mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT

And

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

FINAL

KZN 30/5/1/1/2/108876PR

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: IDLANGA MINING (PTY) LTD

TEL NO: 0836304150

FAX NO: 086 693 8318

POSTAL ADDRESS: POSTNET SUITE 8,
PRIVATE BAG
X7260

PHYSICAL ADDRESS: 1 HIGHVELD INDUSTRIAL PARK,
OLD PRETORIA MAIN ROAD

FILE REFERENCE NUMBER SAMRAD:
FILE REFERENCE NUMBER SAMRAD:

IMPORTANT NOTICE

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

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

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

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

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

OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

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

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

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

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

(d) through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage , and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and technology alternatives on the 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;
(ba) may cause irreplaceable loss of resources; and
(ca) 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.

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LIST OF FIGURES

ACRONYMS AND DESCRIPTIONS

ACRONYMS	DESCRIPTION
AIPs	Alien Invasive Plants
CBA	Critical Biodiversity Area
DBAR	Draft Basic Assessment Report
DWS	Department of Water and Sanitation
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
ESA	Ecological Support Area
FBAR	Final Basic Assessment Report
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
NEMA	National Environmental Management Act
NFEPA	National Freshwater Ecosystem Priority Areas
NWA	National Water Act
PHRAG	The Provincial Heritage Resources Authority Gauteng
SAHRA	South African Heritage Resources Association
WULA	Water Use License Application
BAR	Basic Assessment Report

PART A
SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1. INTRODUCTION

The Applicant, Idlanga Mining, has appointed Information Decision Systems to apply for prospecting rights on Portion 35 of RIETVLEI 150. The proposed prospecting site is located in Ward 5 of the Abaqulusi Local Municipality under the jurisdiction of the Zululand District Municipality (Figure 1). The 330 ha site is bordered by mines and quarries. The proposed activity includes prospecting without bulk sampling for coal. The proposed prospecting activities have been separated into three (3) phases as detailed below;

- Phase 1: Desktop Studies- to establish the status of the area using historical data
- Phase 2: Geophysical work to do a reconnaissance work- Down-hole geophysical methods using wireline geophysical instruments may be used to gather geological and mineral quality information in percussion boreholes. The seam thickness distribution, lateral extent and quality will be determined through detailed borehole measurement and laboratory core analysis. Detailed reserve and quality determinations will then be possible through computer based modelling, and qualitative and quantitative calculations.
- Phase 3: Diamond drilling- The drill rigs are truck-mounted and equipped with diesel driven engines to provide power to the drill. The drill site is not larger than 15m x 15m (225ni) and consists of a drill rig, water pump, caravan and portable chemical toilet. Prospecting work will include diamond drilling as well as possible percussion drilling if deemed necessary. Diamond drilling operations will be carried out for the purpose of retrieving core samples. Laboratory analyses will be performed to establish the quality of material. Twenty (20) exploration boreholes are planned for twenty four months should additional information be required, percussion boreholes will be drilled to gain additional information.

1.1 Location of the overall activity.

FARM NAME:	Portion 35 of RIETVLEI 150 HU
APPLICATION AREA (HA)	Approximately 121 hectares
MAGISTERIAL DISTRICT:	Vryheid, Abaqulusi Local Municipality
DISTANCE AND DIRECTION FROM NEAREST TOWN	Positioned within 21 Km East of Vryheid
21 DIGIT SURVEYOR GENERAL CODE FOR EACH FARM PORTION	N0HU00000000015000035

1.2 Locality map

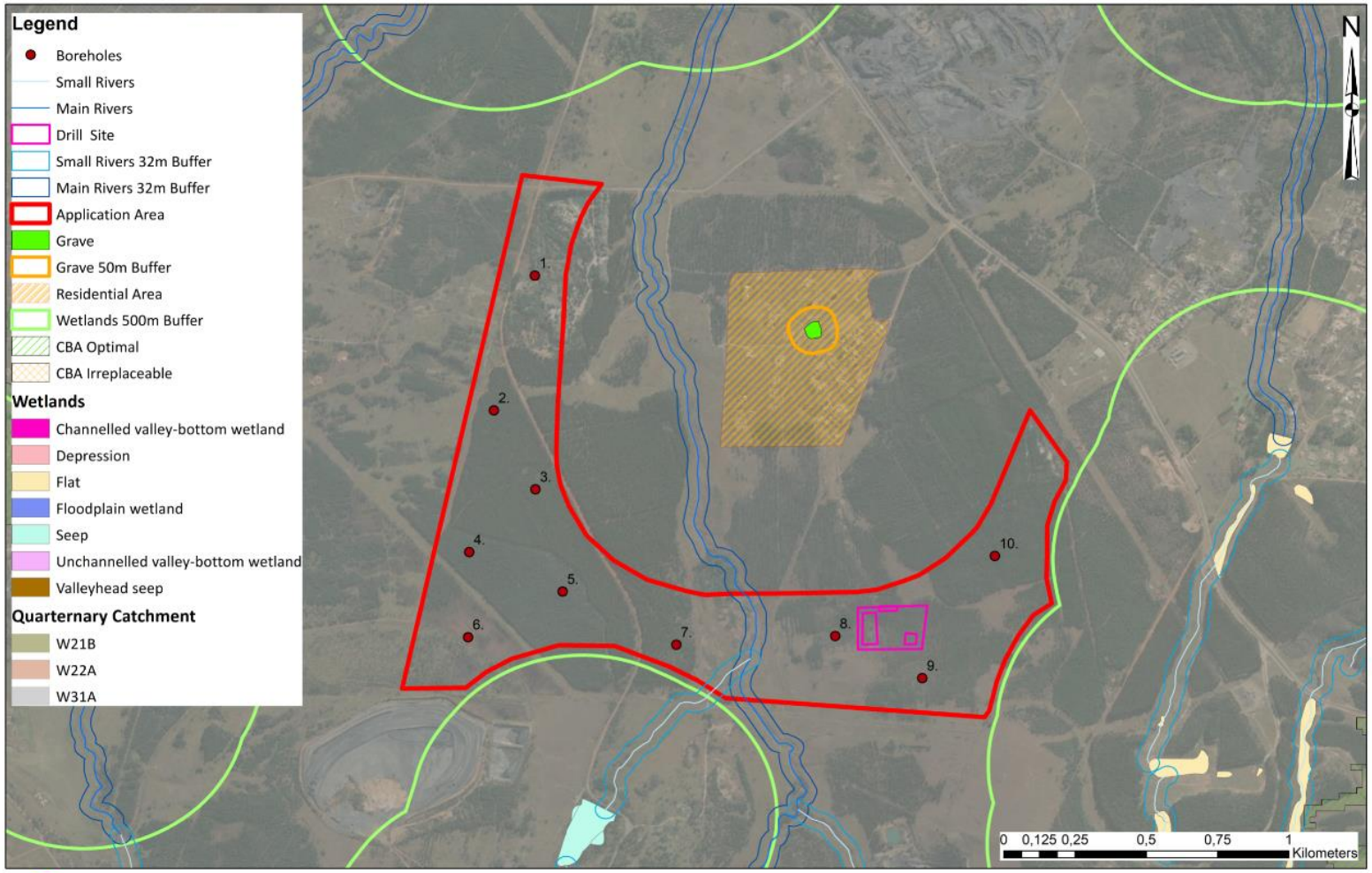


Figure 1 Locality Map

1.3 Details of the EAP

Name of The Practitioner:	Information Decision Systems (Pty) Ltd Graeme Engelbrecht
Tel No:	087 353 2576
Cell No:	083 321 0119
Fax No:	086 685 7767
E-mail address:	graeme@ids-cc.co.za

1.4 Expertise of the EAP

The qualifications of the EAP (with evidence).

BSc (Geology, Geography)	Rhodes University, Grahamstown
BSc (Hons) (Environmental Water Management) Modules in Integrated Catchment Management, Geohydrology, Geographic Information Management, Applied Hydrology,	Rhodes University, Grahamstown

PROFESSIONAL EXPERIENCE

Field of Specialisation in Environmental Science, Geographical Information Systems and Environmental Water Management Graeme is skilled in the following fields:-

- Basic Assessment Reports
- Scoping Reports and Environmental Impact Assessments
- Environmental Management Plans
- Waster use licence applications
- Waste management
- Disaster Management
- Project Management
- GIS Package Skills, particularly ESRI products

Graeme has completed a Bachelor of Science Degree with a focus on Geology and Geohydrology, (Rhodes University, Grahamstown), as well as a Bachelor of Science (Honours) in Environmental Water Management (Rhodes University, Grahamstown), Graeme has also completed a number of short courses ranging from project management and GIS remote sensing. Graeme is a professional GIS professional with the South African Council for Professional and Technical Surveyors.

Since establishing Information Decision Systems in April 2008, Graeme has been involved in a number of projects around South Africa and consulting services, include scoping reports, environmental management plans, integrated management plans, basic assessment reports, environmental impact reports and strategic environmental assessments. He has been involved in a number of project management roles for projects funded by government entities and his knowledge base of GIS and environmental management enables the efficient execution of projects in the respective disciplines.

PROJECT EXPERIENCE

Project Manager;

- Landscape Character Assessment for the Cradle of Humankind, 2018
- Development of the Environmental Management Plan for the proposed development at Roodeplaat Dam, 2017
- Rehabilitation plan for illegally commenced activities in Mpindweni, Nyandeni Local Municipality
- Basic Assessment Report & WULA for the proposed stormwater upgrades in Cunningham, City of Ekurhuleni Metro

Environmental Impact Assessments (BAR/Scoping)

- Environmental Impact Assessment & Water Use Licence Application for the N1 upgrade
- Environmental Impact Assessment & Water Use Licence Application for the storm water upgrades in Edenvale, Gauteng.
- Basic Assessment and Water Use Licence Application for the Winnie Mandela Park.
- Basic Assessment and Water Use Licence Application for the upgrading of intersection R562/Axle Road
- Basic Assessment Report & Water Use Licence Application for the proposed storm water upgrades in Cunningham, City of Ekurhuleni Metro
- Basic Assessment Report & Water Use Licence Application for the proposed upgrades of bridges and culverts in Limpopo
- Basic Assessment and water use licence for the proposed development of the Winnie Mandela Park
- Basic Assessment Report & Water Use Licence Application for the proposed development in Marburg, Port Shepstone
- Basic assessment report for the development of the Winnie Mandela Park, Tembisa
- Basic Assessment and water use licence for the proposed refurbishment of the Giloolys Farm
- Environmental Impact Assessment for the proposed road development of D1194, Limpopo

S24G Applications

- Rectification of illegal activities on 136 Plane Road, Kempton Park
- Rectification of illegal activities on portions of the Swartspruit, Kempton Park

Amendment application

- Amendment of RoD for the proposed housing development, City of Ekurhuleni Municipality
- Amendment of RoD and WULA for portions of the Eastleigh Spruit, City of Ekurhuleni Municipality

Environmental Management Plans

- Environmental Management Plan for the upgrade of Rietfontein Nature Reserve.
- Environmental Management Plan for five landfills within the EMM jurisdiction.
- Environmental Management Plan for the Ennerdale Landfill, Gauteng
- Development of the Environmental Management Plan for the proposed development at Roodeplaat Dam

Senior Environmental Control Officer;

- Environmental Control Officer for the road upgrade of D1194, Limpopo
- Environmental Control Officer for the stormwater management on a private property in Spartan, Kempton Park
- Environmental Control Officer for the Stormwater Management at Oriel
- Environmental Control Officer for the Stormwater Management at Isandovale, Gauteng
- Environmental Control Officer for the rehabilitation work at Eastleigh Channel
- Environmental Control Officer for the Erosion Protection work at Cecil Auret Road, Edenvale
- Environmental Control Officer for Hammarsdale upgrade

Water use licence applications

- Water use license application for Tanganani housing development, Gauteng
- Water use license application for the N1 upgrade
- Water use license application for the storm water upgrades in Edenvale, Gauteng.
- Water use license application for the Winnie Mandela Park.
- Water use license application for the upgrading of intersection R562/Axle Road
- Water use license application for portions of the Eastleigh Spruit.
- Water use license application for the proposed storm water upgrades in Cunningham, City of Ekurhuleni Metro
- Water use license application for the upgrade of BlueGill Dam
- Water use license application for the proposed upgrades of bridges and culverts in Limpopo

2. DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY

Provide a plan drawn to a scale acceptable to the competent authority but not less than 1: 10 000 that shows the location, and area (hectares) of all the aforesaid main and listed activities, and infrastructure to be placed on site.

The Applicant, Idlanga Mining, has appointed Information Decision Systems to apply for prospecting rights on Portion 35 of RIETVLEI 150. The proposed activity includes prospecting without bulk sampling for coal. The proposed prospecting activities have been separated into three (3) phases as detailed below;

Phase 1: Desktop Studies- to establish the status of the area using historical data

Phase 2: Geophysical work to do a reconnaissance work- Down-hole geophysical methods using wireline geophysical instruments may be used to gather geological and mineral quality information in percussion boreholes. The seam thickness distribution, lateral extent and quality will be determined through detailed borehole measurement and laboratory core analysis. Detailed reserve and quality determinations will then be possible through computer based modelling, and qualitative and quantitative calculations.

Phase 3: Diamond drilling- The drill rigs are truck-mounted and equipped with diesel driven engines to provide power to the drill. The drill site is not larger than 15m x 15m (225ni) and consists of a drill rig, water pump, caravan and portable chemical toilet. Prospecting work will include diamond drilling as well as possible percussion drilling if deemed necessary. Diamond drilling operations will be carried out for the purpose of retrieving core samples. Laboratory analyses will be performed to establish the quality of material. Twenty (20) exploration boreholes are planned for twenty four months should additional information be required, percussion boreholes will be drilled to gain additional information.

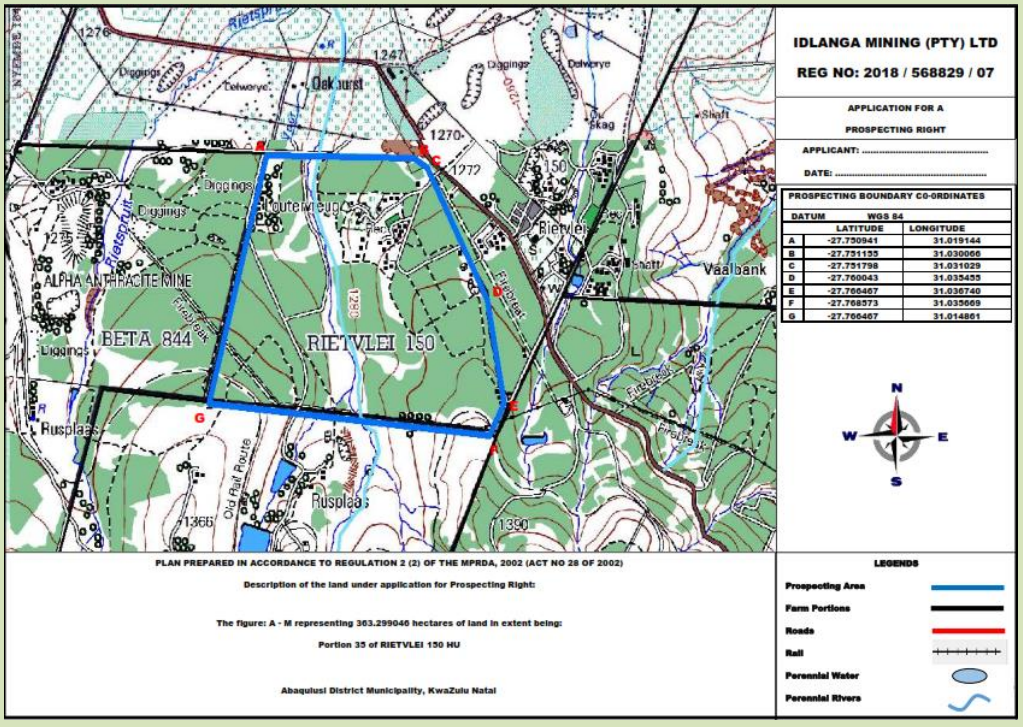


Figure 2 Application Area

2.1 Listed and specified activities

NAME OF ACTIVITY	AERIAL EXTENT OF THE ACTIVITY	APPLICABLE LISTING NOTICE	WASTE MANAGEMENT AUTHORISATION
Prospecting Area	270 ha	Government Notice, No. R. 327, April 2017 (LN1)	**X**
Drilling	0.3 Ha	Government Notice, No. R. 327, April 2017 (LN1)	**X**
Site camp	80 m^2	Government Notice, No. R. 327, April 2017 (LN1)	**X**
Ablution facilities	10 m^2	Government Notice, No. R. 327, April 2017 (LN1)	**X**
Accommodation	30 m^2	Government Notice, No. R. 327, April 2017 (LN1)	**X**
Sample storage	40 m^2	Government Notice, No. R. 327, April 2017 (LN1)	**X**
Equipment storage	50 m^2	Government Notice, No. R. 327, April 2017 (LN1)	**X**
Temporal Site offices	40 m^2	Government Notice, No. R. 327, April 2017 (LN1)	**X**
Access roads	100 m^2	Government Notice, No. R. 327, April 2017 (LN1)	**X**

2.2 Description of the activities to be undertaken

(Describe Methodology or technology to be employed, including the type of commodity to be prospected/ mined and for a linear activity, a description of the route of the activity)

The proposed prospecting activities have been separated into three (3) phases as detailed below;

- **Phase 1: Desktop Studies**- to establish the status of the area using historical data

- **Phase 2: Geophysical work to do a reconnaissance work**- Down-hole geophysical methods using wireline geophysical instruments may be used to gather geological and mineral quality information in percussion boreholes. The seam thickness distribution, lateral extent and quality will be determined through detailed borehole measurement and laboratory core analysis. Detailed reserve and quality determinations will then be possible through computer based modelling, and qualitative and quantitative calculations.

- **Phase 3: Diamond drilling**- The drill rigs are truck-mounted and equipped with diesel driven engines to provide power to the drill.. The drill site is not larger than 15m x 15m (225ni) and consists of a drill rig, water pump, caravan and portable chemical toilet.

Prospecting work will include diamond drilling as well as possible percussion drilling if deemed necessary. Diamond drilling operations will be carried out for the purpose of retrieving core samples. Laboratory analyses will be performed to establish the quality of material. Twenty (20) exploration boreholes are planned for twenty four months should additional information be required, percussion boreholes will be drilled to gain additional information.

3. POLICY AND LEGISLATIVE CONTEXT

APPLICABLE LEGISLATION AND GUIDELINES USED TO COMPILE THE REPORT	REFERENCE WHERE APPLIED	HOW DOES THIS DEVELOPMENT COMPLIY WITH AND RESPOND TO THE LEGISLATION AND POLICY CONTEXT.
National Environmental Management Act, 1998 (Act 107 of 1998)	This entire report is prepared as part of the Application for Environmental Authorisation under the NEMA.	In terms of the National Environmental Management Act an Application for Environmental Authorisation subject to a Basic Assessment Process has been applied for.
Minerals and Petroleum Resources Development Act, 2002 (Act 28 of 2002)	This entire report is prepared as part of the Prospecting Right Application under the MPRDA.	In terms of the Mineral and Petroleum Resources Development Act a Prospecting Right Application has been applied for.
National Water Act, 1998 (Act 36 of 1998) Section 21	Due to the nature of the proposed prospecting activities no Section 21 water uses will be triggered, therefore there is no requirement to apply for Water Use authorisation in terms of the NWA.	In terms of the National Water Act, no Water Use License has been applied for.
National Heritage Resources Act, 1999 (Act 25 of 1999)	The framework for a Heritage Management Plan is provided in this EMPR.	A specialist Heritage Impact Assessment has been undertaken in July 2019 in support of this Prospecting Right application. See Appendix E for the HIA Report. A Paleontological Impact assessment was conducted in August 2017. See Appendix E for the PIA Report.

4. NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES.

(Motivate the need and desirability of the proposed development including the need and desirability of the activity in the context of the preferred location).

The mining industry is of great importance to the South African economy. South Africa has one of the world's largest coal reserves. Eskom currently relies on coal fired power stations to produce approximately 95% of the electricity generated in South Africa and until such time as alternative energy generation options can be implemented on a sufficiently large scale, Eskom is totally dependent on coal mining. The market for coal products is increasingly defined by generally accepted local and international standard quality products for which physical and financial markets exist for trading these standard coal products. The definition of prospecting in terms of the MPRDA states: "*intentionally searching for any minerals by means of any method which disturbs the surface or sub-surface of the earth, including any portion of the earth that is under the sea or under other water…*" Prospecting is the physical search for minerals, fossils, precious metals or mineral specimens, which allows a company to survey or investigate an area of land for the purpose of identifying an actual or probable mineral deposit, before investments are made into the mining activities.

In terms of the EIA Regulations the need and desirability of any development must be considered by the relevant competent authority when reviewing an application. The need and desirability must be included in the reports to be submitted during the environmental authorisation application processes. Assessment of the geological information available has determined that the area in question may have coal reserves. In order to ascertain the above and determine the nature, location and extent of the coal reserves within the proposed prospecting area, it will be necessary that prospecting be undertaken. The prospecting will also determine if there are any features that may have an impact on the economic extraction of the coal. The information that will be obtained from the prospecting to be done will be necessary to determine, should coal be found, how and where the coal will be extracted and how much economically viable coal reserves are available within the proposed prospecting area.

Should prospecting prove successful and a resource quantified, it would indicate a potential viable economic activity in the form of mining that is likely to contribute greatly to the socio-economic status quo in the form of increased income, employment and other benefits that would cascade through the local, regional and national levels.

5. MOTIVATION FOR THE OVERALL PREFERRED SITE, ACTIVITIES AND TECHNOLOGY ALTERNATIVE.

The identification of alternatives is a key aspect of the success of the Basic Assessment process. All reasonable and feasible alternatives must be identified and screened to determine the most suitable alternatives to consider in this application. There are however, some constraints that have to be taken into account when identifying alternatives for a project depending on the scope. Such constraints include financial, social and environment related constraints. Alternatives can typically be identified according to:

- **Activity Alternatives**
- **Location Alternatives**
- **Design or Layout Alternatives**
- **Technology Alternatives**
- **Operational Alternatives**
- **No-Action Alternative (No-Go)**

For any alternative to be considered feasible, such an alternative must meet the need and purposes of the development proposal without presenting significantly high associated impacts. Alternatives are typically distinguished into discrete or incremental alternatives. Discrete alternatives are overall development options, which are typically identified during the pre-feasibility, feasibility and/or Basic

Assessment process. Incremental alternatives typically arise during the Basic Assessment process and are usually suggested as a means of addressing/mitigating identified impacts (drilling and trenching in low sensitivity areas). These alternatives are closely linked to the identification of mitigation measures are therefore not specifically identified as distinct alternatives.

For the purpose of this project the need and justification for alternatives was specifically guided by the relatively low sensitivity of the receiving socio-economic and biophysical environment.

The types of alternatives considered are detailed in Section 6 of this Basic Assessment Report.

6. FULL DESCRIPTION OF THE PROCESS FOLLOWED TO REACH THE PROPOSED PREFERRED ALTERNATIVES WITHIN THE SITE.

6.1 Location alternatives

The location alternative considered for the proposed project include the prospecting sites and associated campsite location and access routes. The location alternatives were selected based on a number of criteria, which include the environmental considerations (how sensitive is the area in terms of soils, groundwater etc.) and the dependency of the project to the required infrastructure.

6.2 The type of activity to be undertaken;

Idlanga (Pty) Limited proposes to undertake exploration for coal to determine whether or not the project area consist of coal and if coal is available whether the coal reserves are found quantities that have economic value. The proposed activity will include the drilling of exploration boreholes. The drill site is not larger than 15m x 15m (225ni) and consists of a drill rig, water pump, caravan and portable chemical toilet.

Due to the unavailability of extensive historical borehole datasets, invasive prospecting activities such as drilling, trenching and sampling as well as non-invasive activities such as desktop studies, field visits and mapping, surface electromagnetic geophysical surveys, geological modelling and resource estimation, will be conducted during prospecting. No bulk sampling work is to be carried out during the prospecting programme.

6.3 The design or layout of the activity;

Since no complicated surface infrastructure will be required for this project, no design and layout alternatives for the proposed project were determined.

6.4 The technology to be used in the activity;

The technologies listed in the Prospecting Work Programme have been selected as they have proven to be effective in the determination of resource viability within the proposed prospecting area. Some of the techniques employed in the non-invasive prospecting will include desktop studies, field visits and mapping, target generation, target prospectivity ranking, surface electromagnetic geophysical surveys, geological modelling and resource estimation.

6.5 The operational aspects of the activity;

Operational aspects that have been considered for the effective implementation of the Prospecting Work Programme include financial arrangements, appropriate equipment available and the technical skills available. An amount of **R1.310 000.00** will be required to finance the Prospecting Work Programme. Idlanga Mining has committed to finance the prospecting costs as detailed in the Prospecting Work Programme.

6.6 The option of not implementing the activity.

If the Prospecting Right is not granted, the potential to identify viable mineral resources could be lost. Historical prospecting and mining activities have taken place in the vicinity of the proposed Prospecting Right area and as such the proposed prospecting activities would represent a continuation of a historic land-use.

7. DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED

7.1 Public Participation Methodology

The Public Participation Process (PPP) is a requirement of several pieces of South African Legislation and aims to ensure that all relevant Interested and Affected Parties (I&APs) are consulted, involved and their opinions are taken into account and a record included in the reports submitted to Authorities. The process ensures that all stakeholders are provided this opportunity as part of a transparent process which allows for a robust and comprehensive environmental study. The public participation process undertaken was done in accordance to Regulation 39 – 44 of the EIA Regulations, 2014 (amended) summarised below;

(a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of—

(i) the site where the activity to which the application or proposed application relates is or is to be undertaken; and

(b) giving written notice, in any of the manners provided for in section 47D of the Act, to—

(i) the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken;

(ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken;

(iii) the municipal councillor of the ward in which the site and alternative site is situated and any organisation of ratepayers that represent the community in the area;

(iv) the municipality which has jurisdiction in the area;

(v) any organ of state having jurisdiction in respect of any aspect of the activity; and

(vi) any other party as required by the competent authority;

(c) placing an advertisement in—

(i) one local newspaper;

7.2 Identification of I&APs

A Draft IAP list has been included in this Report. The IAP database was compiled containing the following categories of stakeholders.

- Provincial Authorities
- Local Authorities
- State-owned companies
- Other organisations, clubs, communities, and unions.

7.3 List of Authorities Identified and Notified

The following authorities have been identified and notified of the proposed Idlanga Prospecting Right:

- KZN Department of Mineral Resources
- KZN Department of Transport
- Abaqulusi Local Municipality
- KwaZulu-Natal Department of Economic Development, Tourism, Environmental Affairs.
- KwaZulu-Natal Department of Agriculture and Rural Development.
- KwaZulu-Natal Department of Cooperative Governance, Traditional Affairs and Human Settlements.
- KwaZulu-Natal Department of Water and Sanitation.
- KwaZulu-Natal Department of Agriculture, Forestry and Fisheries.
- KwaZulu-Natal Department of Transport and Roads.
- KwaZulu-Natal Department of Public Works.
- KwaZulu-Natal Department of Mineral Resources.
- Ezemvelo KZN Wildlife.
- Eskom SOC Limited.
- Transnet SOC Limited.

7.4 List of Key Stakeholders Identified and Notified

The following key stakeholders have been identified and notified of the proposed Idlanga Prospecting Right:

- Wildlife and Environment Society of South Africa (WESSA).
- Birdlife South Africa.
- Endangered Wildlife Trust.
- AMAFA.

7.5 Notification of I&APs

Initial notification documents were prepared in two dominant languages spoken within the application area, namely: English and IsiZulu. All pre-identified I&APs, including those that requested to be registered as I&APs during the initial public consultation phase of the Basic Assessment process were notified of the proposed Prospecting Right Application via the following methods:

- Background Information Documents (Hand delivered and emailed) See Appendix D2
- Questionnaires. See Appendix D2
- Site notices at various locations on-site. See Appendix D1
- Placement of newspaper adverts in the Vryheid Herald. See Appendix D3

7.6 Description of the Information Provided to the Community, Landowners and I&APs

Notification documents sent to all pre-identified I&APs included the following information:

- The site plan.
- List of activities to be authorised.
- Scale and extent of activities to be authorised.
- The duration of the activity.
- The purpose of the proposed project.
- The prospecting methods to be used.
- Details of the affected properties (including parent farm and portion).
- Details of the MPRDA and NEMA regulations that must be adhered to.
- The minerals being prospected for.
- Date by which comment, concerns and objections must be forwarded through to Information Decision Systems.
- Contact details of the Environmental Assessment Practitioner (EAP).

7.7 Summary of Issues Raised by I&APs

(Complete the table summarizing comments and issues raised, and reaction to those responses)

INTERESTED AND AFFECTED PARTIES LIST THE NAMES OF PERSONS CONSULTED IN THIS COLUMN, AND	MARK WITH AN X WHERE THOSE WHO MUST BE CONSULTED WERE IN FACT	DATE COMMENTS RECEIVED	COMMENT RECEIVED	RESPONSE ISSUED
PROVINCIAL AUTHORITY				
KZN Department of Mineral Resources Karoon Moodley	**X**	19/07/2019	1. Include a copy of advert from newspaper (newspaper clipping) / proof of placement in newspaper. 2. Recommendation, (but not a requirement), you can place a checklist based on the EIA Reg's 40 – 44 at the beginning of your PPP report for ease of reference. 3. Final documents must have requisite signatures 4. 3 copies of final BAR & EMPr + supporting documents are required.	1. A newspaper advertisement has been included in Appendix D3 of the Final BAR. 2. Noted. 3. Final BAR has prerequisite signatures. 4. 3 copies of final BAR & EMPr + supporting documents will be submitted.
KZN EDTEA	**X**	N/A	None	N/A
AMAFA	**X**	N/A	None	N/A
KZN Department of Rural Development	**X**	N/A	None	N/A
KZN Department of Agriculture and Forestries	**X**	N/A	None	N/A
KZN Department of Water and Sanitation	**X**	25/06/2019	Page 10 of the document indicates that "a truck fitted with a water tank is used to provide the water supply for the drilling process. This Department requires the following information: (a) The source, volume as well as the frequency of water that will be abstracted. Should water be abstracted from the River, Section 21 (a) of the National Water Act needs to be applied for. (b) Should water be sourced from the Municipality. This office requires a service level agreement for this arrangement. Page 28 of the document states that "figure 13 illustrate wetlands within a 500m radius of the Application Area. It must be noted that the Application area falls within the edge of the wetland buffer, but no prospecting or related activities will be undertaken within the buffer zone. This Department requires mitigation measures that will indicates that the above mentioned wetland will not be affected by the proposed prospecting. The presence of wetlands within the 500m radius of the application area triggers a Section 21 (c) and Section 21 (i) Water Uses and needs to be applied for.	1. A pre-consultation meeting will be held with DWS KZN Regional Offices prior to any prospecting activities on site.

KZN Department of Transport	**X**	N/A	None	N/A
LOCAL AUTHORITIES				
Abaqulusi Local Municipality Community Services Philani Nxumalo	**X**	03/07/2019	1. Spraying water on the gravel road can be mitigation measure to reduce the impact of dust pollution. 2. Is there a buffer from the water source to the working site or will there be activies taking place near the water source.	1. Dust suppression techniques are provided for in the EMPr. 2. The legislated buffer zones according to NEMA and NWA will be adhered to. • No work within 32m of the watercourse. • No activity within 500m of a wetland.
Local Ward Councillor (Ward 5)	**X**	N/A	None	N/A
STATE OWNED COMPANIES				
Eskom	**X**	N/A	None	N/A
Transnet	**X**	N/A	None	N/A
OTHER PARTIES				
Endangered Wildlife Trust	**X**	N/A	None	N/A
Birdlife SA	**X**	N/A	None	N/A
Wildlife and Environment Society of South Africa (WESSA)	**X**	N/A	None	N/A
KZN Ezemvelo Noluthando Dlamini	**X**	**28/05/2019** **03/07/2019**	Comments received regarding BID emailed. 1) All applications should be submitted in hard copy (from the BID stage to EIRs and includes maps). While Ezemvelo is willing to accept only Basic Assessment Reports in electronic format (i.e. CD/DVD), no e-mails will be accepted and all supporting specialist studies and maps must be provided in hard copy. 2) All new applications need to be addressed to: Mr Andy Blackmore – Head IEM and Protected Area Planning Ezemvelo will not be providing comment on this application, but trust that all significant biodiversity related concerns have been clearly identified and made known in this assessment together with appropriate measures (viz. avoid, mitigate and thereafter ameliorate) to safeguard the ecological integrity of the developable area.	Noted. All biodiversity related concerns and mitigation measures are included in EMPr.
FARM OWNERS / LOCAL COMMUNITY MEMBERS				

Mr S Sibiya	X	7/06/2019	1. Request for registration as IAP 2. Seeking business and employment opportunities.	1. You have been registered as an interested and affected party and will be informed about the progress of the application. 2. Your concern regarding business opportunities is also noted and will be communicated to the applicant.
Henry Pretorius SHE Manager Vaalkrantz Coal	X	10/06/2019	1. Please could you furnish me some detail on the proposed Prospecting application, who applied etc; the reason for the request is that we Mine in the vicinity and the Induna's on the traditional council were not at all consulted and came to me for answers, the reason for this e-mail.	Kindly find attached the Background Information Document (BID) for the proposed development. The details about the applicant, the mining area etc. are within the document. With regards to the traditional council, we were not informed of any traditional council with the area during our consultation with the community as well as the local ward councillor. We would love to engage the traditional council and you as an interested and affected party to the application going forward. Would you please kindly assist with the induna's contact details for further consultation.

8. ENVIRONMENTAL ATTRIBUTES AND ASSOCIATED ALTERNATIVES

8.1 Baseline Environment

This section describes the baseline receiving environment of the prospecting area. Information in this section is based on desktop studies by the EAP, a site visit conducted on the 27th May 2019, input from the public through the I&AP questionnaire. As such, the descriptions below of environmental features represent a consolidation of relevant information to the Application Area.

8.1.1 Social and Economic

The proposed prospecting site is located in Ward 5 of the Abaqulusi Local Municipality under the jurisdiction of the Zululand District Municipality.

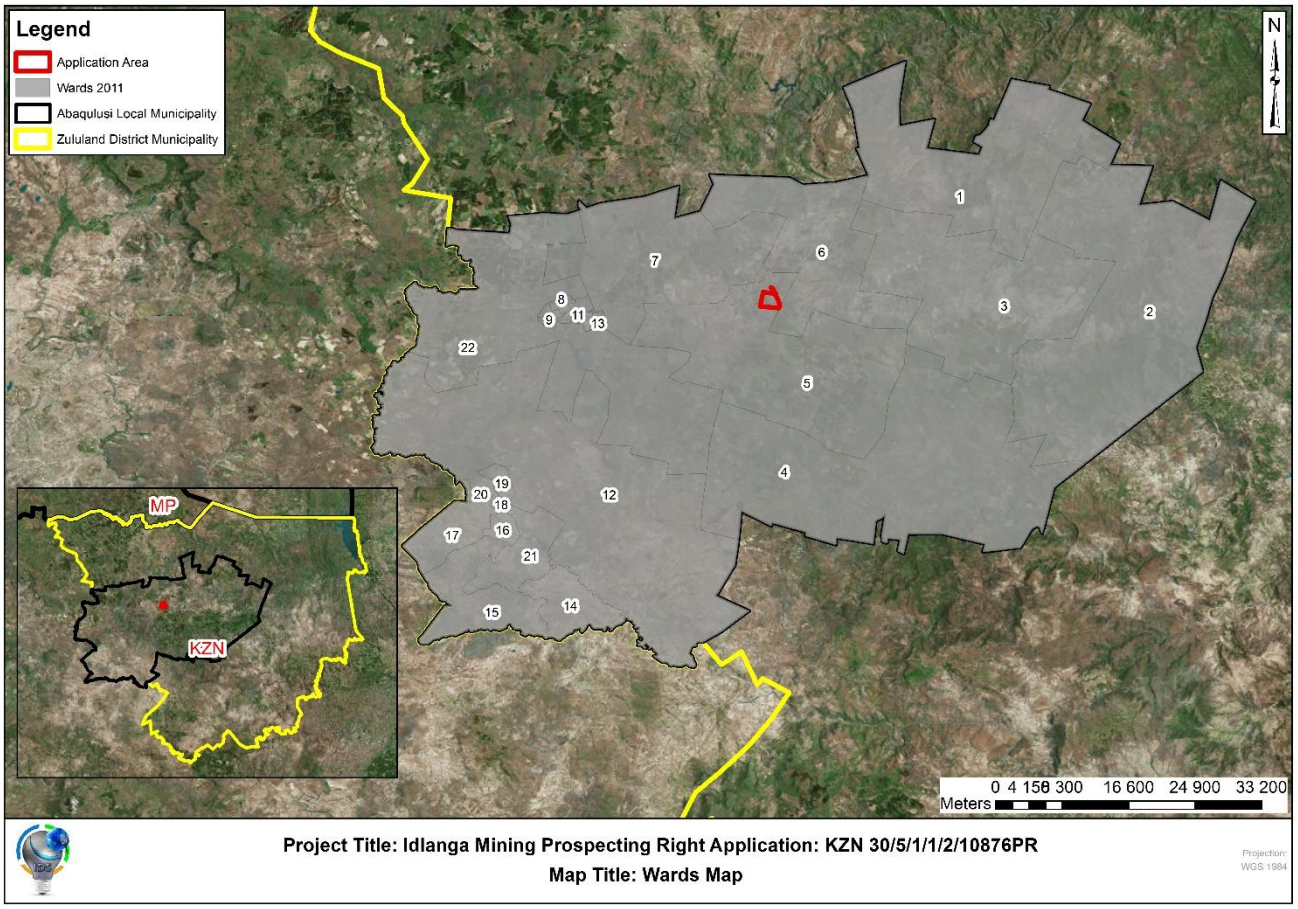
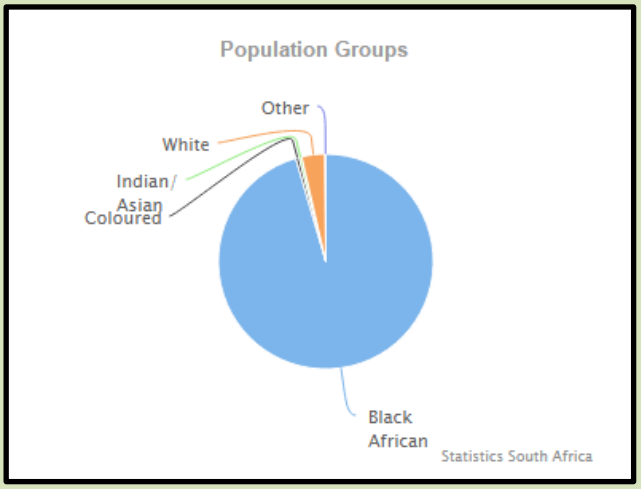
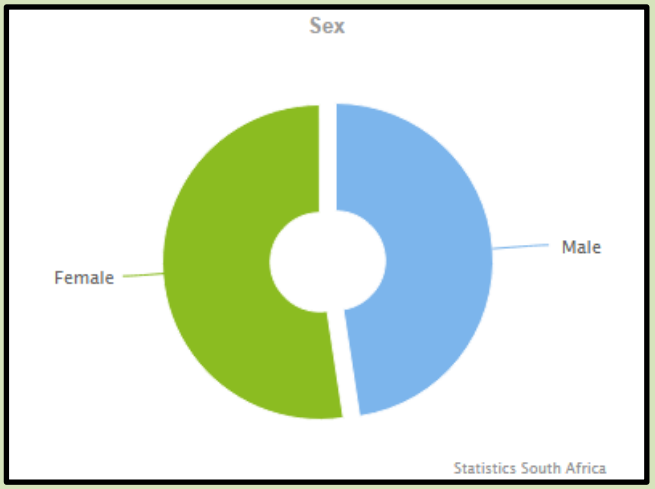


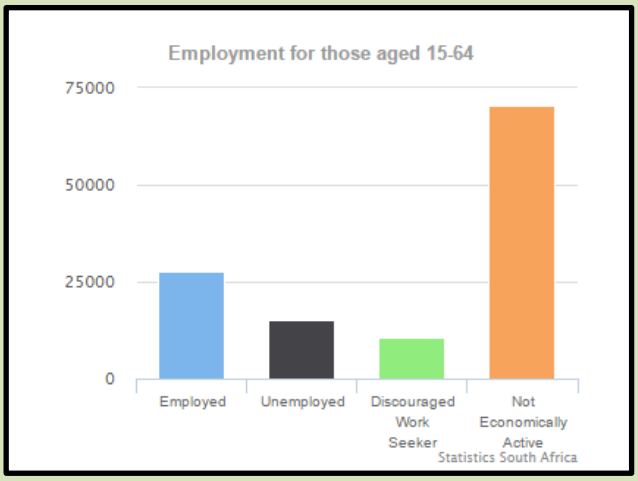
Figure 3 Wards Map

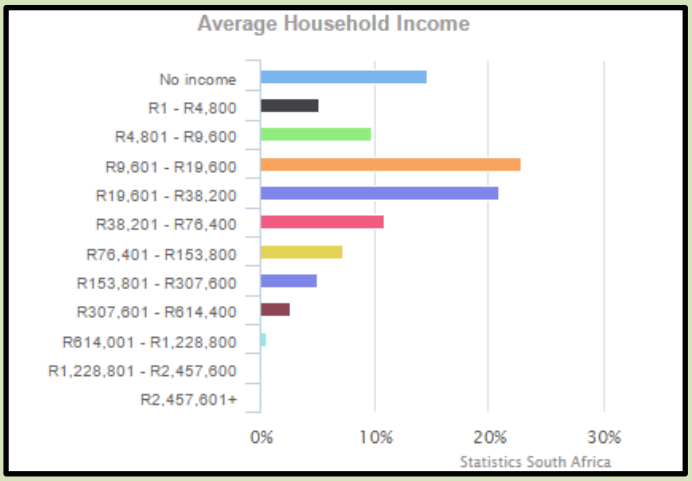
The Municipality is located in the northern part of KwaZulu-Natal and is approximately 1943 km2 in extent and has a population of about 211 060 people. (Statistics SA: Census 2011). The population of Abaqulusi Local Municipality consists of 95, 4% Black Africans, 0.5% Coloureds, 0.4% Indians, 3.5% Whites, with the female sex at 52.4%, slighter higher than that of their male counterparts at 47.6%.





Unemployment is rife in the area with more than 60 000 people not economically active. These numbers equate to an unemployment rate of 35.4% and youth unemployment at 45.1%.





The application area is 21km away from Vryheid, Zululands main commercial, industrial and business centre. It is well located at the intersection of major transport routes, which traverse the region. However, over the years the Abaqulusi region has seen a significant decline in its economy mainly due to the closure of many mines in and around the region which was the primary economic activity in the 80's and 90's. Upon closure of these mines around 1998 and 1999, many people were left unemployed and towns were then disserted and neglected. Many of the effects caused by these mine closures are still evident today in town such as Hlobane, Corronation and Vaalbank.

The above considerations has resulted in additional pressure on the municipality to provide sustainable services to these areas. According to data released in 2011 by Stats SA, just over 60% of the population within the Abaqulusi region source their water from the Municipal water scheme. Only 40% of the LM is connected to the Municipal sewage system.

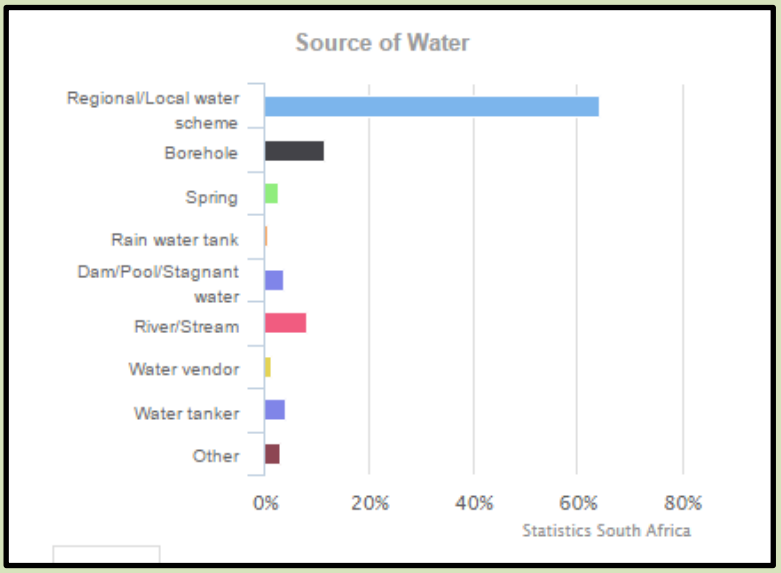


Figure 4 Source of water

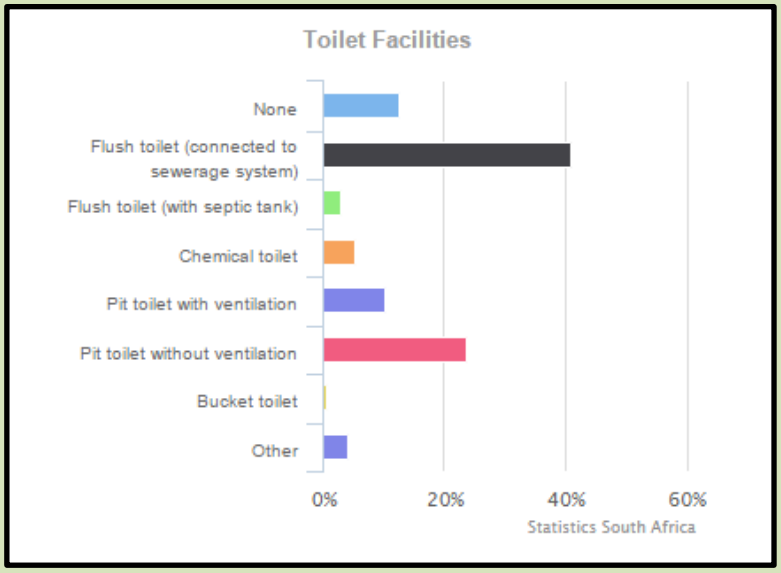


Figure 5 Toilet facilities

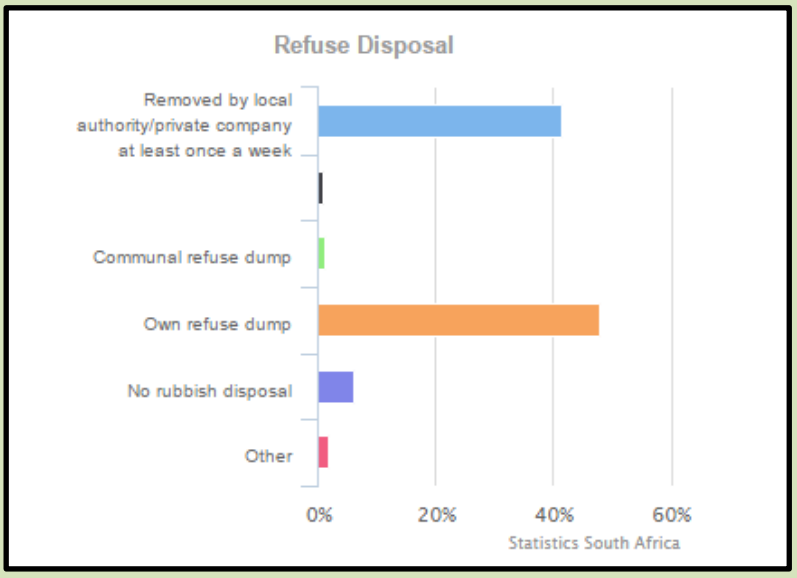


Figure 6 Refuse disposal

8.1.2 Geology

The site, Farm Rietvlei 150 HU, lies in the Vryheid coalfield and south of the Hlobane Colliery. This is in the north eastern part of the main Karoo Basin. Mudstones, siltstones, sandstones and coal seams have filled in the uneven topography of the basin during the Permian and Triassic periods. Jurassic dolerite dykes have cut through these sediments, mostly to the south and west of this area, and are associated with the Drakensberg basalt outpourings. To the east of the site are several small exposuresof the slightly older Dwyka Group tillites, diamictites, sandstones and mudstones, also of the Karoo Supergroup.

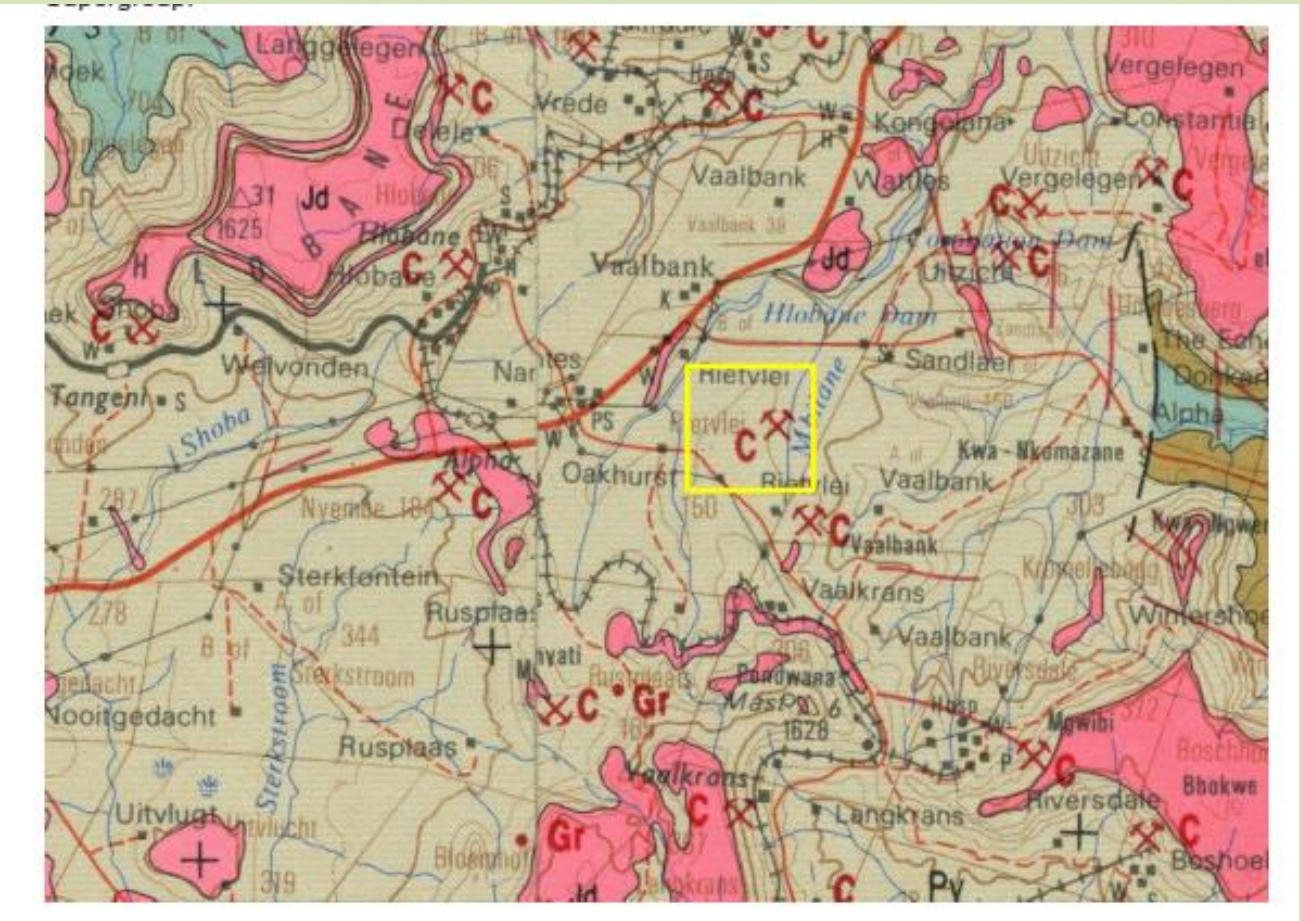


Figure 7 Geological Map

8.1.3 Agricultural capability

The Application Area does not consist of significant arable potential as evident below.

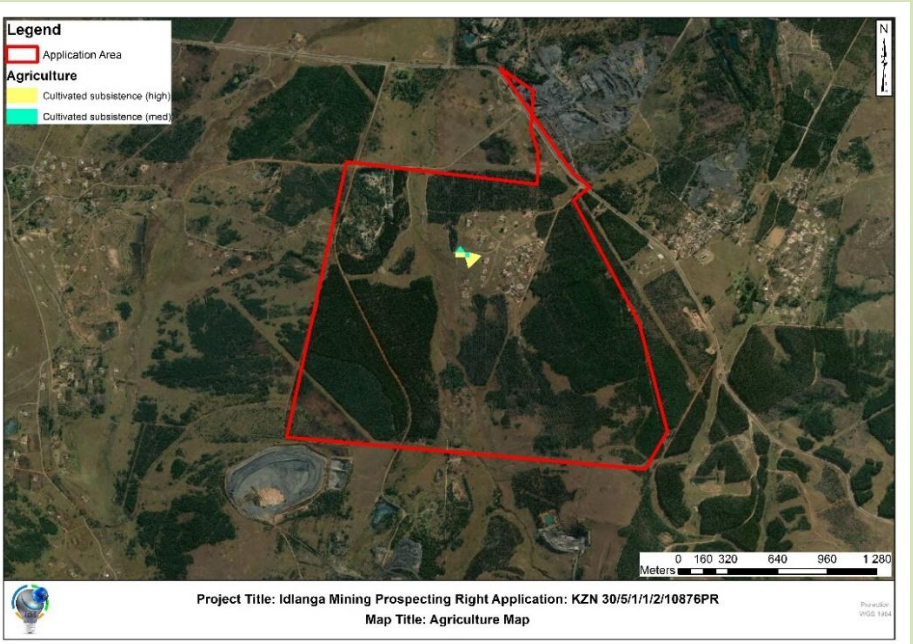


Figure 8 Agriculture

8.1.4 Soils

The Application Area consists of Areni-Endoleptic Regosols which is predominantly found in arid areas, in the dry topics and in mountain regions. Regosols in mountains areas are best left under forest and this is clearly evident in the maps produced illustrating land cover of the site.

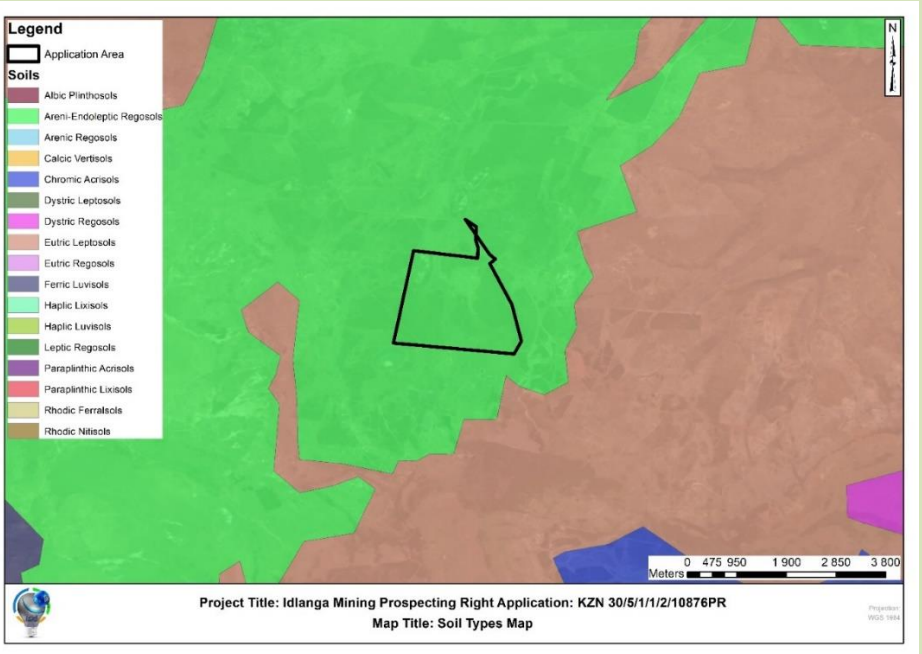


Figure 9 Soils

8.1.5 Biodiversity

The biodiversity of AbaQulusi has large areas of vegetation transformed as a result of one kind of land-use. Wide spread land transformation occurs mainly in Wards 14 to 20 along the western part of the municipality and Wards 7 to 11 in the north western part. Other areas are significant transformation has occurred are in Wards 5 and 3 at the southern end of the municipality. The Application Area, however is not located within any Critical Biodiversity Areas or Ecological Support Areas as illustrated below.

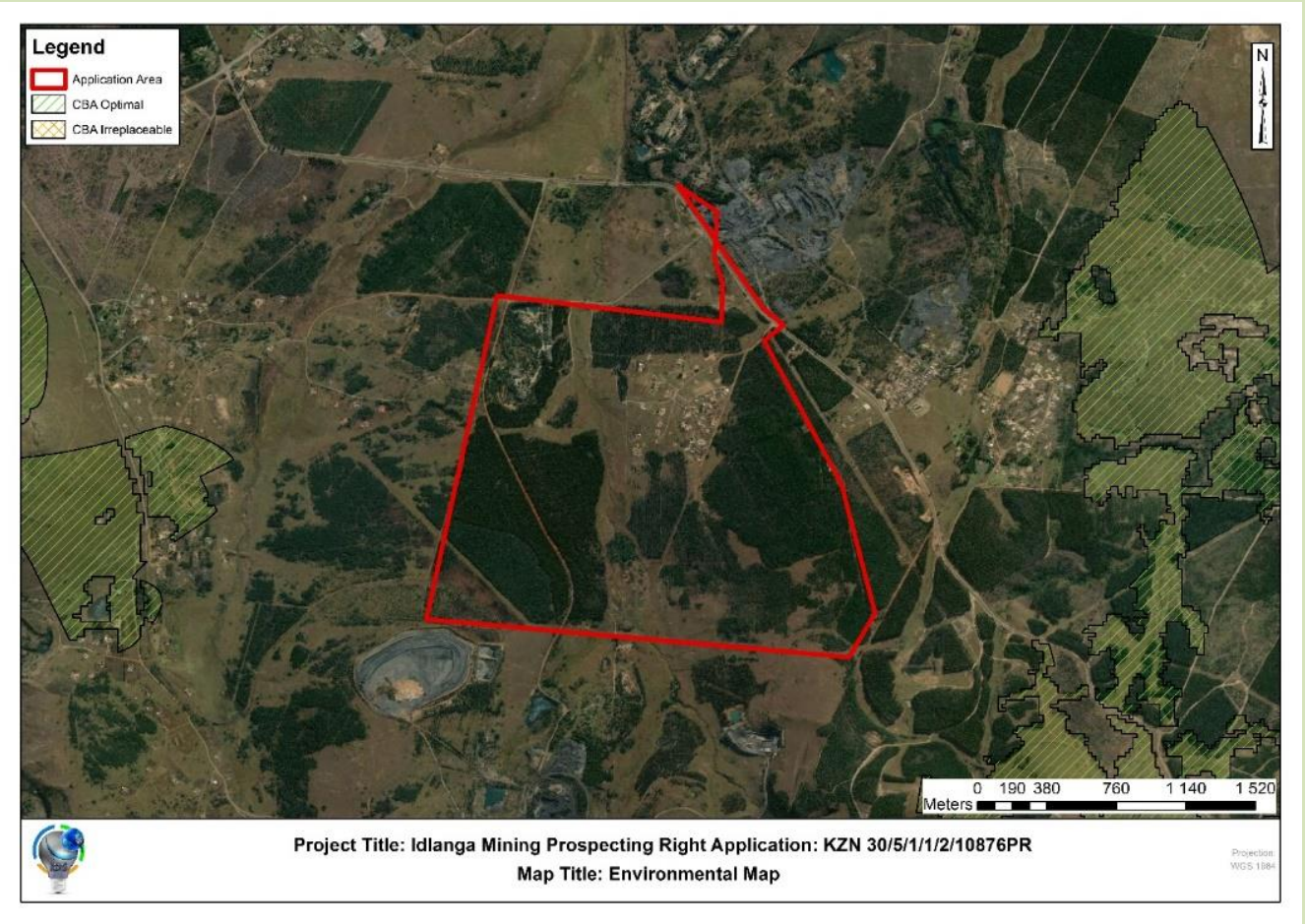


Figure 10 Biodiversity Map

8.1.6 Noise

Potential noise sources from the area may emanate from the following sources i.e. roads and surrounding land uses.

8.1.7 Air Quality

The sources of air pollution from human activities comprise of three broad categories i.e. stationary sources (mining, quarrying,), community sources (homes or buildings, municipal waste, fireplaces, cooking facilities, laundry services and cleaning plants) and mobile sources combustion-engine vehicles and fugitive emissions from vehicle traffic). Air pollutants are generally classified into suspended particulate matter (dust, fumes, mists and smokes), gaseous pollutants (gases and vapours) and odours.

Assessment of the proposed prospecting right area has determined that all three categories of air pollution sources are expected to be of a low significance within the Application area.

8.1.8 Hydrology

The proposed site is located within the Pongola Mtamvuna Water Management Area (WMA). Located under the quaternary catchment W31A, the proposed prospecting site has one (1) stream on site.

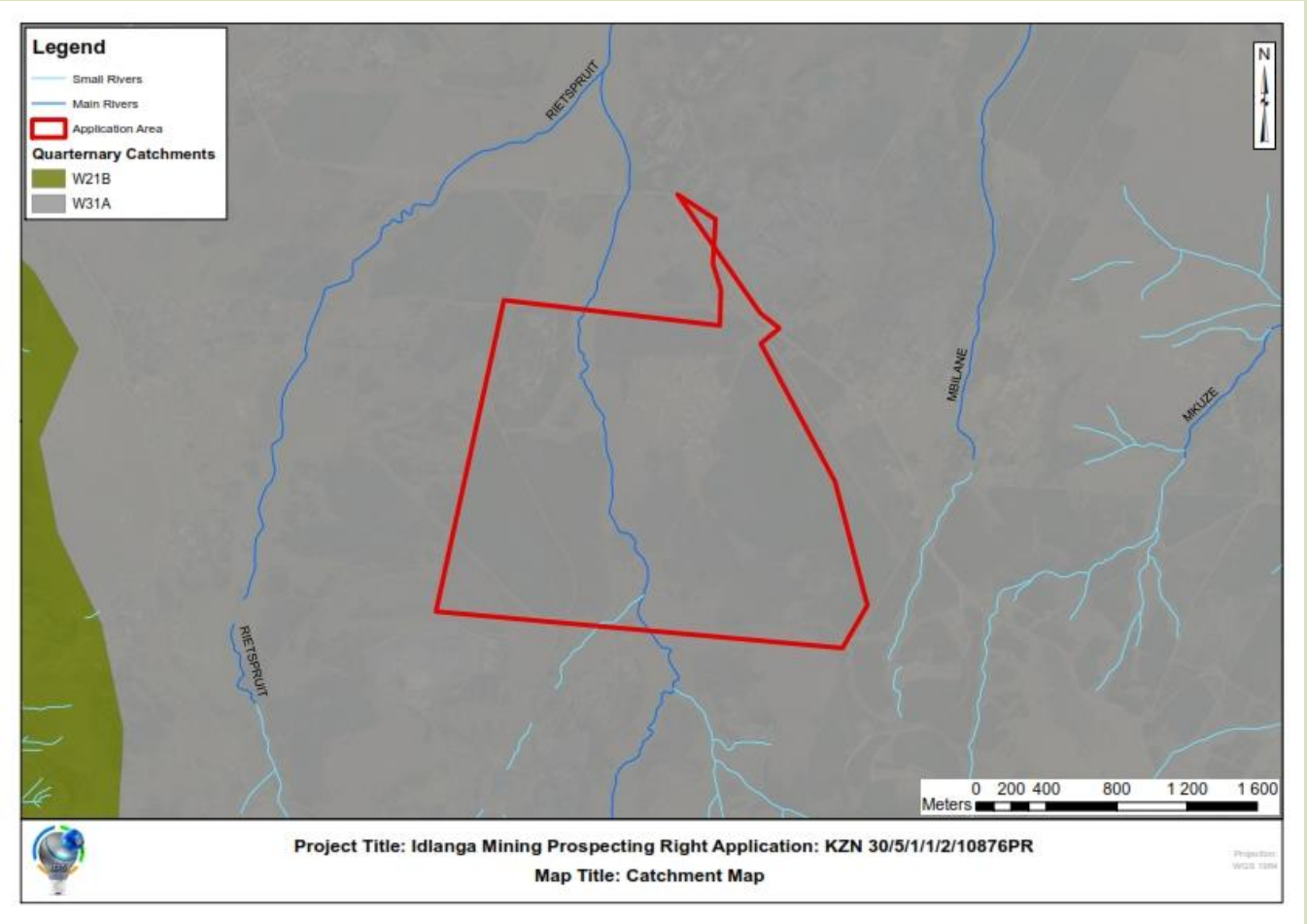


Figure 11 Catchment Map

Figure 12 Stream on site

8.1.9 Heritage Resources

A site inspection conducted on the 27th May 2019. The presence of graves is evident as per Figure 14.

Figure 13 Graves

Figure 15 maps the location of the graves and a 50m buffer has been included.

A Heritage Impact Assessment (HIA) Report has been completed and attached as Appendix E of this Report. In addition, a Palaeontological Impact Assessment was recommended by the Heritage Specialist which has been undertaken and included in Section E of the Basic Assessment Report.

The application area has been amended to exclude this sensitive area.

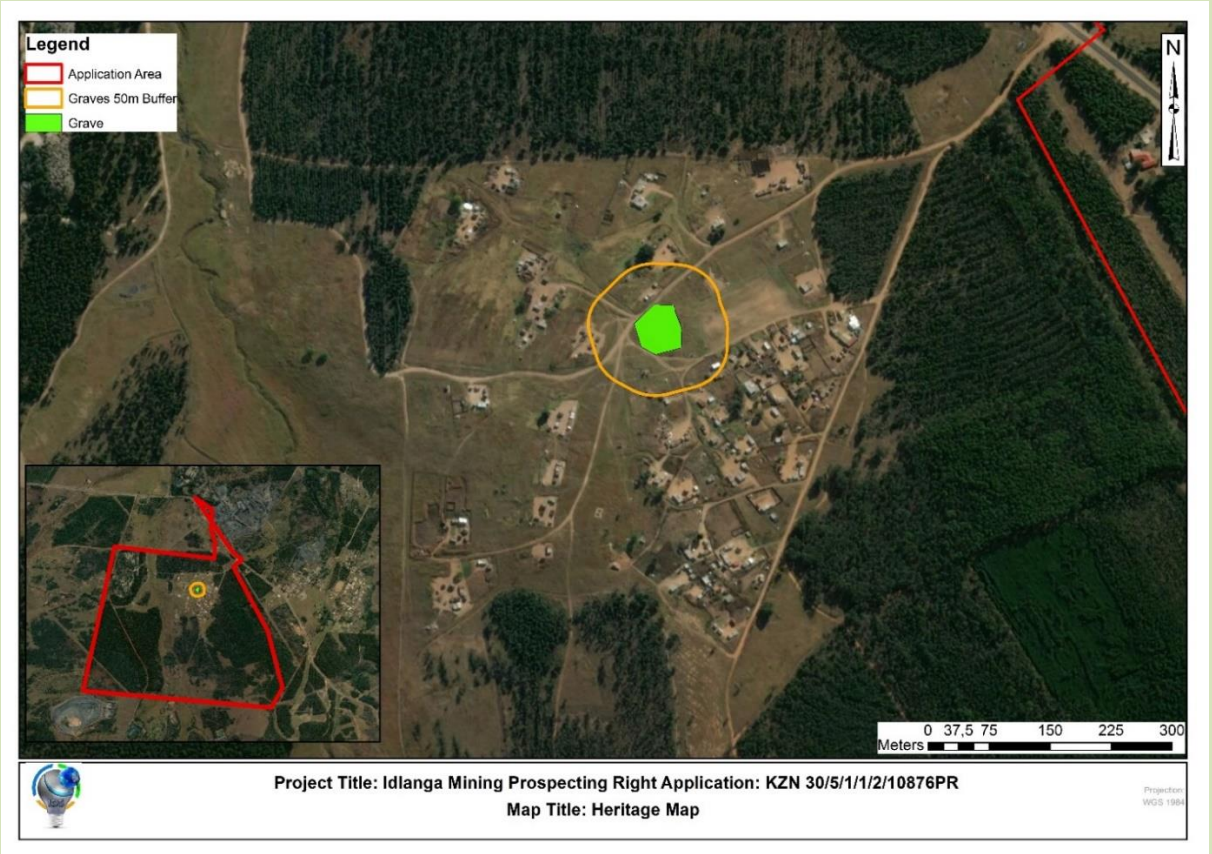


Figure 14 Heritage Map

8.1.10 Description of the current land uses & infrastructure

A land cover map has been produced for the Application Area which comprises of the following land uses and infrastructure;

- Woodlands /vegetation
- Village
- Graves
- Stream
- Gravel roads
- Electricity infrastructure

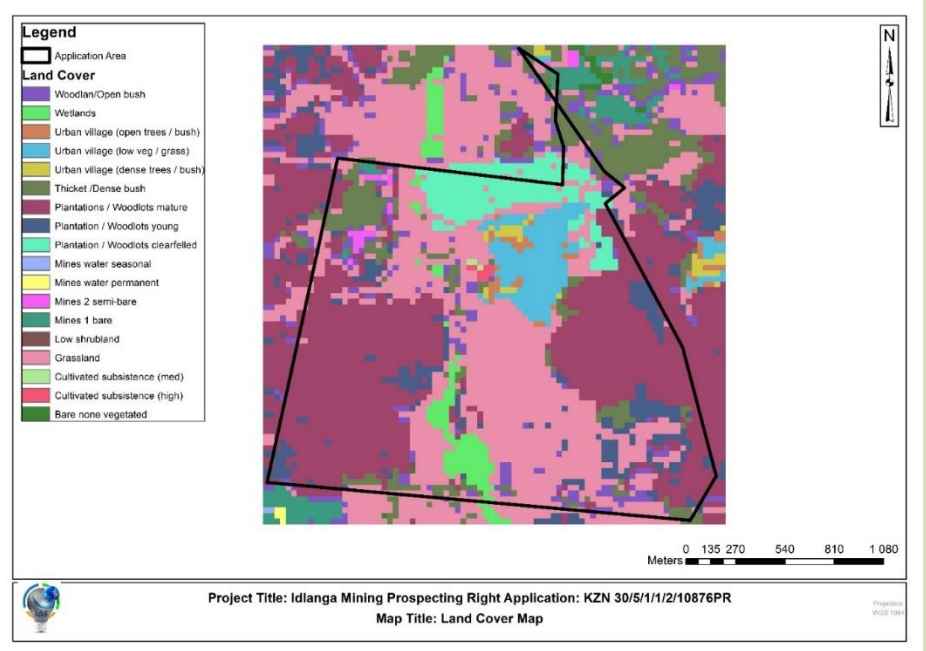


Figure 15 Land cover

Housing

Gravel roads

Vegetation cover

Small-scale Grazing

9. METHODOLOGY OF IMPACT ASSESSMENT

The following methodology has used to conduct the impact assessment for the proposed prospecting application.

ASPECT	SCORE	DEFINITION
Nature	- 1	Likely to result in a negative/ detrimental impact
	+1	Likely to result in a positive/ beneficial impact
Extent	1	Activity (i.e. limited to the area applicable to the specific activity)
	2	Site (i.e. within the development property boundary),
	3	Local (i.e. the area within 5 km of the site),
	4	Regional (i.e. extends between 5 and 50 km from the site
	5	Provincial / National (i.e. extends beyond 50 km from the site)
Duration	1	Immediate (<1 year)
	2	Short term (1-5 years)
	3	Medium term (6-15 years)
	4	Long term (the impact will cease after the operational life span of the project),
	5	Permanent (no mitigation measure of natural process will reduce the impact after
Magnitude/ Intensity	1	Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected)
	2	Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected)
	3	Moderate (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way)
	4	High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease) or
	5	Very high / don't know (where natural, cultural or social functions or processes are altered to the extent that it will permanently cease)
Reversibility	1	Impact is reversible without any time and cost
	2	Impact is reversible without incurring significant time and cost
	3	Impact is reversible only by incurring significant time and cost
	4	Impact is reversible only by incurring prohibitively high time and cost
	5	Irreversible Impact
Probabaility	1	Improbable (the possibility of the impact materialising is very low as a result of
	2	Low probability (there is a possibility that the impact will occur; >25% and <50%),
	3	Medium probability (the impact may occur; >50% and <75%),
	4	High probability (it is most likely that the impact will occur- > 75% probability), or
	5	Definite (the impact will occur),

SIGNIFICANCE AND RISK CATEGORY	DEFINITION
< -10	Low negative (i.e. where this impact would not have a direct influence on the decision to develop in the area).
>-10 <-20	Medium negative (i.e. where the impact could influence the decision to develop in the area).
>-20	High negative (i.e. where the impact must have an influence on the decision process to develop in the area).

10. Impacts and risks identified

(Provide a list of the potential impacts identified of the activities described in the initial site layout that will be undertaken, as informed by both the typical known impacts of such activities, and as informed by the consultations with affected parties together with the significance, probability, and duration of the impacts. Please indicate the extent to which they can be reversed, the extent to which they may cause irreplaceable loss of resources, and can be avoided, managed or mitigated).

CONSTRUCTION / OPERATION PHASE		
Impact	Social: Safety and security risks to landowners and land occupiers	
Environmental Risk Scoring	**Pre-Mitigation**	**Post-Mitigation**
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	1
Magnitude of Impact	2	2
Reversibility of Impact	3	2
Probability	3	2
Environmental Risk Pre-Mitigation	11	8
Mitigation Measures:		
• Prior to accessing any portion of land, the Applicant must enter into formal written agreements with the affected landowner. This formal agreement should additionally stipulate landowner's special conditions which would form legally binding agreement. • All homestead gates must be closed immediately upon entry/exit. • Vehicles used must be in a roadworthy condition. Speed limits must be adhered to and all local, provincial and national regulations with regards to road safety and transport.		
Impact	Clearance of vegetation	
Environmental Risk Scoring	**Pre-Mitigation**	**Post-Mitigation**
Nature of Impact	-1	-1
Extent of Impact	1	1
Duration of Impact	2	2
Magnitude of Impact	3	2
Reversibility of Impact	3	3
Probability	5	4
Environmental Risk Pre-Mitigation	13	11
Mitigation Measures		
• Minimise clearing to areas that are required for invasive works. Where possible, cut vegetation instead of clearing to minimise soil disturbance. • Where possible, locate drill sites as close to existing access roads to minimise the extent of vegetation disturbance caused by temporary access roads. • Rehabilitate all disturbed areas following invasive prospecting activities to the conditions that existed prior to prospecting.		
Impact	Soil Compaction	
Environmental Risk Scoring	**Pre-Mitigation**	**Post-Mitigation**
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	2
Magnitude of Impact	3	2
Reversibility of Impact	3	2
Probability	4	2
Environmental Risk Pre-Mitigation	13	9
Mitigation Measures		

- All areas that are compacted as a result of prospecting activities must be assessed by the ECO and where necessary, scarifying must take place to loosen the soil.

Impact	Disturbance/damage/destruction to Grave Site	
Environmental Risk Scoring	**Pre-Mitigation**	**Post-Mitigation**
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	2
Magnitude of Impact	2	2
Reversibility of Impact	3	3
Probability	2	1
Environmental Risk Pre-Mitigation	10	9

Mitigation Measures

- It is proposed that a 50 m buffer be maintained around cemeteries and that no construction material be placed near the cemeteries. The construction camp should also be constructed away from the cemeteries.

Impact	Noise	
Environmental Risk Scoring	**Pre-Mitigation**	**Post-Mitigation**
Nature of Impact	-1	-1
Extent of Impact	3	1
Duration of Impact	2	2
Magnitude of Impact	3	2
Reversibility of Impact	1	1
Probability	3	2
Environmental Risk Pre-Mitigation	11	7

Mitigation Measures

- All construction vehicles and machinery must be maintained in good working order.
- When working or travelling past noise sensitive receptors, no unnecessary hooting or noise should occur.

Impact	Dust	
Environmental Risk Scoring	**Pre-Mitigation**	**Post-Mitigation**
Nature of Impact	-1	-1
Extent of Impact	3	3
Duration of Impact	2	1
Magnitude of Impact	3	2
Reversibility of Impact	2	2
Probability	3	3
Environmental Risk Pre-Mitigation	12	10

Mitigation Measures

- All vehicles utilising gravel roads must adhere to speed limits.
- By minimising the removal of vegetation and topsoil in affected areas, this will minimise the potential for dusty conditions.
- Prospecting activities (including drill sites) must be located 100 m away from farm dwellings.

Impact	Increased runoff & sedimentation	
Environmental Risk Scoring	**Pre-Mitigation**	**Post-Mitigation**
Nature of Impact	-1	-1
Extent of Impact	3	2
Duration of Impact	3	2
Magnitude of Impact	4	2
Reversibility of Impact	4	2

Probability	4	4
Environmental Risk Pre-Mitigation	17	11
Mitigation Measures		
• Due to the sensitivity of the soil layer, the steep topography and the associated high risk of erosion, the access road should be constructed during the dry season and ideally all prospecting should occur only in this season in order to prevent all run-off and erosion. • All necessary road mitigation measures must be put in place to slow (or stop) run-off from the proposed access road. This is a vital mitigation measure to prevent erosion. • Appropriate speed humps and mitre drains must be constructed along the road for every three metres of elevation in order to slow the flow of water run-off from the road surface. All methods to slow the flow of water off the road surface must be implemented and the feasibility of building an attenuation system to hold surface water and release it slowly into the surrounding environment must be investigated.		
Impact	Spillage of oils, fuels and chemicals	
Environmental Risk Scoring	**Pre-Mitigation**	**Post-Mitigation**
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	2
Magnitude of Impact	3	3
Reversibility of Impact	4	3
Probability	4	3
Environmental Risk Pre-Mitigation	14	12
Mitigation Measures		
• Drip trays must be placed under vehicles. • Any spills or leaks must immediately be cleaned up and the contaminated soil suitably disposed of. • During refuelling of vehicles or equipment, drip trays must be utilised to prevent spills or leaks. • Spill clean-up equipment must be available on site at all times. • In the event of large spills, this must be reported to the authorities and a specialist spill contractor immediately sought to assist with the clean-up.		
Impact	Soil Contamination	
Environmental Risk Scoring	**Pre-Mitigation**	**Post-Mitigation**
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	2
Magnitude of Impact	3	3
Reversibility of Impact	4	3
Probability	4	3
Environmental Risk Pre-Mitigation	14	12
Mitigation Measures		
• Machinery to be used for the operation will be of good working conditions. • Any hydrocarbon spill from the site establishment will be remediated as soon as possible.		
Impact	Introduction of alien invasive species	
Environmental Risk Scoring	**Pre-Mitigation**	**Post-Mitigation**
Nature of Impact	-1	-1
Extent of Impact	2	2
Duration of Impact	2	1
Magnitude of Impact	4	2
Reversibility of Impact	4	2
Probability	3	2
Environmental Risk Pre-Mitigation	14	8
Mitigation Measures		
• Undertake activities in previously disturbed areas. • Locate activities on the boundaries of existing disturbance.		

- Use existing access roads as much as possible.
- Rehabilitate disturbed areas as soon as possible.
- Manage alien plants within close proximity to prospecting activities.

DECOMMISSIONING PHASE

Impact	Spillage of oils, fuels and chemicals	
Environmental Risk Scoring	**Pre-Mitigation**	**Post-Mitigation**
Nature of Impact	-1	-1
Extent of Impact	3	3
Duration of Impact	2	2
Magnitude of Impact	3	2
Reversibility of Impact	4	3
Probability	4	2
Environmental Risk Pre-Mitigation	15	11

Mitigation Measures

- Drip trays must be placed under vehicles.
- Any spills or leaks must immediately be cleaned up and the contaminated soil suitably disposed of.
- During refuelling of vehicles or equipment, drip trays must be utilised to prevent spills or leaks.
- Spill clean-up equipment must be available on site at all times.
- In the event of large spills, this must be reported to the authorities and a specialist spill contractor immediately sought to assist with the clean-up.

Impact	Noise	
Environmental Risk Scoring	**Pre-Mitigation**	**Post-Mitigation**
Nature of Impact	-1	-1
Extent of Impact	2	1
Duration of Impact	2	2
Magnitude of Impact	3	2
Reversibility of Impact	3	1
Probability	3	2
Environmental Risk Pre-Mitigation	12	7

Mitigation Measures

- All construction vehicles and machinery must be maintained in good working order.
- When working or travelling past noise sensitive receptors, no unnecessary hooting or noise should occur.

Impact	Dust	
Environmental Risk Scoring	**Pre-Mitigation**	**Post-Mitigation**
Nature of Impact	-1	-1
Extent of Impact	1	1
Duration of Impact	1	2
Magnitude of Impact	3	2
Reversibility of Impact	3	2
Probability	3	2
Environmental Risk Pre-Mitigation	10	8

Mitigation Measures

- All vehicles utilising gravel roads must adhere to speed limits.
- By minimising the removal of vegetation and topsoil in affected areas, this will minimise the potential for dusty conditions.

IMPACT ASSESSMENT FOR PALAEONOLOGICAL RESOURCES

PART A: DEFINITION AND CRITERIA		
Criteria for ranking of the SEVERITY/NATURE of environmental impacts	H	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action.
	M	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints.
	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	L+	Minor improvement. Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	M+	Moderate improvement. Will be within or better than the recommended level. No observed reaction.
	H+	Substantial improvement. Will be within or better than the recommended level. Favourable publicity.
Criteria for ranking the DURATION of impacts	L	Quickly reversible. Less than the project life. Short term
	M	Reversible over time. Life of the project. Medium term
	H	Permanent. Beyond closure. Long term.
Criteria for ranking the SPATIAL SCALE of impacts	L	Localised - Within the site boundary.
	M	Fairly widespread – Beyond the site boundary. Local

PART A: DEFINITION AND CRITERIA		
	H	Widespread – Far beyond site boundary. Regional/ national
PROBABILITY (of exposure to impacts)	H	Definite/ Continuous
	M	Possible/ frequent
	L	Unlikely/ seldom

TABLE 5: IMPACT ASSESSMENT

PART B: ASSESSMENT		
SEVERITY/NATURE	H	-
	M	-
	L	Fossils of the *Glossopteris* flora are expected in the Vryheid Fm but none was observed in the widespread covering of modern soils. The impact would be very unlikely in the soils. Fossils may occur 100 m below the surface
	L+	-
	M+	-
	H+	-
DURATION	L	-
	M	-
	H	Where manifest, the impact will be permanent.
SPATIAL SCALE	L	Since only the possible fossils within the area would be fossil plants from the *Glossopteris* flora in the shales, 10+m below the surface soils, the spatial scale will be localised within the site boundary.
	M	-
	H	-

PART B: ASSESSMENT		
PROBABILITY	H	-
	M	It is extremely unlikely that any fossils would be found in the dolerite and soils but could be in the shales and mudstones associated with the coal seams. Therefore, a fossil chance find protocol should be added to the eventual EMPr.
	L	-

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

The initial layout included the entire portion 35, however the presence of the grave sites has been excluded in totality from the Area. A heritage impact assessment was conducted and is attached as Appendix E of this BAR.

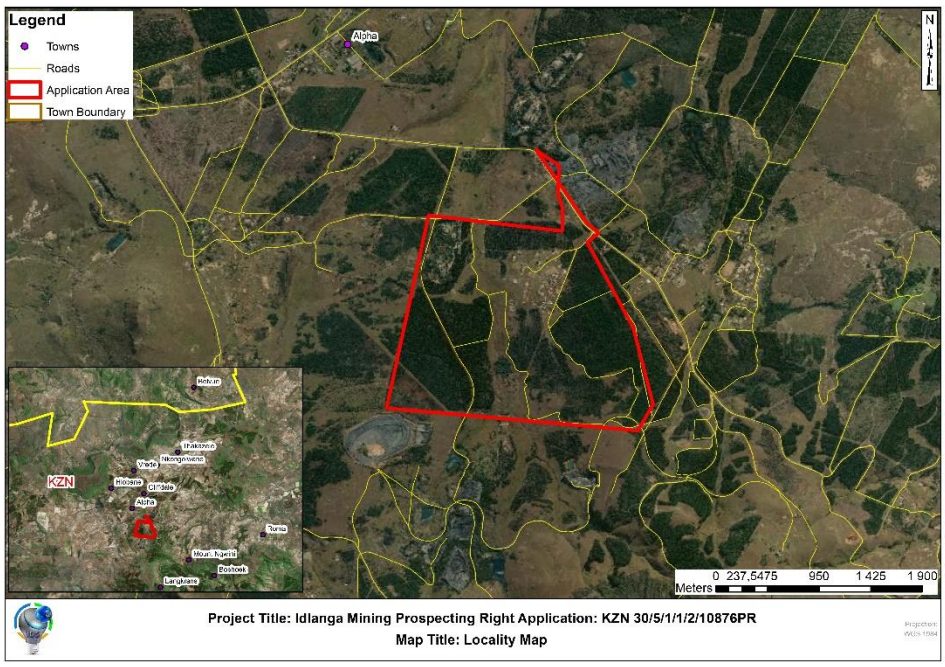


Figure 16 Initial Application Area

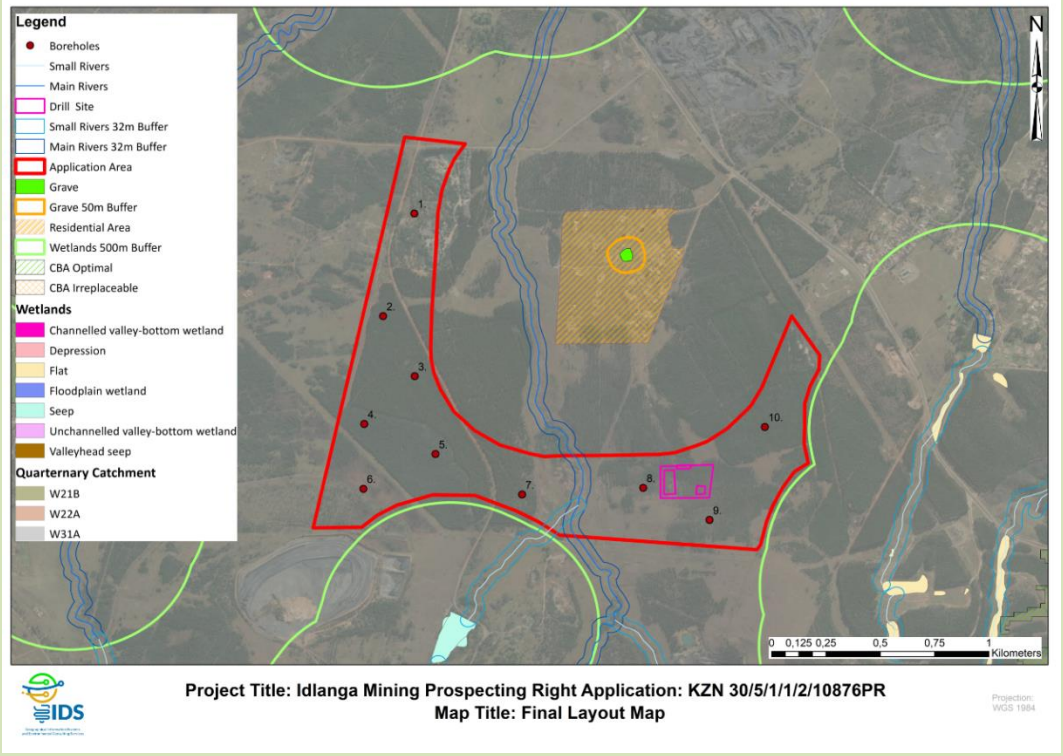


Figure 17 Application Area to be applied for

(viii) The possible mitigation measures that could be applied and the level of risk.

The following potential mitigation measures and residual risks have been provided for each environmental aspect assessed. It should be noted that this report will be made available to I&APs for review and comment, and their comments and concerns will be addressed in the final report to be submitted to the DMR for adjudication.

Furthermore, it should be noted that the results of the public consultation will be used to update the proposed potential mitigation measures prior to the submission of the finalised BAR and EMPR to the DMR for adjudication.

Safety and security risks to landowners and lawful occupiers:

- Ensure construction is consistent with occupational health and safety requirements.
- Prior to accessing any portion of land, the Applicant must enter into formal written agreements with the affected landowner. This formal agreement should additionally stipulate landowner's special conditions which would form a legally binding agreement.
- All homestead gates must be closed immediately upon entry/exit.
- All construction and vehicles using public roads must be in a roadworthy condition and their loads
  secured. Speed limits must be adhered to and all local, provincial and national regulations with regards to road safety and transport.

Clearance of vegetation:

- Minimise clearing to areas that are required for invasive works. Where possible, cut

vegetation instead of clearing to minimise soil disturbance.
- Where possible, locate drill sites and trenches as close to existing access roads to minimise the extent of vegetation disturbance caused by temporary access roads
- Rehabilitate all disturbed areas following invasive prospecting activities to the conditions that existed prior to prospecting.

Soil compaction:
- All areas that are compacted as a result of prospecting activities must be assessed by the ECO and where necessary, scarifying must take place to loosen the soil.

Soil contamination/pollution:
- Drip trays must be placed under vehicles.
- Drilling fluids (mud) must be contained in the steel sumps and any spills or leaks must be cleaned up.
- Machinery to be used for the operation will be of good working conditions.
- Any hydrocarbon spill from the site establishment will be remediated as soon as possible.

Increased runoff and sedimentation:
- Due to the sensitivity of the soil layer, the steep topography and the associated high risk of erosion, the access road should be constructed during the dry season and ideally all prospecting should occur only in this season in order to prevent all run-off and erosion.
- All necessary road mitigation measures must be put in place to slow (or stop) run-off from the proposed access road. This is a vital mitigation measure to prevent erosion.
- Appropriate speed humps and mitre drains must be constructed along the road for every three metres of elevation in order to slow the flow of water run-off from the road surface. All methods to slow the flow of water off the road surface must be implemented and the feasibility of building an attenuation system to hold surface water and release it slowly into the surrounding environment must be investigated.
- Clearing of vegetation or topsoil must be minimised as far as possible.
- A suitably qualified specialist must monitor that no drilling and trenching are undertaken on or within 100m of a watercourse and within the 1:100 years of a floodline.
- All disturbed areas must be suitably rehabilitated on completion of the works to ensure that erosion does not occur.

Spillage of oils, fuels and chemicals:
- Drip trays must be placed under vehicles.
- Any spills or leaks must immediately be cleaned up and the contaminated soil suitably disposed of.
- During refuelling of vehicles or equipment, drip trays must be utilised to prevent spills or leaks.
- Spill clean-up equipment must be available on site at all times.
- In the event of large spills, this must be reported to the authorities and a specialist spill contractor immediately sought to assist with the clean-up.

Dust

- All vehicles utilising public gravel roads must adhere to the speed limits.
- By minimising the removal of vegetation and topsoil in affected area, this will minimise the potential for dusty conditions.
- Prospecting activities (including drill and trench sites) must be located away from dwellings as far as possible.

Noise:

- All construction vehicles and machinery must be maintained in good working order.
- When working or traveling past noise sensitive receptors, no unnecessary hooting or noise should occur.

Introduction of alien species:

- Undertake activities in previously disturbed areas.
- Locate activities on the boundaries of existing disturbance.
- Use existing access roads as much as possible.
- Rehabilitate disturbed areas as soon as possible.
- Manage alien plants within close proximity to prospecting activities.

Generation and disposal of waste

- Any excess or waste material or chemicals, including drilling muds etc. must be removed from the site and must preferably be recycled (e.g. oil and other hydrocarbon waste products)
- Any waste materials or chemicals that cannot be recycled must be disposed of at a suitably licensed waste facility
- All permanent facilities must be removed from site upon closure. This will include the associated equipment, material and waste on site
- Under no circumstances is any form of waste to be disposed of on site

(ix) Motivation where no alternatives sites were considered.

The application area has been selected as the preferred site based on the historical data and available, which indicates the potential for economically viable minerals to occur. Based on mining map provided in this Report, mining activities have been undertaken in close vicinity to the Application Area, however further detailed information regarding the mineral mined previously, the duration and cessation is not available for inclusion in this Report.

(x) Statement motivating the alternative development location within the overall site
(Provide a statement motivating the final site layout that is proposed)

The location considered for the proposed project include the prospecting sites and associated campsite location and access routes. The location was selected based on a

number of criteria, which include the environmental considerations (how sensitive is the area in terms of soils, wetlands, groundwater etc.) and the dependency of the project to the required infrastructure.

i) Full description of the process undertaken to identify, assess and rank the impacts and risks the activity will impose on the preferred site (In respect of the final site layout plan) through the life of the activity.

(Including (i) a description of all environmental issues and risks that are identified during the **environmental** impact assessment process and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures.)

The impact assessment process may be summarised as follows:

- Identification of proposed prospecting activities including their nature and duration.
- Screening of activities likely to result in impacts or risks.
- Utilisation of the above mentioned methodology to assess and score preliminary impacts and risks identified.
- Inclusion of I&AP comment regarding impact identification and assessment.
- Finalisation of impact identification and scoring.

11. Summary of specialist reports

A Heritage Impact Assessment was undertaken and included as Appendix E of this BAR.

During the physical survey, the following sites, features or objects of cultural significance were identified.

- Informal burial site with fifty or more graves. They are of people who stayed here in the local community. The graves are only marked with stone cairns.
- An informal burial site with only two graves. They are of people who stayed here in the local community. The graves are only marked with stone cairns.

Legal requirements

The legal requirements related to heritage specifically are specified in Section 3 of this report. For this proposed project, the assessment has determined that no sites, features or objects of heritage significance occur in the study area. If heritage features are identified during construction, as stated in the management recommendation, these finds would have to be assessed by a specialist, after which a decision will be made regarding the application for relevant permits.

Reasoned opinion as to whether the proposed activity should be authorised:

From a heritage point of view, it is recommended that the proposed development be allowed to continue on acceptance of the proposed mitigation measures and the conditions proposed below.

Conditions for inclusion in the environmental authorisation:

- The Palaeontological Sensitivity Map (SAHRIS) indicate that the study area has a high sensitivity of fossil remains to be found and therefore a palaeontological study is required.

- Should archaeological sites or graves be exposed in other areas during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.

A Palaeontological Impact Assessment was undertaken and included as Appendix E of this BAR.

Recommendations made by the PIA are detailed below;

Based on survey and observations during the site visit, it is clear that there are no fossils present in the soils. There is very small chance that fossils may occur in the shales and mudstones associated with the coal seams. In this area the soils are about 5 m deep but there is a thick capping of dolerite, so there is a chance that fossils occur well below this depth. Their occurrence in the Vryheid Formation (Ecca Group) is sporadic and unpredictable. A Fossil Find Protocol should be added to the EMPr: if fossils are found once mining has commenced then they should be rescued and a palaeontologist called to assess and collect a representative sample.

12. Environmental impact statement.

12.1 Summary of the key findings of the environmental impact assessment

During the proposed prospecting operation impacts may only occur on soils, natural vegetation, surface water, groundwater, sensitive landscapes, air quality, noise, visual aspects, and sites of archaeological and cultural importance should the prospecting method statement not be adhered to.

Alternatives considered for the location campsite and drilling sites has shown that the selected locations would be the most favourable. Idlanga Mining will undertake measures to ensure that the identified impacts are minimised. Assessment of the impacts with the proposed mitigation measures has shown the significance of the impacts on all affected environmental aspects to be reduced from to low and negligible significance.

Land use will not change. Measures such as safety along the roads and dust suppression will be undertaken to ensure that the impacts on the land owners and land occupiers are minimised.

Assessment of the vegetation within the footprint of the development area has shown limited presence of natural vegetation.

All workers will be housed in the campsite to be established on site. The employees will be given stick instruction not to undertaken activities that will affect the environment and that may have an impact on the landowner. Waste generated from the site will be collected in proper receptacle and disposed off in registered waste disposal sites.

12.2 Final Site Map

Provide a map at an appropriate scale which superimposes the proposed overall activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers .Attach as Appendix B

The final maps showing the layouts of the proposed project is will be submitted to the DMR on granting of the prospecting right. The map will be developed to superimpose the proposed prospecting project together and associated infrastructure with the environmental sensitivities within the proposed project site.

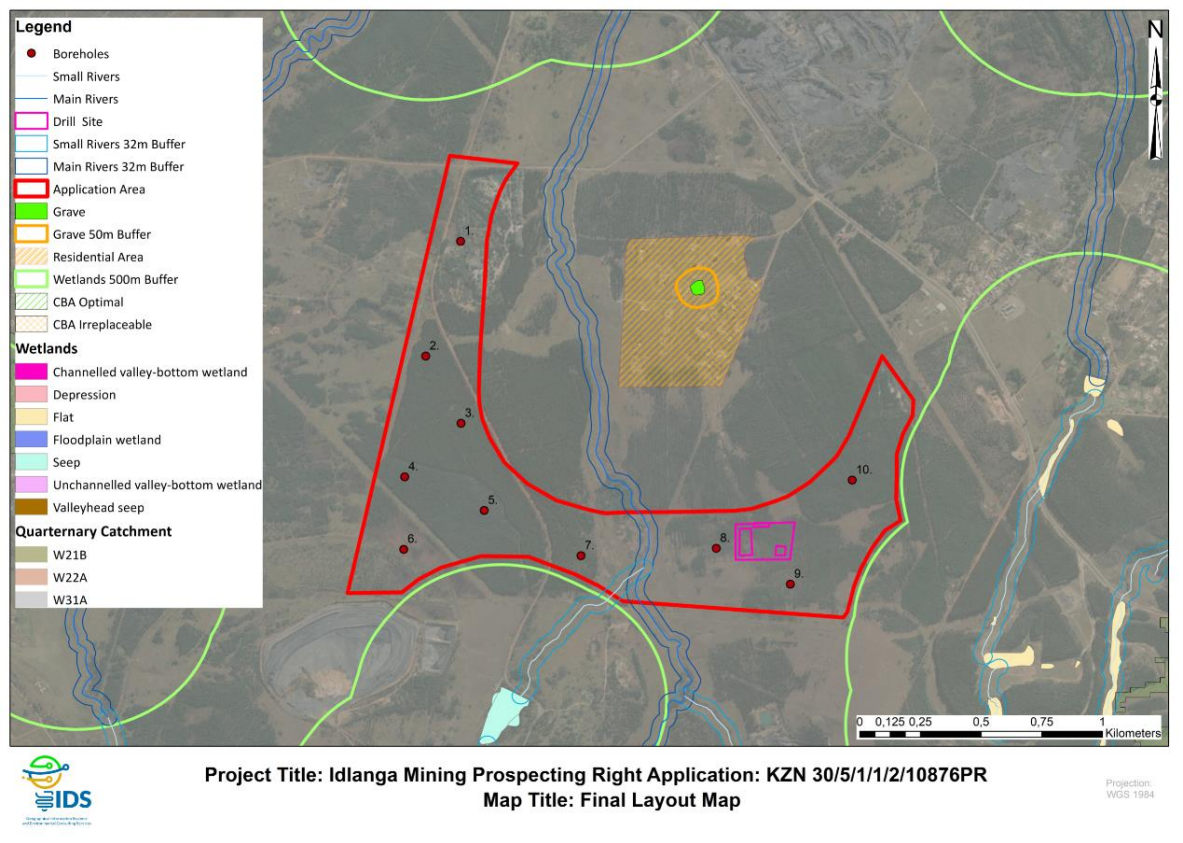


Figure 18 Final Layout Map

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

A summary of the positive and negative potential impacts associated with the project has been outlined in Section l(i) above.

13. Proposed impact management objectives and the impact management outcomes for inclusion in the EMPR;

Based on the assessment and where applicable the recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation.

The EMPr addresses the environmental impacts associated with the project during Construction,

Operation, Decommissioning and Rehabilitation of the proposed project. The objectives of the EMPr will be to provide detailed information that will advise the planning design of SANRAL mining activities in order to avoid and/or reduce impacts that may be detrimental to the environment. The following environmental management objectives are recommended for the proposed mining development and associated infrastructure:

- Alien plant monitoring should take place after construction, throughout the lifecycle of the borrow pit, as well as rehabilitation phase of the borrow pit.
- Development planning must restrict the area of impact to a minimum and designated area only. Monitor and prevent contamination, and undertake appropriate remedial actions.
- Limit the visual and noise impact on receptors.
- Avoid impact on possible heritage finds.
- Promote health and safety of workers.
- Limit dust and other emissions to within allowable limits.
- Manage soils to prevent erosion.

14. Aspects for inclusion as conditions of Authorisation

Any aspects which must be made conditions of the Environmental Authorisation

In authorising the proposed Prospecting project, the following conditions should form part of the environmental authorisation:

- Idlanga Mining may not alter the location of any of the project activities included in this environmental impact assessment without obtaining the required environmental authorisation to do so under NEMA.
- Idlanga Mining will not undertake any new activity that was not part of this environmental impact assessment and that will trigger a need for an environmental authorisation without proper authorisation.
- Idlanga Mining must, where necessary, undertake specialists studies, management procedures and method statement should the need arise.
- The EMPr must be implemented fully at all stages of the proposed project.
- Should archaeological sites or graves be exposed in other areas during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.
- The Fossil Chance Find Protocol must be complied with during the construction/operational phase of the prospecting activity.

15. Description of any assumptions, uncertainties and gaps in knowledge.

(Which relate to the assessment and mitigation measures proposed)

The EIA Regulations, 2014 outline specific requirements that a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures must be provided in the EIR.

The assessments undertaken are based on conservative methodologies and these methods attempts to determine potential negative impacts that could occur on the affected environmental aspects.

These impacts may however be of smaller magnitude than predicted, while benefits could be of a

larger extent than predicted.
This section outlines various limitations to the specialist studies that have been undertaken and indicates, where appropriate, the adequacy of predictive methods used for the assessment. This has been done to provide the authorities and interested and affected parties with an understanding of how much confidence can be placed in this impact assessment.
The EIA has investigated the potential impact on key environmental media relating to the specific environmental setting for the site. A number of desktop assessment were undertaken and result thereof and are presented in this report.
The information provided in this BAR and EMpr is therefore considered sufficient for decision-making purposes.

16. Reasoned opinion as to whether the proposed activity should or should not be authorised

i) Reasons why the activity should be authorized or not.

According to the impact assessment undertaken for the proposed project, the key impacts of the project are on soils, natural vegetation and land owners/occupiers. The project will also have positive impacts due to the employment to be created although for a short term.
The public will also be requested for their comments. All comments to be received during Public

Participation Process will be included in this BAR and EMPr. These comments will be addressed the as far as possible to the satisfaction of the interested and affected parties. The management of the impacts identified in the impact assessment for all phases of the proposed project will be undertaken through a range of programmes and plans contained in the EMPr. Inconsideration of the programmes and plans contained within the EMPr, layouts and method statements compiled for the project, which is assumed will be effectively implemented, there will be significant reduction in the significance of potential impacts.

Based on the above, it is therefore the opinion of the EAP that the activity should be authorised.

17. Conditions that must be included in the authorisation

In authorising the proposed Prospecting project, the following conditions should form part of the environmental authorisation:

- Idlanga Mining may not alter the location of any of the project activities included in this environmental impact assessment without obtaining the required environmental authorisation to do so under NEMA.
- Idlanga Mining will not undertake any new activity that was not part of this environmental impact assessment and that will trigger a need for an environmental authorisation without proper authorisation.
- Idlanga Mining must, where necessary, undertake specialists studies, management procedures and method statement should the need arise.
- The EMPr must be implemented fully at all stages of the proposed project.
- Should archaeological sites or graves be exposed in other areas during construction work, it must immediately be reported to a heritage practitioner so that an investigation and evaluation of the finds can be made.
- The Fossil Chance Find Protocol must be complied with during the construction/operational

phase of the prospecting activity.

18. Period for which the Environmental Authorisation is required.

The Applicant requires the prospecting right to be valid for a period of five years.

19. Undertaking

The undertaking is provided at the end of the EMPr and is applicable to both the BAR and EMPr.

20. Financial Provision

State the amount that is required to both manage and rehabilitate the environment in respect of rehabilitation.

R56 342.00. The breakdown is detailed in Section 20.1.

20.1 Explain how the aforesaid amount was derived.

No.	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Maser Rate	Multiplication factor	Weighting factor 1	Amount (Rands)
1	Dismantling of processing plant and related structures (including overland conveyors and powerlines)	m3	0	13,77	1	1	0
2 (A)	Demolition of steel buildings and structures	m2	0	181,45	1	1	0
2(B)	Demolition of reinforced concrete buildings and structures	m2	0	267,39	1	1	0
3	**Rehabilitation of access roads**	**m2**	**100**	**32,46**	**1**	**1**	**3246**
4 (A)	Demolition and rehabilitation of electrified railway lines	m	0	315,14	1	1	0
4 (A)	Demolition and rehabilitation of non- electrified railway lines	m	0	172	1	1	0
5	Demolition of housing and/or administration facilities	m2	0	363	1	1	0
6	Opencast rehabilitation including final voids and ramps	ha		184 693	1	1	0
7	Sealing of shafts adits and inclines	m3	0	97,5	1	1	0
8 (A)	Rehabilitation of overburden and spoils	ha	0	126 822	1	1	0
8 (B)	Rehabilitation of processing waste deposits and evaporation ponds (non-polluting potential)	ha	0	157 954	1	1	0
8 (C)	Rehabilitation of processing waste deposits and evaporation ponds (polluting potential)	ha	0	458 771	1	1	0
9	Rehabilitation of subsided areas	ha	0	106 194	1	1	0
10	**General surface rehabilitation**	**ha**	**0,331**	**100 464**	**1**	**1**	**33253,584**

11	River diversions	ha	0	100 464	1	1	0
12	Fencing	m	0	115	1	1	0
13	Water management	ha	0	381 99	1	1	0
14	2 to 3 years of maintenance and aftercare	ha	0,3	133 70	1	1	4011
15 (A)	Specialist study	Su m	0	100 000	1	1	0
15 (B)	Specialist study	Su m	0	100 000	1	1	0
					Sub Total 1		40510,584
1	Preliminary and General		4861,27008		**weighting factor 2** 1		4861,27008
2	Contingencies			4051,0584			4051,0584
					Subtotal 2		49422,91
					VAT (14%)		6919,21
					Grand Total		**56342**

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

Idlanga Mining has committed to finance the prospecting costs and the rehabilitation of the site once prospecting has been concluded.

21. Specific Information required by the competent Authority

No other information was requested or required from the Competent Authority.

i) 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). The EIA report must include the:-

(1) Impact on the socio-economic conditions of any directly affected person.
(Provide the results of Investigation, assessment, and evaluation of the impact of the mining, bulk sampling or alluvial diamond prospecting on any directly affected person including the landowner, lawful occupier, or, where applicable, potential beneficiaries of any land restitution claim, attach the investigation report as an **Appendix** .

The consultation process will allow directly affected parties to raise their concerns. Further to this, it must be noted that I&AP's, including directly affected parties such as landowners, have the opportunity to review and comment on this report. The results of the public consultation will be included in the final report submitted to the department for adjudication.

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

A Heritage Impact Assessment was undertaken in July 2019. See Appendix E for the Final HIA.

A Palaeontological Impact Assessment was undertaken in August 2019. See Appendix E for the Final PIA.

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

(The EAP managing the application must provide the competent authority with detailed, written proof of an investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives, as contemplated in sub regulation 22(2)(h), exist. The EAP must attach such motivation as **Appendix D)**.

N/A

PART B
ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

1. INTRODUCTION

1.1 Details of the EAP

The requirements for the provision of the details and expertise of the EAP are included in Part A, Section a) and as Appendix A.

1.2 Description of the Aspects of the Activity

The requirement to describe the aspects of the activity that are covered by the draft environmental management programme is included in PART A, Section d).

2. ENVIRONMENTAL MANAGEMENT PRINCIPLES

It is extremely important for effective environmental management that the Applicant be aware of the general principles upon which sound environmental management is based and that these principles are considered in all aspects of the prospecting operation. NEMA has established a general framework for environmental law, in part by prescribing national environmental management principles that must be applied when making decisions that

may have a significant impact on the environment. These principles are briefly summarised in the sections that follow.

2.1 Holistic principle

The Holistic principle, as defined by NEMA (Section 2(4)(b) requires that environmental management must be integrated, acknowledging that all elements of the environment are linked and inter-related and it must take into account the effect of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option (defined below). Holistic evaluation does not mean that

a project must be looked at as a whole. It rather means that it must be accepted that there is a whole into which a project introduced. If the indications are that the project could have major adverse effects, the project must be reconsidered and where appropriate re-planned or relocated to avoid an adverse impact or to ensure a beneficial impact.

2.2 Best practicable environmental option

When it is necessary to undertake any action with environmental impacts, the different options that could be considered for the purpose must be identified and defined. The Best Practicable Environmental Option (BPEO) is defined in NEMA as “the option that provides the most benefit or causes the least damage to the environment as a whole, at a cost acceptable to society, in the long term as well as in the short term.” Other guidelines typically used for environmental management in terms of other legislation include: BPM which is the Best Practicable Means and BAT which is the Best Available Technology.

2.3 Sustainable development

The concept of sustainable development was introduced in the 1980's with the aim to ensure that the use of natural resources is such that our present needs are provided without compromising the ability of future generations to meet their own needs. The constitution of South Africa is built around the fact that everyone has

the right to have the environment protected through reasonable legislative and other measures that secure ecologically sustainable development. The National Environmental Principles included in the NEMA require development to be socially, environmentally and economically sustainable.

2.4 Preventative principles

The preventative principle is fundamental to sustainable development and requires that the disturbance to ecosystems and the pollution, degradation of the environment and negative impacts on the environment be avoided, or, where they cannot be altogether avoided, are minimised and remedied.

2.5 The precautionary principles

The precautionary principle requires that where there is uncertainty, based on available information, that an impact will be harmful to the environment, it is assumed, as a matter of precaution, that said impact will be harmful to the environment until such time that it can be proven otherwise. The precautionary principle requires that decisions by the private sector, governments, institutions and individuals need to allow for and recognise conditions of uncertainty, particularly with respect to the possible environmental consequences of those decisions. In South Africa, the DWA (then DWAF, now DWS) adopted a BPEO guideline in 1991 for water quality management and in 1994 in the Minimum Requirements document for waste management.

In terms of DWAF Minimum Requirements for the Handling and Disposal of Hazardous Waste, 1994, the precautionary principle is defined as, "Where a risk is unknown; the assumption of the worst case situation and the making of provision for such a situation." Here the precautionary principle assumes that a waste or an identified contaminant of a waste is "both highly hazardous and toxic until proven otherwise."

In the context of the EIA process in South Africa, the precautionary principle also translates to a requirement to provide sound, scientifically based, information that is sufficient to provide the decision making authority with reasonable grounds to understand the potential impacts on the environment, the extent thereof and how impacts could be mitigated. If such information is not adequate for this purpose, the relevant authority cannot be satisfied as is required and then the authority should require that further information be collected and provided.

2.6 Duty of care and cradle to grave principle

In terms of the NEMA Section 28, "Every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring, or, in so far as such harm to the environment is authorised by law or cannot reasonably be avoided or stopped, to minimise and rectify such pollution

or degradation of the environment."

By way of example, the principle of "duty of care" in terms of waste management emphasises the responsibility to make sure that waste is correctly stored and correctly transported, as it passes through the chain of custody to final point of disposal. This means that waste must always be stored safely and securely. The company removing and disposing of waste also holds the responsibility to hold the relevant licenses, and that waste is transported alongside the necessary paperwork. "Cradle to Grave" refers to the responsibility a company takes for the entire life cycle of a product, service or program, from design to disposal or termination. In terms of the DWAF Minimum Requirements for the Handling and Disposal of Hazardous Waste, 1994, "any person who generates, transports, treats or disposes of waste must ensure that there is no unauthorised transfer or escape of waste from his control. Such a person must retain documentation describing both the waste and any related transactions. In this way, he retains responsibility for the waste generated or handled." This places responsibility for a waste on the Generator, by the "Cradle to Grave" principle, according to which a "manifest" accompanies each load of Hazardous Waste until it is responsibly and legally disposed. This manifest is transferred from one transporter to the next along with the load, should more than one transporter be involved. Once the waste is properly disposed of at a suitable, permitted facility, a copy of the manifest must be returned to the point of origin." Duty of Care offers one strategy to implement sustainable development.

2.7 Polluter pays principle

The "polluter pays principle" holds that the person or organisation causing pollution is liable for any costs involved in cleaning it up or rehabilitating its effects. It is noted that the polluter will not always necessarily be the generator, as it is possible for responsibility for the safe handling, treatment or disposal of waste to pass from one competent contracting party to another. The polluter may therefore not be the generator, but could be a disposal site operator or a transporter. Through the 'duty of care' principle, however, the generator will always be one of the parties held accountable for the pollution caused by the waste. Accordingly, the generator must be able to prove that the transferral of management of the waste was a responsible action. The polluter pays principle acceding to NEMA dictates that "the cost of remedying pollution, environmental degradation and consequent adverse effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment."

3. FAILURE TO COMPLY WITH ENVIRONMENTAL CONSIDERATIONS

There are a number of penalties for non-compliance or offences. Below are a few extracts of national legilsation with regards to non-compliance

- NEMA Section 24F(2): It is an offence for any person to fail to comply with or to contravene the conditions applicable to any environmental authorization granted for that listed activity. 24F(4) A person convicted for an offence under subsection 2 is liable to a fine not exceeding 5 million rand or to imprisonment not exceeding 10 years or to both such a fine and

imprisonment

- NEMA Section 34(6): Whenever any manager, agent or employee does or omits to do an act which it had been his or her task to do, or to refrain from doing on behalf of the employer and which would be an offence under any provision listed in Schedule 3 (relates to all environmental related acts) for the employer to do or omit to do, he or she shall be liable to be convicted and sentenced in respect thereof as if he or she were the employer
- NWA Section 151 (1): "No person may fail to comply with any condition attached to a permitted water use (Water Use License)"
- NWA Section 151 (2): "Any person who contravenes any provision of subsection 1 is guilty of an offence and liable, on the first conviction, to a fine or imprisonment for a period not exceeding 5 years or to both a fine and such imprisonment (10 years for second conviction)"
- In addition, if anyone is convicted of an offence under the act which has resulted in harm, loss or damage to any other person, the court may award damages to be paid by the accused or convicted
- NWA Section 154: Makes provision that it's not only the applicant that may be liable but also an employee or agent acting on their behalf
- In terms of the MPRDA, Section 98, any person is guilty of an offence if he or she fails to comply with the requirements of the issued mining permit
- MPRDA Section 99 (1a): any person convicted of an offence in terms of the MPRDA is liable to a fine not exceeding R100, 000 or to imprisonment to a period not exceeding 2 years or to both such fine and imprisonment.

It is recommended that a procedure for non-compliances (i.e. incentives or disincentives for conformance and non-conformance with the EMPR requirements) must be employed to ensure that the EMPR is adequately implemented. The system to be used must be determined before mining commences, included in the tender documents and contracts, and made clear to all project workers. The system may include that the independent ECO can be authorised to impose spot fines on the Contractor and/or his subcontractors for any of the transgressions detailed below:

- Littering on site
- Lighting of illegal fires on site
- Persistent or un-repaired oil leaks
- Any persons, vehicles or equipment related to the Contractor's operations found within the designated "No – go" areas
- Any vehicles being driven in excess of designated speed limits
- Removal and/or damage to fauna, flora or heritage objects on site
- Legal contraventions

Such fines should be issued in addition to any remedial costs incurred as a result of non-compliance with the Environmental Specifications and or legal obligations.

(a) **Composite Map**

(Provide a map **(Attached as an Appendix**) at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers)

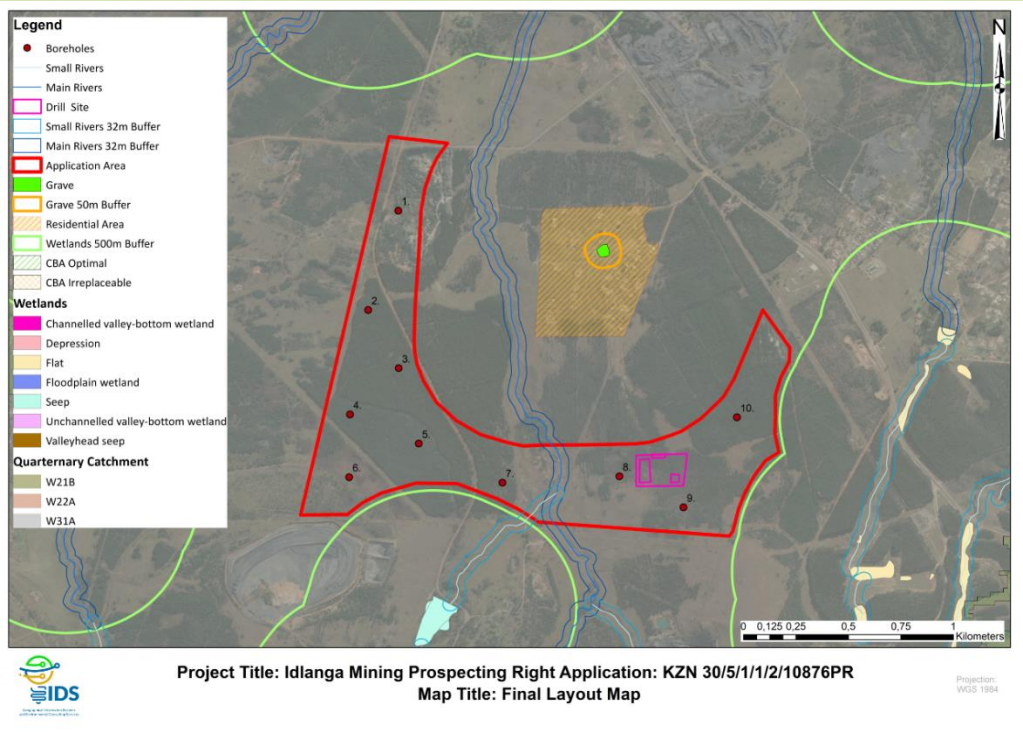


Figure 19 Final Layout Map

4. Description of Impact management objectives including management statements

The following are the closure objectives, general principles and objectives guiding closure of the Idlanga Prospecting areas closure planning:

- Rehabilitation of areas disturbed as a consequence of prospecting to a land capability that will support and sustain a predetermined post-closure land uses;
- Removal of all infrastructure/equipment that cannot be beneficially re-used, as per agreements established, and returning the associated disturbed land to the planned final land use;
- Removal of existing contaminated material from affected areas;
- Establishment of final landforms that are stable and safe in the long run;
- Establishment and implementation of measures that meet specific closure related performance objectives;
- Treatment of mine-affected water to ensure compliance with all relevant standards and supply
- Monitoring and maintenance of rehabilitated areas forming part of site closure to ensure the long-term effectiveness and sustainability of measures implemented.

(i) **Determination of closure objectives.** (Ensure that the closure objectives are informed by the type of environment described)

The vision, and consequent objective and targets for rehabilitation, decommissioning and closure, aim

to reflect the local environmental and socio-economic context of the project, and to represent both the corporate requirements and the stakeholder expectations.
The receiving environment within which the prospecting activities will be undertaken includes the following key land uses:
Concerns raised by the stakeholders consulted during the public participation process for the basic assessment have been taken into consideration and will be included in the final BAR and EMPR which will be submitted to the DMR.
In practice the post closure land-use will depend on the pre-prospecting land-use applicable to the specific location of the invasive prospecting activities. Considering that the exact locations of the planned prospecting have been identified and assessed, it can be said that the closure plan will sufficiently address the objectives for the preferred alternative. This EMP does, however, aim to address the key closure objectives which are likely to remain consistent for the majority of the prospecting activities.
The EMPR includes a monitoring and a rehabilitation plan. The plan shall outline the closure objectives which are aimed at reinstating the landform, land use and vegetation units to the same as before prospecting operations take place unless a specific, reasonable alternate land use is requested by the landowner. As such, the intended end use for the disturbed prospecting areas and the closure objectives will be defined in consultation with the relevant landowner. Proof of such consultation will be submitted together with the Application for Closure Certificate.
The overall aim of the rehabilitation plan is to rehabilitate the environment to a condition as close as possible to that which existed prior to prospecting. This shall be achieved with a number of specific objectives.

- Making the area safe. I.e. decommission prospecting activities so as to ensure that the environment is safe for people and animals. This entails refilling excavations, sealing boreholes, etc.
- Recreating a free draining landform. This entails earthworks infilling, reshaping, levelling, etc. to recreate as close as possible the original topography and to ensure a free draining landscape.
- Re-vegetation. This involves either reseeding or allowing natural succession depending on the area, climate etc.
- Storm water management and erosion control. Management of storm water and prevention of erosion during rehabilitation. E.g. cut off drains, berms etc. and erosion control where required.
- Verification of rehabilitation success. Entails monitoring of rehabilitation.
- Successful closure. Obtain closure certificate

(ii) **Volumes and rate of water use required for the operation.**

The volumes of water anticipated for dust suppression and the prospecting activities are not known at this stage. In addition, the Applicant will be sourcing water from a commercial source. No water will be abstracted from any watercourse.

(iii) **Has a water use licence has been applied for?**

No water use licence has been applied for as part of this this Prospecting Right application as no Section 21 water uses will be undertaken for the project.

f) Impact Management Actions

(A description of impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (c) and (d) will be achieved).

Activity	Potential impact	Aspects affected	Phase	Mitigation type
Site clearance	• Interference with existing land uses • Disturbance/damage/destruction of the Grave Sites • Sense of place • Fugitive dust emissions • Noise • Loss and fragmentation of the vegetation Community • Disturbance/damage/destruction of heritage sensitive areas • Increased runoff and sedimentation • Degradation and/or destruction of wetland habitats • Contamination of surface and ground water • Displacement of landowners	• Topography • Soil • Air quality • Groundwater • Social • Ecology • Wetlands • Noise • Heritage	Construction Operation	Avoid and control through implementation of EMP mitigation measures (e.g. speed limit enforcement, vehicle maintenance)

	and livestock			
Storage of construction vehicles	• Soil compaction • Contamination of surface and ground water • Spillage of oils, fuels and chemicals • Soil contamination/pollution	Surface water Groundwater Soils	Construction Operation	Avoid through implementation of EMP mitigation measures Control through implementation of ESMS
Transportation to and from drill and trench sites	• Soil compaction • Loss and fragmentation of the vegetation • community • Fugitive dust emissions • Noise • Spillage of oils, fuels and chemicals	Ecology Air quality Noise Pollution Soil	Construction Operation	Avoid through implementation of EMP mitigation measures (e.g. speed limit enforcement, vehicle maintenance)
Storage of hazardous substances	• Spillage of oils, fuels and chemicals	Surface water Groundwater Soil Pollution	Construction Operation	Avoid through implementation of EMP mitigation measures
Waste management	• Generation and disposal of waste	Pollution	Construction Operation	Avoid through implementation of EMP mitigation measures

Refuelling	• Spillage of oils, fuels and chemicals • Surface water and groundwater contamination • Soil contamination/pollution	Pollution Groundwater Soil	Construction Operation	Control through implementation of EMPR mitigation measures
Rehabilitation	• Encroachment and displacement of an indigenous and vulnerable vegetation community by alien invasive species, potential re-establishment of natural species that were removed, the nature of the erosion will depend on the amount of successful vegetation establishment • Soil instability • Increased runoff and sedimentation • Soil pollution/contamination • Disturbance/damage/destruction of heritage sensitive areas • Disturbance/damage/destru	Topography Land use Soil Ecology Heritage	Rehabilitation	Control through implementation of EMPR mitigation measures

	ction of the Grave			
Fossil Chance Find Protocol	•		Construction/operational	The following procedure is only required if fossils are seen on the surface or below the surface when excavations/mining commence. 2. When excavations begin the rocks and must be given a cursory inspection by the geologist on site, environmental officer or designated person. Any fossiliferous material (plants, insects, bone, coal) should be put aside in a suitably protected place. This way the mining activities will not be interrupted. 3. Photographs of similar fossil plants must be provided to the developer to assist in recognizing the fossil plants in the shales and mudstones (for examples see Figure 12). This information will be built into the EMP's training and awareness plan and procedures. 4. Photographs of the putative fossils can be sent to the palaeontologist for a preliminary assessment. 5. If there is any possible fossil material found by the developer/environmental officer/miners then the qualified palaeontologist sub-contracted for this project, should visit the site to inspect the selected material and check the dumps where feasible.

				6. Fossil plants or vertebrates that are considered to be of good quality or scientific interest by the palaeontologist must be removed, catalogued and housed in a suitable institution where they can be made available for further study. Before the fossils are removed from the site a SAHRA permit must be obtained. Annual reports must be submitted to SAHRA as required by the relevant permits. 7. If no good fossil material is recovered then the site inspections by the palaeontologist will not be necessary. 8. If no fossils are found and the excavations have finished then no further monitoring is required.

i) Financial Provision

1) Determination of the amount of Financial Provision.

Section 24 P of NEMA requires an applicant applying for an environmental authorisation related to mining to comply with the prescribed financial provision for the rehabilitation, closure and ongoing post decommissioning management of negative environmental impacts before the Minister responsible for mineral resources issues the environmental authorisation. The above-mentioned financial provision may be in the form of an insurance, bank guarantee, trust fund or cash.

Regulations pertaining to the pertaining to the financial provision for prospecting, exploration, mining or production operations (GNR 1147) were promulgated on the 20th of November 2015.

Idlanga Mining has undertaken the financial provision determination in line with the requirements of section 11 of the Regulations pertaining to the Financial Provision for Prospecting, Exploration, Mining or Production Operations (GNR 1147). The financial provision determination for the proposed project is submitted to the Department of Mineral Resources for their consideration.

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

Considering the relatively limited impact of the proposed prospecting activities, the closure objectives are aimed at re-instating the landform, land use and vegetation units to the same as before prospecting operations take place unless a specific, reasonable alternate land use is requested by the landowner. As such, the intended end use for the disturbed prospecting areas and the closure objectives will be defined in consultation with the relevant landowner. Proof of such consultation will be submitted together with the Application for Closure Certificate. The overall aim of the rehabilitation plan is to rehabilitate the environment to a condition as close as possible to that which existed prior to prospecting. This shall be achieved with a number of specific objectives

1. Making the area safe. I.e. Decommission prospecting activities so as to ensure that the environment is safe for people and animals. This entails refilling excavations, sealing boreholes, etc.

2. Recreating a free draining landform. This entails earthworks infilling, reshaping, levelling, etc. to re-create as close as possible the original topography and to ensure a free draining landscape.

3. Re-vegetation. This involves either reseeding or allowing natural succession depending on the area, climate, etc.

4. Storm water management and erosion control. Management of storm water and prevention of erosion during rehabilitation. E.g. cut off drains, berms etc. and erosion control where required.

5. Verification of rehabilitation success. Entails monitoring of rehabilitation.

6. Successful closure. Obtain closure certificate.

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

The Public Participation Process (PPP) is a requirement of several pieces of the South African legislation and aims to ensure that all relevant Interested and Affected Parties (I&APs) are consulted, involved and their opinions are taken into account and a record included in the reports submitted to Authorities. The process ensures that all stakeholders are provided this opportunity as part of a transparent process which allows for a robust and
comprehensive environmental study. The PPP which forms part of the Prospecting Right application needs to be managed sensitively and according to best practises in order to ensure and promote:

- Compliance with national legislation.
- Establish and manage relationships with key stakeholder groups.
- Encourage involvement and participation in the environmental study and authorisation/ approval process.

As such, the purpose of the PPP and stakeholder engagement process is to:

- Introduce the proposed project.
- Explain the environmental authorisations required.
- Explain the environmental studies already completed and yet to be undertaken (where applicable).
- Determine and record issues, concerns, suggestions and objections to the project.
- Provide opportunity for input and gathering of local knowledge.
- Establish and formalise lines of communication between the I&APs and the project team.
- Identify all significant issues for the project.
- Identify possible mitigation measures or environmental management plans to minimise and/or prevent negative environmental impacts and maximise and/or promote positive environmental impacts associated with the project.

(c) 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.

The main aim in developing this rehabilitation plan is to mitigate the impacts caused by the prospecting activities and to restore land back to a satisfactory standard. It is best practice to develop the rehabilitation plan as early as possible so as to ensure the optimal management of rehabilitation issues that may arise. It is important that the project's closure plan is defined and understood before starting the process and is complementary to the rehabilitation goals. Rehabilitation and closure objectives need to be tailored to the project and be aligned with
the EMPR. The overall rehabilitation objectives for this project are as follows:

- Maintain and minimise impacts to the ecosystem within the study area.
- Re-establishment of the pre-developed land capability to allow for a suitable post-mining land use.
- Prevent soil, surface water and groundwater contamination.
- Comply with the relevant local and national regulatory requirements.
- Maintain and monitor the rehabilitated areas.

Successful rehabilitation must be sustainable, requires an understanding of the basic baseline environment and project management to ensure that the rehabilitation program is a success.
It is noted that an application for environmental authorisation must be submitted for closure in

accordance with

Listing Notice 1 Activity 22:
The decommissioning of any activity requiring –
I. a closure certificate in terms of Section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act 28 of 2002).
II. A prospecting right, mining permit, production right or exploration right, where the throughput of the activity has reduced by 90% or more over a period of 5 years excluding where the competent authority has in writing agreed that such reduction in throughput does not constitute closure .

LANDFORM DESIGN, EROSION CONTROL AND REVEGETATION

Landform, erosion control and re-vegetation is an important part of the rehabilitation process. Landform and land use are closely interrelated, and the landform should be returned as closely as possible to the original landform.
Community expectations, compatibility with local land use practices and regional infrastructure, or the need to replace natural ecosystems and faunal habitats all support returning the land as closely as possible to its original appearance and productive capacity. This requires the following:

- Shape, level and de-compact the final landscape after removing all the project infrastructure, dress with topsoil and, where necessary, vegetate with indigenous species. Commission specialists to assist in planning re-vegetation and the management of environmental impact, as required.
- Remove access roads with no beneficial re-use potential by deep ripping, shaping and levelling after the removal and disposal of any culverts, drains, ditches and/or other infrastructure. Natural drainage patterns are to be reinstated as closely as possible.
- Shape all channels and drains to smooth slopes and integrate into the natural drainage pattern.
- Construct contour banks and energy dissipating structures as necessary to protect disturbed areas from erosion prior to stabilisation.
- Promote re-vegetation through the encouragement of the natural process of secondary succession.
- Natural re-vegetation is dependent on de-compaction of subsoils and adequate replacement of the accumulated reserves of topsoil (for example, over the borehole sites), so as to encourage the establishment of pioneer vegetation.
- Remove alien and/or exotic vegetation.
- Undertake a seeding programme only where necessary, and as agreed with the re-vegetation specialist.

POST-CLOSURE MONITORING AND MAINTENANCE

Prior to decommissioning and rehabilitation activities, a monitoring programme shall be developed and submitted to the relevant authority for approval, as a part of the Final Rehabilitation Plan. The programme is to include proposed monitoring during and after the closure of the prospecting borehole sites and related activities. It is
recommended that the post-closure monitoring include the following

- Confirmation that any waste, wastewater or other pollutants that is generated as a result of decommissioning will be managed appropriately, as per the detailed requirements set out in the Final Rehabilitation Plan.
- Confirmation that all de-contaminated sites are free of residual pollution after decommissioning.
- Confirmation that acceptable cover has been achieved in areas where natural vegetation is being re-established. ‘Acceptable cover’ means re-establishment of pioneer grass communities over the disturbed areas at a density similar to surrounding undisturbed areas,

non-eroding and free of invasive alien plants.
- Confirmation that the prospecting borehole sites are safe and are not resulting in a pollution hazard.

Annual environmental reports will be submitted to the Designated Authority and other relevant Departments for at least one year post-decommissioning. The frequency and duration of this reporting period may be increased to include longer term monitoring, at intervals to be agreed with the Designated Authority.

The monitoring reports shall include a list of any remedial action necessary to ensure that infrastructure that has not been removed remains safe and pollution free and that rehabilitation of project sites are in a stable, weed and free condition.

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

The closure plan will assist the proposed mining operation to achieve the following objectives:
- Comply with relevant legislation and policy requirements with regards to mine rehabilitation.
- Avoid or mitigate impacts associated with the project which may be detrimental to the environment.
- Land rehabilitation to a predetermined and agreed upon state that allows sustainable land use and capability of the site, that is to return the site to the condition that existed prior to mining or an agreed upon state.
- Cost effective and efficient closure of mining operations.
- Management and monitoring of the area post-closure.

The rehabilitation plan will thus be aligned to the closure objectives and tailored to the project to achieve these objectives. It will include information about the site prior to the mining operation and provide information on the maintenance of resources required for the rehabilitation process, as well detail how rehabilitation will be undertaken. It will also provide information on the management and monitoring of disturbance to avoid or minimise detrimental impacts, as well as an estimate of the financial closure provision. It will also include information associated with post-closure environmental monitoring of the site to ensure that the rehabilitation plan is followed and its objectives are achieved.

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

Refer to Section 20.1 of the BAR for a detailed breakdown.

(f) Confirm that the financial provision will be provided as determined.

Idlanga Mining has committed to finance the prospecting costs and the rehabilitation of the site once prospecting has been concluded.

l) Indicate the frequency of the submission of the performance assessment/ environmental audit report.

The result of environmental monitoring and compliance to the approved EMPR will be undertaken annually and submitted to the DMR in the form of an environmental performance assessment. Included in the report
will be the following relevant information:

- The period when the performance assessment was conducted.
- The scope of the assessment.
- The procedures used for conducting the assessment.
- Interpreted information gained from monitoring the EMPR.
- Evaluation criteria used during the assessment.
- Results of the assessment are to be discussed and mention must be made of any gaps in the EMPR
- And how it can be rectified.
- Yearly updated layout plans.

Any emergency or unforeseen impacts will be reported immediately to the DMR and other relevant government departments.

m) Environmental Awareness Plan

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

The Applicant and Contractor must ensure that all relevant employees are trained and capable of carrying out their duties in an environmentally responsible and compliant manner, and are capable of complying with the relevant environmental requirements. To obtain buy-in from staff, individual employees need to be involved in:

- Identifying the relevant risks.
- Understanding the nature of risks.
- Devising risk controls.
- Given incentive to implement the controls in terms of legal obligations.

Training and/or awareness should be raised and effectively communicated prior to the commencement of the prospecting activity.
Training sessions should incorporate the management plans addressed in the EMPr as well as any new information and documentation.

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

Environmental awareness could be fostered by induction course for all personnel on site, before commencing site visits. Personnel should also be alerted to particular environmental concerns associated with their tasks for the area in which they are working. Courses must be given by suitably qualified personnel and in a language and medium understood by personnel. The environmental awareness training programme will include the following:

1. Occupational Health and Safety Training (OHS).
2. Environmental Awareness Training EMPR management actions.

Environmental awareness training will focus on the following specific aspects and be undertaken in “Tool box talk “topics prior to site access:

1. Waste collection and disposal.
2. EMPR management options and application.

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

The following measures are provided to control any causes of pollution or degradation during the prospecting activities.

- Contain potential pollutants and contaminants (where possible) at source.
- Handling of potential pollutants and contaminants (where possible) must be conducted in bunded areas and on impermeable substrates.
- Ensure the timeous clean-up of any spills.
- Implement a waste management system for all waste stream present on site.
- Investigate any I&AP claims of pollution or contamination as a result of mining activities.

n) Specific information required by the Competent Authority

(Among others, confirm that the financial provision will be reviewed annually).

No specific information requirements have been made by the Competent Authority at this stage.

2) UNDERTAKING

The EAP herewith confirms

(a) The correctness of the information provided in the reports

(b) The inclusion of comments and inputs from stakeholders and I&APs ;

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

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

G.Engelbrecht

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Signature of the environmental assessment practitioner:

INFORMATION DECISION SYSTEMS
Name of company:

20/01/2020……
Date: