehicle movement	Invasive prospecting Phase	- Implement erosion, sediment and stormwater control, waste management from, site camps, drill pads site (sandbags) - Concurrent rehabilitation of disturbed areas must be undertaken - Uphold a 500m buffer zone from riparian zones and wetlands; also needs to be fenced off with appropriate material;	Adherence to Closure and Rehabilitation Plan. Water management as per requirements of GN 704 of 1999. NEM: WA 59 of 2008- Chapter 4, Section 16, Section 27.	Invasive prospecting Phase
Heritage & Cultural Resources	Site preparation, site camp establishment and prospecting activities	Invasive prospecting Phase	- Permits must be obtained from the Provincial Heritage Authority if heritage sites - Planning of all other prospecting target sites, site camp including design and siting of access roads must avoid heritage sites	A Heritage Specialist must be appointed to map and document heritage sites if they are to be affected by invasive prospecting. Compliance with NHRA 25 of 1998.	Invasive prospecting Phase
Heritage & Cultural Resources	Site preparation, vegetation clearing and prospecting activities.	Invasive prospecting Phase	- Planning of prospecting target sites including design and siting of access roads must avoid	Comply with Composite Map in terms of buffer zones applied to heritage sites (at 50m). Comply with Section	Invasive prospecting Phase

			heritage sites. Uphold a 50m buffer zone from heritage sites	35 and 36 of NHRA 25 of 1998.	
Noise	During geophysical survey (fly aeroplane over area) drilling, noise will be generated from use of aeroplane, drilling and excavation machinery and vehicles travelling in the project site	Invasive prospecting Phase	- Ensure all machinery, drilling and excavation equipment are well maintained. - Comply with noise limits as set out in SANS 10103 of 2008 which set out noise level limits for rural districts at 45dBL (daytime) and 35dBL (night-time). - Provide employees with earplugs to protect their ears (PPE). - Generators must be switched off when not in use. - Regular maintenance of vehicles and equipment is required. Repair and attend to worn and broken equipment. - Reduce speed of the vehicles. - No drilling within 50 m of bird nesting sites.	Maintain a Complaints Register Comply with Section 34 of NEM: AQ 39 of 2004. Comply with Environmental Health and Safety Regulations (noise level guidelines) SANS 10103 of 2008 (noise levels).	Invasive prospecting Phase

			- Drilling only during day time. - Indenisation if drilling will be closed to houses. -Advised landowners and potentially affected populations of the planned actions before they commenced.		
Air Quality & Dust	Site establishment through vegetation clearance, drilling, prospecting activities including entrained dust from vehicle movement on gravel roads	Invasive prospecting Phase	- Do not undertake drilling, activities during high winds which can carry dust far offsite; - Ensure that drill equipment is equipped with appropriate dust suppression system. - Apply wet dust suppression where necessary to manage dust emissions from vehicle movement (avoid excessive wetting which can result in erosion) - Control vehicle speeds along unpaved roads 40km/hour. - Comply with National Dust Control Regulations of 2013	Main Complaints Register Comply with Section 32 of NEM: AQ 39 of 2004. Comply National Dust Control Regulations of 2013.	Invasive prospecting Phase

			(acceptable dustfall rate for rural area of < 1200mg/m2/day).		
Visual Impact (exposed soils, presence of machinery)	Site clearance, establishment of site camp and prospecting activities as well as presence of machinery	Invasive prospecting Phase	- Implement concurrent rehabilitation of drill sites - Implement good house keep rules at each drill and sampling site - Limit target site footprints to a narrow strip to minimise vegetation clearance and exposed areas	Adherence to Closure and Rehabilitation Plan.	Invasive prospecting phase
Land use impact (declared nature reserve)	Prospecting activities within protected area	Invasive prospecting Phase	- Minimise removal of vegetation, where possible work on barren parts of site. - Rehabilitate and re-vegetate denuded areas as soon as possible - Implement all mitigation measures proposed for Aquatic Ecosystems and Ecological identified impacts to minimise the impact on biodiversity onsite	Compliance with NEMPA 57 of 2003. Adherence to Closure and Rehabilitation Plan Comply with biodiversity management requirements in terms of	Site Planning & Invasive Prospecting Phase

Groundwater (Groundwater contamination)	Use of fuel and hydrocarbons during prospecting activities may result in spillages from vehicles and storages which infiltrate groundwater	Invasive prospecting Phase	- Storage fuel, oil and chemicals safely in designated areas - Provide drip trays for standing equipment - Clean up hydrocarbon spillages - Inspect vehicles and machinery on a daily basis for fuel and oil leakages.	Implement water management measures as per GNR 704 of 1999. Section 19, 20 of NWA 36 of 1998. Environmental Inspection	Invasive Prospecting Phase
Surface Water (watercourses contamination)	Waste disposal, use of fuels, chemicals and hydrocarbons during prospecting activities and at site camp (Leakage, run off of contaminants to the unknown river).	Invasive prospecting Phase	- Restrict to designated areas - Uphold the 500m buffer zone from wetland and riparian zones as no go zones for invasive prospecting. - Location ablution facilities outside buffer zones - Control run off and erosion from prospecting target areas - Collect and treat dirty water from prospecting operations - Storage fuel, oil and chemicals safely in designated areas - Provide drip trays for standing equipment Clean up hydrocarbon	Compliance of invasive prospecting footprint areas as per Composite Map. Implement water management measures as per GNR 704 of 1999. Section 19, 20 of NWA 36 of 1998. Environmental Inspection Adherence to Closure and Rehabilitation Plan	Invasive prospecting Phase

			spillages - Implement proper waste disposal - Implement concurrent rehabilitation and landscape rehabilitated target areas to mimic pre-prospecting contours.		
Surface & Groundwater reduced	Abstraction of water for human consumption and drilling operations from existing boreholes	Invasive prospecting Phase	- No water may be abstracted from any surface water body unless permitted. A Water Use License will be required from DWS for any abstraction of water from a surface body. - Monitor water consumption and ensure that all possible use is accounted for. - Ensure water abstraction points do not degrade or erode.	Obtain a Water Use license from DWS for Section 21 (a) water use if any water is to be abstracted from a surface water body. Implement water management measures as per GNR 704 of 1999.	Site Planning Invasive Prospecting Phase
Traffic	Increased traffic due to prospecting vehicles, machinery using local gravel roads.	Invasive prospecting Phase	- Limit unnecessary vehicle movement - Reduce vehicle speeds in highly vegetated areas, 40km/hr speed limit.	Compliance with provincial road regulations, bylaws.	Invasive Prospecting Phase Decommissioning Phase

			- Relocation of prospecting machinery must not be undertaken during peak traffic times along main gravel roads		
Crime	Risk of increased crime due to presence of machinery, batteries and fuel onsite which are resources that attract thieves.	Invasive prospecting Phase	- Establish a fenced off-site camp and establish temporary camps at drilling sites - Security lights can be installed at site camp and temporary camp sites with the addition of security guards.	Compliance with Mine Health and Safety Act 29 of 1996	Invasive prospecting Phase
Crime & Safety	Presence of external contractors at site and within local communities	Invasive prospecting Phase	- Contractors would not be allowed near villages and would be accommodated within the prospecting crew site camp - Ensure that employment criterion for the prospecting crew be made public in advance to deter unqualified job seekers from moving into the area.	Compliance with Mine Health and Safety Act 29 of 1996	Invasive prospecting Phase

			- Employ as far as possible, local labour during the prospecting phase		
Socio-economic	Increased traffic and prospecting activities in livestock grazing areas may increase the livestock mortalities including livestock falling. areas directly affecting community member livelihoods	Invasive prospecting Phase	-Communicate with respective communities regarding grazing of livestock in prospecting target areas and request that these areas are avoided during invasive activities. -Fence off sampling sites/demarcate sampling sites to restrict access by public and livestock. -Implement concurrent rehabilitation	Adherence to Closure and Rehabilitation Plan. Continuous engagement with community/ stakeholders; Comply with Mine Health and Safety Act 26 of 1996.	Invasive prospecting Phase
Soil, Groundwater and Surface Water (contamination of soil and erosion)	Use of fuel, chemicals, hydrocarbons, disposal practice and open boreholes as well as erosion from respreading of	Decommission & Rehabilitation Phase	- All fuel storage tanks will be emptied prior to removal. - Drill holes must be permanently capped as soon as possible to eliminate risk of groundwater contamination.	Adherence to Closure and Rehabilitation Plan. Comply with water management measures as per GNR 704 of 1999 under NWA 36 of 1998.	Decommissioning, Rehabilitation and Closure Phase

	topsoil before vegetation has re-established		- Wastes will be removed and disposed of at a licensed landfill site and recyclables will be taken to a licenced recycling facility. - No activities are to be undertaken neither within the south-western section of the project site nor within 500m buffer zones upheld to wetland and riparian zones. These areas are regarded as no go zones for prospecting activities. - If erosion has occurred, usable soil should be sourced and replaced and shaped to reduce the recurrence of erosion. - Keep grazers out of rehabilitated areas, if possible, until suitable vegetation cover has established. - Progressive monitoring must take place rehabilitated areas must take place		

Fauna & Flora	Decommissioning and rehabilitation of prospecting target areas and infrastructure which include removal of drill pads, capping of boreholes, respreading of stockpiled topsoil over denuded areas	Decommission & Rehabilitation Phase	- Limit bush clearing and conduct concurrent rehabilitation with follow-up inspections to decide effectiveness of rehabilitation steps undertaken - Use existing tracks and roads as far as possible; - Avoid damage to indigenous vegetation and species of conservation concern (large protected trees) whilst removing prospecting infrastructure; - Close drill holes, as soon as possible after drilling and sampling activities have completed to avoid risk of fauna or livestock falling into open drill holes, .; - Drill holes must be permanently capped and . backfilled as soon as possible after sampling and testing is completed at prospecting sites	Adherence to Closure and Rehabilitation Plan.	Decommissioning, Rehabilitation and Closure Phase

Flora	Poor vegetation re growth post decommissioning and rehabilitation of target areas. Establishment of alien vegetation during re-vegetation of disturbed areas.	Decommission & Rehabilitation Phase	- Rehabilitate sites immediately after sampling, concurrent rehabilitation, do not wait until the end to rehabilitate. - Revegetation of disturbed areas will be undertaken immediately after prospecting activities. - Keep topsoil for rehabilitation to promote effective re vegetation - Keep topsoil separate from other materials (overburden or waste materials). Monitor re vegetated areas - Remove all alien vegetation from the site which has established on newly exposed soils; - Eradicate alien vegetation during the lifecycle of the project and monitor post-rehabilitation.	Adherence to Closure and Rehabilitation Plan.	Decommissioning, Rehabilitation and Closure Phase
Noise	Decommissioning and rehabilitation of prospecting sites and	Decommission & Rehabilitation Phase	- Activities are to take place during daytime period 07h00 to	Adherence to Closure and Rehabilitation Plan	Decommissioning, Rehabilitation and Closure Phase

	the site camp will generate noise		17h00. Vehicles speed should be low (40km/h). The noise during those activities high as to negatively impact the community and the school in the vinicity.		
Air Quality & Dust (vehicle entrained dust, from denuded areas)	Dust emissions from decommissioning and rehabilitation activities such capping of boreholes, ripping of disturbed areas	Decommission & Rehabilitation Phase	- Wet dust suppression will be undertaken to manage entrained dust emissions from vehicle movement on gravel roads and at target areas when necessary. - Implement concurrent rehabilitation and revegetate disturbed areas.	Adherence to Closure and Rehabilitation Plan	Decommissioning, Rehabilitation and Closure Phase
Traffic	Increased traffic along main gravel route during decommissioning and rehabilitation of prospecting sites and increased traffic on P39-1-1 road when	Decommission & Rehabilitation Phase	- Limit unnecessary vehicle movement - Relocation of prospecting machinery must not be undertaken during peak traffic times along main gravel roads and regional roads	Adherence to Closure and Rehabilitation Plan Provision road regulations and by-laws.	Decommissioning, Rehabilitation and Closure Phase

	equipment is removed and transported off site				

32. IMPACT MANAGEMENT OUTCOMES

Table 20:Impacts management outcomes

ACTIVITY (Whether listed or not listed). (E.g., Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, etc…etc…etc.).	POTENTIAL IMPACT (e.g., dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc…. etc.…)	ASPECTS AFFECTED	PHASE In which impact is anticipated (e.g., Construction, commissioning, operational Decommissioning, closure, post-closure)	MITIGATION TYPE (modify, remedy, control, or stop) through (E.g., noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc) •	STANDARD TO BE ACHIEVED (Impact avoided, noise levels, dust levels, rehabilitation standards, end use objectives) etc.
Stockpiling of topsoil following site preparation and	Loss of topsoil resource	Soil	Site Preparation and Invasive Prospecting	Control	Prevent loss of topsoil Enough soil, of adequate quality is available for

excavations for drilling,					rehabilitation to support vegetation growth to ensure successful rehabilitation.
Establishment of prospecting sites, site camp, vehicle traffic, material storage	Soil erosion and soil compaction by heavy vehicles, contamination with oil, fuel and hydrocarbon spillages	Soil	Invasive Prospecting Phase	Remedy	Remedy impact on soils by remedying soil erosion and compaction. Indigenous vegetation will be re-instated on disturbed areas to curb erosion of soil and maintain biodiversity
Generation, storage and disposal of waste	Contaminate soil due to improper disposal	Soil Resources (contamination of soil due to improper waste disposal	Invasive prospecting Phase	Control	Control and minimize impact on soil resources
Clearing of vegetation and topsoil as site preparation for prospecting sites, site camp	Loss of Habitat	Fauna & Flora	Invasive prospecting Phase	Control	Minimize and control impact on fauna & Flora
Site establishment for site camp and prospecting activities	Loss of sensitive species	Fauna & Flora	Invasive prospecting Phase	Control	Minimise the impact on conservation important species of fauna & flora

Site clearance for drill, sampling sites as well as camp site establishment	Impact on habitat connectivity and Open Space	Fauna & Flora	Invasive prospecting Phase	Control	Minimise the impact on habitat connectivity and open space and ecological important corridors
Establishment of access tracks and driving off existing tracks	Destruction & Damage to fauna & flora	Fauna & Flora	Invasive prospecting Phase	Control	Minimise destruction and damage on fauna and flora
Direct contact with prospecting equipment, supplies (vehicle, dozers, chemicals, waste)	noise result in animals to vacate area, possible faunal fatalities	Fauna	Invasive prospecting Phase	Control	Minimise disturbance of fauna
Establishment of site camp, drilling pads, excavations sites as well as operation thereof.	Risk of contamination of aquatic ecosystems from hydrocarbon spillages, oil and fuel.	Aquatic Ecosystems	Invasive prospecting Phase	Remedy	Avoid, prevent/reduce, clean-up of spillages from fuel, fuel and chemicals. Minimise the impact on aquatic ecosystems. Protect water sources/ aquatic ecosystems in line with National Water Act of 1998 and Mine Water Regulations of GN 704.

Prospecting activities within unique habitat (wetland, Indigenous trees)	Impact on wetland function	Aquatic Ecosystems	Invasive prospecting Phase	Stop/Avoidance	Avoid and stop any potential impact on the Wetland function. Protect water sources/ aquatic ecosystems in line with National Water Act of 1998 and Mine Water Regulations of GN 704.
Creation and clearing of target areas including vehicle movement	Soil erosion and sediment deposition into aquatic ecosystems	Aquatic Ecosystem	Invasive prospecting Phase	Control	Control erosion and sedimentation into aquatic ecosystems and minimise impact on function of ecosystem
Prospecting activities specifically excavations,	Damage to cultural and heritage features due to unearthing chance finds	Heritage & Cultural Resources	Invasive prospecting Phase	Remedy	Prevent any damage or loss to heritage resources, rectify removal/damage caused
Site establishment through vegetation clearance, drilling, prospecting activities including entrained	Wind-blown dust from bare target areas, vehicle entrained dust may cause	Air Quality & Dust	Invasive prospecting Phase	Control	Control and minimize dust emissions from prospecting activities including vehicle entrained dust on receptors

dust from vehicle movement on gravel roads	nuisance to community				
Site clearance, establishment of site camp and prospecting activities as well as presence of machinery	Unsightly views due to exposed soils and presence of machinery onsite	Visual Impact (exposed soils, presence of machinery)	Invasive prospecting Phase	Remedy	Reinstate the pre-prospecting land use and integrity of target areas to natural/conservation
Prospecting activities within protected area	Impact on biodiversity	Land use impact	Invasive prospecting Phase	Remedy	Minimise the impact on the nature reserve and its biodiversity
Use of fuel and hydrocarbons during prospecting activities	Groundwater contamination from fuel and hydrocarbons spillages from vehicles and storages which infiltrate groundwater	Groundwater	Invasive prospecting Phase	Control and Remedy	Prevent, avoid, minimise impact on groundwater
Waste disposal, use of fuels, chemicals	Impact on surface water quality by	Surface Water	Invasive prospecting Phase	Remedy	Minimise the impact on surface water

and hydrocarbons during prospecting activities and at	poor storage of chemicals, fuel spills, inappropriate waste				

33. IMPACT MANAGEMENT ACTIONS

Table 21:Impacts management actions

ACTIVITY Whether listed or not listed. (E.g., Excavations, blasting, stockpiles, discard dumps or dams, Loading, hauling and transport, Water supply dams and boreholes, accommodation, offices, ablution, stores, workshops, processing plant, storm water control, berms, roads, pipelines, power lines, conveyors, etc…etc…etc.).	POTENTIAL IMPACT (e.g., dust, noise, drainage surface disturbance, fly rock, surface water contamination, groundwater contamination, air pollution etc…. etc.…)	MITIGATION TYPE (modify, remedy, control, or stop) through (e.g., noise control measures, storm-water control, dust control, rehabilitation, design measures, blasting controls, avoidance, relocation, alternative activity etc. etc.)	TIME PERIOD FOR IMPLEMENTATION Describe the time period when the measures in the environmental management programme must be implemented Measures must be implemented when required.	COMPLIANCE WITH STANDARDS (A description of how each of the recommendations in 2.11.6 read with 2.12 and 2.15.2 herein will comply with any prescribed environmental management standards or practices that have been identified by Competent Authorities)
Desktop study	None	No mitigation proposed	N/A	Comply with the approved PWP and EMP

Geological mapping	None	No mitigation proposed	N/A	Comply with the approved PWP and EMP
Transport (movement of vehicles during the prospecting activities)	Noise	• Limit the speed of vehicles to 40km/h • All prospecting vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act.	During the prospecting activities	Comply with the approved PWP, EMP and Road Transport Act
	Dust emission	• Limit the speed of vehicles to 40km/h • All prospecting vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act. • Dust suppression to be conducted as and when.	During the prospecting activities	Comply with the approved PWP, EMP and Road Transport Act

	Watercourses contamination	• Maintain the adequate buffer zone around watercourses. • Limit the speed of vehicles to 40km/h • All prospecting vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act.	During the prospecting activities	Comply with the approved PWP, EMP and Road Transport Act
Drilling	Soil contamination through fuel spills	• Large volumes of potential contaminants will not be kept on site; with storage of daily requirements in suitable containers (specially designed diesel storage trailer) with the drill rig. • Control through proper vehicle maintenance and ensure the use of drip trays to prevent spills to the soil	During the prospecting activities	Comply with the approved PWP and EMP

	Vegetation Clearing/ destruction of important species	• Limit the clearing vegetation. • Avoid removing trees. An investigation of the importance of trees is necessary where they are intended to be removed.		
	Disturbance of animals	• Work should be restricted to one area at a time as this will provide fauna a change to endure the impact. • Workers must stay out of demarcated sensitive areas and no trespassing via foot or vehicle		
	Impact on the soil viability during digging of the water sump	• Topsoil and subsoil will be stored separately. • Keep water sumps as small as possible to reduce disturbance.	Concurrently with the completion of the prospecting activities	Comply with the approved PWP and EMP
	Water contamination during borehole drilling	• No borehole will be planned and drilled less than 100m from any open water system. • Storm water generated around the drilling site will be	Concurrently with the completion of the prospecting activities	Comply with the approved PWP and EMP

		diverted away to the clean water environment. • No concrete mixing and vehicle maintenance will be allowed on site. • All hydrocarbons will be stored in protected storage areas, away from the streams.		
	Air pollution through dust and diesel fumes from the machines.	• Control dust through circulation of water during operation. • Correct speed will be maintained by the operational vehicles at the proposed project site. • Control by maintaining vehicles to eliminate any unnecessary emissions.	During the prospecting activity	Comply with the approved PWP and EMP
	Drilling may impact on the noise level	-Prospecting will take place during daylight hours only, when the noise will blend into the everyday sounds.	During the prospecting activity	Comply with the approved PWP and EMP

		-The applicant must ensure that employees and staff conduct themselves in an acceptable manner while on site, both during work hours and after hours. No loud music may be permitted at the prospecting area. -All prospecting vehicles must be equipped with silencers and maintained in a road worthy condition in terms of the Road Transport Act. -The type, duration and timing of the drilling procedures must be planned with due cognizance of other land users and structures in the vicinity. The community / or any other affected party must be notified of the drilling times.		

		-Surrounding land owners must be notified in writing prior drilling occasions. -The speed of vehicles around the project site should minimised at 40km. The Drilling activities and movement of vehicles into the site should be carried out during the day, the preference will be to start drilling around half past 1pm considering that there is a primary school closed to the development site. -Operators will be supplied with ear plugs. - Drilling must be done…..		
	Drilling as an activity may impact on the natural and socio-economic environments through temporary land use changes, waste generation,	To minimise the impact of the drilling of boreholes, the following will be implemented: • Approval of the landowner will be sought prior to	Concurrently with operation	Comply with the approved PWP and EMP

	and security of the landowner / occupier and their assets (this includes potential fires).	accessing the land – this includes continual updating and liaising with the landowner in terms of the processes being followed and the status of the prospecting work programme. Drill rig and crew camp operational health and safety procedures include: • Mandatory fire extinguishers at the drill rig. • No open flames / fires will be allowed. • On-going steps / procedures to prevent veld fires will be implemented. • The drilling area will be cordoned off to prevent any disturbance or refuse from spreading on and from the site. • All domestic waste material generated on site shall be		

		collected in drums, removed and disposed of regularly at a registered local waste disposal site or municipal receptacle.		
Topsoil stockpile	The stockpiling of soils from the excavation of the water sumps may impact soil viability.	• Topsoil and subsoil will be stockpiled separately. • Soil stockpiles will not be exposed for a long period of time and will be replaced in sequence (subsoil, compaction, topsoil) as soon as possible on completion of drilling.	During operation	Comply with the approved PWP and EMP
Core logging and sampling	None	Core will be logged in a designated core yard and intersected coal will be sent to a certified laboratory.	N/A	Comply with the approved PWP and EMP
Rehabilitation	Clearing the drilling site may impact on the natural vegetation of the area	The footprint of the drilling site will be made as small as possible.	Clear and rehabilitate site concurrently with operations.	Comply with the approved PWP and EMP

34. FINANCIAL PROVISION (DETERMINATION OF THE AMOUNT OF FINANCIAL PROVISION).

34.1. Describe the closure objectives and the extent to which they have been aligned to the baseline environment described under the Regulation.

The rehabilitation plan has been developed to ensure that the ecological functions of the rehabilitated areas are restored. The closure objectives are:

- Rehabilitation of areas disturbed, because of prospecting, to a land capability that will support and sustain predetermined post-closure land uses.
- Removal of the drilling rig, fencing and equipment, and cleaning up the site.
- Backfilling, compacting and topdressing the water sumps.
- Filling the cored borehole with concrete to approximately 300 mm from surface and top-dress to provide a level surface
- Removal of the existing contaminated material from affected areas.
- Restore disturbed areas and re- vegetate these areas with grass naturally occurring in the area.
- Monitoring and maintenance of rehabilitated areas, forming part of the site closure, in order to ensure the long-term effectiveness and sustainability of measures implemented.

34.2 Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties.

Environmental objectives in relation to closure have been consulted with the landowner and interested and affected parties. The copy of this EMP was given to the landowners and affected parties for them to suggest or comment on this document which include environmental objectives in relation to closure of the site.

34.3 Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main activities, including the anticipated prospecting area at the time of closure.

Due to the nature of the proposed activities, each phase of prospecting is dependent on the success of the previous. Thus, depending on the outcome of phase one which entails desktop studies, the location and extent of the proposed borehole will then be determined.

The location and the extent of the activities cannot be determined at this stage.

34.4 Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives.

The objective of both during prospecting and on closure is to allow the existing land use activities to function normally. Decommissioning and rehabilitation include:

- Removal of the drilling rig, fencing and equipment, and cleaning up the site.

- Backfilling, compacting and topdressing the water sumps.
- Filling the cored borehole with concrete to approximately 300 mm from surface and top-dress to provide a level surface.
- Restore disturbed areas and re- vegetate these areas with grass naturally occurring in the area.

Rehabilitation would therefore allow the current land use practices to continue.

34.5 Calculate and state the quantum of the financial provision required to manage and rehabilitate the environment in accordance with the applicable guideline.

- Removal of the drilling rig, fencing and equipment; backfilling, compacting and topdressing the water sumps and cleaning up the site is part of the drilling contractor's responsibility - the costs of which are incorporated into the drilling costs for de-establishment (approximately R2 300 (excl. VAT per borehole)
- Filling the cored borehole with concrete to approximately 300 mm from surface and top-dress to provide a level surface (**10 boreholes**) The estimate takes into consideration the following items which have been included in the costing:

  • General surface rehabilitation and vegetation

  • Access road maintenance and repair

  • Planting and fertilizer application:

Confirm that the financial provision will be provided as determined

Should the prospecting right be granted, Constructo will provide the required amount of financial provision to ensure rehabilitation of the disturbed area.

35 MECHANISMS FOR MONITORING COMPLIANCE WITH AND PERFORMANCE ASSESSMENT AGAINST THE ENVIRONMENTAL MANAGEMENT PROGRAMME AND REPORTING THEREON

Table 22:Mechanism for monitoring compliance with performance assessment EMPR

Source activity	Impacts requiring monitoring programmes	Functional requirements for monitoring	Roles and responsibilities (for the execution of the monitoring programmes)	Monitoring and reporting frequency and time periods for implementing impact management actions
Phase 1: Desktop study, geological mapping and planning of the drilling programme	The activities during phase one will not impact on the environment.	None	N/A	N/A
Phase 2: Construction of the camp site	**Biodiversity** • Clearing the drilling site may impact on the natural vegetation of the area. However, prospecting is localised, with a very small sphere of influence.	Inspection of clearing activities and impact on the biodiversity will be conducted, (if vegetations are to be cleared)	Project Manager and operators, Ecologist/Botanist to be appointed	Daily

	• A search will be undertaken to identify species of conservation concern if required. **Soil** • Fuel spills from the drilling rig and vehicles may impact on the natural environment through soil contamination. • Digging of temporary water sumps for drilling operations may impact soil viability. **Habitat (Loss of habitat)** The activities may change the habitat (loss of habitat).	• Inspection of all vehicles on site for any leaks. • All fuel spills incidents will be identified and a proper response according to the approved response procedure will be applied. • Proper storage of fuel. All stakeholders must be consulted.	Project Manager and operators, Applicant	Before any activity commence.

	Watercourses • Drilling of boreholes may temporarily impact on water quantity and quality, through the use of water for operations. • Contamination of wetlands and the unknown river. • Silting of surface water resource from erosion of exposed surfaces. **Air quality** Machinery and vehicles may contribute to air pollution in the area, through dust and diesel fumes. **Noise** • Drilling activity may impact on the noise levels in the environment.	• Ensure 500 m buffer zone between activities and riparian and wetland area. • Inspection of buffer. Dust monitoring	Project Manager Project Manager Health & Safety	Before Before any activity commence. And Daily Monthly

Phase 3: Drilling, logging and sampling, analysis and rehabilitation	**Soil** • Fuel spills from the drilling rig and vehicles may impact on the natural environment through soil contamination. • Digging of temporary water sumps for drilling operations may impact soil viability. **Water** • Drilling of boreholes may temporarily impact on water quantity and quality, through the use of water for operations. • Contamination of wetlands and the unknown river. • Silting of surface water resource from erosion of exposed surfaces. **Air quality** • Diesel	All soil stockpiles should be monitored for erosion. • Inspection of all vehicles on site for any leaks. • All fuel spills incidents will be identified and a proper response according to the approved response procedure will be applied. • Proper storage of fuel. Ensure that no borehole will be planned and drilled less than 100m from any open water system. • Ensure 500 m buffer zone between activities and riparian and wetland area. • Maintain vehicles to reduce emissions.	Project Manager and operators Project Manager Project Manager	Daily Weekly after rain events Daily

	machinery may contribute to air pollution in the area, through dust and diesel fumes. **Noise** • Drilling activity may impact on the noise levels in the environment. **Biodiversity** • Clearing the drilling site may impact on the natural vegetation of the area. However, prospecting is localised, with a very small sphere of influence. • A search will be undertaken to identify species of conservation concern. **Land use and security** • Drilling as an activity may impact on the natural and socio-economic environments through temporary land use changes, waste generation, and security of the landowner / occupier and their assets (this includes potential fires).	• Sprinkle water to reduce dust. • The level of noise will be monitored. Inspection of clearing activities and impact on the biodiversity will be conducted. • Approval of the landowner will be sought prior to accessing the land – this included continual updating and liaising with the landowner in terms of the processes being followed and the status of the prospecting work programme. • Drill rig and crew camp operational health and safety procedures include: - Mandatory fire extinguishers at the drill rig. - No open flames / fires will be allowed.	Project Manager and operators Project Manager Project Manager Project Manager	Daily Daily Daily

		- On-going steps / procedures to prevent veld fires will be implemented. • The drilling area will be cordoned off to prevent any disturbance or refuse from spreading on and from the site. • All domestic waste material generated on site shall be collected in drums, removed and disposed of regularly at a registered local waste disposal site or municipal receptacle.	Project Manager	Daily Daily

Phase 3: Rehabilitation	**Rehabilitation (soil, vegetation)**	Inspection of all rehabilitated areas.	Project Manager and environmentalist	During the rehabilitation and monthly after rehabilitation has been conducted

36 INDICATE THE FREQUENCY OF THE SUBMISSION OF THE PERFORMANCE ASSESSMENT/ ENVIRONMENTAL AUDIT REPORT.

An environmental audit will be conducted annually; the report of the audit will then be submitted to the DMR.

37 ENVIRONMENTAL AWARENESS PLAN

- **Manner in which the applicant intends to inform his or her employees of any environmental risk which may result from their work.**

An environmental awareness plan will be developed in order to ensure that employees are trained about the environmental risks which may result from their work. The following procedures will be done to inform the employees:

- **Induction**

  All the employees on site will be given an induction. To ensure that proper understanding of the environmental issues is obtained, the induction will be conducted according to the skill and education level of the employees. The induction session will entail the following:

  - Clarify the content of the EMP.
  - Environmental impacts associated with the prospecting activities and their mitigation measures.
  - Response to any environmental problem.
  - Actions for the implementation of the EMP.
  - Incident reporting procedure.

- **Daily pre-shift environmental safety meetings**

  A 20-minute pre-shift talk will be done on site in order to ensure that the principles are continuously re-enforced.

- **Posters**

Environmental awareness will be generated through the provision of posters on site, describing very briefly the environmental considerations applicable to them. The posters should contain the following information:

- Statement of the applicant's commitment to environmental principles.
- List of the "rules" to which people on site must abide by. This will include:
  - No littering. Dispose of all waste in the bins provided.
  - No fires.
  - Stay on demarcated roadways and paths only.
  - Kindly report any environmental infringements that may be noticed.
  - Check your vehicle/equipment for diesel/oil leaks.

- **Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.**

The most common environmental risk from the drilling of boreholes is spills of oil, grease, diesel, acid or hydraulic fluid. This risk will be dealt with as follows:

- Large volumes of the above fluids will not be kept on site.
- Storage of the above fluids will be in suitable portable containers with the drill rig, such as specially designed diesel storage trailer and portable fireproof cage for drill fluids.
- A groundsheet is placed in the water circulation sump to prevent any discharge of drill fluids into the soil.
- A metal drip tray is placed below the drill to catch any oil spills from the rig.
- All drilling fluids must be biodegradable.
- All drill outings, sludge and oil spills are removed from site and disposed at an approved facility upon completion of the borehole.

In plantation / forestry areas, risks associated with fires need to be dealt with as follows:

- Drilling sites will be kept in a clean state, with appropriate waste management measures in place.
- Flammable fluids, e.g., drill fluids, will be stored in appropriate portable containers with fireproof cage.
- No open flames / fires will be allowed.
- Drill rig and crew camp operational health and safety procedures will be in place, with implementation of on-going steps / procedures to prevent fires.
- Mandatory fire extinguishers at the drill rig.

38 SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

The applicant will ensure that financial provision is reviewed annually.

39 UNDERTAKING

The EAP herewith confirms that:

a) the correctness of the information provided in the reports X

b) the inclusion of comments and inputs from stakeholders and I&APs; X

c) the inclusion of inputs and recommendations from the specialist reports where relevant; X and

d) That the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected. Parties are correctly reflected herein. **X**

Mitrance Nana

Signature of the environmental assessment practitioner:

BGES Pty Ltd

Name of company:

23/11/2022

Date:

REFERENCES

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RSA (2014b). Environmental Impact Assessment Regulations Listing Notice 3 of 2014, published under Government Notice R985 of Government Gazette 38282 of 4 December 2014, as amended.
RSA (2014c).

Environmental Impact Assessment Regulations Listing Notice 2 of 2014, published under Government Notice R984 of Government Gazette 38282 of 4 December 2014, as amended.
RSA (2014d).

Environmental Impact Assessment Regulations Listing Notice 1 of 2014, published under Government Notice R983 of Government Gazette 38282 of 4 December 2014 as amended.
July 2019 1791874-325631-10

Ezemvelo, KZN Wildlife. 2013. Guideline Biodiversity Impact Assessment Kwazulu Natal. Final Draft.

RSA (2014e) Environmental Impact Assessment Regulations of 2014, published under Government Notice R982 of Government Gazette 38282 of 4 December 2014, as amended.
RSA (2014f).

National Norms and Standards for the Remediation of Contaminated Land and Soil Quality, published under Government Notice 331 in Government Gazette 37603 of 2 May 2014.

Appendices

Appendix A: Details of EAP and Qualifications

Details of the EAP

Name of the Practitioner: Mitrance Nana Tchakounteu
Tel No.: 0616148272/0721728374
Fax No.: 0865156638
Email: nana@beyondges.co.za ; nonku.mbasane@beyondges.co.za

CAREER HISTORY

1. Environmental consultant: Beyond Green Environmental Services Pty Ltd

February 2022 to-Present

Responsibilities:

- Compile Basic Assessment Reports and Environmental Impact Reports
- Conducting stakeholders and public engagement meetings
- Development of IWWM and water use related documents
- Conduct environmental audits.
- Conduct water use license audits
- Compile maps (biodiversity maps, watercourse maps, geological maps, and Regulation 2.2 plan)

2. Some of the projects compiled include:

2022 - Environmental Compliance Monitoring and Audit for the Construction of Road D327 and Z389 from Ganyesa via Vragas to Madinonyane, Department of Public Works and Transport; Northwest province.

2022 - Environmental Compliance Monitoring and Audit for the Upgrade of National Road R37 Section 2 from Modikwa Mine (KM 117,0) to Burgersfort (26,87), SANRAL; Limpopo province.

2022 - Water Use Licence Application for Enduneni Contractors CC Sand Mining Project along Buffels River.

2022- External Water Use Licence Audit for IKWEZI Coal Mining, Kwazulu Natal.

2022 - Basic Assessment Report for Coal Mining for MSI Empire Pty Ltd.

2022 - Basic Assessment Report for Prospecting of Coal, for MSI Empire Pty Ltd.

2022 - Basic Assessment Report for Prospecting of Coal, for Ladysmith Black Mining Pty Ltd.

2022 - Basic Assessment Report for Agregate Mining for Hlempu group, Kwazulu Natal.

2022 - Basic Assessment Report for Prospecting with bulk sampling of Manganese, for Tshimega.

2022 - Basic Assessment Report for Prospecting of Manganese and iron ore for Obombo group Pty Ltd, Kwazulu Natal.

2022 - Environmental Impact Assessment Report for Prospecting of Manganese, gold and iron ore, for Arengo Pty Ltd, North-West province.

2. Environmental scientist **Carin Bosman Sustainable solutions**

March 2020 to-November 2020

- Development of IWWM and water use related documents
- Conduct water uses assessment
- Conduct water use license audits
- desktop studies and research analysis
- Compile data sheet for South Africa Quality Water Guideline/Requirements for all water uses

Some reports involved:

-Annual external water use license audit; Chemwes (Pty) Ltd, North-West Province

- Water use assessment for Raumix aggregates, Willows quarry (Pty) Ltd, Gauteng Province

3. Environmental consultant **Centre of African research and development & Ministry of public work ,**

January 2011 to- December 2016, Cameroon

- Desktop studies and research analysis
- Biodiversity and ecological studies
- Compile Basic Assessment and Environmental Impact Reports
- Conducting stakeholders and public engagement meetings
- Conduct environmental audits.

NWU®

NORTH-WEST UNIVERSITY
NOORDWES-UNIVERSITEIT
YUNIBESITI YA BOKONE-BOPHIRIMA

MASTER OF ENVIRONMENTAL MANAGEMENT

awarded to

MITRANCE SORELLE TCHAKOUNTEU

after complying with all the requirements

18 August 2021

Prof ND Kgwadi
Vice-Chancellor

Prof M Verhoef
Registrar

University Number: 31421806
Serial Number: 876138

University of Cape Town • iYunivesithi yaseKapa • Universiteit van Kaapstad

SPES BONA

Faculty of Law

We certify that

Mitrance Sorelle Tchakounteu Epse Nana

completed a short course with an estimated learning time of 100 hours, start date 9 October 2017 end date 15 January 2018, in

Occupational Health and Safety

22 January 2018

Dean of Faculty

UNIVERSITY OF CAPE TOWN MDCCCXXX

Course Convenor

Presented on the GetSmarter platform

UNISA university of south africa

CENTRE FOR SUSTAINABLE AGRICULTURE AND ENVIRONMENTAL SCIENCES

This is to certify that

MITRANCE SORELLE NANA

has complied with the requirements for the

COURSE IN EXPLORING GEOGRAPHICAL INFORMATION SYSTEMS

NQF LEVEL: 5
CREDITS: 27
DURATION: 6 MONTHS

M. Light

Executive Dean:
College of Agriculture &
Environmental Sciences

30 NOVEMBER 2017
COURSE CODE: 75515

Manager:
Centre for Sustainable Agriculture
and Environmental Sciences

UN660809ISA

SACNASP

South African Council for Natural Scientific Professions

herewith certifies that

Mitrance Sorelle Tchakounteu Epse Nana

Registration Number: 116364

is a registered scientist

in terms of section 20(3) of the Natural Scientific Professions Act, 2003
(Act 27 of 2003)
in the following fields(s) of practice (Schedule 1 of the Act)

Environmental Science (Candidate Natural Scientist)

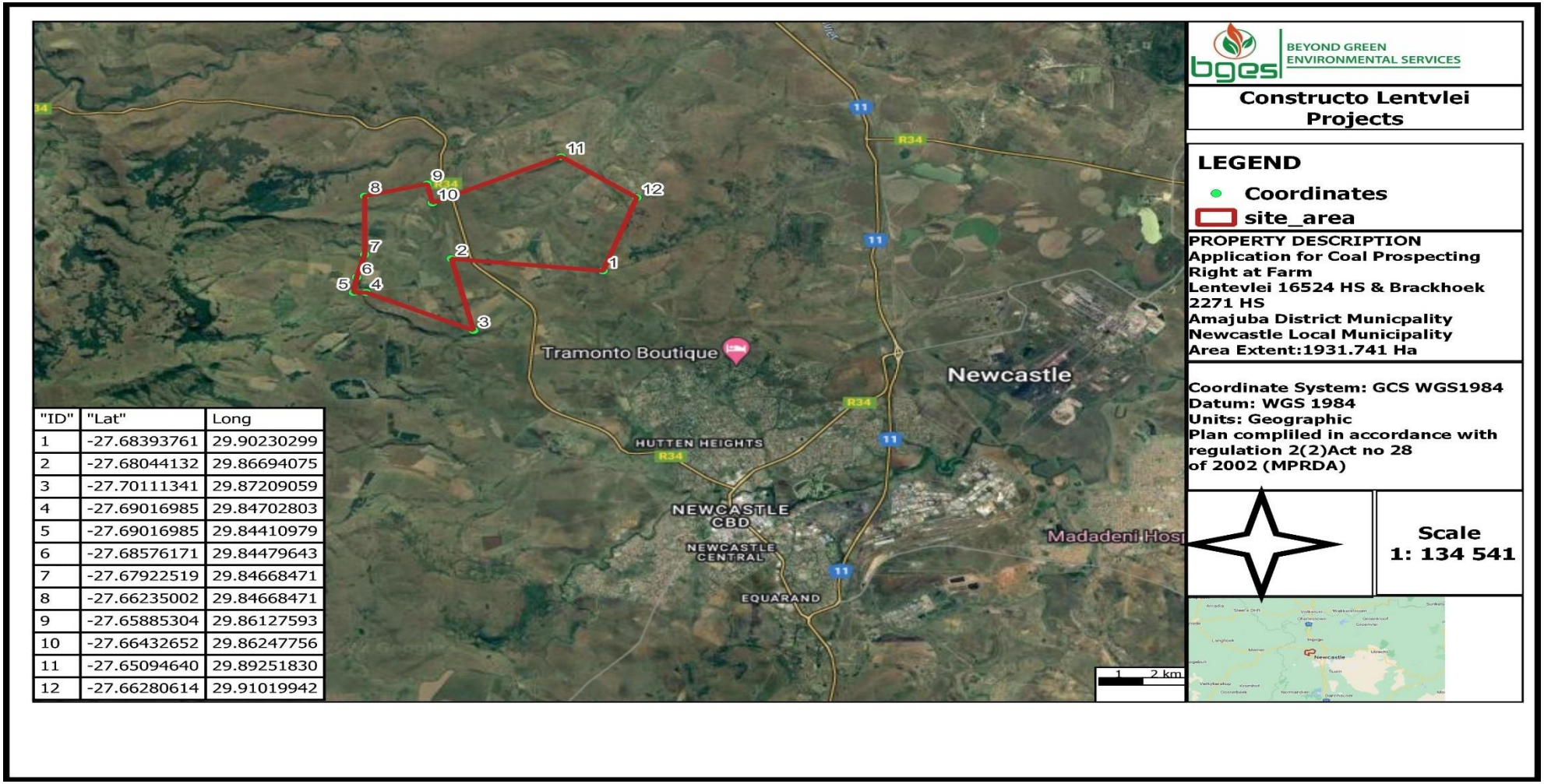
Effective **20 March 2018** Expires **31 March 2023**

Chairperson

Chief Executive Officer

To verify this certificate scan this code

APPENDIX B: SITE PLANS/MAPS



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APPENDIX C: Public Participation Process Report

BEYOND GREEN ENVIRONMENTAL SERVICES
+27 31 003 2900 / +27 12 003 6593
www.beyondges.co.za
info@beyondges.co.za

Public Participation Report

APPLICANT: Constructo Civil Construction and Mining Services (pty) ltd
REF NO.:

(to be completed at a later stage)

INCLUDED IN THE REPORT:

1. DATABASE FOR I&AP
2. WRITTEN NOTICES- BID & DRAFT BAR
3. PROOF OF SITE NOTICE
4. PROOF OF NEWSPAPER ADVERTISEMENT
5. LANDOWNER CONSULTATION
6. MINUTES OF MEETINGS
7. ATTENDANCE REGISTERS
8. COMMENTS AND RESPONSES REPORT
9. PROOF OF ISSUES RAISED

C/r of Olievenhoutbosch & Jean Avenue
Centurion
0157

Director: Nonkululeko S Mbasane
Reg.no. (2015/238102/07)
VAT. no.4580290619

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Durban
4001

END