



**mineral resources  
& energy**

Department:  
Minerals Resources and Energy  
**REPUBLIC OF SOUTH AFRICA**

**FINAL SCOPING REPORT FOR THE PROSPECTING RIGHT APPLICATION  
WITH BULK SAMPLING BY VURANOK CHROME RESOURCES (PTY) LTD ON  
THE FARMS KLIPFONTEIN 465 KS, PASCHASKRAAL 466 KS FETAKGOMO  
MAGISTERIAL DISTRICT, LIMPOPO.**

SUBMITTED FOR ENVIRONMENTAL AUTHORIZATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (AS AMENDED IN 2021), 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).

Compiled For

**VURANOK CHROME RESOURCES (PTY) LTD**

By:

**Archean Resources (Pty) Ltd**

**Release Date: 13 October 2021**

**DMR REFERENCE: LP/5/1/1/2/14364PR**

## REPORT INFORMATION

<b>Report Title:</b>	Application for a Prospecting Right in terms of the MPRDA Act 28 Of 2002, National Environmental Management Act (NEMA) (Act No 107 Of 1998): in line with the Environmental Impact Assessment Regulations 2017 (as amended).	
<b>Report Reference:</b>	Scoping Report for the Prospecting Right with Bulk Sampling by Vuranok Chrome Resources (Pty) Ltd on the farms Klipfontein 465 KS, Paschaskraal 466 KS Fetakgomo Magisterial District, Limpopo.	
<b>Reference</b>	LP/5/1/1/2/14364PR	
<b>Report Status:</b>	FSR- 01: Final Report for DMRE review	
<b>REVISION</b>	<b>DATE</b>	<b>REASON FOR CHANGE</b>
<b>001</b>	10 <sup>th</sup> of September - 11 <sup>th</sup> of October 2021	Release of Draft Scoping for public review
<b>002</b>	13 October 2021	Final Scoping Report: Additional Environmental information and consolidation of I&AP comments

## DETAILS OF APPLICANT AND EAP

Table 1: Applicant Details

<b>NAME OF APPLICANT</b>	Vuranok Chrome Resources (Pty) Ltd
<b>CONTACT PERSON</b>	Mampuru Koma
<b>TEL NO:</b>	(0) 60 813 5655
<b>FAX NO:</b>	(0) 86 718 1800
<b>EMAIL:</b>	Vuranokcr@gmail.com
<b>POSTAL ADDRESS:</b>	345 Justice Mohamed, Macklenuck, Gauteng. 0002

### Contact Person and correspondence address

Table 2: EAP Details

<b>Company:</b>	<b>ARCHEAN RESOURCES (PTY) LTD</b>
<b>CONTACT PERSON (S)</b>	Nhlahla Khosa
<b>ADDRESS</b>	5 Villa Serring, Wapadrand Road, Wapadrand Pretoria
<b>CELL PHONE</b>	0715896813
<b>FAX NUMBER</b>	0866955990
<b>EMAIL:</b>	nhlanhla@archeanresources.com; yvonne@archeanresources.com

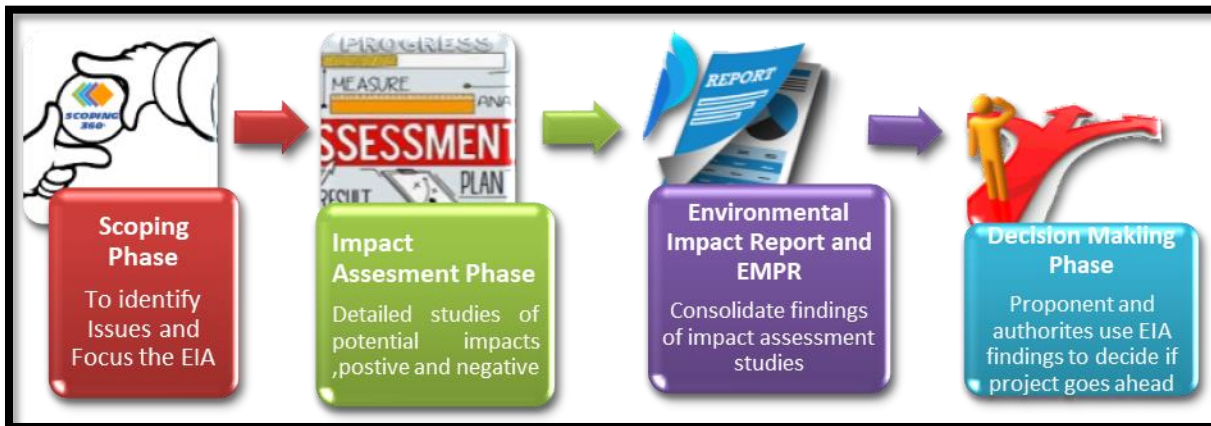
## EXECUTIVE SUMMARY

Vuranok Chrome Resources (Pty) Ltd has appointed Archean Resources (Pty) Ltd, an independent consulting company, to conduct an Environmental Impact Assessment (EIA) to evaluate the potential environmental and social impacts of the proposed prospecting right which include bulk sampling application and drilling. The application area is on Klipfontein 465 KS, Paschaskraal 466 KS located in the Fetakgomo Magisterial District, Limpopo. The farm is situated 43km North of the town of Steelpoort.

A prospecting right application was lodged with an application for Environmental Authorisation (EA) in terms of Section 24 of the NEMA Act read with Section 21 of the EIA regulations to the DMR. The prospecting right application acceptance was received dated 31 August 2021. The report has been designed to meet the requirements for conducting an Environmental Impact Assessment (EIA) and Environmental Management Programme (EMPR) as stipulated in the Regulations contained in both the Mineral and Petroleum Resources Development Act (Act No. 28 of 2002-MPRDA) and National Environmental Management Act (NEMA) respectively.

Comments received during this phase will be considered and addressed in the Environmental Impact Assessment (EIA/EMPR) which will be submitted to the competent authority Department of Minerals (DMR) for approval.

AN EIA CONSISTS OF THE FOLLOWING PHASES



### **Purpose of this Report**

This report addresses the requirements for Scoping Phase and the Plan of Study (PoS) for the Environmental Authorisation Process as outlined in the NEMA regulations and the MPRDA regulations. The aim of this SR is to:

- Provide information to the authorities as well as interested and affected parties (I&APs) on the proposed project;
- Provide information regarding alternatives that are being considered;

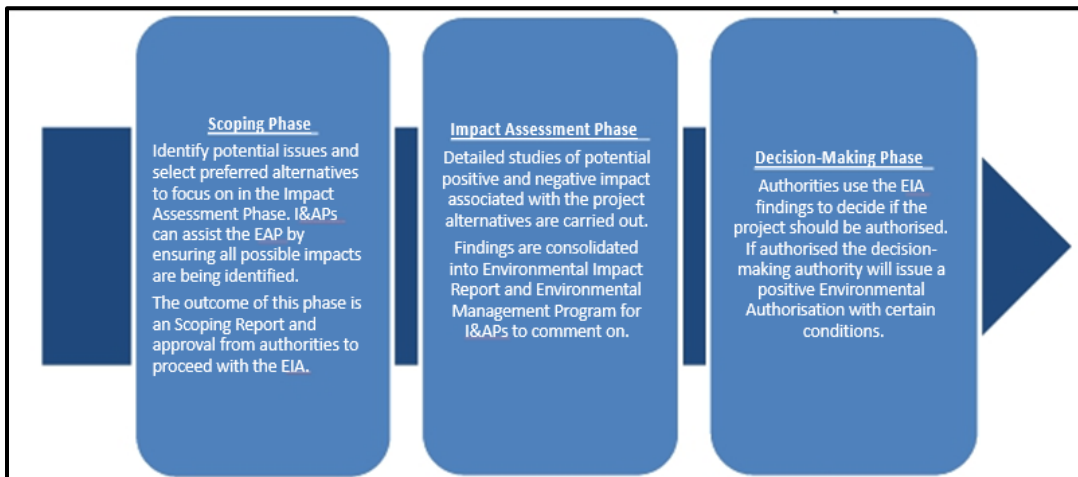
- Indicate how I&APs have been and are still being afforded the opportunity to contribute to the project, verify that the issues raised during the scoping phase are incorporated in the impact assessment phase of the environmental authorization process;
- Describe the baseline receiving environment;
- Define the Terms of Reference (ToR) for specialist studies to be undertaken in the Impact Assessment Phase of the EIA; and
- Present the findings of the Scoping Phase in a manner that facilitates input by the I&AP's and decision-making by the relevant authorities.

**The Process**

As part of the project, the environmental authorizations and licenses required to start the prospecting need to be obtained. To do so, a Scoping and Environmental Impact Assessment Process (S&EIR) is being undertaken in line with the provisions of the National Environmental Management Act (EIA regulations as amended). The S&EIR process and specialist studies to be undertaken will also support the applications for the required licenses and environmental authorizations. The EIA findings are used by the applicant and authorities to obtain an objective view of the potential environmental, social and cultural impacts that could arise during the prospecting of the proposed area.

Measures for the avoidance or mitigation of negative impacts will be proposed and positive impacts will be enhanced. The outcome of the first phase of the S&EIR is the Scoping Report, which provides the basis for undertaking the Impact Assessment Phase of the project. The draft scoping report was available for review for at least 30 days from the 10<sup>th</sup> of September to the 11<sup>th</sup> of October 2021.

The process is summarized in the illustration below



**Environmental Baseline and Potential Impacts**

The prospecting right area has been identified and this assessment is aimed at identifying the general environmental sensitivities across the prospecting right area. This will involve desktop plus specialist studies and draws extensively on information contained in these studies. In order to assess these potential impacts the following baseline information will be assessed:

- Agricultural Impact Assessment
- Archaeological and Cultural Heritage Impact Assessment
- Palaeontology Impact Assessment
- Terrestrial Biodiversity Impact Assessment
- Aquatic Biodiversity Impact Assessment
- Noise Impact Assessment
- Radioactivity Impact Assessment
- Plant Species Assessment
- Animal Species Assessment
- Hydrological and Geohydrological Assessments

The proposed activities include sampling and bulk sampling, to be completed over different phases.

### **Way Forward**

The EIA process is being carried out in accordance with the NEMA EIA regulations. Each of the specialists will undertake a detailed EIA assessment. Included in this report is a detailed plan of study provided by each of the appointed specialists to be implemented during the EIA phase. Potential impacts identified during the Scoping and EIA will be assessed by the specialists for each feasible development alternative and for each phase of the project. The EIA and specialist studies will provide input into the EMPR which will provide the necessary action plans and management measures to mitigate the identified impacts.

This Scoping study has been undertaken with the aim of identifying potential positive and negative impacts on the environment and gathering issues, concerns, and queries from I&APs. The Scoping report documents the process followed, the findings and recommendations of the Scoping Phase study, and the proposed Plan of Study for the EIA Phase to follow.

The way forward recommended by this study is as follows:

- Make the Scoping Report available for public comment for a period of 30 calendar days;
- Submit the Scoping Report to the competent authority for permission to undertake the Impact Assessment Phase of the project;
- Upon approval of the Scoping Report, all I&APs are to be notified of the conditions of the Department of Mineral Resources for proceeding with the Impact Assessment Phase of the project;
- Execute the Plan of Study for Impact Assessment during the Impact Assessment Phase of the project.

## TABLE OF CONTENTS

<b>1</b>	<b>PROJECT INFORMATION</b>	<b>14</b>
1.1.1	Introduction	14
1.1.2	Purpose of the report	14
1.1.3	Assumptions and Limitations	14
1.1.4	Description of the property	14
1.1.5	Project Locality	15
1.1.6	Description why the Geological formation substantiates the minerals to be prospected for.	19
<b>2</b>	<b>DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY</b>	<b>20</b>
2.1.1	Listed and specified activities	20
2.1.2	Description of the activities to be undertaken	21
2.1.3	Minerals applied for:	24
<b>3</b>	<b>POLICY AND LEGISLATIVE CONTEXT</b>	<b>26</b>
3.1.1	The South African Constitution	26
3.1.2	National Environmental Management Act	27
3.1.3	Mineral and Petroleum Resources Development Act	29
3.1.4	National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)	29
3.1.5	National Forest Act, 1998 (Act 84 of 1998)	30
3.1.6	National Environmental Management: Air Quality Act (Act No 39 of 2004)	30
3.1.7	Conservation of Agricultural Resources Act (Act 43 of 1983)	30
3.1.8	National Environmental Management: Waste Act (Act 59 of 2008)	31
3.1.9	Occupational Health and Safety Act (Act 85 of 1993)	31
3.1.10	National Heritage Resources Act	32
3.1.11	National Water Act, 1998 (Act No.36 of 1998)	35

3.1.12	Applicable Legislation and Approvals Required	36
<b>4</b>	<b>PROJECT ALTERNATIVES</b>	<b>38</b>
4.1.1	Motivation for the overall preferred site, activities and technology alternative.	38
4.1.2	General Geology.	38
4.1.3	Feasible alternatives	39
4.1.4	No Project Alternative	40
4.1.5	Need and desirability of the proposed activities.	40
<b>5</b>	<b>PUBLIC PARTICIPATION (REFER TO APPENDICES FOR PROOF OF PRELIMINARY CONSULTATION)</b>	<b>44</b>
5.1.1	Public Participation Process to be followed	44
5.1.2	I&AP and Stakeholder identification, registration and the creation of an electronic database	44
5.1.3	Formal notification of the application to key Interested and Affected Parties (adjacent landowners) and other stakeholders	45
5.1.4	Consultation and correspondence with I&AP's and Stakeholders and the addressing of their comments (continuous).	45
5.1.5	Release of the revised and amended Scoping Report to I&AP's and stakeholders for review and comment.	46
5.1.6	Next Phases of the Public Participation Process	46
5.1.7	Summary of issues raised by I&AP's	46
<b>6</b>	<b>BASELINE RECEIVING ENVIRONMENT</b>	<b>47</b>
6.1.1	Regional Setting	47
6.1.2	Climate	48
6.1.3	Air Quality	49
6.1.4	Geology	50
6.1.5	Fauna and Flora	51
6.1.6	Land use	52
6.1.7	Hydrology	53
6.1.8	Socio economic	55
6.1.9	Screening tool Description of specific environmental features and infrastructure on the site.	57

<b>7</b>	<b>ENVIRONMENTAL IMPACT ASSESSMENT</b>	<b>67</b>
7.1.1	Assessment Criteria	67
7.1.2	Extent	67
7.1.3	Duration	67
7.1.4	Intensity	68
7.1.5	Probability	68
7.1.6	Mitigation	69
7.1.7	Determination of significance – Without Mitigation	69
7.1.8	Determination of significance – With Mitigation	69
7.1.9	Assessment weighting	70
7.1.10	Ranking, Weighting and Scaling	70
7.1.11	Identifying the Potential Impacts without Mitigation (WOM)	71
7.1.12	Identifying the Potential Impacts with Measures (WM)	71
7.1.13	Impacts identified	72
7.1.14	The positive and negative impacts that the proposed activity	75
7.1.15	The possible mitigation measures that could be applied and the level of risk.	76
7.1.16	Final Site Layout Plan	76
7.1.17	Plan of study for the Environmental Impact Assessment process	76
7.1.18	Description of the aspects to be assessed as part of the environmental impact assessment process	77
7.1.19	Specialist Studies	78
7.1.20	Description of aspects to be assessed by specialists	79
7.1.21	Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives	80
7.1.22	The stages at which the competent authority will be consulted	83
<b>8</b>	<b>PUBLIC PARTICIPATION DURING THE EIA PHASE</b>	<b>84</b>



8.1.1	Particulars of the public participation process with regard to the Impact Assessment process that will be conducted	84
8.1.2	Details of the engagement process to be followed	85
8.1.3	Description of the information to be provided to Interested and Affected Parties	85
8.1.4	Description of the tasks that will be undertaken during the environmental impact assessment process	86

**9 MITIGATION MEASURES -----88**

9.1.1	Measures to avoid, reverse, mitigate, or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored	88
9.1.2	Other Information required by the competent Authority	89
9.1.3	Impact on the socio-economic conditions of any directly affected person.	89
9.1.4	Impact on any national estate referred to in section 3(2) of the National Heritage Resources Act.	89
9.1.5	Potential Cumulative impact and mitigation measures	90

**10 RECOMMENDATIONS-----90**

10.1.1	Undertaking Regarding Correctness of Information	91
--------	--	----

**LIST OF FIGURES**

FIGURE 1:	LOCALITY MAP	16
FIGURE 2:	GOOGLE MAP OF THE PROJECT AREA	17
FIGURE 3:	REGULATION MAP	18
FIGURE 4:	GEOLOGY OF THE APPLICATION AREA	19
FIGURE 5:	MUNICIPALITY MAP	48
FIGURE 6:	MUNICIPALITY MAP SEKHUKHUNE	49
FIGURE 7:	GEOLOGY OF THE APPLICATION AREA	50
FIGURE 8:	VEGETATION	51
FIGURE 9:	MAP OF RELATIVE TERRESTRIAL BIODIVERSITY THEME SENSITIVITY	52
FIGURE 10:	MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY	53
FIGURE 11:	MAP OF RELATIVE AQUATIC BIODIVERSITY THEME SENSITIVITY	55
FIGURE 12:	MAP INDICATING PROPOSED DEVELOPMENT FOOTPRINT WITHIN APPLICABLE DEVELOPMENT INCENTIVE, RESTRICTION, EXCLUSION OR PROHIBITION ZONES	59
FIGURE 13 :	THE RIVER NAME MASUTSA	61
FIGURE 14	THE GENERAL VEGETATION IN THE AREA	62
FIGURE 15:	THE GENERAL TOPOGRAPHY OF THE AREA	63
FIGURE 16:	MAANDEGSHOEK ROAD THAT CONECTS FROM THE R37. IT CONNECETS GA-SELEPE, MONOTWANE AND PASCHASKRAAL	64
FIGURE 17:	SHARED CEMETERY ON THE FARM PASCHASKRAAL	65

FIGURE 18: WETLAND AREA ..... 66  
 FIGURE 19: DESCRIPTION OF BIOPHYSICAL ASSESSMENT PARAMETERS WITH ITS RESPECTIVE WEIGHTING ..... 71

**LIST OF TABLES**

TABLE 1: APPLICANT DETAILS ..... II  
 TABLE 2: EAP DETAILS ..... II  
 TABLE 3: LISTED AND SPECIFIED ACTIVITIES ..... 20  
 TABLE 4: BULK SAMPLING ACTIVITIES ..... 23  
 TABLE 5: PROSPECTING PHASES AND TIMELINE ..... 25  
 TABLE 6: LIST OF POTENTIAL IMPACTS ..... 74  
 TABLE 7: MITIGATION MEASURES ..... 88  
 TABLE 8: CUMULATIVE IMPACTS AND MITIGATION MEASURES ..... 90

**LIST OF APPENDICES**

- 1: CONSULTATION REPORT
- 2: LIST OF I&AP
- 3: BID
- 4: NEWSPAPER ADVERT
- 5: EMAILS
- 6: SITE NOTICE
- 7: SITE NOTICE PICTURES
- 8: ISSUE AND RESPONSE SHEET
- 9: MEETING PRESENTATION
- 10: MEETING PICTURES
- 11: MEETING MINUTES
- 12: MEETING ATTENDANCE REGISTER
- 13: SAHRA UPLOAD

## LIST OF ABBREVIATIONS

<b>AIA</b>	Archaeological Impact Assessment
<b>ASAPA</b>	Association of Southern African Professional Archaeologists
<b>BID</b>	Background Information Document
<b>CA</b>	Competent Authority
<b>CARA</b>	Conservation of Agricultural Resources Act (Act 43 of 1983)
<b>CSA</b>	Constitution of South Africa (Act No. 108 of 1996)
<b>DEA</b>	Department of Environmental Affairs
<b>DMRE</b>	Department of Minerals and Energy
<b>DWS</b>	Department of Water and Sanitation
<b>EA</b>	Environmental Authorisation
<b>EAP</b>	Environmental Assessment Practitioner
<b>ECA</b>	Environment Conservation Act (ECA), 1989 (Act No. 73 of 1989)
<b>EIA</b>	Environmental Impact Assessment
<b>EIAR</b>	Environmental Impact Assessment Report
<b>GN</b>	Government Notice
<b>HIA</b>	Heritage Impact Assessment
<b>I&amp;APs</b>	Interested and Affected Parties
<b>IEM</b>	Integrated Environmental Management
<b>IWULA</b>	Integrated Water Use License Application
<b>IWWMP</b>	Integrated Water and Waste Management Plan
<b>MPRDA</b>	Minerals and Petroleum Resources Development Act (Act No. 28 of 2002) (as amended)
<b>NEMA</b>	National Environmental Management Act (EIA regulations of 4 Dec 2014 as amended in April 2017)
<b>NEMAQA</b>	National Environmental Management: Air Quality Act (Act No. 39 of 2004)
<b>NEMBA</b>	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)
<b>NEMWA</b>	National Environmental Management: Waste Act (Act No. 59 of 2008)
<b>NHRA</b>	National Heritage Resources Act, 1999 (Act No. 25 of 1999)
<b>NWA</b>	National Water Act, 1998 (Act No. 36 of 1998)
<b>OHSA</b>	Occupational Health and Safety Act (Act No. 85 of 1993)
<b>PPP</b>	Public Participation Process
<b>SAHRA</b>	South African Heritage Resources Agency
<b>SANBI</b>	South African National Biodiversity Institute
<b>SR /DSR</b>	Scoping Report / Draft Scoping

## GLOSSARY OF TERMS

**Anthropogenic:** Change induced by human intervention.

**Applicant:** Any person who applies for an authorisation to undertake an activity or undertake an Environmental Process in terms of the Environmental Impact Assessment (EIA) Regulations – National Environmental Management Act (EIA regulations as amended in April 2017) as contemplated in the scheduled activities listed in Government Notice (GN) No 324, 325 and 327.

**Archaeological resources:** This includes:

- material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years including artefacts, human and hominid remains and artificial features and structures;
- rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;
- wrecks, being any vessel or aircraft, or any part thereof which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the republic as defined in the Maritimes Zones Act, and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which South African Heritage Resources Agency (SAHRA) considers to be worthy of conservation; features, structures and artefacts associated with military history which are older than 75 years and the site on which they are found.

**Biodiversity:** The variety of life in an area, including the number of different species, the genetic wealth within each species, and the natural areas where they are found.

**Cultural significance:** This means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.

**Cumulative Impact:** In relation to an activity, cumulative impact means the impact of an activity that in itself may not be significant, but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

**Environment:** All physical, chemical and biological factors and conditions that influence an object.

**Environmental Impact Assessment:** In relation to an application, to which Scoping must be applied, means the process of collecting, organising, analysing, interpreting and communicating information that is relevant to the consideration of the application.

**Environmental Impact Assessment Report:** In-depth assessment of impacts associated with a proposed development. This forms the second phase of an EIA and follows on the Scoping Report (SR).

**Heritage resources:** This means any place or object of cultural significance. See also archaeological resources above.

**Precipitation:** Any form of water, such as rain, snow, sleet, or hail that falls to the earth's surface.

**Red Data species:** All those species included in the categories of endangered, vulnerable or rare, as defined by the International Union for the Conservation of Nature and Natural Resources.

**Riparian:** The area of land adjacent to a stream or river that is influenced by stream induced or related processes.

## **1 PROJECT INFORMATION**

### **1.1.1 Introduction**

Vuranok Chrome Resources (Pty) Ltd has appointed Archean Resources (Pty) Ltd, an independent consulting company, to conduct an Environmental Impact Assessment (EIA) to evaluate the potential environmental and social impacts of the proposed prospecting right with include bulk sampling application and drilling. The application area is on Klipfontein 465 KS, Paschaskraal 466 KS located in the Fetakgomo Magisterial District, Limpopo. The farm is situated 43km North of the town of Steelpoort.

A prospecting right application was lodged with an application for Environmental Authorisation (EA) in term of Section 24 of the NEMA Act read with Section 21 of the EIA regulations to the DMR. The prospecting right application acceptance was received dated 31 August 2021. A full EIA must be undertaken due to the bulk sampling noted in the prospecting works program. The report has been designed to meet the requirements for conducting an Environmental Impact Assessment (EIA) and Environmental Management Programme (EMPR) as stipulated in the Regulations contained in both the Mineral and Petroleum Resources Development Act (Act No. 28 of 2002-MPRDA) and National Environmental Management Act (NEMA) respectively.

### **1.1.2 Purpose of the report**

In terms of relevant legislations, the applicant may not commence with the prospecting prior to a suite of authorisations. This document is the Scoping Report, the purpose of which is to provide stakeholders with the preliminary results of the Scoping Phase of the study and with an opportunity to verify that all issues have been identified and, if not, provides an opportunity for stakeholders to raise them and for them to be captured and considered in the EIA process.

### **1.1.3 Assumptions and Limitations**

As is standard practice, this Scoping Report is based on a number of assumptions and is subject to certain limitations. These are as follows:

- It is assumed that information provided by the applicant and specialists is accurate;
- A more detailed project description will be presented in the Impact Assessment Phase; and
- Detailed assessment of the potential positive and negative environmental impacts of the proposed development will only be undertaken during the Impact Assessment Phase.

Notwithstanding the above, Archean Resources is confident that these assumptions and limitations do not compromise the overall findings of this report.

### **1.1.4 Description of the property**

The application area is on Klipfontein 465 KS, Paschaskraal 466 KS located in the Fetakgomo Magisterial District, Limpopo. The farm is situated 43km North of the town of Steelpoort.

#### 1.1.5 Project Locality

<b>Farm Name:</b>	Klipfontein 465 KS, Portion 1 and the Re extent of Paschaskraal 466 KS
<b>Application area (Ha)</b>	5 767.13 hectares
<b>Magisterial district:</b>	Fetakgomo Magisterial District, Limpopo
<b>Distance and direction from nearest magisterial district</b>	The farm is situated 43km North of the town of Steelpoort
<b>Name and location of nearest town(s), city, harbour</b>	TOKS00000000046600001, TOKS00000000046600000, TOKS00000000046500001

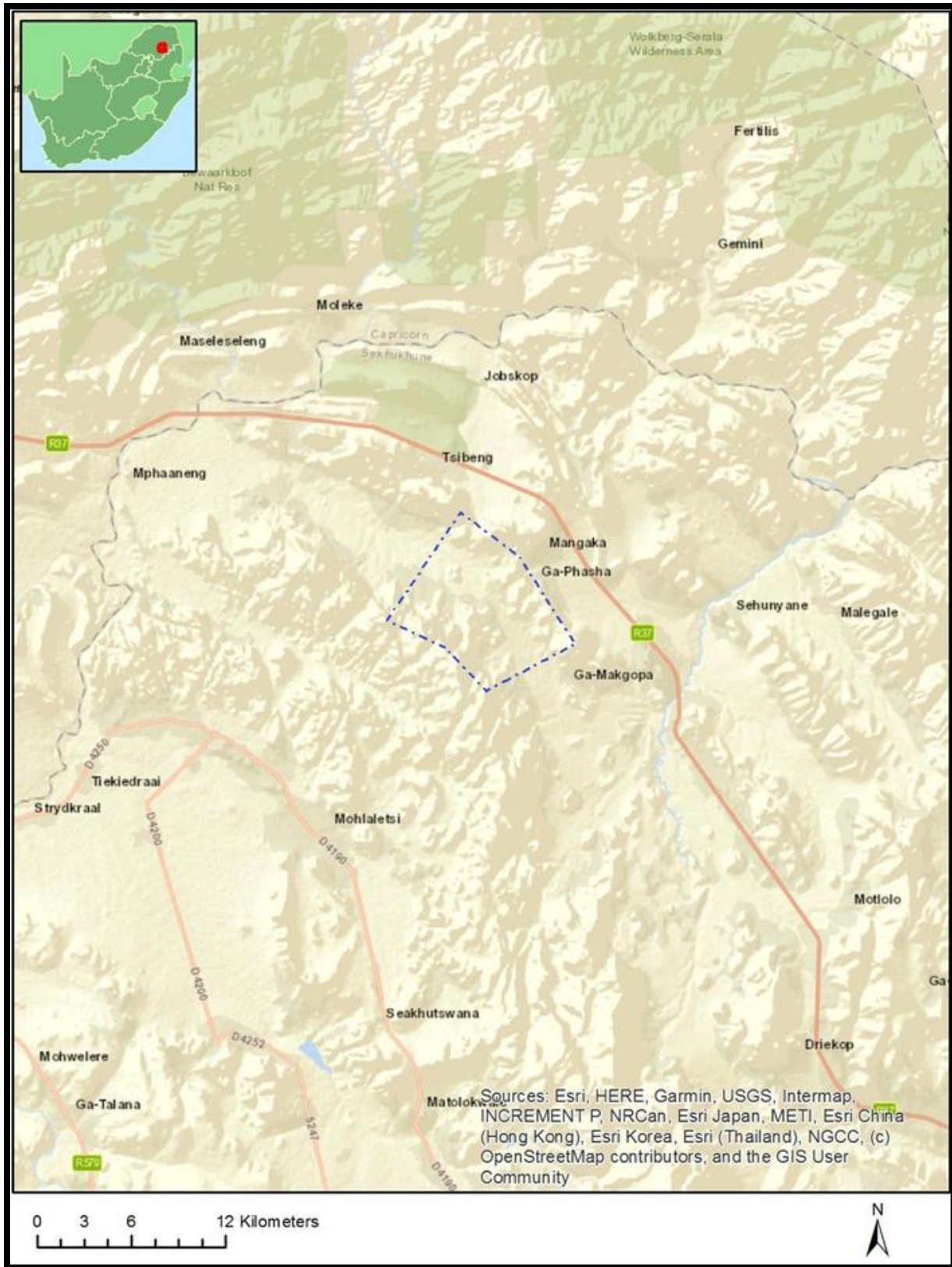


Figure 1: Locality Map





Figure 2: Google Map of the project area



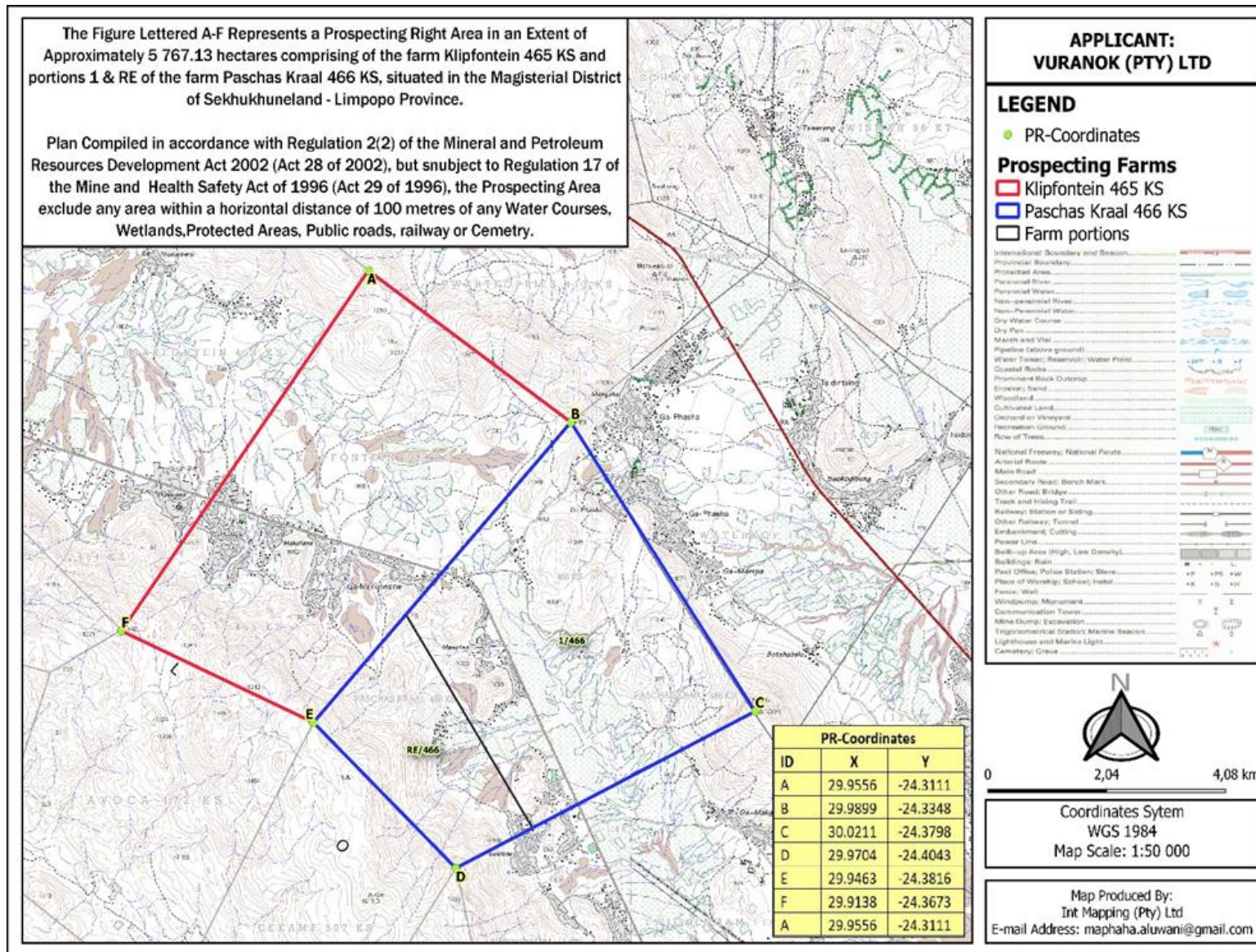


Figure 3: Regulation Map

**1.1.6 Description why the Geological formation substantiates the minerals to be prospected for.**

**1.1.6.1 The Nylstroom Supergroup**

The properties are found within the Nylstroom Supergroup which is informally divided into upper and lower parts and the deposition of the lower formation is thought to have been penecon-temporaneous with the intrusion of the Bushveld Complex granites. It consists of intensely sheared and jointed arenites and rudites. With no Bushveld granites clasts. The upper part consists chiefly of fractured arenites and rudites with intercalated lutities.

It has a thick lava unit at its base and several other lava flows higher up the sequence. It also includes a quartz porphyry. The iron ore formations underwent contact metamorphism during the intrusion of the Bushveld Complex and region metamorphism during the Waterberg tectonism, the latter event forming the talc-hematite and carbonate- hematite rocks.

There are several mines in adjacent farms that are already operating and extracting chrome. Sefateng, Bauba Platinum, Afarak, etc are some examples of the mines in the adjacent area. On the farm Klipfontein, Bokoni has an existing mining right.

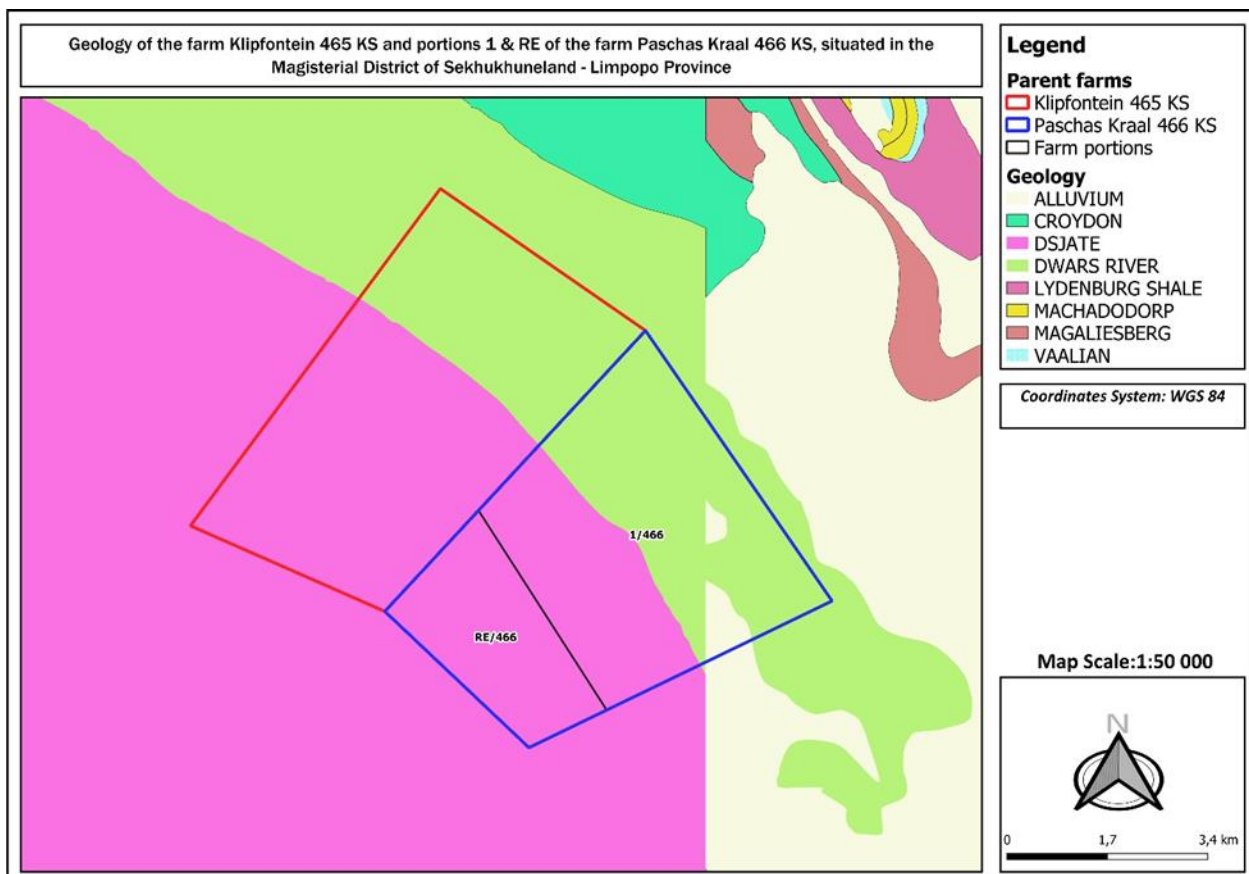


Figure 4: Geology of the application area.

## 2 DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY

### 2.1.1 Listed and specified activities

Table 3: Listed and specified activities

NAME OF ACTIVITY  (E.g. For prospecting - drill site, site camp, ablution facility, accommodation, equipment storage, sample storage, site office, access route etc...etc...etc	Aerial extent of the Activity  Ha or m <sup>2</sup>	LISTED ACTIVITY  (Mark with an X where applicable or affected).	APPLICABLE LISTING NOTICE  (GNR 324, 325, 327)	WASTE MANAGEMENT AUTHORISATION  (Indicate whether an authorisation is required in terms of the Waste Management Act).  (Mark with an X)
Listing 1 & 3- GNR 324 & 327 requiring a Basic Assessment				
Any activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002). <b>Relevance: Vuranok will appoint the same contractor working with Samancor Chrome Limited who will be using traditional pike and shovel mining and the processing will be done at Samancor Chrome washing plant in Steelpoort.</b>	Extent of application area: 5 767.13 ha	X	GNR 327 – Listing 1: Activity No. 20	N/A
The development of a road— (ii) [a road] with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres. <b>Relevance: Access roads will be required</b>	10km	X	GNR 327 Listing Notice 1: Activity 24	N/A
The clearance of an area of 300 square metres or more of indigenous vegetation e. Limpopo i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004; ii. Within critical biodiversity areas identified in bioregional plans; or iii. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning.	20ha	X	GNR 324 Listing Notice 3: Activity 12	N/A
Listing 2- GNR 325 requiring a Scoping EIA				

The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (ActNo. 28 of 2002) <b>Pitting and Bulk Sampling</b>	50000m <sup>3</sup>	X	GNR 325 – Listing 2: Activity 19	N/A
The clearance of an area of 20 hectares or more of indigenous vegetation <b>Relevance: clearing of prospecting area</b>	20 ha	X	GNR 325 Listing 2: Activity 15	N/A

## 2.1.2 Description of the activities to be undertaken

### 2.1.2.1 DESCRIPTION OF PLANNED NON-INVASIVE ACTIVITIES:

(These activities do not disturb the land where prospecting will take place e.g., aerial photography, desktop studies, aeromagnetic surveys, etc.)

The Desktop Study planned for the proposed prospecting programme:

- Data collection, geological interpretation, and projection
- Resource mapping and surface sampling
- Desktop study which involves the collection of existing information or data interpretation and report.
- Planning of logistics of the physical drilling programme;
- Geological mapping sampling and analyses.
- Planning of logistics of the physical drilling programme.

### 2.1.2.2 DESCRIPTION OF PLANNED INVASIVE ACTIVITIES:

(These activities result in land disturbances e.g. sampling, drilling, bulk sampling, etc.)

#### 2.1.2.2.1 Drilling

The principal prospecting activity will be diamond core drilling. Drill rigs, drilling at least 60mm size core will be utilized. This core size provides sufficient sample mass for core lengths from approximately 2.0m upwards for mineral analysis on thin samples. It provides sufficient sample mass for standard observation and analytical work on normal sample widths.

Approximately 20 boreholes are expected to be of an average of 100 meters in Phase 2 and 50 meters in Phase 3 respectively, distributed evenly and proportionately in a grid across the target areas.

Bulk Sampling

Depending on the economic viability, a bulk sample of 50 000 m<sup>3</sup> is planned in the completion of phase 2 and 3 drilling programme. The bulk sample will be removed by means of backactor and dump trucks. The bulk sample will be taken from strategic points of the area after having studied the characteristics of the rocks during the first phase of the prospecting programme.

#### 2.1.2.2.2 Phases 2a and 2b – Exploration Drilling

- Drilling - 20 boreholes will be drilled during this phase with a total estimated depth of 200 meters;
- A minimum of 1 sample per strata/band intersection will be taken. More samples will be required when large variations in mineral quality occur within a stratum. Therefore an estimated 2 samples per borehole is budgeted for;
- Full analyses will be carried out on all samples. Reporting of results is expected within 30 days of submission at laboratory;
- Establishment of the data base, recording of borehole logs, evaluation and profile modeling will be carried out after all the results have been recorded.

#### 2.1.2.2.3 Phase 3 – Bulk sample

- Bulk sample permission in terms of Section 20(2) of the Mineral and Petroleum Resources Act, 2002, (Act no. 28 of 2002) forms part of this application and it is anticipated that a bulk sample will cover a size of 50 000 m<sup>3</sup>. The bulk sample will be extracted from different strategic points of the target area depending on the results of the initial drilling and the understanding of the geological characteristics studied on initial phases.

#### 2.1.2.2.4 Phase 4

- A further 10 boreholes will be drilled during this phase with a total estimated depth of 200 meters;
- A minimum of 1 sample per band intersection will be taken. More samples will be required when large variations in mineral quality occur within a band. Therefore an estimated 2 samples per borehole is budgeted for;
- Mineral analyses will be carried out on all samples and reporting thereof will be expected within 30 days after submission to the laboratory;

Establishment of the data base, recording of borehole logs, evaluation and profile modeling will be carried out after all the results have been recorded..

### 2.1.2.3 DESCRIPTION OF PRE-/FEASIBILITY STUDIES

(Activities in this section includes but are not limited to: initial, geological modeling, resource determination, possible future funding models, etc)

#### 2.1.2.3.1 Phase 5

- Feasibility study
- Environmental studies and reports
- Socio-economic impact assessments
- Permitting and authorizations

#### 2.1.2.3.2 Data Collection from the drilling programme

The recovered core will be described mineralogically in respect of the lithologic horizons intersected and the bands will be described and sampled in economic units according to the recognizable horizons that may be present in the intersections. The sampled core will be analyzed by an accredited laboratory for mineral grade.

#### 2.1.2.3.3 Data Processing

The second phase and fourth phase data collected in this manner will be structured by the technical personnel and then further electronically processed through.

MODELMAKER and MICROSOFT EXCEL software, together with results obtained from no- invasive activities will be utilized. A preliminary set of geological data will be produced at stage 2 followed by detailed study after Phase 4.

The results from the fourth phase drilling and mineral analyses will be processed in a similar way to produce the final prospecting results in a format that can serve as a base for feasibility studies.

### 2.1.2.4 DESCRIPTION OF BULK SAMPLING ACTIVITIES

**This activity requires that an application IN TERMS OF Section 20 of the Act is specifically included in your application for a prospecting Right and cannot be proceeded with if such permission is not specifically granted.**

(Bulk sampling is a sampling technique ONLY- it cannot be used to conduct mining operations. The following table must be completed for Bulk Sampling)

Table 4: **Bulk Sampling Activities**

ACTIVITY		DETAILS
Number of pits/trenches planned		
Dimensions of pits/trenches, per pit/trench	Number of pits/trenches	Length Breadth Depth
	10 (initial cross sections)	100 x 5 x 5 = 2000 m <sup>3</sup> x 10 pits = 2 500m <sup>3</sup>
	10 (follow-up cross-section)	100 x 5 x 5 = 2000 m <sup>3</sup> x 10 pits = 2 500m <sup>3</sup>
Locality		See attached plan
Volume Overburden (Waste)		12 000 m <sup>3</sup>
Volume Ore		50 000 m <sup>3</sup>
Density Overburden		Not applicable
Density Ore		Not applicable
Phase(s) when bulk sampling will be required		Phase 3 and 4
Timeframe(s)		Months 15 -20

Bulk sample permission in terms of Section 20(2) of the Mineral and Petroleum Resources Act, 2002, (Act no. 28 of 2002) forms part of this application and it is anticipated that a bulk sample will cover a size of 50 000 m<sup>3</sup>. The bulk sample will be extracted from different strategic points of the dump depending on the results of the initial drilling

### 2.1.3 Minerals applied for:

Chrome Ore (LG and MG Seams).



Table 5:Prospecting phases and timeline

Phase	Activity (what are the activities that are planned to achieve optimal prospecting)	Skill(s) required (refers to the competent personnel that will be employed to achieve the required results)	Timeframe (in months) forthe activity)	Outcome (What is the expected deliverable, e.g. Geological report, analytical results, feasibility study, etc.)	Timeframe for outcome(dea dline for the expected outcome to be delivered)	What technical expert will sign off on the outcome?(e.g. geologist, mining engineer, surveyor, economist,etc)
OrientationPhase	<u>Non-Invasive Prospecting</u> Desktop study Prospecting Rights	Surveyor, Exploration Geologist	Months 0-6	Extraction of site specific geological map,information and geological report Interpretation of digital data into report Correlation of geophysical and geologicalresults	Month 7	Geologist
Phase 1	<u>Non-Invasive Prospecting</u> Geological mapping Geophysical surveys	Surveyor, Exploration Geologist	Months 7- 12	Geo maps Undertake ground magnetic, gravity, electromagnetic and resistivity surveysreports Rock sample results	Month 13	Geologist
Phase 2a	<u>Invasive Prospecting</u> Diamond Drilling Collation and interpretation ofresults	Geologist, Drilling contractor, Site workforeman, Labourers	month 13-24	Profile Report and initial samples Updating of data base, recording of borehole logs, evaluation and geologicalmodeling.	Month 31	Geologist
Phase 2b	Infill- drilling Collation and interpretation ofresults	Geologist, Drilling contractor, Site workforeman, Labourers	Months 24 - 30	Pre-feasibility study and planning of Phase 3 & 4		
Phase 3	<u>Invasive Prospecting</u> Excavate bulk sample	Geologist, Contractor, Sitework foreman, Labourers	month 31- 44	Detailed grade analyses report	Month 45	Geologist
Phase 4	<u>Invasive Prospecting</u> Further drilling & bulk sampling	Geologist, Drilling & Excavation Contractor, Sitework foreman, Labourers	month 45 – 56	Updating of database, recording of borehole logs, evaluation and geologicalmodeling, geohydrological studies.	Month 57	Geologist
Phase 5	Feasibility, etc.	Geologist, Mining Engineer, Mine Surveyor, Mine Economist, Environmentalist, Social Scientist, etc.	Month 44 -60	Environmental Assessment and rehabilitation, conceptual mine planning, preliminary economic analysis	Month 60	Mining Engineer

### 3 POLICY AND LEGISLATIVE CONTEXT

#### 3.1.1 The South African Constitution

This section provides an overview of the legislative requirements applicable to this project and it includes the Acts, guidelines and policies considered in the compilation of this report. The legislative motivation for this project is underpinned by the Constitution of South Africa, 1996 (Act No. 108 of 1996), which states that:

The State must, in compliance with Section 7(2) of the Constitution, respect, protect, promote and fulfil the rights enshrined in the Bill of Rights, which is the cornerstone of democracy in South Africa. Section 24 of the Constitution:

#### **24. Environment**

*-Everyone has the right-*

- (a) to an environment that is not harmful to their health or well-being; and*
- (b) to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that-*
  - (i) prevent pollution and ecological degradation;*
  - (ii) promote conservation; and*
  - (iii) secure ecologically sustainable development and use of natural resources while promoting a justifiable economic and social development.*

Section 24 of the Constitution of South Africa (Act No. 108 of 1996) requires that all activities that may significantly affect the environment and require authorisation by law must be assessed prior to approval. In addition, it provides for the Minister of Environmental Affairs or the relevant provincial Ministers to identify:

- new activities that require approval;
- areas within which activities require approval; and
- existing activities that should be assessed and reported on.

Section 28(1) of the Constitution of South Africa (Act No. 108 of 1996) states that: *“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”*. If such pollution or degradation cannot be prevented then appropriate measures must be taken to minimise or rectify such pollution or degradation. These measures may include:

- Assessing the impact on the environment;
- Informing and educating employees about the environmental risks of their work and ways of minimising these risks;
- Ceasing, modifying or controlling actions which cause pollution/degradation;
- Containing pollutants or preventing movement of pollutants;
- Eliminating the source of pollution or degradation; and
- Remedying the effects of the pollution or degradation.

**Applicability: Public participation process and consultation at every stage of the EIA phase. A public participation process will be followed and consultations to be done regarding the proposed project. An EMP and awareness plan will be designed according to the issues raised during this process**

### **3.1.2 National Environmental Management Act**

The NEMA Act under sections 24(2), 24(5), 24D and 44, read with section 47A (1) (b) of National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations, 2014 as amended in April 2017, is regarded as one of the important pieces of general environmental legislation as it provides a framework for environmental law reform. The main objective of this act is to ensure that ecosystem services and biodiversity are protected and maintained for sustainable development. Furthermore, Section 28 (1) of the NEMA requires that “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”.

NEMA strives to regulate national environmental management policy and is focussed primarily on co-operative governance, public participation and sustainable development. NEMA makes provisions for co-operative environmental governance by establishing principles for decision making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by Organs of State and to provide for matters connected therewith.

A scoping report must contain the information that is necessary for a proper understanding of the process, informing all preferred alternatives, including location alternatives, the scope of the assessment, and the consultation process to be undertaken through the environmental impact assessment process, and must include-

(a) details of-

- I. *the EAP who prepared the report; and*
- II. *the expertise of the EAP, including a curriculum vitae;*

(b) the location of the activity, including-

- I. *the 21 digit Surveyor General code of each cadastral land parcel;*
- II. *where available, the physical address and farm name;*
- III. *where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;*

(c) a plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is-

- I. *a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or*
- II. *on land where the property has not been defined, the coordinates within which the activity is to be undertaken;*

(d) a description of the scope of the proposed activity, including-

- I. *all listed and specified activities triggered;*
- II. *a description of the activities to be undertaken, including associated structures and infrastructure;*

- (e) a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process;
- (f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;
- (h) a full description of the process followed to reach the proposed preferred activity, site and location within the site, including-
- I. *details of all the alternatives considered;*
  - II. *details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;*
  - III. *a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;*
  - IV. *the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;*
  - V. *the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts-*
    - a) *can be reversed;*
    - b) *may cause irreplaceable loss of resources; and*
    - c) *can be avoided, managed or mitigated;*
  - VI. *the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;*
  - VII. *positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;*
  - VIII. *the possible mitigation measures that could be applied and level of residual risk;*
  - IX. *the outcome of the site selection matrix;*
  - X. *if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and*
  - XI. *a concluding statement indicating the preferred alternatives, including preferred location of the activity;*

**Applicability: Baseline environmental information of the project area will be assessed. Mitigation measures and recommendations where provided according to best practice standards. This scoping report complies with the requirements of the NEMA act.**

### 3.1.3 Mineral and Petroleum Resources Development Act

The MPRDA makes provision, for persons to apply for a prospecting right. A prospecting right granted in terms of the MPRDA is a limited real right in respect of the type of resources and the land to which the permit relates. The holder of a prospecting right is entitled to the rights referred to in the MPRDA or any other law.

The applicant requires a prospecting right and environmental authorisation from the DMR. Acceptance of the application by DMR only permits the applicant to continue with the necessary process and does not constitute authorisation. The acceptance details the outstanding requirements for the application, which includes:

- (a) the submission of an EMP; and
- (b) notification and consultation with IAPs, including landowners or lawful occupiers of land, on which the proposed prospecting is to be conducted;
- (c) Details on how the applicant will substantially and meaningfully expand opportunities for historically disadvantaged persons.

**Applicability: A prospecting right application was lodged with the DMR.**

### 3.1.4 National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004)

The overarching aim of the National Environmental Management: Biodiversity Act, 2004 (NEMBA), within the framework of NEMA, is to provide for:

- *The management and conservation of biological diversity within South Africa as well as for the components of such biological diversity;*
- *The use of indigenous biological resources in a sustainable manner and*
- *The fair and equitable sharing among stakeholders of benefits arising from bioprospecting involving indigenous biological resources.*

As part of its implementation strategy of NEMBA, the National Spatial Biodiversity Assessment was developed. This assessment classifies areas as worthy of protection based on its biophysical characteristics, which are ranked according to priority levels. The approach used for biodiversity planning is systematic and entails the following three key principles:

- *The need to conserve a representative sample of biodiversity pattern, such as species and habitats (the principle of representation);*
- *The need to conserve the ecological and evolutionary processes that allow biodiversity to persist over time (the principle of persistence); and*
- *The need to set quantitative biodiversity targets that quantifies the degree of conservation required for each biodiversity feature in order to maintain functioning landscapes and seascapes.*

Furthermore, the South African National Biodiversity Institute (SANBI) was established by the NEMBA, its purpose being (*inter alia*) to report on the status of the country's biodiversity and the conservation status of all listed threatened or

protected species and ecosystems. NEMBA provides for a range of measures to protect ecosystems and for the protection of species that are threatened or in need of protection to ensure their survival in the wild, including a prohibition on carrying out a “restricted activity” involving a specimen of a listed threatened or protected species without a permit issued in terms of Chapter 8 of the Act. Lists of critically endangered, endangered, vulnerable and protected species have been published and a permit system for listed species has been established.

It is also appropriate to undertake a Biodiversity Impact Assessment for developments in an area that is considered ecologically sensitive, and which requires environmental authorisation in terms of NEMA, with such assessment taking place during the Scoping or EIA phase. The Applicant is therefore required to take appropriate reasonable measures to limit the impacts on biodiversity, to obtain permits if required.

**Applicability: A Biodiversity Impact Assessment study will be required.**

### **3.1.5 National Forest Act, 1998 (Act 84 of 1998)**

The purposes of National Forest Act, 1998 (act 84 of 1998) (NFA) includes *inter alia*:

*(c) provide special measures for the protection of certain forests and trees:*

*(d) promote the sustainable use of forests for environmental, economic, educational, recreational, cultural, health and spiritual purposes.*

**Applicability: Impact and mitigation measures to be implemented for the bulk sampling areas. Tree removal permits may be applicable. This will be assessed in the biodiversity study.**

### **3.1.6 National Environmental Management: Air Quality Act (Act No 39 of 2004)**

Section 28 (1) of NEMA places a general duty of care on any person who causes pollution, to take reasonable measures to prevent such pollution from occurring. The objective of the National Environmental Management: Air Quality Act, 2004 (NEM: AQA) is to regulate air quality to protect, restore and enhance the quality of air in the Republic, taking into account the need for sustainable development. Furthermore, the provision of national norms and standards regulating air quality monitoring, management and the control by all spheres of government determine that specific air quality measures should be adhered to. Dust created during the construction and operational phases of the proposed prospecting could influence air quality and thus make this legislation relevant to this development. Air quality management and mitigation measures during the operational phase will be considered to be a measure to exercise this duty of care, since it aim to minimise volumes of dust emissions emanating from the operational activities.

**Applicability: An air emission license will not be required but air quality monitoring will be implemented.**

### **3.1.7 Conservation of Agricultural Resources Act (Act 43 of 1983)**

The aim of the Conservation of Agricultural Resources Act,1983 (Act 43 of 1983) (CARA) is to provide for control over the utilisation of the natural agricultural resources of the Republic in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants and for matters connected therewith. The

EIA phase of the project will take into account the requirements of CARA as well as determine the potential direct and indirect impacts on agricultural resources as a result of the proposed prospecting development.

**Applicability: Impact and mitigation measures to be implemented for the bulk sampling and vehicles associated with the prospecting.**

**3.1.8 National Environmental Management: Waste Act (Act 59 of 2008)**

The National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (NEM:WA) and Waste Classification and Management Regulations, 2003 (GNR: 634 – 635): To reform the law regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development; to provide for institutional arrangements and planning matters; to provide for national norms and standards for regulating the management of waste by all spheres of government; to provide for specific waste management activities; to provide for the remediation of contaminated land; to provide for the national waste information system; to provide for compliance and enforcement; and to provide for matters connected therewith.

The operational activities associated with the proposed prospecting program shall be in accordance with the requirements of National Environmental Management: Waste Act, 2008 (Act 59 of 2008) (NEM: WA) and Waste Classification and Management Regulations, 2003 (GNR: 634 – 635). The proposed project does not require waste management licencing.

**3.1.9 Occupational Health and Safety Act (Act 85 of 1993)**

The aim of the Occupational Health and Safety Act, 1993 (act 85 of 1993) (OHSA) is to provide for the health and safety of persons at work and for the health and safety of persons in connection with the use of plant and machinery ; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety as well as to provide for matters connected therewith.

Section 8 which deals with the general duties of employers and their employees states that:

- 1) *“Every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of the employees.”*
- 2) *“Without derogating from the generality of an employer's duties under subsection (1), the matters to which those duties refer include in particular:*
  - a. *The provision and maintenance of systems of work, plant and machinery that, as far as reasonably practicable, are safe and without risk to health;*
  - b. *Taking such steps as may be reasonably practicable to eliminate or mitigate any hazard or potential hazard to the safety and health of employees;*
  - c. *Making arrangement for ensuring as far as reasonably practicable, the safety and absence of risks to health relating to the production, processing, use, handling, storage and transport of articles or substances;*
  - d. *Establishing, as far as reasonably practicable, what hazards to the health or safety of persons are attached to any work which is performed, any article or substance which is produced, processed, used, handled, stored or transported and any plant or machinery which is used in his business, and he shall, as far as reasonably*

*practicable, further establish what precautionary measures should be taken with respect to such work, article, substance, plant or machinery in order to protect the health and safety of persons, and he shall provide the necessary means to apply such precautionary measures;*

- e. Providing such information, instruction, training and supervision as may be necessary to ensure, as far as reasonably practicable, the health and safety of employees;*
- f. As far as reasonably practicable, not permitting any employee to do any work or to produce, process, use, handle, store, or transport any article or substance or to operate any plant or machinery, unless precautionary measures contemplated in paragraph (b) and (d), or any precautionary measures which may be prescribed, have been taken;*
- g. Taking all necessary measures to ensure that the requirements of this act are complied with by every person in his employment or on the premises under his control where plant and machinery is used;*
- h. Enforcing such measures as may be necessary in the interest of health and safety;*
- i. Ensuring that work is performed, and that plant and machinery is used under the general supervision of a person trained to understand the hazards associated with it and who has the authority to ensure that precautionary measures taken by the employer are implemented and*
- j. Causing any employees to be informed regarding the scope of their authority as contemplated in section 37(1)(b).”*

### **3.1.10 National Heritage Resources Act**

#### **National Heritage Resource Act, 1999 (Act No. 25 of 1999)**

The proposed chrome prospecting project by Vuranok must comply with the requirements stipulated in the National Heritage Resources Act, 1999 (Act 25 of 1998) (NHRA). The NHRA legislates the necessity for cultural and Heritage Impact Assessment (HIA) in areas earmarked for development, which exceed 0.5 ha or linear development exceeding 300 metres in length. The Act makes provision for the potential destruction to existing sites, pending the archaeologist's recommendations through permitting procedures. Permits are administered by the South African Heritage Resources Agency (SAHRA).

Section 38(1) of NHRA, subject to the provisions of subsections (7), (8) and (9), requires that any person who intends to undertake a development categorised as:

- (a) The construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
- (b) The construction of a bridge or similar structure exceeding 50m in length;*
- (c) Any development or other activity which will change the character of a site-*
  - (i) Exceeding 5 000 m<sup>2</sup> in extent; or*
  - (ii) Involving three or more existing erven or subdivisions thereof; or*



*(iii) Involving three or more erven or divisions thereof which have been consolidated within the past five years; or*

*(iv) The costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;*

*(d) The re-zoning of a site exceeding 10 000 m<sup>2</sup> in extent; or*

*(e) Any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*

Archaeological impact assessments (AIAs) are often commissioned as part of the heritage component of an EIA and are required under Section 38(1) of the NHRA of 1999, Section 38(8) of the NEMA and the MPRDA.

The process of archaeological assessment usually takes the form of:

1. A scoping or initial pre-assessment phase where the archaeologist and developer's representative establish the scope of the project and terms of reference for the project;
2. A Phase 1 AIA;
3. A Phase 2 archaeological mitigation proposal; and
4. A Phase 3 heritage site management plan.

#### **Phase 1: Archaeological Impact Assessment**

A Phase 1 AIA generally involves the identification and assessment of sites during a field survey of a portion of land that is going to be affected by a potentially destructive or landscape altering activity. The locations of the sites are recorded, and the sites are described and characterised. The archaeologist assesses the significance of the sites and the potential impact of the development on the sites and makes recommendations. It is essential that the report supply the heritage authority with sufficient information about the sites to assess, with confidence, whether or not it has any objection to a development, indicate the conditions upon which such development might proceed and assess which sites require permits for destruction, which sites require mitigation and what measures should be put in place to protect sites that should be conserved.

Minimum standards for reports, site documentation and descriptions are clearly set out by the SAHRA and supported by the Association of Southern African Professional Archaeologists (ASAPA). The sustainable conservation of archaeological material (*in situ*) is always the best option for any sites that are deemed to be of importance. The report needs to indicate which sites these are, explain why they are significant and recommend management measures. In certain kinds of developments which involve massive intervention (prospecting, dam construction, etc.), it is not possible to reach a conservation solution other than to develop a programme of mitigation which is likely to involve the total or partial "rescue" of archaeological material and its indefinite storage in a place of safety.

#### **Phase 2: Archaeological Mitigation Proposal**

If the Phase 1 report finds that certain archaeological sites in a development area are of low significance, it is possible to seek permission from the heritage authority for their destruction. The final decision is then taken by the heritage resources authority, which should give a permit or a formal letter of permission, or in the case of an EIA issue a comment allowing destruction.

Phase 2 archaeological projects are primarily based on salvage or mitigation excavations preceding development that will destroy or impact on a site. This may involve collecting of artefacts from the surface, excavation of representative samples of the artefact material to allow characterisation of the site and the collection of suitable materials for dating the sites. The purpose is to obtain a general idea of the age, significance and meaning of the site that is to be lost and to store a sample that can be consulted at a later date for research purposes. Phase 2 excavations should be done under a permit issued by SAHRA, or other appropriate heritage agency, to the appointed archaeologist. Permit conditions are prescribed by SAHRA, or other appropriate heritage agencies. Conditions may include as minimum requirements reporting back strategies to SAHRA, or other appropriate heritage agencies and/or deposition of excavated material at an accredited repository.

Should further material be discovered during development, this must be reported to the archaeologist or to the heritage resources authority and it may be necessary to give the archaeologist time to rescue and document the findings. In situations where the area is considered archaeologically sensitive the developer will be asked to have an archaeologist monitor earth-moving activity.

### **Phase 3: Management plan for conservation and planning, site museums and displays**

On occasion Phase 2 may require a Phase 3 program involving one of the following:

- The modification of the site;
- The incorporation of the site into the development itself as a site museum;
- A special conservation area; or
- A display.

Alternatively, it is often possible to re-locate or plan the development in such a way as to conserve the archaeological site or any other special heritage significance the area may have. For example, in a wilderness or open space areas where such sites are of public interest, the development of interpretative material is recommended since it adds value to the development. Permission for the development to proceed can be given only once the heritage resources authority is satisfied that measures are in place to ensure that the archaeological sites will not be damaged by the impact of the development or that they have been adequately recorded and sampled. Careful planning can minimise the impact of archaeological surveys on development projects by selecting options that cause the least amount of inconvenience and delay. The process as explained above allows the rescue and preservation of information relating to our past heritage for future generations. It balances the requirements of developers and the conservation and protection of our cultural heritage as required of SAHRA and the provincial heritage resources authorities.

**Applicability: Heritage and palaeontology assessment will be conducted Proper management and mitigation measures will be recommended in the EIAR including chance find protocols.**

### **3.1.11 National Water Act, 1998 (Act No.36 of 1998)**

The National Water Act, 1998 (Act 36 of 1998) (NWA) aims to provide management of the national water resources to achieve sustainable use of water for the benefit of all water users. This requires that the quality of water resources is protected as well as integrated management of water resources with the delegation of powers to institutions at the regional or catchment level.

The purpose of the NWA is to ensure that the nation's water resources are protected, used, developed, conserved, managed and controlled in ways, which take into account:

- Meeting the basic human needs of present and future generations;
- Promoting equitable access to water;
- Redressing the results of past racial discrimination;
- Promoting the efficient, sustainable and beneficial use of water in the public interest;
- Facilitating social and economic development;
- Providing for growing demand for water use;
- Protecting aquatic and associated ecosystems and their biological diversity;
- Reducing and preventing pollution and degradation of water resources;
- Meeting international obligations and
- Managing floods and droughts.

Section 21 of the National Water Act, 1998 (No. 36 of 1998) (NWA) lists water uses for which a Water Use License (WUL) must be obtained. Uses with potential relevance to the proposed prospecting include:

*Section 21 (a) Taking of water from a water resource (surface or groundwater).*

*Section 21 (b) Storing of water (not containing waste).*

*Section 21 (c) Impeding or diverting the flow of water in a water course.*

*Section 21 (e) Engaging in a controlled activity:*

*Section 21 (i) altering the beds, banks, course or characteristics of a water course.*

The Department of Water and Sanitation (DWS) has published various General Authorizations (GA) in terms of Section 39 of the NWA which, replace the need for a water user to apply for a license in terms of the NWA for specific activities. The GAs have been revised and amended at different times.

The GAs set out specific conditions under which a water use may occur without a license and also specify the conditions or thresholds at which a user must register the use with the DWS.

**Due to the nature of activities no water use license will be required however mitigation measures for protection of water resources will be implemented.**

**Other Applicable National and Provincial legislations**

- Mine Health and Safety Regulations ("MHSR"), published under the Mine Health and Safety Act 29 of 1996 ("MHSA") (relevant buffer zones to be implemented);
- Bioregional Plans Under Section 47(2) And Section 100(1) of the National Environmental Management: Biodiversity Act 10 Of 2004
- Sekhukhune District Bioregional Plan: The bioregional plan for the Sekhukhune District Municipality is based on the Limpopo Conservation Plan v2 (Desmet et al., 2013)
- Hazardous Substances Act, 1973 (Act No. 15 of 1973);
- Roads Ordinance Amendment Act, 1998 (Act No. 17 of 1998);
- South African National Roads Agency Limited and National Roads Act, 1998 (Act No. 7 of 1998);
- National Environmental Management: Waste Act, 2008;
- List of waste management activities promulgated in GN No. 921 of 29 November 2013 (as amended);
- National Waste Information Regulations promulgated in GN No. R. 625 of 13 August 2012;
- National Norms and Standards for the Storage of Waste promulgated in GN No. 926 of 29 November 2013; and
- Waste Classification and Management Regulations promulgated in GN No. R. 634 of 23 August 2013.

The National Environmental Management: Protected Areas Act 57 of 2003 (NEMPAA)	Identification of protected areas and ecological support areas.	Assessment and mitigation of direct impacts and cumulative impacts on protected areas.
Convention of Biological Diversity (CBD)	South Africa is a signatory to the CBD, which requests countries to: <ul style="list-style-type: none"> <li>• Establish a system of protected areas to conserve biodiversity;</li> <li>• Develop guidelines for the selection, establishment and management of protected areas;</li> </ul>	Assessment and mitigation of direct impacts and cumulative impacts on biodiversity.
Biosphere reserves: The Seville Strategy and the Statutory Framework of the World Network. UNESCO, Paris (UNESCO, 1996)	The primary objectives of biosphere reserves are the conservation of biological diversity; sustainable use and fair and equitable sharing of benefits arising from the utilization of genetic resources (in accordance with the Convention on Biological Diversity).	

**3.1.12 Applicable Legislation and Approvals Required**

The proposed chrome prospecting project requires the following main approvals before the project may commence:

- Prospecting right and Environmental authorization from the Department of Mineral Resources in terms of the MPRDA (Act 28 of 2002) and National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations as amended.
- Approval of an environmental management programme, in terms of the **Mineral and Petroleum Resources Development Act** (No 28 of 2002) (MPRDA), by the Department of Mineral Resources.

In addition to the main legal approvals, the following approvals will be required:

- The South African Heritage Resources Agency needs to approve a heritage assessment, to be conducted as part of the overall EIA process, in terms of the **National Heritage Resources Act** (No 25 of 1999). Permits will be required for the destruction or removal of any heritage resources affected by the development if any.
- Should protected species be affected, permits will have to be obtained for their removal, relocation or destruction. This is in terms of the **National Environmental Management: Biodiversity Act** (No 10 of 2004).

## 4 PROJECT ALTERNATIVES

Feasible and reasonable alternatives must be identified for a development as required by the NEMA EIA Regulations and applicable to EIA. Each alternative is to be accompanied by a description and comparative assessment of the advantages and disadvantages that such development and activities will pose on the environment and socio-economy. When no feasible and/or reasonable alternatives could be identified and investigated in terms of a comparative assessment during the Scoping phase, the EIAR will then not contain a section with alternative. Alternatives forms a vital part of the initial assessment process through the consideration of modifications in order to prevent and/or mitigate environmental impacts associated with a particular development. Alternatives are to be amended when the development's scope of work is amended. It is vital that original as well as amended alternative identification, investigation and assessment together with the generation and consideration of modifications and changes to the development and activities are documented.

The EIA Regulations defines alternatives as the different means of meeting the general purpose and requirements of the activity, which may include alternatives to:

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

Although an array of alternatives could be investigated for each project, such alternatives will not necessarily be applicable to each project and/or project phase. However, there must always be strived to seek alternatives that maximises efficient and sustainable resource utilisation and minimise environmental impacts.

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

### 4.1.2 General Geology.

The Nylstroom Supergroup

The properties are found within the Nylstroom Supergroup which is informally divided into upper and lower parts and the deposition of the lower formation is thought to have been penecon-temporaneous with the intrusion of the Bushveld Complex granites. It consist of intensely sheared and jointed arenites and rudites. With no Bushveld granites clasts. The upper part consists chiefly of fractured arenites and rudites with intercalated lutities.

It has a thick lava unit at its base and several other lava flows higher up the sequence. It also includes a quartz porphyry. The iron ore formations underwent contact metamorphism during the intrusion of the Bushveld Complex and region

metamorphism during the Waterberg tectonism, the latter event forming the talc-hematite and carbonate- hematite rocks.

There are several mines in adjacent farms that are already operating and extracting chrome. Sefateng, Bauba Platinum, Afarak, etc are some examples of the mines in the adjacent area.

#### **4.1.2.1 Minerals applied for**

No alternative activities were considered for the project and this assessment as the geology is indicative of Chrome Ore (LG and MG Seams).

#### **4.1.3 Feasible alternatives**

##### **4.1.3.1 Location**

No alternatives have been investigated in terms of location due to the geological formation of the area. Should the proposed prospecting site be relocated to another location the applicant will not be able to utilise the resource potential.

##### **4.1.3.2 Activity**

In terms of the technologies proposed, these have been chosen based on the long-term success of these types in the prospecting and mining industry. The prospecting activities proposed in the Prospecting Works Programme is dependent on the preceding phase as previously discussed, therefore no alternatives are indicated, but rather a phased approach of trusted prospecting techniques.

##### **4.1.3.3 Design or layout**

Based on the underlying geology the proposed pitting and bulk sampling areas follow the ore bearing lithology hence the selected areas are optimal for resources evaluation.

##### **4.1.3.4 Technological**

**Recycling:** The prospecting project will in its operational phase implement recycling policies and measures for optimal utilisation of resources and minimisation of waste generation.

**Stores and Material:** A containerized storage for waste management on the vessels will be used, to hold a limited store of high use items such as oils, grease, air filters etc. These stores will meet the requirements of the various health and safety and environmental legislation.

**Electricity:** Electricity is sourced from a mobile generator.

**Water:** Potable water will be stored on site.

**Access Roads:** The existing access tracks on site will be used to access the site, should new roads be developed they will be covered under the listed activity.

**Energy:**

Fuel types will be investigated as well as energy conserving measures will be implemented i.e. prospecting times will be during the day to save on using lights in the evening.

**4.1.3.5 Operational Aspects**

Due to the nature of the prospecting activities, no permanent services in terms of water supply, electricity, or sewer age facilities are required. Vuranok intends to make use of standard prospecting methods that enable safe prospecting which has the having the lowest risk of causing health risks or environmental degradation. Impact associated with the bulk sampling operations will be managed through the implementation of a management plan, developed as part of the application for authorisation and rehabilitation of the bulk sampled areas.

**4.1.4 No Project Alternative**

Not undertaking the prospecting will prevent disturbances and potential impacts to the natural environment as described in this assessment. These impacts are mostly limited in extent and duration, but some are potentially high risk while they occur.

Not undertaking the prospecting activity will lead to sterilisation of resources as well as the potential socio-economic benefits that will arise with this opportunity.

**4.1.5 Need and desirability of the proposed activities.**

Prospecting leads to mining where there are enough resources. Mining is of great importance to the South African economy. There is a need that the environment is left in a safe manner that is not harmful to the neighbouring community. The project will stimulate the local and regional economy. The project will create jobs both skilled, semi-skilled and unskilled. The aim of the strategic focus area is to create an economically enabling environment in which investment can grow and jobs can be created. Various initiatives and programmes are identified which will aid to stimulate economic growth and create more employment opportunities.

The Project should be implemented in line with the relevant development plans and motivations for small scale miners to grow within the mining industry. Mitigation measures are aimed at lessening negative consequences of the proposed operation. The mitigation measures include designs and management practises that will be embarked on, to prevent the identified impacts on the social, cultural and environmental aspects.

Opportunities that will arise from the prospecting are as follows but not limited to:

- Development of small scale miners and employment creations;



- Constant demand on the market for chrome
- Establishment of a permanent working group between the Municipality and the managers responsible from developing local economic development initiative;
- Encourage local SMME's and entrepreneurs to take advantage of procurement.

When considering an application for Environmental Authorisation (EA), the competent authority must comply with section 24O of the National Environmental Management Act, No 107 of 1998 (NEMA), and must have regard for any guideline published in terms of section 24J of the Act and any minimum information requirements for the application. This includes this need and desirability guideline. Additionally, the Environmental Impact Assessment (EIA) regulations require environmental assessment practitioners (EAPs) who undertake environmental assessments, to have knowledge and take into account relevant guidelines. A person applying for an EA must abide by the regulations, which are binding on the applicant.

This guideline contains information on best practice and how to meet the peremptory requirements prescribed by the legislation and sets out both the strategic and statutory context for the consideration of the need and desirability of a development involving any one of the NEMA listed activities. Need and desirability is based on the principle of sustainability, set out in the Constitution and in NEMA, and provided for in various policies and plans, including the National Development Plan 2030 (NDP). Addressing the need and desirability of a development is a way of ensuring sustainable development – in other words, that a development is ecologically sustainable and socially and economically justifiable – and ensuring the simultaneous achievement of the triple bottom-line. The Guideline sets out a list of questions which should be addressed when considering need and desirability of a proposed development. These are divided into questions that relate to ecological sustainability and justifiable economic and social development. The questions that relate to ecological sustainability include how the development may impact ecosystems and biological diversity; pollution; and renewable and non-renewable resources. When considering how the development may affect or promote justifiable economic and social development, the relevant spatial plans must be considered, including Municipal Integrated Development Plans (IDP), Spatial Development Frameworks (SDF) and Environmental Management Frameworks (EMF). The assessment reports will need to provide information as to how the development will address the socio-economic impacts of the development, and whether any socio-economic impact resulting from the development impact on people's environmental rights. Considering the need and desirability of a development entails the balancing of these factors.

The identified specialist will use the following to assess the impacts of the proposed projects on the following aspects to determine the recommendation of the project go-ahead in terms of need and desirability:

- “securing ecological sustainable development and use of natural resources”
- How will this development (and its separate elements/aspects) impact on the ecological integrity of the area?

- How were the following ecological integrity considerations taken into account?:
  1. Threatened Ecosystems
  2. Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure
  3. Critical Biodiversity Areas (“CBAs”) and Ecological Support Areas (“ESAs”),
  4. Conservation targets,
  5. Ecological drivers of the ecosystem,
  6. Environmental Management Framework,
  7. Spatial Development Framework, and
  8. Global and international responsibilities relating to the environment (e.g. RAMSAR sites, Climate Change, etc.)
- How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts
- How will this development pollute and/or degrade the biophysical environment? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?
- What waste will be generated by this development? What measures were explored to firstly avoid waste, and where waste could not be avoided altogether, what measures were explored to minimise, reuse and/or recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?
- How will this development disturb or enhance landscapes and/or sites that constitute the nation’s cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?
- How will this development use and/or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?

- How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and/or impact on the ecosystem jeopardise the integrity of the resource and/or system taking into account carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts?
- Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e. de-materialised growth)? (note: sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life)
- Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used (i.e. what are the opportunity costs of using these resources this the proposed development alternative?)

Bulk samples extracted under the scenario described above in South Africa should fall within the definition provided in Section 20(1) of the MPRDA, and it should not be necessary to get permission in terms of Section 20(2) of the Act to remove and dispose of minerals. However, in view of the experience of application of the law by the Department of Minerals Resources, it would however be wise to apply for the Section 20(2) permission simultaneously with the application for a prospecting right.

## **5 PUBLIC PARTICIPATION (Refer to Appendices for proof of preliminary consultation)**

### **5.1.1 Public Participation Process to be followed**

This section of the report provides an overview of the tasks undertaken for the PPP to date. All PPP undertaken is in accordance with the requirements of the EIA Regulations (2021 as amended). It further provides an outline of the next steps in the PPP and makes recommendations for tasks to be undertaken during the environmental assessment phase of the environmental authorisation process.

The PPP tasks conducted for the proposed project to date include:

1. Identification of key Interested and Affected Parties (affected and adjacent landowners) and other stakeholders (organs of state and other parties);
2. Formal notification of the application to key Interested and Affected Parties (all adjacent landowners) and other stakeholders;
3. Consultation and correspondence with I&AP's and Stakeholders and the addressing of their comments; and
4. Newspaper adverts.

#### **5.1.1.1 Landowner consent**

VCR representatives have been in contact with both Maesela Manotwane Traditional Council and Swazimnyane Traditional Council respectively with regards to a meeting to discuss terms and letters of no objection with regards to this application. As of now, dates are yet to be determined.

### **5.1.2 I&AP and Stakeholder identification, registration and the creation of an electronic database**

Public Participation is the involvement of all parties who are either potentially interested and or affected by the proposed development. The principle objective of public participation is to inform and enrich decision-making. This is also its key role in this Environmental Impact Assessment (EIA) process.

Interested and Affected parties (I&APS) representing the following sectors of society has been identified:

- National, provincial and local government;
- Agriculture, including local landowners;
- Community Based Organisations;
- Non-Governmental Organisations;
- Water bodies;
- Fisheries;
- Tourism;
- Industry and mining;
- Commerce; and
- Other stakeholders.

### **5.1.3 Formal notification of the application to key Interested and Affected Parties (adjacent landowners) and other stakeholders**

The project was announced as follows:

#### 1. Newspaper advertisement

An advertisement was placed in Sekhukhune Times in English announcing the release of the scoping report and the project announcement. The local newspaper published the advert on the 10<sup>th</sup> of September 2021.

#### 2. Site notice placement

To inform surrounding communities and adjacent landowners of the proposed development, site notices were erected on site and at visible locations close to the site. Site Notices were placed near the project area on the 10<sup>th</sup> of September 2021.

#### 3. Written notification

I&AP's and other key stakeholders were notified of the project. A background information document was sent out to the identified I&AP's. The draft scoping report is available for comment for at least 30 days 10<sup>th</sup> of September 2021 to the 11<sup>th</sup> of October 2021.

#### 4. Background Information Document

A Background Information Document (BID) in English was distributed (on the 10<sup>th</sup> of September 2021). The BID provides information concerning the proposed project and invites IAPs to register and to attend the public meeting. IAPs should distribute the documents to other parties who may be interested or affected by the project.

#### 5. Public Meeting

##### **PUBLIC PARTICIPATION MEETINGS**

##### ➤ MEETING 1: Date: 08 October 2021

Time: 10:00 -12:00

Venue: Swazimnyane Traditional Council Hall

##### ➤ MEETING 2: Date: 08 October 2021

Time: 14:00 -16:00.

### **5.1.4 Consultation and correspondence with I&AP's and Stakeholders and the addressing of their comments (continuous).**

To date there has been a few acknowledgements from I&APs, queries or registration requests have been received from stakeholders. Refer to the appendices.

#### **5.1.5 Release of the revised and amended Scoping Report to I&AP's and stakeholders for review and comment.**

This scoping report was released to the public for public review and comment. All stakeholders and I&AP's were notified of the report's availability for comment for 30 days from the 10th of September 2021 to the 11<sup>th</sup> of October 2021

Additional electronic and or hard copies were made available to interested and affected parties and stakeholders who request them.

Hard copies were available at:

- Fetakgomo Tubatse Local Municipality and local Library.

#### **5.1.6 Next Phases of the Public Participation Process**

All comments and responses received and sent throughout the entire process will be updated and included in the comments and responses report which will be submitted to the Department of Mineral Resources. Note that this PPP Report shall be updated at each phase as required.

The draft and final EIAR/EMPr will be released for public review for 30 days each excluding public holidays. A final Consultation report with stakeholder comments from each phase will be submitted.

#### **5.1.7 Summary of issues raised by I&AP's**

All comments and responses received and sent throughout the entire process will be updated and included in the comments and responses report which will be submitted to the Department of Mineral Resources. Note that this PPP Report shall be updated at each phase as required.

## **6 BASELINE RECEIVING ENVIRONMENT**

### **6.1.1 Regional Setting**

This chapter provides a description of the biophysical and socio-economic environment likely to be affected by the proposed project in the study area.

The Fetakgomo Tubatse Local Municipality was established and officially proclaimed in terms of Section 12 Notice Limpopo Provincial Gazette no. 2735, titled: "Notice in terms of s12 of the Local Government: Municipal Structures Act, 1998 (Act 117 of 1998): Disestablishment of Existing Municipalities and Establishment of New Municipalities", dated 22nd July 2016 issued by the Member of the Executive Council (MEC) for local government in Limpopo Province. The municipality was formed as a sequel to an amalgamation between the former Fetakgomo Local Municipality and the former Greater Tubatse Municipality, which municipalities were established after the 2000 Local Government Elections as an outflow of the municipal demarcation board. The amalgamation was given a force of law in the aftermath of the 2016 Local Government Elections, which municipal elections were held on the 03rd August 2016. Both the former FTM and former GTM were classified as categories B municipalities due to their spatial and economic characteristics.

Its municipal boundaries have been determined in the Demarcation Notice published in Gazette no. 2629 dated 11 November 2015. The MDB (Municipal Demarcation Board) Circular 8/2015: Redetermination of Municipal Boundaries in terms of Section 21 of Local Government: Municipal Demarcation Act, 1998, has re-determined the municipal boundaries of Fetakgomo Tubatse Local

Municipality by amalgamating the former municipal areas of FTM (Lim 474) and GTM (Lim 475) into the boundaries of the new municipal area. 4590001. The Fetakgomo Tubatse Local Municipality is located north of N4 highway, Middleburg, Belfast and Mbombela; and east of the N1 highway; Groblersdal and Polokwane. The municipal area of jurisdiction covers approximately 4550.001105 square kilometres or 45500.1105 ha in size. The area is known as the middelveld as it is located between the Highveld and lowveld regions. It is located within the Sekhukhune District Municipality (SDM) of the Limpopo Province.

The political governance of the municipality, Fetakgomo Tubatse Local Municipality, is operated on a collective executive system combined with a ward participatory system. The municipality has a total of 39 wards, making it the third (03) largest municipality in the Limpopo Province in terms of wards after Polokwane with 45 wards and Thulamela with 41 wards. The municipality has a total of 77 councillors, of these, 39 are ward councillors while 38 were proportionally elected. The Executive Committee of the municipality is led by the Mayor while the municipal Speaker presides over the Council in terms of Section 37 and 49 of the Local Government: Municipal Structures Act 117 of 1998 respectively.

The municipality comprises approximately 342 villages. The municipality is largely dominated by rural landscape with only 06 (six) proclaimed townships. Like most rural municipalities in the Republic of South Africa, Fetakgomo Tubatse Local

Municipality is characterised by weak economic base, inadequate infrastructure, major service backlogs, dispersed human settlements and high poverty levels. This led to description of various municipal categorisation, for example, in its 'State of Local Government in South Africa: Overview Report, the Department of Cooperative Governance (CoG) (2009:22) describes category B4 municipalities as those municipalities which are mainly rural, located in economically depressed areas, consequently having difficulties in attracting and retaining skilled managers/professionals and are struggling from a revenue generation perspective. As earlier alluded to, the portions the rural heritage of the municipality in terms of which settlements are far apart makes the provision and maintenance of services very costly and/or exorbitant. Some of these areas are too small to attain the economic threshold required to provide social facilities in a cost-effective manner. The following map indicates the location of Fetakgomo Tubatse Local Municipality government municipality in Limpopo Province:

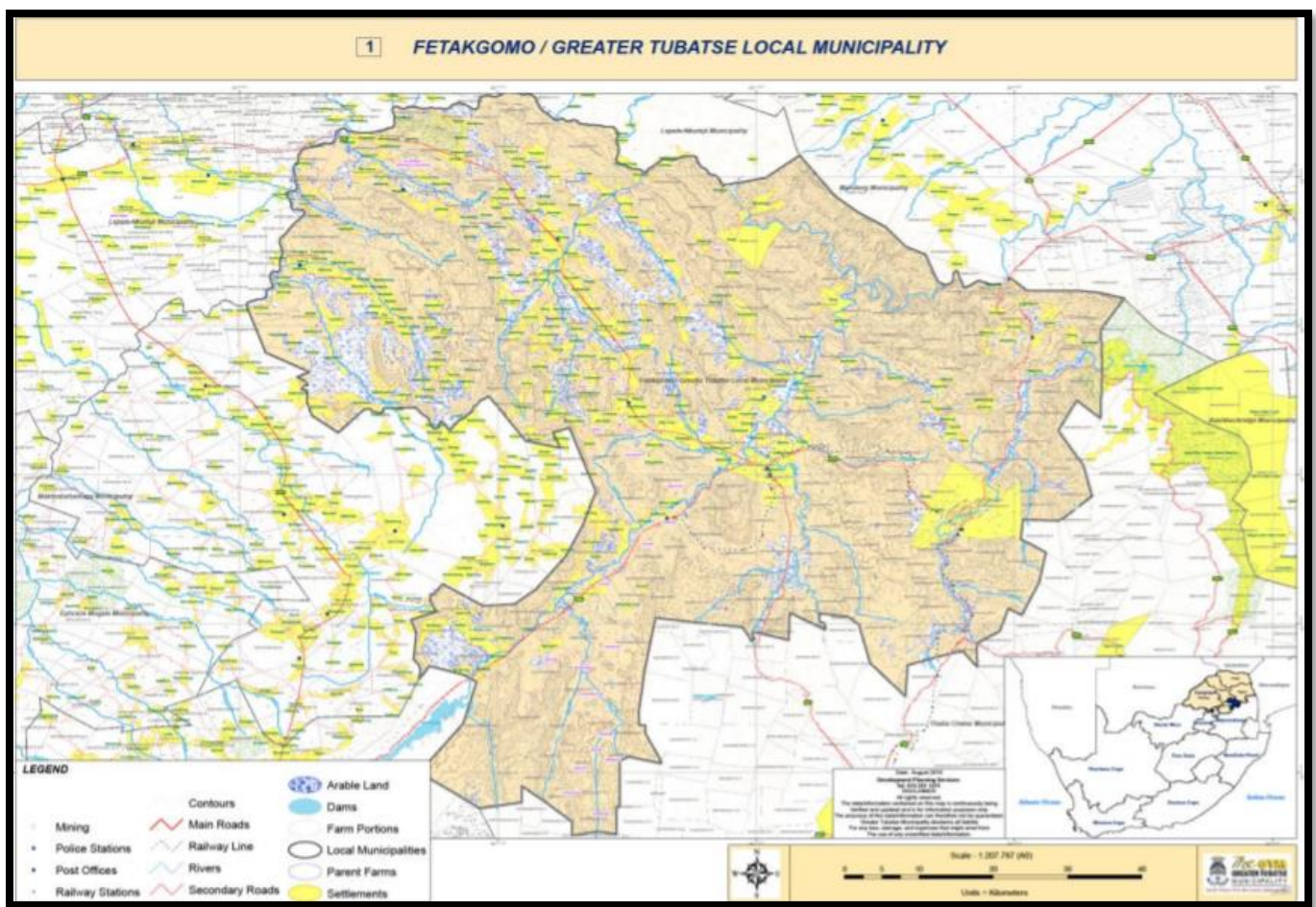
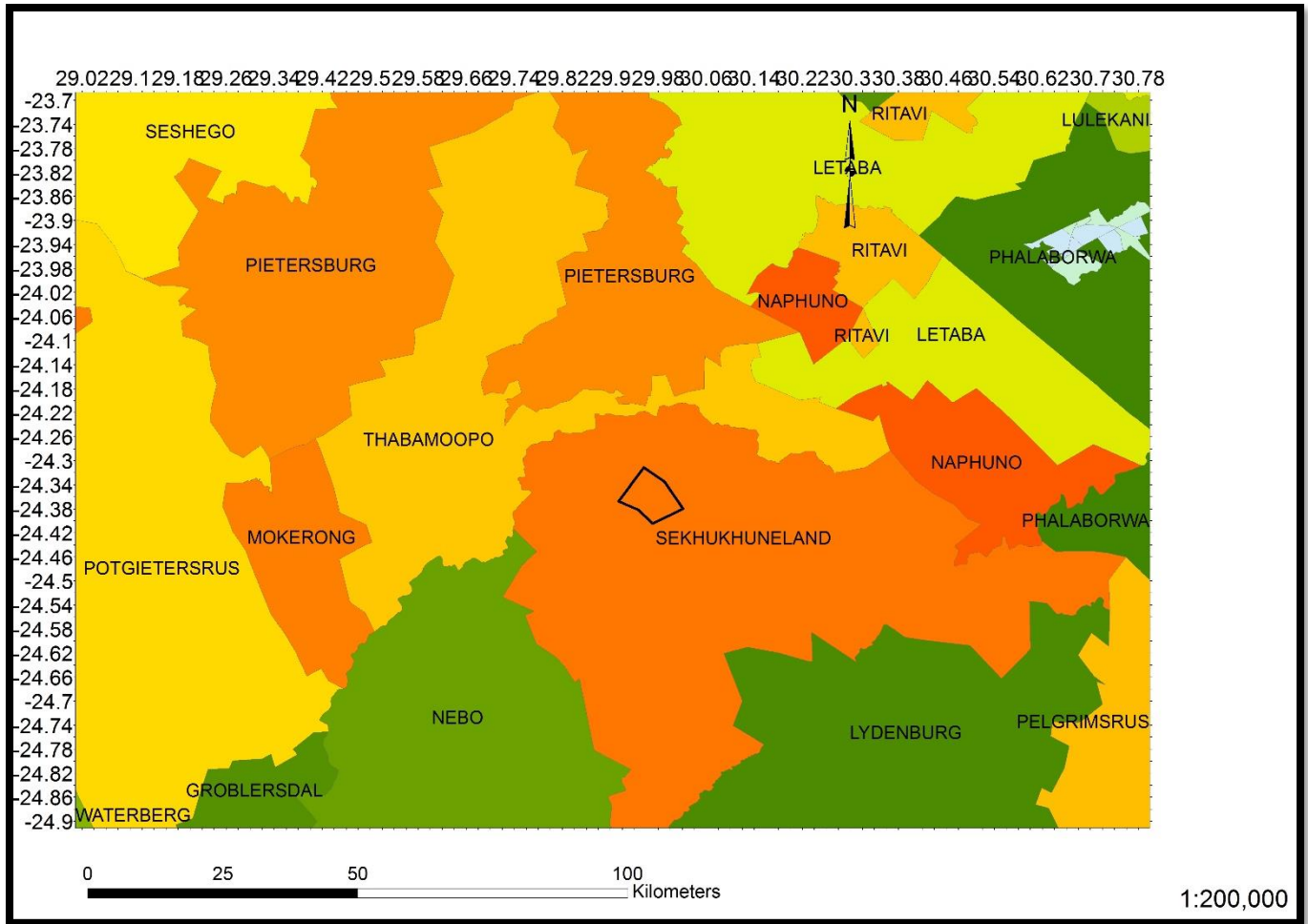


Figure 5: Municipality Map

### 6.1.2 Climate

In the Sekhukhune Plains Bushveld the average rainfall varies between 400 and 600mm per annum. Temperatures varies between 37.3°C and -0.9°C (Mucina and Rutherford, 2006).





**Figure 6: Municipality Map Sekhukhune**

### 6.1.3 Air Quality

The air quality of the study area is mostly influenced by activities from mining operations, farming activities, domestic fires, vehicle exhaust emissions and dust entrained by vehicles. These emission sources vary from activities that generate relatively coarse airborne particulates (such as farmland preparation, dust from paved and unpaved roads) to fine PM such as that emitted by vehicle exhausts, diesel power generators and dryers.

Emissions from unpaved roads constitute a major source of emissions to the atmosphere in South Africa. Dust emissions from unpaved roads are a function of vehicle traffic and the silt loading on the roads. Emissions generated by wind erosion are dependent on the frequency of disturbance of the erodible surface. Every time that a surface is disturbed e.g. by mining, agriculture and/or grazing activities, its erosion potential is restored.

### 6.1.4 Geology

Geology influences the topography of an area, as well as its soil types and its potential for agriculture. Usually, there is more than one rock type for each rock formation. Fetakgomo Tubatse Local Municipality is in the eastern part of the Bushveld Igneous Complex and the Transvaal geological system and as a result, it is underlain by sedimentary and volcanic rock formations. The municipal area is covered by quite several geological elements; however, Gabbro covers the largest area of the municipality as it covers approximately 25.9% of the municipal area, followed by Shale covering approximately 22.1% of the area. The third element is Norite which covers over 9% of the municipal area. Due to its geological composition, the municipal area is characterised by steep rising mountains. The associated engineering impact of Shale includes expansive clay; low shear strength; high settlement; slaking on exposure; semi or impervious soil; dispersive soil; and poor compaction or workability. Norite is part of the basic igneous rocks and has similar engineering impacts as Shale i.e. expansive clay; low shear strength; semi to impervious soil; and poor compaction or workability. Other impacts associated with Norite are unstable slopes and uneven bedrock surface (The Department of Public Works South Africa, 2007).

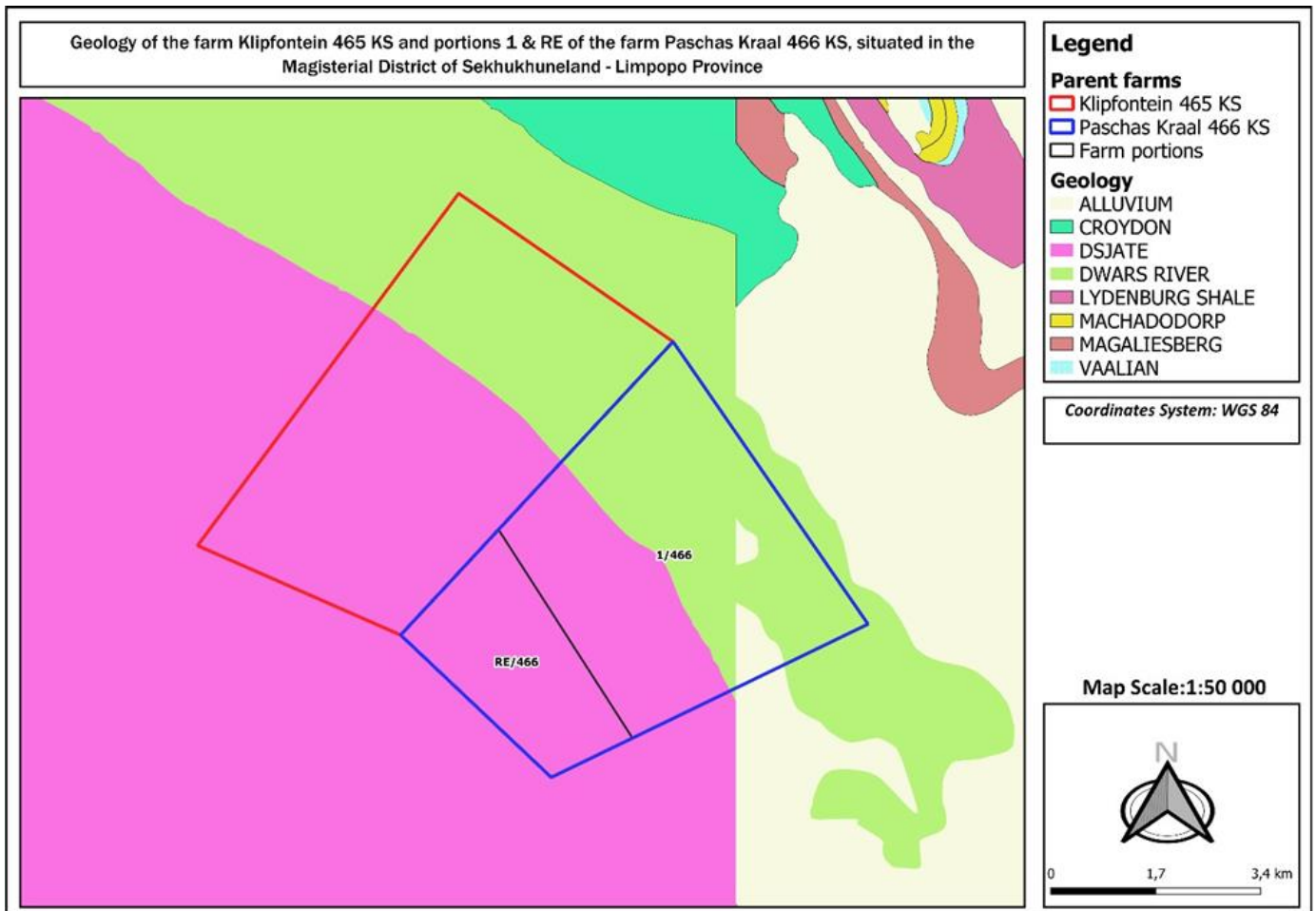


Figure 7: Geology of the application area.

### 6.1.5 Fauna and Flora

The project falls within one vegetation unit, namely the Sekhukhune Mountain Bushveld. Bulk of the mining area occurs in the Sekhukhune Mountain Bushveld. This vegetation type is typical in the Limpopo and found on the mountains and undulating hills above the Sekhukhune plains. The altitude varies from 800 m to 1600 m above sea level. Sekhukhune Mountain Bushveld vegetation is dry, open microphyllous and broad-leaved Savanna on hills and mountain slopes. The vegetation types within the Sekhukhune Mountain Bushveld are Mixed Bushveld and Sourish Mixed Bushveld (Acock, 1988). The open Bushveld is associated with ultramafic soils on southern aspects, with high diversity of edaphic specialists while the Bushveld of the slopes is taller than that encountered in the valleys and has a well-developed herbaceous layer.

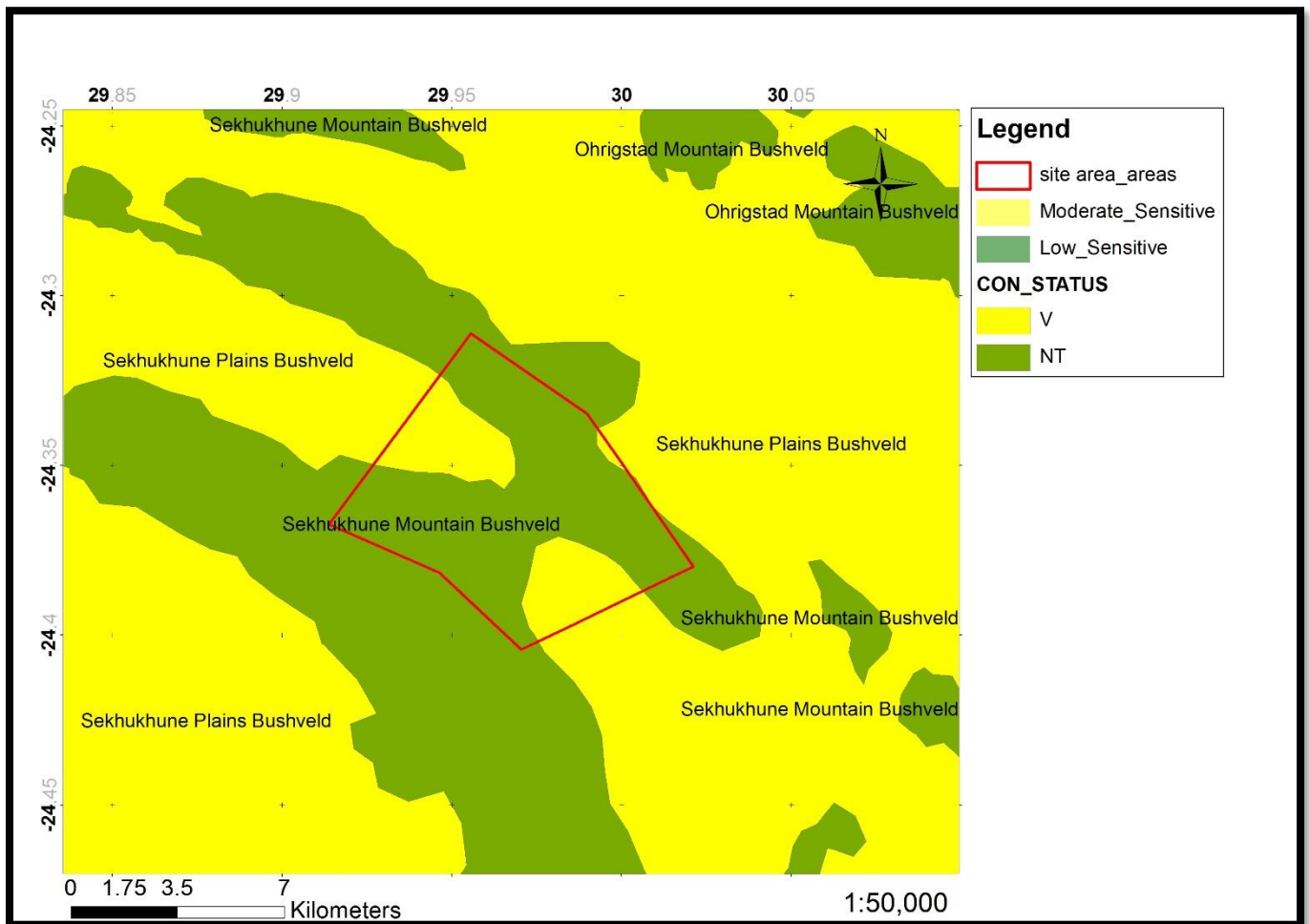


Figure 8:Vegetation

In the Sekhukhune Plains Bushveld the average rainfall varies between 400 and 600mm per annum. Temperatures varies between 37.3°C and -0.9°C (Mucina and Rutherford, 2006).

Sekhukhune Plains Bushveld is considered to be vulnerable, with only 2% of the targeted 19% conserved. More than 25% is transformed by mining, rural villages, farming and over grazing. The erosion potential is high to very high and aliens include

Agave species, Caesalpinia decapetala, Lantana camara, Melia azedarach, Nicotiana glauca, Opuntia species, Verbesina encelioides and Xanthium strumarium (Mucina and Rutherford, 2006).

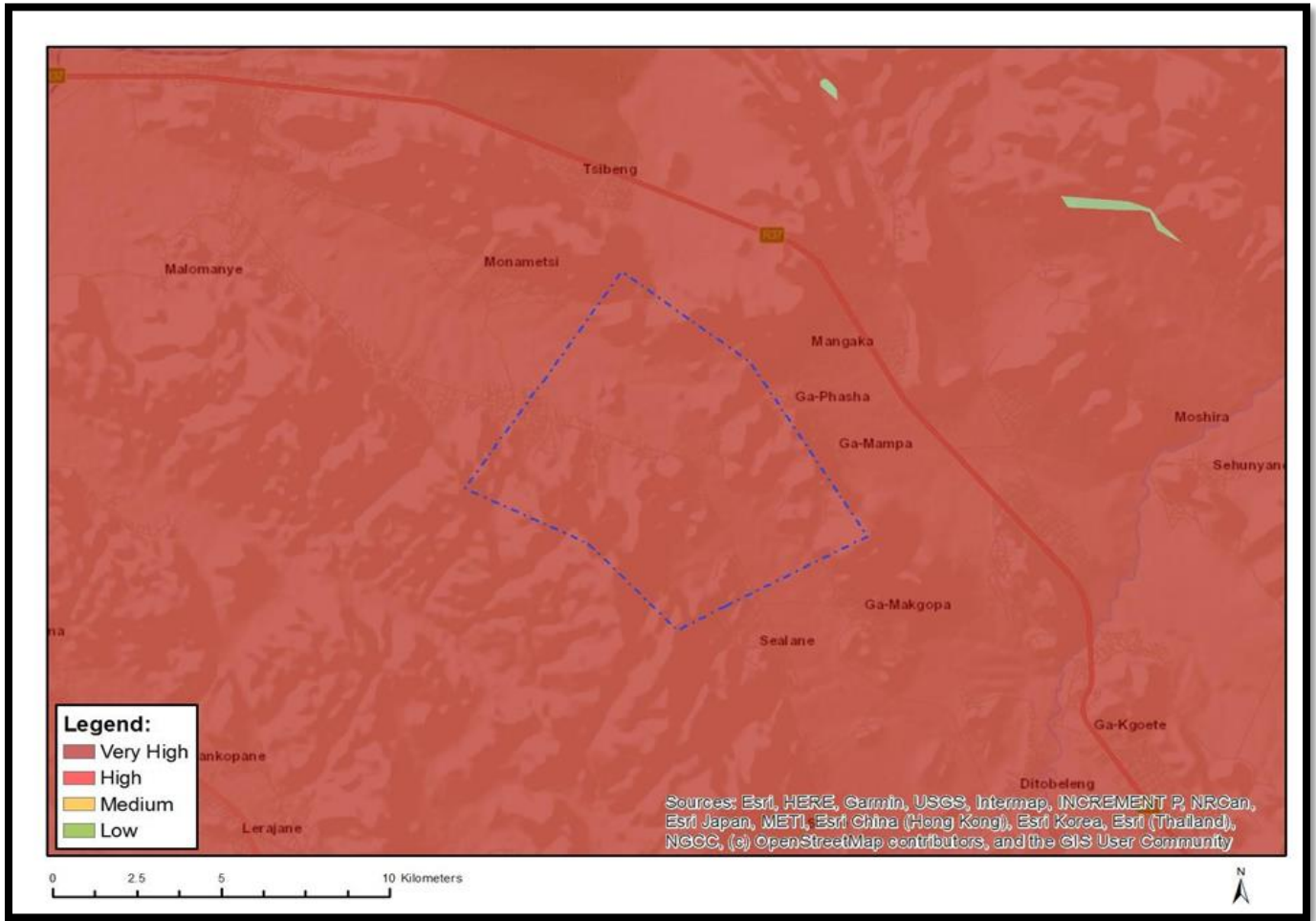


Figure 9: Map of Relative Terrestrial Biodiversity Theme Sensitivity

### Animal life

The study determined that a variety of mammals can potentially inhabit the proposed project as a result of the undisturbed conditions that predominate especially on top of the hills. Due to the diversity of habitat types present on the study area, a wide variety of avian species occur in the study area. Amongst others, Greyheaded Bush-Shrike (*Malaconotus blanchoti*) and Speckled Mousebird (*Colius striatus*). No Red Data Listed avian species were encountered, but various protected and sensitive bird species are known to occur in the region and have a high probability of occurring in the study area.

### 6.1.6 Land use



The proposed mining area has a low to moderate agricultural land use capability. This is largely due the combination of land use stressors associated with property size, inconsistent topography, soil depths and ultimately soil structures. The majority of area has very shallow rocky soils with rocky outcrops and has a class VI land capability. The land types include Mispah, Glenrosa, Hutton and Clovelly soils, all having grazing land capabilities, with the Mispah and Hutton soils tending towards wilderness status when shallow and rocky; detailed soil surveys indicated deep and shallow rocky Mispah soils, with wilderness/grazing land capabilities respectively

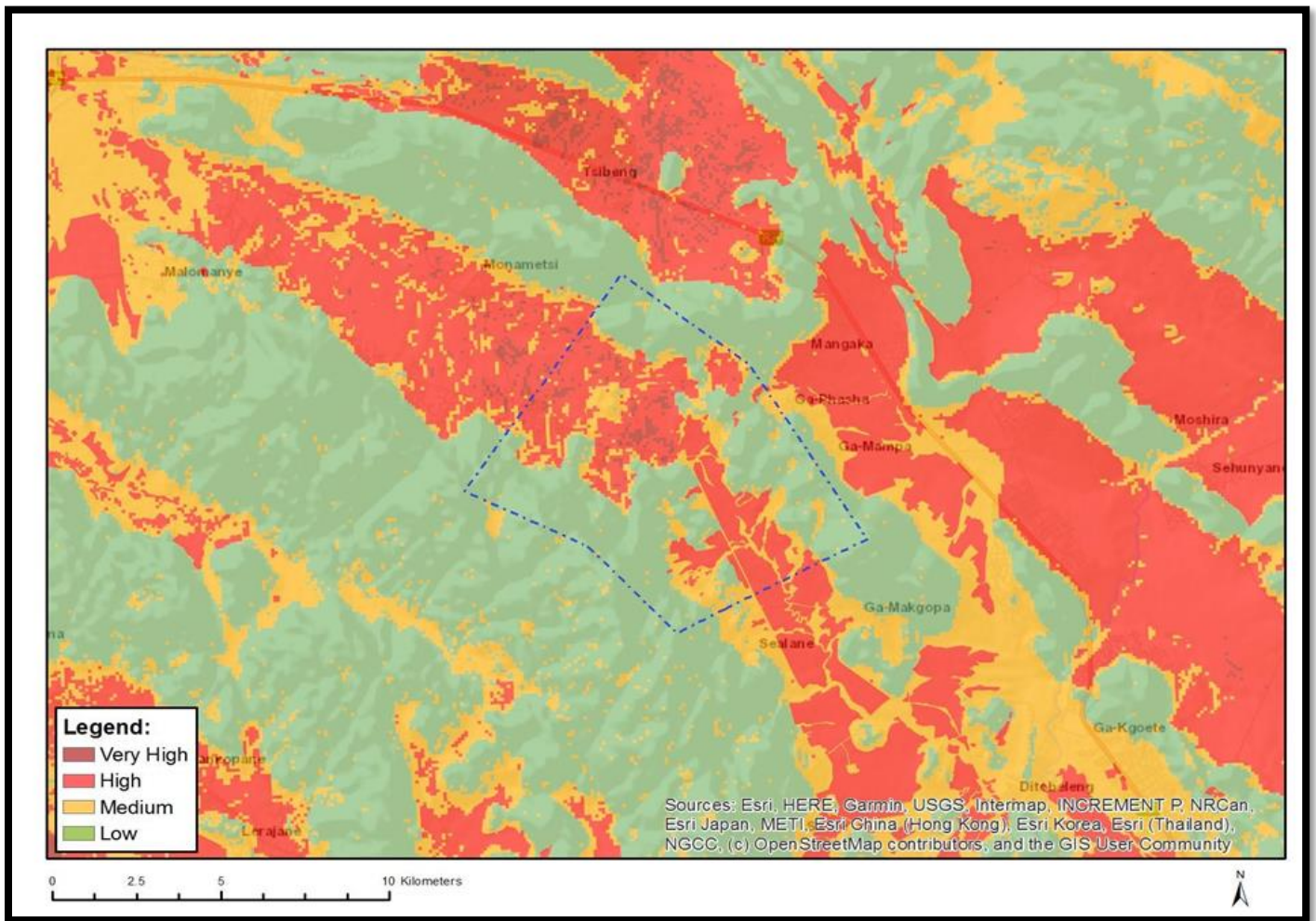


Figure 10: Map of Relative Agriculture Theme Sensitivity

### 6.1.7 Hydrology

#### 6.1.7.1 Rivers

The area is covered by a number of rivers and streams, providing habitable areas along it and its branches. The municipality’s current Integrated Development Plan (IDP) seeks the conservation of its natural environment, and one of the objectives

identified for the achievement of this goal is the protection of groundwater quality and river systems for water supply to communities. This is because the rivers are the key source of drinking water for the many communities that do not have access to piped water. The following are the rivers within the municipality: Groot-Dwarfs; KleinDwars; Steelpoort; Tubatsane; Moopetsi; Spekboom; Mabitsana; Tshwetlane; Hodupong; Matadi; Mabogwane; Olifants; Motse; Monametsi; Pelangwe; Mohlaletsi; Ohrigstad; Vyehoek; Mantshibi; Waterval; and Eloffspruit .

The rivers and watercourses within the municipality flow into various dams within and around the Fetakgomo Tubatse Local Municipal boundary, stretching into dams in other municipalities. This shows that the water system within the municipality is not isolated, it is a system that functions together with the watercourses in its neighboring municipalities. Implications for land use management:

- No agricultural activity should take place closer than 32 metres from any river bank.
- Developments below a dam wall, must take cognisance of the dam failure flood line.
- No development within the specified flood line and where the integrity of a river bank may be compromised.

#### **6.1.7.2 Dams**

Dams within the municipal area are the following:

Tubatse Dam; Tweefontein Mine Return Water Dam; Richmond Dam; Lepellane Dam; and Vlakfontein Dam. Implications for land use management:

- Existing settlements should be encouraged to relocate outside of these flood lines.
- No future settlements within the 1:100 year flood line and dam failure flood lines.
- No development should be closer than 32m from the high-water mark of any unprotected dam, until such time as the Disaster Management Plan identifies settlements that are at risk of being flooded.

#### **6.1.7.3 Wetlands**

Wetlands occur as individual endorheic pans, linear riverine systems, slope depression, flat and fringe wetlands. All wetlands, are temporary – i.e. filling up briefly after summer rains. Pans are of ecological importance in arid regions for their ability to hold water and often unique associated biota. A large amount of mining activities within the municipal area may pose a threat to natural wetlands and should be very carefully managed.

#### **6.1.7.4 Hydrology**

To sustain the growth of specific riverine ecosystems adequate water flow and good quality water are required. The integrity of aquatic habitat and water quality are major determinants of the biological communities in a system. The biological

integrity of the system will be adversely affected if for a number of reasons habitat is lost or degraded. Thus, habitat availability and diversity are important in supporting diverse biological communities and provides an indication of the current ecological integrity of an ecosystem.

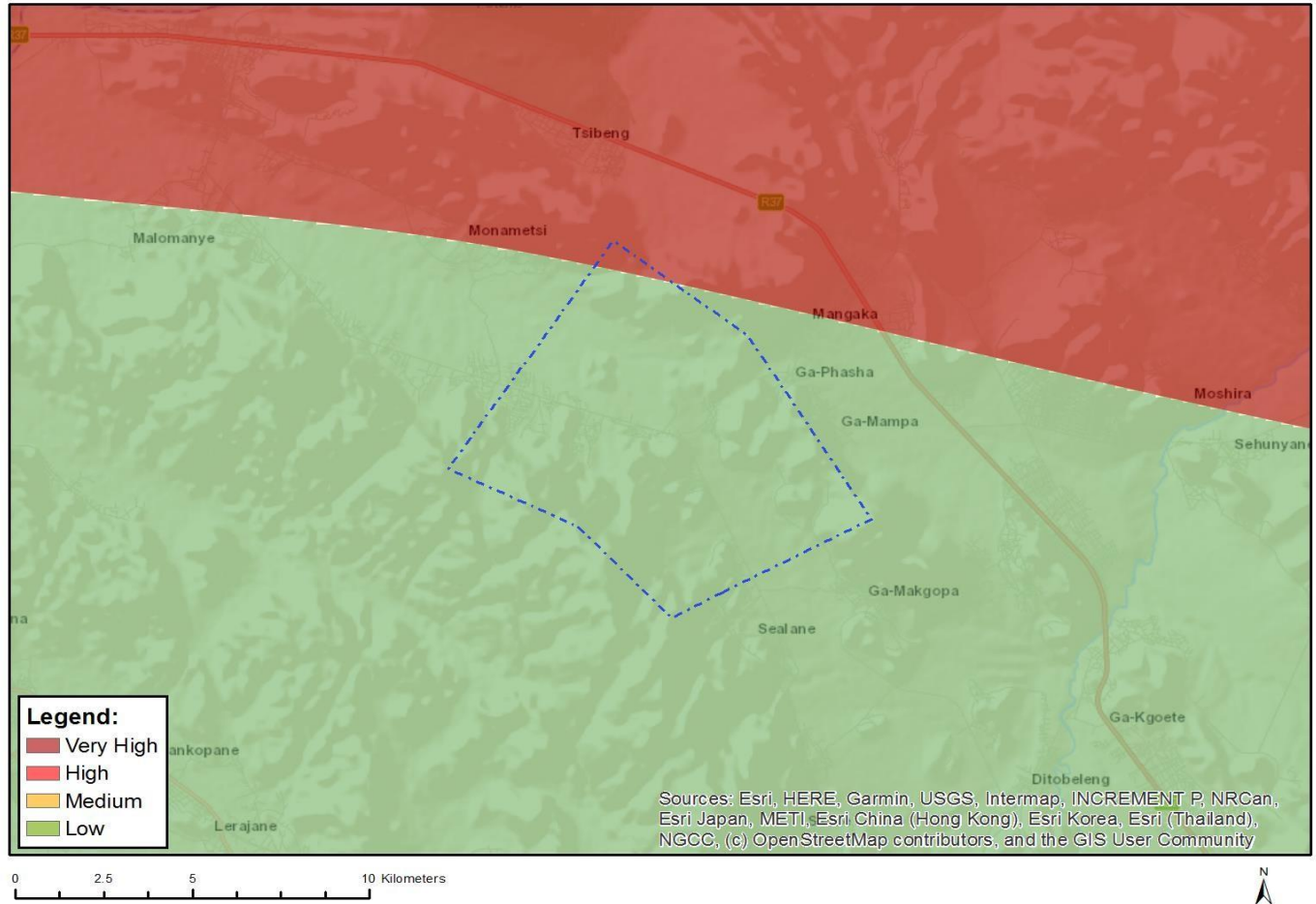


Figure 11: Map of Relative Aquatic Biodiversity Theme Sensitivity

### 6.1.8 Socio economic

The e GTM compared to national and provincial averages between 2011 and 2016 that could signify high levels of inmigration into the local municipality by especially young people from the rural areas of Limpopo (especially from elsewhere in the poor Sekhukhune district) in search of jobopportunities in the expanding mining sector in the area. The high levels of in-migration are suggested by the high portion of males relative to females compared to nationally, 96% in South Africa compared to 98% in GTM. The high youth ratio (% of people falling in the age category 15-64) in GTM also could suggest a large inflow of younger migrants into the area. As is the case nationally households in GTM grows faster than population as larger households

split off and more single/migrant households move into the area. This situation places greater pressure on the GTM to eradicate service backlogs (housing, energy, water and sanitation) in the local area. In contrast to the Greater Tubatse area, Fetakgomo Local Municipality experienced low population and household growth since 2011 with people most likely out-migrating to job opportunities within Greater Tubatse Local Municipality as evidenced in the low male to female ratios in Fetakgomo Municipality

#### **6.1.8.1 Cultural History and Characteristics of the Local Area**

The cultural history of the Steelpoort Valley is associated with in-migration and settlement of small groups of Northern Sotho-speaking who displaced the San and Khoi Khoi from the area in the 1700's. It is assumed that during the period from 1700 to 1826 the Pedi took political control over the territory previously known as Lebowa. During the disruption of the difaqane (c. 1822 to 1828) the Ndebele under Mzilikazi attacked the Pedi from the south-east in 1826 and in 1827/1828. The Pedi sought refuge in the Soutpansberg in 1822 and only returned to the area in 1828. After the wars with Mzilikazi, the Pedi in the area fought against the Swazi. After the Voortrekkers arrived in the Steelpoort area in the late 1840's, several border disputes between the Voortrekkers and the Pedi ensued, culminating in the two Sekhukune wars after the establishment of the Zuid-Afrikaansche Republiek (ZAR) in the last part of the 19th century. The Second Sekhukune War is associated with the settlements of Thaba Mosego and Tšate, a new village established by Sekhukune close to Thaba Mosego (Pistorius, 2005). The name Steelpoort possibly originates from a hunting expedition in the late 19th century or the early 20th century when Voortrekkers shot an elephant at dusk and on returning next morning found that the tusks had been removed. The river flowing through the poort was then called Steelpoort River (steel' meaning steal) (Pistorius, 2005).

In Pedi it was named the Tubatse River. The capital of the early Pedi Empire, Manganeng, was found on the banks of this river in the early 1800's (Sekhukune District, 2016). The first discovery of the Merensky Reef (a layer of igneous rock in the North West, Limpopo, Gauteng and Mpumalanga provinces known for its wealth of mineral resources) can be traced back to the 1924. Its importance was recognised by geologist Hans Merensky whose prospecting work traced the Reef for several hundred kilometres by 1930. Extensive mining of the Reef did not take place until an upsurge in the demand for platinum group metals used in exhaust pollution control in the 1950's, made exploitation economically feasible. Extraction of metals from the UG2 chromitite could only take place in the 1970's with major advances in metallurgy (Pistorius, 2005). Due to the apartheid policies when Afrikaner-dominated National Party came to power in 1948, a clear divide was formed between the southern and northern areas of the current Greater Tubatse Municipality (with the R555 road as a buffer/ boundary). The apartheid policies expected African people to settle permanently only in demarcated areas of the former Lebowa territory (i.e. scattered rural villages) while white people settled in the areas south of the R555 (the former Transvaal provincial area) in a few compact towns (Burgersfort, Steelpoort and Ohrigstad) and on mainly privately owned farms with intensive commercial agriculture (Greater Tubatse Local Municipality, 2016).



The northern part of the Greater Tubatse area is largely rural and subsistence-based, whilst the southern part is far more developed and has a more diversified economy. As was mentioned above, the population settlement pattern is marked by a few consolidated urban areas (Steelpoort, Burgerfort and Ohrigstad) alongside scattered rural settlements across the municipal area. The majority of settlements in the area have low population densities and are located far apart which makes the provision and maintenance of services very costly. These villages are furthermore too small for cost-effective service delivery. The situation is aggravated by the poor co-ordination between relevant government departments resulting in a lack of prioritisation of areas for service delivery (Greater Tubatse Municipality, 2016). Approximately 50% of the land in the former Greater Tubatse Local Municipality is furthermore under land claims. The claims are almost exclusively in rural areas that were part of the former Lebowa territory. Only one claim is found in near an urban area, and that is, in Steelpoort with none in Burgersfort and Ohrigstad (Greater Tubatse Municipality, 2016).

#### **6.1.8.2 Protected Areas**

A large portion of land, possibly over 80%, in Fetakgomo Tubatse Local Municipality is natural environment, which comprises of bushveld and areas of thinly dispersed and scattered grassland. The Kruger to Canyon biosphere, which is said to contain approximately 75% of all terrestrial bird species, 80% of all raptor species, 72% of all mammals, 50% of all butterflies and 50% of all frog species found in South Africa, stretches onto the municipality's northern borders, this presents benefits for the municipality. Fetakgomo Tubatse Local Municipality has multiple nature reserves which form part of its protected areas as the municipality deems it important to preserve its natural environment. The following table shows the Nature Reserves that are found within the municipality and the land area they cover.

#### **6.1.9 Screening tool Description of specific environmental features and infrastructure on the site.**

##### **6.1.9.1 Environmental sensitivity screening.**

(Show all environmental, and current land use features)

The Screening Tool Report generated from the National Web Based Environmental Screening Tool in accordance with the latest NEMA Minimum Requirements and Protocol for Specialist Impact Assessment as contained in the "Procedures to be followed for the assessment and minimum criteria for reporting of identified environmental themes of Section 45 (a) and (h) of the National Environmental Management Act, 1998, when applying for Environmental Authorization" (10 May 2020).

- No nearby wind or solar developments found
- Environmental Management Frameworks relevant to the application
- Strategic Transmission Corridor- International
  - corridor [https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/GN\\_113\\_16\\_February\\_2018.pdf](https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/GN_113_16_February_2018.pdf)

➤ South African Conservation

- Areas [https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/SACAD\\_OR\\_2021\\_Q1\\_Metadata.pdf](https://screening.environment.gov.za/ScreeningDownloads/DevelopmentZones/SACAD_OR_2021_Q1_Metadata.pdf)

**6.1.9.2 Proposed Development Area Environmental Sensitivity**

The following summary of the development site environmental sensitivities is identified. Only the highest environmental sensitivity is indicated. The footprint environmental sensitivities for the proposed development footprint as identified, are indicative only and must be verified on site by a suitably qualified person before the specialist assessments identified below can be confirmed.

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture Theme	X			
Animal Species Theme		X		
Aquatic Biodiversity Theme	X			
Archaeological and Cultural Heritage Theme	X			
Civil Aviation Theme		X		
Defence Theme			X	
Paleontology Theme			X	
Plant Species Theme			X	
Terrestrial Biodiversity Theme	X			

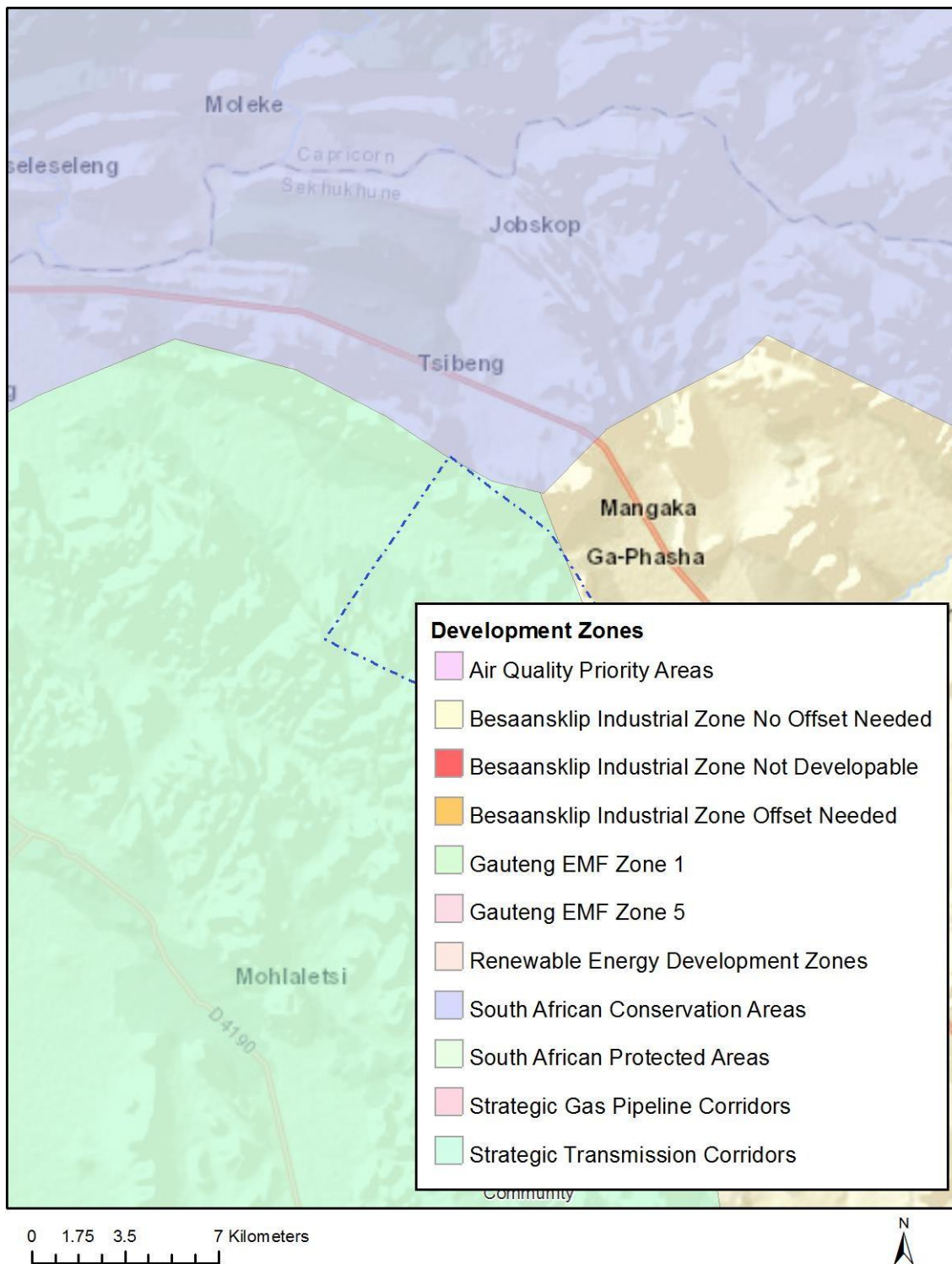


Figure 12: Map indicating proposed development footprint within applicable development incentive, restriction, exclusion or prohibition zones

### 6.1.9.3 Specialist assessments identified

Based on the selected classification, and the environmental sensitivities of the proposed development footprint, the following list of specialist assessments have been identified for inclusion in the assessment report. It is the responsibility of the EAP to confirm this list and to motivate in the assessment report, the reason for not including any of the identified specialist study including the provision of photographic evidence of the site situation.

No	Specialist assessment	Assessment Protocol
1	Agricultural Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Agriculture_Assessment_Protocols.pdf</a>
2	Archaeological and Cultural Heritage Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf</a>
3	Palaeontology Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf</a>
4	Terrestrial Biodiversity Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Terrestrial_Biodiversity_Assessment_Protocols.pdf</a>
5	Aquatic Biodiversity Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Aquatic_Biodiversity_Assessment_Protocols.pdf</a>
6	Noise Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Noise_Impacts_Assessment_Protocol.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Noise_Impacts_Assessment_Protocol.pdf</a>
7	Radioactivity Impact Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_General_Requirement_Assessment_Protocols.pdf</a>
8	Plant Species Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Plant_Species_Assessment_Protocols.pdf</a>
9	Animal Species Assessment	<a href="https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf">https://screening.environment.gov.za/ScreeningDownloads/AssessmentProtocols/Gazetted_Animal_Species_Assessment_Protocols.pdf</a>
10	Hydrological and Geohydrological Assessments	

6.1.9.4 Site Sensitivity Verification



Figure 13 : The River Name Masutsa





Figure 14 The general vegetation in the area

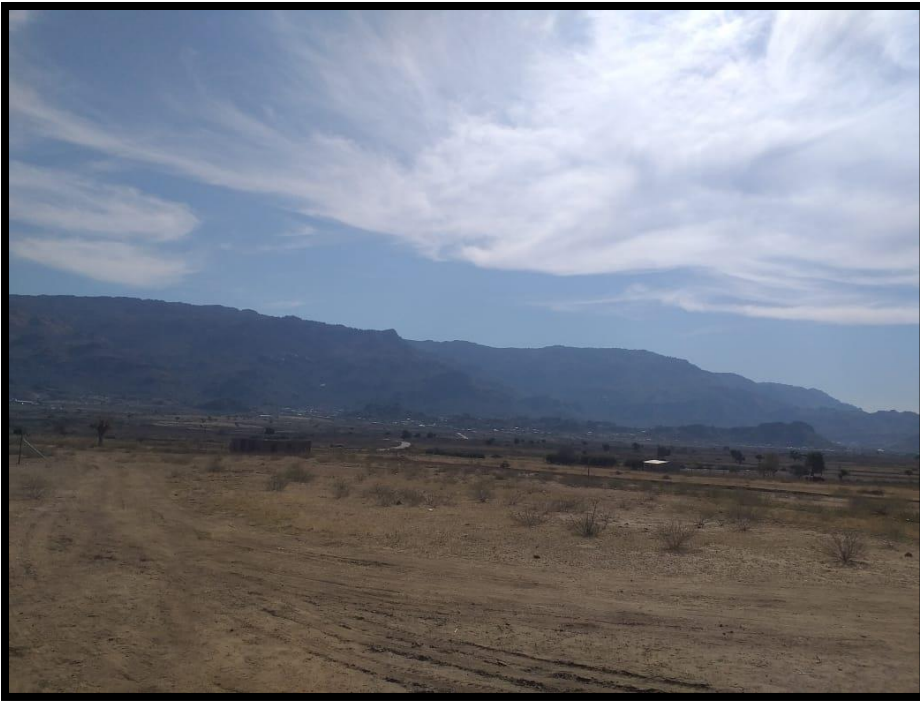


Figure 15: The general topography of the area



Figure 16: Maandegshoek Road that connects from the R37. It connects Ga-selepe, Monotwane and Paschaskraal





Figure 17: Shared cemetery on the farm Paschaskraal





Figure 18: wetland area

## 7 ENVIRONMENTAL IMPACT ASSESSMENT

### 7.1.1 Assessment Criteria

The assessment of the impacts will be conducted according to a synthesis of criteria required by the integrated environmental management procedure.

### 7.1.2 Extent

The physical and spatial scale of the impact is classified as:

- a) Footprint  
The impacted area extends only as far as the activity, such as footprint occurring within the total site area.
- b) Site  
The impact could affect the whole, or a significant portion of the site.
- c) Regional  
The impact could affect the area including the neighbouring properties, the transport routes and the adjoining towns.
- d) National  
The impact could have an effect that expands throughout the country (South Africa).
- e) International  
Where the impact has international ramifications that extent beyond the boundaries of South Africa.

### 7.1.3 Duration

The lifetime of the impact, that is measured in relation to the lifetime of the proposed development.

- a) Short term  
The impact would either disappear with mitigation or will be mitigated through natural processes in a period shorter than that of the construction phase.
- b) Short to Medium term  
The impact will be relevant through to the end of the construction phase.
- c) Medium term  
The impact will last up to the end of the development phases, where after it will be entirely negated.
- d) Long term

The impact will continue or last for the entire operational lifetime of the development, but will be mitigated by direct human action or by natural processes thereafter.

e) Permanent

This is the only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient,

#### 7.1.4 Intensity

The intensity of the impact is considered by examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functioning, or slightly alters the environment itself. The intensity is rated as:

a) Low

The impact alters the affected environment in such a way that the natural processes or functions are not affected.

b) Medium

The affected environment is altered, but functions and processes continue, albeit in a modified way.

c) High

Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

#### 7.1.5 Probability

This describes the likelihood of the impacts actually occurring. The impact may occur for any length during the life cycle of the activity, and not at any given time. The classes are rated as follows:

a) Impossible

The possibility of the impact occurring is none, due either to the circumstances, design or experience. The chance of this impact occurring is zero (0%).

b) Possible

The possibility of the impact occurring is very low, due either to the circumstances, design or experience. The chances of this impact occurring is defined as 25%.

c) Likely

There is a possibility that the impact will occur to the extent that provisions must therefore be made. The chances of this impact occurring is defined as 50%.

d) Highly likely

It is most likely that the impacts will occur at some stage of the development. Plans must be drawn up before carrying out the activity. The chances of this impact occurring is defined as 75%.

e) Definite

The impacts will take place regardless of any provisional plans, and or mitigation actions or contingency plans to contain the effect can be relied on. The chance of this impact occurring is defined as 100%.

### **7.1.6 Mitigation**

The impacts that are generated by the development can be minimised if measures are implemented in order to reduce the impacts. The mitigation measures ensure that the development considers the environment and the predicted impacts in order to minimise impacts and achieve sustainable development.

### **7.1.7 Determination of significance – Without Mitigation**

Significance is determined through a synthesis of impacts as described in the above paragraphs. It provides an indication of the importance of the impact in terms of both tangible and intangible characteristics. The significance of the impact “without mitigation” is the prime determinant of the nature and degree of mitigation required. Where the impact is positive, significance is noted as “positive”. Significance is rated on the following scale:

a) No significance

The impact is not substantial and does not require any mitigation action.

b) Low

The impact is of little importance, but may require limited mitigation.

c) Medium

The impact is of importance and is therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.

d) High

The impact is of major importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.

### **7.1.8 Determination of significance – With Mitigation**

Determination of significance refers to the foreseeable significance of the impact after the successful implementation of the necessary mitigation measures. Significance with mitigation is rated on the following scale:

a) No significance

The impact will be mitigated to the point where it is regarded as insubstantial.

b) Low

The impact will be mitigated to the point where it is of limited importance.

c) Low to Medium

The impact is of importance however, through the implementation of the correct mitigation measures such potential impacts can be reduced to acceptable levels.

d) Medium

Notwithstanding the successful implementation of the mitigation measures, to reduce the negative impacts to acceptable levels, the negative impact will remain of significance. However, taken within the overall context of the project, the persistent impact does not constitute a fatal flaw.

e) Medium to High

The impact is of major importance but through the implementation of the correct mitigation measures, the negative impacts will be reduced to acceptable levels.

f) High

The impact is of major importance. Mitigation of the impact is not possible on a cost-effective basis. The impact is regarded as high importance and taken within the overall context of the project, is regarded as a fatal flaw. An impact regarded as high significance, after mitigation could render the entire development option or entire project proposal unacceptable.

#### **7.1.9 Assessment weighting**

Each aspect within the impact description was assigned a series of quantitative criteria. Such criteria are likely to differ during the different stages of the project's life cycle. In order to establish a defined base upon which it becomes feasible to make an informed decision, it is necessary to weigh and rank all criteria.

#### **7.1.10 Ranking, Weighting and Scaling**

For each impact under scrutiny, a scale weighting Factor is attached to each respective impact (refer to Figure 19: Description of biophysical assessment parameters with its respective weighting), The purpose of assigning such weight serve to highlight those aspects considered most critical to the various stakeholders and ensure that each specialist's element of bias is taken into account. The weighting factor also provides a means whereby the impact assessor can successfully deal with the complexities that exist between the different impacts and associated aspects criteria.

Simply, such a weighting factor is indicative of the importance of the impact in terms of the potential effect that it could have on the surrounding environment. Therefore, the aspects considered to have a relatively high value will score a relatively higher weighting than that which is of lower importance.

Extent	Duration	Intensity	Probability	Weighting Factor (WF)	Significance Rating (SR)	Mitigation Efficiency (ME)	Significance Following Mitigation (SFM)
Footprint 1	Short term 1	Low 1	Probable 1	Low 1	Low 0-19	High 0,2	Low 0-19
Site 2	Short to medium 2	Medium 2	Possible 2	Low to medium 2	Low to medium 20-39	Medium to high 0,4	Low to medium 20-39
Regional 3	Medium term 3	High 3	Likely 3	Medium 3	Medium 40-59	Medium 0,6	Medium 40-59
National 4	Long term 4	Very High 4	Highly Likely 4	Medium to high 4	Medium to high 60-79	Low to medium 0,8	Medium to high 60-79
International 5	Permanent 5	Catastrophic 5	Definite 5	High 5	High 80-100	Low 1,0	High 80-100

Figure 19: Description of biophysical assessment parameters with its respective weighting

### 7.1.11 Identifying the Potential Impacts without Mitigation (WOM)

Following the assignment of the necessary weights to the respective aspects, criteria are summed and multiplied by their assigned weightings, resulting in a value for each impact (prior to the implementation of mitigation measures).

Equation 1:

Significance Rating (WOM) = (Extent + Intensity + Duration + Probability) x Weighting Factor

### 7.1.12 Identifying the Potential Impacts with Measures (WM)

In order to gain a comprehensive understanding of the overall significance of the impact, after implementation of the mitigation measures, it was necessary to re-evaluate the impact.

#### a) Mitigation Efficiency (ME)

The most effective means of deriving a quantitative value of mitigated impacts is to assign each significance rating value (WOM) a mitigation effectiveness (ME) rating. The allocation of such a rating is a measure of the efficiency and effectiveness, as identified through professional experience and empirical evidence of how effectively the proposed mitigation measures will manage the impact.

Thus, the lower the assigned value the greater the effectiveness of the proposed mitigation measures and subsequently, the lower the impacts with mitigation.

Equation 2:

Significance Rating (WM) = Significance Rating (WOM) x Mitigation Efficiency

Or WM = WOM x ME

#### b) Significance Following Mitigation (SFM)

The significance of the impact after the mitigation measures are taken into consideration. The efficiency of the mitigation measure determines the significance of the impact. The level of impact is therefore seen in its entirety with all considerations taken into account.

#### **7.1.13 Impacts identified**

A number of negative impacts on the bio-physical environment could result from disturbances during prospecting. The significance of any potential impact is largely limited by the small physical size and short duration of the prospecting, but also by the sensitivity of the receiving environment or receptor(s).

Potential impacts resulting from the proposed project were identified using input from the following:

- Views of I&APS which will be ascertained during the consultation process;
- Existing information;
- Screening report and
- Legal and policy requirements that need to be fulfilled for the proposed project

The following potential impacts were identified:

- Ground and surface water alteration;
- Geology, soil and land capability loss;
- Socio-economic issues on land use
- Waste products;
- Floral and faunal displacement;
- Dust and noise impacts;
- Temporary increase in traffic; and
- Identified heritage sites.

#### **Impact statement**

The following key issues and potential impacts (direct and cumulative) were identified during the Scoping phase, which will together with potential cumulative impacts, be assessed during the Environmental Impact Assessment phase of the project and appropriate mitigation measures to reduce the identified impacts will be proposed.

#### ***Potential Direct Impacts identified***



IMPACT	
<b>SURFACE WATER</b>	Alteration of the characteristics of a water resource Hydrological modification on storm water flow and watercourses.
	Deterioration of water quality
	The impact on ground and surface water by migration of contaminated water from the hydrocarbon leakages
	Impacts on surface water during the construction and operational phases.
<b>GROUNDWATER</b>	Impact on ground and surface water by migration of contaminated water from the construction and operational phases.
	Deterioration of water quality
<b>NOISE AND AIR QUALITY</b>	Increased noise levels and Dust impacts on air quality during the prospecting phases.
<b>SOIL, GEOLOGY AND MINERAL RESOURCE</b>	Impact of vegetation clearance on soil erosion and surface water runoff during the prospecting phase
	Soil pollution during the prospecting phase
	Prospecting of resource underlying the site
<b>ECOLOGICAL</b>	Destruction of sensitive habitat
	Destruction of faunal habitat and faunal displacement
	Reduction in natural migratory routes and faunal dispersal patterns
<b>VISUAL</b>	Minimisation of aesthetics and/or sense of place of the surrounding areas.
<b>SOCIO-ECONOMICAL</b>	Development and upliftment of the surrounding communities and infrastructure
	Development of the economic environment
	Loss of income from tourism activities
	Loss of income from affected land uses
<b>HERITAGE</b>	Alteration of archaeological, historical and paleontologic features

***Potential Cumulative Impacts identified***

IMPACT	
<b>Traffic</b>	Increased traffic volumes within the project area and surrounding communities. (low)
<b>Air Quality</b>	Decrease in air quality in the immediate surroundings of the prospecting site

IMPACT	
<b>Hydrological</b>	Cumulative loss of surface water functionality as a result of an increase in pollutants.
	Cumulative impact of hydrological modifications
<b>Ecology Biodiversity</b>	Cumulative destruction of sensitive habitat.
	Cumulative impact of faunal habitat and displacement.
	Cumulative loss of flora and fauna
	Cumulative impact on natural migratory routes and faunal dispersal patterns.
<b>Visual</b>	Cumulative impact of visual disturbances
<b>Noise</b>	Cumulative impact of construction and operational noise as well as noise due to prospecting vessels and geophysical survey
	Cumulative impact of noise and vibrations
<b>Socio-Economical</b>	Positive - Cumulative impact of development on the surrounding communities.
	Positive - Cumulative impact of development on the economic environment.
	Positive - Cumulative impact of the employment opportunities provided.
	Negative – Cumulative Loss of income from tourism and other activities
	Negative- Cumulative Loss of income from loss of landuse

This section provides a list of potential impacts on environmental aspects separately in respect of each of the main project actions / activities and processes. The potential impacts are presented for each of the project phases in tabular format.

**Table 6: List of Potential Impacts**

Activity	Phase	Potential impacts (unmitigated)
<b>Site preparation</b> Vehicle movement, vessel preparation	Construction Operation Decommissioning	Physical destruction and disturbance of biodiversity Air pollution Disturbing noise Visual impacts
Prospecting (Mapping, Bulk sampling and drilling)	Operation	Loss of habitats Physical destruction and disturbance of biodiversity Pollution of water resources Contamination of groundwater

		Air pollution Disturbing noise Visual impact Loss of sense of place of the environment
<b>Transport systems</b> Use of access points, road transport to and from site for employees and supplies, movement of prospecting vessel within site boundary	Construction Operation Decommissioning	Loss of soil resources and land capability Disturbance of biodiversity Pollution of surface water resources Alteration of natural drainage patterns Contamination of groundwater Disturbing noise Traffic impacts Visual impacts
<b>Site / contract management</b> Appointment of workers/contractors, site management (Monitoring, inspections, maintenance, security, access control), awareness training, emergency response, implementing and maintaining programmes	Construction Operation Decommissioning Closure	Management of the site plays a significant role in all identified impacts
<b>Rehabilitation</b> Replacing soil, slope stabilization, landscaping, revegetation, restoration	Construction Operation Decommissioning Closure	Hazardous excavations Loss of resources and land capability Disturbance of biodiversity Pollution of surface water resources Alteration of natural drainage patterns Contamination of groundwater Air pollution Disturbing noise Visual impacts
<b>Maintenance and aftercare</b> Inspection and maintenance of remaining facilities and rehabilitated areas	Closure	Loss of soil resources and land capability Disturbance of biodiversity Noise Pollution Air pollution Visual impacts

#### 7.1.14 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.

During the EIA phase all potential negative and potential impact will be identified, ranked and mitigation measures will be prescribed. These will be developed based on the finding of the specialist studies.

#### **7.1.15 The possible mitigation measures that could be applied and the level of risk.**

During the EIA phase all possible impacts will be assessed and an EMP outlining the risk and mitigation measures will be compiled. These will be developed based on the finding of the specialist studies.

#### **7.1.16 Final Site Layout Plan**

The Final Layout Plan will be provided in the EIA/EMP after public consultation as well as specialist studies findings, delineation of sensitive environments and buffers.

#### **7.1.17 Plan of study for the Environmental Impact Assessment process**

A plan of study for undertaking the environmental impact assessment process to be undertaken will include-

- a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;
- a description of the aspects to be assessed as part of the environmental impact assessment process;
- aspects to be assessed by specialists;
- a description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;
- a description of the proposed method of assessing duration and significance;
- An indication of the stages at which the competent authority will be consulted;
- particulars of the public participation process that will be conducted during the environmental impact assessment process; and
- a description of the tasks that will be undertaken as part of the environmental impact assessment process;
- Identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

The EIA phase will comprise of the following activities;

- Stakeholder Engagement;
- Assessing of Alternatives;
- Baseline and consideration of potential Specialist Studies;
- Identification of potential impacts
- Impact Assessment;
- Identification and Description of mitigation measures; and
- Reporting and decision-making.

#### **7.1.18 Description of the aspects to be assessed as part of the environmental impact assessment process**

The authorization process to be followed has been designed to meet the requirements of the MPRDA (Act 28 of 2002) and National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations, 2014. The authorization process will include:

- Scoping Phase:
- Stakeholder Notification;
- Authority Consultation;
- Capturing of Issues and Concerns;
- Compilation of a Stakeholder Database;
- Identification of Potentially Significant Impacts;
- Identification of Potentially Sensitive Environmental Aspects;
- Identification of Required Specialist Studies;
- Compilation of a Scoping Report (this document), including:
  - Plan of Study for EIA/EMP Amendment.
  - Issues Report; and
  - Stakeholder Review of Documentation;
  - Submission and approval of Scoping Report by relevant authorities.
- Impact Assessment Phase:
  - Undertake necessary specialist studies;
  - Assessment of environmental impacts;
  - Compilation of management plans;
  - Compilation of an EMP Report;
  - Stakeholder document review and comment;
  - Submission of final report for decision-making.

The EMP Report will include a description of the proposed project, a list of identified environmental aspects that will potentially be impacted upon by the prospecting project, an Impact Assessment for these aspects, and an Environmental Management Programme for the mitigation and management of the identified impacts.

A plan of study for undertaking the environmental impact assessment process to be undertaken will include-

- a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity;
- a description of the aspects to be assessed as part of the environmental impact assessment process;
- aspects to be assessed by specialists;

- a description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;
- a description of the proposed method of assessing duration and significance;
- An indication of the stages at which the competent authority will be consulted;
- particulars of the public participation process that will be conducted during the environmental impact assessment process; and
- a description of the tasks that will be undertaken as part of the environmental impact assessment process;
- Identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

### **7.1.19 Specialist Studies**

#### **7.1.19.1 Site Sensitivity Verification and Minimum Report Content Requirements**

Prior to commencing with a specialist assessment, the current use of the land and the environmental sensitivity of the site under consideration identified by the national web based environmental screening tool (screening tool), where determined, must be confirmed by undertaking a site sensitivity verification.

The screening tool can be accessed at: <https://screening.environment.gov.za/screeningtool>.

- The site sensitivity verification must be undertaken by an environmental assessment practitioner or a specialist.
- The site sensitivity verification must be undertaken through the use of:
  - (a) a desk top analysis, using satellite imagery;
  - (b) a preliminary on-site inspection; and
  - (c) any other available and relevant information.
- The outcome of the site sensitivity verification must be recorded in the form of a report that--

(a) confirms or disputes the current use of the land and the environmental sensitivity as identified by the screening tool, such as new developments or infrastructure, the change in vegetation cover or status etc.;

(b) contains a motivation and evidence (e.g. photographs) of either the verified or different use of the land and environmental sensitivity; and

(c) is submitted together with the relevant assessment report prepared in accordance with the requirements of the Environmental Impact Assessment Regulations (EIA Regulations).

#### **7.1.19.2 Specialist Assessment and Minimum Report Content Requirements**

Where a specialist assessment is required and no specific environmental theme protocol has been prescribed, the required level of assessment must be based on the findings of the site sensitivity verification and must comply with Appendix 6 of the

EIA Regulations. In order to assess the environmental, social and cultural impacts of the proposed chrome prospecting activity, a number of specialist studies will be commissioned. The findings of these studies will be incorporated into the Environmental Impact Assessment Report (EIR). The specialist studies consider the proposed structure and activities of the operations, as well as the associated risks to the receiving physical and socio-cultural environment.

The following aspects of the biophysical environment will be considered in the baseline studies:

- Agricultural Impact Assessment
- Archaeological and Cultural Heritage Impact Assessment
- Hydrological and Geohydrological Assessments
- Palaeontology Impact Assessment
- Terrestrial Biodiversity Impact Assessment
- Aquatic Biodiversity Impact Assessment
- Noise Impact Assessment
- Radioactivity Impact Assessment
- Plant Species Assessment
- Animal Species Assessment; and
- GIS Land Use Mapping.

#### **7.1.20 Description of aspects to be assessed by specialists**

- Provide a general description of the local fauna and flora.
- Identify, describe and assess the significance of potential impacts of the proposed geophysical surveying and bulk sampling on the local biota.
- Identify practicable mitigation measures to reduce any negative impacts and indicate how these could be implemented during the construction and management of the proposed project.
- input from a palaeontologist as to the likelihood of impacts arising from the bulk sampling programme on palaeontological resources; and
- a consideration of the potential for the presence of and impacts on archaeological material.
- Provide a general description of the local fauna and flora.
- Identify, describe and assess the significance of potential impacts of the proposed geophysical surveying and bulk sampling on the local biota.
- Identify practicable mitigation measures to reduce any negative impacts and indicate how these could be implemented during the construction and management of the proposed project.

A general view of the existing socio-economic structures of the project area will be addressed to identify relevant social aspects and predict the anticipated future social developments and/or changes in the receiving human environment;

- Provide a baseline study describing the socio-economic factors of the affected population;
- Assess negative and positive impacts associated with the project;
- Identify feasible mitigation measures and benefits related with the project.

**7.1.21 Proposed method of assessing the environmental aspects including the proposed method of assessing alternatives**

Methodology for Assessing Environmental Issues and Alternatives

According to National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations, 2014), the environment is described as the surrounding within which human exist and that are made up of:

*(i) the land, water and atmosphere of the earth;*

*(ii) micro-organisms, plant and animal life;*

*(iii) any part or combination of (i) and (ii) and the interrelationships among and between them; and*

*(iv) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.*

**Impact Assessment Methodology**

**(a) Nature of the impact**

The NATURE of an impact can be defined as: *“a brief description of the impact being assessed, in terms of the proposed activity or project, including the socio-economic or environmental aspect affected by this impact”.*

**(b) Extent of the impact**

The EXTENT of an impact can be defined as: *“a brief description of the spatial influence of the impact or the area that will be affected by the impact”.*

<b>EXTENT</b> Extent or spatial influence of impact	<b>Footprint</b>	Only as far as the activity, such as footprint occurring within the total site area
	<b>Site</b>	Only the site and/or 500m radius from the site will be affected
	<b>Local</b>	Local area / district (neighbouring properties, transport routes and adjacent towns) is affected
	<b>Region</b>	Entire region / province is affected
	<b>National</b>	Country is affected



**(a) Magnitude of the impact**

The MAGNITUDE of an impact can be defined as: “a brief description of the intensity or amplitude of the impact on socio-economic or environmental aspects”.

<b>MAGNITUDE</b> Magnitude / intensity of impact (at the specified scale)	<b>Zero</b>	Natural and/or social functions and/or processes remain <i>unaltered</i>
	<b>Very low</b>	Natural and/or social functions and/or processes are <i>negligibly</i> altered
	<b>Low</b>	Natural and/or social functions and/or processes are <i>slightly</i> altered
	<b>Medium</b>	Natural and/or social functions and/or processes are <i>notably</i> altered
	<b>High</b>	Natural and/or social functions and/or processes <i>severely</i> altered

**(b) Duration of the impact**

The DURATION of an impact can be defined as: “a short description of the period of time the impact will have an effect on aspects”.

<b>DURATION</b> Duration of the impact	<b>Short term</b>	Construction phase up to 3 years after construction
	<b>Medium term</b>	Up to 6 years after construction
	<b>Long term</b>	More than 6 years after construction

**(c) Probability of the impact occurring**

The PROBABILITY of an impact can be defined as: “the *estimated chance of the impact happening*”.

<b>PROBABILITY</b>	<b>Unlikely</b>	<i>Unlikely</i> to occur (0 – 25% probability of occurring)
	<b>Possible</b>	<i>May</i> occur (26 – 50% chance of occurring)
	<b>Probable</b>	<i>Likely</i> to occur (51 – 75% chance of occurring)
	<b>Definite</b>	Will <i>certainly</i> occur (76-100% chance of occurring)

**(d) Degree to which impact can be reversed**

The REVERSABILITY of an impact can be defined as: “the *ability of an impact to be changed from a state of affecting aspects to a state of not affecting aspects*”.

<b>REVERSABILITY</b>	<b>Reversible</b>	Impacts can be reversed through the implementation of mitigation measures
----------------------	-------------------	---

	<b>Irreversible</b>	Impacts are permanent and can't be reversed by the implementation of mitigation measures
--	---------------------	--

**(e) Degree to which impact may cause irreplaceable loss of resources**

The IRREPLACEABILITY of an impact can be defined as: "the amount of resources that can (not) be replaced".

<b>IRREPLACEABILITY</b> Irreplaceable loss of resources	<b>No loss</b>	No loss of any resources
	<b>Low</b>	Marginal loss of resources
	<b>Medium</b>	Significant loss of resources
	<b>High</b>	Complete loss of resources

**(f) Degree to which the impact can be mitigated**

The degree to which an impact can be MITIGATED can be defined as: "the effect of mitigation measures on the impact and its degree of effectiveness".

<b>MITIGATION RATING</b>	<b>MITIGATED</b> Degree impact can be mitigated	<b>High</b>	Impact 100% mitigated
		<b>Medium</b>	Impact >50% mitigated
		<b>Low</b>	Impact <50% mitigated

**(g) Confidence rating**

CONFIDENCE in the assessment of an impact can be defined as the: "level of certainty of the impact occurring".

<b>CONFIDENCE RATING</b>	<b>CONFIDENCE</b>	<b>Unsure</b>	Amount of information on and/or understanding of the environmental factors the potentially influence the impact is <i>limited</i> .
		<b>Sure</b>	Amount of information on and/or understanding of the environmental factors the potentially influence the impact is <i>reasonable and relatively sound</i> .
		<b>Certain</b>	Amount of information on and/or understanding of the environmental factors the potentially influence the impact is <i>unlimited and sound</i> .

**(h) Cumulative impacts**

The effect of CUMULATIVE impacts can be described as:” the effect the combination of past, present and “reasonably foreseeable” future actions have on aspects”.

<b>CUMULATIVE RATING</b>	<b>CUMULATIVE EFFECTS</b>	<b>Low</b>	<i>Minor</i> cumulative effects
		<b>Medium</b>	<i>Moderate</i> cumulative effects
		<b>High</b>	<i>Significant</i> cumulative effects

#### 7.1.22 The stages at which the competent authority will be consulted

The competent authority will be consulted during the

- Scoping phase
- Public Review of Documents
- EIA phase and release of the EMP
- Further Consultation after the EIA/EMP has been submitted if there are comments from I&AP's

## **8 PUBLIC PARTICIPATION DURING THE EIA PHASE**

### **8.1.1 Particulars of the public participation process with regard to the Impact Assessment process that will be conducted**

Public participation is an essential and regulatory requirement for an environmental authorization process and is guided by Regulations promulgated under NEMA, specifically the EIA Regulations. NEMA EIA Regulations defines the “Public Participation Process” as a process in which potential interested and affected parties (I&APs) are given an opportunity to comment on, or raise issues relevant to, specific matters”.

The public participation process is designed to provide sufficient and accessible information to I&APs in an objective manner to assist them to:

#### **During the Scoping Phase:**

- Raise issues of concern and suggestions for enhanced benefits;
- Verify that their issues have been recorded;
- Assist in identifying reasonable alternatives; and
- Contribute relevant local information and traditional knowledge to the environmental assessment.

#### **During the Impact Assessment Phase:**

- Contribute relevant information and local and traditional knowledge to the environmental assessment;
- Verify that their issues have been considered in the environmental studies; and
- Comment on the findings of the environmental assessments.

The identified Interested and Affected Parties during the scoping phase will be made aware of the availability of the EIA report VIA

- A notification letter
- Emails and SMS
- Press advertisements
- Site Notices
- Public and Stakeholder Meetings
- The EIA will be made available for review to all IAPs for 30days. All registered IAPs will be notified by email, fax, SMS, or post of the report’s availability. Hard copies of the draft report will be placed at:
- Public Libraries, Municipal Offices and other accessible places.

### **8.1.2 Details of the engagement process to be followed**

- In addition to land owners, other relevant organisations will be identified and notified of the application. This includes municipal and State departments with jurisdiction in the area and Non-governmental Organisations (NGOs) with an interest.
- A notification letter with the details of the availability of the EIA will be distributed (by email, fax or post) to all land owners. All IAPs will be asked to distribute the documents to anyone who may be interested or affected by the project.
- Site Notices
- Public and Stakeholder Meetings
- Register of IAPs during the scoping report will be used to notify the availability of the EIA
- EIAR/EMPr will be released for public review for 30 days each excluding public and school holidays.
- Hard copies of the draft report will be placed at: Public Libraries, Municipal Offices and other accessible places.
- A final Consultation report with stakeholder comments from each phase will be submitted.

Framework of a Stakeholder Engagement Plan and Regulations and requirements;

- Summary of previous engagement;
- Project stakeholders inclusive of an analysis and categorisation of all project stakeholders;
- Stakeholder engagement process inclusive of the regulatory process and separate engagement processes (i.e. with neighbouring facilities, or international NGOs);
- Timetable;
- Resources and responsibilities;
- Grievance mechanism;
- Key messages (code of conduct);
- Monitoring and reporting – i.e. comments and response tracking; and
- Management functions.

### **8.1.3 Description of the information to be provided to Interested and Affected Parties**

Once the competent authority has approved the SR, the Impact Assessment Phase will commence. Stakeholders will receive notification of the start of the Impact Assessment Phase and opportunities for public review and comment.

Public participation during the Impact Assessment Phase revolves around a review of the findings of the EIA, presented in the Draft EIA Report. This report will be made available for public comment for a period of 30 days.

Stakeholders will be invited to comment on the Draft EIA Report and EMP in the following ways:

- By completing a comment sheet made available together with the report at the public places, and by submitting additional written comments, by email or fax, or by telephone, to the public participation office; and
- The Draft EIA Report and EMP Report and its accompanying Specialist Studies will be distributed for comment to public places in the project area, to everyone who requests a copy email.

The documents will contain a project location, map as well as detailed legislations triggered by the project and a project description as well as reference number of the project.

The scoping report will be made available to the public for review at public libraries. The scoping report will entail potential impacts, mitigation measures as well as specialist reports to be undertaken to supplement the background information of the proposed project.

#### **8.1.4 Description of the tasks that will be undertaken during the environmental impact assessment process**

The Environmental Impact Assessment Phase will include the following activities:

- 1) Undertake necessary specialist studies;
- 2) Assessment of environmental impacts;
- 3) Compilation of management plans;
- 4) Compilation of an EMP Amendment Report;
- 5) Stakeholder document review and comment;
- 6) Submission of Scoping and EIA report for decision-making

The EIA report must contain:

- A description of the property on which the activity is to be undertaken and the location of the activity on the property;
- A description of the environment that may be affected by the activity and the manner in which the physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed activity;
- Details of the public participation process conducted including
  - Steps undertaken in accordance with the plan of study;
  - A list of persons, organisations and organs of state that were registered as interested and affected parties;
  - A summary of comments received from, and a summary of issues raised by registered interested and affected parties, the date of receipt of these comments and the response of the EAP to those comments; and
  - Copies of any representations and comments received from registered interested and affected parties;

- A description of the need and desirability of the proposed activity;
  - A description of identified potential alternatives to the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and the community that may be affected by the activity;
  - An indication of the methodology used in determining the significance of potential environmental impacts;
  - A description and comparative assessment of all alternatives identified during the environmental impact assessment process;
    - A summary of the findings and recommendations of any specialist report or report on a specialized process;
    - A description of all environmental issues that were identified during the environmental impact assessment process, an assessment of the significance of each issue and an indication of the extent to which the issue could be addressed by the adoption of mitigation measures;
  - An assessment of each identified potentially significant impact, including:
    - Cumulative impacts;
    - The nature of the impact;
    - The extent and duration of the impact;
    - The probability of the impact occurring;
    - The degree to which the impact can be reversed;
    - The degree to which the impact may cause irreplaceable loss of resources; and
    - The degree to which the impact can be mitigated;
  - A description of any assumptions, uncertainties and gaps in knowledge;
  - A reasoned opinion as to whether the activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;
  - An environmental impact statement which contains:
    - A summary of the key findings of the environmental impact assessment; and
    - A comparative assessment of the positive and negative implications of the proposed activity and identified alternatives;
- A draft environmental management programme containing;
- Copies of any specialist reports and reports on specialised processes; and
  - Any specific information that may be required by the competent authority

## 9 MITIGATION MEASURES

### 9.1.1 Measures to avoid, reverse, mitigate, or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored

Table 7: Mitigation Measures

Potential Environmental Impacts & Sources	Measures to prevent, mitigate, minimize or manage the impacts
<b>CONSTRUCTION PHASE</b>	
Activity: establishment Impact: <b>Air pollution</b> (dust, gaseous emissions) Source: Establishment, movement of vehicles.	<ul style="list-style-type: none"> <li>• Dust suppression measures such as spraying with water</li> <li>• Speed limits will be established and enforced</li> <li>• Equipment and vehicles equipped with standard exhaust systems which minimize the amount of emissions</li> </ul>
Activity: maintenance of vehicles and or drill rig Impact: <b>Water pollution (surface water, groundwater)</b> Source: spillages from vehicles	<ul style="list-style-type: none"> <li>• Use oil trays</li> <li>• Use modern vehicles in good working condition</li> <li>• Take vehicles to accredited workshop in town</li> <li>• Use absorbents to trap hydrocarbons</li> </ul>
Activity: Disposal of Waste Impact: <b>Land degradation, land-use and capability</b> Source: Poor waste management	<ul style="list-style-type: none"> <li>• Place waste receptacles at strategic points</li> <li>• Monitor housekeeping behaviour and insist on corrective action</li> <li>• Waste will be disposed of in approved site</li> </ul>
<b>OPERATIONAL PHASE</b>	
Activity: Preparation of prospecting area Impact: habitat degradation, land-use and capability Source: Drilling and bulk sampling Poor waste management	<ul style="list-style-type: none"> <li>• Prospected areas will increase sedimentation during excavations</li> <li>• Debris will be removed and disposed of in approved site</li> <li>• Areas which do not form part of prospecting site will not be disturbed.</li> </ul>
Activity: prospecting and lubrication of equipment Impact: <b>water pollution</b> (surface water, groundwater) Source: leaks, spillages from equipment and vehicles	<ul style="list-style-type: none"> <li>• Operate outside 100 m distance from stream or any water body</li> <li>• Maintenance of vessels and drilling equipment</li> </ul>
Activity: Vehicle movement during operational hours Impact: <b>Ecological degradation</b> Source: Uncontrolled vehicle movement and poor rehabilitation	<ul style="list-style-type: none"> <li>• Most of the biodiversity will be restored after closure</li> <li>• Movement of vehicles will be restricted to designated areas</li> </ul>
Activity: Accidental spillages Impact: <b>Land pollution</b> Source: Lack of proper house keeping	<ul style="list-style-type: none"> <li>• Trays used to trap hydrocarbons</li> <li>• Absorbent agents to be used to trap hydrocarbons and grease</li> <li>• Any spillage will be recorded, and remedial action taken immediately</li> <li>• Reporting of significant hazardous spillages</li> </ul>
Activity: Prospecting general Impact: <b>Noise</b> Source: Machine and Vehicle engines	<ul style="list-style-type: none"> <li>• The operation will comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its regulations as well as other applicable legislation regarding noise control</li> </ul>



	<ul style="list-style-type: none"> <li>• Employees will be equipped with ear plugs and other protective gear. All vehicles will be equipped with silencers and maintained in a roadworthy condition</li> </ul>
Activity: Prospecting Vehicles Impact: <b>Aesthetic pollution</b> Source: visibility of site	<ul style="list-style-type: none"> <li>• Site selection to prioritize areas not to exposed to the public or local residences</li> <li>• Visual impact will be temporary</li> </ul>
Activity: Drilling Impact: <b>Destruction of fauna and flora</b> Source: sedimentation and visibility of site	<ul style="list-style-type: none"> <li>• Conduct the invasive prospecting during off peak fishing and tourism phases.</li> <li>• Biodiversity to specify mitigation measures</li> </ul>
Activity: Bulk Excavation Impact: <b>Land degradation</b> Source: sedimentation and visibility of site	<ul style="list-style-type: none"> <li>• Site selection to prioritize areas not to exposed to the public or local residences</li> </ul>
Activity: Bulk sample Impact: <b>degradation</b> Source: visibility of site	<ul style="list-style-type: none"> <li>• Biodiversity to specify mitigation measures</li> </ul>
<b>DECOMMISSIONING AND CLOSURE PHASE</b>	
Activity: de-establishment Impact: <b>Air pollution</b> (dust, gaseous emissions) Source: movement of vehicles.	<ul style="list-style-type: none"> <li>• Speed limits will be established and enforced</li> <li>• Very temporary in nature</li> </ul>
Activity: De-establishment / removal of infrastructure Impact: <b>Noise</b> Source: vehicle movement	<ul style="list-style-type: none"> <li>• The operation will comply with the provisions of the Mine Health and Safety Act, 1996 (Act 29 of 1996) and its regulations as well as other applicable legislation regarding noise control</li> <li>• Employees will be equipped with ear plugs and other protective gear. All vehicles will be equipped with silencers and maintained in a roadworthy condition</li> </ul>

### 9.1.2 Other Information required by the competent Authority

Additional consultation and studies might be requested by the relevant authorities.

### 9.1.3 Impact on the socio-economic conditions of any directly affected person.

The socio-economic conditions will be identified and described as part of the EIA process. Preliminary it can be assumed that livelihoods of the adjacent landowners will be impacted by the disturbances on land use.

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

In terms of the National Heritage Resources Act, 1999 (Act no. 25 of 1999) an Archaeological Impact Assessment will undertaken in order to establish if any localities of heritage and palaeontological significance are present.

### 9.1.5 Potential Cumulative impact and mitigation measures

Table 8: Cumulative Impacts and Mitigation Measures

TRIGGERS	POTENTIAL CUMULATIVE IMPACT	SIGNIFICANCE	MITIGATION AND MANAGEMENT MEASURES	SIGNIFICANCE (with mitigation)
Use of hazardous substances (hydrocarbons), soil erosion	Contamination of water resources	Low	Avoidance of hazardous substances Prevention of spillages Proper house keeping Prevent soil erosion Concurrent rehabilitation	Low
Soil erosion	Reduction of land capability	High	Restriction on vehicular circulation Immediate rehabilitation of disturbed sites	Low
Loss of sense of place and serenity	Reduction of land land-use potential Reduction in tourism	High	Reduction of noise and visual aspects Immediate rehabilitation of disturbed sites Conducting the invasive prospecting off tourism peaks	Medium
Drilling and bulk sampling	Loss of flora and fauna and habitats	High	Prospecting should be conducted in cognisance with migratory patterns to minimise disturbances	Medium
Lack of supervision and site surveys	Loss of biodiversity, habitats and heritage resources	Moderate	Use of existing roads and tracks. Limited vehicular movement Prospect in one area at a time to systematically and other land uses	Low
Improper use of machinery and vehicles	Generation of dust, smog and noise	Moderate	Maintenance of machinery and vehicles Operate within prescribed working hours	Moderate
Perception of job opportunities	Conflict between project team and the local community	Moderate	Employ local people, communicate the right messages about the project	Negligible

## 10 RECOMMENDATIONS

The scoping report outlines the studies to be undertaken and the protocols to be used in assessing the impacts and recommendation of best practice measures. The risks that have been identified need to be mitigated. The EAP recommends the acceptance of the scoping report and plan of study with the inputs from commenting authorities and interested and affected parties.

### 10.1.1 Undertaking Regarding Correctness of Information

#### DECLARATION OF INDEPENDENCE

I, Yvonne Gutoona, on behalf of Archean Resources (Pty) Ltd in my capacity as an environmental consultant, hereby declare that I:-

- ✚ Act as an independent consultant;
- ✚ Do not have any financial interest in the undertaking of this project, other than remuneration for the work performed in terms of the National Environmental Management Act EIA Regulations as amended;
- ✚ Have and will not have vested interest in the proposed activity nor will I engage myself in any conflicting interest associated with this project
- ✚ I undertake to disclose and provide to the competent authority any material or information at my disposal regarding this project as required in terms of National Environmental Management Act (EIA regulations as amended in 2021);
- ✚ Based on the information provided to me by the client and in addition to information obtained during the course of this study, I have presented the results and conclusion with regard to this project to the best of my professional ability;

I **Yvonne Gutoona** herewith undertake that the information provided in the foregoing report is correct, and that the comments and inputs from stakeholders and Interested and Affected parties has been correctly recorded in the report.

*y. gutoona*

---

Signature of the EAP

DATE:

13 October 2021

#### UNDERTAKING REGARDING LEVEL OF AGREEMENT

I **Yvonne Gutoona** herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with interested and Affected Parties and stakeholders has been correctly recorded and reported herein.

*y. gutoona*

---

Signature of the EAP

DATE:

13 October 2021