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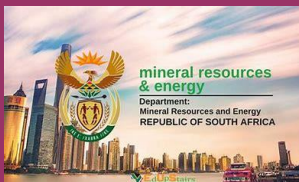
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BASIC ASSESSMENT REPORT & ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

For prospecting right application on portions 1, 6,
11 and 13 of the farm Hazeldene 12649 GT and
farm Ostend 10643 GT situated in Magisterial
District of Umzinyathi in Kwa-Zulu Natal Province.

DMRE REF: KZN 30/5/1/1/2/11406PR



mineral resources & energy

Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

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	Big Sky Mining (Pty) Ltd
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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 Authorization 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 authorization 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 Authorization 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.

PREFACE

This Basic Assessment Report has been compiled by Singo Consulting (Pty) Ltd, based on the guidelines provided by the National Environmental Management Act, 1998 (Act no 107 of 1998), Environmental Impact Assessment Regulations, 2014. Full acknowledgement is made for use of the NEMA EIA 2014 regulations guideline in compiling this report. This document includes Singo Consulting (Pty) Ltd's own interpretation of the requirements of the National Environmental Management Act (Act 107 of 1998), the regulations, the guidelines, and the integration with other statutory and best practice criteria. This report is the first step in the process of applying for environmental authorization for the proposed prospecting operation by Big Sky (Pty) Ltd.

COMMENTING PERIOD

The 30-day commenting period for the Draft Basic Assessment Report (BAR) will run from Saturday, 29 July 2023, through Monday, 28 August 2023 (excluding public holidays). The Final BAR, which will be submitted to the Department of Mineral Resources and Energy (DMRE) for final approval, will take into account and address the comments made during this time period. Written feedback should be directed to Singo Consulting (Pty) Ltd.

DISCLAIMER

The opinion expressed in this, and associated reports are based on the information provided by Big Sky (Pty) Ltd to Singo Consulting (Pty) Ltd ("Singo Consulting") and is specific to the scope of work agreed with Big Sky (Pty) Ltd.

Singo Consulting (Pty) Ltd acts as an advisor to Big Sky (Pty) Ltd and exercise all reasonable skill and care in the provision of its professional services in a manner consistent with the level of care and expertise exercised by members of the environmental profession.

Where site inspections and testing of fieldwork have taken place, the report is based on the information made available by Singo Consulting (Pty) Ltd during the visit, visual observations and any subsequent discussions with regulatory authorities. The information used in this report was obtained from relevant stakeholders through sharing BID's as a way of notifying the stakeholders about the proposed project.

Singo Consulting (Pty) Ltd ("Singo Consulting") takes reasonable care and diligence when providing services and preparing documents, but it has been assumed that the information provided to Singo Consulting (Pty) Ltd ("Singo Consulting") is accurate.

PART A:

Basic Assessment Report

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.

1. Executive Summary

Singo Consulting (Pty) Ltd on behalf of Big Sky (Pty) Ltd submitted an application for a Prospecting Right subject to Section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA) and an application for Environmental Authorization in terms to Chapter 6 of GNR 982 enacted under the National Environmental Management Act (Act 107 of 1998) (NEMA) for Coal.

The proposed project will aim to ascertain if economically viable mineral deposits exist within the application area. In order to undertake the Proposed prospecting activities, Big Sky (Pty) Ltd will require a Prospecting Right in terms of the Mineral and Petroleum Resources Development Act (MPRDA, Act No.28 of 2002). The Applicant is also required to obtain an Environmental Authorization (EA) in terms of the National Environmental Management Act (NEMA, Act No. 107 of 1998) which involves the submission of a Basic Assessment Report and Environmental Management Programme report (BAR & EMPr).

Singo Consulting (Pty) Ltd has been appointed by Big Sky (Pty) Ltd to manage the Environmental Authorization process by conducting Environmental Impact Assessment, Public Participation for the proposed project and to compile the Basic Assessment Report and Environmental Management Programme report in support of the Prospecting Right application which in turn will be submitted to the Department of Mineral Resources and Energy for adjudication. This BAR & EMPr has been designed to meet the specifications as set out in the NEMA's 2014 EIA Regulations. Feedback received from stakeholders will form basis of this BAR & EMPr.

Locality description: The proposed Prospecting Right Application to prospect for Coal on portions 1, 6, 11 and 13 of the farm Hazeldene 12649 GT and farm Ostend 10643 GT situated in Magisterial District of Umzinyathi in Kwa-Zulu Natal Province. The area covers an extent of 1 476.440 ha. The proposed project area is situated approximately 10.68 km Southeast of Hlathi Ngudulwane and 18.74 km from Dundee. It is also 20 km away from Endumeni Local municipality. The proposed application area is also located approximately 1.35km from the PR application lodged by Big Sky (Pty) Ltd on all portions of the farm Rietspruit 425 GT, situated in the magisterial district of uMzinyathi in KwaZulu-Natal Province. Proposed project area can be accessed by gravel roads leading to R68.

During site assessment, it was identified that the proposed area is currently used for residential, livestock farming and grazing activities. The following infrastructures were identified onsite, farm roads, houses, boreholes, powerline, and graves. Drilling will be conducted 100m away from the identified infrastructures to avoid any disturbance.

Channeled valley bottom wetlands, dam, non-perennial rivers were observed onsite, and are regarded as no go area for this project. A perennial river was flowing on the boundary of the application area. A 100m Buffer zone will be applied from the identified rivers and 500m buffer will be applied from the channelled valley bottom wetlands to avoid triggering section 21 (l) and (c) of the National Water Act No: 36 of 1998. A Water Use License will be applied for in case prospecting will be conducted within a regulated area.

Due to the remote locality of the proposed operation no infrastructure will be affected. Existing roads and tracks will be used and in the case of new tracks being developed it will be addressed at final closure and rehabilitation. The impact of the proposed prospecting area on the infrastructural features of the surrounding area is deemed to be of very low significance. The impact of the prospecting activities will be concentrated within the 0.9 ha footprint of the area. Only 0.9 ha of the 50-ha account for vegetation clearing will be cleared for drilling, which account for less than 1% of the 0.9 ha to be disturbed. Generators and solar power panels will be used to power the infrastructure on site, however Future endeavors will dictate if or when an Eskom connection will be secured provided if the prospecting moves to the next stage of mining permit/ right. All diesel storage will be below the threshold as mentioned in the EIA regulations of the National Environmental Management Act, 1998 (Act No 107 of 1998) as amended 2017.

During site assessment, it was identified that the area is characterized of Critical Biodiversity Area. The Critical Biodiversity Area observed onsite was covered with natural vegetation and a wetland area. No drilling will be conducted in Critical Biodiversity Areas and areas where there are floral and faunal species of conservation concern. heritage and cultural features such as graves were observed onsite during site assessment and their locations were marked. No drilling will be conducted in areas where there are heritage and cultural features. These areas will be demarcated and regarded as no go areas for prospecting activities and SAHRA has been notified of these findings.

The proposed prospecting activities will aim to establish the extent and the quality of the Coal through non-invasive (desktop study) and invasive (core drilling) methods.

Non-invasive prospecting activities will consist of:

- Desktop studies
- Spatial Database Compilation

- Land Survey
- Remote sensing
- Geophysical survey

The proposed borehole map is already developed for invasive prospecting resource determination.

Invasive prospecting activities will consist of:

- ❖ Establishment of drill site and temporary contractors' yard
- ❖ Core drilling.
- ❖ Rehabilitation of boreholes
- ❖ Drill rig, machinery, and vehicle movement.
- ❖ Water Management.
- ❖ Ablution Facilities.
- ❖ Domestic Waste Management
- ❖ Storage and Handling of Dangerous goods

Following the invasive prospecting activities and laboratory analysis, data will be assessed in a pre-feasibility study to determine mining potential.

Alternatives: This particular application's application area was chosen after careful consideration of the region's geology. Additionally, the proposed site was open for prospecting and not owned by another business. Drilling is still the most efficient method and industry standard for completing resource evaluation, and using aerial geological mapping as a first non-invasive technique to delimit areas for invasive drilling is seen as the most responsible method to reduce unnecessary surface disturbance and reduce environmental impact footprint. Therefore, no alternative activities or technologies are taken into consideration.

The geology within the area of interest forms part of the Eccca Group, which is the lowermost unit of the Karoo Supergroup. The Eccca Group is comprised of a sequence of shales, sandstones, and coal seams, and it is divided into several formations based on lithological and stratigraphic characteristics. The coal seams are specifically part of the Vryheid Formation which is the uppermost formation within the Eccca Group and it is known for its coal-bearing strata occurring as interbeds within shale and sandstone sequences. Literature review offers valuable insight and context on the project area It reveals that the geological setting of the area is comprised of the Vryheid formation.

No prior drilling activities have occurred near the project site, but notable drilling data is available 23.70 km away. Active mining operations are located approximately 27.83 km from the site. The absence of historical data and previous prospecting hinders resource estimation. The limited accessibility and distance of available borehole data impede precise assessments. To gain a comprehensive understanding, it is recommended to conduct phased drilling of 15 boreholes, with an average depth of approximately 300 meters each. Successful initial drilling results can lead to a second phase, confirming mineral deposits. Completion of the second phase and acquisition of significant data may warrant applying for a mining right, supported by comprehensive information gathered from drilling activities.

Therefore, the alternatives will be assessed in terms of:

Design or layout - To provide a representative sample for the project region, the proposed prospecting boreholes' initial positions have been sited in accordance with an economically viable grid (SAMREC).

- ❖ No go Option.

Environmental Specialist Studies

A comprehensive assessment was undertaken in support of the Prospecting Right Project. Three baseline studies will be conducted and these studies are still underway for the proposed project, namely:

- Hydrogeological Studies.
- Hydrological Studies.
- Soils Studies

Public Participation

The Draft BAR and EMPR will be released for the review and comment period for a 30-day program. Soft copies of the BAR & EMPr will be shared electronically via email and WeTransfer. Hard copies of the Draft BAR and EMPR will be submitted to the KwaZulu Natal organs of state and relevant authorities (i.e DWS, Eskom, SANRAL) by means of courier. Public participation process commenced on the 17th – 19th of June 2023, where we engaged with the affected Parties (Landowner), Mayor, Councillors, speaker, and municipalities officials. Other key stakeholders were identified and consulted via emailing on the 30th of June 2023. Chief Sithole was consulted telephonically, and we were instructed to consult with his advisor Mr. Zakwe and a meeting was held on the 17th of June 2023 at Mr Zakwe's home. Mr Zawe indicated that the applicant must follow the right protocol and he is in support of the proposed project as it will boost the community in terms of employment. Mr. Mandla, one of the residents of the proposed area, was consulted by Singo Consulting,

and he recommended that we consult Mr. Sifiso Mayisela for the attention of the Nhlahleni Property Trust-Trustees since he is the principal representative of the trust. A meeting was suggested for July 8th, 2023 after Mr. Mayisela was contacted by phone. Mr. Sifiso had other family obligations in Delmas, so the meeting could not be done as planned. However, plans were made to meet with him there instead, and a brief discussion was had during which they asked to sit alone and promised to come back to us in two weeks. Singo Consulting proposed to have a meeting on the third week of August and an exact date will be communicated.

Triple C Feedlot was consulted on the 19th of June 2023 for the attention of portion 1 of the farm Hazeldene 12649 GT and contact details were shared. A consultation email was sent to the landowner on the 30th of June 2023 and a response was received from the landowner's representative and alerting Sing Consulting that he has been appointed to handle project related issues with regard the landowner of portion 1. This was received on the 1st of July 2023. Correspondence have been made with the representative with regard access to do a full site assessment on portion 1. Singo Consulting received an email on the 4th of August 2023 requesting we proposed two dates so that he may negotiate with the landowner for us to conduct site assessment and 16th and 17th of August were proposed and a go ahead for site inspection was given for the date of the 16th of August 2023.

On June 30, 2023, a land claim inquiry email was submitted, and on July 12, 2023, a response was received indicating that portions 1, 6, 11, and 13 of the farms Hazelden 12649 GT and Ostend 10643 GT are subject to a Nhlahleni Community Claim. There has already been communication with Mr. Mayisela of the Trustees of the Nhlahleni Property Trust.

The following steps are to be undertaken as part of the public participation process:

- ❖ Identifying internal and external stakeholders during the development of an Interested and Affected Party (IAP) database.
- ❖ Written notice to key stakeholders (directly affected landowners, lawful occupiers, adjacent landowners, local authorities, and relevant organs of state).
- ❖ Publication of newspaper for the proposed project which also invite the public to register as I&APs and notify them of the availability of the draft Basic Assessment Report (BAR) for public review.
- ❖ Plugging of site notices in and around the application area and various public venues inviting the public to register as Interested and Affected Parties (I&APs) and notifying them of the availability of the Draft BAR for public review.
- ❖ A hard copy of this Draft BAR will be placed at the Dundee Public Library, Endumeni Local Municipality, to provide the opportunity to any individuals to access and review the full report.

- ❖ This Draft BAR will be emailed to all registered IAPs and commenting authorities for review.
- ❖ Respond to all comments and/or concerns submitted by stakeholders and include proof of correspondence in the BAR & EMPr.
- ❖ Submission of the Final Basic Assessment Report to DMRE for final decision.
- ❖ Notify the I&APs of the decision made by the Competent Authority regarding the EA and the appeals process via e-mail. Depending on the conditions of the EA, a notice will also be placed in the local newspaper giving the I&APs the opportunity to lodge an appeal.

Table of Contents

1. Executive Summary	7
3. Project Background	30
4. Purpose and Scope of the Impact Assessment Process.....	31
5. Contact Person and correspondence address.	32
5.1 Details of the Environmental Assessment Practitioner (EAP)	32
5.1.1 Summary of the EAP's past experience	34
5.1.2 Full Particulars of Applicant	34
6. Project Location	35
6.1 Description of the Property	35
6.2 Adjacent Land Tenure and Use.....	36
6.3 Surface Infrastructure and Servitudes	36
6.4 Zoning	39
7. Locality map.....	39
7.1 Nearby Mines.....	43
8. Description of the scope of the proposed overall activity.....	44
9. Listed and specified activities	45
9.1 Description of the activities to be undertaken	47
9.1.1 Phase 1: Non-invasive prospecting.....	47
9.1.2 Phase 2: Invasive prospecting	48
8.1.2.1 AUXILLARY ACTIVITIES INCLUDES:	55
9.1.3 Phase 3: Analytical assessment of prospecting data	59
10. Policy and Legislative Context.....	60
11. Need and desirability of the proposed activities.	53

12.	Motivation for the overall preferred site, activities, and technology alternative	59
12.1	Preferred site	59
12.2	Activities.....	59
12.3	Technology	59
13.	Description of the process followed to reach the proposed preferred site.....	60
13.1	The property on which or location where it is proposed to undertake the activity	60
13.2	The type of activity to be undertaken.....	60
13.3	The design and layout of the activity	60
13.4	The technology to be used in the activity.....	62
13.5	The operational aspects of the activity.....	62
13.6	The option of not implementing the activity	62
14.	Details of the Public Participation Process Followed.....	63
14.1	Newspaper advertisement	64
14.2	Written notification	66
14.3	Notification to and consultation with landowners and/or lawful occupiers.....	66
14.4	Site notice placement	66
14.5	Consultation and correspondence with I&AP's and stakeholders	66
14.6	Next phases of the public participation process	67
14.7	Summary of issues raised by IAPs.....	75
15.	Environmental attributes associated with the development footprint (Baseline Environment)	78
15.1	Geology.....	79
15.1.1	Regional Geology	79
15.1.2	Local Geology	81
15.2	Topography.....	85
15.3	Climate	88
15.4	Soils, Land Use and Capability.....	90
15.5	Terrestrial Biodiversity.....	93

14.5.1	Protected tree species.....	98
14.5.2	Protected areas.....	101
14.6	Fauna.....	102
14.6.1	Mammals.....	102
14.6.2	Amphibians.....	105
14.6.3	Avifauna	105
14.6.4	Phylum chordate.....	105
14.6.5	Reptilia	105
14.7	Surface Water and Aquatic Ecosystems.....	79
14.8	Groundwater	83
14.9	Air Quality	84
14.10	Noise.....	84
14.11	Visual Aesthetics	84
14.12	Heritage and cultural resources.....	84
14.12	Socio Economic Characteristics.....	90
14.13.1	Description of the current land uses.....	93
16.	Impacts and risks identified	95
16.1	Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks	97
16.1.1	Significance Level.....	99
16.1.1.1	Assessment of potential impacts and risks.....	102
16.1.1.2	Positive and negative impacts that the proposed activity alternatives will have on the environment and the community that may be affected.....	102
16.1.1.3	Possible mitigation measures that could be applied and the level of residual risk.	102
16.1.1.5	Statement motivating the preferred site.....	102
17.	Full Description of the Process Undertaken to Identify, Assess and Rank the Impacts and Risks the Activity will impose on the Preferred Site through the Life of the Activity	103

16.1 Assessment of each identified potentially significant impact pre and post mitigation.	104
18. Environmental impact statement	113
18.1 Summary of the key findings of the environmental impact assessment	113
18.1.1 Key positive impacts	113
18.1.2 Key negative impacts	113
19. Final Site Map.....	115
19.1 Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives	116
19.2 Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr.....	116
19.3 Aspects for inclusion as conditions of Authorisation.....	118
19.4 Description of any assumptions, uncertainties, and gaps in knowledge	120
19.4.1 Assumptions.....	120
19.4.2 Uncertainties and gaps in knowledge	120
19.5 Reasoned opinion as to whether the proposed activity should or should not be authorized	120
19.5.2 Conditions that must be included in the authorization.	121
19.6 Period for which the Environmental Authorization is required.	121
20. Financial Provision.....	121
20.1 Explain how the aforesaid amount was derived.	122
20.2 Confirm that this amount can be provided for from operating expenditure.	122
19.3 Undertaking	122
21. Specific Information required by the competent Authority	123
21.1 Compliance with the provisions of sections 24(4) (a) and (b) read with section 24.....	123
21.1.1 Impact on the socio-economic conditions of any directly affected person	123
21.1.2 Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.....	123
21.1.3 Other matters required in terms of sections 24(4) (a) and (b) of the Act.....	123

22.	Details of EAP	125
23.	Description of the Aspects of the Activity	125
24.	Composite Map	127
25.	Description of impact management objectives including management statements .	127
	24.1 Determination of closure objectives.....	127
	24.1.1 Process to manage environmental impacts.	129
	24.1.2 Volumes and rate of water use required for the operation	129
	24.2 Has a water use license has been applied for?	129
	24.3 Impacts to be Mitigated, Management Actions, Outcomes and Standards to be Achieved.....	130
26.	Financial Provision	149
	26.1 Description of the closure objectives and extent to which they align with the baseline characterization.....	150
	26.1.1 Geology	150
	26.1.2 Topography	150
	26.1.3 Soils and land capability	150
	26.1.4 Surface water and aquatic ecosystems	150
	26.1.5 Groundwater.....	150
	26.1.6 Flora and Fauna.....	150
27.	Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties.....	151
	27.1 Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure .	151
	27.2 Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives	151
	27.3 Quantum of the financial provision required to manage and rehabilitate the environment.....	152
	27.4 Confirm that the financial provision will be provided as determined.....	154

28.	Mechanisms for monitoring compliance with and performance assessment against the environmental management programme.....	155
29.	Indicate the frequency of the submission of the performance assessment report.	160
29.1	Environmental Awareness Plan.....	160
29.2	Manner in which the applicant intends to inform employees of any environmental risk	160
29.3	Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.....	161
30.	Specific information required by the Competent Authority	162
31.	Recommendations	162
32.	UNDERTAKING.....	162
	Summary	7
2.	Project Background	30
3.	Purpose and Scope of the Impact Assessment Process.....	31
4.	Contact Person and correspondence address.	32
4.1	Details of the Environmental Assessment Practitioner (EAP)	32
4.1.1	Summary of the EAP's past experience	34
4.1.2	Full Particulars of Applicant	34
5.	Project Location	35
5.1	Description of the Property	35
5.2	Adjacent Land Tenure and Use.....	36
5.3	Surface Infrastructure and Servitudes	36
5.4	Zoning	39
6.	Locality map.....	39
6.1	Nearby Mines.....	43
7.	Description of the scope of the proposed overall activity.....	44

8.	Listed and specified activities	45
8.1	Description of the activities to be undertaken	47
8.1.1	Phase 1: Non-invasive prospecting	47
8.1.2	Phase 2: Invasive prospecting	48
8.1.2.1	AUXILLARY ACTIVITIES INCLUDES:	55
8.1.3	Phase 3: Analytical assessment of prospecting data	59
9.	Policy and Legislative Context.....	60
10.	Need and desirability of the proposed activities.	53
11.	Motivation for the overall preferred site, activities, and technology alternative	59
11.1	Preferred site	59
11.2	Activities.....	59
11.3	Technology	59
12.	Description of the process followed to reach the proposed preferred site.....	60
12.1	The property on which or location where it is proposed to undertake the activity	60
12.2	The type of activity to be undertaken.....	60
12.3	The design and layout of the activity	60
12.4	The technology to be used in the activity.....	62
12.5	The operational aspects of the activity.....	62
12.6	The option of not implementing the activity	62
13.	Details of the Public Participation Process Followed.....	63
13.1	Newspaper advertisement	64
13.2	Written notification	66
13.3	Notification to and consultation with landowners and/or lawful occupiers.....	66
13.4	Site notice placement	66
13.5	Consultation and correspondence with I&AP's and stakeholders	66
13.6	Next phases of the public participation process	67
13.7	Summary of issues raised by IAPs.....	75

14. Environmental attributes associated with the development footprint (Baseline Environment)	78
14.1 Geology.....	79
14.1.1 Regional Geology	79
14.1.2 Local Geology	81
14.2 Topography.....	85
14.3 Climate	88
14.4 Soils, Land Use and Capability.....	90
14.5 Terrestrial Biodiversity.....	93
14.5.1 Protected tree species.....	98
14.5.2 Protected areas.....	101
14.6 Fauna.....	102
14.6.1 Mammals.....	102
14.6.2 Amphibians.....	105
14.6.3 Avifauna	105
14.6.4 Phylum chordate.....	105
14.6.5 Reptilia	105
14.7 Surface Water and Aquatic Ecosystems.....	79
14.8 Groundwater	83
14.9 Air Quality	84
14.10 Noise.....	84
14.11 Visual Aesthetics	84
14.12 Heritage and cultural resources.....	84
14.12 Socio Economic Characteristics.....	90
14.13.1 Description of the current land uses.....	93
15. Impacts and risks identified	95
15.1 Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks	97

15.1.1	Significance Level.....	99
15.1.1.1	Assessment of potential impacts and risks	102
15.1.1.2	Positive and negative impacts that the proposed activity alternatives will have on the environment and the community that may be affected.....	102
15.1.1.3	Possible mitigation measures that could be applied and the level of residual risk. 102	
15.1.1.5	Statement motivating the preferred site.....	102
16.	Full Description of the Process Undertaken to Identify, Assess and Rank the Impacts and Risks the Activity will impose on the Preferred Site through the Life of the Activity	103
16.1	Assessment of each identified potentially significant impact pre and post mitigation.	104
17.	Environmental impact statement	113
17.1	Summary of the key findings of the environmental impact assessment	113
17.1.1	Key positive impacts	113
17.1.2	Key negative impacts	113
18.	Final Site Map.....	115
18.1	Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives	116
18.2	Proposed impact management objectives and the impact management outcomes for inclusion in the EMPr.....	116
18.3	Aspects for inclusion as conditions of Authorisation.....	118
18.4	Description of any assumptions, uncertainties, and gaps in knowledge	120
18.4.1	Assumptions.....	120
18.4.2	Uncertainties and gaps in knowledge	120
18.5	Reasoned opinion as to whether the proposed activity should or should not be authorized	120
18.5.2	Conditions that must be included in the authorization.	121
18.6	Period for which the Environmental Authorization is required.	121
19.	Financial Provision.....	121

19.1	Explain how the aforesaid amount was derived.	122
19.2	Confirm that this amount can be provided for from operating expenditure.	122
19.3	Undertaking	122
20.	Specific Information required by the competent Authority	123
20.1	Compliance with the provisions of sections 24(4) (a) and (b) read with section 24.....	123
20.1.1	Impact on the socio-economic conditions of any directly affected person	123
20.1.2	Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act	123
20.1.3	Other matters required in terms of sections 24(4) (a) and (b) of the Act.....	123
21.	Details of EAP	125
22.	Description of the Aspects of the Activity	125
23.	Composite Map	127
24.	Description of impact management objectives including management statements .	127
24.1	Determination of closure objectives.....	127
24.1.1	Process to manage environmental impacts.	129
24.1.2	Volumes and rate of water use required for the operation	129
24.2	Has a water use license has been applied for?	129
24.3	Impacts to be Mitigated, Management Actions, Outcomes and Standards to be Achieved.....	130
25.	Financial Provision.....	149
25.1	Description of the closure objectives and extent to which they align with the baseline characterization.	150
25.1.1	Geology	150
25.1.2	Topography	150
25.1.3	Soils and land capability	150
25.1.4	Surface water and aquatic ecosystems	150
25.1.5	Groundwater.....	150
25.1.6	Flora and Fauna.....	150

26.	Confirm specifically that the environmental objectives in relation to closure have been consulted with landowner and interested and affected parties.....	151
26.1	Provide a rehabilitation plan that describes and shows the scale and aerial extent of the main mining activities, including the anticipated mining area at the time of closure .	151
26.2	Explain why it can be confirmed that the rehabilitation plan is compatible with the closure objectives	151
26.3	Quantum of the financial provision required to manage and rehabilitate the environment.....	152
26.4	Confirm that the financial provision will be provided as determined.....	154
27.	Mechanisms for monitoring compliance with and performance assessment against the environmental management programme.....	155
28.	Indicate the frequency of the submission of the performance assessment report.	160
28.1	Environmental Awareness Plan.....	160
28.2	Manner in which the applicant intends to inform employees of any environmental risk	160
28.3	Manner in which risks will be dealt with in order to avoid pollution or the degradation of the environment.....	161
29.	Specific information required by the Competent Authority	162
30.	Recommendations	162
31.	UNDERTAKING.....	162

Tables

Table 1:Details of the Public Participation Process (PPP) Officer	Error! Bookmark not defined.
Table 2:Details of the EAP that prepared the report.	32
Table 3Details of the EAPs who reviewed the report.	32
Table 4: Applicant Contact Details	34
Table 5: Project Location details.	35
Table 6: List of activities planned associated with the mining operation.	Error! Bookmark not defined.
Table 7: Proposed prospecting phases and time frames	51
Table 8: Proposed drilling Programme	54
Table 7: Policies and legislation	61
Table 8: Need and desirability considerations.....	55
Table 9: Summary of the potential impacts identified.....	95
Table 10: Variables with each category score.....	100
Table 11: Impact assessment	98
Table 12: Summary of Baseline Studies	111
Table 13:Financial Provision.....	121
Table 14: Closure objectives per environmental aspects.	128
Table 15: Environmental Management Programme.	131
Table 16:Financial Provision.....	149
Table 17: Financial provision calculation.....	153
Table 18: Monitoring programme.....	156

Figures

Figure 1: Typical example of gravel roads found onsite.....	36
Figure 2: Typical example of infrastructures observed onsite.	38
Figure 3: Locality Map	40
Figure 4: Regulation 2(2) Plan	41
Figure 5: Adjacent Map	42
Figure 6: Location of Buffalo Coal Dundee from PR Area	43
Figure 7: A proposed borehole map.....	44
Figure 8: Typical example of layout plan of a drilling site.....	50
Figure 9: A typical example of a drilling site.....	50

Figure 10: Access Road from R52 to the proposed project site	55
Figure 11: An image showing a typical example of mobile toilets.....	56
Figure 12: Typical example of a gazebo/mobile tent.....	56
Figure 13: Example of a dangerous goods storage/ container.....	57
Figure 14: Example of temporary fence	58
Figure 15: Example of a water storage tank.	58
Figure 16: Proof of newspaper publication.....	65
Figure 17: Title deed of the proposed project.	72
Figure 18: Plugging of site notices.	74
Figure 19: South Africa's Coalfields	80
Figure 20: Geology map of the project area.	83
Figure 21: General Stratigraphy of the Klip River Coalfield.....	84
Figure 22: Topology map of the project area.	85
Figure 23: Overview of the proposed project area.	87
Figure 24: Temperature map of the proposed area.....	88
Figure 25: Depicts mean annual rainfall of the proposed area	89
Figure 26: Soil type map of the proposed project area.....	91
Figure 27: Typical example of soil type of the project area.....	91
Figure 28: Agricultural theme sensitivity of the application area.....	92
Figure 29: Terrestrial biodiversity theme sensitivity.....	94
Figure 30: Biodiversity map of the project area.	95
Figure 31: Biome type of the project area.....	97
Figure 32: Typical example of <i>Kniphofia Galpinii</i> adapted from internet.	98
Figure 33: Plant species theme sensitivity of the application area.....	99
Figure 34: Floral species observed onsite.....	100
Figure 35: Hazeldene and Ostend DFFE Protected Environment 5km buffer.....	101
Figure 36: Mammal species theme sensitivity of the application area.	103
Figure 37: Domestic animals observed onsite	104
Figure 38: Quaternary catchment area map.	79
Figure 39 waterbodies observed onsite.	80
Figure 40 Aquatic biodiversity theme sensitivity.	81
Figure 41: Biodiversity map	82
Figure 42: Borehole observed onsite during site assessment.....	83
Figure 43: Graves observed on site.....	86
Figure 44: Archaeological and cultural heritage theme sensitivity of the application area.....	87
Figure 45: Paleontology theme sensitivity of the application area.	89
Figure 46: Land use and landcover map of the proposed project area.....	94
Figure 47: Proposed borehole map of the proposed project area.	115

Figure 48: Handout to be provided to all personnel onsite 161

Appendices

Appendix 1: DMRE Letters..... 165
Appendix 2: Project maps 169
Appendix 3: Background Information Document 183
Appendix 4: Financial Provision 190
Appendix 5: attendance register 191
Appendix 6: Screening Report..... 193

List of Abbreviations

BAR	Basic Assessment Report
BID	Background Information Document
CBA	Critical Biodiversity Area
CSAMT	Controlled Source Audio Magnetotellurics
DEA	Department of Environmental Affairs
DM	District Municipality
DMRE	Department of Mineral Resources and Energy
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAPASA	Environmental Assessment Practitioners Association of South Africa
EAP	Environmental Assessment Practitioner
EMPR	Environmental Management Programme Report
ESA	Ecological Support Areas
GDP	Gross Domestic Product
GNR	Government Notice
HA	Hectare
IAP	Interested and Affected Party
IDP	Integrated Development Plan
IEM	Integrated Environmental Management
IWULA	Integrated Water Use License Application
IWWMP	Integrated Water And Waste Management Plan
KPI	Key Performance Indicator
LM	Local Municipality
MAMSL	Meter Above Mean Sea Level
MBGL	Meter Below Ground Level
MHSA	Mine Health and Safety Act, Act 29 of 1996
MPRDA	Minerals And Petroleum Resources Development Act, 1998 (Act No. 28 Of 2002)
MT	Million Tons
NEMA	National Environmental Management Act, 1998 (Act No.107 Of 1998)
NEM:BA	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 Of 2004)

NFEPA	National Freshwater Ecosystem Priority Areas
NHRA	National Heritage Resources Act, Act (NHRA), 1999 (Act No. 25 of 1999)
NEM: PAA	National Environmental Management: Protected Areas Act (Act No. 57 of 2003)
NWA	National Water Act, 1998 (Act No. 36 Of 1998)
PPP	Public Participation Processes
PWP	Prospecting Work Program
PCLU	Post closure land use
RC	Reverse Cycle
RE	Remaining Extent
RRC	Report On The Results Of Consultation

SAHRA	South African Heritage Resource Agency
SANBI	South African National Biodiversity Institute
SAMREC	South African Mineral Resource Committee
SAPAD	South African Protected Areas Database
SLP	Social and Labour Plan
SMME	Small, Medium And Micro-Sized Enterprises
SP	Significant Points
WMA	Water Management Area
WUL	Water Use License
WULA	Water Use License Application

2. Project Background

Big Sky (Pty) Ltd applied for a prospecting right with the Department of Mineral Resources and Energy (DMRE) to search for coal on portions 1, 6, 11 and 13 of the farm Hazeldene 12649 GT and Ostend 10643 GT, all of which are located in the Kwa-Zulu Natal province's Magisterial District of Umzinyathi. A gravel road going to R68 Provincial Road connects to the intended location.

The prospecting right application has been accepted by the DMRE. The project requires a Prospecting Right in terms of the Mineral and Petroleum Resources Development Act (MPRDA), 2002 (Act 28 of 2002) and Environmental Authorization (EA) for triggering activities that fall under the Listing Notices of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA), as amended, from the Department of Mineral Resources and Energy (DMRE), KwaZulu Natal Province. An integrated application for a Prospecting Right and associated Environmental Authorization will be followed with the DMRE KwaZulu Natal identified as the Competent Authority. A Basic Assessment Process is required, as stipulated in GN 517 EIA Regulation 19 (as amended), in support of the application.

Big Sky (Pty) Ltd appointed Singo Consulting (Pty) Ltd as independent environmental consultant to conduct the Prospecting Right and associated Environmental Authorization Application for the proposed project. The DMRE is responsible to assess the information provided and in writing:

- (a) grant an environmental authorization in respect of all or part of the activities applied for; or
- (b) refuse environmental authorization.

3. Purpose and Scope of the Impact Assessment Process

Before a project begins, environmental impact assessment is performed to evaluate its possible effects, including environmental, social, and economic factors. Environmental Impact Assessments' primary goals are to:

- ❖ Recognize the implications that the proposed development(s) will have on the environment.
- ❖ Identify strategies for enhancing the development's effects. These might include techniques for reducing adverse effects and maximizing its positive effects.
- ❖ Share this information with decision-makers and I&APs.

The ultimate goal of an environmental assessment is to mitigate serious environmental harm. The proposed prospecting operation's components and effects on the social and natural environment will be the main topics of the impact assessment. The proposed project will aim to maximize benefits to people while minimizing harm to the environment, according to the findings of the impact assessment, which will be used to inform the design, development, implementation, monitoring, and evaluation of an environmental management programme report. The 2014 EIA Regulations, specifically Regulation 19 of those regulations, govern how the Basic Assessment Process is carried out. The Final Basic Assessment Report (BAR) and Environmental Management Programme (EMPr), which must have undergone a public participation process of at least 30 days, must be submitted within 90 calendar days after the application has been accepted by the Competent Authority, in accordance with the regulated timeframes. The responsible authority must grant or deny environmental authorization within 107 calendar days of receiving the Final Basic Assessment and EMPr.

3.1 Basic Assessment Process

The 2014 EIA Regulations, specifically Regulation 19 of those regulations, govern how the Basic Assessment Process is carried out. The Final Basic Assessment Report (BAR) and Environmental Management Programme (EMPr), which must have undergone a public participation process of at least 30 days, must be submitted within 90 calendar days after the application has been accepted by the Competent Authority, in accordance with the regulated timeframes. The responsible authority must grant or deny environmental authorization within 107 calendar days of receiving the Final Basic Assessment and EMPr.

4. Contact Person and correspondence address.

Big Sky (Pty) Ltd appointed Singo Consulting (Pty) Ltd as independent environmental consultants to facilitate the Integrated Environmental Application Process for the proposed project.

4.1 Details of the Environmental Assessment Practitioner (EAP)

Table 1:Details of the EAP that prepared the report.

Name of the Practitioner	Ms Thilivhali Ndou
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Tel No	013 692 0041
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Table 2Details of the EAPs who reviewed the report.

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Name of the Practitioner	Dr NK Singo
Designation	Principal EAP
Tel No	+27 78 2727 839
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Fax No	086 514 4103
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a) Details of the Principal EAP



DR NDINANNYI KENNETH SINGO

MANAGING DIRECTOR

QUALIFICATIONS

- Ph.D. Geology, Applied Environmental Mineralogy and Geochemistry (UJ)
- MSc Environmental Management (University of South Africa (UNISA))
- BSc (Hons) in Mining and Environmental Geology (UNIVEN).

AFFILIATIONS

- South African Council for Natural Scientific Professions (SACNASP: Earth Science)
- Geological Society of South Africa (GSSA) [Geologist and Hydrogeologist]
- Land Rehabilitation Society of Southern Africa (LaRSSA)
- South African Affiliates of the International Association for Impact Assessment (IAIAsa)
- WESSA (People Caring for the Earth)
- Environmental Assessment Practitioners Association of South Africa (EAPASA)

EXPERIENCE

Dr. Singo is a Principal Consultant (Earth Science), and REAP (EAPASA) in the Mining, Agricultural and Construction sector and currently works for Singo Consulting, an advisory firm based in eMalahleni. He has over 11 years' experience in diverse areas of natural resources including Geology, Geochemistry and Environmental Geochemistry. He is a coal expert with extensive experience of the Waterberg, Soutpansberg, Witbank, Highveld, and Springbok flats, as well as the Tete (Moatize) coalfield in Mozambique.

Kenneth holds an MSc in Environmental Geochemistry (University of South Africa (UNISA)), BSc (Hons) in Mining and Environmental Geology (the University of Venda), and Ph.D. (Geology, Applied Environmental Mineralogy and Geochemistry) at the University of Johannesburg. Dr. Singo has knowledge of Mine Water and Mine Environmental Management (acid mine drainage, heavy metal assessments and tailings management) in various commodities including coal, gold, magnesite and base metals (Cu, Pb, Zn). He has extensive knowledge of defunct mining waste and waste water impact assessments in communities residing in the vicinity of those mines. This knowledge was gained through MSc. Kenneth has sound knowledge of risk assessment, both in terms of human health and the environment. He is experienced in the appraisal of potential constraints, as well as devising means of mitigation through remedial strategy development, feasibility and validation.

During his PhD studies, Dr. Singo has learned how to operate within contaminated lands. His PhD largely focused on disused mines (gold, copper and magnesite) ranging from Phase I and Phase II investigations to development of remedial strategies (i.e. Phase III). His PhD further equipped him to intensively understand the waste classification, profiling and understanding of the implications associated with the management of waste, landfill disposal profiling and development of beneficiation strategies.

4.1.1 Summary of the EAP's past experience

In the year 2008, Singo Consulting (Pty) Ltd was established as an Independent Consulting Company focused to create opportunities within the Mining and Environmental Industry. With time, Singo Consulting (Pty) Ltd has diversified its services, it provides high value Geological, Hydrological, Environmental, Cleaning and Rehabilitation specialized services to clients across a range of industries that are primarily natural resource based. The company aims to be a consulting firm that communicates sound environmental services solutions. Singo Consulting (Pty) Ltd takes pride in the fact that it holds no equity in any project and is owned by the staff, enabling it to offer clients objective support on crucial issues.

4.1.2 Full Particulars of Applicant

The Applicant's contact details as well as the relevant contact person are contained in Table 4 below.

Table 3: Applicant Contact Details

Item	Contact Details
Company Name	Big Sky (Pty) Ltd
Tel no.	+27 13 692 4378
Cell no:	+27 79 494 0068
Contact Person	Mr. Sonwabo Sellwa Debedu
E-mail Address	sonwabo@tornowize.co.za
Physical Address	654, Kenilworth Street, Kyalamiestates, Kyalami, Gauteng, 1684

5. Project Location

The proposed prospecting right application area is on portions 1, 6, 11 and 13 of the farm. Hazeldene 12649 GT and farm Ostend 10643 GT situated in Magisterial District of Umzinyathi in Kwa-Zulu Natal Province. This proposed prospecting Area, as seen in Figure 2 and Figure 3, is situated approximately 10.68 km Southeast of Hlathi Ngudulwane and 18.74 km from Dundee. It is also 20 km away from Endumeni Local municipality. The proposed project area can be accessed by gravel roads leading to R68 Provincial Road.

5.1 Description of the Property

The prospecting right application has been submitted to prospect for Coal on portions 1, 6, 11 and 13 of the farm Hazeldene 12649 GT and farm Ostend 10643 GT. The application area is currently utilized for residential purpose and livestock farming. Refer to Table 5 below for the project location details.

Table 4: Project Location details.

Farm Name:	portions 1, 6, 11 and 13 of the farm. Hazeldene 12649 GT and farm Ostend 10643 GT
Application area (Ha)	1 476.440Ha
Magisterial district:	Umzinyathi
Distance and direction from nearest town	situated approximately 10.68 km Southeast of Hlathi Ngudulwane and 18.74 km from Dundee. It is also 20 km away from Endumeni Local municipality
21-digit Surveyor General Code for each farm portion	NOGT00000001264900001 NOGT00000001264900006 NOGT00000001264900011 NOGT00000001264900013 NOGT00000001064300000

5.2 Adjacent Land Tenure and Use

The neighbouring farms are being used for livestock grazing, cultivation, and residential areas.

5.3 Surface Infrastructure and Servitudes

The application area is mostly used for livestock activities and the infrastructures found onsite include gravel roads, fences, gates, houses, water bodies, borehole and power lines. Figure 1 and Figure 2 shows typical Examples of infrastructures identified onsite.



Figure 1: Typical example of gravel roads found onsite.



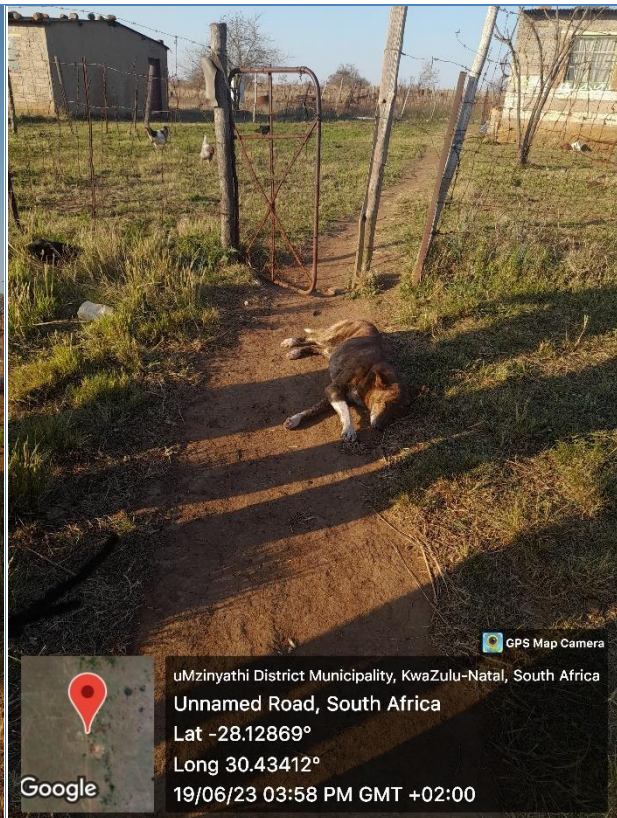
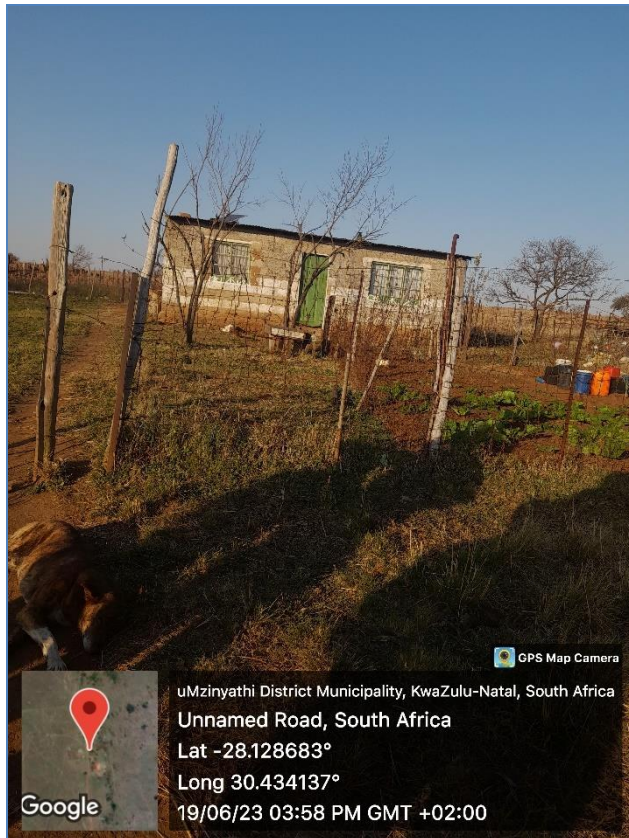


Figure 2: Typical example of infrastructures observed onsite.

5.4 Zoning

The proposed prospecting right application area is zoned for agriculture.

6. Locality map

Please refer to the locality map in Figure 3 below. This proposed prospecting Area, as seen in Figure 4 and Figure 4, is situated approximately 10.68 km Southeast of Hlathi Ngudulwane and 18.74 km from Dundee. It is also 20 km away from Endumeni Local municipality. The Regulation 2(2) plan developed in terms of the Minerals and Petroleum Resources Development Regulations is included in Figure 4 below. The plan indicates the prospecting right area in relation to the farm boundaries.

The coalfields within the Endumeni Municipality, which are part of the Klip River coalfield, are known for their abundant reserves of high-quality bituminous coal. This coal is widely used for electricity generation and industrial processes, including steel production. This statement is substantiated by the presence of operational coal mines located approximately 17.39 km from the project site, including Aviemore mine, Buffalo Coal, Slater Coal (PTY) Ltd, and C Potco CC.

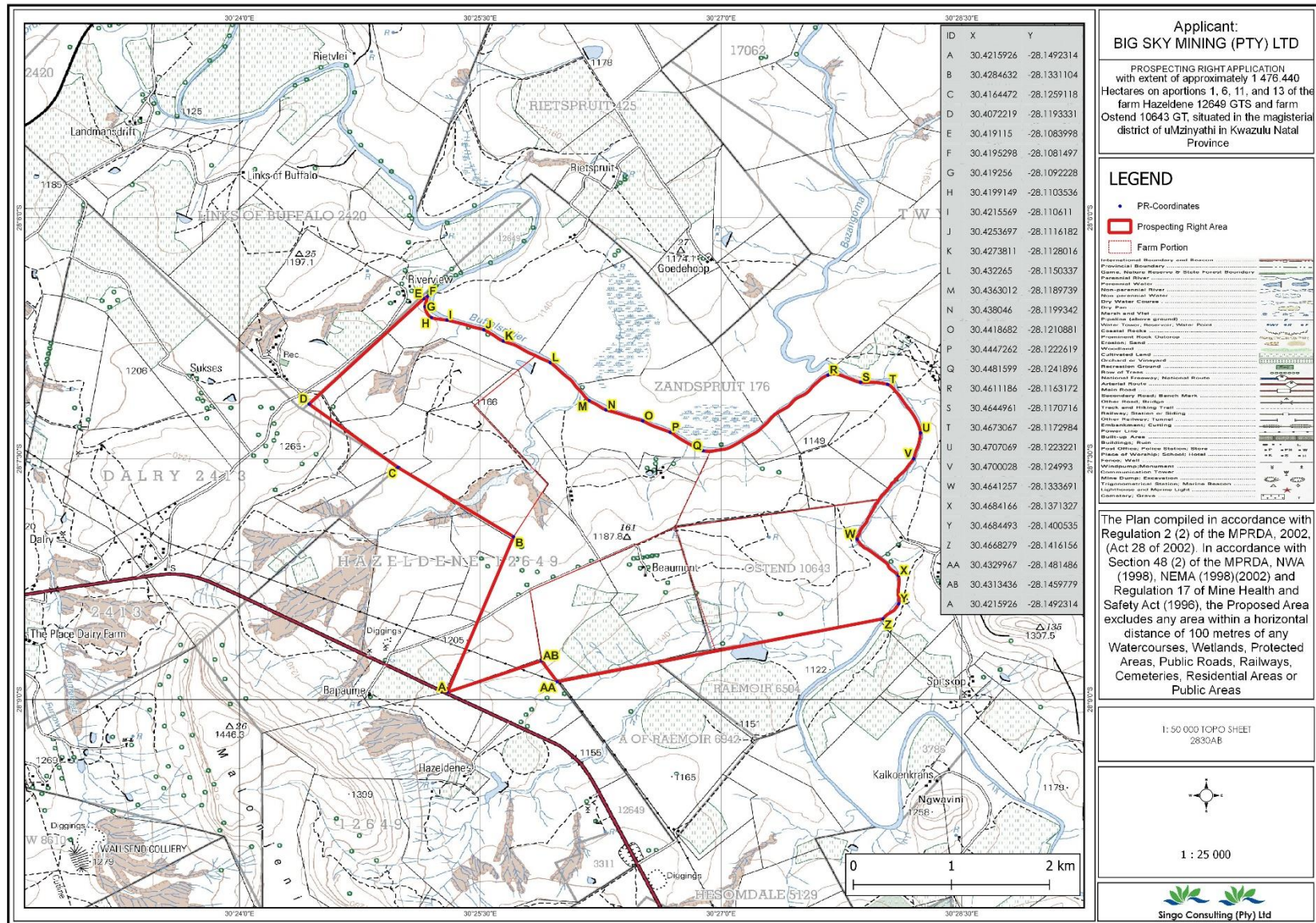


Figure 4: Regulation 2(2) Plan

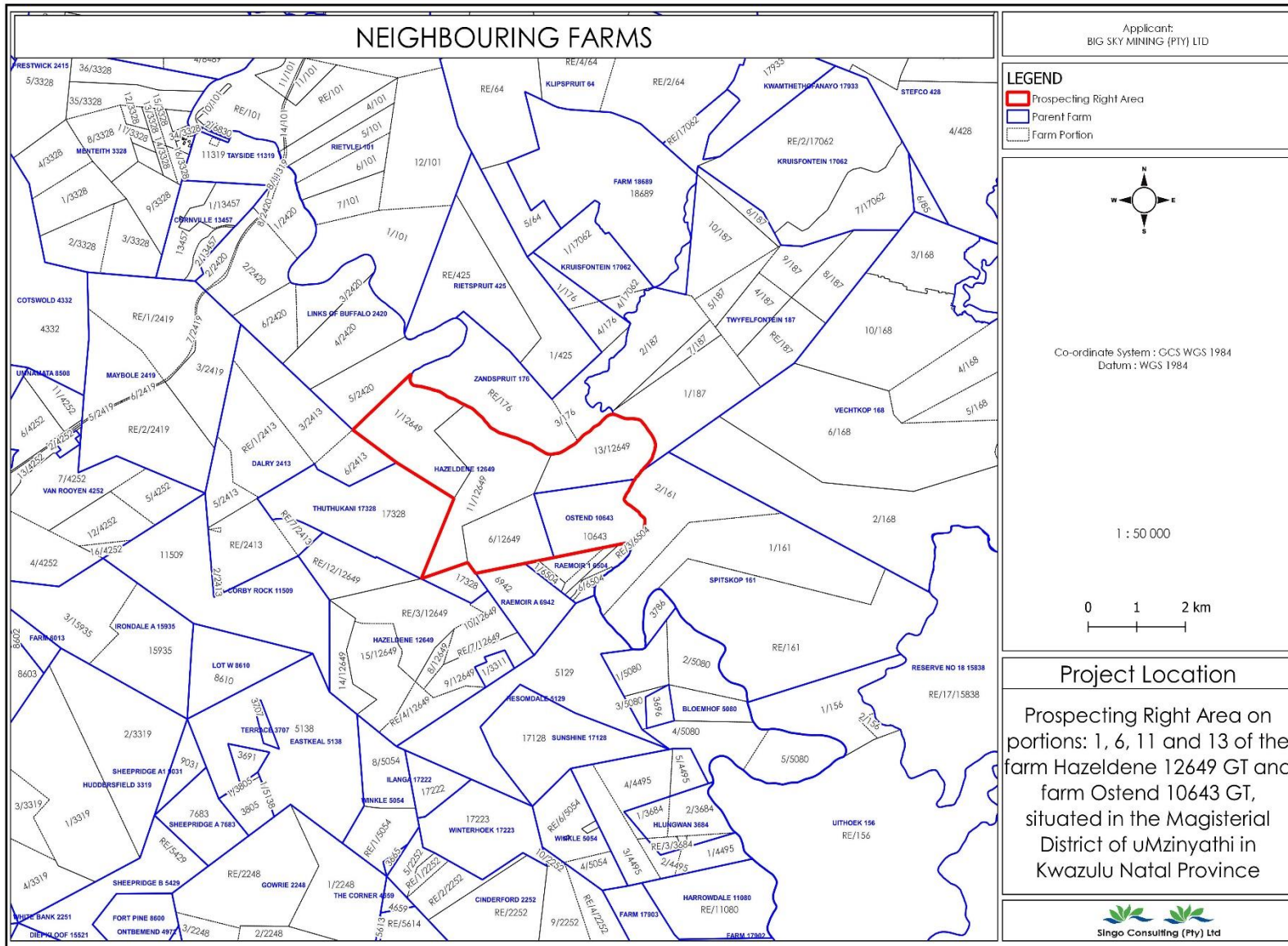


Figure 5: Adjacent Map

6.1 Nearby Mines

Buffalo Coal Dundee (Figure 9) located 19.36 km southwest from the project area in Dundee, South Africa. The company's main focus is on the region's substantial coal resources. Magdalena, one of their primary mining sites, has an estimated coal reserve of 43.87 million tonnes of bituminous coal. This resource represents a considerable reserve that Buffalo Coal intends to mine and utilise. Furthermore, Buffalo Coal's Aviemore Mine has a large anthracite coal reserve of 28.25 million tonnes. With access to these vast coal deposits, Buffalo Coal is well-positioned to service both local and international markets as a dependable provider of high-quality anthracite and bituminous coal products. Balgray has a measured and indicated reserve of 3.23 million tonnes, replacing Aviemore East. Buffalo Coal sells anthracite and bituminous coal in both local and international markets.

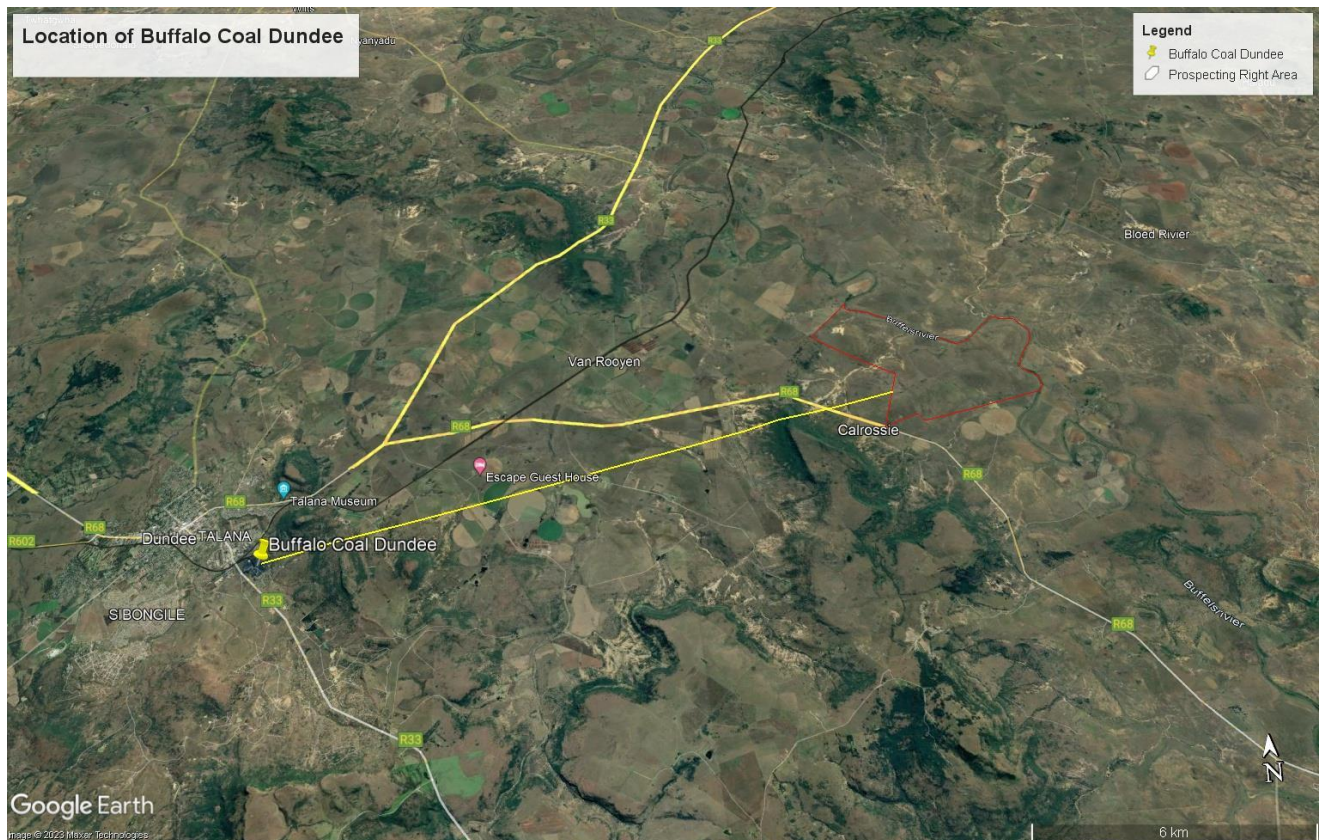


Figure 6: Location of Buffalo Coal Dundee from PR Area

7. Description of the scope of the proposed overall activity

The proposed prospecting activities would use both intrusive (core drilling) and non-invasive (desktop study) techniques to determine the quantity and quality of the coal. For reserve estimation and mine planning, locations identified using the non-intrusive methods outlined below will be the focus of core drilling. Figure 7 below provides a projected borehole map that shows the number of holes and their locations. For the planned project, a maximum of 15 boreholes will be drilled. The prospecting activities are anticipated to be carried out over a five-year period, with the possibility of renewal based on the outcomes and studies conducted.

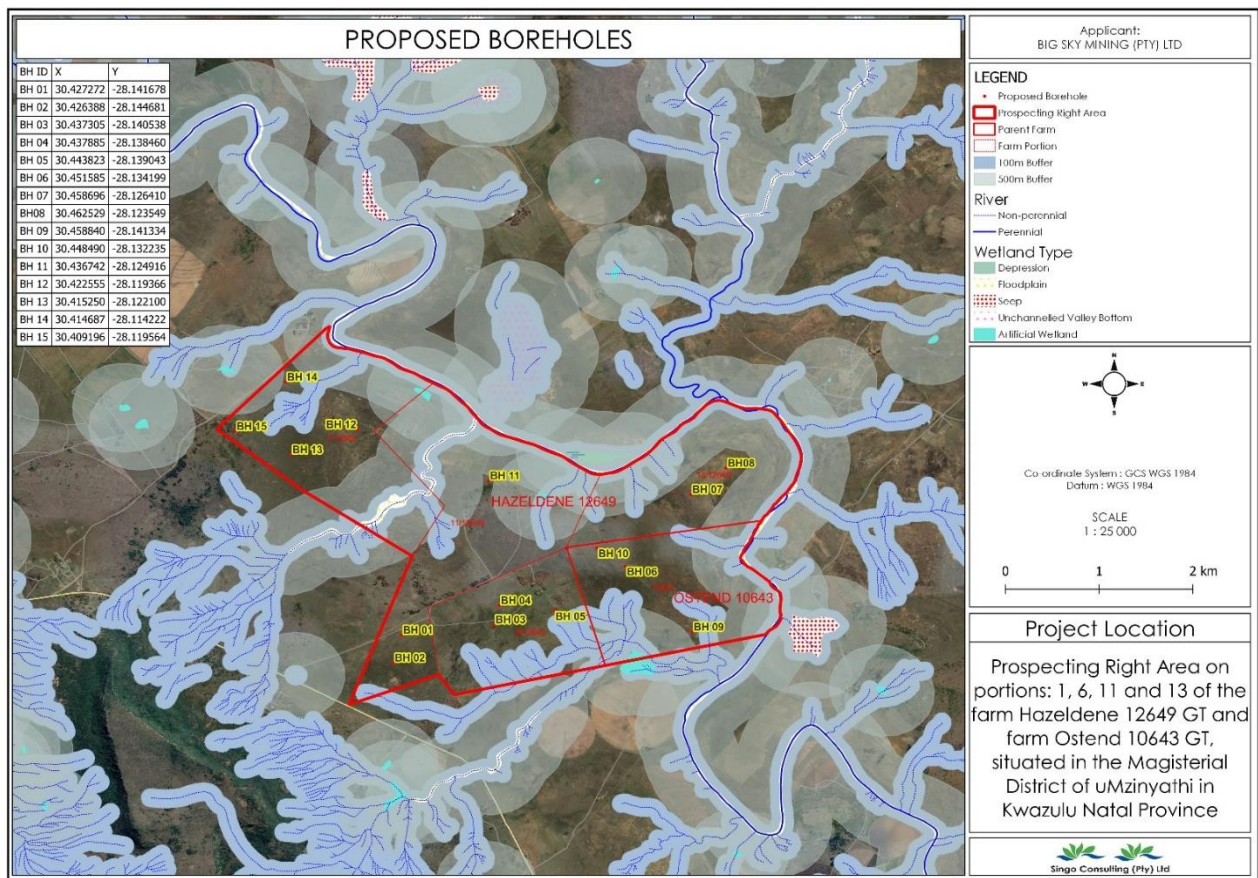


Figure 7: A proposed borehole map

8. Listed and specified activities

Please refer to the table below for the specific activities planned (listed of not)

Table 6: List of activities planned associated with the mining operation.

Name of activity E.g., for prospecting (drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc.)	Aerial extent of the activity Ha or m ²	Listed activity Mark with an X where applicable/affected	Applicable listing notice GN 517, 11 June 2021
Prospecting by means of diamond drilling 15 boreholes.	1476.440 ha of the prospecting area (Disturbed area: 0.06 ha per hole x 15 boreholes = 0,9 ha)	X	GN 517, Listing Notice 1, Activity 20
Vegetation clearance for drilling (includes drill site). Invasive prospecting by means of diamond drilling 15 boreholes. The holes will be drilled to an average depth 110 m. The demarcated working area (total area to be disturbed) per site is 30 m x 20 m = 600 m ² (0.06 ha). Then 600 m ² x 15 boreholes =9 000 m ² The total area to be disturbed is 9 000 m ² /10 000 = 0,9 ha	0,9 ha (total disturbed area) of 1476.440 ha (extent of application area)		Not Listed
Mobile office	12.5 m ²		Not Listed
Mobile toilet	6 m ²		Not listed
Drill team and visitor team parking	45 m ²		Not listed
Access road	132.7 m ²		Not listed
Guard room	6.25 m ²		Not listed
Access gate	0.5 m ²		
Geological logging area	29.25 m ²		Not listed
Waste bins and tools	9 m ²		Not Listed
Drill machine	15 m ²		Not listed
Drill rods	25 m ²		Not listed
Clean sump	6 m ²		Not listed
Dirty sump	6 m ²		Not listed

Name of activity E.g., for prospecting (drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route, etc.)	Aerial extent of the activity Ha or m²	Listed activity Mark with an X where applicable/affected	Applicable listing notice GN 517, 11 June 2021
Water tank	7.268 m ²		Not listed

8.1 Description of the activities to be undertaken

The proposed timeframe for non-invasive prospecting activities is expected to be 2 months. The proposed activities are described below.

8.1.1 Phase 1: Non-invasive prospecting

The proposed timeframe for non-invasive prospecting activities is expected to be 2 months. The proposed activities are described below.

Desktop Studies

Spatial Database Compilation

Spatial information will be compiled into a GIS database for access, correlation, and evaluation. The GIS system will be used and maintained for the period of the prospecting right exploration program and regularly updated as new information is generated by the exploration program.

Remote sensing

As part of the initial review, public domain aerial photos will be acquired, and a detailed geological and structural interpretation will be done on these to aid in identifying target areas that are not readily evident on the ground and to provide an independent interpretation of the geology of the area. Satellite imagery will also be acquired to provide a more regional viewpoint of the area of interest. As before a detailed geological and structural interpretation will be done on these images to provide a more regional viewpoint on the target areas. Satellite imagery is used to complement the aerial photos interpretations as the combination of multi-spectral bands can be used to highlight certain lithology's, vegetation types, soil types, alteration minerals, etc.

Geophysical survey

Both airborne and ground geophysical surveys may be undertaken for the prospecting right area. This is dependent on the results of the desktop study. These surveys will be used in conjunction with the data available to the public from the Council of Geoscience. A small airborne magnetic/radiometric survey may be carried out over the prospect and surrounding areas to map the structural geology of the area. Follow up ground geophysical surveys will be carried out on coincident targets from the compilation of geological and geophysical data.

8.1.2 Phase 2: Invasive prospecting

The proposed timeframe associated with invasive prospecting can only be determined by the results of geophysical and geological work carried out in Phase 1 of the prospecting programme. Invasive prospecting activities will consist of:

- Establishment of drill site and temporary contractors' yard. This will involve:
 - ❖ Clearing of vegetation for sumps and the drill entrance point
 - ❖ Earth sumps for water recycling
 - ❖ Laydown area for drill rods, fuel, and ablution facilities (chemical toilets)
 - ❖ Site office
 - ❖ Parking area
- Core drilling. (The precise number of boreholes needed cannot be determined until the above-described non-invasive prospecting is finished; nevertheless, preliminary placements have been suggested in Figure 6). Diamond core drilling will be one of the drilling techniques. The borehole depths should range from 100 to 150 meters. The core will be logged, cut, and sampled. The samples will be crushed and milled and then analyzed at an accredited laboratory to determine quality.
- Rehabilitation of boreholes. Casing will be removed from the borehole on completion thereof and the borehole sealed in accordance with "Standard Borehole Sealing Procedure" i.e.: each borehole certificated in terms of this procedure. Sealing will include:
 - Removing casing- if casing is to be removed, a specialist borehole contractor will advise on appropriate techniques and associated risks.
 - Backfilling- boreholes should be backfilled with clean uncontaminated material. Backfilled hole should be similar to surrounding strata.
 - Seal top of borehole- backfilled borehole should be compiled with an impermeable plug to prevent entry of potentially contaminated surface run-off for other liquids.
 - Record details- the depths and position of each layer of backfilling and sealing material.
- **Drill rig, machinery, and vehicle movement:** Existing farm roads and tracks will be utilized as far as possible. However, where a road does not exist temporary access roads will be established to access a drill site after consultation with the landowner. The type of access envisaged is limited to removal of large rocks and disturbance of vegetation. Such access roads may also require 'light'

grading to allow the movement of surface mobile vehicles.

- **Water Management:** Existing lawful users, an irrigation board, or a water services provider will supply process and drinkable water. Around the drilling rigs, two sumps (supply sump and settling sump) will be erected to collect water used during drilling and settle out suspended solids so that the water can be recycled. On the rig, this water will be used once more. To reduce the quantity of process water seepage, it is advised to line the sumps at the drill sites with plastic.
- **Ablution Facilities:** The service provider will install portable chemical restrooms near to the drilling site and maintain them on a regular basis.
- **Domestic Waste Management:** The nearest town will serve as the drilling team's off-site home. On-site lodging will not be offered. There will be designated locations for lunch breaks, and a closed receptacle will be available to collect home waste, which the drilling team will remove and dispose of at an appropriate location.
- **Safety and Security:** Security staff will be employed once equipment has been established on site.
- **Storage and Handling of Dangerous goods:** During drilling activities, there will be no storage area for diesel and oil. The diesel will be trucked onto the site on a daily basis using a diesel bowser. Drip pans should be placed under drill rig for leakages.

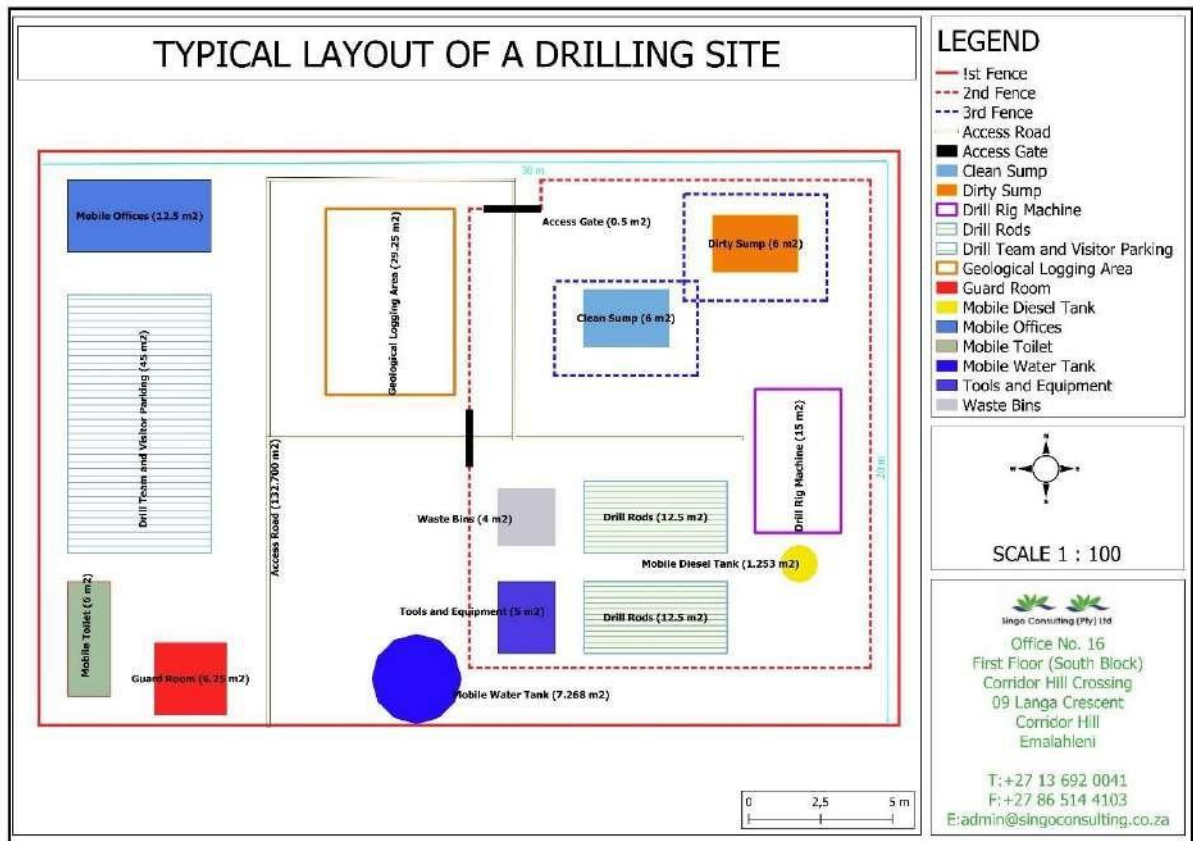


Figure 8: Typical example of layout plan of a drilling site



Figure 9: A typical example of a drilling site.

Table 5: Proposed prospecting phases and time frames

Phase	Activity	Skill(s) required	Timeframe	Outcome	Timeframe for outcome	What technical expert will sign off on the outcome?
Phase 1: Invasive Prospecting						
	Diamond drilling (5 boreholes)	Exploration Geologist	Month 1 (30 days)	Borehole core data coal samples Rock core samples	Month 1	Exploration Geologist
	Sampling	Exploration Geologist		Core analyses Rock core analyses	Month 2 – 3	Laboratory analyst
Phase 1: Non-invasive Prospecting						
	Consultations with landowners	Land Tenure Specialist	Month 1	Legal Access Agreement	Month 1	Land Tenure Specialist
	Data processing and validation	Exploration Geologist	Month 7-8	Stratigraphic correct borehole data Analytical correct borehole data	Month 8 – 10 Month 8 - 10	Exploration Geologist /Database administrator Exploration Geologist /Database administrator
	Lithofacies and Coal quality modelling	Exploration Geologist	Month 10-12	Contour maps Reserve breakdown	Month 10-12	Exploration Geologist /Modeller

	Inspection/Consultation with landowners	Land Tenure Specialist /Drilling contractor	Month 5-6	Rehabilitation clearance certificate	Month 5 - 6	Land Tenure Specialist / Environmental officer
Phase 2: Invasive Prospecting						
	Diamond drilling (5 borehole)	Exploration Geologist	Month 13	Borehole core data Coal core samples Rock core samples Core analyses Rock core analyses	Month 13 Month 13-14	Exploration Geologist Laboratory analyst
	Geophysical survey (Optional)	Geophysicist Exploration Geologist	Month 13-15	Lithology data Structural data	Month 13-14	Geophysicist
	Geohydrological survey (Optional)	Geohydrologist Exploration Geologist	Month 13-14	Borehole water yield Water samples	Month 17-20	Geohydrologist
Phase 2: Non-invasive Prospecting						
	Consultation with landowners	Mining Rights officer	Month 12	Legal Access Agreement	Month 12	Land Tenure Specialist
Phase	Activity	Skill(s) required	Timeframe	Outcome	Timeframe for outcome	What technical expert will sign off on the outcome?
	Data processing and validation	Exploration Geologist	Month 17-18	Stratigraphic correct borehole data Analytical correct	Month 20 – 22	Exploration Geologist /Database administrator

				borehole data	Month 20 - 22	Exploration Geologist /Database administrator
	Lithofacies and coal quality modelling	Exploration Geologist	Month 22-24	Contour maps Reserve breakdown	Month 22-24	Exploration Geologist /Modeler
	Inspection/Consultation with landowners	Mining Rights officer	Month 16-17	Rehabilitation clearance certificate	Month 16 - 17	Land Tenure Specialist / Environmental officer
Phase 3: Invasive Prospecting						
	Diamond drilling (5 borehole)	Exploration Geologist	Month 25	Borehole core data Coal core samples Rock core samples Coal core analyses Rock core analyses	Month 25 Month 25-36	Exploration Geologist Laboratory analyst
	Directional drilling (Optional)	Exploration Geologist	Month 24-30	Lithological data	Month 24-36	Exploration Geologist
	Geophysical survey (Optional)	Geophysicist Exploration Geologist	Month 25-27	Lithology data Structural data	Month 25-36	Geophysicist
	Geohydrological survey (Optional)	Geohydrologist Exploration Geologist	Month 25-26	Borehole water yield Water samples	Month 29-36	Geohydrologist
Phase 3: Non-invasive Prospecting						

	Consultation with landowners	Mining Rights officer	Month 24	Legal agreement	Month 24	Land Tenure Specialist
	Data processing and validation	Exploration Geologist	Month 29-30	Stratigraphic correct borehole data Analytical correct borehole data	Month 32 – 36 Month 32 - 36	Exploration Geologist /Database administrator Exploration Geologist /Database administrator
	Lithofacies and Coal	Exploration Geologist	Month 34-36	Contour maps Reserve breakdown	Month 34-36	Exploration Geologist /Modeler
	Inspection/consultation with landowners	Land Tenure Specialist	Month 28-29	Rehabilitation clearance certificate	Month 28 - 36	Land Tenure Specialist / Environmental officer

Table 6: Proposed drilling Programme

Drilling method	Diamond core drilling
Number of boreholes	15
Depth of boreholes	300 m
Duration of drilling	A borehole takes about 2 days to complete; 15 boreholes will take about 30 days.
Demarcated working area	600 m ² (600 m ² per drilling site based on a 30 m x 20 m grid) which is equals to 0.06 ha per site
Total area to be disturbed	600 m ² (600 m ² x 15 boreholes = 9 000 m ² (0.9 Ha))

8.1.2.1 AUXILLARY ACTIVITIES INCLUDES:

Access Road.

Portion 6, 11, 13 of the farm Hazeldene and farm Ostend of proposed application area can be accessed through a gravel Remoir farm road that connected to the R68 provincial road. Portion 1 of the farm Hazeldene 1246 GT can be accessed through the D471 gravel road that's connect to the R68.

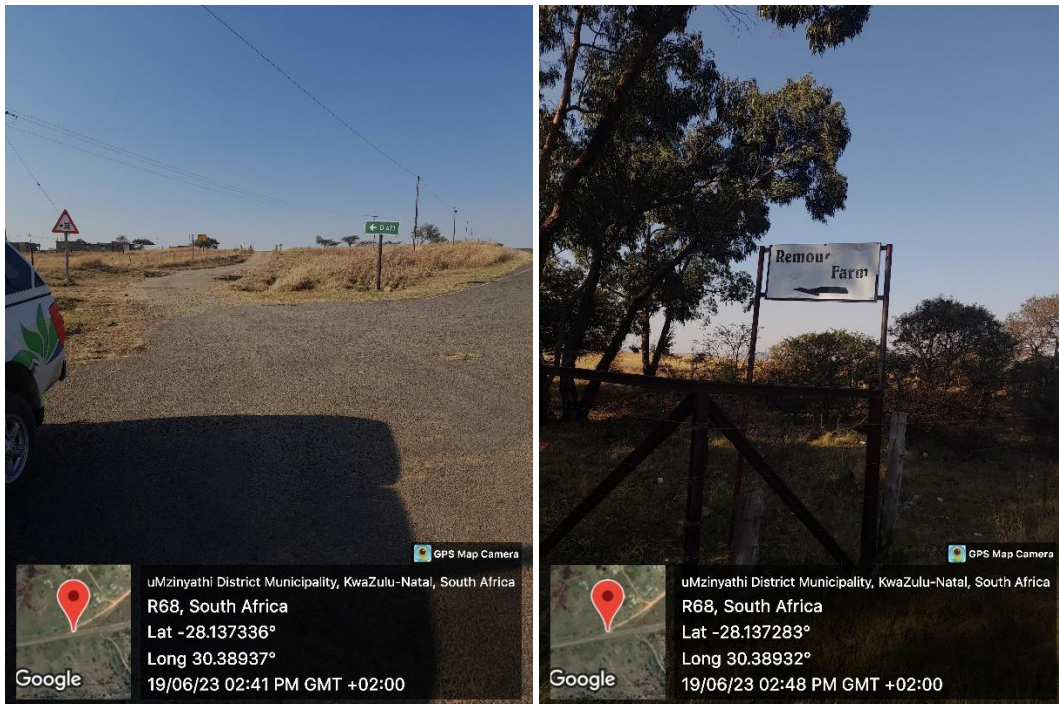


Figure 10: Access Road from R52 to the proposed project site

Ablution facilities.

Due to the nature of prospecting, no permanent ablutions will be implemented on site. On-site ablution facilities will include the installation of drum/tank-type portable toilets (see Figure 8). Since the prospecting activity will be of limited duration, portable toilets are preferred.



Figure 11: An image showing a typical example of mobile toilets.

Temporary Office.

A temporary, shaded site office will be erected at the drill sites. No on-site electricity will be generated by generators. Meals will be provided to staff and workers as no heating and/or cold storage facilities will be available. A shaded eating area will be provided.



Figure 12: Typical example of a gazebo/mobile tent

Accommodation

Staff will be accommodated in nearby villages (not on site) and transported to and from the site daily. Night security staff will be employed once equipment has been established on site.

Blasting

There will be drilling, but no blasting.

Storage of dangerous goods

During drilling, limited quantities of diesel fuel, oil and lubricants will be stored on site. A maximum amount of 60 m³ diesel will be stored in above-ground diesel storage tanks.



Figure 13: Example of a dangerous goods storage/ container

Temporary Fences.

Temporary Fences will be erected on the boundaries of prospecting target areas prior to commencement of works at the target footprint areas to prevent unauthorised entry and animals. Fences are to always remain maintained, and gates are not to be left open at any time. Signs indicating the risks involved in unauthorised entry must be displayed at each entrance.



Figure 14: Example of temporary fence

Water supply

The prospecting activity will involve drilling of boreholes preferred by the applicant. This signifies that no water resource will be used for the purpose of drilling purpose however, water requirements relate to the potable water supply for employees and workers. A temporary 200 L on-site vertical water storage tank (for drinking water and general use by persons) will be provided at the drill site. However, water use license is being applied for in terms of Chapter 4 of the National Water Act, 1998 (Act 36 of 1998). The project is for a coal prospecting right, exploration boreholes will be located 100m from the non-perennial and perennial rivers within and around the project area.

The proposed project will trigger the following sections:

Section 21 (c): Impeding or diverting the flow of water in a watercourse.

Section 21 (i): Altering the bed, banks, course, or characteristics of a watercourse.



Figure 15: Example of a water storage tank.

8.1.3 Phase 3: Analytical assessment of prospecting data

Data will be assessed in a pre-feasibility study to determine resource estimates to commence with prefeasibility and feasibility assessments for the proposed activities.

9. Policy and Legislative Context

This prospecting right application is being sought by Big Sky (Pty) Ltd as an initial application for exploration and any future mining activities over the listed farm portions for the extraction of Coal. The prospecting right application is subject to the following Acts:

- ❖ Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002) (MPRDA).
- ❖ National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA) and the NEMA EIA Regulations of 2014, as amended.

The legislative summary below is specific for the proposed prospecting activities to which this application relates.

Table 7: Policies and legislation

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
<p>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.</p>		<p>E.g., In terms of the National Water Act, a Water Use License has been applied for.</p>
Legislation		
<p>NEMA, No. 107 of 1998 (as amended) Listing Activity 20 of Listing Notice 1 in terms of Regulation 983 of 2014</p>	<p>Prospecting activities</p>	<p>In terms of the NEMA, No. 107 of 1998 (as amended), an application for Environmental Authorization was submitted by the DMRE. DMRE Ref: (KZN 30/5/1/1/2/11406 PR). Big Sky Mining (Pty) Ltd appointed Singo Consulting as an independent EAP to undertake the Basic Assessment Process associated with the Prospecting Right Application. All potential impacts of the proposed prospecting activities have been assessed. The EMPr includes mitigation measure implementation, which will apply throughout prospecting activities.</p>
<p>As per the Constitution of South Africa, specifically, everyone has a right to: an environment that is not harmful to their health or wellbeing; and have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that: prevent pollution and ecological degradation</p>	<p>Prospecting activities</p>	<p>An EMPr for proposed prospecting activities has been drafted to ensure that prospecting activities are conducted in such a manner that significant environmental impacts are avoided. Where significant impacts cannot be avoided, they will be minimized and mitigated to protect the environmental right of South Africans.</p>

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
promote conservation secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.		
MPRDA, No. 28 of 2002 Section 16 (as amended)	Prospecting activities	The applicant submitted a Prospecting Right Application to the DMRE. The conditions and requirements of the prospecting right will apply to the prospecting activities.
NEMA Biodiversity Act, 2004		The EMPr will regulate the applicant's implementation of biodiversity management measures. This is particularly relevant to all species of the Highveld Grassland family and the project area falls under unclassified.
National Water Act (NWA), Act 36 of 1998	N/A	Water use license has been applied for in terms of Chapter 4 of the National Water Act, 1998 (Act 36 of 1998).
National Environmental Management: Waste Act, Act 59 of 2008 (NEMWA) (as amended)	Management measures environmental awareness plan	Waste generation will be minimized by ensuring employees of the drilling contractor are subjected to the appropriate environmental awareness campaign before drilling commences. All waste generated during the drilling activities will be disposed of in a responsible legal manner. Proof of legal disposal will be maintained on site.
National Heritage Resources Act (NHRA), 25 of 1999.	Management measures	Should archaeological artefacts or skeletal material be discovered in the area during development activities, activities will be stopped, and the South African Heritage Resource Agency (SAHRA) will be notified for an investigation and evaluation of the discoveries.
Municipal plans and policies		
Local Municipality Integrated Development Plan (IDP) 2022-2023	N/A	The prospecting and mining of key minerals like Coal is highlighted in the IDP. It also highlights the need to preserve the natural environment in the area by conducting mineral exploration that is minimally invasive to the environment.
Municipality 2014-2034 Spatial Development Framework (SDF)		The applicant acknowledges the need to maximize economic benefit from mining, industrial, business, agricultural and tourism development in the area and promote a climate for economic development in line

Applicable legislation and guidelines used to compile the report	Reference where applied	How does this development comply with and respond to the policy and legislative context
		with the municipal development frameworks.
Standards, guidance and spatial tools		
South African National Biodiversity Institute (SANBI) Biodiversity GIS (bgis.sanbi.org)	Baseline environmental description.	Used during desktop research to identify sensitive environments in the prospecting rights area.
QGIS Desktop: Version 2.18.10.	Baseline environmental description and mapping.	Used during desktop research to map the locality and sensitive environments in the prospecting rights area.

10. Need and desirability of the proposed activities.

With the help of prospecting, South Africa's mineral resources may be used for development in line with national development frameworks and objectives. The activity will take place in the KwaZulu Natal province. Since prospecting is the first step in mining, it doesn't offer many benefits that are immediately apparent. Prospecting comes before mining, yet it is at this point that it is decided whether it is possible to mine the current mineral reserves profitably. Prospecting is given more importance in order to reap the rewards of mining because it is generally known that the mining industry contributes significantly to South Africa's economy and employs a sizable labour force.

Although prospecting efforts don't require a lot of labour, about 10 workers will be engaged to help with routine tasks. The uMzinyathi District's economy will benefit if the necessary services can also be found locally, subject to availability. The project region has the potential for coal. Big Sky (Pty) Ltd expects to start mining operations as soon as the outcomes of the exploration efforts have demonstrated their viability.

The exploratory activity may lead to a mining right application and a social and labour plan (SLP), both of which will support local economic development in the region as a whole. Staff will gain from the SLP's implementation through training (skills development) and scholarship initiatives. Both municipal taxes and the GDP (Gross Domestic Product) GDP could increase as a result of the planned project. Mineral extraction will eventually enable ongoing supply to other sectors of industry that also contribute to GDP and municipal taxes.

Although prospecting is not seen as an activity that significantly and sustainably contributes to an area's economy, it is a precursor to possible mining activities. The activity of mining has numerous social and economic benefits in local, regional, and national context. These include:

- ❖ Skills development
- ❖ Job Creation
- ❖ SMME development
- ❖ Local economic development
- ❖ Contribution to local and national tax income (royalties, companies tax etc.)
- ❖ Contribution to the national gross domestic product

Therefore, prospecting is essential to determining whether it is feasible to look into mining and, in turn, the advantages listed in points 1-6. The phrase "need and desirability" refers to a variety of factors, including the type, scope, and location of proposed development as well as the efficient

use of available property. Although "need and desirability" can be explained in terms of the two components' general meanings, where need primarily refers to time and desirability to place (i.e., is this the right time and is this the right place to locate the type of land-use/activity being proposed?), "need and desirability" are interrelated and the two components can be taken into consideration as a whole in an integrated manner.

Table 8: Need and desirability considerations.

NEED AND DESIRABILITY OF THE PROPOSED PROJECT		
PART I: NEED		
	Questions (Notice 792, NEMA, 2012)	Answers
1.	Is the land use associated with the activity being applied for considered within the timeframe intended by the existing approved SDF agreed to be the relevant environmental authority?	In order to utilise the area's enormous natural resources and build a strong, resilient, and prosperous district, prospecting is a crucial component of the plan. Prospecting is not connected to the land usage.
2.	Should the development, or if applicable, expansion of the town/area concerned in terms of this land use occurs here at this point in time?	Should a mining right be requested and allowed in the future, the integrity of the current environmental management priorities of the region may be jeopardized, necessitating the completion of a comprehensive Environmental Impact Assessment to assess the viability of the mining operations. Should the prospecting results indicate that there are reserves extant that may be mined and a mining right is awarded, the proposed project will improve the socioeconomic circumstances of the local communities involved.
3.	Does the community/area need the activity and the associated land use concerned? This refers to the strategic as well as local level.	The Big Sky (Pty) Ltd prospecting will yield positive impact on the socio-economic conditions especially if it graduates to mining, by creating more jobs and providing developments to the local communities.
4.	Are the necessary services with adequate capacity currently available (at the time of application) or must additional capacity be created to cater for the development?	All infrastructure for services and capacity will be temporary and will be provided for the proposed prospecting/drilling activities. Temporary infrastructure includes i.e Mobile toilets, temporary shaded area (in a form of Gazebo). Drilling mechanisms to be employed will be of diamond core drilling. The road networks are fully intact, and the project will not have a major impact

		on road congestion. Thus, additional capacity does not need to be created for the development.
5.	Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of the services and opportunity cost)?	Due to its limited size and regional significance, the development is not included in the municipality's infrastructure planning. As a result, the proposed project won't have any effects on infrastructure planning because no new services or infrastructure are needed to accommodate it. Mobile structures will be used in the proposed project.
6.	Is the project part of a national programme to address an issue of national concern or importance?	The mining industry not only employs a sizable number of people but also makes a major contribution to the national GDP. The National Development Plan, which aims to end unemployment and poverty, will benefit from the work of this project. An "inclusive rural economy" is highlighted in Chapter 6 of the National Development Plan. This plan's goals include the creation of mining and industrial jobs as well as the stimulation of rural economies through assistance with small- and micro-scale mining.
PART II: DESIRABILITY		
7.	Is the development the best practicable environmental option for this land/site?	The project area lies on unclassified area and the area is covered with grassland. The activities currently present onsite have no significant impact or their impact are minimal to the area. The disturbed areas (drill sites) will be rehabilitated after prospecting activities.
8.	Would the approval of this application compromise the integrity of the existing approved and credible IDP, and SDF as agreed to by the relevant authorities?	The approval of this prospecting application will not compromise the integrity of the existing environmental management priorities of the area provided that sensitive areas are avoided, and the mitigation measures as recommended in this report and in the EMP are implemented.

9.	Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g., as defined in EMFs), and if so, can it be justified in terms of sustainability considerations?	This development will not jeopardize the integrity of the area's current environmental management priorities.
10.	Do location factors favour this land use at this place? (this relates to the contextualization of the proposed land use on this site within its broader context).	Although there is a diabase rock intruding with the prospecting area, the project area's coalfield lithology is made up of sediments of the Dwyka group and Silverton thus providing the ideal geological formation for the presence of the mineral applied for. The current infrastructure suffices for the process of prospecting. The planned drilling activities does not need any new infrastructure.
11.	How will the activity of the land use associated with the activity being applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?	As far as the Basic Assessment on the area of question, there is are known heritage or cultural significance. Should the standings change, the relevant authority will be notified immediately, and information will be included into the BAR & EMPr.
12.	How will the development impact on people's health and well-being? (E.g., In terms of noise, odours, visual character and sense of place, etc.)?	<p>The impacts on well-being, following mitigation, will be as follows:</p> <ul style="list-style-type: none"> • Visual: Medium to low • Dust: Medium to Low • Noise: Medium to Low • Vibrations: Medium to Low <p>Strict adherence to the recommendations & mitigation measures identified will be ensured.</p>

13.	Will the proposed activity or the land use associated with the activity being applied for, result in unacceptable opportunity costs?	Continuous evidence of the economic benefits that mining revenues can have on the economies of the nations from which they are derived can be found in South Africa. The municipal's GDP is significantly impacted by applied commodities.
14.	Will the proposed land use result in unacceptable cumulative impacts?	It has only been determined that the proposed project will have negligible overall effects that can be reduced to a manageable level. The actions listed in the EMP that is attached will be used as a way to prevent any significant long-term cumulative effects of the proposed project on the receiving environment.

11. Motivation for the overall preferred site, activities, and technology alternative

11.1 Preferred site

The proposed application area was selected based on extensive research on the geology of the area. Furthermore, the proposed site was also available for prospecting (i.e., not held by another company).

11.2 Activities

No activity alternatives are considered. Drilling is still the most effective way and an industry norm to complete resource evaluation as required for the Prospecting works programme to be submitted in support of the Prospecting Right Application if the mineral deposit of interest is identified onsite.

11.3 Technology

The use of aerial geological mapping as an initial non-invasive technique to delimit areas for invasive drilling is seen as the most responsible method to reduce needless surface disturbance and reduce environmental impact footprint. Technological alternatives are therefore also not assessed further.

12. Description of the process followed to reach the proposed preferred site

The consideration of alternatives is an integral part of the impact assessment process. In terms of Regulation 50 (d) of the MPRDA Regulations R. 527 under the Mineral and Petroleum Resources Development Act, Act 28 of 2002, an environmental impact assessment report must include inter alia the following:

“(d) A comparative assessment of the identified land use and development alternatives and their potential environmental, social and cultural impacts.”

Finding the best solution to fulfil the proposal's requirement and purpose through the enhancement of the environmental advantages of the planned activity or the reduction or avoidance of potentially major negative consequences is the aim of the evaluation of alternatives. The environmental, social, and economical concerns that must be taken into account when selecting alternatives for the proposed project are covered in the discussion that follows. The main goal of evaluation must be to list the benefits and drawbacks of the identified alternatives and to identify which one is considered technically, financially, and environmentally feasible. The headings below explain the alternatives that were taken into consideration for the planned project.

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

The property has been identified by the Applicant due to its geological significance and potential to produce Coal reserve. Due to the nature and extent of the geology and minerals available in the area it is not possible to identify an alternative property as the geology is directly associated with the applied area. Numerous alternative drill sites, within the application area, are available and dependent on the site conditions. Refer to Section 10.3 below.

12.2 The type of activity to be undertaken

The activity to be undertaken is prospecting. Prospecting is an activity that is defined as formalized process with a systematic approach to identify the presence of a mineral resource and include invasive (drilling) and non-invasive (desktop studies) activities. Alternative activities that can be undertaken include:

❖ Diamond core drilling

The activity to be undertaken is not decided by the EAP but defined by the geology of the area. Prospecting for this project will involve diamond core drilling. No bulk sampling will be conducted during diamond core drilling.

12.3 The design and layout of the activity

The preliminary positions of the proposed prospecting boreholes have been sited, in-line with

an economically acceptable grid (SAMREC), to give a representative sample for the project area. Alternative positions are considered to avoid disturbance of water resources, and heritage sites and other infrastructure available onsite, as well as their applicable buffers. In instances where boreholes will have to be situated inside these buffers, the requisite authorization will be obtained from the relevant authorities.

Existing farm roads and tracks will be utilised as far as possible. The construction of new roads will be required where no existing roads are present. The type of access envisaged is limited to removal of vegetation. Such access roads may also require 'light' grading to allow the movement of surface mobile vehicles and will not trigger any listed activity in terms of NEMA. Should a site camp need to be erected it will be positioned near an existing road as it increases accessibility as well as reduce any environmental disturbance associated with the need to create new access roads. The site camp will consist of storage for drilling equipment and portable ablution facilities.

It can be stated that invasive prospecting (drilling) will avoid watercourses, infrastructures, any heritage sites which might be identified during drilling and Critical Biodiversity Areas through the establishment of buffer zones around these areas in which no activities will be allowed without the necessary authorizations, licenses and/or permits.

12.4 The technology to be used in the activity.

The use of desktop studies and literature reviews are viewed as an initial non-invasive technique to delimit areas for invasive drilling prospecting and is seen as the most responsible method to reduce needless surface disturbance and reduce the environmental impact footprint. Technology alternatives are therefore also not assessed further.

12.5 The operational aspects of the activity

Drilling is still the most effective way as well as an industry norm to complete resource evaluation as required for the mine works programme to be submitted in support of a Mining Right Application to be submitted if mineral deposit of interest will be identified during drilling. No further alternatives are relevant.

12.6 The option of not implementing the activity

Should the project not be implemented, the status quo remains, and cultivation, residential, livestock farming and grazing, schools, and churches will continue unaltered with no negative impacts on the biophysical, socio economic or cultural environment. On the other hand, not proceeding with the proposed operation would have a direct consequence in that the mineable potential of the suspected reserve would not be determined.

The secondary effect of that not happening is that the community and IAPs will have been negatively affected by this application for prospecting in that they would not have been informed (together with the prospecting Applicant) as to the future of exploiting any potential mineral reserve: this question will then not have been answered for either party and the community and IAPs will expect another round of public participation in the future when the next Applicant applies to prospect in the area. One possible mitigation mechanism is for the Applicant and the DMRE to be transparent with the community and IAPs in informing them of what the actual reasons are for the prospecting operation not proceeding. Furthermore, not proceeding with the operation will result in the loss of potential employment opportunities for local communities.

13. Details of the Public Participation Process Followed

Public Participation is a legal requirement, where the potential exists for individuals and/or parties to be affected by a proposed activity. According to the principles of Integrated Environmental Management (IEM), these individuals and/or parties should be involved in the decision-making process from an early stage in the project, with regards to any relevant issues and concerns complementing the information on which the Regulating Authorities would base their decision. This facilitation of effective communication between the Authorities, the Public and the Applicant forms the primary role of the Public Participation Process. Through the public participation process the Interested and Affected Parties (IAPs) are offered an opportunity to voice their opinions and concerns with regards to the application and have them formally recorded and registered as such to be considered by the Authorities in the decision-making process.

The term "Public Participation" is defined by the International Association for Public Participation (IAP) as "any process that involves the public in problem-solving or decision-making and that uses public input to make better decisions". This application is subject to legislation stipulated in the GN R517 of NEMA with regards to public participation, and the EIA Regulations of 2014 Regulation 41-44. These regulations stipulate the public participation process that must be conducted to provide the IAPs with the opportunity to form part of the process. The focus of the public participation process is to involve the public in the decision-making process from an early stage in the project, with regards to any relevant issues and concerns complementing the information on which the Regulating Authorities would base their decision. Steps that will be taken throughout the BAR Process will include:

- ❖ Notification of the public in writing and through the newspaper and site notices.
- ❖ Stakeholder meetings (one-on-one and focus group meetings with key stakeholders).
- ❖ Make information containing all relevant facts in respect of the application available to potential IAPs.
- ❖ Provide IAPs a reasonable opportunity to comment on the application.
- ❖ Open and maintain an IAP Register of issues and concerns.
- ❖ Provide the registered IAPs the opportunity to comment on all reports.
- ❖ Record all comments of IAPs in the reports and plans and ensure that written comments, including responses to such comments and records of meetings, are attached to the reports and plans that are submitted to the competent authority.

13.1 Newspaper advertisement

A newspaper advertising (in English and Zulu) was published on the Natal Courier on June 30, 2023. See Figure 9 below for proof of newspaper publishing. To inform the public about the proposed prospecting right application, a newspaper was issued. The public was also urged by the newspaper advertisement to register as an IAP in order to receive all upcoming correspondence surrounding this project. The public was informed by the notification that the Draft BAR will be available for comments from Saturday, July 29, 2023, until Monday, August 28, 2023.

Sentraal overcome Bears in toughest challenge yet



Xander Kriel crashes over in Sentraal's first team 17-12 win over the Bears. Inset: Jan-Frederick van Zyl lines up the ball.

Sentraal survived their toughest on-and-off-the-field challenge of the season when their first team beat the Bears of Newcastle 17-12 in a humdinger of a match played in Dundee on Saturday.

Sentraal stormed ahead with two tries after absorbing initial pressure from a much-improved Bears side.

They went into half-time leading 12-5, with tries by Xander Kriel and Willem Husselman...

However, Bears came out determined in the second half.

As the sun set and with no floodlights, thanks to load-shedding, the field became darker and so did tempers when Sentraal supporters became agitated with what they saw as 'an unfair ref' who continuously penalised the local team. Sentraal did score another try (via Steps Mgabi) to secure the win. The ref came under fire after the match and the volatile situation had to be cooled down, but in the end, the spirit of sportsmanship seemed to overcome the acrimony.

The second team overcame Bears' second team 32-7, with London Myesa scoring a hat-trick, Tyrone Terry dotting down twice, and Gary Simpson once.



NOTICE OF PUBLIC PARTICIPATION FOR PROSPECTING RIGHT AND ENVIRONMENTAL AUTHORIZATION APPLICATION

ISIZULU

Isaziso Sohlelo Lokucela Ilungelo Lokubheka Ngokufunwa ngokoMthetho WoMineral kanye nePetroleum Resources Development Act (MPRDA) (Act 28 of 2002) mayelana nokufunwa kwamalahle **ingxenye 1, 6, 11 futhi 13 ipulazi Hazelden 12649 GT futhi ipulazi Ostend 10643 GT**, endaweni yesiFunda sikaMantshi sase **uMzinyathi** Isifundazwe saKwa-Zulu Natal.

ISIMEMO SOKUBHALISA & PHAWULA

Isaziso sikhishwa ngokomthetho wokuthuthukiswa kwezimbiwa Nezimbwam kanye Phethiloli (MPRDA) (uMthetho wama-28 wezi-2002) kanye nemithethonqubo ye-EIA ka-2014, eshicilelwe ngaphansi kwesaziso sikahulumeni esingunombolo 982 kuGazethi No. 3822 mhla zingu-8 kuZibandlela kunyaka ka-2014, esachitshiyelwa mhla zingu-7 kuMbasa kunyaka ka-2017 futhi ngu GN 517 ngo-11 Juni 2021, sokuthi **Big Sky Mining (Pty) Ltd** lufake isicelo seLungelo Lokuhlola amaminerali ashawo ngenhla **DMRE Ref: KZN 30/5/1/1/2/11406 PR**.

Njengengxenye yenqubo ye-EIA, ikakhulukazi inqubo yokubamba iqhaza komphakathi kule phrojekthi ehlongozwayo, Abanentshisekelo Nabathintekayo (I&APs) bayamenywa ukuba babhalise futhi bathumele ngomusa noma yikuphi ukuphawula noma ukukhathazeka ukuze kufinyelele kwi-Public Participation Officer: **uNksz Thilivhali Ndou**, kusetshenziswa imininingwane yokuxhumana enikezwe ngezansi. Umphakathi uyamenywa futhi ukuthi ubuyekeze futhi uphawule mayelana Nohlaka Lombiko Wokuhlola Okuyisisekelo kanye ne-EMPr. Uhlaka lwe-BAR & EMPr luzotholakala ukuthi lubuyekezeve esikhathini sekhelenda lezinsuku ezingama-30 kusukela **NgoMgqibelo mhla zi-29 ku-Julayi 2023 kuya NgoMsombuluko mhla zi-28 kuAgasti 2023**. (ngokukhishwa kwamaholidi omphakathi).

Lo mbiko uzotholakala e**Dundee Public Library** (Boundary Rd, Dundee, 3000), kunye no**Masipala wasekhaya Endumeni** (64 Victoria Street, Dundee). Ikhophi ethambile iyatholakala kwa-**Singo Consulting (Pty) Ltd** uma icelwa, kusetshenziswa imininingwane yokuxhumana yomsizi ka-Environmental Assessment Practitioner (EAP). Amazwana ne-DBAR & EMPr kufanele athunyelwe ngaphambi komhla **zi-28 kuAgasti 2023**.

EAP Contact Details:

Office 870, 5 Balalaika Street,
 Tasbet Park Ext. 2, eMalahlani (Witbank), 1040
EAP: Miss Bongokuhle Sibiya
PPP Officer: Miss. Thilivhali Ndou
Cell No.: +27 63 050 6313
Tel No.: +27 13 6920 041
Fax No.: +27 86 5144 103
Email: thilivhali@singoconsulting.co.za

ENGLISH

Notice of the Prospecting Right Application Process as per the Mineral and Petroleum Resources Development Act (MPRDA) (Act 28 of 2002) for the prospecting of **Coal on portion 1, 6, 11 and 13 of the farm Hazelden 12649 GT and farm Ostend 10643 GT** situated in the Magisterial District of **uMzinyathi in Kwa-Zulu Natal Province**.

INVITATION TO REGISTER & COMMENT

Notice is hereby given in terms of the Mineral and Petroleum Resources Development Act (MPRDA) (Act 28 of 2002) and EIA regulations 2014, published under Government Notice No. 982 in Gazette No. 3822 of 4 December 2014, amended on 7 April 2017 and by GN 517 on 11 June 2021 that **Big Sky Mining (Pty) Ltd** has applied for a Prospecting Right for the above-mentioned mineral with **DMRE Ref: KZN 30/5/1/1/2/11406 PR**.

As part of the EIA process, more especially the public participation process for this proposed project, Interested and Affected Parties (I&APs) are invited to register and kindly submit any comments or concerns to reach **Public Participation Officer: Miss Thilivhali Ndou**, using the contact details provided below. The public is also invited to review and comment on the Draft Basic Assessment Report (DBAR) and Environmental Management Programme Report (EMPr). The DBAR & EMPr will be available for review for 30 days' calendar period from **Saturday the 29th of July 2023 to Monday the 28th of August 2023**. (with the exclusion of public holidays).

This report will be available at **Dundee Public Library** (Boundary Rd, Dundee, 3000) and **Endumeni Local Municipality** (64 Victoria Street, Dundee). A soft copy is available from **Singo Consulting (Pty) Ltd** upon request, using the contact details of the Environmental Assessment Practitioner (EAP) below.

Comments on the Draft BAR & EMPr should be submitted no later than the **28th of August 2023**.

EAP Contact Details:

BIG SKY MINING (Pty) Ltd

Physical Address: 654 Kenilworth Street Kyalamiestates, Kyalami, Gauteng, 1684
Contact person: Mr. Sonwabo Sellwa Debedu
Cell No.: +27 79 494 0068
Tel No.: +27 13 692 4378
Email: sonwabo@tomowise.co.za

Figure 16: Proof of newspaper publication.

13.2 Written notification

Stakeholders will continue to be given an opportunity to participate in the process and express their views. On June 30, 2023, I&APs and other significant stakeholders were directly informed of the proposed development via email with an attachment of the Background Information Document (BID), Regulation 2.2 Map, and KML. This process is ongoing. I&APs have 30 days to remark on the planned development and/or voice any concerns they may have. Stakeholders will still have the chance to engage in the process and voice their opinions.

13.3 Notification to and consultation with landowners and/or lawful occupiers.

According to the attached title deed (see Figure 10), the proposed farms are owned by several landowners. The proposed project was announced to the landowners on June 30, 2023, by newspaper publication, and on June 19 and 20, 2023, through the plugging of site notices at the farm's gate. Face-to-face consultation was conducted from June 17 through June 20, 2023, via BID, landowner notification letter to landowners, and title deeds, to inform them of the planned prospecting right application submitted to DMRE on the proposed farms.

13.4 Site notice placement

Site notices were placed across the community, in the Endumeni Local Municipality, and at the Dundee Public Library on the 19th and 20th of June 2023 to alert nearby communities, affected landowners, and neighbors to the intended development.

13.5 Consultation and correspondence with I&AP's and stakeholders

Draft Basic Assessment Report (BAR) and Environmental Management Programme report (EMPr) will be available for review from Saturday, July 29, 2023, until Monday, August 28, 2023 (Excluding Public Holidays). The stakeholders will be given 30 days review calendar period to raise issues/concerns about the proposed project based on the DRAFT BAR and EMPr. Copies of the Draft BAR and EMPr will be delivered and shared via email to all organs of state and relevant authorities, to registered I&APs and upon request from Singo Consulting (Pty) Ltd. The Draft BAR and EMPr will be available at Endumeni Local Municipality, Dundee Public Library and softcopies will also be shared via emails.

13.6 Next phases of the public participation process

The Complete BAR and EMPr will be submitted to the Competent Authority (CA) and will include all comments and responses from I&APs and state entities. The CA must evaluate and appraise the report after receiving the BAR and EMPr before making a judgement on the application. Thereafter the registered I&APs will be notified of the CA's decision. During each stage of the planned project, the stakeholder database will be updated.



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SEARCH CRITERIA

Search Date	2023/06/09 16:25	Farm Number	12649
Reference	-	Registration Division	GT
Report Print Date	2023/06/09 16:26	Portion Number	-
Farm Name	HAZELDENE	Remaining Extent	NO
Deeds Office	Pietermaritzburg	Search Source	WinDeed Database

PROPERTY INFORMATION

Property Type	FARM	Diagram Deed Number	G47/965
Farm Name	HAZELDENE	Local Authority	NOT AVAILABLE
Farm Number	12649	Province	KWAZULU NATAL
Registration Division	GT	Remaining Extent	NO
Portion Number	1	Extent	395.0519H
Previous Description	-	LPI Code	N0GT00000001264900001

OWNER INFORMATION (1)

AFT PROPERTY TRUST		Owner 1 of 1	
Company Type	TRUST	Document	T12806/2017
Registration Number	IT1035/2006	Microfilm / Scanned Date	-
Name	AFT PROPERTY TRUST	Purchase Price (R)	-
Multiple Owners	NO	Purchase Date	-
Multiple Properties	NO	Registration Date	2017/05/15
Share (%)	-		

ENDORSEMENTS (3)

#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	B6110/2017	STANDARD BANK OF SOUTH AFRICA LIMITED	45 000 000	20170525 09:44:21
2	NATAL RD,12649,1	-	-	1994 0062 1946

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SEARCH CRITERIA

Search Date	2023/06/09 16:27	Farm Number	12649
Reference	-	Registration Division	GT
Report Print Date	2023/06/09 16:28	Portion Number	-
Farm Name	HAZELDENE	Remaining Extent	NO
Deeds Office	Pietermaritzburg	Search Source	WinDeed Database

PROPERTY INFORMATION

Property Type	FARM	Diagram Deed Number	G119/954
Farm Name	HAZELDENE	Local Authority	NOT AVAILABLE
Farm Number	12649	Province	KWAZULU NATAL
Registration Division	GT	Remaining Extent	NO
Portion Number	6	Extent	213,6159HA
Previous Description	-	LPI Code	NOGT00000001264900006

OWNER INFORMATION (1)

NHLANHLENI PROPERTY TRUST-TRUSTEES		Owner 1 of 1	
Company Type	TRUSTEES	Document	T33447/2007
Registration Number	IT 1824/2004	Microfilm / Scanned Date	2007 0383 2627
Name	NHLANHLENI PROPERTY TRUST-TRUSTEES	Purchase Price (R)	1 900 000
Multiple Owners	NO	Purchase Date	2007/03/13
Multiple Properties	NO	Registration Date	2007/07/19
Share (%)	-		

ENDORSEMENTS (2)

#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	RENUMBER FROM	NATAL RD , 12649 ,	-	0000000000 00 *
2	NATAL RD,12649,6	-	Unknown	1994 0062 1951

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WinDeed Database D/O Property

GT, HAZELDENE, 12649, 11, PIETERMARITZBURG

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SEARCH CRITERIA

Search Date	2023/06/09 16:28	Farm Number	12649
Reference	-	Registration Division	GT
Report Print Date	2023/06/09 16:29	Portion Number	-
Farm Name	HAZELDENE	Remaining Extent	NO
Deeds Office	Pietermaritzburg	Search Source	WinDeed Database

PROPERTY INFORMATION

Property Type	FARM	Diagram Deed Number	G124/953
Farm Name	HAZELDENE	Local Authority	NOT AVAILABLE
Farm Number	12649	Province	KWAZULU NATAL
Registration Division	GT	Remaining Extent	NO
Portion Number	11	Extent	397,1074HA
Previous Description	-	LPI Code	N0GT00000001264900011

OWNER INFORMATION (1)

NHLANHLENI PROPERTY TRUST-TRUSTEES		Owner 1 of 1	
Company Type	TRUSTEES	Document	T33447/2007
Registration Number	IT 1824/2004	Microfilm / Scanned Date	2007 0383 2627
Name	NHLANHLENI PROPERTY TRUST-TRUSTEES	Purchase Price (R)	1 900 000
Multiple Owners	NO	Purchase Date	2007/03/13
Multiple Properties	NO	Registration Date	2007/07/19
Share (%)	-		

ENDORSEMENTS (3)

#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	RENUMBER FROM	NATAL RD , 12649 ,	-	0000000000 00 *
2	NATAL RD,12649,11	-	Unknown	1994 0062 1961

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WinDeed Database D/O Property

GT, HAZELDENE, 12649, 13, PIETERMARITZBURG

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SEARCH CRITERIA

Search Date	2023/06/09 16:29	Farm Number	12649
Reference	-	Registration Division	GT
Report Print Date	2023/06/09 16:29	Portion Number	-
Farm Name	HAZELDENE	Remaining Extent	NO
Deeds Office	Pietermaritzburg	Search Source	WinDeed Database

PROPERTY INFORMATION

Property Type	FARM	Diagram Deed Number	G119/954
Farm Name	HAZELDENE	Local Authority	NOT AVAILABLE
Farm Number	12649	Province	KWAZULU NATAL
Registration Division	GT	Remaining Extent	NO
Portion Number	13	Extent	251,9170HA
Previous Description	-	LPI Code	NOGT00000001264900013

OWNER INFORMATION (1)

NHLANHLENI PROPERTY TRUST-TRUSTEES		Owner 1 of 1	
Company Type	TRUSTEES	Document	T33447/2007
Registration Number	IT 1824/2004	Microfilm / Scanned Date	2007 0383 2627
Name	NHLANHLENI PROPERTY TRUST-TRUSTEES	Purchase Price (R)	1 900 000
Multiple Owners	NO	Purchase Date	2007/03/13
Multiple Properties	NO	Registration Date	2007/07/19
Share (%)	-		

ENDORSEMENTS (2)

#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	NATAL RD,12649,13	-	Unknown	1994 0062 1964
2	RENUMBER FROM	NATAL RD , 12649 ,	-	0000000000 00 *

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SEARCH CRITERIA

Search Date	2023/06/09 16:39	Farm Number	10643
Reference	-	Registration Division	GT
Report Print Date	2023/06/09 16:39	Portion Number	-
Farm Name	OSTEND	Remaining Extent	NO
Deeds Office	Pietermaritzburg	Search Source	WinDeed Database

PROPERTY INFORMATION

Property Type	FARM	Diagram Deed Number	T10643/925
Farm Name	OSTEND	Local Authority	NOT AVAILABLE
Farm Number	10643	Province	KWAZULU NATAL
Registration Division	GT	Remaining Extent	NO
Portion Number	0	Extent	268,2056HA
Previous Description	-	LPI Code	NOGT00000001064300000

OWNER INFORMATION (1)

NHLANHLENI PROPERTY TRUST-TRUSTEES		Owner 1 of 1	
Company Type	TRUSTEES	Document	T33447/2007
Registration Number	IT 1824/2004	Microfilm / Scanned Date	2007 0383 2627
Name	NHLANHLENI PROPERTY TRUST-TRUSTEES	Purchase Price (R)	1 900 000
Multiple Owners	NO	Purchase Date	2007/03/13
Multiple Properties	NO	Registration Date	2007/07/19
Share (%)	-		

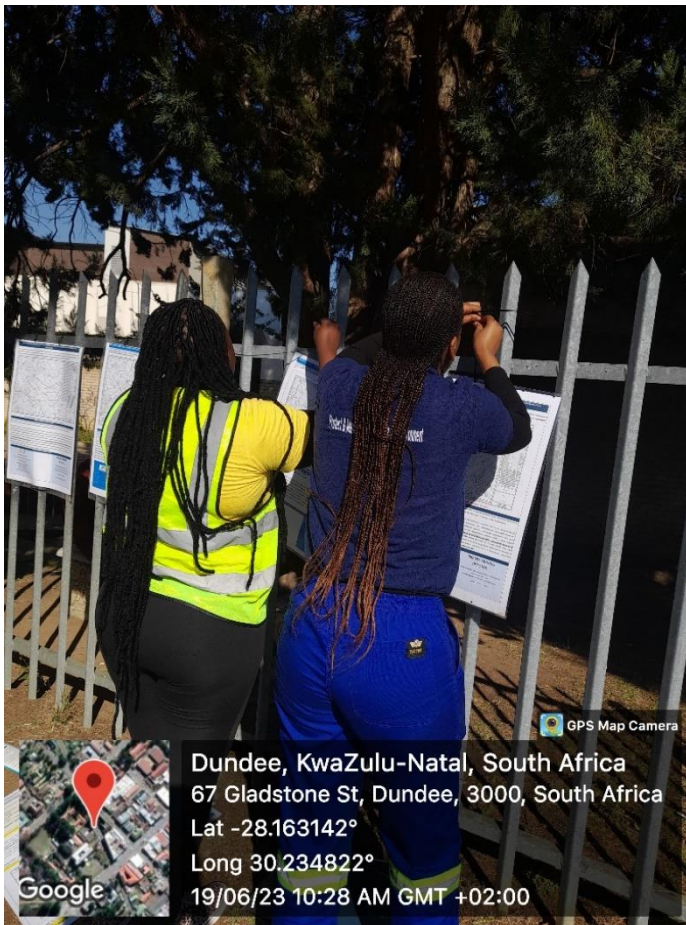
ENDORSEMENTS (1)

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1	RENUMBER FROM	REG DIV NATAL RD ,NAME OSTEND ,NO 10643 ,PRTN	-	0000000000 00 *

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Figure 17: Title deed of the proposed project.



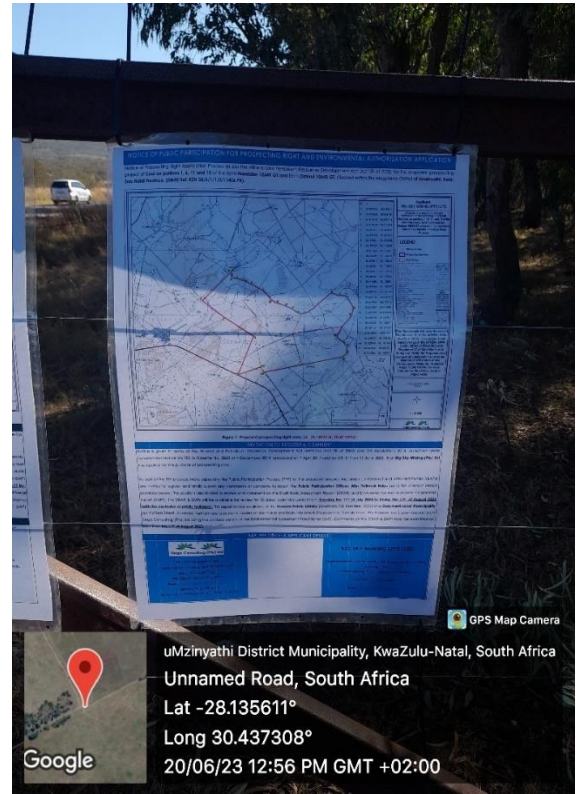


Figure 18: Plugging of site notices.

13.7 Summary of issues raised by IAPs

The over-riding objective during this consultative process has been to create an atmosphere conducive to sharing knowledge with the stakeholders to ensure that issues identified are used in a positive and constructive manner. All parties will be given the opportunity to raise their issues – be they fact or perception. The number and frequency with which issues are raised, and the extent to which they are debated gives a direct indication of the following:

- The success of the participative process.
- The perceived significance of the issues; and
- A measure of the sustainability of the outcome/solution.

All issues and comments raised by IAPs are summarized in the Comments and Response Table incorporated in the consultation report. The table will be updated with any comments received during the commenting period.

List Authorities Identified and Notified

The following authorities have been identified and notified of the proposed Prospecting RightApplication project:

- Endumeni Local Municipality
- Dundee Public Library
- Kwazulu Natal Department of Water and Sanitation.
- Department of Agriculture, Forestry and Fisheries
- Department of Environmental Affairs
- Department of Land Restitution Commission
- Department of Agriculture, Rural Development and Land Reform
- South African National Roads Agency Ltd (SANRAL).
- South African Heritage Resources Agency.
- South African Biodiversity Institute
- Eskom SOC Limited.

Refer to full Consultation incorporated in the Consultation Report in the following page.

14. Environmental attributes associated with the development footprint (Baseline Environment)

The objective of this section is to describe the type of environment that will be affected by the proposed activity. The baseline information presented below will be used to determine protection, remedial measures, and environmental management objectives. The methodology used to assess the baseline environment is described below.

An in-depth assessment of the proposed application was undertaken using the following available information:

- EIA Screening Tool.
- South African National Biodiversity Institute (SANBI).
- Google Earth.

A site assessment was conducted to confirm the information obtained through the desktop study and to assess the current state of the environment as well as the need for specialist studies. Consultation with the landowners were also utilized to determine the environmental attributes of the application area.

14.1 Geology

14.1.1 Regional Geology

The main Karoo Supergroup basin covers over 50% of South Africa's surface (Figure 7) and consists of five age-based groups, which show a change of depositional environment in time. These groups are the Dwyka (glacial), Eccca (shallow marine and coastal plain), Beaufort (non-marine fluvial), Stormberg (aeolian) and the volcanic Lebombo or Drakensberg groups (Johnson et al., 2006). The proposed project area falls within the Ermelo Coalfield which hosts thinner seams that are more sedimentological and structurally complex. Sediments of Vryheid and Dwyka formations underlay the area which was deposited on a glaciated Pre-Karoo basement consisting of Rooiberg felsites. The deposit is preserved as an outlier underlying the small hill known as Vlooi kop, surrounded by strata of the Dwyka Group (mainly fillites and varved mudstones/shales).

Dwyka Group

The rocks of the Dwyka Group in South Africa are amongst the most important glaciogenic deposits from Gondwana. This Group is named for exposures along the Dwyka River east of Laingsburg and forms the basal succession of the Karoo Supergroup. Dwyka Group strata are mostly contained within bedrock valleys incised into Archean to lower Palaeozoic bedrock (Visser, 1990; Visser and Kingsley, 1982; Von Brunn, 1996). The lithologies in the areas underlying the coalfields of South Africa consist of a heterolithic arrangement of massive and stratified polymictic diamictites, conglomerates, sandstones, and dropstone-bearing varved mudstones. The easily identifiable lithologies form a good marker below the coal bearing Eccca Group. In the distal sector of the MKB these sedimentary strata accumulated largely as ground moraine associated with continental ice sheets and is generally composed of basal lodgement and supraglacial tills. These deposits are generally massive, but crude horizontal bedding occurs in places towards the top (Tankard et al., 1982).

Eccca Group

In the 1970s several studies (Cadle, 1974; Hobday, 1973, 1978; Mathew, 1974; Van Vuuren and Cole, 1979) showed that the Eccca Group could be subdivided into several informal units based on the cyclic nature of the sedimentary fills. In 1980 the South African Committee for Stratigraphy (SACS, 1980) introduced a formal lithostratigraphic nomenclature for the Eccca Group in the northern, distal sector of the MKB, which replaced the previously used informal Lower, Middle and Upper subdivisions with the Pietermaritzburg Shale Formation, the Vryheid Formation, and the Volksrust Shale Formation.

In South Africa, based on the literature; only 19 coalfields are generally accepted which cover an area of approximately 9.7 million hectares (ha). The distinction between coalfields

is based on geographic considerations and variations in the mode of sedimentation, origin, formation, distribution, and quality of the coals. (Hancox & Annette, 2014).

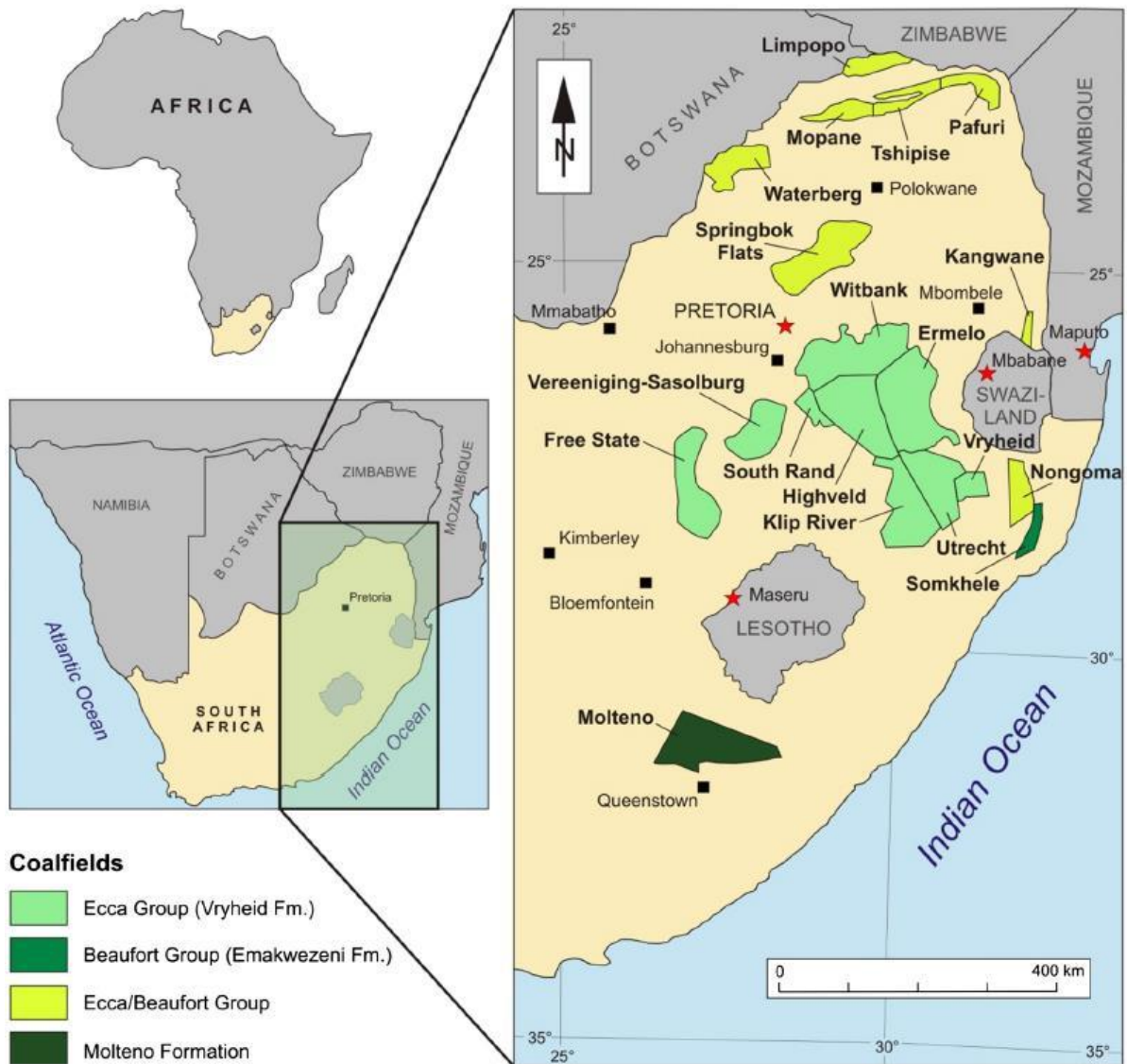


Figure 19: South Africa's Coalfields

14.1.2 Local Geology

The Karoo Dolerite Suite

A network of dykes and sills that occur as feeders or tongues to the flood basalt province and are most developed in the major Karoo Basin (Walker & Poldervaart, 1949). These dolerite sills and dykes, central ring complexes (Eales et al., 1984; Galerne et al., 2008), and saucer-shaped sheets (Duncan and Marsh, 2006) intruded the Karoo Supergroup rocks contemporaneously with and immediately following the eruptions of the Drakensberg lavas, as determined by cross-cutting relations (Mountain, 1968; Walker and Poldervaart, 1949)). Multiple dolerite intrusion events occurred in the Karoo, both predating and postdating the flood basalts (Erlank, 1984; Mountain, 1968; Walker and Poldervaart, 1949), making it difficult to link them to a single intrusive or tectonic event (Chevallier and Woodford, 1999; Duncan and Marsh, 2006; van Zijl, 2006a).

In the Karoo, sills and sheet intrusions range in thickness from a few metres to 200 metres (Duncan and Marsh, 2006; Walker and Poldervaart, 1949) and frequently crown hills with underlying sedimentary layers. Some sheet intrusions descend virtually vertically and are classified as dykes. True dykes, on the other hand, can be up to 10m broad and run 5 - 30 km along the strike (Duncan and Marsh, 2006). Many dykes appear to have intruded following the sills and sheet intrusions, as evidenced by crosscutting connections (Walker and Poldervaart, 1949) and resistivity investigations (van Zijl, 2006b). Central ring complexes are often interpreted as sites of original volcanic activity (Eales et al., 1984).

The dykes in the central and eastern Karoo have an approximate north-northwest tendency, with subordinate tendencies at nearly right angles (Walker and Poldervaart, 1949). Dykes and sills constitute a complex, linked, and anastomosed structure in the western Karoo, coupled with discordant sheets and saucer-shaped intrusions (Chevalier and Woodford, 1999). The dykes are concentrated in swarms in numerous regions of the Karoo Basin, and some have been recognised as feeder systems to the underlying lavas (Eales et al., 1984). The bulk of the dykes, however, do not have a clear favoured orientation (Duncan and Marsh, 2006).

Masotcheni Formation

The Masotcheni Formation consists of colluvial deposits that accumulate in bedrock depressions or colluvial hollows due to the topography of the hillslope, leading to overland flow and sediment transport. Gully cut-and-fill processes have occurred in the region, indicating multiple episodes of erosion and deposition. These colluvial sediments are poorly sorted and include fine clay, silt, and sand, originating from the weathered regolith and soils upslope on the Drakensberg foothill interfluvial ridges.

The Masotcheni Formation is often affected by gully erosion, locally referred to as "dongas." The paleosols within the formation are classified as Solonetz according to the FAO soil Group

Classification. They exhibit silty-clay soils with a high concentration of sodic clay in the Btn horizon. Some of these paleosols feature columnar, prismatic-shaped peds with a polygonal structure on top of the Btn horizon.

These colluvial deposits were formed under semi-arid conditions, followed by periods of hillslope stability represented by paleosol profiles. The concentration of runoff towards the colluvium-filled bedrock depressions on middle and lower hillslopes leads to the preferential erosion of the colluvium/paleosol succession, which includes dispersive and highly erodible sediment. It should be noted that the information provided is a paraphrased and summarized version based on the given text and may not include all the details from the original sources mentioned.

Vryheid Formation

The local geology of the project area (See Figure 7) is comprised mostly of the Vryheid Formation of the Karoo Basin, which is characterized by five coarsening upward sequences, displaying lateral continuity across the region. Each sequence begins with fine-grained marine facies, transitioning to coarser delta front and delta plain-fluvial facies. Coal seams are associated with the top of each sequence and exhibit lateral continuity but have some correlation discrepancies between coalfields. The economically significant coal in South Africa is primarily found in the Vryheid Formation, with thickness ranging from less than 70.0 m to over 500.0 m. The thickest portions are located south of Newcastle and Vryheid. The Vryheid Coalfield was historically known for high-quality coking coal and anthracite production.

Although extensively mined, there is potential for further extraction, and the coalfield spans approximately 2,500,000 ha, with around 15% considered coal-bearing. The stratigraphy of the Vryheid Coalfield closely resembles that of the Utrecht Coalfield. The basement of the Vryheid Coalfield comprises various rock types, including metasedimentary rocks, metavolcanic rocks, and post-Pongola aged granitic and diabase intrusions. The Dwyka Group, averaging 150 m in thickness, is well developed but variable due to pre-Karoo glacial valleys and basement highs. The overlying Pietermaritzburg Formation is dominated by siltstones and mudstones deposited in deep water.

The research suggests that the basement palaeotopography influences coal seam development in the northern coalfields of the MKB and the Klip River, Utrecht, and Vryheid coalfields. The Klip River Coalfield lacks exposed basement rocks, and the Dwyka Group is limited in outcrop sections. The entire Vryheid Formation in the Klip River Coalfield has an estimated thickness of approximately 310 meters. It can be subdivided into three informal lithostratigraphic subdivisions: Lower Sandstone unit, Coal Zone with associated coal seams,

and Upper Zone with lobate or braid deltas. The Volksrust Formation overlies the coalfield, with varying thickness.

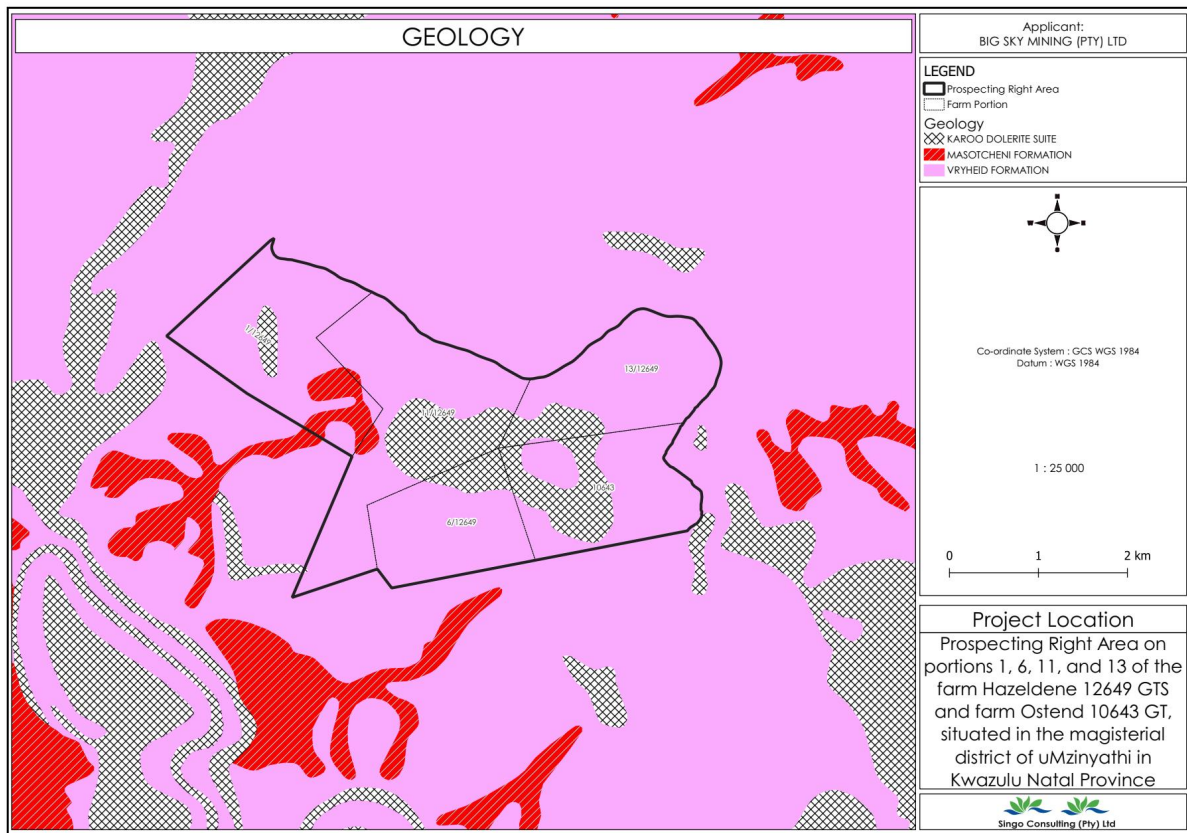


Figure 20: Geology map of the project area.

Coal Seams

The Klip River Coalfield in South Africa contains five known coal seams (Figure 9). The main seams that are commercially exploited are the Top Seam (No. 3 Seam) and the Bottom Seam (No. 2 Seam). There is also some coal extraction from the Extra-Bottom Seam (No. 1 Seam), although it is not the primary focus due to limited economic viability. These seams are located approximately 200 meters above the top of the Pietermaritzburg Formation and 120 meters below the base of the Volksrust Formation.

The Top and Bottom seams are separated by a layer of cross-stratified sandstone, which ranges in thickness from 0.3 to 15 meters. This sandstone layer gradually transitions into carbonaceous siltstone and mudstone. Minor seams are sporadically present but not consistently developed. The Extra-Bottom Seam, the lowest coal horizon in the coalfield, is rarely encountered in boreholes and is not extensively targeted for extraction. Its distribution is less well-understood compared to the commercially exploited seams. It is most developed in the northern and northeastern regions of Durnacol village.

In other areas, such as north of Dannhauser, the seam can be found as a single layer with a

thickness of approximately 0.60 meters, although it may be split by a sandstone parting. In the region between Dannhauser and Dundee, the seam is discontinuous and complex. Near Dundee and Wasbank, the Extra-Bottom Seam appears as a zone of thin, discontinuous, dull, and shaley coal layers, with individual layers typically less than 0.15 meters thick. This zone is characterized by extensive bioturbation caused by *Siphonichnus* traces. Overall, the commercially exploited coal seams in the Klip River Coalfield are the Top Seam, Bottom Seam, and to a lesser extent, the Extra-Bottom Seam, while other minor seams occur intermittently.

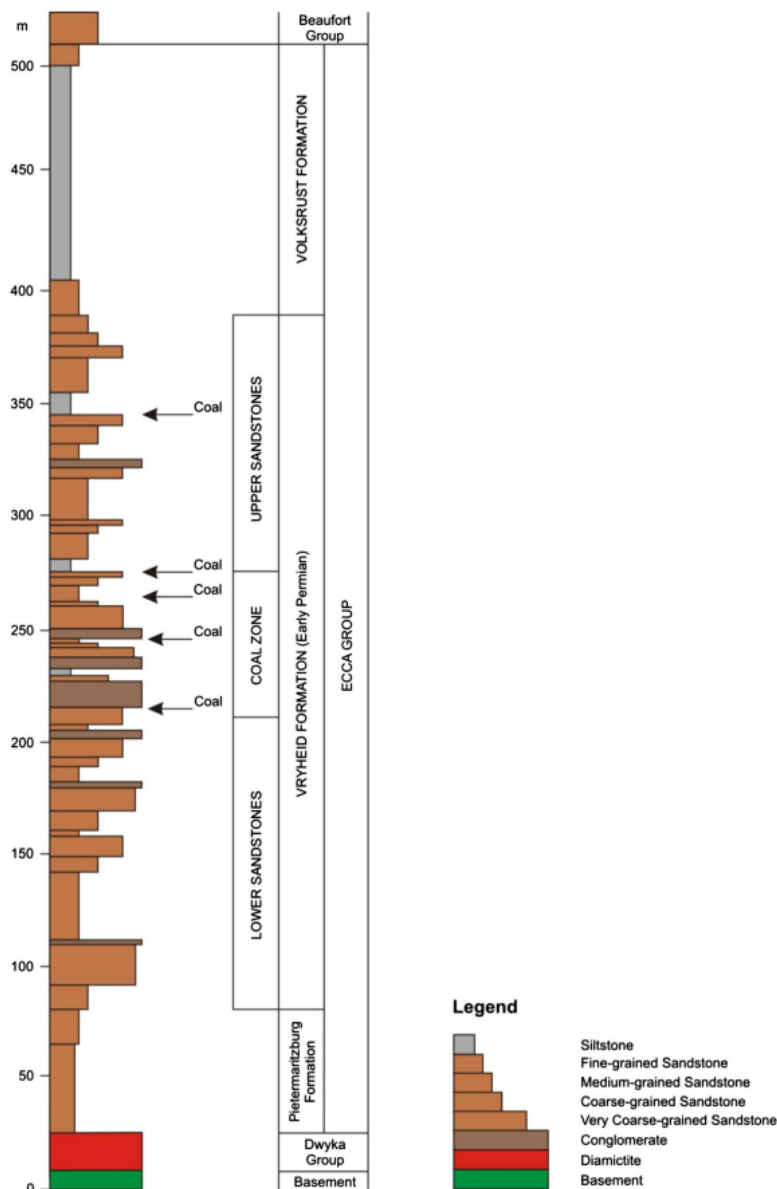


Figure 21: General Stratigraphy of the Klip River Coalfield

14.2 Topography

The area exhibits diverse terrain, characterized by subtle but noticeable variations in elevation. The landscape seamlessly transitions between different elevations, the elevation within this region ranges from approximately 1160 to 1200 meters above sea level, showcasing the geological forces at play. These intriguing fluctuations in elevation can be attributed to various geological factors. The presence of water bodies, including irrigation dams, rivers, both perennial and non-perennial, within and around the area's boundaries, has played a significant role in shaping the land.

In the proposed project area, there are perennial rivers, non-perennial rivers, unchanneled valley wetlands, the Buffles River (which flows on the PR region's border), and other natural features that contribute to South Africa's freshwater supply. According to Figure 21, the proposed project area's contour lines are spaced 20 metres apart. The project region was surrounded by mountains, grassland, livestock farming, and residential areas when the site was being assessed. The proposed project area's overview is shown in Figure 22 below.

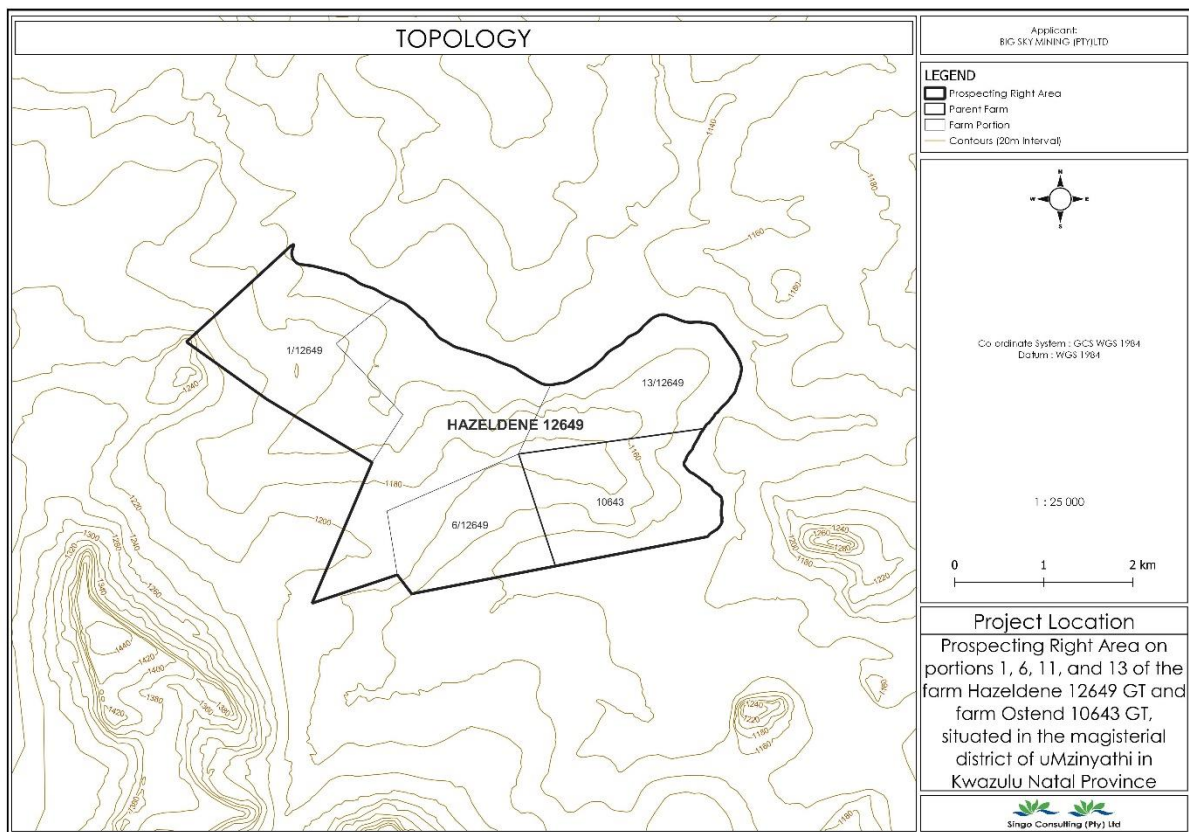


Figure 22: Topology map of the project area.





Figure 23: Overview of the proposed project area.

14.3 Climate

According to the map produced by Singo Consulting (Pty) Ltd, Database Manager, the average annual minimum temperature of the project area is less than 5°C and the mean annual precipitation range between 601 to 800 mm (see Figure 23 and Figure 24).

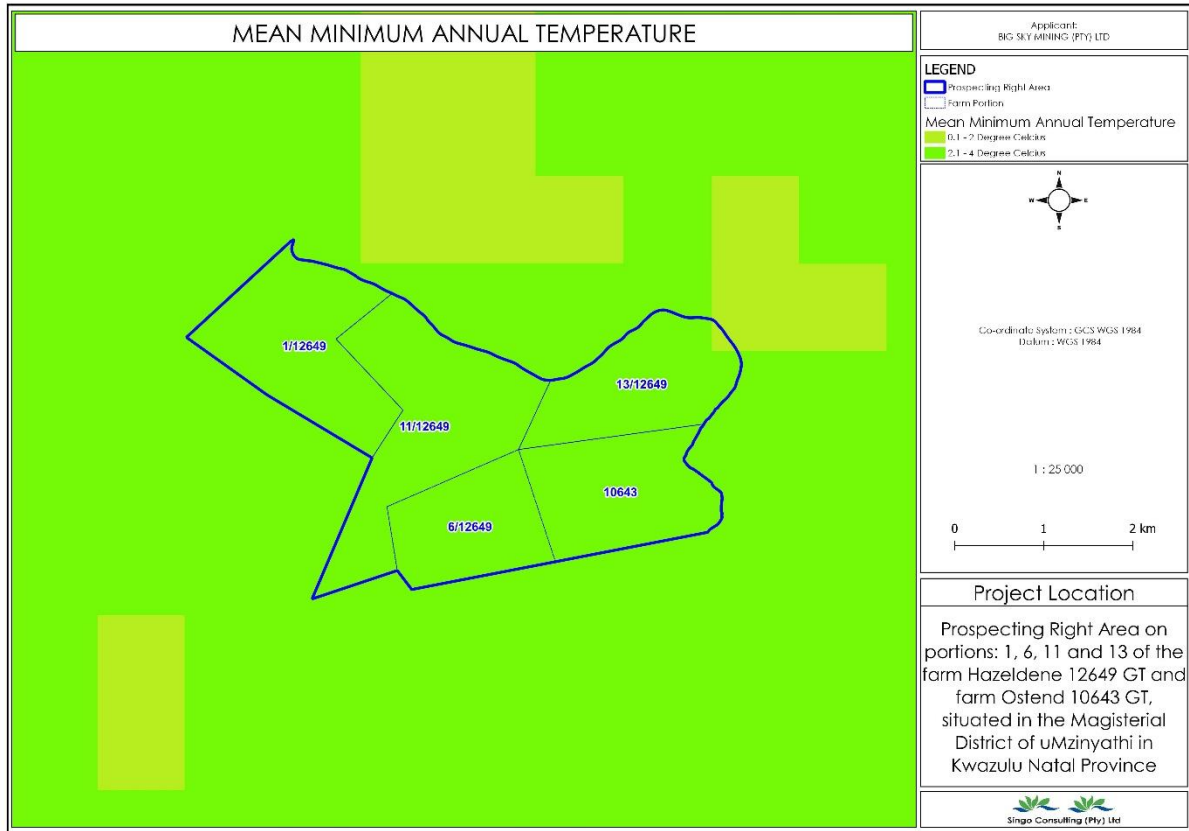


Figure 24: Temperature map of the proposed area.

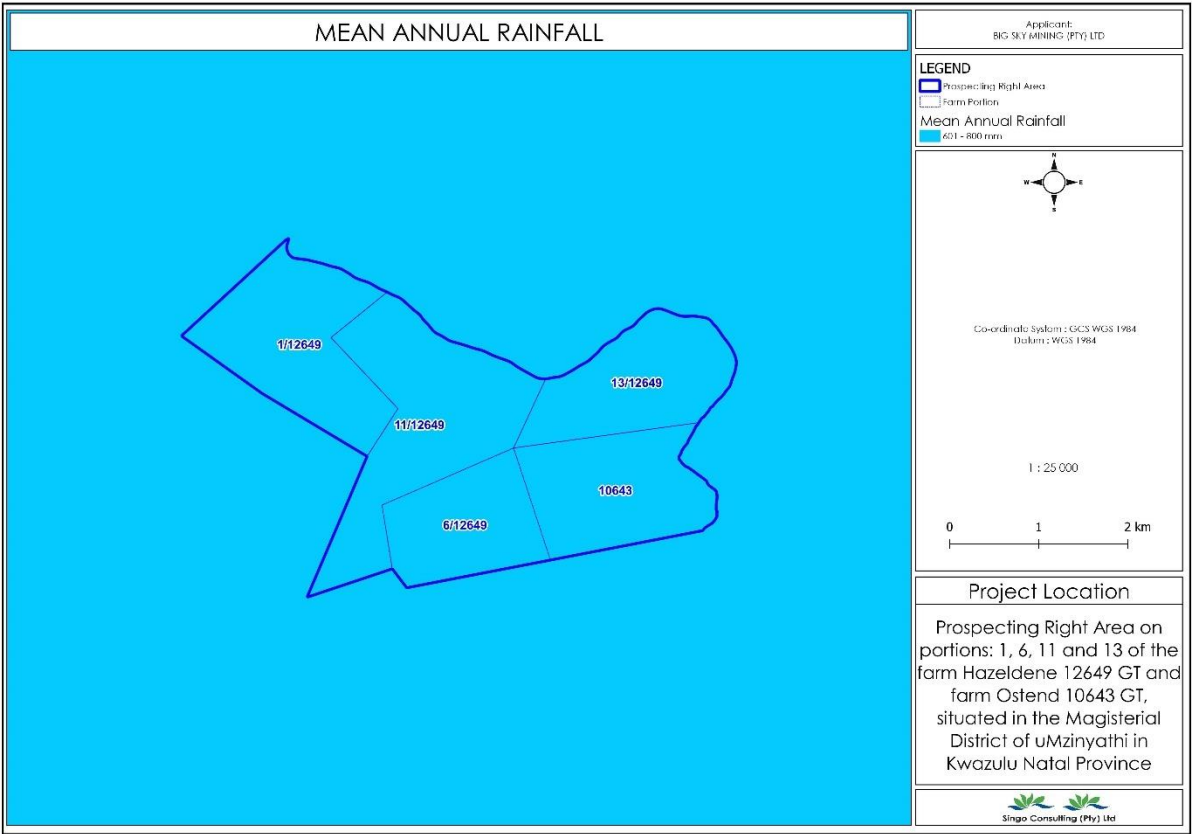


Figure 25: Depicts mean annual rainfall of the proposed area

14.4 Soils, Land Use and Capability

The proposed prospecting right area is largely covered by Association of Classes 17 and 19: Structureless and Textural Contrast Soils, followed by Soils with a Pedocutanic Horizon and the remaining Non-Soil Land Classes, per the map created by Singo Consulting (Pty) Ltd Database Manager (see Figure 25). Figure 26 below shows a typical example of the soil type of the proposed project area. The detailed information about the soil type and impacts of the proposed project on soil are included on the soil study conducted by specialist from Singo consulting (Pty) Ltd. The agricultural theme sensitivity of the application area is indicated as high sensitivity according to the National Web-based Environmental Screening Tool (see Figure 27). The proposed site's other portion is used for residential activities and the grazing of livestock. Since prospecting will not have a substantial impact on the area's land capability, the land capability has not been discussed in detail.

Soils can be defined based on their soil depth, Soil Drainage, erodibility, and natural fertility.

Soil depth

Depth of the soil profile is from the top to the parent material or bedrock. This type of soil can be classified as a restricted soil depth. A restricted soil depth is a nearly continuous layer that has one or more physical, chemical, or thermal properties.

Soil Drainage

Soil drainage is a natural process by which water moves across, through, and out of the soil because of the force of gravity. The soils in the proposed area have an excessive drainage due to the soils having very coarse texture. Their typical water table is less than 150.

Erodibility

Erodibility is the inherent yielding or non-resistance of soils and rocks to erosion. The freely drained structureless soils have high erodibility. A high erodibility implies that the same amount of work exerted by the erosion processes lead to a larger removal of material.

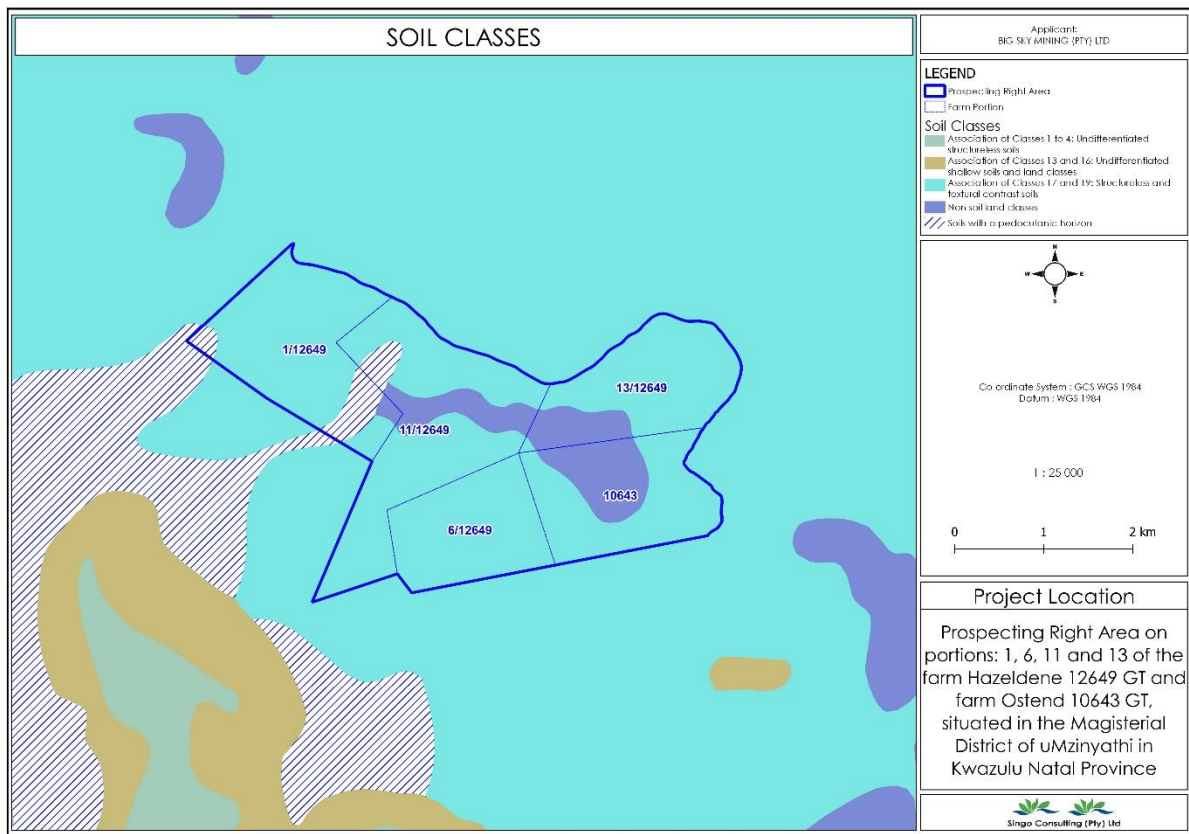


Figure 26: Soil type map of the proposed project area.

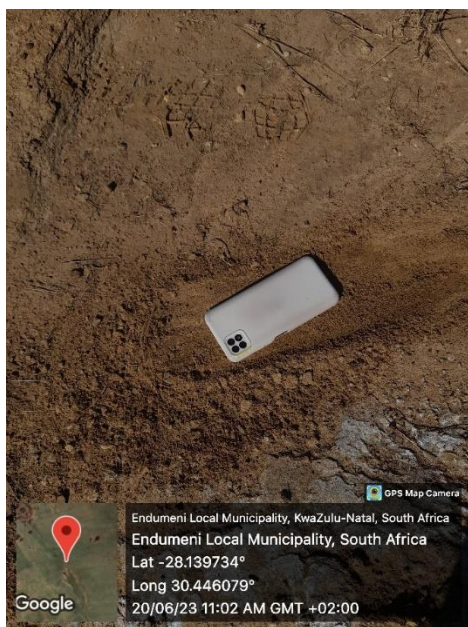
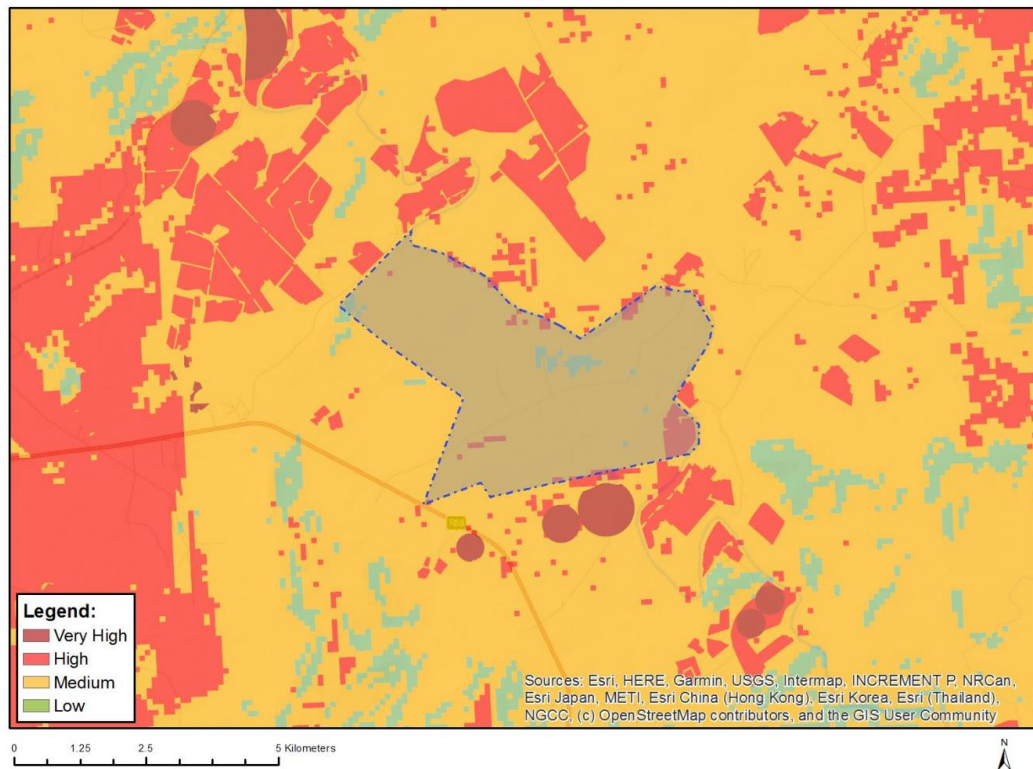


Figure 27: Typical example of soil type of the project area.

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Land capability;09. Moderate-High/10. Moderate-High
High	Old Fields;Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate
Low	Land capability;01. Very low/02. Very low/03. Low-Very low/04. Low-Very low/05. Low
Medium	Land capability;06. Low-Moderate/07. Low-Moderate/08. Moderate

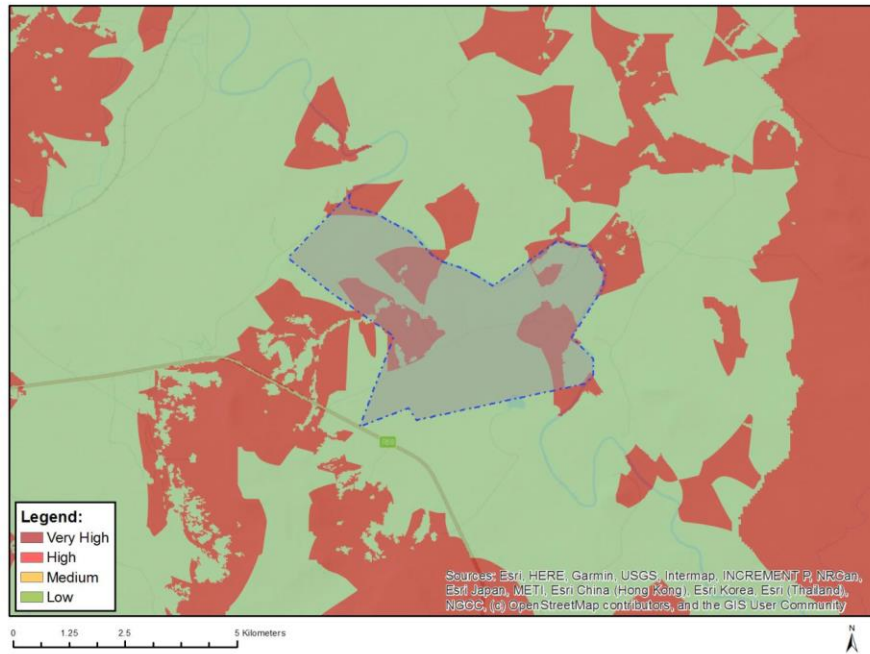
Figure 28: Agricultural theme sensitivity of the application area.

14.5 Terrestrial Biodiversity

Biodiversity is a comprehensive umbrella term for the extent of nature's variety in the natural system; both in number and frequency. It is often understood in terms of the wide variety of plants, animals and microorganisms, the genes they contain and the ecosystem they form. The biodiversity we see today is the result of billions of years of evolution, shaped by natural processes and, increasingly, by the influence of humans. It forms the web of life of which we are an integral part and upon which we so fully depend. About 2.1 million species have been identified, mostly small creatures such as insects. Scientists believe that there are about 13 million species exist on earth (Rawat and Agarwal 2015).

During desktop study, the screening report shows that the proposed project area falls in the very highly sensitive area for terrestrial biodiversity with CBA 2 (see Figure 28). The Terrestrial Biodiversity Map produced by Singo Consulting (Pty) Ltd Database Manager, shows that the proposed project area falls in the unclassified areas, and small part of the proposed areas falls in the CBA: Optimal. The area outside the proposed project area falls in the Unclassified areas and CBA: Optimal (see Figure 29).

MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Very High	Critical biodiversity area 2

Figure 29: Terrestrial biodiversity theme sensitivity.

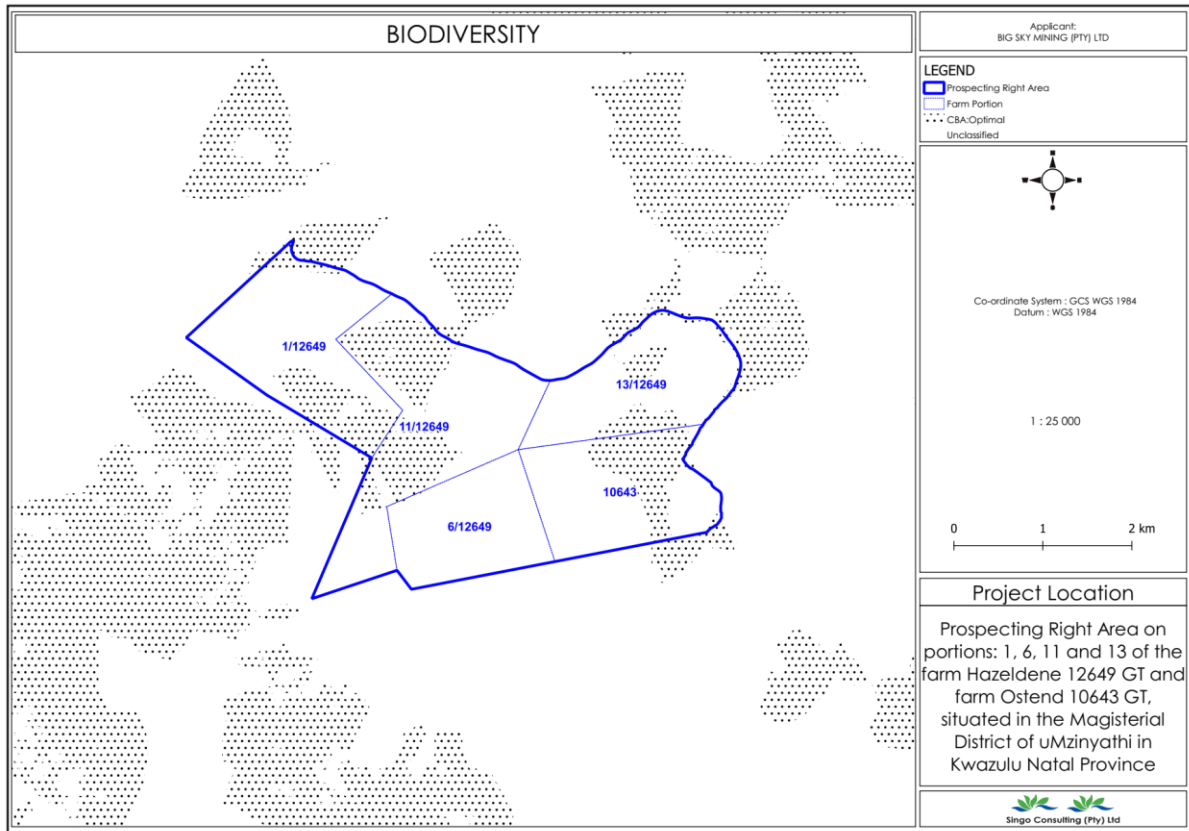


Figure 30: Biodiversity map of the project area.

The characteristics of the grassland biome and the relevant vegetation types are discussed below:

Grassland Biome

Broad biological groups known as biomes represent the main life zones that span vast natural landscapes. Bioregions, which are spatial terrestrial groups with comparable biotic and physical characteristics and processes, are further subdivided into biomes. (Rutherford, 1997). The proposed project area falls in the grassland biome (see Figure 30). The grassland biome in South Africa has traditionally been divided into 'pure' grasslands, assumed to be climatically determined, and 'false' grasslands of recent anthropogenic origin. A review of literature from several disciplines including paleobotany, archaeology, ecology and biogeography indicates that this is not a valid distinction. It is clear that the distribution of the grassland biome as a whole is poorly understood, but the general correlation between the distribution of biomes and climate elsewhere in the world suggests that this warrants more detailed investigation. The Grassland Biome is found chiefly on the high central plateau of South Africa, and the

inland areas of KwaZuluNatal and the Eastern Cape. The topography is mainly flat and rolling, but includes the escarpment itself. Altitude varies from near sea level to 2 850 m above sea level.

Grasslands are structurally simple and strongly dominated by grasses (Poaceae). The canopy cover is moisture-dependant and decreases with lower mean annual rainfall, but is influenced by the amount and type of grazing and by the presence of fire. Minimum temperature plays a decisive role in structurally distinguishing temperate grasslands from those where frosts are rare (Walker 1993). Woody species, where they occur, are limited to specialised niches/habitats. Forbs form an important component of grasslands and, although not usually dominant, probably contribute more to the species richness of grasslands than grass species do. Annuals do not form a large component of the vegetation, but are important in filling gaps where disturbance occurs.

Grasslands (also known locally as Grassveld) are dominated by a single layer of grasses. The amount of cover depends on rainfall and the degree of grazing. Trees are absent, except in a few localized habitats. Geophytes (bulbs) are often abundant. Frosts, fire and grazing maintain the grass dominance and prevent the establishment of trees.

Grazing has a major influence on canopy structure in grasslands as well as on species composition. The grass plant is well adapted to defoliation by grazing, fire or mowing: the basal meristems of grass leaves enable regrowth after defoliation and draw on carbohydrate reserves from the stem bases or rhizomes (Rutherford & Westfall 1986).

The Grassland Biome covers large areas of the central part of South Africa. In the general geological description of the Savanna Biome the history of the Kaapvaal Craton is summarized, which also applies here. The grasslands of South Africa cover a more significant portion of the Karoo Supergroup than the regions of the Savanna Biome. The Kaapvaal Craton is the thick, stable block of continental crust that underlies most of the central, northern and eastern parts of South Africa. It was formed by the welding together of ancient blocks of crust by voluminous intrusions of granitoid plutons around 3 gya, which formed a continental crust strong and stable enough to preserve the thick volcano-sedimentary sequences of the Witwatersrand, Ventersdorp and Transvaal Supergroups as well as the massive intrusion of the Bushveld Igneous Complex.

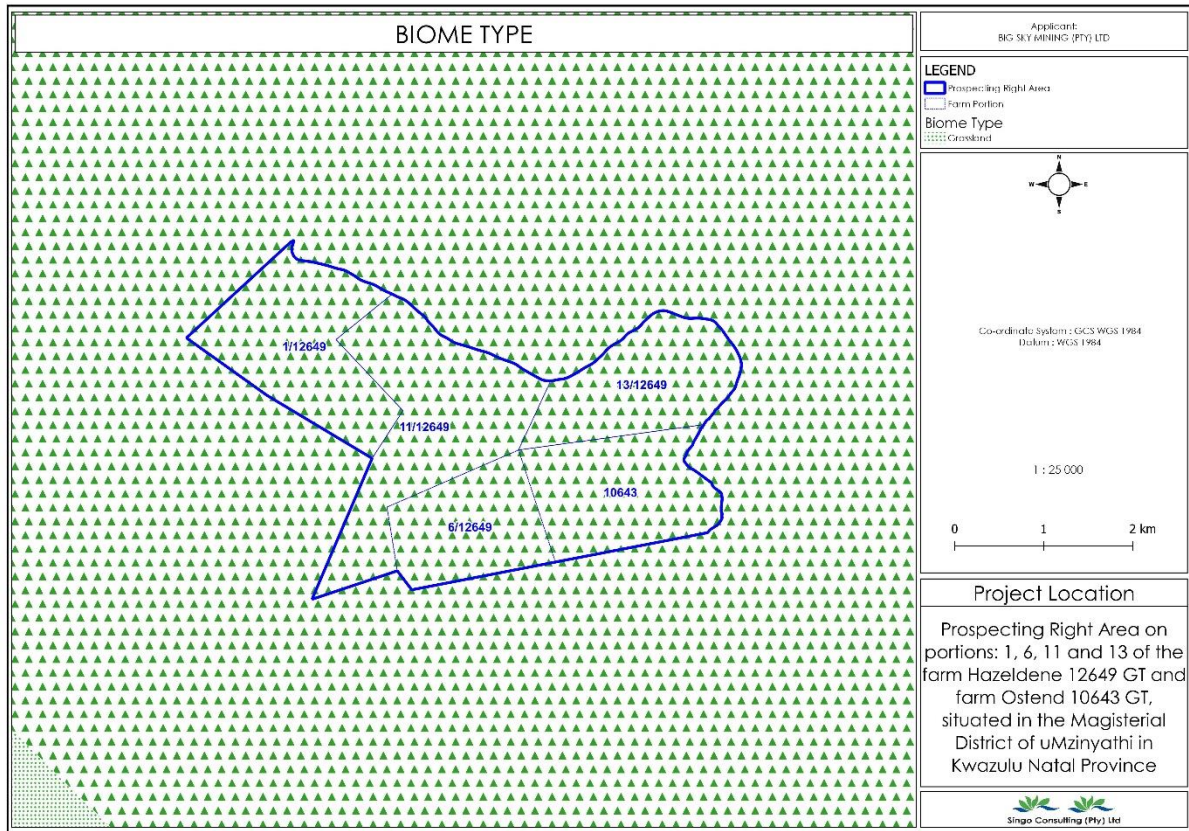


Figure 31: Biome type of the project area.

14.5.1 Protected tree species

In terms of the National Forests Act (Act No. 84 of 1998), certain tree species can be identified and declared as protected. According to the screening report, the proposed project area is of low to medium sensitivity for plant species with the following plant species sensitive species 1003 and Sensitive species 1086 (See Figure 32).

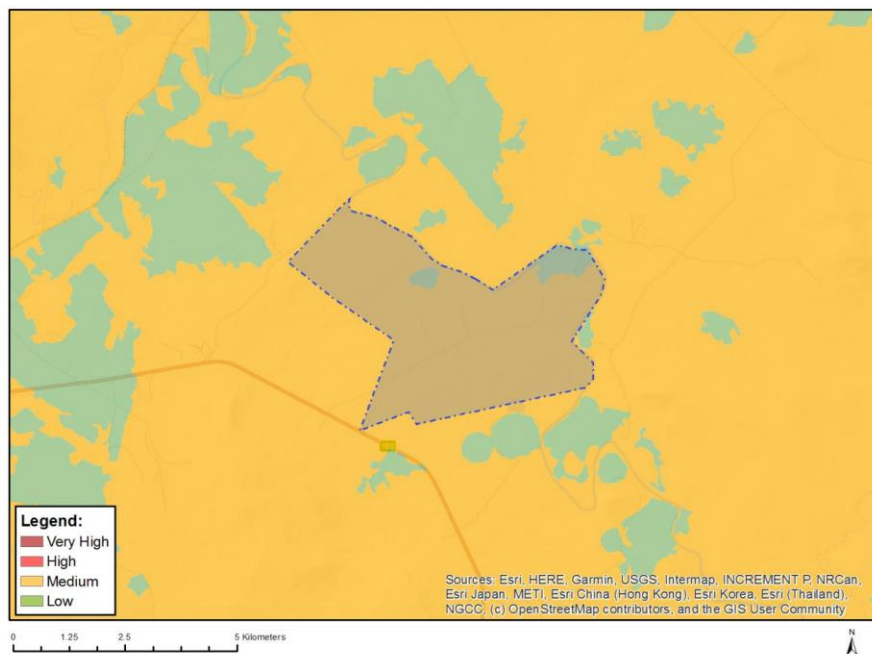
During ground truthing no protected tree species observed onsite. The proposed area is covered with mixture of floral species of least concern and alien invasive species. The following floral species were observed onsite during site assessment, namely (A) *Senecio inaequidens* DC, (B) *Aloe ferox* Mill. and (C) *Hippophae rhmnoides* L (see Figure 32). naturally or anthropogenically disturbed habitats such as riverbanks, rocky slopes, heavily grazed or recently burned grasslands, and road verges.

Kniphofia Galpinii is the most prevalent plant species in the area, according to the species list the biodiversity specialist provided; however, during the site assessment, this plant species was not encountered. If this plant species is discovered during prospecting activities, it will be considered of ecological importance, and drilling will not take place within this.



Figure 32: Typical example of *Kniphofia Galpinii* adapted from internet.

MAP OF RELATIVE PLANT SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at ejadatarerequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
		X	

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low Sensitivity
Medium	Sensitive species 1003
Medium	Sensitive species 1086

Figure 33: Plant species theme sensitivity of the application area.

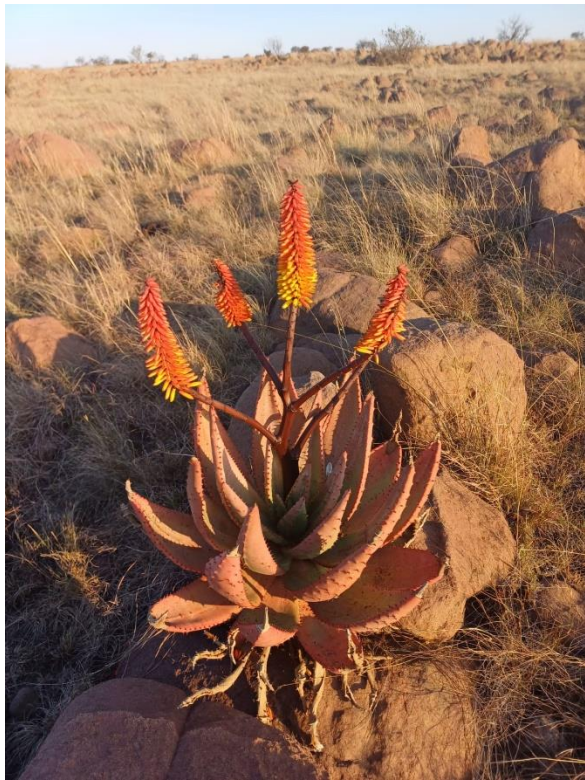


Figure 34: Floral species observed onsite.

14.5.2 Protected areas

According to the screening report, the proposed project area is characterized of Low sensitivity and Critical biodiversity area 2. During site assessment the no protected area were observed onsite. A further investigation was done on DFFE portal and the proposed area does not fall any protected area, (see Figure 34) for the DFFE protected areas screenshots.

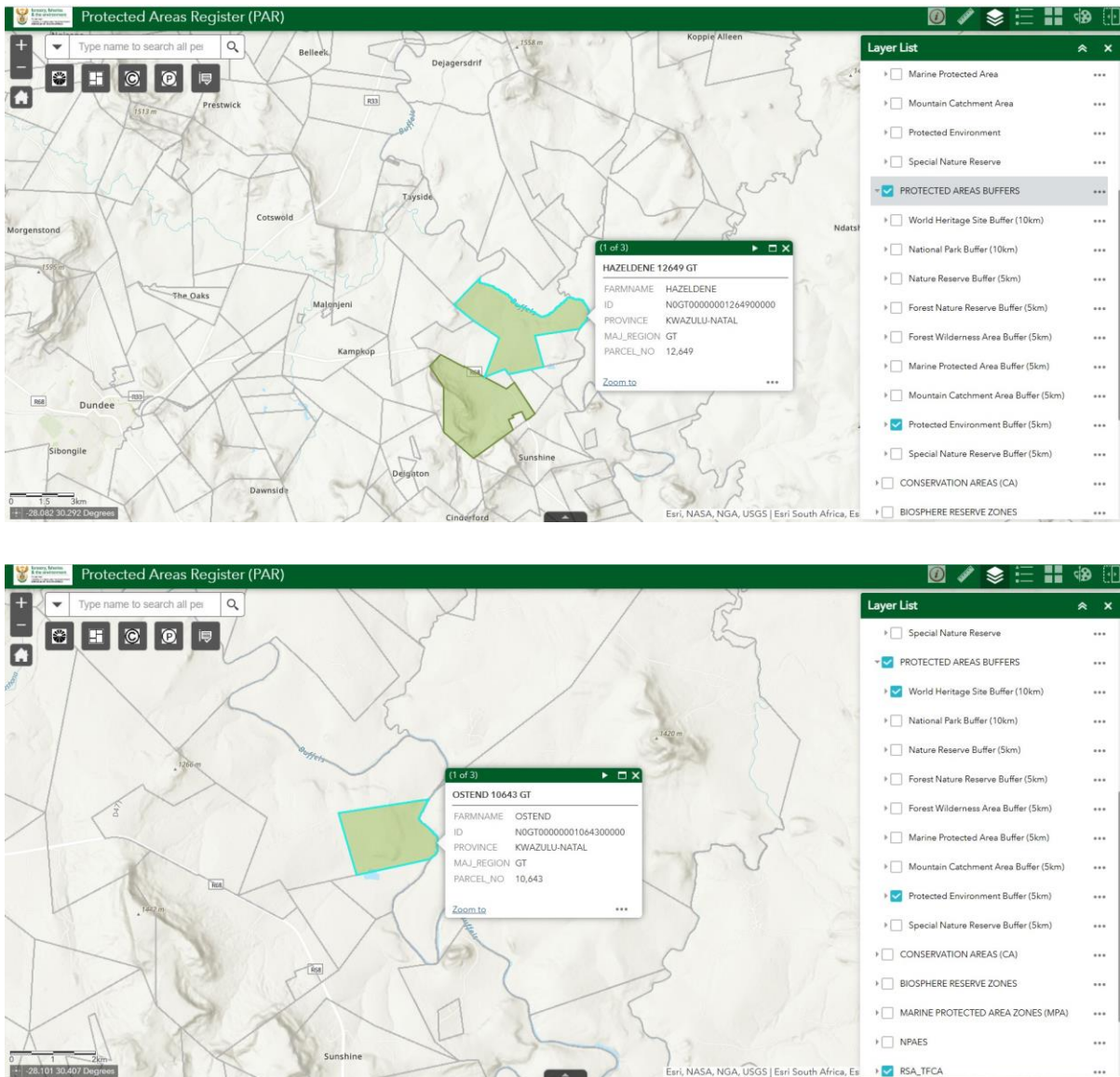


Figure 35: Hazeldene and Ostend DFFE Protected Environment 5km buffer.

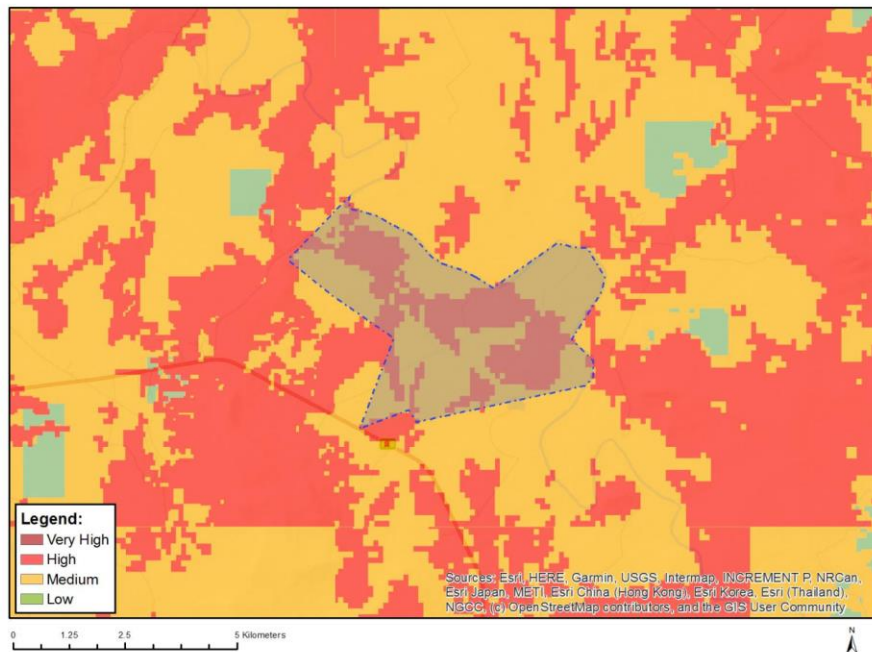
14.6 Fauna

14.6.1 Mammals

The screening report shows that the proposed project area is of high sensitivity for animal species with the following animals: *Aves-Geronticus calvus* and *Aves-Eupodotis senegalensis* and medium sensitivity of the following: *Aves-Podica senegalensis*, *Aves-Hydroprogne caspia*, *Aves-Eupodotis senegalensis*, *Aves-Sagittarius serpentarius* and *Mammalia-Ourebia ourebi ourebi* (see Figure 35). According to screening report the mammal species is **Mammalia-Ourebia ourebi ourebi** but during site assessment, no animals' species of medium sensitivity were observed onsite, only domestic animals such as cattles, goats and a dog were observed onsite (see Figure 36). *The mammals species of high sensitivity were also not observed on site.* If any mammal species might be identified onsite during drilling, they will be allowed to move away from the proposed area. Animal killing will be prohibited onsite.

According to the biodiversity animal species data provided by the biodiversity species specialist, the following mammal species are found in the proposed area are: *Sylvicapra Grimmia*. During site assessment none of the mentioned above were encountered and if they are found during drilling, no drilling activities will be permitted in the close proximity of these species.

MAP OF RELATIVE ANIMAL SPECIES THEME SENSITIVITY



Where only a sensitive plant unique number or sensitive animal unique number is provided in the screening report and an assessment is required, the environmental assessment practitioner (EAP) or specialist is required to email SANBI at ejadatarerequests@sanbi.org.za listing all sensitive species with their unique identifiers for which information is required. The name has been withheld as the species may be prone to illegal harvesting and must be protected. SANBI will release the actual species name after the details of the EAP or specialist have been documented.

Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	X		

Sensitivity Features:

Sensitivity	Feature(s)
High	Aves-Geronticus calvus
High	Aves-Eupodotis senegalensis
Medium	Aves-Podica senegalensis
Medium	Aves-Hydroprogne caspia
Medium	Aves-Eupodotis senegalensis
Medium	Aves-Sagittarius serpentarius
Medium	Mammalia-Ourebia ourebi ourebi

Figure 36: Mammal species theme sensitivity of the application area.

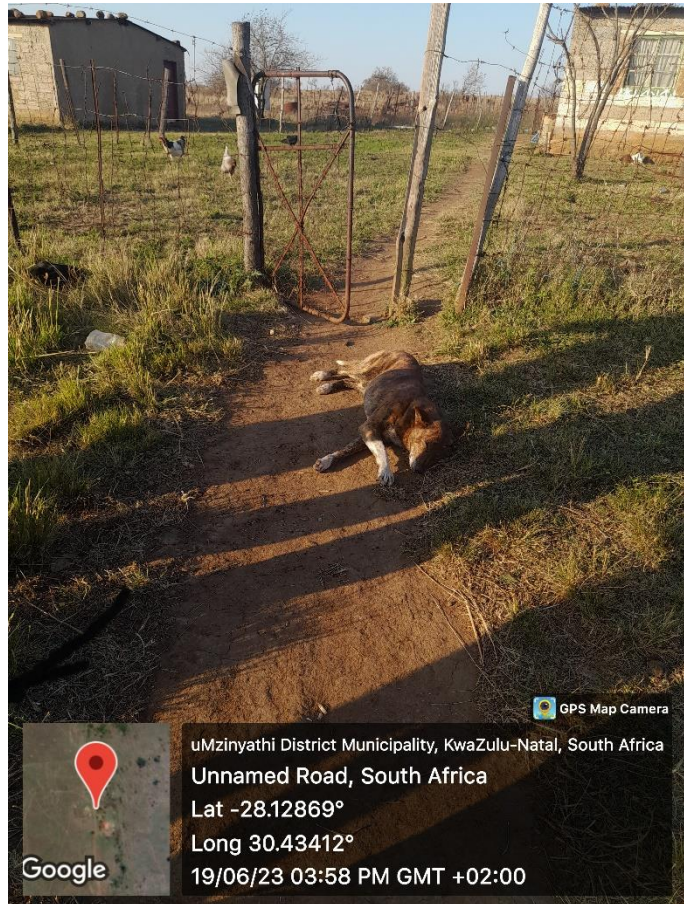


Figure 37: Domestic animals observed onsite

14.6.2 Amphibians

According to the screening report, no amphibians species of conservation concern are known to occur in the proposed project area. No amphibians species observed during site assessment. The site might have amphibians species as there are wetlands observed on site, perennial river flowing on the edges of the proposed area and unchanneled valley bottom wetland observed outside the project area which provides habitat to amphibians species. The biodiversity animal species data provided by the biodiversity specialist show the following animal species of conservation concern in the proposed area are: **Amietia Poyntoni**, **Amietophrynus Gutturalis**, **Amietia Queckettii**, **Tomopterna Cryptotis**, **Hyperotis Marmoratus**, **Kassina Senegalensis**, **Phrynobatrachus Natalensis**, **Amietophrynus Rangeri**, **Cacosternum Boettgeri** and **Ptychadena Porosissima**. Drilling will be conducted 500 m away from the wetlands identified to avoid unnecessary disturbance of habitat for amphibians.

14.6.3 Avifauna

According to the screening report, the proposed project area is of medium to high sensitivity for birds species. High sensitivity species are: *Aves-Geronticus calvus* and *Aves-Eupodotis senegalensis* and medium sensitivity of the following: *Aves-Podica senegalensis*, *Aves-Hydroprogne caspia*, *Aves-Eupodotis senegalensis*, *Aves-Sagittarius serpentarius* (see Figure 35 above). During site assessment, no avifauna species were observed onsite. If avifauna species might be identified during drilling, they should not be killed or disturbed, and they will be allowed to move away from the proposed site without any harm. But the biodiversity species data show that the following Avifauna are found on the proposed site: *Polemaetus Bellicosus*, *Circus Ranivorus*, *Anthropoides Paradiseus*, *Neotis Denhami* and *Balearica Regulorum*.

14.6.4 Phylum chordate.

According to the screening report, the proposed project area does not fall under any fish species however the biodiversity species data show that the area is comprised of the following species: **Barbus Anoplus**, **Labeobarbus Natelensis** and **Barbus Paludinosus**.

14.6.5 Reptilia

The screening report does not reveal any reptilian and so is the ground truthing, however the biodiversity species data provided by the biodiversity specialist shows that the area comprised of the **Causus Rhombatus**.

14.7 Surface Water and Aquatic Ecosystems

The proposed project area falls in the Pongola-Mtamvuna water management area, and the project area falls between the following quaternary catchments: **W32E** and **W32F** (see Figure 37). During desktop study, the screening report shows that the proposed project area falls in the very high sensitivity area for aquatic biodiversity with the following features Aquatic CBA and wetland and Estuaries (see Figure 39). The Biodiversity Map produced by Singo Consulting (Pty) Ltd Database Manager, shows that the proposed project area falls in the unclassified and CBA optimal (see Figure 40). Site assessment revealed that there are unchanneled valley bottom wetlands, artificial wetland, perennial rivers and non-perennial river observed onsite (see Figure 38). The wetlands and rivers observed are of high ecological function and high conservation importance. A 500m buffer zone should be maintained from the wetlands and 100m buffer zone should be maintained from the rivers identified onsite to avoid triggering section 21 (l) and (c) of National Water Act. No drilling should be conducted within a DWS regulated area without a water use license from DWS.

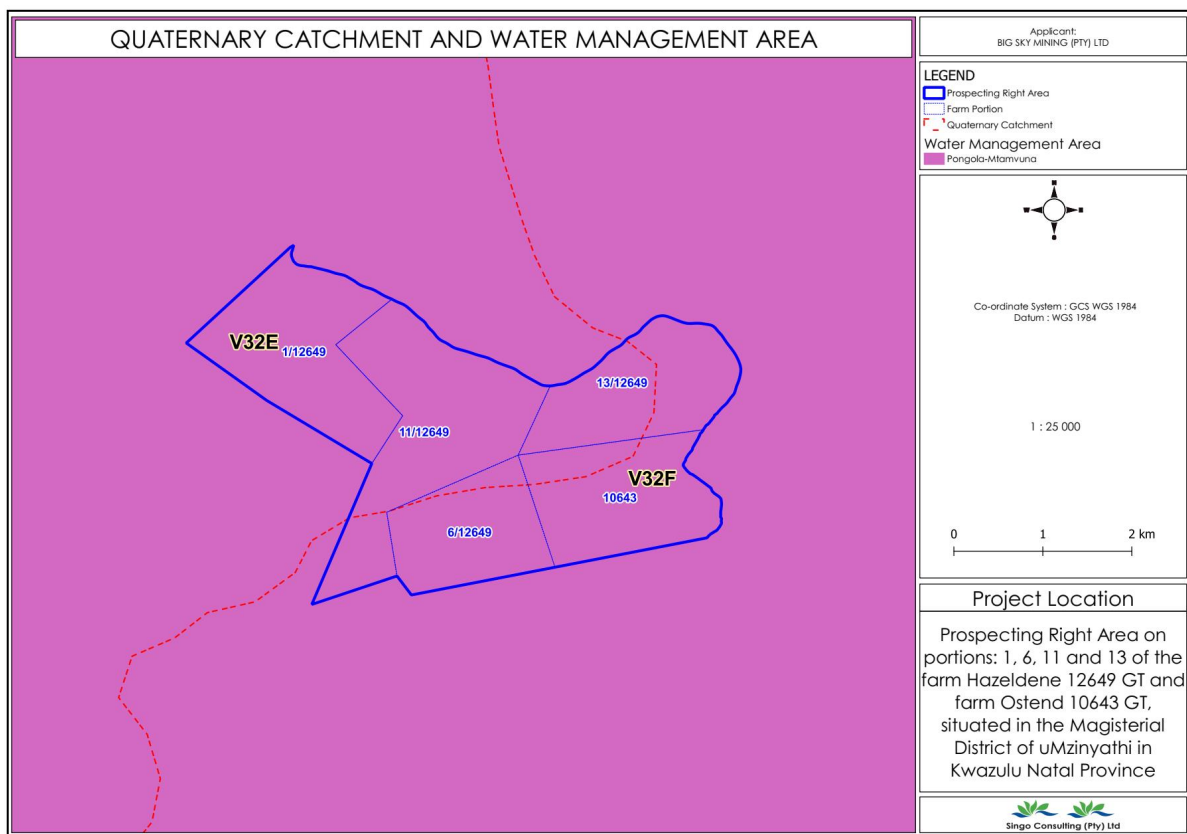
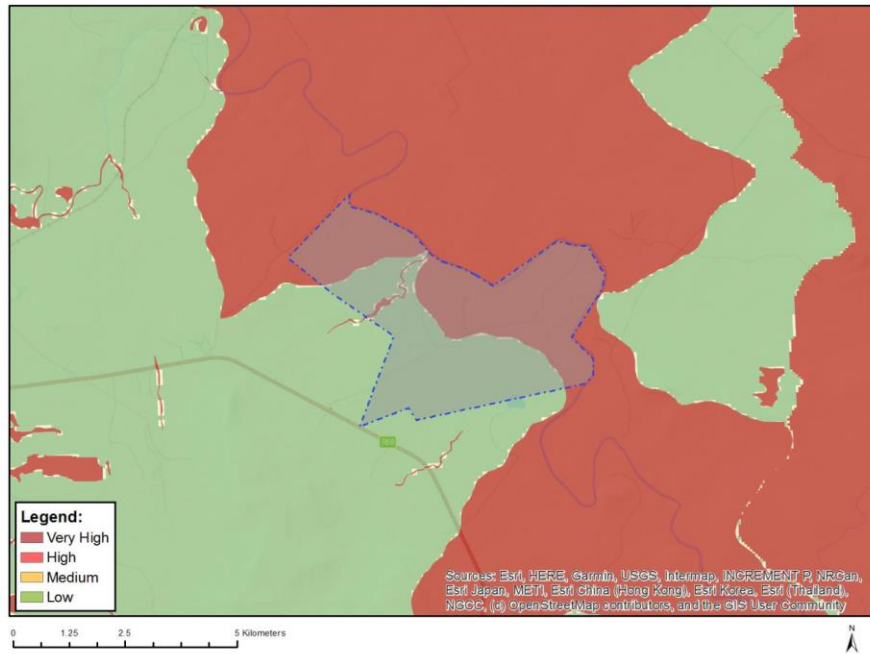


Figure 38: Quaternary catchment area map.



Figure 39 waterbodies observed onsite.

MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Low	Low sensitivity
Very High	Aquatic CBAs
Very High	Wetlands and Estuaries

Figure 40Aquatic biodiversity theme sensitivity.

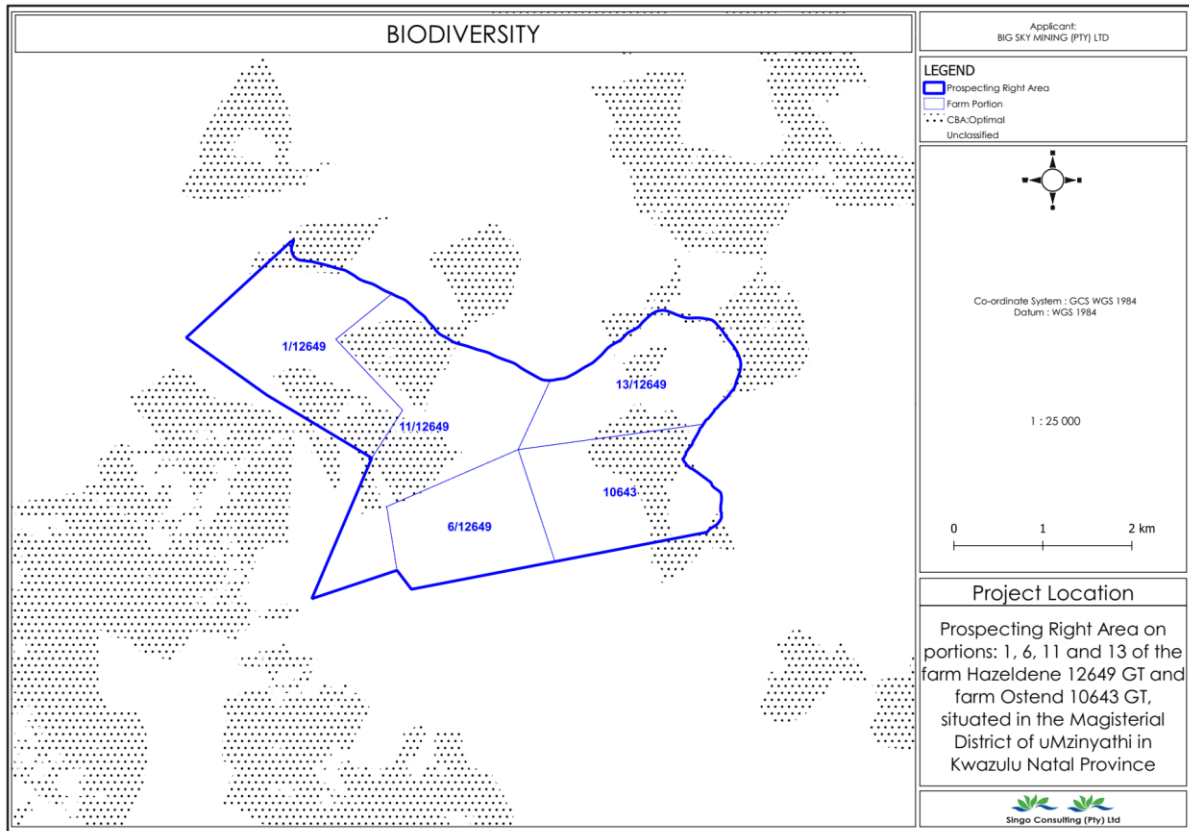


Figure 41: Biodiversity map

14.8 Groundwater

During site assessment, drilled boreholes were observed onsite but only one borehole is used by the farm residents. No pump testing was performed at this stage and no water samples were taken, but groundwater quality is assumed to be good since the water is used only for domestic and livestock agricultural. Figure 41 below shows a typical example of a boreholes identified onsite. Groundwater uses within the project area is limited to domestic purposes and agricultural purposes such as livestock agricultural and drinking.



Figure 42: Borehole observed onsite during site assessment.

14.9 Air Quality

There aren't any significant sources of air pollution in the area prior to prospecting. Fugitive dust emissions may be caused by animal operations, wind erosion from open spaces, and vehicle entrainment of dust from gravel roadways. Livestock farming is the primary emphasis of local agriculture. It is unlikely that agriculture will have a large impact on ambient dust levels. The proposed project location is primarily rural, hence the air quality is thought to be good.

14.10 Noise

The application area is situated in a farm environment, with typically low levels of noise, dominated by man influenced sounds such as residential activities, livestock, and farming activities (use of farming equipment). Noise in the greater region emanates primarily from the following sources:

- ❖ Human settlements.
- ❖ Vehicles on the gravel roads
- ❖ Farming equipment's within the farm and in the neighboring farms

14.11 Visual Aesthetics

The visual character of the landscape in and around the application area consists mainly of residential area and agricultural practices. The visual quality of the area is enhanced by the rivers, unchanneled valley bottom wetlands, and areas covered with natural vegetation found inside the project area.

The application area has a relatively gentle and steep topography. The landscape is perceived as topographically steep, gentle, and homogenous in colour and texture due to the vegetation cover stretching from horizon to horizon. The vegetation cover of the proposed area and hills restrict viewing corridors of the proposed area.

14.12 Heritage and cultural resources

According to the National Heritage Resources Act 25 of 1999, heritage resources are any place or object of cultural significance. In one familiar aspect, heritage resources refer to buildings, monuments, landscapes, and artefacts. These resources are relatively permanent, though somewhat very tenuous, environmental features; if they are present, their integrity is highly susceptible to construction and ground disturbance activities like prospecting and mining activities. The screening report shows that the proposed project area is of low sensitivity for Archaeology and Cultural Heritage theme sensitivity (see Figure 43).

During site assessment, Archaeology and Cultural Heritage features such as graves were observed onsite (see Figure 42). Online consultation with SAHRA was conducted and SAHRA

will guide if the Heritage Impact Assessment study should be conducted for the proposed project. It is recommended that heritage Impact Assessment study should be conducted by qualified Archaeology to identify all archaeological and cultural heritage features available onsite which were not identified during site assessment. Drilling activities should avoid any areas with Archaeology and Cultural Heritage features.

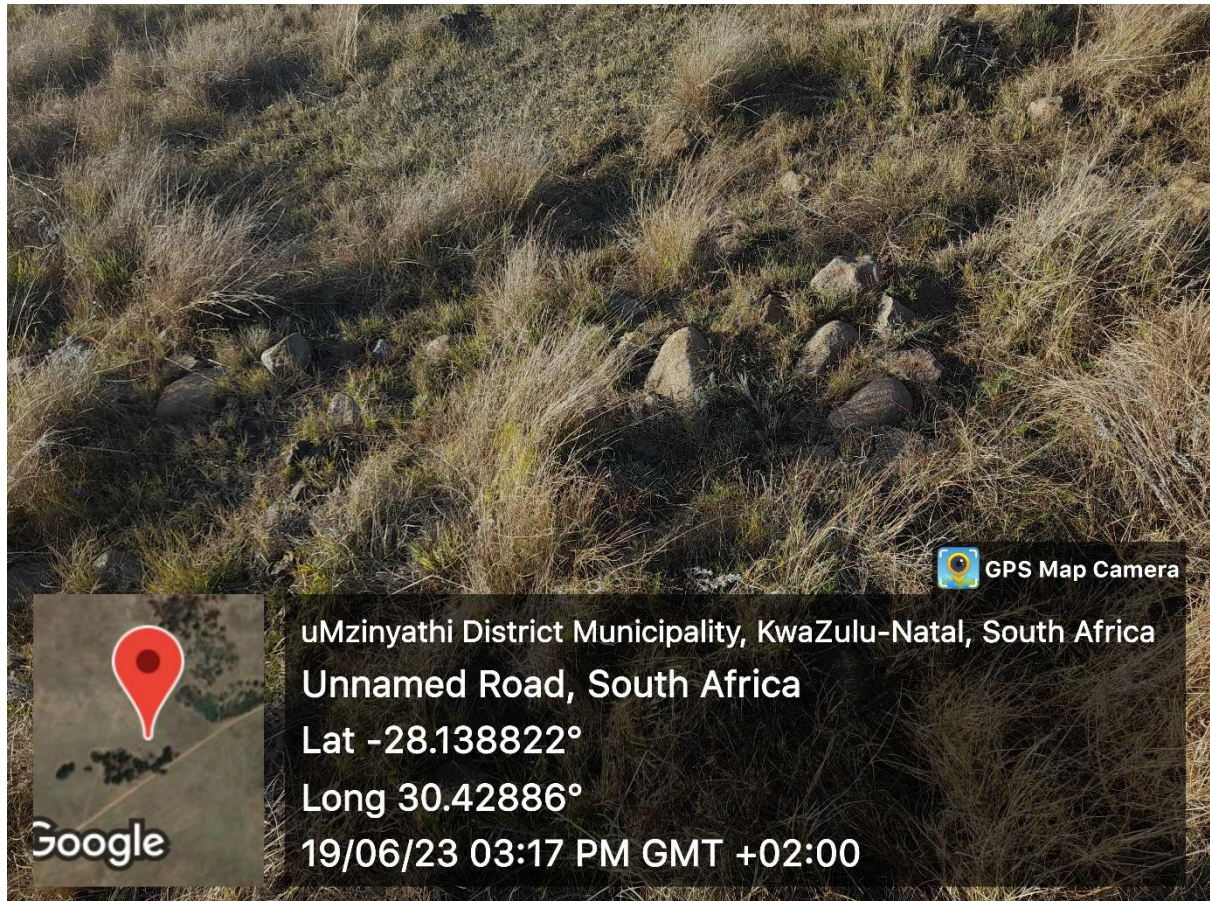
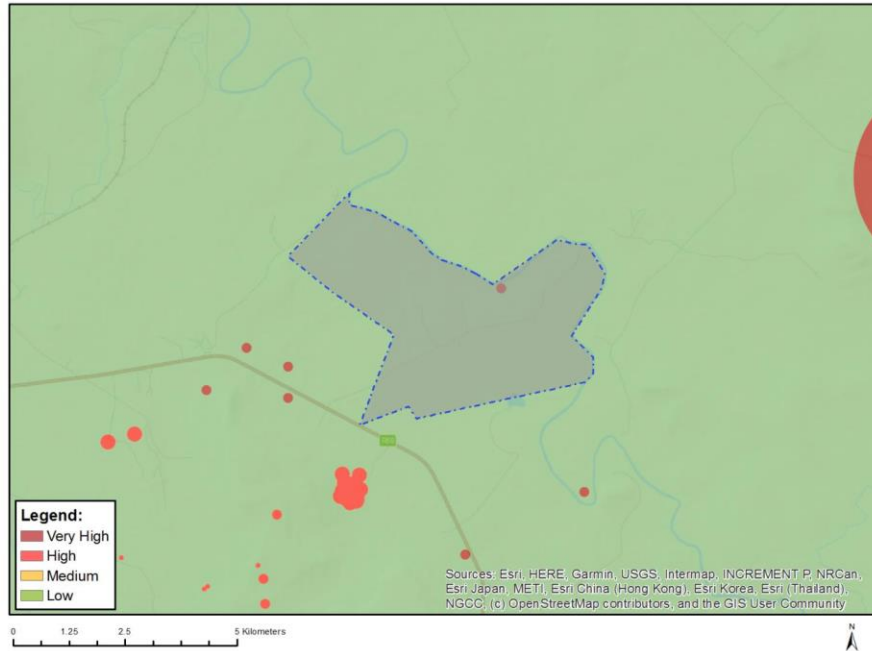




Figure 43: Graves observed on site.

MAP OF RELATIVE ARCHAEOLOGICAL AND CULTURAL HERITAGE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

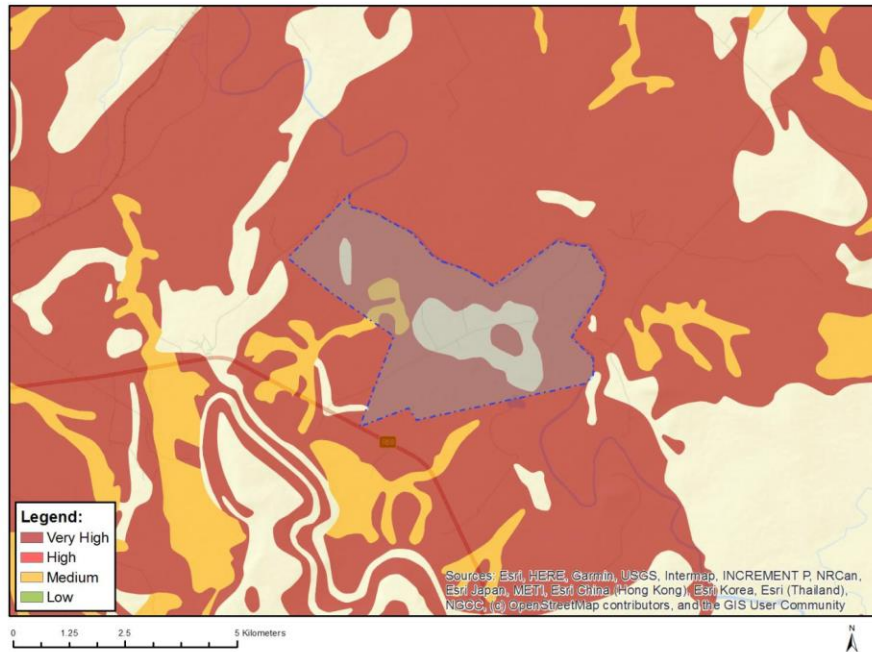
Sensitivity	Feature(s)
Low	Low sensitivity
Very High	Within 100m of an Ungraded Heritage site

Figure 44: Archaeological and cultural heritage theme sensitivity of the application area.

The scientific study of life that lived before the Holocene Epoch (approximately 11,700 years ago) and occasionally throughout it is known as paleontology. In order to categorise species and analyse relationships with one another and their habitats, it also includes the study of fossils. Paleontology lies on the border between biology and geology but differs from archaeology in that it excludes the study of anatomically modern humans. It now uses techniques drawn from a wide range of sciences, including biochemistry, mathematics, and engineering. The screening report shows that the proposed project area is of medium to very high sensitivity for Paleontology theme sensitivity (see Figure 44).

During ground truthing, no paleontological features old buildings and houses were observed onsite, however graves were observed and the coordinates have been noted down. If any Paleontological features might be identified during drilling, the area where paleontological features will be identified will be demarcated and the operation will be stopped. A qualified Archeologist will be appointed to conduct Paleontology study to identify all Paleontological features available onsite. Online consultation with SAHRA was conducted and SAHRA will guide if the Heritage Impact Assessment study and paleontology study should be conducted for the proposed project. Drilling will be conducted 100m away from the identified archaeological, cultural heritage and paleontological features.

MAP OF RELATIVE PALEONTOLOGY THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
X			

Sensitivity Features:

Sensitivity	Feature(s)
Medium	Features with a Medium paleontological sensitivity
Very High	Features with a Very High paleontological sensitivity

Figure 45: Paleontology theme sensitivity of the application area.

14.12 Socio Economic Characteristics

The project falls within Endumeni local municipality, the local municipality is located under uMzinyathi District Municipality. Endumeni local Municipality is one of four Municipalities within the uMzinyathi District Municipality. Endumeni Municipality is bordered in the north by the Amajuba District Municipality, in the west by the uThukela District Municipality, in the southwest by the uMgungundlovu District Municipality, in the southeast by the iLembe District Municipality and in the east by King Cetshwayo District Municipality, as spatially depicted on plan no. 2. The municipality is generally accessed off the N3 highway onto the N11 then proceeding onto the R68 into the Municipal area.

The Umzinyathi District has a total area of 8079 km² and has extensive grasslands in the north supporting the primary agricultural sector based on cattle ranching for beef, small scale sheep and mixed farming and maize cultivation. In the southern areas substantial forestry is prevalent. Sugar cane and smaller scale fruit farming such as avocado and kiwi fruit cultivation also occur. Within Endumeni Local Municipality, the town of Dundee has the main economic activities within the district ranging from retail trade, tourism, and farming. Dundee is a centre of tourism activity based on the cultural heritage of the Zulu Kingdom and "Battlefields."

The population is spread unevenly among the 7 municipal wards. These wards coincide with the growing settlements of, Dundee, eSbongile, eSibongile, Glencoe, Sbongile, Sithembile, and Wasbank. Endumeni Local Municipality comprises 7 wards with 7 Ward Councilors respectively. There is one Traditional Council for the proposed area, the upcoming applied activities are to develop the local municipality in terms of job opportunities that will change the Municipals IDP.

The study of economic development, which is generally broad in its scope, refers to the standard of living of citizens; most often measured by GDP per capita, literacy rate, and life expectancy. Economic development incorporates many elements of pure macro-economics, such as price stability, high employment, and sustainable growth. However, this is underpinned by the study of infrastructure and social development programmes, such as education, housing, and road networks. If prospecting for the mineral deposit of interest identified, mining permit or mining right will be applied, and mine operations have the potential to influence/affect the economic environment of the area positively or negatively.

Dundee has the main economic activities within the district ranging from retail trade, tourism, and farming however, mines will also contribute directly towards employment, procurement, skills development, and taxes on a local, regional, and national scale. In addition, mines

indirectly contribute to economic growth in the local and regional economies because the increase in the number of incomes earning people has a multiplying effect on the trade of other goods and services in other sectors. The proposed prospecting right process will provide limited job opportunities to local communities through hiring security offices from the local communities to provide safety and security services where drilling will be conducted to avoid theft. Other community members will be hired to work as drilling assistants because drilling require people who are having extensive experience and knowledge. Local people who are having qualifications and experience in drilling will also be hired to boost drilling team and ensure drilling is conducted accordingly.

During drilling, local businesses and community members who are providing lighting equipment, portable restrooms, and mobile containers to be utilized as offices will be employed. However, placing a mine at a location could have negative effects on the environment in the vicinity. This is due to the fact that modifications are made to not only the pre-existing land uses but also the related social structures and way of life. Because the surrounding environment no longer benefits financially from the mine's operation, the mine's closing phase may have extremely detrimental effects. To ensure the economic safety of the communities which are affected by the mining operations, mitigation measures post closure of the mine will need to consider the economic environment of the communities and address these impacts effectively.

THE SEVEN (7) KZN PRIORITIES

The following are the seven (7) KZN Priorities that each municipality as an implementing agent should strive to address / achieve:

- ❖ Job creation;
- ❖ Human Resource Development;
- ❖ Human & Community Development;
- ❖ Strategic Infrastructure;
- ❖ Environment Sustainability;
- ❖ Governance & Policy
- ❖ Spatial equity

Impacts on the socio-economic environment are expected to occur as follows:

- ❖ Economic growth.
- ❖ Education, skills development, and training.
- ❖ Employment opportunities.

Conclusion

The proposed project will contribute positively to the Endumeni local municipality's IDP strategic framework in terms of job creation and skill development. If the project is given the chance to look for the mineral in question and it is discovered, it will provide a chance to advance to the next stage of mining right/permit and will grow the community locally and the GDP of KZN.

14.13 Specific environmental features and infrastructure occurring on site which may require protection, remediation, management, or avoidance

The following specific environmental features and infrastructure have been identified that may require protection, remediation, management, or avoidance:

- ❖ Unchanneled valley bottom wetlands.
- ❖ Rivers
- ❖ Farmhouses.
- ❖ Graves
- ❖ Gravel roads.
- ❖ Powerlines.
- ❖ Fences and gates.

Drilling can be done with considerable flexibility to prospecting in order to avoid the infrastructure and environmental features mentioned above. If any of these locations are required for conducting activities, the required applications and/or landowner agreements will be sought and authorized before conducting activities there. Before beginning any works, the necessary authorizations will be obtained from the DWS in cases where boreholes must be placed inside watercourse buffers.

14.13.1 Description of the current land uses

During desktop study the map produced by Singo Consulting (Pty) Ltd, Database Manager shows that the proposed project area is characterized by the following, Plantation Natural Vegetation, Waterbodies, Bare Land, Wetlands, Cultivated Land, Built-Up Area and Mine (see Figure 45). The current land-use of the proposed project area is characterised by residential, livestock farming and grazing and plantation. Figure 46 below shows typical examples of current land use activities. The neighboring farms area is also used for livestock farming, cultivation and residential.

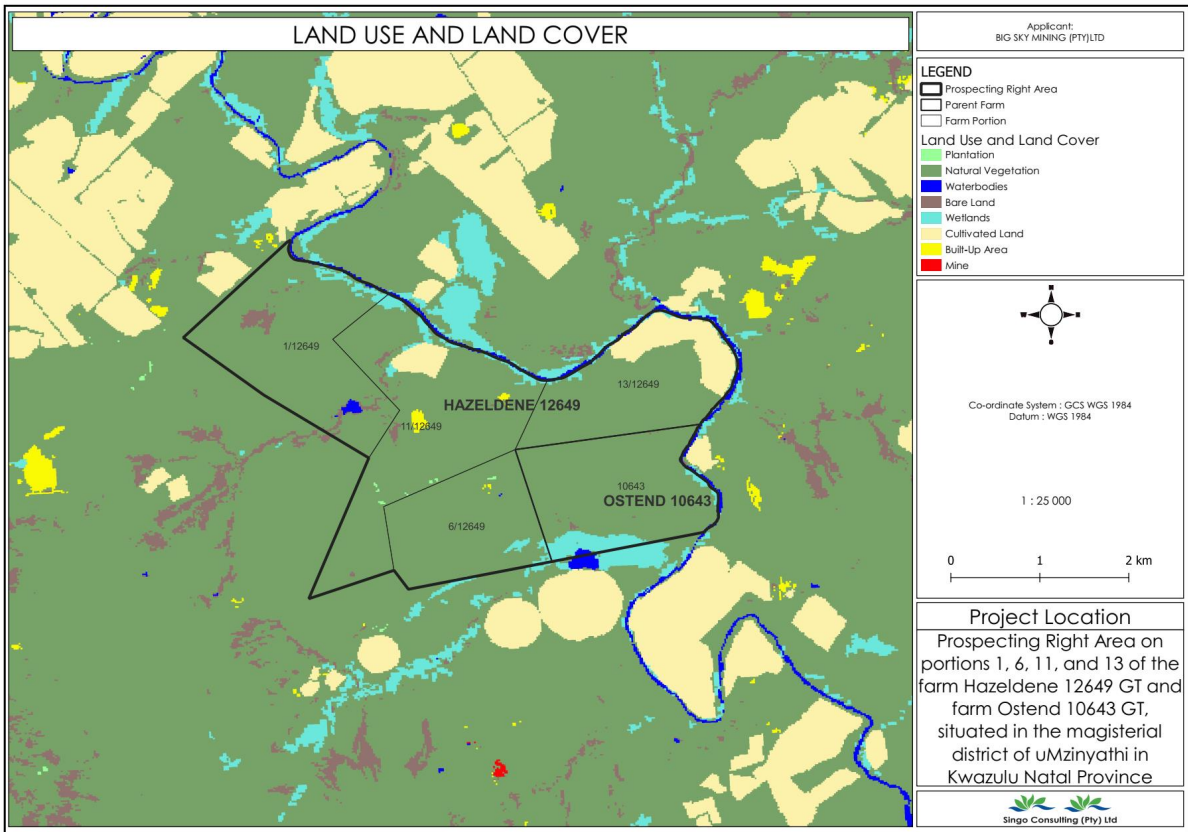


Figure 46: Land use and landcover map of the proposed project area.

15. Impacts and risks identified

Table 9 lists the potential impacts identified per environmental aspect. These impacts have been further refined and assessed according to the quantitative impact assessment methodology described in Section 15.1 below and the results, including the nature, significance, consequence, extent, duration and probability of the impacts as well as the degree to which these impacts can be reversed, are presented in Table 11.

Table 9: Summary of the potential impacts identified.

Aspect	Potential Impacts
Geology	The local geology will be disturbed by drilling for core samples that has a direct impact on the geological strata.
Topography	Localised dips in topography if boreholes collapse after material is replaced.
Land Capability and Use	Land use and capability will not be significantly impacted as the current land use can continue concurrent to prospecting activities.
Soils	Soil contamination from hydrocarbon spillages from the drill rig and vehicles, leakage from portable toilets and littering.
	Disturbance of soil resource caused by the movement of the drill rig, vehicles, establishment of the drill site and temporary contractor's yard.
Flora	Loss and degradation of vegetation caused by the movement of the drill rig, vehicles, establishment of the drill site and temporary contractor's yard over undisturbed areas.
	Potential invasion of alien plants on disturbed areas.
Fauna	Disturbance of animal species especially sensitive bird species nesting in and around the proposed drill sites.
	Increased human activity in the area can result in harm to animals caused by littering, accidents, and illegal hunting.
Surface water and aquatic ecosystems	Disturbance to the bed and banks of watercourses if the activity proceeds indiscriminately.
	Deterioration in surface water quality due to hydrocarbon, sewage, process water from sumps or other waste spillages ending up in surrounding watercourses.
	Irresponsible use of water and water wastage.
Groundwater	Contamination of the groundwater resources through hydrocarbons, process water and wastes seeping into the groundwater table in the event of

	leaks/spills.
	Drilling into the geological strata may cause cracks leading to disruption of the aquifer.
Air quality	Reduction in the ambient air quality through the creation of fugitive dust from the movement of the drill rig and vehicles as well as drilling activities.
Aspect	Potential Impacts
Noise	Increase in the ambient noise levels caused by the drilling activities and movement of vehicles.
Visual	Change in the visual characteristics of the immediate area around the drill sites and its surrounds
Heritage resources	Loss of and disturbance to archaeological / heritage / grave sites that may be encountered.
Socio economic, health and safety	Temporary employment opportunities for contractors (drilling and sample analysis)
	Theft and safety risk to surrounding landowners
	Increase potential for accidents caused by moving vehicles
	Damage to existing infrastructure incl. roads, fences and gates.
	Increase risk of veld fires

15.1 Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks

The methodology used determines the significance of the impacts by evaluating the consequence (extent, duration, and severity) and probability of each impact. The definitions of the terms used within the methodology are provided below, followed by the stepped approach.

Definitions

Aspect – a particular part or feature of something.

Impact – is defined as any change to the environment, whether positive or negative, resulting from a facility/project/development's products, development, and activities.

Cause/Activity – the precipitating factor resulting in a perceived impact.

Mitigation Measures – identified actions and requirements designed to be instituted to reduce the undesirable effects of a perceived impact.

Significance Level – the degree of importance of the impact on the social and/or biophysical environment; a proxy for the degree to which the impact is reversible and may cause irreplaceable loss of a resource. The approach used to determine significance makes use of value judgements to determine the degree of change on the social and/or biophysical environment, after which the consequence and likelihood of the impact are ranked to provide a significance level.

Extent – the spatial scope of the perceived impact. (How large an area will be impacted). **Duration** – the temporal scope of the perceived impact, or the period of time during which the social and/or biophysical environment is changed by the impact. (How long the impact will last).

Severity – the degree to which the natural, cultural, and/or social functions and processes of an environment may be affected or altered by a perceived impact. (How extreme/harsh the impact will be. The degree of disturbance).

Probability – the possibility or likelihood of the impact occurring or manifesting.

Approach

The stepped approach used is provided below:

Step 1: The different aspects of the proposed project are identified along with the associated environmental and social impacts which may occur during the construction, operation, decommissioning and post closure phases.

Step 2: Assess the environmental and social impacts by providing a numerical score for each

of the following factors using the ranking scales in Table 7:

- ❖ Extent.
- ❖ Duration.
- ❖ Severity.
- ❖ Probability

Step 3: Once these factors are ranked for each impact, the significance points are calculated by using the formula below.

$$\text{Significant Points (SP)} = \text{Consequence (Extent + Duration + Severity)} \times \text{Probability}$$

Step 4: Mitigation measures for each impact are determined during the EIA Phase, and the above approach is repeated to determine the significance of each impact post-mitigation

15.1.1 Significance Level

The maximum value is 100 significant points. The significance level could therefore be rated as either Very High (VH), High (H), Medium (M), Low (L), or VeryLow (VL) on the following basis:

Very Low	Negligible impact which does not require further mitigation.	SP <19
Low	Acceptable impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent the implementation of the project. These impacts will result in either positive or negative medium to short term effects on the social and/or natural environment.	SP 20 - 39
Medium	An important impact which requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but which in conjunction with other impacts may prevent its implementation. These impacts will usually result in either a positive or negative medium to long-term effect on the social and/or natural environment.	SP 40 - 59
High	A serious impact, if not mitigated, may prevent the implementation of the project. These impacts would be considered by society as constituting a major and usually a long-term change to the (natural &/or social) environment and result in severe negative or beneficial effects.	SP 60 - 79
Very High	A very serious impact which, if negative, may be sufficient by itself to prevent implementation of the project. The impact may result in permanent change. Very often these impacts are unmitigable and usually result in very severe negative or very beneficial effects.	SP > 80

Table 10: Variables with each category score.

CONSEQUENCE		Extent (Magnitude) of the Impact	SP
	Site	Limited to parts of the application area.	1
	Project area	Limited to within the application area.	2
	Local	Extends beyond the application area on a local scale.	3
	Regional	Extends beyond application area on a regional scale.	4
	National	Widespread, far beyond the application area (regional or greater area)	5
		Duration of the Impact	
	Immediate	One to two days.	1
	Short term	One Week to one Month.	2
	Medium term	Two Months to one Year	3
	Long term	Two to five years. Ceases with operational life of project.	4
	Permanent	Impact occurs beyond lifespan of the project.	5
		Severity of the Impact	
	Minor	Non-harmful. Impacts affect the environment in such a way that natural, cultural and/or social functions and processes are not affected.	2
	Low	Potentially harmful. Impacts affect the environment in such a way that natural, cultural and/or social functions and processes are negligibly altered.	4
	Medium	Slightly harmful. Impacts affect the environment in such a way that natural, cultural and/or social functions and processes are slightly altered.	6

	High	Significantly Harmful. Impacts affect the environmental in such a way that natural, cultural and/or social functions and processes are notably altered.	8
	Very High	Extremely harmful. Impacts affect the environmental in such a way that natural, cultural and/or social functions and processes are severely altered.	10
Probability	Probability		
	None	0% chance of the impact occurring.	0
	Improbable	The possibility of the impact materializing is very low. 1% to 9% chance of occurrence.	1
	Low Probability	Impact not expected to occur, but conceivable. 10% to 30% chance of occurrence; and Circumstances rarely encountered.	2
	Medium Probability	Impact may occur sometimes. 31 - 60% chance of occurrence. Circumstances occasionally encountered.	3
	High probability	Impact will probably occur. 61 - 90% chance of occurrence. Circumstances frequently encountered;	4
	Almost Certain	91 - 100% chance of occurrence.	5

15.1.1.1 Assessment of potential impacts and risks

Refer to table 11 for the impact assessment table.

15.1.1.2 Positive and negative impacts that the proposed activity alternatives will have on the environment and the community that may be affected.

No activity alternatives are considered except for the No Go Option. Should the project not be implemented, the status quo remains, and farming activities will continue unaltered with no negative impacts on the biophysical, socio economic or cultural environment. On the other hand, not proceeding with the proposed operation would have a direct consequence in that the mineable potential of the suspected reserve would not be determined.

15.1.1.3 Possible mitigation measures that could be applied and the level of residual risk.

Refer to Section 14 for the mitigation measures identified to reduce and/or minimize potential impacts and risks where they are unavoidable. It is anticipated that the mitigation measures envisaged in this report and the EMPr (Part B) will be adequate to manage the potential negative impacts on the biophysical and societal environment.

15.1.1.4 Motivation where no alternative sites were considered

With regard to location, the prospecting activities are delimited by the properties available for prospecting (i.e., not held by another company) and the geology of the surrounding area. The application area has already been determined through extensive geological research and prospecting can only take place in the area on which the rights are granted.

15.1.1.5 Statement motivating the preferred site

The preliminary positions of the proposed prospecting boreholes have been sited to give a representative sample for the project area considering the buffer zones around the watercourses. Alternatives may be considered based on the findings of the geophysical investigations. At this stage, it can only be stated that invasive prospecting (drilling) will avoid watercourses, potential historical sites, graves, protected plant species if identified during drilling by the establishment of buffer zones in which no activities can take place. In instances where boreholes will have to be situated inside these buffers, the requisite authorisations will be obtained.

16. Full Description of the Process Undertaken to Identify, Assess and Rank the Impacts and Risks the Activity will impose on the Preferred Site through the Life of the Activity

This section describes the potential positive and negative environmental impacts identified for the proposed operation. The objective was to determine the significance level of each of the potential environmental impacts and to identify mitigation measures to prevent, reduce or contain the impacts during all the phases of the operation. The impacts were assessed, according to the methodology described in Section 13.1. The following key principles contained in the National Environmental Management Act (Act 107 of 1998) (NEMA), were considered during the impact assessment:

- ❖ **Sustainability** – development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs.
- ❖ **Mitigation hierarchy** – avoidance of environmental impact, or where this is not possible, minimizing the impact and remediating the impact; and
- ❖ The duty of care of developers towards the environment as embodied in the NEMA (section 28) and the NWA (section 20).

The assessment methods proved adequate to determine the nature and extent of all impacts that the proposed operation may have on the natural, social, and economic environments. Based on the findings of the impact assessment, which included a thorough public participation process, a comprehensive Environmental Management Programme (EMPr) has been developed to prevent, reduce or contain the impacts of the proposed prospecting operation – see Part B EMPr - Section 5 of this report. The development and implementation of a successful EMPr has benefits beyond merely meeting legal obligations. It contributes to environmental awareness of the workforce, it can facilitate the prevention of environmental degradation, and minimize impacts when they are unavoidable.

16.1 Assessment of each identified potentially significant impact pre and post mitigation.

The Impact Assessment below assesses the significance of the potential environmental impacts of each of the proposed prospecting activities, described in Section 6.2 above, pre-, and post-mitigation. All impacts of the proposed operation are expected to occur during Phase 2: Invasive Prospecting. The table further indicates if these impacts can be reversed, degree to which these impacts could cause irreplaceable loss of resource and whether these impacts can be avoided, managed, or mitigated along with the mitigation type proposed. Through the public participation process (PPP), any issues or potential impacts identified by the IAPs will be added to the list of potential impacts.

All these impacts have been assessed as per the methodology described in Section 13.1 above and their significance determined. Impact identification has therefore been a consolidated approach based on professional experience, desktop studies and IAP (including organs of state involved the PPP) input.

Table 11: Impact assessment

Potential Impact	Aspect	Type and Nature of Impact	Reversible	Degree to which impact can cause irreplaceable loss of resource	Significance if not mitigated	Can be avoided, managed / mitigated (Yes/No)	Mitigation type	Significance if mitigated
Core Drilling								
Cracks and disruption to geological layers	Geology	Direct Negative	Not reversible	Low	Medium	No	Control by: Plan location of invasive prospecting sites properly to avoid geological features. Start with fewer boreholes to verify non-invasive prospecting followed by more extensive drilling in areas indicating adequate resources.	Medium
Hydrocarbon contamination of soils	Soils	Direct Negative	Completely reversible	Very low	Low	Yes	Remove any spills as soon as it occurs along with the polluted soil and dispose of it at a registered waste site. Follow the equipment's operation and maintenance procedures and all vehicles must undergo periodic maintenance and inspection. Equip vehicles on site with drip trays and place drip trays under leaky equipment. Spill kits must be available on site and personnel trained to utilize these to clear spills immediately.	Very low
Harm/disturbance to protected fauna and flora species	Fauna and Flora	Direct Negative	Partially reversible	Low	Medium	Yes	Plan location of drill sites properly to avoid sensitive features such as water courses and rocky outcrops. Survey prospecting sites in areas with natural vegetation for any protected species known to occur in the region and either keep species in situ with 50m buffer zone to prevent inadvertent damage to these species or obtain permits to remove / destroy protected species. Do not hinder, harm, or trap animals.	Very low
Disturbance to streams and wetlands if activity proceeds indiscriminately.	Surface water and aquatic ecosystems	Direct Negative	Not reversible	Medium	Medium	Yes	No prospecting activities can take place within 100m of streams and/or 500m of wetlands unless authorisation is obtained to do so. Plan drill sites properly to avoid water courses.	Low

Hydrocarbon contamination of surfacewater through contaminated runoff.	Direct Negative	Not reversible	Low	Medium	Yes	Remove any spills as soon as it occurs along with the polluted soil and dispose of it at a registered waste site.	Low
Irresponsible use of water and water wastage	Cumulative Negative	Not reversible	Low	Low	Yes	Recycle water from the sumps to re-use on the rig. Source water from existing lawful water use or water service provider. Use clean water responsibly.	Low

Potential Impact	Aspect	Type and Nature of Impact	Reversible	Degree to which impact can cause irreplaceable loss of resource	Significance if not mitigated	Can be avoided, managed / mitigated (Yes/No)	Mitigation type	Significance if mitigated
Cracks and disruption to aquifers.	Groundwater	Direct Negative	Not reversible	Medium	Medium	Yes	Start with fewer boreholes to verify non-invasive prospecting followed by more extensive drilling in areas indicating adequate resources. Limit development to target rocks and reduce exposure of aquifer rocks.	Low
Potential hydrocarbon contamination seeping to the groundwater environment.		Direct Negative	Not reversible	Low	Medium	Yes	Remove any spills as soon as it occurs along with the polluted soil and dispose of it at a registered waste site.	Low
Emissions into the atmosphere through use of diesel-powered equipment, machinery, and vehicles.	Air quality	Cumulative Negative	Not reversible	Low	Medium	Yes	Maintaining all vehicles, machinery and equipment and discontinuing use of faulty equipment.	Low
Increase in ambient noise levels.	Noise	Cumulative Negative	Completely reversible	Very low	Medium	Yes	Drilling must be done in consultation with the landowners to ensure that work schedules are communicated to them. Prospecting activities must be conducted during normal working hours (Monday – Friday - 7am – 17pm) Implement noise control measures on noisy equipment.	Low
Visual intrusion and disturbance to the sense of place.	Visual	Direct Negative	Completely reversible	Very low	Low	Yes	Keep disturbed areas as small as possible. Keep the drill site neat, clean, and organized in order to maintain a tidy appearance. Remove waste off site as soon as possible or place it in closed bins in order to keep the site free from additional unsightly elements.	Very low
Loss of and disturbance to archaeological / heritage / grave sites that may be encountered.	Heritage	Direct Negative	Not reversible	High	Medium	Yes	Visually surveying drill sites for any heritage resources. Prevent activities near potential heritage sites unless necessary permits are obtained to do so. Should any graves/ruins be found during prospecting a 100m buffer will be established and maintained around these areas.	Low

Creation of employment opportunities	Socio Economic	Direct Positive	N/A	N/A	Medium +	Yes	Appoint local contractors where possible.	Medium +
Establishment of drill site and temporary contractors' yard								
Compaction of soils	Soils	Direct Negative	Completely reversible	Very low	Low	Yes	Keep disturbed area as small as possible. Rip compacted soils.	Low
Temporary change in land use	Land use	Direct Negative	Completely reversible	Low	Low	Yes	Keep the disturbed area as small as possible.	Very low

Potential Impact	Aspect	Type and Nature of Impact	Reversible	Degree to which impact can cause irreplaceable loss of resource	Significance if not mitigated	Can be avoided, managed / mitigated (Yes/No)	Mitigation type	Significance if mitigated
Disturbance/damage to vegetation and subsequent disturbance to animal species	Flora	Direct Negative	Partially reversible	Low	Medium	Yes	<p>Plan location of drill sites properly to avoid sensitive features such as watercourses and rocky outcrops.</p> <p>Restrict vegetation clearance.</p> <p>Remove vegetation during periods of low rainfall or dry periods.</p> <p>Relocate protected plant species for which permits are obtained rather than destroying species.</p>	Low
Increase in dust fall out	Air quality	Cumulative Negative	Completely reversible	Very low	Medium	Yes	Dust suppression procedures should be implemented to reduce and control dust on the drill site.	Low
Increase in ambient noise levels.	Noise	Cumulative Negative	Completely reversible	Very low	Medium	Yes	<p>Drilling must be done in consultation with the landowners to ensure that work schedules are communicated to them.</p> <p>Prospecting activities must be conducted during normal working hours (Monday – Friday - 7am – 17pm)</p> <p>Implement noise control measures on noisy equipment.</p>	Low
Visual intrusion and disturbance to the sense of place.	Visual	Direct Negative	Completely reversible	Very low	Low	Yes	<p>Keep disturbed areas as small as possible.</p> <p>Keep the drill site neat, clean, and organised in order to maintain a tidy appearance.</p> <p>Remove waste off site as soon as possible or place it in closed bins in order to keep the site free from additional unsightly elements.</p>	Very low
Loss of and disturbance to archaeological / heritage / grave sites that may be encountered.	Heritage	Direct Negative	Not reversible	High	Medium	Yes	<p>Visually surveying drill sites for any heritage resources.</p> <p>Prevent activities near potential heritage sites unless necessary permits are obtained to do so.</p> <p>Should any graves/ruins be found during prospecting a 50m buffer must be established and maintained around these areas.</p>	Low

Drill rig, machinery, and vehicle movement								
Compaction of soils	Soils	Direct Negative	Completely reversible	Very low	Medium	Yes	Remain in designated roads / routes / activity areas. Where not possible, routes must be properly planned to reduce disruption to soil as far as possible.	Low
Hydrocarbon contamination of soils		Direct Negative	Completely reversible	Very low	Medium	Yes	Follow the equipment's operation and maintenance procedures and all vehicles must undergo periodic maintenance and inspection.	Low
Harm/disturbance to protected fauna		Direct	Partially	Low	Medium	Yes	Survey any off-road routes for any protected species known to occur	Low

Potential impact	Aspect	Type and Nature of Impact	Reversible	Degree to which impact can cause irreplaceable loss of resource	Significance if not mitigated	Can be avoided, managed / mitigated (Yes/No)	Mitigation type	Significance if mitigated
and flora species	Flora and Fauna	Negative	reversible				in the region and either keep species in situ with 50m buffer zone to prevent inadvertent damage to these species or obtain permits to remove / destroy protected species. Remain in designated roads as far as possible.	
Disturbance to streams and wetlands if activity proceeds indiscriminately.		Direct Negative	Partially reversible	Low	Low	Yes	No prospecting activities can take place within 100m of streams and/or 500m of wetlands unless authorisation is obtained to do so.	Low
Hydrocarbon contamination of surfacewater through contaminated runoff.	Surface water and aquatic ecosystems	Direct Negative	Not reversible	Low	Low	Yes	Follow the equipment's operation and maintenance procedures and all vehicles must undergo periodic maintenance and inspection. Leaky vehicles will not be parked over bare ground; where unavoidable, drip trays will be placed under the equipment to collect leaks. The leaky vehicles will be discontinued until repairs are made.	Low
Potential hydrocarbon contamination seeping to the groundwater environment.	Groundwater	Direct Negative	Not reversible	Low	Low	Yes		Low
Emissions into the atmosphere through use of diesel-powered equipment, machinery, and vehicles.	Air quality	Cumulative Negative	Not reversible	Low	Medium	Yes	Maintaining all vehicles, machinery and equipment and discontinuing use of faulty equipment.	Low
Increase in dust fall out		Cumulative Negative	Completely reversible	Very low	Medium	Yes	Dust suppression procedures should be implemented to reduce and control dust on the access road and drill site. Control the speed of operational vehicles. The drill rig must remain on site as far as possible.	Low

Increase in ambient noise levels.	Noise	Cumulative Negative	Completely reversible	Very low	Medium	Yes	Drilling must be done in consultation with the landowners to ensure that work schedules are communicated to them. Prospecting activities must be conducted during normal working hours (Monday – Friday - 7am – 17pm). Implement noise control measures on noisy equipment.	Low
Loss of and disturbance to archaeological / heritage / grave sites that may be encountered.	Heritage	Direct Negative	Not reversible	High	Medium	Yes	Visually surveying drill sites for any heritage resources. Prevent activities near potential heritage sites unless necessary permits are obtained to do so. Should any graves/ruins be found during prospecting a 50m buffer must be established and maintained around these areas.	Low

Potential Impact	Aspect	Type and Nature of Impact	Reversible	Degree to which impact can cause irreplaceable loss of resource	Significance if not mitigated	Can be avoided, managed / mitigated (Yes/No)	Mitigation type	Significance if mitigated
Damage to existing infrastructure incl. gates, roads, and fences.	Socio economic, health and safety	Direct Negative	Completely reversible	N/A	Medium	Yes	Remain in designated roads /routes. The drilling team must always close the farm gates after entering. If infrastructure were damaged by the drill team the Applicant must repair the damages (i.e., grade farm roads that have been damaged due to use by prospecting team).	Low
Increase potential for road accidents		Direct Negative	Not reversible	N/A	Low	Yes	The drilling contractor's personnel will always adhere to the speed limit. No transporting will occur after sunset. Vehicles will be in roadworthy condition with reflective strips to make them clean and visible for other road users. Intersections with main tarred roads will be clearly signposted.	Very low
Water Management								
Loss of soil resource due to erosion	Soils	Indirect Negative	Partially reversible	Low	Low	Yes	Adequate drainage and erosion protection in the form of cut-off berms or trenches shall be provided where necessary. Effective managing of the topsoil by covering or reseeded the stockpiles to avoid erosion. Any erosion gullies must be remediated immediately.	Low
Potential contamination of surface water resources with process water from the sumps	Surface water and aquatic ecosystems	Direct Negative	Not reversible	Low	Low	Yes	Use biodegradable lubricants and fluids/polymers. Maintain buffer zones around water courses as ecological corridors and refuges.	Low
Potential contamination of groundwater through process water seepage	Groundwater	Direct Negative	Not reversible	Low	Medium	Yes	Line sumps with the appropriate lining system. Isolate porous or highly transmissive groundwater zones through capping or grouting to prevent clean groundwater ingress or recharge of contaminated water.	Low

Storage and Handling of Dangerous goods								
Hydrocarbon contamination of soils	Soils	Direct Negative	Completely reversible	Very low	Medium	Yes	Equip vehicles on site with drip trays and place drip trays under leaky equipment. Spill kits must be available on site in the event of a spillage. Adhere to safe work procedure when refuelling vehicles and machinery.	Low
Hydrocarbon contamination of surfacewater through contaminated runoff	Surface water and aquatic ecosystems	Direct Negative	Not reversible	Low	Low	Yes		Low
Potential hydrocarbon contamination	Groundwater	Direct	Not	Low	Medium	Yes		Low

Potential Impact	Aspect	Type and Nature of Impact	Reversible	Degree to which impact can cause irreplaceable loss of resource	Significance if not mitigated	Can be avoided, managed / mitigated (Yes/No)	Mitigation type	Significance if mitigated
seeping to the groundwater environment		Negative	reversible				Hydrocarbons must be stored within portable bund tanks.	
Ablution Facilities								
Potential contamination of soils and groundwater with sewage	Soils Groundwater	Direct Negative	Completely reversible	Very low	Low	Yes	Inspect, repair, and replace any damaged toilets. Appoint the necessary reputable contractor to manage portable toilets. Implement proper housekeeping and hygienic practices.	Very low
Potential contamination of surface water with sewage	Surface water and aquatic ecosystems	Direct Negative	Not reversible	Low	Low	Yes	Maintain buffer zones around watercourses as ecological corridors and refuges. Inspect, repair, and replace any damaged toilets. The portable toilets must be managed by a reputable contractor, emptied on a regular basis as needed. Toilets must be maintained in hygienic state.	Very low
Domestic Waste Management								
Potential contamination of soils with indiscriminately dumped waste or littering.	Soils	Direct Negative	Completely reversible	Very low	Low	Yes	Domestic waste must be collected in waste bins that are located on site.	Very low
Potential contamination of surface water with indiscriminately dumped waste or littering.	Surface water and aquatic ecosystems	Direct Negative	Partially reversible	Very low	Low	Yes	The waste bins must be marked clearly indicating what waste must be disposed of in what bin. Employees must be encouraged to re-use, recycle, and reduce waste where possible.	Very low
Potential contamination of groundwater with indiscriminately dumped waste or littering.	Groundwater	Direct Negative	Not reversible	Low	Low	Yes	No burning of domestic waste may be done on site. Appoint reputable contractors for the removal and disposal of general waste at a licensed facility.	Low

Rehabilitation of boreholes

Localised dips in topography if boreholes collapse after material is replaced.	Topography	Residual Negative	Partially reversible	Medium	Medium	Yes	Inspect and take immediate action to repair any dips by levelling and grading the disturbed area.	Low
Soil replacement and re-vegetation of disturbed areas	Soils	Direct Positive	N/A. Positive impact	N/A	Low +	Yes	Enhance positive impact through: Rehabilitation must be on-going as soon as drilling results are completed. Replaced soil should be vegetated as soon as possible, where	Medium +

Potential Impact	Aspect	Type and Nature of Impact	Reversible	Degree to which impact can cause irreplaceable loss of resource	Significance if not mitigated	Can be avoided, managed / mitigated (Yes/No)	Mitigation type	Significance if mitigated
							required, to prevent erosion and establishment of weed species. Soil compaction should be avoided as far as possible but where not compacted soils must be ripped to correct any compaction.	
Permanent change of land use back to pre-drilled state	Land use	Residual Positive	N/A. Positive impact	N/A	Medium +	Not necessary	N/A	Medium +
Alien plant infestation	Flora	Residual Negative	Completely reversible	Low	Medium	Yes	Remove alien and invasive species that may establish around prospecting sites. Clear all vehicles coming to site of any vegetative material.	Low
Improvement of visual quality and sense of place	Visual	Residual Positive	N/A. Positive impact	N/A	Low +	Yes	Enhance positive impact through: Rehabilitation must be on-going as soon as drilling results are completed.	Medium +
Influx of people into the area								
Theft and safety risk resulting in the decrease in quality of life	Socio economic, health and safety	Indirect Negative	Not reversible	N/A	Low	Yes	Ensure farm gates are always closed. No employee will be allowed to stay over on site after working hours. No employee will be allowed to loiter around farms. The drill contractor must monitor the whereabouts of the drill team.	Low
Increase risk of veld fires		Indirect Negative	Reversible	Medium	Low	Yes	No employees will be allowed to make any open fires on the farms or adjacent land. Cigarette butts may not be thrown in the veld, but must be disposed of correctly. Contractors must ensure that basic fire-fighting equipment and suitably qualified/experienced personal are always available on site. Fire extinguishers shall be placed at working areas and all areas where hazardous substances are kept.	Low

14.2 Summary of specialist reports

Table 12: Summary of Baseline Studies

LIST OF BASIC 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 WHERE SPECIALIST RECOMMENDATIONS HAVE BEEN INCLUDED.
Soil study		X	

Hydrogeology Study		X	
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The following baseline studies are underway:

- ❖ Hydrogeology study
- ❖ Soil study
- ❖ Hydrological study
- ❖ Rehabilitation study

17. Environmental impact statement

17.1 Summary of the key findings of the environmental impact assessment

The key positive and negative impacts, based on the impact assessment in **Section 13**, are summarized below.

17.1.1 Key positive impacts

Contractors will have employment opportunities as a result of the anticipated prospecting activity, but the impact will only be somewhat significant because it will only be transitory. Prospecting operations, as stated in Section 8 above, will not have a substantial beneficial impact, but they are a step towards potential mining activities, which could result in many economic advantages through the execution of the SLP if mining rights are obtained for the proposed area. If the desired mineral deposit is found during drilling, a mining right or mining permit will be issued.

17.1.2 Key negative impacts

No impacts are expected to exceed the significance of medium post mitigation. The key negative impacts are summarized below:

Surface and groundwater contamination

The significance of surface and groundwater contamination is medium as drilling activities will avoid water resources. The proposed mitigation/management measures can reduce the significance of the impact to low. The water resources found within and outside the proposed project area are dam, perennial rivers and channeled valley bottom wetlands. Due to the limited number of isolated water resources, the probability of the prospecting activities resulting in contamination is medium which can be reduced to low through the implementation of the proposed buffer zones and mitigation measures. No drilling activities will be conducted in the DWS regulated area. Therefore the potential impacts on the surface and ground water resources are rated as low pre and post mitigation.

Disturbance to protected flora and fauna species

The application area is largely covered with natural vegetation. Therefore the potential disturbance/damage to highly sensitive area, flora subsequent disturbance to fauna has a medium significance rating pre mitigation. The significance can be reduced to low by locating the drill sites in areas that can be accessed through the existing gravel roads than to create new roads. It can also be reduced through conducting drilling in areas which are already heavily modified and avoid sensitive areas.

Decrease in the ambient air quality and increase noise levels

The predominant activities in the surrounding area are cultivation, livestock farming, residential activities, these activities are coupled with gravel roads in the area, can lead to elevated levels of dust. The proposed prospecting process will contribute to the elevated dust and noise levels in the application area with a significance rating of medium pre mitigation. The proposed mitigation/management measures can reduce the significance of the impact to low.

Damage to existing infrastructure including roads, bridges, fences, houses, and gates

There are powerlines, numerous gravel roads, fences, and gates in the proposed project area which are used by the landowners, residents, and adjacent landowners daily. Therefore the impacts has been rated as medium pre-mitigation. The proposed mitigation/management measures can reduce the significance rating to low because it will reduce the probability of the impact occurring to low.

Loss of and disturbance to archaeological/heritage/grave sites that may be encountered

Any damage caused to archaeological/heritage and paleontological sites are considered medium as archaeological/heritage and paleontological features such as graves were observed, and their locations were recorded. Damages are not reversible; however, the impact can be avoided by establishing the proposed buffer zones around the archaeological/heritage identified during drilling. Therefore the impact has a significant rating of low post mitigation.

18. Final Site Map

Preliminary positions of the proposed borehole have been proposed as detailed in Figure 46 below.

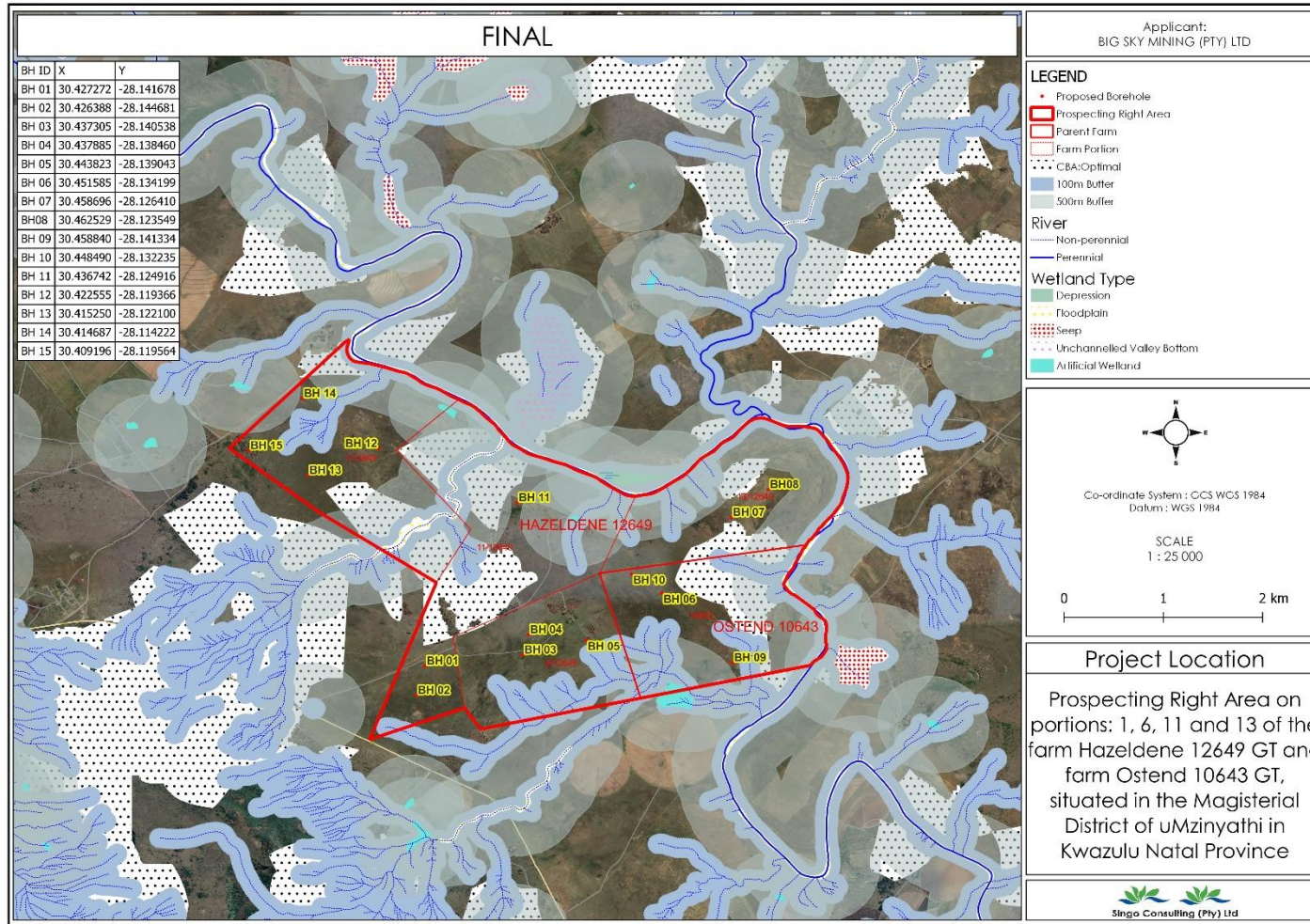


Figure 47: Proposed borehole map of the proposed project area.

18.1 Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives

Most of the negative effects of the proposed operation are related to access and drilling, contaminating surface and groundwater resources, causing waste spills in sensitive areas for terrestrial biodiversity, raising dust and noise levels, and having an adverse effect on the environment. The minimal but temporary job creation has positive effects.

18.2 Proposed impact management objectives and the impact management outcomes for inclusion in the EMP

The overarching goal of environmental management is to maximise any beneficial socioeconomic effects of the proposed operation while minimizing any potential negative effects on the environment and society. The following list includes the primary impact management goals and results that will direct and oversee all aspects of the prospecting activity. To achieve adequate environmental (social, economic, and biophysical) management of the activity, these goals must be met and/or maintained. The following is a list of environmental impact management goals and results:

- ❖ Conduct prospecting activities responsibly and ensure operation is compliant with legislative requirements.
- ❖ The drilling sites must be positioned by a geologist to ensure that it is not above any weak geological strata.
- ❖ Protect the biophysical environment as far as possible, specifically the channeled valley bottom wetlands, dams, rivers and any protected species which might be identified on site.
- ❖ To keep, as far as possible, water of differing qualities separate within a prospecting area, so as to minimise contamination of clean run-off and surface water.
- ❖ Prevent groundwater contamination through seepage.
- ❖ Reduce compaction of soil and maintain existing arable land capability by prohibiting movement of machinery outside the designated areas.
- ❖ Preserve protected flora and fauna species which might be identified on site.
- ❖ Ensure atmospheric and noise pollution is kept to a minimum.
- ❖ Ensure adequate rehabilitation to allow continued land use.
- ❖ Ensure socially responsible activities.
- ❖ Protect historical and cultural sites observed on site.
- ❖ Maintain high safety standards on site with reduced safety risks.
- ❖ Leave site without any incidents, safety risks, damage to infrastructure and theft to

surrounding farmers.

The specific management objectives for each potential impact identified is described in Part B: EMPr Section 5.

18.3 Aspects for inclusion as conditions of Authorisation

The impact assessment focused on the project scope as described in Section 4 which was compiled using the information provided by the Applicant. The mitigation measures identified to manage the potential impacts during the prospecting operation are contained in the EMPr. The implementation of the EMPr is a requirement in terms of NEMA and will be a condition of the Environmental Authorisation. The EMPr should form an integral part of the contract documents to ensure compliance with environmental specifications and management measures. The EMPr is not a static document, and most undergo regular monitoring and auditing as key factors and processes may change through the life of the project which could alter the proposed mitigation measures. The Applicant must ensure compliance with all relevant legislation including but not limited to:

- ❖ MPRDA, 2002 (Act 28 of 2002)
- ❖ NEMA, 1998 (Act 107 of 1998)
- ❖ National Environmental Management: Waste Act (No. 59 of 2009) GNR 921 (9 November 2013)
- ❖ National Water Act, 1998 (Act No. 36 of 1998)
- ❖ National Environmental Management: Air Quality Act (Act No. 39 of 2004) GNR893 (22 November 2013)
- ❖ Noise Control Regulations (GN R154 of 1992)
- ❖ National Environmental Management: Biodiversity (Act No. 10 of 2004)
- ❖ National Forest Act (No. 84 of 1998)
- ❖ National Veld and Forest Fire Act, Act 101 of 1998
- ❖ National Heritage Resources Act, Act (NHRA), 1999 (Act No. 25 of 1999)
- ❖ Hazardous Substances Act (No. 15 of 1973)
- ❖ Conservation of Agricultural Resources Act (No. 43 Of 1983)
- ❖ Mine Health and Safety Act (No. 29 of 1996)

In addition, the following conditions should be included as part of the Environmental Authorisation:

- ❖ The EMPr must be enforced throughout the prospecting operation.
- ❖ Implement a stormwater management plan in line with the provisions of GNR 704.

- ❖ No activity is to occur within 500m and 100m from the identified watercourses without the necessary authorization under NEMA and NWA.
- ❖ Protected species must remain in situ until the necessary permits are obtained under NEM:BA.
- ❖ Heritage sites must be buffered with 100m buffer zones at all times unless the necessary permits are obtained under SAHRA.
- ❖ Rehabilitation must be applied on an on-going basis and no sites must be left exposed for more time than necessary to obtain the necessary data.
- ❖ Appoint an Environmental Control Officer with the appropriate training and experience to monitor the implementation of the EMPr.

18.4 Description of any assumptions, uncertainties, and gaps in knowledge

18.4.1 Assumptions

The following assumptions are made:

- ❖ The information provided by the Applicant with regards to the proposed activities is correct.
- ❖ No activity is to occur within watercourses and their 500m and 100m buffer zones without the necessary authorization under NEMA and NWA.
- ❖ Protected species will remain in situ until the necessary permits are obtained under NEM:BA.
- ❖ Heritage sites and 100m buffer zones will be preserved at all times unless the necessary permits are obtained under SAHRA.
- ❖ Planning before carrying out prospecting activities in a particular area and surveying the area before conducting invasive prospecting will occur to ensure the sensitive areas are preserved and to ensure prospecting proceeds in a manner compliant with national legislation.
- ❖ Rehabilitation will be applied on an on-going basis and no sites will be left exposed for more time than necessary to obtain the necessary data. All areas disturbed during drilling process will be rehabilitated to previous land use capability.

18.4.2 Uncertainties and gaps in knowledge

The following uncertainties and gaps in knowledge are applicable:

- ❖ once of site assessment was conducted.
- ❖ It was not always possible to involve all IAPs individually, however every effort has been made to involve as many affected stakeholders as possible.

18.5 Reasoned opinion as to whether the proposed activity should or should not be authorized

There exist no highly significant impacts and or risks after mitigation therefor it is the consideration of the EAP that authorisation of the activity should be granted, with the understanding that legal commitment and strict adherence to the EMP are agreed to by the Applicant.

18.5.2 Conditions that must be included in the authorization.

Please refer to Section 15.5 above

18.6 Period for which the Environmental Authorization is required.

The EA is requested for a period of 5 years.

19. Financial Provision

The total amount required to manage and rehabilitate the environment in respect of rehabilitation is R40 166.00 including VAT and contingencies.

CALCULATION OF THE QUANTUM

Applicant: **BIG SKY (PTY) LTD**
Evaluator: **Singo Consulting (Pty) Ltd**

DMRE REF: MP 30/5/ KZN30/5/1/1/2/11406 PR
Date: 03-Aug-23

No.	Description	Unit	A	B	C	D	E=A*B*C*D Amount (Rands)
			Quantity	Master Rate	Multiplicati factor	Weighting factor 1	
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	19	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	271	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	400	1	1	0
3	Rehabilitation of access roads	m2	5683	49	0,2	0,3	16708,02
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	471	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	257	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	542	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	284292	1	1	0
7	Sealing of shafts adits and inclines	m3	0	146	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	189528	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	236054	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	685612	1	1	0
9	Rehabilitation of subsided areas	ha	0	158701	1	1	0
10	General surface rehabilitation	ha	0,9	150138	0,4	0,3	16214,904
11	River diversions	ha	0	150138	1	1	0
12	Fencing	m	0	171	1	1	0
13	Water management	ha	0	57087	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0	19980	1	1	0
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
Sub Total 1							32922,924
1	Preliminary and General		3950,75088		weighting factor 2	1	3950,75088
2	Contingencies			3292,2924			3292,2924
Subtotal 2							40165,97
VAT (15%)							
Grand Total							40166

Sign
Date

THILIVHALI NDOU
03/08/2023

Table 13:Financial Provision

19.1 Explain how the aforesaid amount was derived.

The environmental liability only focused on the proposed prospecting activities and was calculated using the DMRE's rule-based assessment and has factored in inflation. The closure components and size of disturbed areas provided by Big Sky (Pty) Ltd in the Prospecting Work Program (PWP) was used to calculate the financial provision. The accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. The financial provision required for all the additional environmental management and monitoring, as per the EMPr will be conducted by Big Sky (Pty) Ltd where needed and will form part of their operational running costs.

19.2 Confirm that this amount can be provided for from operating expenditure.

Big Sky (Pty) Ltd confirms that a financial provision of R40 166.00 has been allocated and is available for the rehabilitation of the environment after prospecting has taken place. Big Sky (Pty) Ltd will provide for the closure liability associated with the project through the purchase of a Bank Guarantee as allowed by the Financial Provision for Prospecting, Exploration, Mining or Production Operations Regulations, with the Bank Guarantee provided to the DMRE following authorization of the project.

19.3 Undertaking

The undertaken has been fully signed and completed at the end of Part B: EMPr.

20. Specific Information required by the competent Authority

20.1 Compliance with the provisions of sections 24(4) (a) and (b) read with section 24

(3) (a) and (7) of the National Environmental Management Act (Act 107 of 1998)

20.1.1 Impact on the socio-economic conditions of any directly affected person

If EMPr is applied to prospecting activities and prospecting sites, the impact is considered to be minor. The likelihood of impacts like veld fires and threats to the safety and security of landowners and residents is low. Since locals will be doing any manual labour, no open fires or site camping will be permitted on the prospecting site. In-town housing will be provided for skilled personnel from outside the region. Road accident risks will be reduced through the implementation of traffic control measures. Since the current land use can continue alongside the prospecting, it is not envisaged that the drilling activities will have an influence on the socioeconomic circumstances of the landowner or occupier.

20.1.2 Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act

Since the prospecting locations would be somewhat flexible, the management plan has allowed for mitigating steps to guarantee that these sites are avoided should they be discovered. The EMPr mandates that permits must be obtained in accordance with SAHRA where it is unavoidable.

20.1.3 Other matters required in terms of sections 24(4) (a) and (b) of the Act

Section 24(4) (b) (i) of the Act requires the EAP to conduct an investigation of the potential consequences of impacts of alternatives to the activity on the environment and assessment of the significance of those potential consequences. This has been addressed in Section 10 above. As stipulated, the site is delimited by the prospecting rights area and the extent of the resource. Invasive prospecting area will be delimited by the data from non-invasive techniques. The approach to prospecting is environmentally responsible (by completing non-invasive techniques first) and an industrial norm (drilling is still an acceptable means for resource evaluation as required for the Mining Right or Mining Permit Application).

PART B

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

A BAR Process was followed according to GNR 517 Regulation 19 of the NEMA EIA Regulations 2014, as amended, in support of the Prospecting Right and Environmental Authorization application and the EMPr is thus subject to the requirements of Appendix 4 of the NEMA EIA Regulations of 2014.

The implementation of this EMPr is a requirement in terms of NEMA and will be a condition of the Environmental Authorization, issued by the Competent Authority. The Applicant and contractors must therefore familiarize themselves with the contents of this document because failure to comply with the commitments made will constitute an offence which can lead to penalties and/or legal action.

The EMPr should form an integral part of the contract documents to ensure that the biophysical, cultural, and socio-economic environment is not adversely affected by the potential impacts resulting from the different aspects of the proposed prospecting operation. It should further be noted that the EMPr is not static, as allowances have been made for it to evolve in the future.

21. Details of EAP

The Applicant appointed Singo Consulting (Pty) Ltd as an independent Environmental Assessment Practitioner to facilitate the Environmental Authorisation process. This EMPr was compiled by Singo Consulting (Pty) Ltd for the proposed project. Please refer to section 3 of the BAR for the details of the EAP.

22. Description of the Aspects of the Activity

The prospecting right application has been submitted to prospect for Coal on portions 1, 6, 11 and 13 of the farm Hazeldene 12649 GT and farm Ostend 10643 GT situated in Magisterial District of Umzinyathi in Kwa-Zulu Natal Province. The proposed activities on site will be approached in phases, and will include:

Phase 1: Non-invasive prospecting

Non-invasive prospecting activities will consist of:

- ❖ A desktop study and literature review.
- ❖ Obtaining historical borehole data and resource information.
- ❖ Feasibility studies.
- ❖ Geophysical site visit and survey will be conducted by a field geologist.
- ❖ Data will be extracted and plotted into geological maps identifying areas for invasive prospecting for resource determination.

Phase 2: Invasive prospecting:

The proposed timeframe associated with the invasive prospecting is expected to be no more than 5 years. Invasive prospecting activities will consist of:

- Establishment of drill site and temporary contractors' yard. This will involve:
 - ❖ Clearing of vegetation for sumps and the drill entrance point
 - ❖ Earth sumps for water recycling
 - ❖ Laydown area for drill rods, fuel and ablution facilities (chemical toilets)
 - ❖ Site office
 - ❖ Parking area
- Core drilling. (however, preliminary positions have been proposed. Cores will be sampled and assessed by the on-site geologists and core logs will be maintained.
- Rehabilitation of boreholes. Casing will be removed from the borehole on completion thereof and the borehole sealed in accordance with "Standard Borehole Sealing Procedure" i.e.: each borehole certificated in terms of this procedure. Sealing will include:
 - ❖ Removing casing- if casing is to be removed, a specialist borehole contractor

will advise on appropriate techniques and associated risks.

- ❖ Backfilling- boreholes should be backfilled with clean uncontaminated material. Backfilled hole should be similar to surrounding strata.
 - ❖ Seal top of borehole- backfilled borehole should be completed with an impermeable plug to prevent entry of potentially contaminated surface run-off or other liquids.
 - ❖ Record details- the depths and position of each layer of backfilling and sealing material.
 - ❖ Drill rig, machinery, and vehicle movement. Existing farm roads and tracks will be utilised as far as possible however, where a road does not exist temporary access roads will be established to access a drill site after consultation with the landowner. The type of access envisaged is limited to removal of large rocks and disturbance of vegetation. Such access roads may also require 'light' grading to allow the movement of surface mobile vehicles.
 - ❖ Water Management. Process and potable water will be obtained from existing lawful users, an irrigation board or water services provider. Two sumps (delivery sump & settling sump) will be installed around the drilling rigs to collect water during the drilling process and settle out the suspended solids, for recycling of the water. This water will be re-used on the rig. It is recommended that the sumps at the drill sites be plastic lined to limit the amount of seepage of process water.
 - ❖ Ablution Facilities. Portable chemical toilets will be provided within close proximity of the drilling site and serviced on a regular basis by the service provider.
- Domestic Waste Management - The drilling team will be housed off site in the nearest town. No accommodation will be provided on site. Specific areas for lunch breaks will be provided and closed bin will be provided to collect domestic waste which will be removed and disposed of by the drilling contractor at a suitable site.
 - Safety and Security - Security staff will be employed once equipment has been established on site.
 - Storage and Handling of Dangerous goods - During the drilling activities there will be no storage area where diesel will be stored on site. Diesel will be trucked onto site using a diesel bowser on a daily basis until prospecting concludes. Drip trays will be placed under mobile plant for the purpose of leakages.

Phase 3: Analytical assessment of prospecting data

Data will be assessed in a pre-feasibility study to determine resource estimates to commence with prefeasibility and feasibility assessments for mine planning and Mining Right Application processes.

In terms of NEMA and its EIA Regulations the above-mentioned activities trigger the listed activities presented in section A under Listed Activities and is thus subject to a Basic Assessment ("BA") and EMPR.

23. Composite Map

The location of the prospecting boreholes in relation to the 100m and 500m buffers around the rivers, and wetlands, respectively. It must be noted that during the site inspection it was confirmed that there are perennial and non-perennial rivers, and wetlands present in the proposed project area. refer to the proposed borehole map in section A

24. Description of impact management objectives including management statements

The following EMPr has been structured in such a manner as to provide a basis for an Environmental Management Systems (EMS) for the prospecting operation. The purpose of this Environmental Management Programme Report (EMPr) is to serve as an action plan for implementation of mitigation and management measures to ensure satisfactory environmental (biophysical, cultural and socio economic) management. More specifically, the objectives of the EMPr are to guide and control the invasive prospecting activities and should be to ensure that appropriate environmental management measures and monitoring requirements are implemented by Big Sky (Pty) Ltd.

24.1 Determination of closure objectives

Post-closure land use must continue as prior to prospecting. The specific closure objectives for each environmental aspect that must be met are presented in Table 11 below.

Table 14: Closure objectives per environmental aspects.

Environmental aspect	Closure objective
Geology	All boreholes must be sealed, and the disturbed area stabilized.
Topography	The final elevation of drilled areas must be free draining.
Soils	Topsoil must be replaced over the disturbed area to restore vegetation growth and limit the risk of erosion.
Land capability and use	The disturbed areas must return to self-sustaining veld suitable for animal breeding and feeding practices.
Vegetation	Prevent the establishment and spreading of alien plant species on the disturbed areas.
Animal life	A non-aggressive environment, suitable to the natural re-habitation of indigenous animal life.
Surface water and aquatic ecosystems	Ensure that the surface water leaving the site is of acceptable quality, and enable through landscaping, as much as possible of the storm water runoff to flow off the rehabilitated areas without undue delay, to minimise infiltration without causing unacceptable erosion.
Groundwater	Ensure no contamination of the local ground water systems.
Air quality	To have rehabilitated the disturbed areas such that dust levels return to pre-drilled state through adequate vegetative cover.
Noise	The noise levels must return to the pre-drilled situation, typically in the region of 40 dB for rural areas.
Environmental aspect	Closure objective
Visual	The rehabilitated areas must resemble the pre-drilled landscape and sense of place.

24.1.1 Process to manage environmental impacts.

Significant environmental aspects and their associated environmental impacts were identified for the proposed prospecting operation as part of the impact assessment. Consideration was given to the Impact Mitigation Hierarchy in terms of the impact management objectives. The main objective is to focus on avoiding/preventing the impact from occurring and where this is not possible to minimize the significance of the impact. Where the impact cannot be avoided and or minimized, measures have been included that focusses on the repair/restore of the environmental aspect. The identified impacts will be mitigated by implementing the measures outlined in section 5 below. The mitigation measures aim is to prevent emergencies and minimize environmental risks and impacts as far as possible.

24.1.2 Volumes and rate of water use required for the operation

After careful consideration of the scale of operation it has been deduced that approximately 40 L will used as potable water. It is anticipated that water will be purchased from a private water filter dealer and brought onto the site. Water to be used onsite for drilling purpose will be trucked in using water bowser for the sole purpose of this project until prospecting concludes. This water will be bought from the municipality or licensed water supplier that sells potable water or treated industrial water for which a water sale agreement will be provided and filed onsite to ensure compliance. It is estimated that up to 18 000 litres per day could be required for diamond core drilling. However, a water use license has been applied for.

24.2 Has a water use license has been applied for?

Yes, water use license is being applied for in terms of Chapter 4 of the National Water Act, 1998 (Act 36 of 1998). The project is for a coal prospecting right, exploration boreholes will be located 100m from the non-perennial and perennial rivers within and around the project area.

The proposed project will trigger the following sections:

Section 21 (c): Impeding or diverting the flow of water in a watercourse.

Section 21 (i): Altering the bed, banks, course, or characteristics of a watercourse.

24.3 Impacts to be Mitigated, Management Actions, Outcomes and Standards to be Achieved.

This section lists the potential impacts per environmental aspect for each of the proposed prospecting activities. For each impact, a set of mitigation/management measures have been identified along with the time period for implementation, performance criteria (compliance with standards) and standards to be achieved. The information contained in this section forms an integral part of this EMPr and must be adhered to at all times.

Table 15: Environmental Management Programme.

Potential Environmental Impact	Activity	Size and scale of disturbance	Mitigation Measures	Phase	Time period for implementation	Performance criteria (compliance with standards)	Standards to be achieved
Geology							
Cracks and disruption to geological layers.	Core drilling	25m ² per borehole	Plan location of invasive prospecting sites properly to avoid sensitive geological features. Start with fewer boreholes to verify non-invasive prospecting followed by more extensive drilling in areas indicating adequate resources.	Operation	Once-off sign-off of drill sites or amendments to these plans before any activities take place for the duration of prospecting operations.	NEMA & MPRDA principals and regulations regarding environmental protection and rehabilitation. Standard industry practises.	The drilling sites must be positioned by a geologist to ensure that it is not above any weak geological strata.
Topography							
Localised dips in topography if boreholes collapse after material is replaced.	Rehabilitation of boreholes	0.06ha per borehole	Inspect and take immediate action to repair any dips by levelling and grading the disturbed area.	Decommissioning and closure	Once-off inspection of drilled boreholes after substantial rainfall	NEMA & MPRDA principals and regulations regarding environmental protection and rehabilitation requirements.	Restore natural catchment drainage patterns as far as possible.
Soils							
Compaction of soils	Establishment of drill sites and contractor's camp	600m ²	Keep disturbed area as small as possible. Rip compacted soils.	Construction Operation	Weekly inspections of the drill site, contractor's camp and surrounding area for the duration of prospecting activities	NEMA & MPRDA principals and regulations regarding environmental protection and rehabilitation.	Reduce compaction of soil and maintain existing arable land capability.
	Drill rig, machinery, and vehicle movement	Farm roads will be used as far as possible. Temporary Access Road (if required) will not exceed 3.5m in width	Remain in designated roads / routes / activity areas. Where not possible, routes must be properly planned to reduce disruption to soil as far as possible.	Construction Operation	Once-off sign-off of route plans or amendments to these plans before any activities take place for the duration of prospecting operations.		Prohibit movement of machinery outside designated areas.

Loss of soil resource due to erosion	Water management	6 m ²	<p>Adequate drainage and erosion protection in the form of cut-off berms or trenches shall be provided where necessary.</p> <p>Effective managing of the topsoil by covering or reseeded the stockpiles to avoid erosion.</p> <p>Any erosion gullies must be remediated immediately.</p>	Operation	Weekly inspections of the drill site, contractor's camp and surrounding area for the duration of prospecting activities	NEMA & MPRDA principals and regulations regarding environmental protection and rehabilitation.	Reduce erosion of soil and maintain existing arable land capability.
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Potential Environmental Impact	Activity	Size and scale of disturbance	Mitigation Measures	Phase	Time period for implementation	Performance criteria (compliance with standards)	Standards to be achieved
Hydrocarbon contamination of soils	Core drilling	0.06m ² per borehole	Remove any spills as soon as it occurs along with the polluted soil and dispose of it at a registered waste site. Spill kits must be available on site and personnel trained to utilize these to clear spills immediately.	Construction Operation Decommissioning and closure	Weekly inspections of the vehicles and storage area for the duration of prospecting activities.	General duty of care in terms of NEMA & NEMWA	SANS / SABS / SA legislative requirements regarding vehicle and equipment maintenance and operating requirements.
	Drill rig, machinery and vehicle movement	Farm roads will be used as far as possible. Temporary Access Road (if required) will not exceed 3.5m in width	Follow the equipment's operation and maintenance procedures and all vehicles must undergo periodic maintenance and inspection.				
Potential contamination of soils with sewage	Ablution facilities	Portable chemical toilets will be used	Inspect, repair, and replace any damaged toilets. Appoint the necessary reputable contractor to manage portable toilets. Implement proper housekeeping and hygienic practices.	Operation	Weekly inspections of portable toilet facilities for the duration of prospecting activities.	General duty of care in terms of NEMA & NEMWA	Reduced bacterial contamination and associated health effects on neighbouring areas.
Potential contamination of soils with indiscriminately dumped waste or littering.	Domestic waste management	Portable closed bins will be used	Domestic waste must be collected in waste bins that are located on site. The waste bins must be marked clearly indicating what waste must be disposed of in what bin. Employees must be encouraged to re-use, recycle, and reduce waste where possible. No burning of domestic waste may be done on site.	Operation	Weekly inspections of the waste bins for the duration of prospecting activities.	Dispose waste generated by the project according to good practice waste management principles.	Attain "cradle to grave" management of waste on site.

Potential Environmental Impact	Activity	Size and scale of disturbance	Mitigation Measures	Phase	Time period for implementation	Performance criteria (compliance with standards)	Standards to be achieved
			Appoint reputable contractors for the removal and disposal of general waste at a licensed facility.				
Soil replacement and re-vegetation of disturbed areas	Rehabilitation of boreholes	0.06ha per borehole	<p>Rehabilitation must be on-going as soon as drilling results are completed.</p> <p>Replaced soil should be vegetated as soon as possible, where required, to prevent erosion and establishment of weed species.</p> <p>Soil compaction should be avoided as far as possible but where not compacted soils must be ripped to correct any compaction</p>	Operation, decommissioning and closure	<p>Monthly once invasive prospecting commences for the duration of prospecting.</p> <p>Once-off inspection of rehabilitated sites after substantial rainfall.</p>	General duty of care in terms of NEMA and MPRDA rehabilitation standards.	Promote aeration, water infiltration and the establishment of vegetation.
Land capability and use							
Temporary change in land use	Establishment of drill site and contractor's camp	600m ² per borehole	Keep the disturbed area as small as possible.	Operation	Weekly inspections of the drill site, contractor's camp and surrounding area for the duration of prospecting activities	NEMA & MPRDA principals and regulations regarding environmental protection and rehabilitation.	Maintain existing land capability.
Permanent change of land use back to pre-drilled state	Rehabilitation of boreholes	0.09ha per site	No mitigation necessary – impact is positive	Decommissioning and closure	N/A	General duty of care in terms of NEMA and MPRDA rehabilitation standards.	<p>Restore natural catchment drainage patterns as far as possible.</p> <p>Restore land to arable land use.</p>
Flora and Fauna							
Disturbance/damage to vegetation and subsequent disturbance to animal species	Establishment of drill sites and contractor's camp	600m ² per borehole	<p>Plan location of drill sites properly to avoid sensitive features such as watercourses and rocky outcrops.</p> <p>Restrict vegetation clearance.</p> <p>Remove vegetation during periods</p>	Operation	Weekly inspections of the contractor's camp and surrounding area for the duration of prospecting activities.	General duty of care in terms of NEMA, NWA, NFA and NCNCA and must be applied when necessary.	Preservation of protected species.

		oflow rainfall or dry periods.				
Alien plant infestation	Rehabilitation of boreholes	Remove alien and invasive species that may establish around prospecting sites.	Operation Decommissioning and closure	Monthly once invasive prospecting commences for the duration of prospecting.	NEMA & MPRDA principals and regulations regarding environmental protection	

Potential Environmental Impact	Activity	Size and scale of disturbance	Mitigation Measures	Phase	Time period for implementation	Performance criteria (compliance with standards)	Standards to be achieved
			Clear all vehicles coming to site of any vegetative material.		Once-off inspection of rehabilitated sites after substantial rainfall.	and rehabilitation requirements.	
Harm/disturbance to protected fauna and flora species	Core drilling		<p>Survey prospecting sites for any protected species known to occur in the region and either keep species in situ with 50m buffer zone to prevent inadvertent damage to these species or obtain permits to remove / destroy protected species.</p> <p>Relocate protected plant species for which permits are obtained rather than destroying species.</p> <p>Do not hinder, harm or trap animals.</p>	Operation	Once-off sign-off of borehole locations or amendments to these plans before any activities take place for the duration of prospecting operations.	NEMA & MPRDA principals and regulations regarding environmental protection and rehabilitation.	
	Drill rig, machinery, and vehicle movement	Farm roads will be used as far as possible. Temporary Access Road (if required) will not exceed 3.5m in width	<p>Survey any off-road routes to prevent damage to red data plants.</p> <p>Remain in designated roads / routes / prospecting areas.</p>	Operation	Once-off sign-off of route plans or amendments to these plans before any activities take place for the duration of prospecting operations.	General duty of care in terms of NEMA.	
Surface water and aquatic ecosystems							
Disturbance to streams and wetlands if activity proceeds indiscriminately.	Core drilling	0.06m ² per boreholes	No prospecting activities can take place within 100m of streams and/or 500m of wetlands unless authorization is obtained to do so.	Operation	Once-off sign-off of drill sites or amendments to these plans before any activities take place for the duration of prospecting operations.	NWA will be complied with to ensure that the quantity, quality, and reliability of water required to maintain the ecological function on which human depends is maintained.	Prevent disturbance to wetlands and riparian areas.
	Drill rig, machinery, and vehicle movement	Farm roads will be used as far as possible. Temporary Access Road (if required) will not			Once-off sign-off of route plans or amendments to these plans before any activities take place for the duration of prospecting		

		exceed 3.5m in width			operations.		
Hydrocarbon contamination of surfacewater through contaminated runoff.	Core drilling	0.06 ha per boreholes	Remove any spills as soon as it occurs along with the polluted soil and dispose of it at a registered waste site.	Operation	Weekly inspections of the vehicles and storage area for the duration of prospecting activities.	NWA will be complied with to ensure that the quantity, quality, and reliability of water required to maintain	SANS / SABS / SA legislative requirements regarding vehicle and equipment

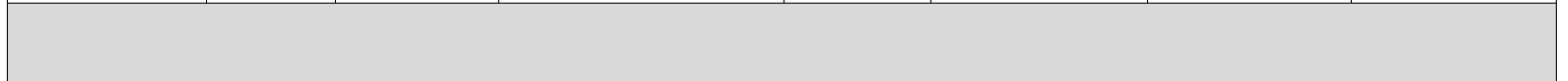
Potential Environmental Impact	Activity	Size and scale of disturbance	Mitigation Measures	Phase	Time period for implementation	Performance criteria (compliance with standards)	Standards to be achieved
						the ecological function on which human depends is maintained.	maintenance and operating requirements.
	Drill rig, machinery and vehicle movement	Farm roads will be used as far as possible. Temporary Access Road (if required) will not exceed 3.5m in width	Follow the equipment's operation and maintenance procedures and all vehicles must undergo periodic maintenance and inspection. Leaky vehicles will not be parked over bare ground; where unavoidable, drip trays will be placed under the equipment to collect leaks. The leaky vehicles will be discontinued until repairs are made.				
	Storage and handling of dangerous goods	<30m ³	Equip vehicles on site with drip trays and place drip trays under leaky equipment. Spill kits must be available on site in the event of a spillage. Adhere to safe work procedure when refuelling vehicles and machinery. Hydrocarbons must be stored within portable bund tanks.	Operation	Weekly inspections of hydrocarbon storage areas for the duration of prospecting activities.	General duty of care in terms of NEMA & NWA.	
Irresponsible use of water and water wastage	Core drilling	20m ² per borehole	Recycle water from the sumps to re-used on the rig. Source water from existing lawful water use or water service provider. Use clean water responsibly.	Operation	Monthly visual inspection of the active prospecting areas.	NWA will be complied with to ensure that the quantity, quality, and reliability of water required to maintain the ecological function on which human depends is maintained.	To keep, as far as possible, water of differing qualities separate within prospecting area, so as to minimise the contamination of clean runoff and surface water
Potential contamination of surface water resources with process water from	Water management	10m ²	Use biodegradable lubricants and fluids/polymers.	Operation			

the sumps	nt		Maintain buffer zones around watercourses as ecological corridors and refuges.				
Potential contamination of surface water with sewage	Ablution facilities	Portable chemical toilets will be used		Operation	Weekly inspections of portable toilet facilities for the duration of prospecting activities.	General duty of care in terms of NEMA & NEMWA	Reduced bacterial contamination and associated health effects on neighbouring areas.

Potential Environmental Impact	Activity	Size and scale of disturbance	Mitigation Measures	Phase	Time period for implementation	Performance criteria (compliance with standards)	Standards to be achieved
Potential contamination of surface water with indiscriminately dumped waste or littering.	Domestic waste management	Portable closed bins will be used	<p>Inspect, repair, and replace any damaged toilets.</p> <p>The portable toilets must be managed by a reputable contractor, emptied on a regular basis as needed.</p> <p>Toilets must be maintained in a hygienic state.</p> <p>Inspect and clear all litter and waste.</p> <p>Appoint reputable contractors for the removal and disposal of general waste at a licensed facility.</p>	Operation	Weekly inspections of the waste bins for the duration of prospecting activities.	Dispose waste generated by the project according to good practice waste management principles.	Attain "cradle to grave" management of waste onsite.
Groundwater							
Cracks and disruption to aquifers.	Core drilling	20m ² per borehole	<p>Start with fewer boreholes to verify non-invasive prospecting followed by more extensive drilling in areas indicating adequate resources.</p> <p>Limit development to target rocks and reduce exposure of aquifer rocks.</p>	Operation	Once-off sign-off of drill sites or amendments to these plans before any activities take place for the duration of prospecting operations.	NEMA & MPRDA principles and regulations regarding environmental protection and rehabilitation.	The drilling sites must be positioned by a geologist to ensure that it is not above any weak geological strata.
Potential hydrocarbon contamination seeping to the groundwater environment.	Core drilling		Remove any spills as soon as it occurs along with the polluted soil and dispose of it at a registered waste site.	Operation	Weekly inspections of the vehicles and storage area for the duration of prospecting activities.	NWA will be complied with to ensure that the quantity, quality, and reliability of water required to maintain the ecological function on which human depends is maintained.	SANS / SABS / SA legislative requirements regarding vehicle and equipment maintenance and operating requirements.
	Drill rig, machinery and vehicle movement	Farm roads will be used as far as possible. Temporary Access Road (if required) will not exceed 3.5m in width	<p>Follow the equipment's operation and maintenance procedures and all vehicles must undergo periodic maintenance and inspection.</p> <p>Leaky vehicles will not be parked over bare ground; where unavoidable, drip trays will be placed under the equipment to collect leaks. The leaky vehicles will be</p>		Weekly inspections of hydrocarbon storage areas for the duration of prospecting activities.	General duty of care in terms of NEMA & NWA.	

			discontinued until repairs are made.				
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Potential Environmental Impact	Activity	Size and scale of disturbance	Mitigation Measures	Phase	Time period for implementation	Performance criteria (compliance with standards)	Standards to be achieved
	Storage and handling of dangerous goods	<30m ³	<p>Equip vehicles on site with drip trays and place drip trays under leaky equipment.</p> <p>Spill kits must be available on site in the event of a spillage.</p> <p>Adhere to safe work procedure when refueling vehicles and machinery.</p> <p>Hydrocarbons must be stored within portable bund tanks.</p>				
Potential contamination of groundwater through process water seepage	Water management	20m ² per borehole	<p>Line sumps with the appropriate lining system.</p> <p>Isolate porous or highly transmissive groundwater zones through capping or grouting to prevent clean groundwater ingress or recharge of contaminated water.</p>	Operation Decommissioning	Monthly visual inspection of the active prospecting areas.	NWA will be complied with to ensure that the quantity, quality, and reliability of water required to maintain the ecological function on which human depends is maintained.	Prevent groundwater contamination through seepage.
Potential contamination of groundwater with indiscriminately dumped waste or littering.	Domestic waste management	Portable closed bins will be used	<p>Domestic waste must be collected in waste bins that are located on site.</p> <p>Employees must be encouraged to re-use, recycle, and reduce waste where possible.</p> <p>No burning of domestic waste may be done on site.</p> <p>Appoint reputable contractors for the removal and disposal of general waste at a licensed facility.</p>	Operation	Weekly inspections of the waste bins for the duration of prospecting activities.	Dispose waste generated by the project according to good practice waste management principles.	Attain "cradle to grave" management of waste onsite.



Air quality

Emissions into the atmosphere through use of diesel-powered equipment, machinery, and vehicles.	Core drilling	20m ² per boreholes	Maintaining all vehicles, machinery and equipment and discontinuing use of faulty equipment.	Operation	Weekly inspections of the vehicles and machinery for the duration of prospecting activities.	SANS / SABS / SA legislative requirements regarding vehicle and equipment maintenance and operating requirements.	Vehicles, machinery and equipment maintained within operational specification and legislative requirements.
	Drill rig, machinery and vehicle movement	Farm roads will be used as far as possible. Temporary Access Road (if required) will not exceed 3.5m in width					

Potential Environmental Impact	Activity	Size and scale of disturbance	Mitigation Measures	Phase	Time period for implementation	Performance criteria (compliance with standards)	Standards to be achieved
Increase in dust fall out	Establishment of drill sites and contractor's camp	20m ² per boreholes	Dust suppression procedures should be implemented to reduce and control dust on the access road and drill site.	Operation	Weekly inspections of the drill site, contractor's camp and access roads for the duration of prospecting activities.	General duty of care in terms of NEMA.	Dust fallout will be managed to not exceed 600mg/m ² /day.
	Drill rig, machinery and vehicle movement	Farm roads will be used as far as possible. Temporary Access Road (if required) will not exceed 3.5m in width	Control the speed of operational vehicles. The drill rig must remain on site as far as possible.				
Noise							
Increase in ambient noise levels.	Core drilling	20m ² per boreholes	Drilling must be done in consultation with the landowners to ensure that work schedules are communicated to them. Prospecting activities must be conducted during normal working hours (Monday – Friday - 7am – 17pm) Implement noise control measures on noisy equipment.	Operation	Weekly inspections of the drill site, contractor's camp, and access roads for the duration of prospecting activities	General duty of care in terms of NEMA.	Prevent nuisance noise to nearby landowners / users.
	Establishment of drill sites and contractor's camp	625m ² per site					
	Drill rig, machinery and vehicle movement	Farm roads will be used as far as possible. Temporary Access Road (if required) will not exceed 3.5m in width					
Visual							
Visual intrusion and disturbance to the sense of place.	Core drilling	20m ² per boreholes	Keep disturbed areas as small as possible.	Operation	Weekly inspections of the drill site and site camp for the duration of prospecting activities	Dispose waste generated by the project according to good practise waste management principles.	Attain "cradle to grave" management of waste onsite.
	Establishment of drill sites and contractor's camp	625m ² per site	Keep the drill site neat, clean, and organized in order to maintain a tidy appearance. Remove waste off site as soon as possible or place it in closed bins in order to keep the site free from additional unsightly elements.				

Improvement of visual quality and sense of place	Rehabilitation of boreholes	20m ² per borehole	Rehabilitation must be on-going as soon as drilling results are completed.	Decommissioning	Monthly once invasive prospecting commences for the duration of prospecting.	General duty of care in terms of NEMA. MPRDA rehabilitation standards.	Restore land to arable land use.
					Once-off inspection of		

Potential Environmental Impact	Activity	Size and scale of disturbance	Mitigation Measures	Phase	Time period for implementation	Performance criteria (compliance with standards)	Standards to be achieved
					rehabilitated sites after substantial rainfall.		
Heritage resources							
Loss of and disturbance to archaeological / heritage /grave sites that may be encountered	Core drilling	20m ² per boreholes	Visually surveying drill sites for any heritage resources. Prevent activities near potential heritagesites unless necessary permits are obtained to do so. Should any graves/ruins be found during prospecting a 50m buffer will be established and maintained around these areas.	Operation	Once-off sign-off of drill site locations and route plans or amendments to these plans before any activities take place for the duration of prospecting operations.	SAHRA will be complied with regarding permits for destruction and relocation or management of heritagesites, and applicable buffers.	Preservation of heritage sites.
	Establishment of drill sites and contractor's camp	625m ² per site					
	Drill rig, machinery and vehicle movement	Farm roads will be used as far as possible. Temporary Access Road (if required) will not exceed 3.5m in width					
Socio economic, health and safety							
Creation of employment opportunities	Core drilling	20m ² per boreholes	Appoint local contractors where possible.	Operation	Once off before prospecting activities commence	N/A	Transparent communication with job seekers.

<p>Damage to existing infrastructure incl. gates, roads, and fences</p>	<p>Drill rig, machinery and vehicle movement</p>	<p>Farm roads will be used as far as possible. Temporary Access Road (if required) will not exceed 3.5m in width</p>	<p>Remaining in designated roads /routes.</p> <p>If infrastructure were damaged by the drill team the Applicant must repair the damages (i.e., grade farm roads that have been damaged due to use by prospecting team).</p> <p>The drilling team must always close the farm gates after entering.</p>	<p>Operation Decommissioning and closure</p>	<p>Once-off sign-off of route plans or amendments to these plans before any activities take place for the duration of prospecting operations.</p> <p>Once off inspection of routes after activity in the area has ceased.</p>	<p>General duty of care in terms of NEMA</p>	<p>High safety standards on site with reduced safety risks</p>
<p>Increase potential for road accidents</p>	<p>Drill rig, machinery and vehicle movement</p>		<p>The drilling contractor's personnel will always adhere to the speed limit.</p> <p>No transporting will occur after sunset.</p> <p>Vehicles will be in roadworthy condition with reflective strips to make them clean and visible for other road users.</p> <p>Intersections with main tarred roads will be clearly signposted.</p>	<p>Operation</p>	<p>Daily for the duration of prospecting operations</p>	<p>General duty of care in terms of NEMA</p>	<p>Leave site without any incidents, safety risks and theft to surrounding farmers.</p>

Potential Environmental Impact	Activity	Size and scale of disturbance	Mitigation Measures	Phase	Time period for implementation	Performance criteria (compliance with standards)	Standards to be achieved
Theft and safety risk resulting in the decrease in quality of life	Influx of people into the area	N/A	<p>Ensure farm gates are always closed.</p> <p>No employee will be allowed to stayover on site after working hours.</p> <p>No employee will be allowed to loiter around farms.</p> <p>The drill contractor must monitor the whereabouts of the drill team.</p>	Operation	Daily for the duration of prospecting operations	General duty of care interms of NEMA	
Increase risk of veld fires	Influx of people into the area	N/A	<p>No employees will be allowed to make any open fires on the farms or adjacent land.</p> <p>Cigarette butts may not be thrown in the veld, but must be disposed of correctly.</p> <p>Contractors must ensure that basic fire-fighting equipment and suitably qualified/experienced personal are always available on site.</p> <p>Fire extinguishers shall be placed at working areas and all areas where hazardous substances are kept.</p>	Operation	Daily for the duration of prospecting operations	Operations will comply with NVFFA standard procedures and regulations	Compliance with the National Veld & Forest Fire Act (NVFFA, Act 101 of 1998)

25. Financial Provision

CALCULATION OF THE QUANTUM

Applicant: **BIG SKY (PTY) LTD**
 Evaluator: **Singo Consulting (Pty) Ltd**

DMRE REF: MP 30/5/ KZN30/5/1/1/2/11406 PR
 Date: 03-Aug-23

No.	Description	Unit	A	B	C	D	E=A*B*C*D Amount (Rands)
			Quantity	Master Rate	Multiplicati factor	Weighting factor 1	
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	19	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	271	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	400	1	1	0
3	Rehabilitation of access roads	m2	5683	49	0,2	0,3	16708,02
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	471	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	257	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	542	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	284292	1	1	0
7	Sealing of shafts adits and inclines	m3	0	146	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	189528	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	236054	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	685612	1	1	0
9	Rehabilitation of subsided areas	ha	0	158701	1	1	0
10	General surface rehabilitation	ha	0,9	150138	0,4	0,3	16214,904
11	River diversions	ha	0	150138	1	1	0
12	Fencing	m	0	171	1	1	0
13	Water management	ha	0	57087	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0	19980	1	1	0
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
						Sub Total 1	32922,924
1	Preliminary and General		3950,75088		weighting factor 2	1	3950,75088
2	Contingencies			3292,2924		Subtotal 2	3292,2924
						VAT (15%)	40165,97
						Grand Total	40166

Sign
 Date THILIVHALI NDOU
 03/08/2023

Table 16:Financial Provision

25.1 Description of the closure objectives and extent to which they align with the baseline characterization.

The closure vision for the proposed project is to establish a safe, stable, and non-polluting post-prospecting landscape that can facilitate integrated, self-sustaining and value generating opportunities, thereby leaving a lasting positive legacy. Closure objectives identified include:

25.1.1 Geology

Make sure that every borehole has been capped and plugged. The stabilization of the affected region and the filling of the hole will be the main goals of the rehabilitation of each drilling site.

25.1.2 Topography

Ensure that the final elevation of rehabilitated areas is free draining. The localised nature of the prospecting activities means that attaining objective will result in restoration of baseline conditions.

25.1.3 Soils and land capability

To maintain the potential for arable land and lower the risk of erosion, make sure topsoil is replenished on top of repaired drilling sites (where appropriate, with vegetation clods). The baseline conditions will only be slightly changed and entirely return to baseline over a short to medium time period if soil clods are removed with plants.

25.1.4 Surface water and aquatic ecosystems

Make that the nearby surface water systems are not chemically or sedimentally contaminated. Maintain biological corridors connected to watercourses found within the application area, prevent disruption to depression wetlands, and keep them in their current state.

25.1.5 Groundwater

Ensure no contamination of ground water or disturbance to ground water aquifers.

25.1.6 Flora and Fauna

Encourage indigenous vegetative growth over the disturbed areas to prevent alien plant infestation. The aim is to reduce introduction of new species or spread of existing species and to preserve protected species in situ as far as possible.

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

Post closure land use (PCLU) is determined in consultation with stakeholders so that the PCLU meets the requirements of the stakeholders, within the context of the closure plan. This activity is undertaken for the area affected by prospecting activities and integrates stakeholder requirements with risk mitigation. The draft BAR & EMP will be made available for a 30-day review and comment period. The comments received during this period will be addressed in the final report.

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

This application is for a prospecting right. Each individual drill site will impact a maximum footprint of 20m² and the rehabilitation actions for the drilled boreholes will be conducted after drilling of each and every borehole concludes.

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

The rehabilitation plan has been compiled with the aim to meet the primary closure objective which is to establish a safe, stable, and non-polluting post-prospecting landscape. By implementing the rehabilitation activities in line with the plan the Applicant should be able to restore the affected areas to the pre-prospecting condition.

26.3 Quantum of the financial provision required to manage and rehabilitate the environment

An applicant or holder of a right must determine and make financial provision to guarantee the availability of sufficient funds to undertake rehabilitation and remediation of the adverse environmental impacts of prospecting, exploration and mining or production operations, as contemplated in the Mineral and Petroleum Resources Development Act, 2004, (MPRDA) and MPRDA Regulations to the satisfaction of the Minister responsible for mineral resources.

The environmental liability only focused on the proposed prospecting activities and was calculated using the DMRE's rule-based assessment and is estimated to be R40166 .00 including VAT and contingencies (see Table 14). The closure components and size of disturbed areas provided by Big Sky (Pty) Ltd in the Prospecting Work Program (PWP) was used to calculate the financial provision. The accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data.

CALCULATION OF THE QUANTUM

Applicant: **BIG SKY (PTY) LTD**
 Evaluator: **Singo Consulting (Pty) Ltd**

DMRE REF: **MP 30/5/ KZN30/5/1/1/2/11406 PR**
 Date: **03-Aug-23**

No.	Description	Unit	A	B	C	D	E=A*B*C*D Amount (Rands)
			Quantity	Master Rate	Multiplacati factor	Weighting factor 1	
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	19	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	271	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	400	1	1	0
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4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	471	1	1	0
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5	Demolition of housing and/or administration facilities	m2	0	542	1	1	0
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8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	685612	1	1	0
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10	General surface rehabilitation	ha	0,9	150138	0,4	0,3	16214,904
11	River diversions	ha	0	150138	1	1	0
12	Fencing	m	0	171	1	1	0
13	Water management	ha	0	57087	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0	19980	1	1	0
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
Sub Total 1							32922,924

1	Preliminary and General	3950,75088	weighting factor 2	3950,75088
			1	
2	Contingencies	3292,2924		3292,2924
Subtotal 2				40165,97
VAT (15%)				
Grand Total				40166

Sign
Date

THILIVHALI NDOU
03/08/2023

Table 17: Financial provision calculation

26.4 Confirm that the financial provision will be provided as determined.

Big Sky (Pty) Ltd will provide for the closure liability associated with the project through the purchase of a Bank Guarantee as allowed by the Financial Provision for Prospecting, Exploration, Mining or Production Operations Regulations, with the Bank Guarantee provided to the DMRE following authorization of the project.

27. Mechanisms for monitoring compliance with and performance assessment against the environmental management programme

Regular monitoring of all the environmental management measures and components shall be carried out by the holder of the prospecting right in order to ensure that the provisions of this EMP are adhered to. Environmental management and monitoring will be conducted where needed by in-house Environmental Managers. The anticipated monitoring program is provided in Table 18 below.

The recommended management options have been listed below:

- ❖ Provide an updated layout plan at the prospecting site indicating the final locations of the proposed drill holes.
 - ❖ Demarcating each drill site to ensure activities do not take place outside this area.
 - ❖ Effective managing of the topsoil by covering or reseedling the stockpiles to avoid erosion.
 - ❖ Use existing roads as far as possible and if new roads need to be established it must be done in consultation with the landowner.
 - ❖ Implement dust control during dry and windy days.
 - ❖ Temporary toilet facilities, wastewater and refuse disposal areas must be established.
 - ❖ Maintenance of vehicles should not take place on site.
 - ❖ Prospecting operations need to be conducted at least 500m away from all wetlands identified onsite and outside the project area.
 - ❖ Final disposal of domestic and hazardous waste must be done by a registered contractor.
 - ❖ Compliance reporting/submission of information
-

Table 18: Monitoring programme.

Aspect	Area to be monitored	Impacts Requiring Monitoring	Functional Requirements for Monitoring (refer to detailed description of the monitoring programs above)	Roles and Responsibilities	Monitoring and Reporting Frequency
Geology	Drilling sites	Cracks and disruption to geological layers.	1. Ensure sensitive sites are avoided or that necessary authorisations / permits are obtained where these cannot be avoided through sign-off of all onsite activity plans.	1. Geologist and site manager	1. Once-off sign-off of drilling plans or amendments to these plans before any activities take place for the duration of prospecting operations.
Topography		Localised dips in topography if boreholes collapse after materials replaced.	1. Inspect drilled sites for localised dipping in topography or pooling of water	1. Environmental manager	1. Once-off inspection of drilled boreholes after substantial rainfall
Soils	Access routes	Loss of soil resource through compaction and contamination	1. Inspect all routes and prospecting sites for compacted soils, erosion, and degradation. 2. Ensure vehicles are within operation specifications to reduce risks of leaks.	1. Environmental manager 2. Environmental manager	1. Once off inspection of rehabilitated areas after substantial rainfall. 2. Weekly inspection of all vehicle and equipment service and maintenance logbooks for the duration of prospecting operations.
	Drilling sites		1. Ensure responsible material and soil handling and replacement. 2. Ensure area is clear of hydrocarbon spills.	1. Environmental manager with the contracting prospecting manager 2. Site manager	1. Monthly inspection once invasive prospecting commences for the duration of prospecting. 2. Weekly inspection of all vehicle and equipment service and maintenance logbooks for the duration of prospecting operations.
	Contractor's camp		1. Using biodegradable fluids/polymers. 2. Ensure portable toilet facilities are in proper working condition, not overflowing or leaking and hygienic. 3. Ensure that all machinery and vehicles are in proper working condition with no leaking and are fully equipped with portable bunding and	1. Prospecting manager 2. Site manager 3. Site manager	1. Weekly inspections will be conducted during the duration of the prospecting activities

			drip trays with a spill kits on site.		
Flora	Access routes	Disturbance/damage to vegetation	1. Ensure sensitive sites are avoided or that necessary authorisations / permits are obtained where these cannot be avoided through sign-off of all onsite activity plans.	1. Environmental manager and site manager	2. Once-off sign-off of drilling plans or amendments to these plans before any activities take place for the duration of prospecting operations.
	Drill sites	Alien plant infestation	1. Where alien and invasive species, specifically those listed under NEMBA as Category 1b species, are noted, immediate eradication actions should be undertaken.	1. Environmental manager	2. Sporadic visual inspection of rehabilitated drill sites throughout prospecting operations

Aspect	Area to be monitored	Impacts Requiring Monitoring	Functional Requirements for Monitoring (refer to detailed description of the monitoring programs above)	Roles and Responsibilities	Monitoring and Reporting Frequency
Surface water and aquatic ecosystems	Access routes	Disturbance to streams and wetlands if activity proceeds indiscriminately.	1. Ensure sensitive sites are avoided or that necessary authorisations / permits are obtained where these cannot be avoided through sign-off of all onsite activity plans.	1. Environmental manager and site manager	2. Once-off sign-off of route plans or amendments to these plans before any activities take place for the duration of prospecting operations.
		Potential silt loading of surface water features.	1. Inspect all routes and prospecting sites for soil erosion or degradation.	1. Environmental manager	2. Monthly inspection once invasive prospecting commences for the duration of prospecting.
	Contractor's camp	Contamination of surface water resources	1. Ensure area is clear of hydrocarbon spills. 2. Ensure portable toilet facilities are in proper working condition, not overflowing or leaking and hygienic.	1. Site manager 2. Prospecting manager	1. Weekly inspection of all vehicle and equipment service and maintenance logbooks for the duration of prospecting operations. 2. Weekly inspections of portable toilet facilities for the duration of prospecting activities.
Groundwater	Drill sites	Groundwater contamination	1. Prevent any oil spills or leaks into borehole. 2. Lining sumps with the appropriate lining system	1. Site manager 2. Site manager	1. Daily check of oil leaks 2. Daily inspection of drilling areas.
Air quality	Access routes	Increase in dust fall out	1. Visual inspection for billowing dust clouds.	1. Environmental manager	1. Sporadic visual inspection of billowing dust clouds from prospecting areas throughout prospecting operations.
Heritage resources	Access routes	Loss of and disturbance to archaeological / heritage / grave sites that may be encountered.	1. Preserve any heritage and cultural sites encountered.	1. Environmental manager	1. Once-off survey for heritage sites on areas targeted for travel and / or drilling prior to activity in the area.
Socio economic, health and safety	Access routes	Damage to existing infrastructure and increase potential for road accidents	1. Maintain roads and intersections with public roads to reduce road incidences. 2. Ensure that on-site speed limits are enforced to reduce dust generation and road incidences.	1. Site manager 2. Site manager	1. Monthly inspections of all farm roads and intersections from the onset of operations for the duration of prospecting operations. 2. Sporadic speed inspections for the duration of prospecting operations.

	Working & hazardous substance storage areas	Increase risk of veld fires	<ol style="list-style-type: none"> 1. Ensure that all machinery and vehicles are in proper working condition with no leaking and are fully equipped with portable bunding and drip trays with a spill kits on site. 2. No open fires should be allowed on site and serviced fire extinguishers should be provided on site. 	<ol style="list-style-type: none"> 1. Site manager 2. Prospecting manager 	<ol style="list-style-type: none"> 3. Weekly visual inspection of the active 2021 prospecting areas will commence as soon as any prospecting contractors comes to site and continue for the life of prospecting operations.
--	---	-----------------------------	--	---	--

28. Indicate the frequency of the submission of the performance assessment report.

An annual performance assessment (or at a frequency stipulated in the EA) will be conducted by an independent Environmental Assessment Practitioner throughout the life of prospecting as required under NEMA. This is conducted to assess the adequacy and compliance to the EMP, EA and the relevant legislation. Based on the findings of the external audit any significant variation in the prospecting activity that will require changes to the EMP will be updated and communicated with the department before such changes are implemented.

28.1 Environmental Awareness Plan

The section was compiled using the Applicant's environmental policies.

28.2 Manner in which the applicant intends to inform employees of any environmental risk

The Environmental Manager, Site Manager and Prospecting Manager must be conversant in environmental legislation, with special reference to the MPRDA, NEMA, NFA, NCNCA and the NWA. The contractor/driller will be responsible for training its staff in terms of general environmental awareness. This will include basic training on the contents of this EMPR and will be conducted prior to commencement of prospecting activities. The aim of the environmental awareness training will be to highlight the potential impacts of the prospecting activities, and to highlight no-go areas. The contractor / driller will ensure that records are kept of all training sessions / inductions. The Environmental Manager will monitor these records and undertake regular follow ups. Figure 45 presents a hand-out to be made available to all personnel / laborer's on site.



Figure 48: Handout to be provided to all personnel onsite.

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

Big Sky (Pty) Ltd is committed on establishing and maintaining procedures to identify potential emergency situations, respond on emergencies and to mitigate any resulting safety, health, and environmental risks. In addition, the organization will review its emergency procedures (particularly after emergency situations) and periodically test such procedures where practicable.

Training, as detailed above, will address the specific measures and actions as listed in the EMP and also conditions of the EA. In this way, the prospecting team will be provided with the knowledge required to conduct the prospecting activities without resulting in environmental non-compliance, the liability of which would lie with Big Sky (Pty) Ltd. Secondly, informing the prospecting team of the EMP will also assist the team in identifying if an impact is likely to occur / has occurred and communicate this appropriately to the Environmental Manager.

In order for appropriate action to be taken, proper communications network and reporting protocol must be established, with the prospecting team and the site manager reporting all environmental and social issues to the Environmental.

29. Specific information required by the Competent Authority

All the information requested by the Competent Authority (DMRE) to date has been included in the BAR/EMPr.

30. Recommendations

Considering the limited data available for the project area, it is advisable to proceed with drilling activities in order to acquire a more comprehensive understanding of the stratigraphic profile and to verify the presence of mineralization. To gather substantial knowledge about the area, it is recommended to drill a total of 15 boreholes, with an average depth of approximately 300 meters per borehole. To ensure a systematic approach, the drilling process should be executed in phases. If the drilling results from the initial phase prove successful, indicating positive signs of mineralization, then a second phase of drilling should be implemented. The second phase will provide further confirmation and validation of the mineral deposits in the project area. Upon successful completion of the second phase of drilling and obtaining significant data, it may be appropriate to consider applying for a mining right. This application would be supported by the comprehensive information gathered from the drilling activities, substantiating the presence and potential value of the mineral resources in the project area.

31. UNDERTAKING

The EAP herewith confirms.

- a) the information provided in the foregoing report is correct.
- b) the comments and inputs from stakeholders and I&APs have been correctly recorded in the report.
- c) the information provided to interested and affected parties and any responses to comments or inputs made by interested and affected parties are correctly reflected in the report; and
- d) the inputs and recommendations from the specialist reports have been included in the EIA/EMPr Report.

Signature of the environmental assessment practitioner:

Singo consulting (Pty) Ltd

Name of company:

Date:

Appendices



Appendix 1: DMRE Letters



mineral resources & energy

Department:
Minerals Resources and Energy
REPUBLIC OF SOUTH AFRICA

Private Bag X 54307, Durban, 4000, 333 Anton Lembede Street, 3rd Floor Durban Bay House, Durban, Tel (031) 335 9600, Fax (031) 305 5801
Reference: KZN 30/5/1/1/2/ 11406 PR Enquiries: Mrs Nontobeko Ncama Email address: nontobeko.ncama@dmre.gov.za.

REGISTERED MAIL

THE MANAGER

BIG SKY MINING (PTY) LTD

P.O BOX 1035

WITBANK

1035

Email: sonwabo@tornowize.co.za

Dear Sir/Madam

ACCEPTANCE OF AN APPLICATION FOR PROSPECTING RIGHT IN TERMS OF SECTION 16(4) OF THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT, 2002 (ACT 28 OF 2002)

1. Please be informed that your application for Prospecting for **Coal on Portions 1, 6, 11 and 13 of the Farm Hazeldene 12649 GT and Farm Ostend 10643 GT** situated in the Magisterial District of **Umzinyathi**, is hereby accepted on the above-mentioned properties, in terms of section 16 (2) of the Act.
2. Take note that in light of the minimum requirements as stipulated on regulation 16 (1) and 16 (2) of the EIA Regulations, your application for an Environmental Authorisation was deemed incomplete as it was not accompanied by this acceptance letter as per Su Regulation 16 (1) (ix) and considering that it is now completed by this acceptance letter, you are hereby required to submit the documents as stipulated on Regulation 19 (1) to 19 (8) of the EIA Regulation (only in cases where Basic Assessment Report is applicable or Regulation 21 (Scoping Report and Regulation 23 (Environmental Impact Report) (only in cases where applicable). All submission timeframes are effective from the dates of this acceptance letter.

3. Please take further note that in terms of section 16 (4) of the Act, you are required to:-

3.1 Upload unto the SAMRAD system one copy and submit three (03) hard copies of the requisite environmental reports as required by section 16 of the MPRDA within **ninety (90) days** from the date of this letter.

3.2 to consult in the prescribed manner with the landowner, lawful occupier and any interested and affected party including the Land Restitution Commission and include the result of such consultation in the relevant environmental reports to be submitted and uploaded on the SAMRAD system on or before **19th June 2023 (within 30 days from the date of this letter)**.

Please note that the consultation process referred to in paragraph 2.2 above does not imply issuing letters and requesting the affected parties to indicate whether they support your proposed project or not.

*It includes among others an extensive process of giving and discussing the specific details of the proposed project, giving the I & A Parties an opportunity to table their comments, objection and support, it also involves **your written responses and specific commitments made** in dealing with the issues raised during the consultation.*

Note that it is important to ensure that your consultation process is comprehensive so that your Environmental Impact Assessment and Environmental Management Plan can be informed by all potential impacts that your project may have.

4. Should the land be owned by the communities or a Trust on behalf of the community, a proper and thorough consultation process must be engaged upon and a legitimate Tribal Resolution or consent must be obtained from the Traditional Authority / Council or Trust and be submitted with the results of consultation. *Should you need any assistance or guidance relating to the required consultation process & procedure in traditional institutions, please contact the District office of the Department of Cooperative Governance and Traditional Affairs in **Umzinyathi District Municipality**.*

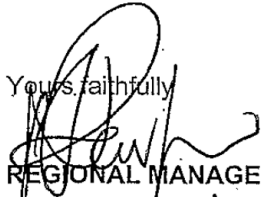
5. Further note that the acceptance of your application does not grant you the right to commence with **prospecting activities**. It only signifies that your application

~~will be processed and evaluated. The Minister or his delegate will make a decision~~

once the process of the evaluation and appeal on the Environmental Authorization application has been finalized.

6. You are in terms of Section 17(1) of the Act required to give effect to the objects referred to in Section 2 (d) of the Act. Therefore please submit on or before **31st July 2023 (within 60 days from the date of this letter)** to this office for the attention of Regional Manager any documentation proving such including but not limited to:-
 - 6.1 Duly signed shareholders agreements with your empowerment partner in which provision **shall** be made for entrepreneurs, local community and employees,
 - 6.2 Share certificates,
 - 6.3 Details relating to the equity by the BEE shareholders; Any other agreement relating to the BEE shareholding including the voting pool agreement where applicable,
 - 6.4 Articles and memorandum of association of the company.
 - 6.5 Any other information that may be necessary to explain and serve as evidence that the applicant meets the appropriate HDSA ownership and/or compliance requirements of the aforesaid Act and Mining Charter.
7. Please submit within 60 days (31st July 2023) from date of this letter for the attention of Regional Manager a complete prospecting work programme prepared in terms of Regulation 7 of the Mineral and Petroleum Resources Development Act, 2002 (Act no 28 of 2002): Mineral and Petroleum Development Regulation.
8. You are also required to adhere with the requirements of Mine Health and Safety Inspectorate and upload on system the required information and details on or before **19th June 2023 (within 30 days from the date of this letter)**
9. Please be advised that your application might be processed in terms of section 9 (1) (b) of the Act. If this office discovers that there is an existing or pending application on the same properties and for the same mineral, this application shall discontinue.
10. Please take note that failure to adhere to the timeframe stipulated above and to submit any documentation required in terms of this notice will result into non-compliance with the provision of the Act and the Amendment Act and will result in the refusal of your application.

Yours faithfully

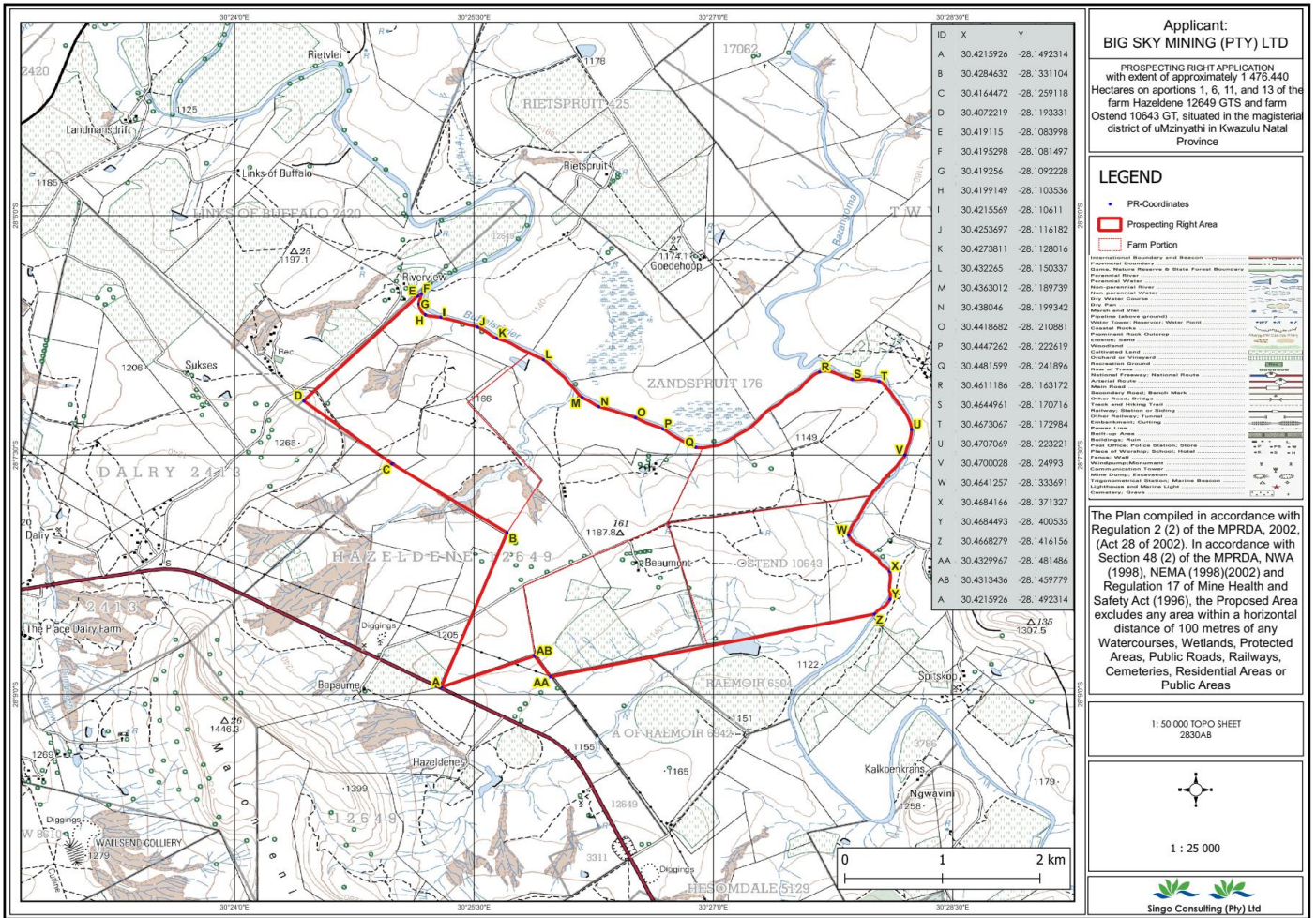


REGIONAL MANAGER

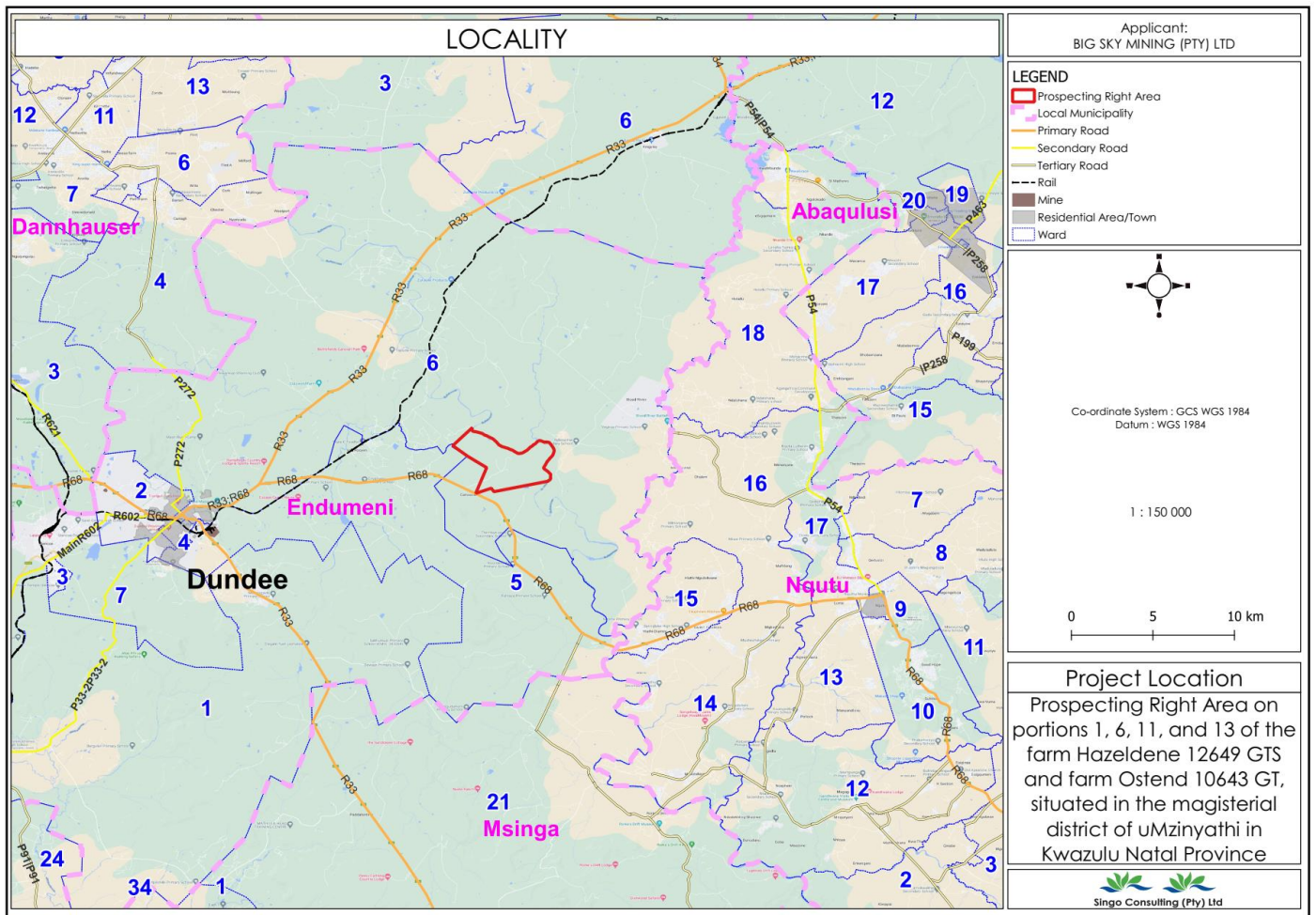
KWAZULU NATAL REGION

DATE: 09/05/2023

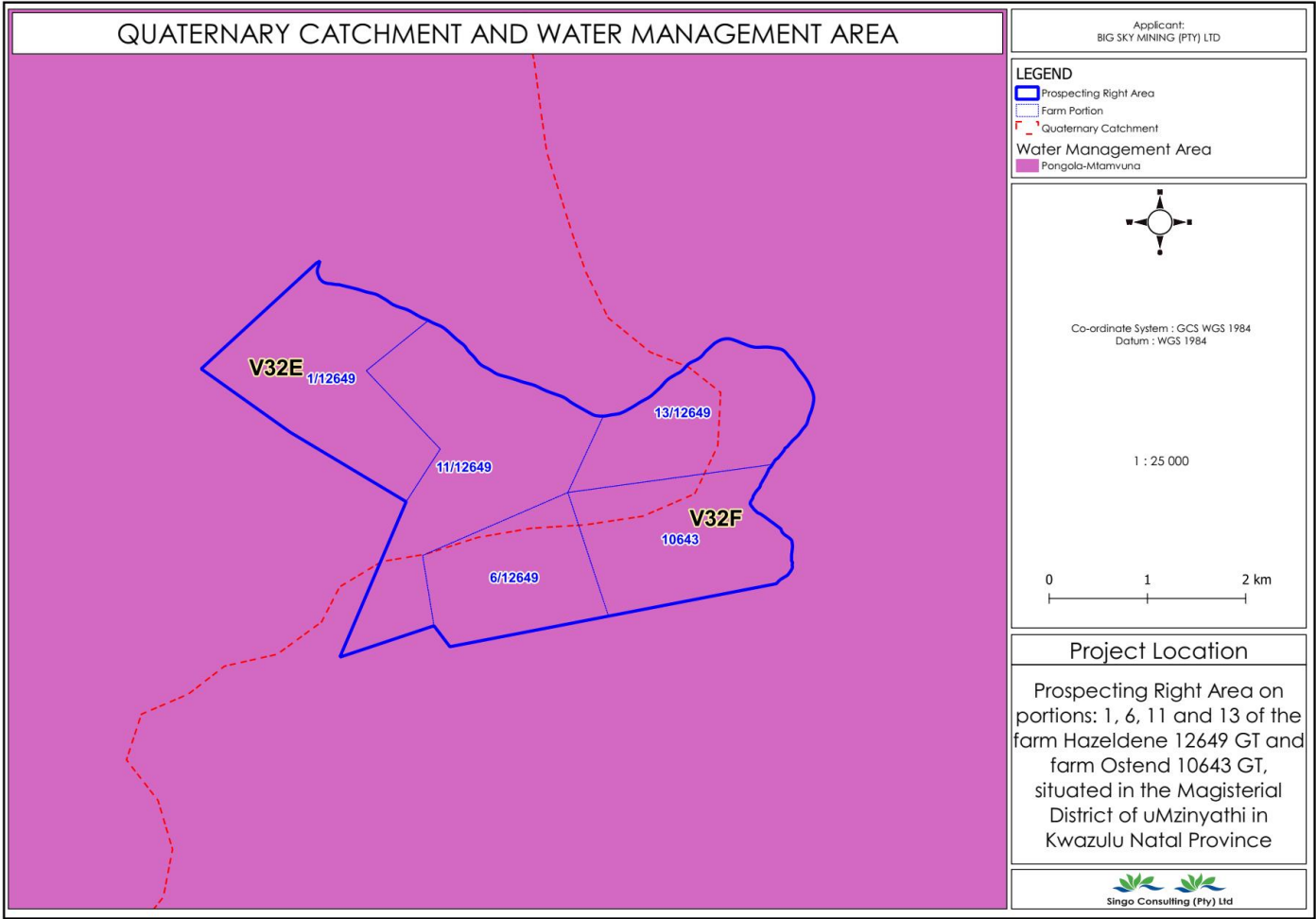
Appendix 2: Project maps



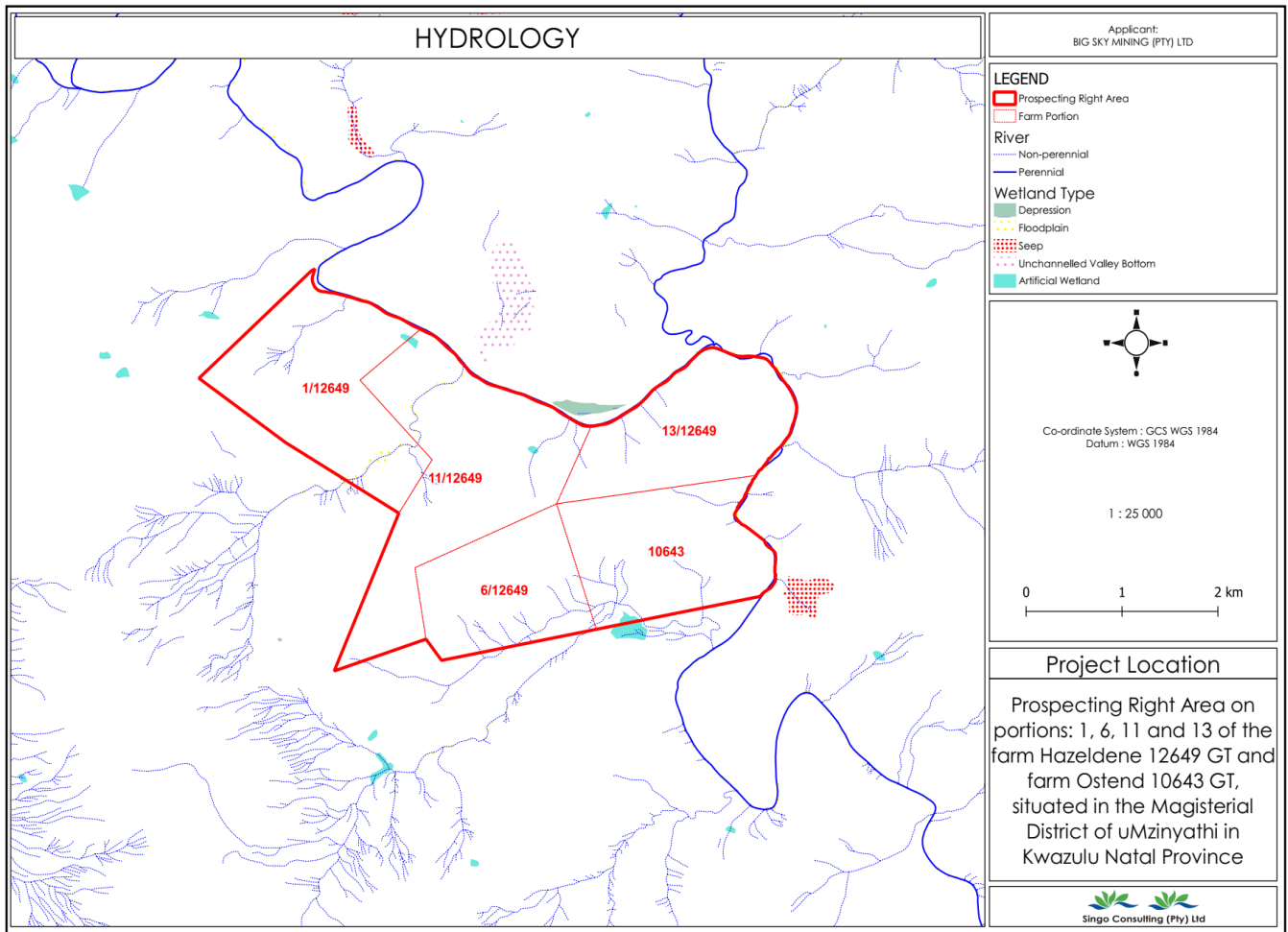
Regulation Map 2.2 Map.



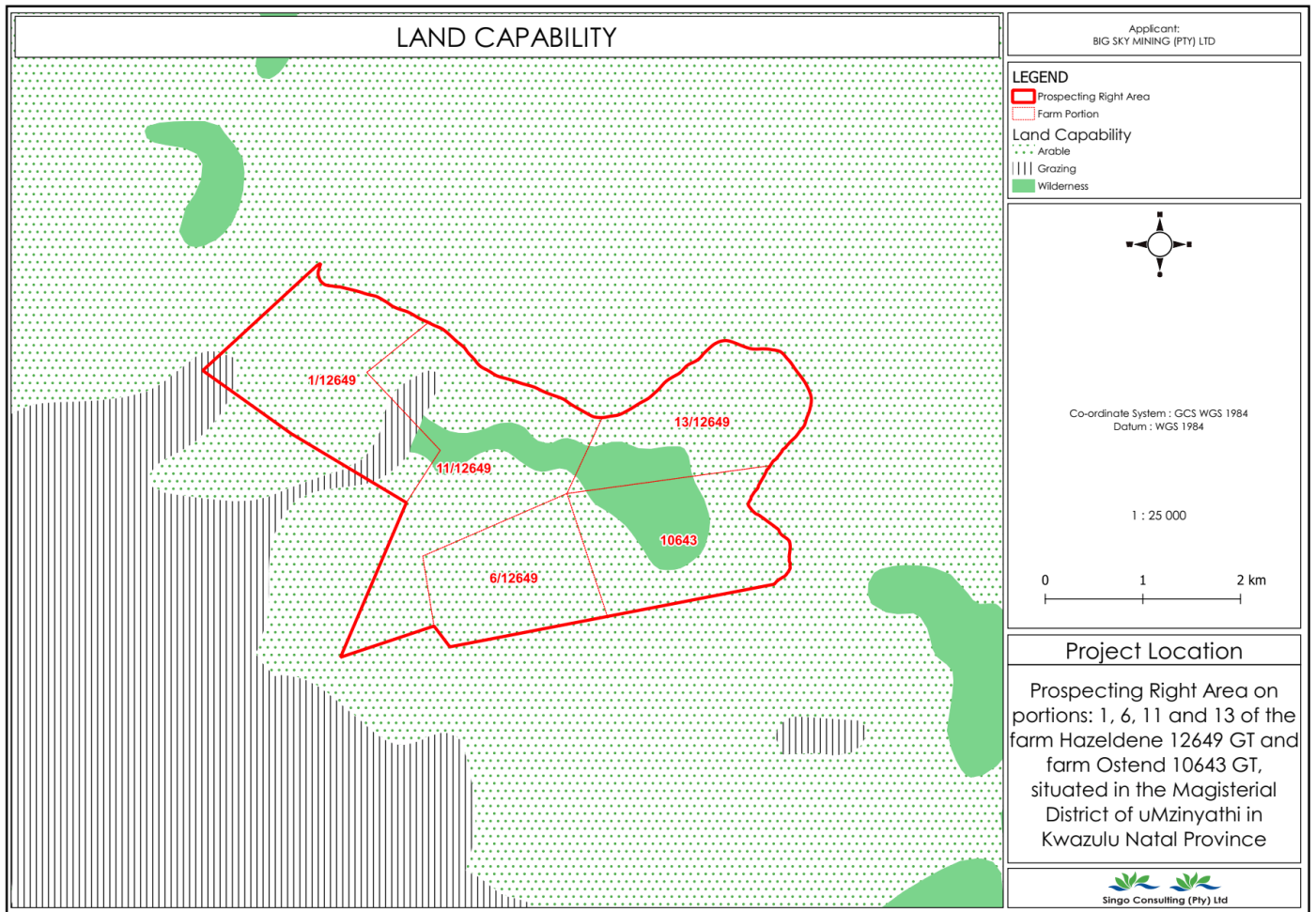
Locality Map.



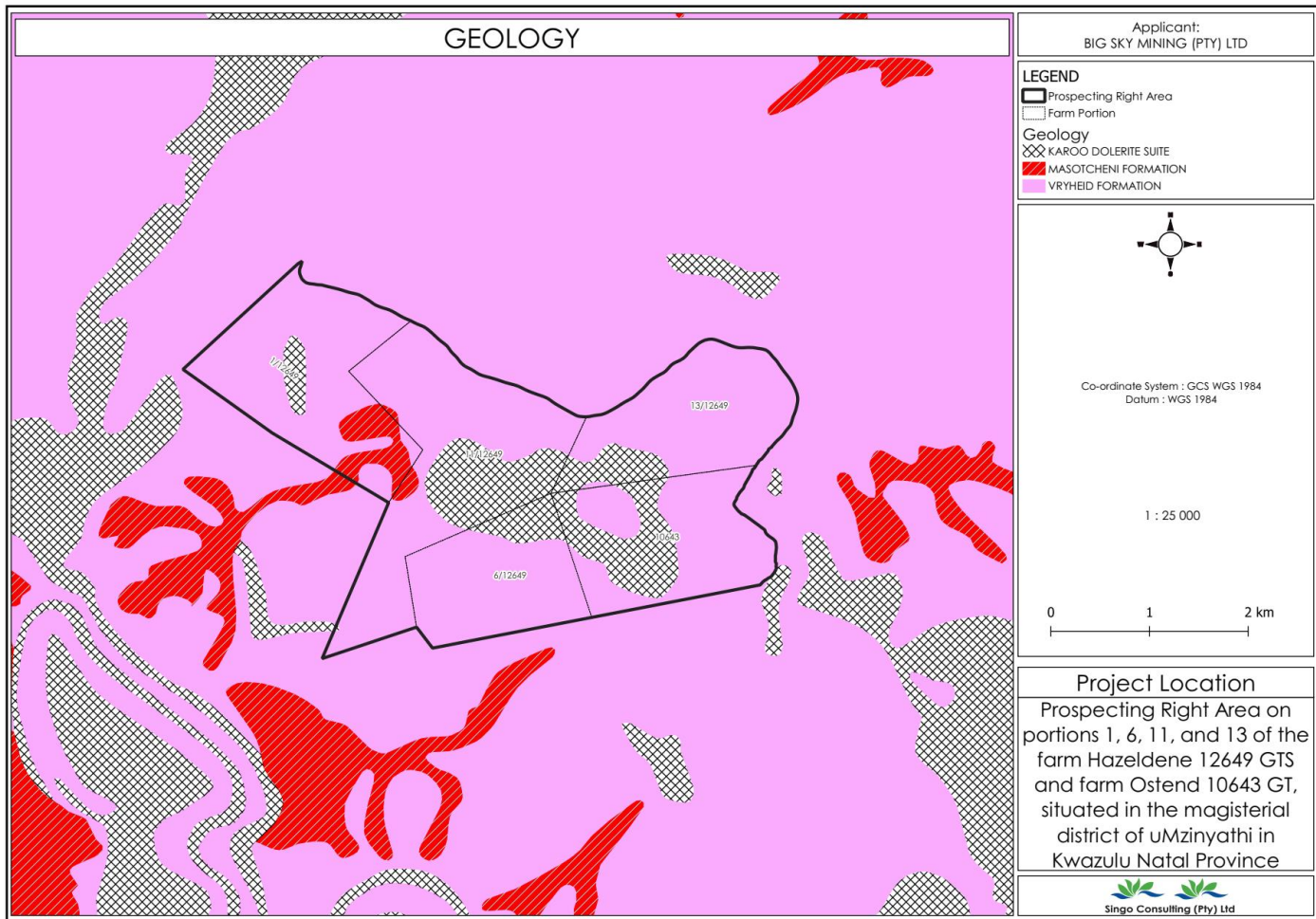
Quaternary Catchment and Water Management Areas map.



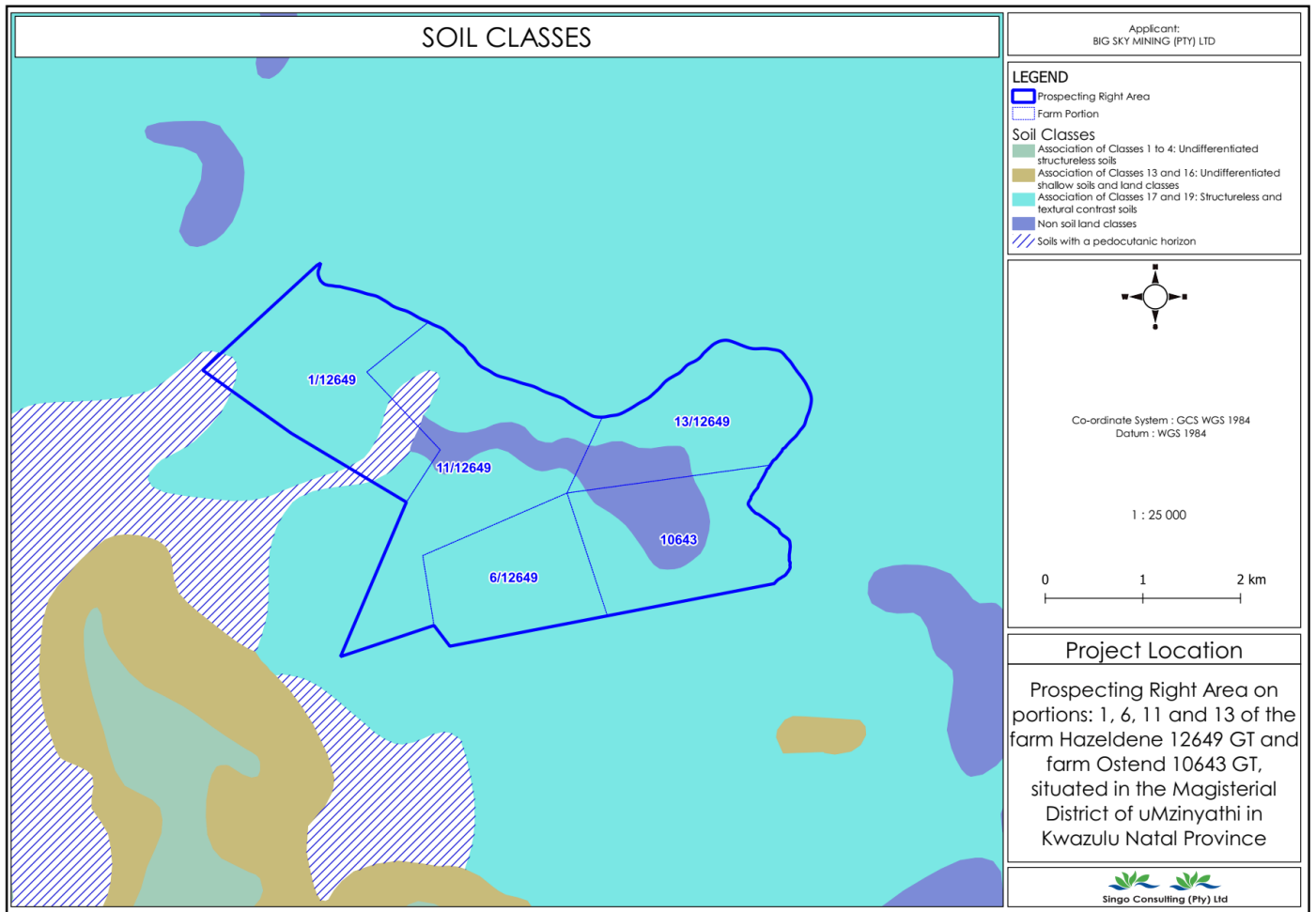
Hydrology map



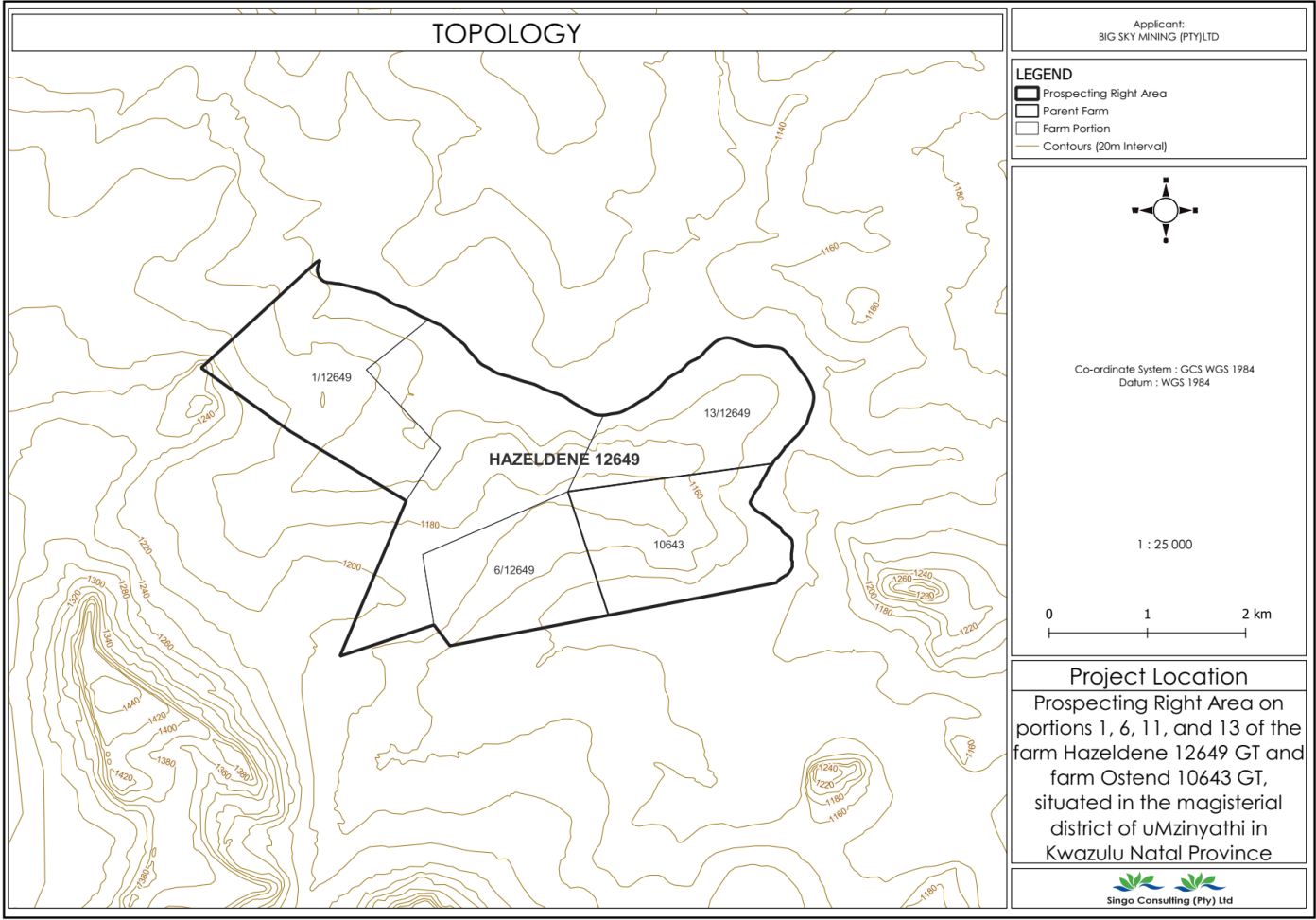
Land capability map.



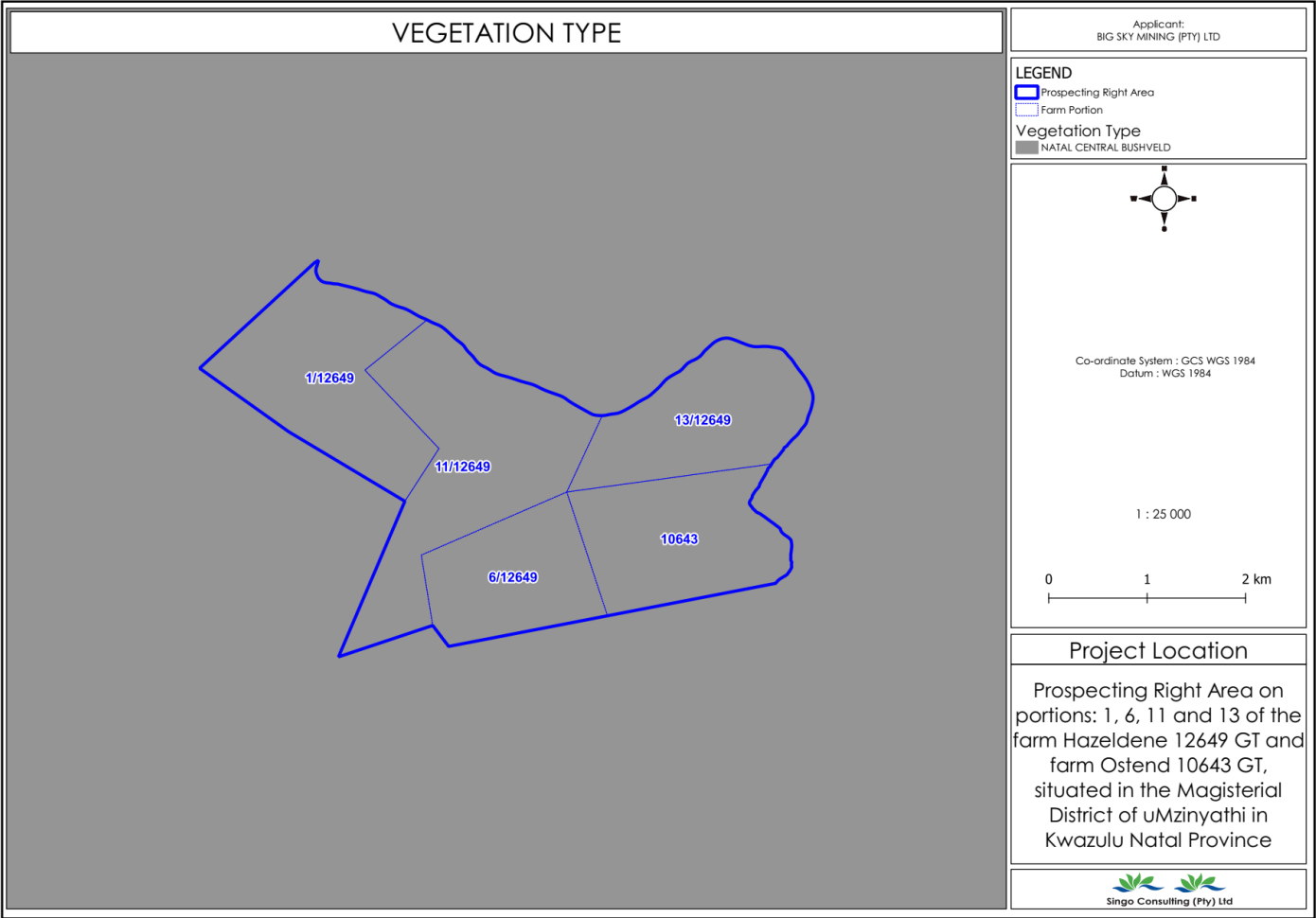
Geology map.



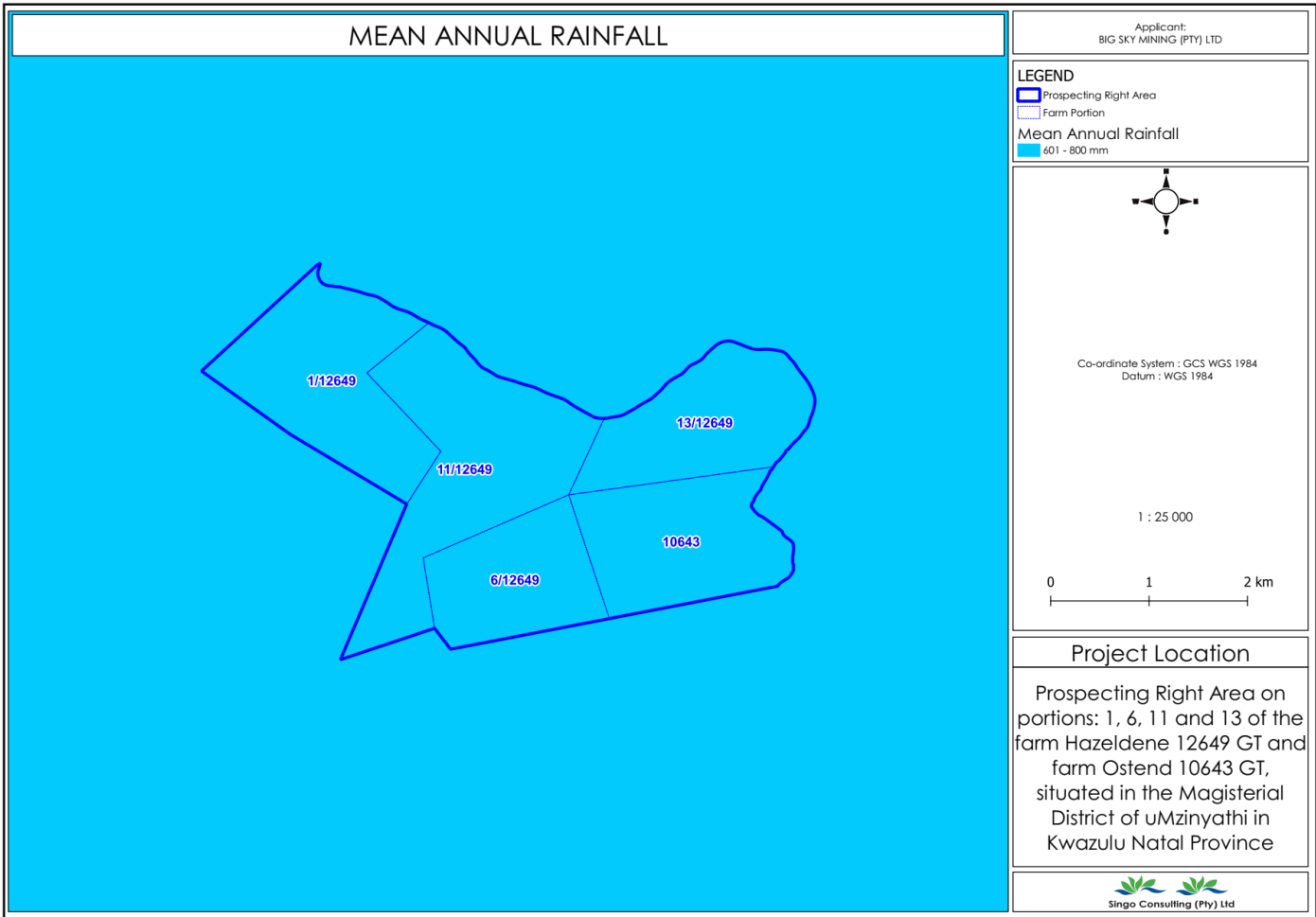
Soil classes map



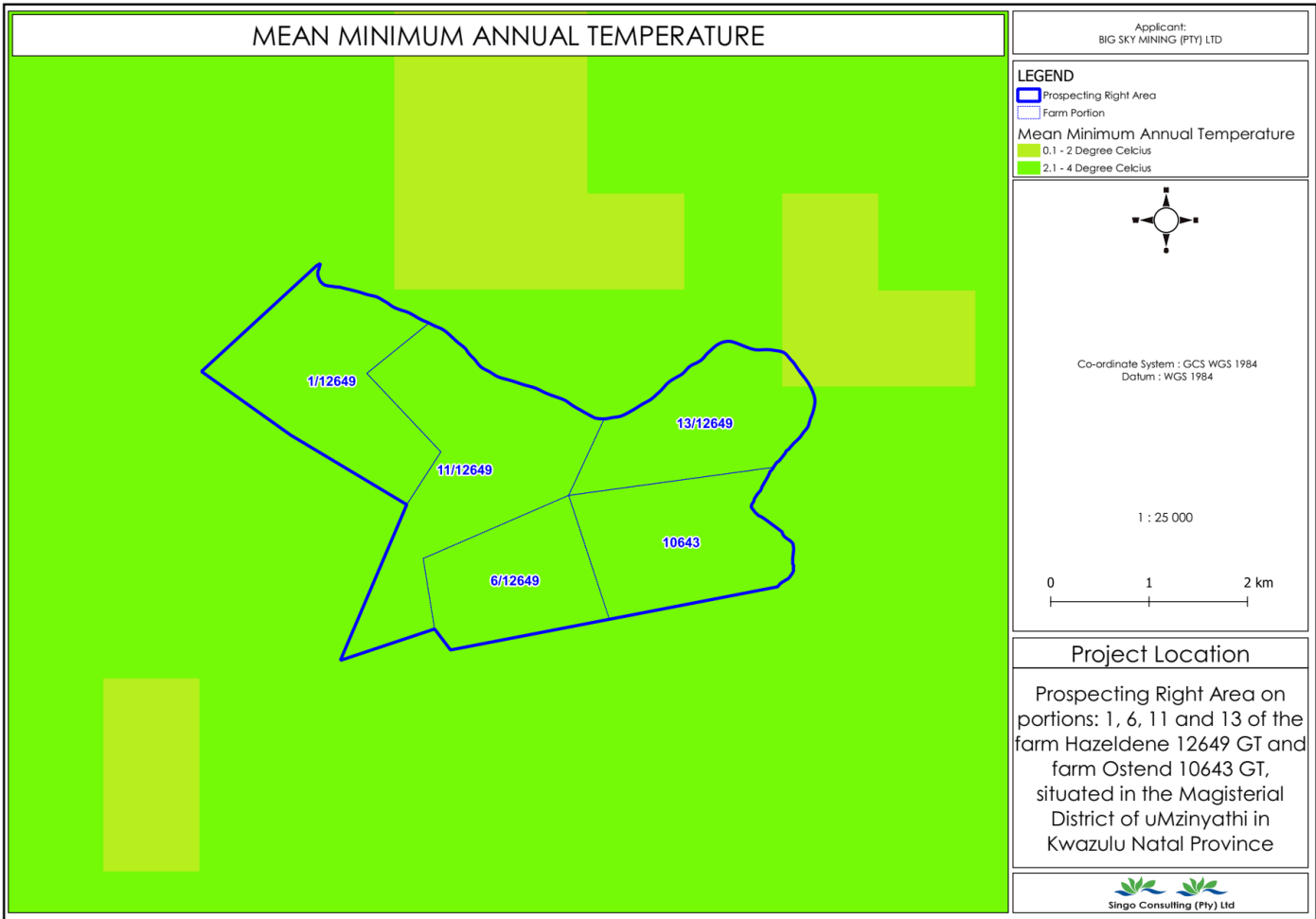
Topology map



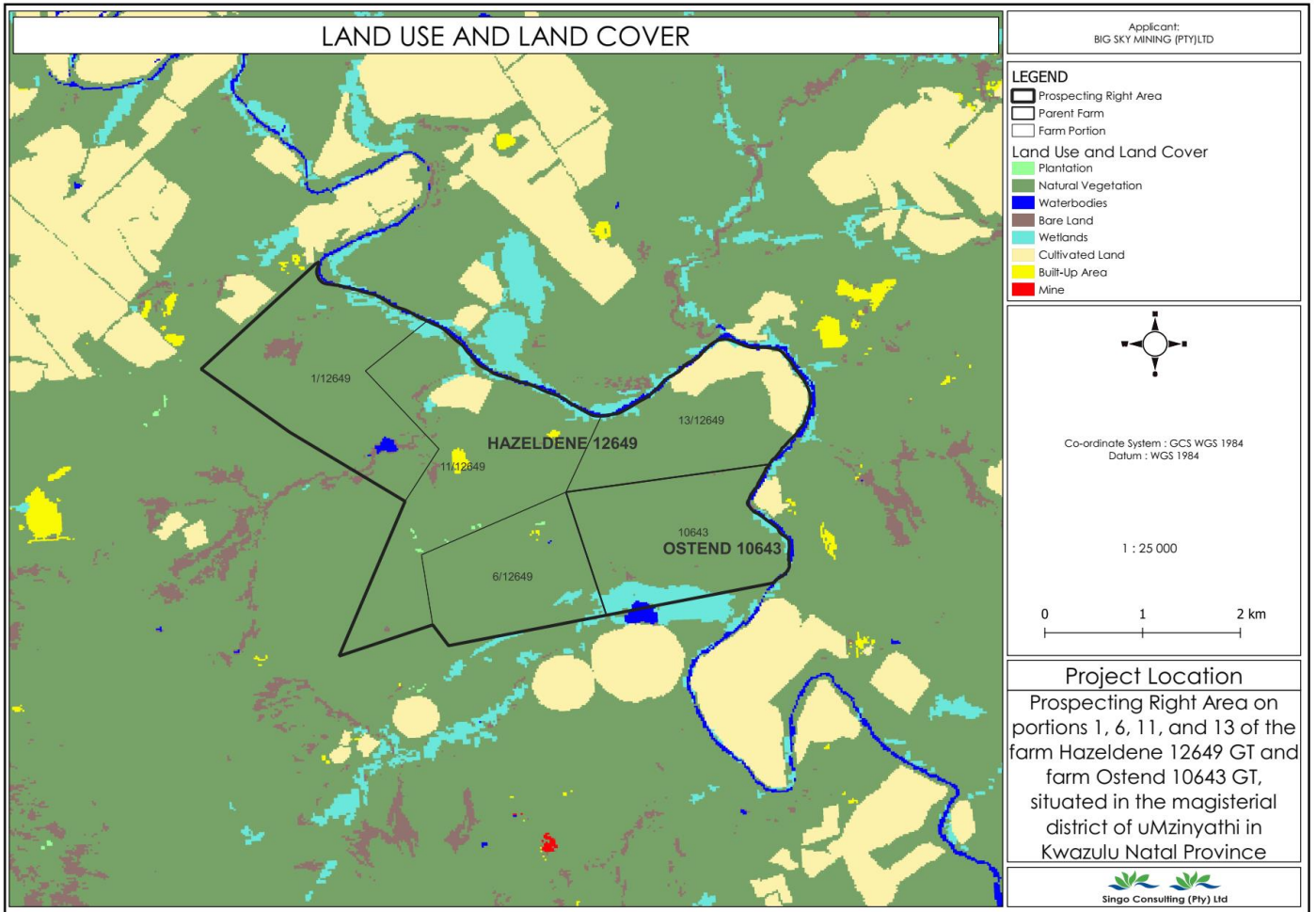
Vegetation type map.



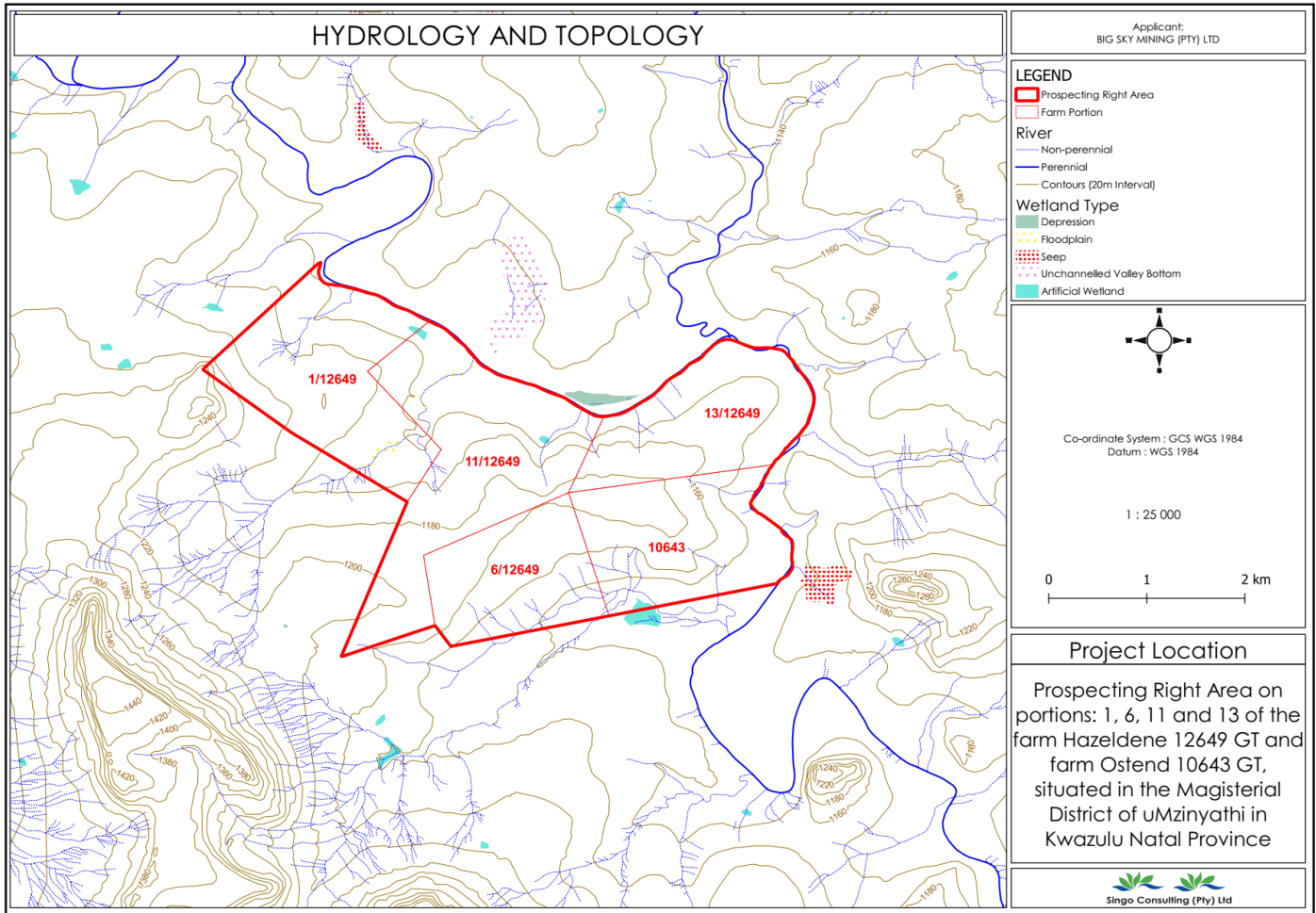
Mean annual rainfall map



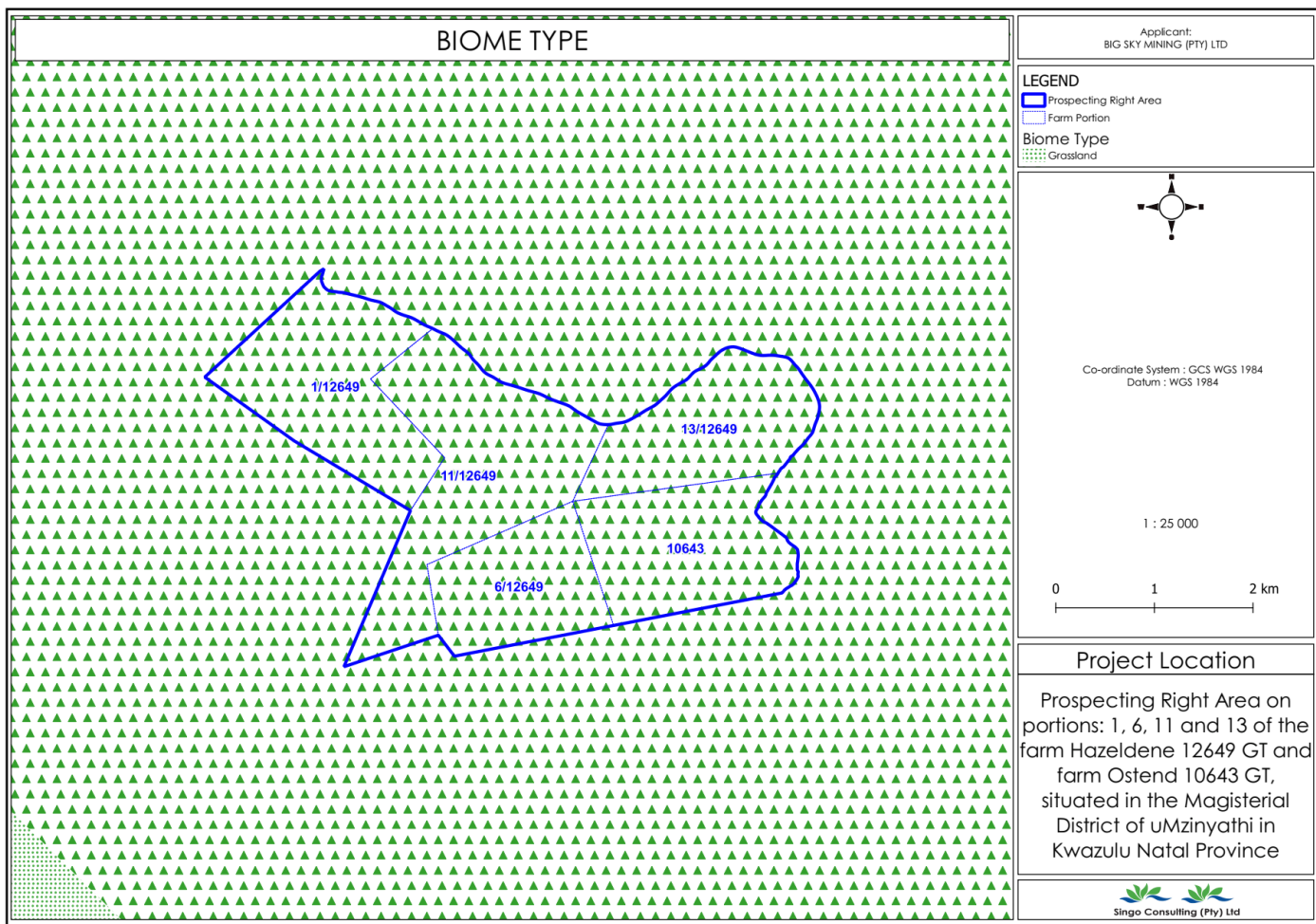
Mean annual temperature map.



Land use and landcover map



Hydrology and topology map.



Biome type map

Appendix 3: Background Information Document



BACKGROUND INFORMATION DOCUMENT

For prospecting right application on portions 1, 6, 11 and 13 of the farm Hazeldene 12649 GT and farm Ostend 10643 GT situated in Magisterial District of Umzinyathi in Kwa-Zulu Natal Province.

DMRE Ref: KZN 30/5/1/1/2/11406 PR

PREPARED FOR:

Big Sky Mining (PTY) LTD

Physical Address: 654

Kenilworth Street

Kyalamiestates, Kyalami,

Gauteng, 1684

Contact person: Mr. Sonwabo

Sellwa Debedu

Cell No.: 079 494 0068

Tel No.: 013 692 4378

Email:

sonwabo@tornowize.co.za

PREPARED BY:



Singo Consulting (Pty) Ltd

Office 870, 5 Balalaika Street,

Tasbet Park Ext. 2, eMalahleni

(Witbank), 1040

EAP.: Dr Kenneth Singo

PPP Officer.: Miss. Thilivhali Ndou

Cell No.: +27 63 050 6313

Tel No.: +27 13 6920 041

Fax No.: +27 86 5144 103

Email:

thilivhali@singoconsulting.co.za

INTRODUCTION AND THE PURPOSE OF THIS DOCUMENT

Singo Consulting (Pty) Ltd has been appointed as an independent Environmental Consultant by **Big Sky Mining (Pty) Ltd** to conduct Environmental Impact Assessment (EIA), compile a Basic Assessment Report (BAR), compile an Environmental Management Programme report (EMPr), and undertake Public Participation Process (PPP). This is done for the process of acquiring Environmental Authorization for the proposed Prospecting Right Application on **portions 1, 6, 11 and 13 of the farm Hazeldene 12649 GT and farm Ostend 10643 GT, situated within the Magisterial District of Umzinyathi, Kwa-Zulu Natal Province. (DMRE Ref: KZN 30/5/1/1/2/11406 PR).**

The Purpose of this Background Information Document (BID) is to provide a perfunctory description of the project and outline EIA processes to be followed and contributions from Interested and Affected Parties (I&APs) on the issues related to the project in question, allowing comments and concerns to be raised.

Results of the EIA, both negative and positive will be submitted and made available to the relevant Departments such as the Department of Mineral Resources and if requested, Environmental Affairs, Water and Sanitation, Landowner and other interested stakeholders.

This Background Information Document therefore requests and invites I&APs to comment on the environmental, physical, social and economic impacts associated with the proposed Prospecting Activities. Be assured that your comments are of great value as they ensure that relevant issues are taken into consideration. Attached at the end of this document is a registration form, kindly complete it and send it back to **Ms Thilivhali Ndou** through given means of communication also attached there.

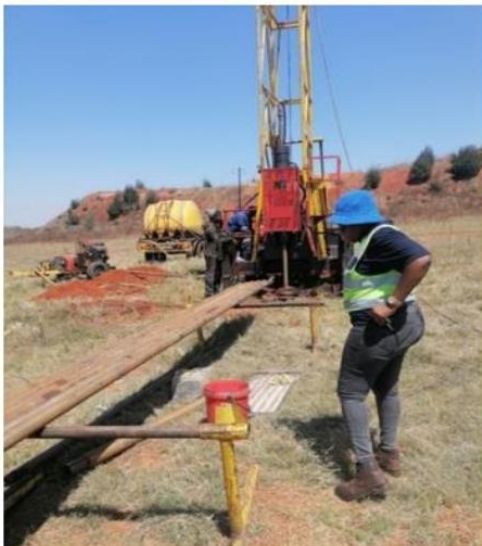
PROJECT DESCRIPTION

Prospecting right Application has been submitted for the searching(drilling) of coal resource on the properties mentioned above. This proposed prospecting Area, as seen in Figure 2 and Figure 3, is situated approximately 10.68 km Southeast of Hlathi Ngudulwane and 18.74 km from Dundee. It is also 20 km away from Endumeni Local municipality.

Prospecting activities will be undertaken over a period of five (5) years and are designed in phases, each phase conditional on the success of the previous phase. Both invasive and non-invasive methods will be implemented. Invasive are those activities which have footprint or cause harm (if not mitigated or managed properly) or those that have a physical impact on the environment, while non-invasive do not cause any harm or effects on the environment. See **Figure 1** for drilling setting and equipments example.

Non-invasive: Desktop study of the area has commenced, and this incorporates desktop geographical and geological mapping. This will be followed by detailed geochemical and geotechnical surveys. In turn, this is followed by detailed geophysical studies.

Invasive: A detailed drilling, sampling, assaying and mineralogical study will be carried out. Diamond method will be utilized to prospect Coal. To ensure or minimize impacts on the receiving environment, All the activities will be guided by the project's BAR & EMPr.



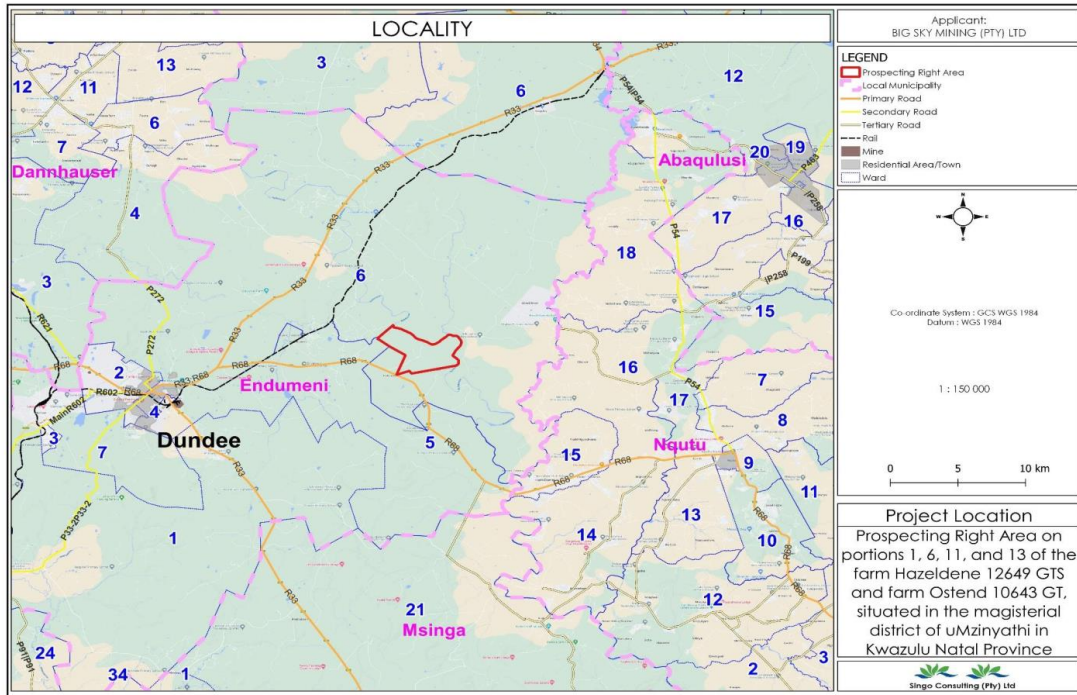


Figure 2: Locality map for Proposed Prospecting Right Area.

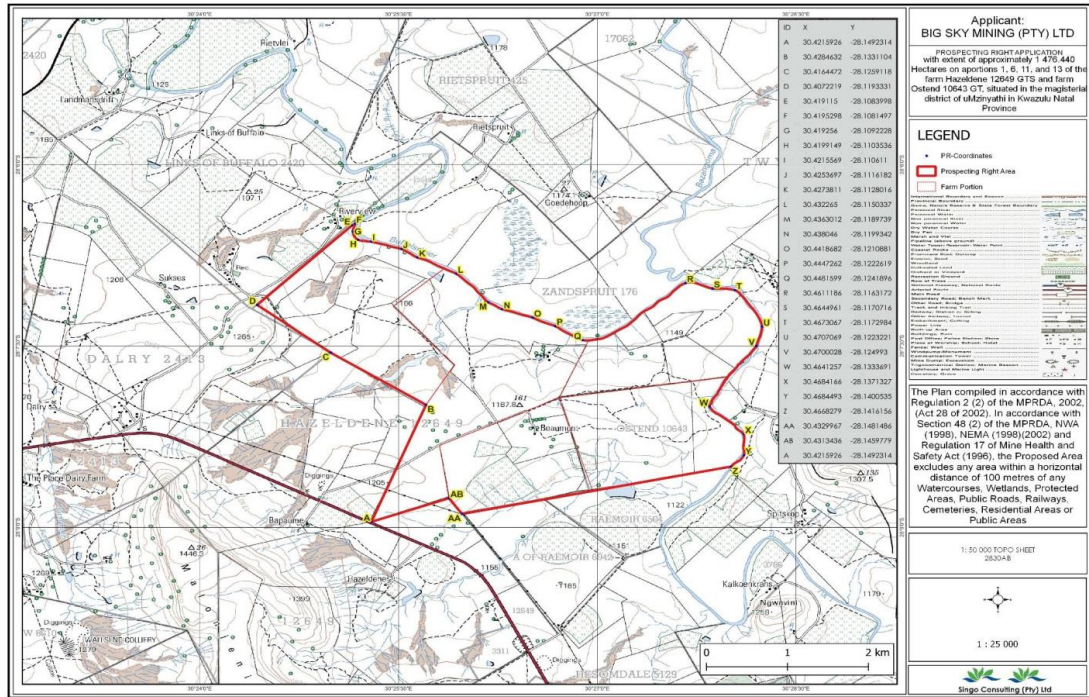


Figure 3: Regulation 2.2 Map for the proposed Area. (A -28.1492314, 30.4215926)

BASIC AND ENVIRONMENTAL IMPACT ASSESSMENT PROCESSES

These are planning and decision-making tools used in identifying potential environmental, economic and social consequences of a proposed activity prior the commencement of the activity.

These together with the public issues and concerns are to be identified sufficiently early so that they can be assessed and incorporated into the final reports when/if necessary.

These tools are regarded as crucial because they are utilized to demonstrate to the relevant stakeholders about the potential impacts, which in turn leads to the prospecting application process being a success or declined.

REGULATORY FRAMEWORK

Therefore, EIA through BAR & EMPr to be undertaken will be conducted in accordance with the National Environmental Management Act (Act 107 of 1998) and Environmental Impact Assessment regulations as amended (April 2017).

The activity is to prospect the existence and occurrence of coal therefore, this will be conducted in accordance with Mineral and Petroleum Resources Development Act, (Act 28 of 2002). Other regulatory guidelines to be followed include National Water Act, 1998 (Act 36 of 1998), National Air Quality Standards (GN 1210: 2009) and National Dust Control Regulations (GN 827 of GG NO. 36974).

PUBLIC PARTICIPATION PROCESS

Public Participation remains a cornerstone of the Environmental Impact Assessment process. It ensures provision of relevant and enough information with openness and transparency. Public Participation process presents to I&APs, an opportunity to understand what the project is about, and affords them an opportunity to make valuable contributions towards the EIA process.

I&APs can be any person, group of persons or organization interested in or affected by the proposed activity, and any organ of state that may have jurisdiction over any aspect of the activity.

The key objective of PPP is to afford the I&APs with an opportunity to comment and provide valuable inputs during the planning phase of the project.

For this specific proposed project, I&APs will be given a period of 30 days to comment and raise issues/concerns with regards to the BAR and EMPr which will be available at the **Dundee Public Library and Endumeni Local Municipality**. A soft copy is available from **Singo Consulting (Pty) Ltd** upon request, using the contact details of the Environmental Assessment Practitioner (EAP) and Public **Participation Process Officer (PPP Offer) Ms. Thilivhali Ndou**

Kindly note the following dates:

- ❖ Review of Draft BAR & EMPr: **Saturday the 29th of July 2023 to Monday the 28th of August 2023.**
(with the exclusion of public holidays).



Office No: Office 870
 5 Balalaika Street, Tasbet park, Ext 2
 Witbank, 1035.
Cell: +27 63 050 6313
Tel: +27 13 692 0041
Fax: +27 86 5144 103
Email: thilivhali@singoconsulting.co.za
admin@singoconsulting.co.za

REGISTRATION & COMMENT SHEET

Proposed Prospecting Right Application for Coal on portions 1, 6, 11 and 13 of the farm Hazeldene 12649 GT and farm Ostend 10643, situated within the Magisterial District of Umzinyathi, Kwa-Zulu Natal Province. (DMRE Ref: KZN 30/5/1/1/2/11406 PR).

Attention: **Ms Thilivhali Ndou**

Email: thilivhali@singoconsulting.co.za

Date				
Title	Name	Surname		
Company				
Designation				
Address				
Tel No.			Fax No.	
E-mail			Cell No.	
I would like to receive my notifications be (mark with "X"):		Post	E-mail:	
			Fax:	
Please indicate why you would have an interest in the above-mentioned project.				
Please provide your comments and questions here:				
<i>Please feel free to attach a separate document</i>				
Please add any person you think may be interested and affected parties:				
Full name			Company	
Address				
E-mail			Contact No.	

Appendix 4: Financial Provision

CALCULATION OF THE QUANTUM

Applicant: **BIG SKY (PTY) LTD**
 Evaluator: **Singo Consulting (Pty) Ltd**

DMRE REF: **MP 30/5/ KZN30/5/1/1/2/11406 PR**
 Date: **03-Aug-23**

No.	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Master Rate	Multiplicati factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	19	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	271	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	400	1	1	0
3	Rehabilitation of access roads	m2	5683	49	0,2	0,3	16708,02
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	471	1	1	0
4 (A)	Demolition and rehabilitation of non-electrified railway lines	m	0	257	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	542	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha	0	284292	1	1	0
7	Sealing of shafts adits and inclines	m3	0	146	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	189528	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	236054	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	685612	1	1	0
9	Rehabilitation of subsided areas	ha	0	158701	1	1	0
10	General surface rehabilitation	ha	0,9	150138	0,4	0,3	16214,904
11	River diversions	ha	0	150138	1	1	0
12	Fencing	m	0	171	1	1	0
13	Water management	ha	0	57087	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0	19980	1	1	0
15 (A)	Specialist study	Sum	0			1	0
15 (B)	Specialist study	Sum				1	0
Sub Total 1							32922,924

1	Preliminary and General	3950,75088	weighting factor 2	3950,75088
			1	
2	Contingencies	3292,2924		3292,2924
Subtotal 2				40165,97

Sign
Date

THILIVHALI NDOU
03/08/2023

VAT (15%)	
Grand Total	40166

Appendix 5: attendance register

SINGO CONSULTING (Pty) Ltd
Meeting venue: <u>Hezelden Farm</u>
Date: <u>19 June 2023</u>
Time: <u>16:02</u>



ATTENDANCE REGISTER					
No.	Designation	Company/Land Owner/ Other(Specify)	Contact Details	Email Address	Signature
			0722790900		V.E. Mkhunni
			0785817088		Z. Buthelezi <i>[Signature]</i>
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					

SINGO CONSULTING (Pty) Ltd
 Meeting venue: Dinnhauser (Chief's advisor)
 Date: 17/06/2023
 Time: @ 17:45



ATTENDANCE REGISTER						
No.	Name & Surname	Designation	Company/Land Owner/ Other (Specify)	Contact Details	Email Address	Signature
1		Consultant	Singo Consulting			[Signature]
2		Consultant	Singo Consulting			[Signature]
3		Consultant	Singo Consulting			[Signature]
4		Legal Advisor	-			[Signature]
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						

Appendix 6: Screening Report