



ORIBI PROSPECTING RIGHT
BASIC ASSESSMENT REPORT

Submitted in support of a prospecting right application

Prepared on Behalf of:

WHITE RIVERS EXPLORATION (PTY) LTD

DMR REFERENCE NUMBER:

FS 30/5/1/1/3/2/1 (10369) EM

EIMS REFERENCE NUMBER:

1102



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Leaders in Environmental Management



**WRE ORIBI PROSPECTING RIGHT
BASIC ASSESSMENT REPORT**

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REVISION AND AMENDMENTS

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mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

BASIC ASSESSMENT REPORT

And

ENVIRONMENTAL MANAGEMENT PROGRAMME REPORT

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

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IMPORTANT NOTICE

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

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

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

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

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

OBJECTIVE OF THE BASIC ASSESSMENT PROCESS

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

- a) Determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;
- b) Identify the alternatives considered, including the activity, location, and technology alternatives;
- c) Describe the need and desirability of the proposed alternatives;
- d) Through the undertaking of an impact and risk assessment process inclusive of cumulative impacts which focused on determining the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the sites and locations within sites and the risk of impact of the proposed activity and the technology alternatives on the these aspects to determine:
 - i. The nature, significance, consequence, extent, duration, and probability of the impacts occurring to; and
 - ii. The degree to which these impacts-
 - (aa) Can be reversed;
 - (ba) May cause irreplaceable loss of resources; and
 - (ca) Can be managed, avoided or mitigated;
- e) Through a ranking of the site sensitivities and possible impacts the activity and technology alternatives will impose on the sites and location identified through the life of the activity to –
 - i. Identify and motivate a preferred site, activity and technology alternative;
 - ii. Identify suitable measures to manage, avoid or mitigate identified impacts; and
 - iii. Identify residual risks that need to be managed and monitored.

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APPENDICES

Appendix A: Details and Experience of EAP

Appendix B: Public Participation

Appendix C: Maps

Appendix D: Impact Assessment Calculations

ABBREVIATIONS

BAR	: Basic Assessment Report
BID	: Background Information Document
DMR	: Department of Mineral Resources
DWS	: Department of Water and Sanitation
EA	: Environmental Authorisation
EAP	: Environmental Assessment Practitioner
EIMS	: Environmental Impact Management Services
EMPR	: Environmental Management Programme
I&AP	: Interest and Affected Parties
MPRDA	: Mineral and Petroleum Resources Development Act
NEMA	: National Environmental Management Act
PPP	: Public Participation Process
PWP	: Prospecting Works Programme
WRE	: White River Exploration (Pty) Ltd

PART A:

SCOPE OF ASSESSMENT AND BASIC ASSESSMENT REPORT

1 INTRODUCTION

White Rivers Exploration (Pty) Ltd (WRE) have identified potentially exploitable mineral resources over a number of farms near the town of Bothaville in the Free State Province. The area of interest occupies a total of approximately 9 703.3 hectares and is located 40 km north of Welkom, 51 km south of the town of Klerksdorp and approximately 2.5 km west of the town of Bothaville (see Figure 1).

The proposed project that will aim to explore and quantify the potential mineral reserves will be known as the Oribi Prospecting Right. In order to undertake prospecting activities, WRE will require a Prospecting Right in terms of the Mineral and Petroleum Resources Development Act (MPRDA, Act No.28 of 2002). The Applicant is also required to obtain an Environmental Authorisation (EA) in terms of the National Environmental Management Act (NEMA, Act No. 107 of 1998) which involves the submission of a Basic Assessment Report (BAR). Environmental Impact Management Services (Pty) Ltd (EIMS) have been appointed by WRE to compile the BAR (this report) in support of the Prospecting Right Application submitted by WRE.

This BAR has been designed to meet the requirements for a BAR and Environmental Management Programme (EMPR) as stipulated in the 2014 EIA Regulations promulgated under the NEMA. The adjudicating authority for this Application will be the Department of Mineral Resources (DMR), and this report has been compiled in accordance with the applicable DMR guidelines and BAR template.

The proposed Oribi Prospecting Right Area is situated over thirty two (32) farm portions next to the town Bothaville in the Free State Province. Due to the abundance of historical data available for the proposed prospecting area, no invasive activities will be undertaken during the proposed prospecting operations. The primary targets of the prospecting operation are the potentially gold bearing conglomerates (reefs) of the Central Rand Group, Witwatersrand Supergroup. These are overlain by younger Karoo Supergroup sandstones and shales, which may contain coal. Post-Karoo intrusions are common. Recent sand deposits cover much of the present day surface. The type of minerals to be prospected for includes the following:

- Silver Ore;
- Gold Ore;
- Coal;
- Cobalt;
- Copper Ore;
- Diamond (Alluvial);
- Iron Ore;
- Manganese Ore;
- Molybdenum Ore;

- Nickel Ore;
- Lead;
- Platinum Group Metals;
- Rare Earths;
- Sulphur;
- Uranium Ore;
- Tungsten Ore; and
- Zinc Ore.

The Prospecting Right Application and Application for Environmental Authorisation was submitted to the DMR on the 21st of September 2015. The DMR accepted the Application for Environmental Authorisation on the 5th of October 2015. Once completed, the BAR will be made available to Interested and Affected Parties (I&AP's) for comment before being finalised and submitted to the DMR for adjudication.

1.1 REPORT STRUCTURE

This report has been compiled in accordance with the 2014 NEMA EIA Regulations. A summary of the report structure, and the specific sections that correspond to the applicable regulations, is provided in **Error! Not a valid bookmark self-reference.** below.

Table 1 Report Structure

Environmental Regulation	Description	Section in Report
NEMA Regulation 982 (2014)		
Appendix 1(3)(a):	Details of – <ul style="list-style-type: none"> (i) The EAP who prepared the report; and (ii) The expertise of the EAP, including a curriculum vitae; 	Section 1.2 Section 1.3
Appendix 1(3)(b):	The location of the activity, including: <ul style="list-style-type: none"> (i) The 21 digit Surveyor General code of each cadastral land parcel; (ii) Where available, the physical address and farm name; and (iii) Where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties; 	Section 1.4 Section 1.5
Appendix 1(3)(c):	A plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale, or, if it is – <ul style="list-style-type: none"> (i) A linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; (ii) On land where the property has not been defined, the coordinates within which the activity is to be undertaken; 	Section 1.5

Environmental Regulation	Description	Section in Report
Appendix 1(3)(d):	<p>A description of the scope of the proposed activity, including –</p> <ul style="list-style-type: none"> (i) All listed and specified activities triggered and being applied for; and (ii) A description of the activities to be undertaken including associated structures and infrastructure; 	<p>Section 2</p> <p>Section 2.1</p> <p>Section 2.2</p>
Appendix 1(3)(e):	<p>A description of the policy and legislative context within which the development is proposed including –</p> <ul style="list-style-type: none"> (i) An identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and (ii) How the proposed activity complies with and responds to the legislation and policy context plans, guidelines, tools frameworks, and instruments; 	<p>Section 3</p>
Appendix 1(3)(f):	<p>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;</p>	<p>Section 4</p>
Appendix 1(3)(g):	<p>A motivation for the preferred site, activity and technology alternative;</p>	<p>Section 5</p>
Appendix 1(3)(h):	<p>A full description of the process followed to reach the proposed alternative within the site, including:</p> <ul style="list-style-type: none"> (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; 	<p>Section 6</p> <p>Section 6.1</p> <p>Section 6.2</p> <p>Section 6.3</p> <p>Section 6.4</p>

Environmental Regulation	Description	Section in Report
	<ul style="list-style-type: none"> (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 – <ul style="list-style-type: none"> (aa) Can be reversed; (bb) May cause irreplaceable loss of resources; and (cc) 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; 	<ul style="list-style-type: none"> Section 6.5 Section 6.6 Section 6.7 Section 6.8 Section 6.9 Section 6.10
<p>Appendix 1(3)(i):</p>	<p>A full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including –</p> <ul style="list-style-type: none"> (i) A description of all environmental issues and risks that were identified during the environmental impact assessment process; and 	<p>Section 7</p>

Environmental Regulation	Description	Section in Report
	(ii) An assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;	
Appendix 1(3)(j):	An assessment of each identified potentially significant impact and risk, including – (i) Cumulative impacts; (ii) The nature, significance and consequence of the impact and risk; (iii) The extent and duration of the impact and risk; (iv) The probability of the impact and risk occurring; (v) The degree to which the impact and risk can be reversed; (vi) The degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) The degree to which the impact and risk can be mitigated;	Section 8
Appendix 1(3)(k):	Where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;	Section 9
Appendix 1(3)(l):	An environmental impact statement which contains – (i) A summary of the key findings of the environmental impact assessment; (ii) A map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and (iii) A summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	Section 10

Environmental Regulation	Description	Section in Report
Appendix 1(3)(m):	Based on the assessment, and where applicable, impact management measures from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPR;	Section 11
Appendix 1(3)(n):	Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	Section 12
Appendix 1(3)(o):	A description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Section 13
Appendix 1(3)(p):	A reasoned opinion as to whether the proposed 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;	Section 14
Appendix 1(3)(q):	Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, and the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	Section 15
Appendix 1(3)(r):	<p>An undertaking under oath or affirmation by the EAP in relation to:</p> <ul style="list-style-type: none"> (i) The correctness of the information provided in the reports; (ii) The inclusion of comments and inputs from stakeholders and I&Ps; (iii) The inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties; 	<p>Section 16</p> <p>Section 27</p>

Environmental Regulation	Description	Section in Report
Appendix 1(3)(s):	Where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	Section 17
Appendix 1(3)(t):	Any specific information that may be required by the competent authority; and	Section 18
Appendix 1(3)(u):	Any other matters required in terms of section 24(4)(a) and (b) of the Act.	Section 19
Appendix 4(1)(1)(a):	Details of – (i) The EAP who prepared the EMPR; and (ii) The expertise of that EAP to prepare an EMPR, including a curriculum vitae;	Section 20.1
Appendix 4(1)(1)(b):	A detailed description of the aspects of the activity that are covered by the EMPR as identified by the project description;	Section 20.2
Appendix 4(1)(1)(c):	A map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;	Section 20.3
Appendix 4(1)(1)(d):	A description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including – (i) Planning and design; (ii) Pre-construction activities; (iii) Construction activities; (iv) Rehabilitation of the environment after construction and where applicable post closure;	Section 21

Environmental Regulation	Description	Section in Report
	<p>and</p> <p>(v) Where relevant, operation activities;</p>	
Appendix 4(1)(1)(e):	A description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);	Section 21.5
Appendix 4(1)(1)(f):	<p>A description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and (e) will be achieved, and must, where applicable, include actions to –</p> <ul style="list-style-type: none"> (i) Avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation; (ii) Comply with any prescribed environmental management standards or practices; (iii) Comply with any applicable provisions of the ac regarding closure, where applicable; <p>and</p> <ul style="list-style-type: none"> (iv) Comply with any provisions of the Act regarding financial provisions for rehabilitation, where applicable; 	Section 21.6
Appendix 4(1)(1)(g):	The method of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 23
Appendix 4(1)(1)(h):	The frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f);	Section 23
Appendix 4(1)(1)(i):	An indication of the persons who will be responsible for the implementation of the impact management actions;	Section 23

Environmental Regulation	Description	Section in Report
Appendix 4(1)(1)(j):	The time periods within which the impact management actions contemplated in paragraph (f) must be implemented;	Section 23
Appendix 4(1)(1)(k):	The mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f);	Section 23
Appendix 4(1)(1)(l):	A program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;	Section 24
Appendix 4(1)(1)(m):	An environmental awareness plan describing the manner in which – <ul style="list-style-type: none"> (i) The applicant intends to inform his or her employees of any environmental risk which may result from their work; and (ii) Risks must be dealt with in order to avoid pollution or the degradation of the environment; and 	Section 25
Appendix 4(1)(1)(n):	Any specific information that may be required by the competent authority.	Section 26

1.2 DETAILS OF THE EAP

Environmental Impact Management Services (Pty) Ltd (EIMS) was appointed by WRE as the Environmental Assessment Practitioner (EAP) to compile this report. The contact details of the EIMS consultant who compiled the report are as follows:

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1.3 EXPERTISE OF THE EAP

1.3.1 QUALIFICATIONS OF THE EAP

In terms of Regulation 13 of the 2014 EIA Regulations (Government Notice R. 982), an independent Environmental Assessment Practitioner (EAP), must be appointed by the applicant to manage the application. EIMS has been appointed by the Applicant as the EAP and is compliant with the definition of an EAP as defined in Regulations 1 and 13 of the EIA Regulations and Section 1 of the NEMA. This includes, inter alia, the requirement that EIMS is:

- 1) Objective and independent;
- 2) Has expertise in conducting EIA's;
- 3) Comply with the NEMA, the Regulations and all other applicable legislation;
- 4) Takes into account all relevant factors relating to the application; and
- 5) Provides full disclosure to the applicant and the relevant environmental authority.

Elizabeth holds a B.Sc. Honours Degree in Environmental Management (Ecological Remediation and Sustainable Development) from the University of the North West. She has compiled several BAR's in support of Prospecting Right Applications for Viva Voce, Encourage Power trade and Invest, and Delf Silica amongst others.

The declaration of independence of the EAP and the Curriculum Vitae (indicating the experience with environmental impact assessment and relevant application processes) of the consultants that were involved in the BAR process and the compilation of this report are attached as Appendix A.

1.3.2 SUMMARY OF EAP'S PAST EXPERIENCE

EIMS is a private and independent environmental management-consulting firm that was founded in 1993. EIMS has in excess of 20 years' experience in conducting EIAs, including many EIA's for mines and mining related projects. Please refer to the EIMS website (www.eims.co.za) for examples of EIA documentation currently available.

Elizabeth's experience lies mainly with environmental assessments for the mining and energy industry, including the compilation of BAR's, EIA's, EMPR's, and undertaking compliance monitoring and Performance Assessments on behalf of clients such as Silver Wave Energy, Exxaro Coal Mpumalanga, Continental Coal, and Molopo Exploration and Production.

The declaration of independence of the EAP and the Curriculum Vitae (indicating the experience with environmental impact assessment and relevant application processes) of the consultants that were involved in the Basic Assessment process and the compilation of this report are attached as Appendix A.

1.4 LOCATION OF THE OVERALL ACTIVITY

The table below indicates the farm portions that fall within the Prospecting Right Application Area.

Table 2: Locality Details

Farm Name	
	1- Boschrand 361 Portion 0;
	2- De Bank 407 Remaining Extent (RE);
	3- De Bank 407 Remaining Extent (RE) of 1;
	4- De Bank 407 Remaining Extent (RE) of 3 of 1;
	5- De Bank 407 Portion 2 (Olympus);
	6- De Bank 407 Portion 5 of 3;
	7- De Bank 407 Portion 8;
	8- De Bank 407 Portion 14;
	9- De Bank 407 Portion 15;
	10- Die Brug 897 Portion 0;
	11- Doornhoek 514 Remaining Extent (RE);
	12- Doornhoek 514 Portion 1;
	13- Doornhoek 514 Remaining Extent (RE) of 2;
	14- Eenzaamheid 94 Remaining Extent (RE);
	15- Eenzaamheid 94 Portion 1;
	16- Eenzaamheid 94 Portion 2;
	17- Enkeldoorn 605 Remaining Extent (RE);
	18- Enkeldoorn 605 Portion 1 (Sonderdoorn);
	19- Goedgevonden 1160 Remaining Extent (RE);
	20- Goedgevonden 1160 Portion 1;
	21- Kameelvlëij 479 Remaining Extent (RE);
	22- Karoodam 1188 Portion 0;
	23- Kwaggadrif 898 Portion 0;
	24- Mooihoek 60 Remaining Extent (RE);
	25- Morester 1175 Portion 0;

	<p>26- Saxony 870 Portion 0;</p> <p>27- Skaapkraal 899 Portion 0;</p> <p>28- Tevrede 1191 Portion 0;</p> <p>29- Verdrietput 174 Portion 0 (Re);</p> <p>30- Vreugde 98 Portion 0;</p> <p>31- Wolvedoorns 486 Remaining Extent (RE); and</p> <p>32- Wolvedoorns 486 Portion 1.</p>		
Application Area (Ha)	The application area extends over thirty two (32) farm portions with a total area of 9 703.3 hectares		
Magisterial District	Lejweleputswa Magisterial District		
Distance and direction from nearest town	The Oribi application area is located 40 km north of Welkom, 51 km south of Klerksdorp and approximately 2.5 km west of Bothaville. The application area can be accessed from the N12, onto the R30 at Klerksdorp, traveling south along the R30 past Orkney then turning west onto the R504.		
21 digit Surveyor General Code for each Portion	Farm Name:	Portion:	SG Codes:
	1- Boschrand 361	0	F00500000000036100000
	2- De Bank 407	RE	F00500000000040700000
	3- De Bank 407	RE of 1	F00500000000040700001
	4- De Bank 407	RE of 3 of 1	F00500000000040700003
	5- De Bank 407	2 (Olympus)	F00500000000040700002
	6- De Bank 407	5 of 3	F00500000000040700005
	7- De Bank 407	8	F00500000000040700008
	8- De Bank 407	14	F00500000000040700014
	9- De Bank 407	15	F00500000000040700015
	10- Die Brug 897	0	F00500000000089700000
	11- Doornhoek 514	RE	F00500000000051400000
	12- Doornhoek 514	1	F00500000000051400001

	13- Doornhoek 514	RE of 2	F00500000000051400002
	14- Eenzaamheid 94	RE	F00500000000009400000
	15- Eenzaamheid 94	1	F00500000000009400001
	16- Eenzaamheid 94	2	F00500000000009400002
	17- Enkeldoorn 605	RE	F0050000000006050000
	18- Enkeldoorn 605	1 (Sonderdoorn)	F00500000000060500001
	19-Goedgevonden 1160	RE	F00500000000116000000
	20-Goedgevonden 1160	1	F00500000000116000001
	21- Kameelvej 479	RE	F00500000000047900000
	22- Karoodam 1188	0	F00500000000118800000
	23- Kwaggadrif 898	0	F00500000000089800000
	24- Mooihoek 60	RE	F00500000000006000000
	25- Morester 1175	0	F00500000000117500000
	26- Saxony 870	0	F00500000000087000000
	27- Skaapkraal 899	0	F00500000000089900000
	28- Tevrede 1191	0	F00500000000119100000
	29- Verdrietput 174	0 (RE)	F00500000000017400000
	30- Vreugde 98	0	F00500000000009800000
	31-Wolvedoorns 486	RE	F00500000000048600000
32- Wolvedoorns 486	1	F00500000000048600001	

2 DESCRIPTION OF THE SCOPE OF THE PROPOSED OVERALL ACTIVITY

Figure 2 below depicts the proposed prospecting area. No invasive prospecting activities will be undertaken as part of the proposed prospecting work programme (PWP). Six non-invasive activities will be undertaken, namely desktop study, data capturing, digitization and synthesis of historical data, development of 3 dimensional (geological) models, resampling of historical cores, and resource estimation. The scope of these activities is as follows:

The desktop studies will incorporate all historical data detailing the position of the target horizons. The data obtained will be in the form of historical borehole information, cadastral maps, geological maps, geophysical surveys (all available existing published gravimetric, radiometric, magnetic, seismic data, remote sensing data, as well as any information pertaining to previous exploration or mining will be consulted and integrated). Much of the data will be obtained from the former Harmony Oribi Project. As such, borehole data will also be available to WRE (Years 1 and 2).

The data located and acquired during Year 1 and beginning of Year 2 will be inventoried in software databases for future reference and ease of access to relevant information. The capturing of data will transform hard copy information into an electronic format, creating a tool for use in 3 dimensional geological modelling and efficient resource estimation.

The acquired data will be compiled into a geological database for the area that will be utilised to present the relevant geological data in useable GIS digital map format. These different data sets will be plotted on a base map of the project and surrounding areas in order to develop a geological model. This model will be used to further refine the prospecting programme for the target area.

Regional aeromagnetic surveys are available and will be used in conjunction with historical borehole data. Should the regional geophysical survey prove favourable, further ground magnetic geophysical investigations will be carried out. The approximate time frames are given: geophysical (Year 4), data compilation and interpretation (Year 4) and refinement of geological model (year 4).

Should the seismic surveys be purchased, they will be integrated with the geological database and presented in useable GIS digital map formats. This information will also be incorporated into the geological model in order to further define the resource.

Based on the geological model, key boreholes previously drilled in the area will be located and negotiations with the owners undertaken to obtain access to the cores for re-logging and, if necessary, re-sampling. Should this be achieved, the estimation of a resource will commence (Year 5).

Table 3: Timeframes each of the proposed activities

	Year 1	Year 2	Year 3	Year 4	Year5
Desktop Study (obtain historic data)					
Data capturing.					

	Year 1	Year 2	Year 3	Year 4	Year5
Digitization and synthesis of historical data.					
Development of 3 dimensional (geological) models.					
Relogging of historical cores. (possibility to re sample)					
Resource estimation.					

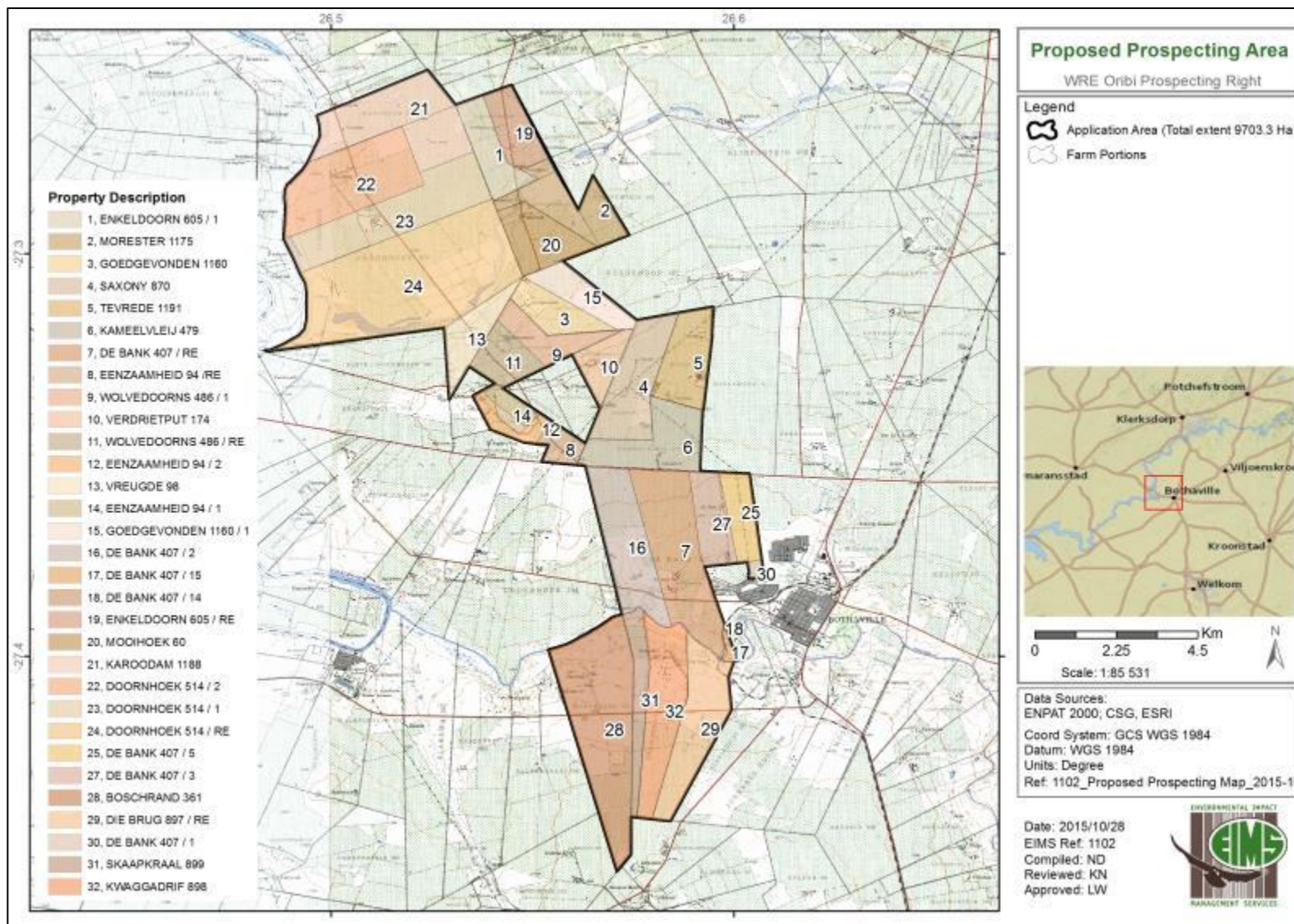


Figure 2: Proposed Prospecting Area

2.1 LISTED AND SPECIFIED ACTIVITIES

Table 4: Listed and Specified Activities

Name of Activity	Aerial Extent of Activity (Ha or m ²)	Listed Activity	Applicable Listing Notice
Activities directly related to prospecting of a mineral resource, including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks.	9 703.3 ha	X	GNR 983
Desktop study	N/A	N/A	N/A
Data capturing.	N/A	N/A	N/A
Digitization and synthesis of historical data.	N/A	N/A	N/A
Development of 3 dimensional (geological) models.	N/A	N/A	N/A
Resampling of historical cores.	N/A	N/A	N/A
Resource estimation.	N/A	N/A	N/A

2.2 DESCRIPTION OF ACTIVITIES TO BE UNDERTAKEN

Due to the abundance of historical data available for the proposed prospecting area, no invasive work will be undertaken on the affected portions. The primary targets of the prospecting activities are the potentially gold bearing conglomerates (reefs) of the Central Rand Group, Witwatersrand Super group. These are overlain by younger Karoo Super group sandstones and shale's, which may contain coal. Post-Karoo intrusive are common. Recent sand deposits cover much of the present day surface. The type of minerals to be prospected for consist of the following; Silver Ore, Gold Ore, Coal, Cobalt, Copper Ore, Diamond (Alluvial), Iron Ore, Manganese Ore, Molybdenum Ore, Nickel Ore, Lead, Platinum Group Metals, Rare Earths, Sulphur, Uranium Ore, Tungsten Ore and Zinc Ore.

The planned non-invasive activities consist of the following:

- Desktop Study

A desktop study of the available historical data will be undertaken (Year 1 – Duration: 8 months).

- Data capturing:

The desktop studies will incorporate all historical data detailing the position of the target horizons. The data obtained will be in the form of historical borehole information, cadastral maps, geological maps and geophysical surveys. All available existing published gravimetric, radiometric, magnetic, seismic data, remote sensing data, as well as any information pertaining to previous exploration or mining will be consulted and integrated. Much of the data will be obtained from the former Harmony Oribi project. As such, borehole data will also be available to WRE (Years 1 and 2 - Duration: 16 months).

Regional aeromagnetic surveys are available and will be used in conjunction with historical borehole data. Should the regional geophysical survey prove favourable, further ground magnetic geophysical investigations will be carried out. The approximate time frames are given: geophysical (Year 4 Duration: 12 months), data compilation and interpretation (Year 4 Duration: 12 months) and refinement of geological model (year 4 Duration: 12 months).

- Digitization and synthesis of historical data:

The acquired data will be compiled into a geological database for the area that will be utilised to present the relevant geological data in useable GIS digital map format. These different data sets will be plotted on a base map of the project and surrounding areas in order to develop a geological model. This model will be used to further refine the exploration programme for the target area (Year 2 Duration: 6 months, Year 3 Duration: 6 months).

Should the seismic surveys be purchased, they will be integrated with the geological database and presented in useable GIS digital map formats. This information will also be incorporated into the geological model in order to further define the resource.

- Development of 3-dimensional geological model:

The data located and acquired during Year 1 and beginning of Year 2 will be inventoried in access databases for future reference and ease of access to relevant information. The capturing of data will transform hard copy information into an electronic format, creating a powerful tool for use in 3 dimensional geological modelling. A provisional geological model will be developed in Year 3 and finalised in Year 4 (Duration: 12 months).

- Resampling of historical cores:

Based on the geological model, key boreholes previously drilled in the area will be located and negotiations with the owners undertaken to obtain access to the core for re-logging and, if necessary, re-sampling (Year 4 Duration 12 months).

- Resource estimation:

Based on the above data collection and geological model, the estimation of a resource will commence. The geological model and resource determination conducted will then be incorporated into a financial model of a potential future mine in a pre-feasibility study. At this stage, future funding for feasibility study and possible resource exploitation will be considered (Year 5, Duration 12 month).

Due to the nature of data collection and the extensive historical borehole datasets, invasive activities such as drilling are deemed to be unnecessary during the initial investigation. This is due to the availability of previously drilled boreholes adjacent to and within the prospects. WRE is therefore fast tracking the resource estimation process by purchasing historic boreholes information rather than drilling boreholes which need to be logged and interpreted. WRE acknowledges that some prospecting areas have a larger concentration of historical boreholes than others. Should it become clear that invasive prospecting activities such as drilling is required, WRE will advise the DMR timeously and will adjust the PWP by way of a Section 102 (of the MPRDA) Amendment Application.

3 POLICY AND LEGISLATIVE CONTEXT

Table 5: Policy and Legislative Context

Applicable Legislation and Guidelines	Reference Where Applied (i.e. where in this document has it been explained how the development complies with and responds to the legislation and policy context)	How does this Development Comply with and Respond to the Legislation and Policy Context
<p>National Environmental Management Act (NEMA):</p> <p>GNR 983 Activity 20: Activities directly related to prospecting of a mineral resource, including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks.</p>	<p>This entire report is prepared as part of the Application for Environmental Authorisation under the NEMA.</p>	<p>In terms of the National Environmental Management Act an Application for Environmental Authorisation subject to a Basic Assessment Process has been applied for.</p>
<p>Minerals and Petroleum resources Development Act (MPRDA):</p> <p>In support of the Prospecting Right Application submitted by WRE the applicant is required to conduct a NEMA BAR process in terms of Section 5A and Chapter 16 of the MPRDA.</p>	<p>This entire report is prepared as part of the Prospecting Right Application under the MPRDA.</p>	<p>In terms of the Mineral and Petroleum Resources Development Act a Prospecting Right Application has been applied for.</p>
<p>National Water Act (NWA):</p> <p>Water may not be used without prior authorisation by the DWA. Section 21 of the NWA water uses for which authorisation is required.</p>	<p>Due to the nature of the proposed prospecting activities no Section 21 water uses will be triggered, therefore there is no requirement to apply for Water Use authorisation in terms of</p>	<p>In terms of the National water Act no Water Use Licence has been applied for.</p>

Applicable Legislation and Guidelines	Reference Where Applied (i.e. where in this document has it been explained how the development complies with and responds to the legislation and policy context)	How does this Development Comply with and Respond to the Legislation and Policy Context
	the NWA.	

4 NEED AND DESIRABILITY OF THE PROPOSED ACTIVITIES

The minerals being prospected for are Silver Ore, Gold Ore, Coal, Cobalt, Copper Ore, Diamond (Alluvial), Iron Ore, Manganese Ore, Molybdenum Ore, Nickel Ore, Lead, Platinum Group Metals, Rare Earths, Sulphur, Uranium Ore, Tungsten Ore and Zinc Ore. The proposed Oribi Prospecting Right, if approved, will allow WRE to determine if there is an economically viable resource available in the area. The wealth of previous geological information compiled also allows for the potential identification of a resource without the need for invasive prospecting to be undertaken unlike other prospecting operations.

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

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

The application area has been selected as the preferred site based on the historical geological data available for the region, which indicates the potential for economically viable minerals to occur. The wealth of previous geological information compiled also allows for the potential identification of a resource without the need for invasive prospecting to be undertaken.

The activities listed in the PWP have been selected as they do not require invasive, on the ground investigations, in order to determine the economic viability of the mineral resources in the prospecting area. Some of the techniques employed in the non-invasive prospecting activities will include a desktop study, digitization and a compilation and synthesis of databases, the development of a provisional geological model, an assessment of historical borehole data, re-logging and resampling of historic cores and the development of a 3D geological model.

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

6.1 DETAILS OF DEVELOPMENT FOOTPRINT ALTERNATIVES

There will be no development footprint due to the fact that no invasive prospecting will be undertaken. The geology is the primary driver in determining the location of prospecting and mining. The geology of this area has already been explored historically providing a wealth of information that with update can be used to determine the presence of potential resources without requiring invasive activities. As such no assessment of alternative development scenarios was conducted.

6.1.1 PROPERTY

The application area has been selected based predominantly on historical data available for the region, which indicates the potential for economically viable resources to occur. The Welkom Goldfield hosts eleven mines in the triangle between Allanridge, Welkom and Virginia, 270km southwest of Johannesburg. Historically, these mines have collectively produced in excess of 9.6 Million kg Au (gold). The Central Rand Group of the Witwatersrand Supergroup is present within the proposed Oribi Prospecting Right, with four potentially economic placer deposits. The mineralised reefs at Oribi are the Basal Reef, Big Pebble Conglomerate, A Reef and the B Reef. In addition to gold, the primary exploration target, silver, uranium, sulphur, diamonds, rare earths and platinum group metals are currently and have been historically, extracted as by-products of gold. Base metals (cobalt, copper, manganese, molybdenum, nickel, lead, tungsten and zinc) could also potentially be present in mafic intrusions.

The non-invasive prospecting activities proposed are designed to allow for the identification of the preferred target areas through the use of historical data and desktop techniques.

6.1.2 TYPE OF ACTIVITY

Due to the nature of data collection and the extensive historical borehole datasets, invasive prospecting such as drilling is perceived to be unnecessary during the initial investigation. This is due to the availability of previously drilled boreholes adjacent to and within the prospects. WRE is therefore fast tracking the resource estimation process by purchasing historic boreholes rather than drilling new ones. WRE acknowledges that some prospecting areas have a larger concentration of historical boreholes than others.

6.1.3 DESIGN OR LAYOUT

No invasive activities are planned. As such there are no design or layout alternatives to consider.

6.1.4 TECHNOLOGY ALTERNATIVES

The technologies listed in the PWP have been selected as they are proven and do not require the use of invasive prospecting techniques, in order to determine resource viability within the proposed prospecting area. Some of the techniques employed in the non-invasive prospecting will include a desktop study, digitization and a compilation and synthesis of databases, the development of a provisional geological model, an assessment of historical borehole data, re-logging and resampling of historic cores and the development of a 3D geological model. These technologies have been selected due to their non-invasive nature and ability to provide information, at the level required, to determine and estimate a potential resource. As such no further technology alternatives are considered.

6.1.5 OPERATIONAL ASPECTS

At this stage no invasive activities will be undertaken. As such there are no operational aspect alternatives to consider.

6.1.6 OPTION OF NOT IMPLEMENTING

If the prospecting right is not granted the potential to identify viable mineral resources could be lost. There are extremely few negative impacts likely to occur as a result of the prospecting work and therefore the lost opportunity of positive impacts outweighs the negative impacts of implementing the proposed prospecting activities.

6.2 DETAILS OF THE PUBLIC PARTICIPATION PROCESS FOLLOWED

6.2.1 PUBLIC PARTICIPATION METHODOLOGY

The Public Participation Process (PPP) is a requirement of several pieces of South African Legislation and aims to ensure that all relevant Interested and Affected Parties (I&AP's) are consulted, involved and their opinions are taken into account and a record included in the reports submitted to Authorities. The process ensures that all stakeholders are provided this opportunity as part of a transparent process which allows for a robust and comprehensive environmental study.

The legal landowners and other pre-identified key I&AP's were sent a notification letter on the 3rd of November 2015, disseminated via email, fax and registered mail. I&AP's have been provided a period of 42 days to register and comment on the proposed activity and application. The draft BAR will be available during this period from the 13th of November 2015 to the 15th December 2015 for review and comment.

6.2.2 IDENTIFICATION OF I&AP'S

An initial I&AP list was compiled using WinDeed searches to determine the registered landowners of the project affected land parcels. The I&AP database was compiled containing the following categories of stakeholders:

- National Government;
- Provincial Government;
- Local Government;
- Agricultural Sector;
- Organised Business;
- Host and Adjacent Communities;
- Land Claimants;
- Other organisations, clubs, communities, and unions; and
- Various NGO's.

6.2.2.1 LIST OF AUTHORITIES IDENTIFIED AND NOTIFIED

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

- National Department of Mineral Resources
- National Department of Agriculture, Forestry and Fisheries
- National Department of Rural Development and Land Reform
- National Department of Water and Sanitation
- Nation Department of Transport
- South African National Roads Agency Ltd (SANRAL)
- South African Local Government Association (SALGA) - Free State
- South African Heritage Resources Agency (SAHRA) - National
- Free State Department of Agriculture and Rural Development

- Free State Department of Cooperative Governance, Traditional Affairs & Human Settlements
- Free State Department of Economic Development, Tourism, Environmental Affairs & Small Business
- Free State Department of Police, Roads and Transport
- Free State Department of Public Works
- Free State Department of Water and Sanitation
- Agri Free State
- Eskom
- Transnet
- Lana Local Municipality
- Lejweleputswa District Municipality
- South African National Parks (SANParks)

6.2.2.2 LIST OF KEY STAKEHOLDERS IDENTIFIED AND NOTIFIED

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

- SECCP of Earthlife Africa
- Wildlife and Environment Society of South Africa (WESSA)
- Agri SA
- Bothaville Farmer's Union
- Earthlife Africa
- Birdlife South Africa
- Agricultural Research Council
- Endangered Wildlife Trust

6.2.2.3 LIST OF SURFACE RIGHTS/LAND OWNERS IDENTIFIED AND NOTIFIED

The following surface rights/landowners of the area under application have been identified and notified of the proposed Oribi Prospecting Right:

- Mannetjie Van Der Linde Trust
- Nala Local Municipality
- Abraham Preller Trust
- Cawood Robert Helgard
- Transnet Ltd
- Petrus Jakobes De Klerk
- Wymar Trust
- Wymar Trust (Mr. W. Van Der Westhuizen)
- AT Jordaan Trust
- Score Wise Trading Pty Ltd
- Sunnyside Trust

- Boehankie Trust
- Sunette Boerdery cc
- Izmey Stoet Boerdery Pty Ltd
- Willows Parys Eenheid 25 Pty Ltd
- Sonja Trust
- Goedgevonden Trust
- Francois Hendrik Jordaan
- Abraham Preller Trust (Gaupner)
- Betel Boerdery Pty Ltd
- Pieter Willem Swanepoel
- Tevrede Trust
- Kootjie Jordaan Trust
- Micha De Bruin

6.2.3 NOTIFICATION OF I&AP'S

All I&AP's were notified of the proposed Prospecting Right Application via the following methods:

- 1) Registered letters, emails and faxes;
- 2) Background Information Document;
- 3) Questionnaires;
- 4) Placement of 30 A2 Correx Site Notices in various locations on the site;
- 5) Placement of a newspaper advert in The Weekly on the 30th of October 2015.

The I&AP database is included in Appendix B. Please also refer to Appendix B for proof of notification sent to I&APs and for proof of correspondence with I&APs.

Description of the Information Provided to the Community, Landowners and I&AP's

Notification documents sent to all pre-identified I&AP's included the following information:

- The site plan;
- List of activities to be authorised;
- Scale and extent of activities to be authorised;
- Typical impacts of activities to be authorised;
- The duration of the activity;
- Sufficient detail of the intended operation to enable them to assess what impact the activities will have on them or on the use of their land);
- The purpose of the proposed project;
- The prospecting methods to be used;
- Details of the affected properties (including parent farm and portion);
- Details of the MPRDA and NEMA Regulations that must be adhered to;
- The minerals being prospected for;

- Date by which comment, concerns and objections must be forwarded through to both EIMS and the DMR respectively;
- Contact details of the Environmental Assessment Practitioner (EAP); and
- Contact details of the DMR and name of the relevant DMR official.

In addition, a questionnaire was included in the registered letters, emails and facsimiles sent and requested the following information from I&AP's:

- To provide information on how they consider that the proposed activities will impact on them or their socio-economic conditions;
- To provide written responses stating their suggestions to mitigate the anticipated impacts of each activity;
- To provide information on current land uses and their location within the area under consideration;
- To provide information on the location of environmental features on site, to make written proposals as to how and to what standard the impacts on site can be remedied.
- To mitigate the potential impacts on their socio economic conditions to make proposals as to how the potential impacts on their infrastructure can be managed, avoided or remedied;
- Details of the landowner and information on lawful occupiers;
- Details of any communities existing within the area;
- Details of any Tribal Authorities within the area;
- Details of any other I&AP's that need to be notified;
- Details on any land developments proposed;
- Details of any perceived impacts to the environment that should be considered in the BAR; and
- Any specific comments, concerns or objections to the proposed prospecting operation.

I&AP's have been provided a period of 42 days, from the 3rd of November 2015 to the 15th of December 2015, to register and comment on the proposed activity and application. The draft BAR will be available for 32 days during this period, from the 13th of November 2015 to the 15th December 2015, for review and comment. Refer to Appendix B for proof of notification sent to I&APs.

Comments obtained during the BAR consultation period have been included in the summary table below, which will be continuously updated throughout the BAR consultation period, and will be submitted together with the Final BAR to the relevant competent authorities. No comments have been received to date.

To date, no objections have been received for this prospecting application (refer to Section 6.3).

6.2.4 PUBLIC PARTICIPATION OPEN DAYS/MEETINGS

Due to the scale of the BAR process and the non-invasive nature of the prospecting activities, it is highly unlikely that a public meeting will be required at this stage in the BAR process. However, should I&AP's request a public meeting, one will be scheduled to further consult with I&AP's.

6.2.5 ISSUES AND RESPONSES

The PPP was initiated on 3 November 2015 with the draft BAR being made available from 13 November 2015. I&AP's have been given until 15 December 2015, a period of 42 days to register, and 32 days to provide comment on the draft BAR. All comments or issues received from I&AP's thus far have been included in the summary table below.

6.3 SUMMARY OF ISSUES RAISED BY I&AP'S

Any comments received during the PPP will be included in this report and summarised in Table 6 below for submission to the DMR.

Table 6: Summary of Issues Raised by I&AP's

Interested and Affected Parties	Consulted	Date Comments Received	Issues Raised	Response to Issue	Report Reference
Key Stakeholders					
Landowner/s					
Mannetje Van Der Linde Trust	X	NA	No comment received	NA	NA
Nala Local Municipality	X	NA	No comment received	NA	NA
Abraham Preller Trust	X	NA	No comment received	NA	NA
Cawood Robert Helgard	X	NA	No comment received	NA	NA
André Bodenstein	X	NA	No comment received	NA	NA
Transnet Ltd	X	NA	No comment received	NA	NA
Petrus Jakobes De Klerk	X	NA	No comment received	NA	NA
Wymar Trust	X	NA	No comment received	NA	NA

Interested and Affected Parties	Consulted	Date Comments Received	Issues Raised	Response to Issue	Report Reference
Wymar Trust (Mr. W. Van Der Westhuizen)	X	NA	No comment received	NA	NA
AT Jordaan Trust	X	NA	No comment received	NA	NA
Score Wise Trading Pty Ltd	X	NA	No comment received	NA	NA
Sunnyside Trust	X	NA	No comment received	NA	NA
Boehankie Trust (Mr Martinus Jahannes van de Venter)	Yes	11/11/2015	Mr van de Venter indicated to EIMS that he is the owner of Portion RE, 2 and 1 of the farm Eenzaamheid and entire farm Verdrietput. Mr van de venter indicated that the receiving environment is that of farming and residential purposes.	EIMS thanked Mr van de Venter for providing EIMS with comment on the project. EIMS indicated that Mr van de Venter has been registered as an I&AP and a landowner. As such Mr van de Venter will receive notifications throughout the BAR process. EIMS indicated that Mr van de Venters comments will be included in the issues and response report and included in the BAR which will be submitted to the authorities at a later stage. EIMS also stated that the BAR	

Interested and Affected Parties	Consulted	Date Comments Received	Issues Raised	Response to Issue	Report Reference
				will be available for review from the Friday the 13th of November 2015 to the 15th of December 2015.	
Sunette Boerdery cc	X	NA	No comment received	NA	NA
Izmey Stoet Boerdery Pty Ltd	X	NA	No comment received	NA	NA
Willows Parys Eenheid 25 Pty Ltd	X	NA	No comment received	NA	NA
Sonja Trust	X	NA	No comment received	NA	NA
Goedgevonden Trust	X	NA	No comment received	NA	NA
Francois Hendrik Jordaan	X	NA	No comment received	NA	NA
Abraham Preller Trust (Gaupner)	X	NA	No comment received	NA	NA
Betel Boerdery Pty Ltd	X	NA	No comment received	NA	NA
Pieter Willem Swanepoel	X	NA	No comment received	NA	NA
Tevrede Trust	X	NA	No comment received	NA	NA

Interested and Affected Parties	Consulted	Date Comments Received	Issues Raised	Response to Issue	Report Reference
Kootjie Jordaan Trust	X	NA	No comment received	NA	NA
Micha De Bruin	X	NA	No comment received	NA	NA
Sonja Trust	X	NA	No comment received	NA	NA
Lawful Occupier/s					
N/A					
Adjacent Landowners					
Wilhelmus Hendrikus van Zyl	Yes	10/11/2015	<p>Mr van Zyl provided EIMS with completed registration and questionnaire form. Mr van Zyl indicated that he is an adjacent landowner. Mr van Zyl's portions are portion 3 of 2 of the farm Doornhoek 244 and he is a 1/5 owner of the farm Engela's Rust 895. Mr van Zyl stated that he is aware of other landowners staying on their farms.</p> <p>The receiving environment is mainly veld used for grazing cattle. Engela's</p>	<p>EIMS thanked Mr van Zyl for providing comment on the project. EIMS indicated that Mr van Zyl has been registered as an interested and affected party as well as an adjacent landowner. EIMS indicated that Mr van Zyl will receive notification throughout the basic assessment process.</p> <p>EIMS reiterated that the proposed prospecting is for non-invasive activities and as such no access to</p>	

Interested and Affected Parties	Consulted	Date Comments Received	Issues Raised	Response to Issue	Report Reference
			<p>Rust has some infrastructure on it and plans for a feedlot. Doornhoek has an Eskom power line on it.</p> <p>The application area is close to 2 rivers (Vaal and Vals rivers respectively). Mr van Zyl raised concerns about the potential for pollution to occur as a result of the project and therefore the loss of farmland. Mr van Zyl further indicated that rehabilitation plans and proposed flows of possible acid water should be checked.</p>	<p>farms will be required. All prospecting techniques to be used will not cause any physical disturbance.</p> <p>EIMS indicated that Mr van Zyl's comments will be included in the issues and response report that will be included in the BAR submitted to authorities at a later stage. EIMS also indicated that the BAR would be available from Friday the 13th of November 2015 to the 15th of December 2015.</p>	
Municipal Councillor					
Ward 8 councillor	X	NA	No comment received	NA	NA
Municipality					
Lejweleputswa District	X	NA	No comment received	NA	NA

Interested and Affected Parties	Consulted	Date Comments Received	Issues Raised	Response to Issue	Report Reference
Municipality					
Lana Local Municipality	X	NA	No comment received	NA	NA
Organs of State					
South African National Parks (SANParks)	X	NA	No comment received	NA	NA
Eskom	Yes	4/11/2015	Rochelle of Eskom indicated that her jurisdiction is in the Western Cape and as such she will not be providing comment.	EIMS notified Eskom	
Transnet	X	NA	No comment received	NA	NA
South African National Roads Agency Ltd (SANRAL)	X	NA	No comment received	NA	NA
South African Local Government Association (SALGA) - Free State	X	NA	No comment received	NA	NA
Communities					

Interested and Affected Parties	Consulted	Date Comments Received	Issues Raised	Response to Issue	Report Reference
N/A					
Department of Land Affairs					
National Department of Rural Development and Land Reform	Yes	3/11/2015	<p>Mr Armour responded to the fax notification distributed on 3/11/2015 indicating that EIMS will be undertaking a BAR and PPP in support of an application for Prospecting Right without bulk sampling and environmental authorisation.</p> <p>Mr Armour stated that he and Cynthia Troost would like to be registered as Interested and Affected Parties as they will be acting for AgriFS as an I&AP in an oversight and monitoring capacity who will be liaising with our directly affected members. Mr Armour also requested that he be sent the documents electronically to assist in distributing them to the local structure.</p>	<p>EIMS indicated that Mr Armour and Ms Troost have been added to the registered I&AP's database for the Proposed Oribi Prospecting Right Application.</p> <p>EIMS also sent electronic copies of the following documents (Notification document, Background information document and a Registration and Questionnaire form to Mr Armour and Ms Troost for review and distribution.</p>	NA

Interested and Affected Parties	Consulted	Date Comments Received	Issues Raised	Response to Issue	Report Reference
Traditional Leaders					
N/A					
Department of Environmental Affairs					
Free State Department of Economic Development, Tourism, Environmental Affairs & Small Business	X	NA	No comment received	NA	NA
Other Competent Authorities					
National Department of Mineral Resources	X	NA	No comment received	NA	NA
National Department of Agriculture, Forestry and Fisheries	X	NA	No comment received	NA	NA
National Department of Water and Sanitation	X	NA	The Department of Water and Sanitation contacted EIMS thanking EIMS for the initial notification for prospecting at Bothaville. The	NA	NA

Interested and Affected Parties	Consulted	Date Comments Received	Issues Raised	Response to Issue	Report Reference
			department indicated that they had received the notification and requested that the BAR be sent directly to the department. DWS provided contact details for the correct official to liaise with.		
Nation Department of Transport	X	NA	No comment received	NA	NA
South African Heritage Resources Agency (SAHRA) - National	X	NA	No comment received	NA	NA
Free State Department of Agriculture and Rural Development	X	NA	No comment received	NA	NA
Free State Department of Cooperative Governance, Traditional Affairs & Human Settlements	X	NA	No comment received	NA	NA
Free State Department of Police, Roads and Transport	X	NA	No comment received	NA	NA

Interested and Affected Parties	Consulted	Date Comments Received	Issues Raised	Response to Issue	Report Reference
Free State Department of Public Works	X	NA	No comment received	NA	NA
Free State Department of Water and Sanitation	X	NA	No comment received	NA	NA
Agri Free State	X	NA	No comment received	NA	NA
Other Affected Parties					
SECCP of Earthlife Africa	X	NA	No comment received	NA	NA
Wildlife and Environment Society of South Africa (WESSA)	X	NA	No comment received	NA	NA
Agri SA	X	NA	No comment received	NA	NA
Bothaville Farmer's Union	X	NA	No comment received	NA	NA
Earthlife Africa	X	NA	No comment received	NA	NA
Birdlife South Africa	X	NA	No comment received	NA	NA
Agricultural Research Council	X	NA	No comment received	NA	NA

Interested and Affected Parties	Consulted	Date Comments Received	Issues Raised	Response to Issue	Report Reference
Endangered Wildlife Trust	X	NA	No comment received	NA	NA
Interested Parties					
N/A					

6.4 THE ENVIRONMENTAL ATTRIBUTES ASSOCIATED WITH THE ALTERNATIVES

6.4.1 THE BASELINE ENVIRONMENT

6.4.1.1 TYPE OF ENVIRONMENT AFFECTED BY THE PROPOSED ACTIVITY

6.4.1.1.1 SOCIO-ECONOMIC

The application area is located in the Free State Province close to the town of Bothaville. The town is a maize/crop farming community which is situated near the Vaal River. The town of Bothaville is located in the District Municipality of Lejweleputswa. The application area can be found in Nala Local Municipality (Ward 8). According to the 2011 census data Bothaville has a population of 4 152 people.

6.4.1.1.2 CULTURE AND HERITAGE

No cultural or heritage features have been identified within the proposed application area. Notice of the application for a Prospecting Right and Environmental Authorisation has been uploaded to the South African Heritage Resources Agency's (SAHRA) website, South African Heritage Information System (SAHRIS). To date, no comment has been received from SAHRA.

6.4.1.1.3 GEOLOGY, TOPOGRAPHY AND SOILS

Geology

The application area is located within the Central Rand Group of the Witwatersrand Supergroup. These areas are overlain by the younger Karoo Supergroup sandstones and shales, which may contain coal deposits. Post-Karoo intrusive are common in this formation as well as recent sand deposits which cover much of the present day surface.

Topography

The topography of the application area comprises of undulating plains varying in altitude between 1 000 and 1 500 metres above sea level (masl).

Soils

Areas that are associated with the Highveld Alluvial Vegetation type are generally deep sandy to clayey alluvial soils developed over Quaternary alluvial sediments. The following soil forms are associated with this vegetation type; Oakleaf, Dundee, Hortlands, Glenrosa and Mispah. In areas where the Vaal-Vet Sandy Grassland vegetation type dominates the soil forms are mostly Avalon, Westliegh and Clovelly.

The dominant soil type is Bd, closely followed by Bc, Ae, and Ba (refer to Figure 6). These soils are mainly red and yellow apedal soils. They range from moderate to high fertility status with large variability in texture, mostly sandy loam to sandy clay loam. The Bd, Bc, and Ba types contain a greyish subsoil layer where Iron and Manganese accumulate in mottles due to a seasonally fluctuating water table. These mottles eventually harden to form concretions which cause restricted water infiltration (AGIS, 2015).

6.4.1.1.4 CLIMATE

The application area receives summer (November - March) rainfall with a mean annual precipitation (MAP) of 500 mm. The area experiences temperatures in excess of 30°C during the summer months and severe frost during winter months.

6.4.1.1.5 SURFACE HYDROLOGY

The application area falls within the Vaal catchment area, specifically in the following three Quaternary catchments C24J, C60J and C25C (Figure 5). According to the DWS Water Allocation Reform (WAR) page, these three catchments are all of moderate ecological sensitivity. The area is drained by the Vaal River and two of its tributaries – the Vals River and Soofonteinlaagte River. The Soofonteinlaagte and Vaal Rivers are Class D rivers, considered largely modified. The Vals River is a Class C river, considered to be moderately modified.

Several National Freshwater Ecosystem Priority Areas (NFEPA) wetlands are present on site. It is, however, widely known that the NFEPA database is incomplete. In interpreting the NFEPA data, it must always be remembered that “not all wetlands have been mapped and there are substantial gaps” (NFEPA Implementation Manual, Driver et al., 2011). Furthermore, “rivers and wetlands that are not FEPAs... still require a biodiversity assessment because knowledge of special ecological features or species of special concern is incomplete, and it is therefore critical to verify that they do not occur on the site.”

6.4.1.1.6 FLORA

The application area falls within two vegetation types according (refer to Figure 4). These two vegetation types are Highveld Alluvial Vegetation and Vaal-Vet Sandy grassland. The vegetation types are discussed in more detail below.

Highveld Alluvial Vegetation

The Highveld Alluvial Vegetation can be found Mpumalanga, Gauteng, the Free State and the North West provinces as well as Lesotho and Swaziland. The vegetation type can be found at an altitude of 1000 - 1500 masl. The Highveld Alluvial Vegetation supports riparian thickets which are mostly dominated by *Acacia karoo*. These areas are accompanied by seasonally flooded grasslands and disturbed herblands which are often dominated by alien plants.

Important taxa include:

- Riparian Thickets
 - Small Trees: *Acacia karoo* (d), *Salix mucronata subsp. mucronata* (d), *S. mucronata subsp. woodii* (d, within subescarpment grasslands of KwaZulu - Natal), *Ziziphus macronata* (d), *Celtis africana*, *Rhus lancea*.
 - Tall Shrubs: *Gymnosporia buxifolia* (d) *Rhus pyroides* (d) *Diospyros lycioides*, *Ehretia rigida*, *Grewia flava*.
 - Low Shrubs: *Asparagus laricinus* (d), *A suaveolens* (d).
 - Woody Climber: *Clematis brachiata*.
 - Succulent Shrub: *Lycium hirtum* (d).
 - Graminoids: *Setaria verticillata* (d), *Panicum maximum*.

- Herb: *Pollichia campestris*.
- Reed Beds
 - Megagraminoid: *Phragmites australis* (d).
- Flooded Grasslands and Herblands
 - Low Shrubs: *Gomphocarpus fruticosus* (d), *Felicia muricata*.
 - Succulent Shrub: *Salsola rabieana*
 - Graminoids: *Agrostis lachnantha* (d), *Andropogon eucomus* (d), *Chloris virgata* (d), *Cynodon dactylon* (d), *Eriogrostis plana* (d), *Hemarthria altissima* (d), *Imperata cylindrica* (d), *Ischaemum fasciculatum* (d), *Miscanthus junceus* (d), *Paspalum distichum* (d), *Andropogon appendiculatus*, *Brachiaria morlothii*, *Cyperus denudatus*, *C. longus*, *Echinochloa holubii*, *Eragrostis obtusa*, *E. porosa*, *Fimbristylis ferruginea*, *Panicum coloratum*, *Pycreus mundii*, *Sporobolus africanus*, *S. fimbriatus*, *Themeda triandra*, *Urochloa panicoides*.
 - Herbs: *Persicaria lapathifolia* (d), *Alternanthera sessilis*, *Barleria macrostegia*, *Corchorus asplenifolius*, *Equisetum ramosissimum*, *Galium capense*, *Hibiscus pusillus*, *Lobelia angolensis*, *Nidorella resedifolia*, *Persicaria amphibia*, *P. hystricula*, *Pseudognaphalium oligandrum*, *Pulicaria scabra*, *Rorippa fluvialis* var. *fluvialis*, *Senecio inornatus*, *Stachysochloa*, *Vahlia capensis*.
 - Geophytic Herbs: *Vrimum bulbispermum*, *Haplocarpha lyata*.
- Open Water
 - Aquatic Herb: *Myriophyllum spicatum*.

The Highveld Alluvial Vegetation is considered least threatened. Nearly 10 % has been statutorily conserved in the Barberspan. These conserved areas are; Bloemhof Dam, Christiana, Faan Meintjies, Sandveld, Schoonspruit, Soetdoring, and Wolwespruit Nature Reserves. A loss in the vegetation type is generally associated with cultivation and the building of dams. This Alluvial vegetation is prone to infestation by a number of weeds, obviously encouraged by the high nutrient status of soils and ample water supply. Woody species often dominate either riverine thickets or grasslands or form rural communities in disturbed habitats. The undergrowth of the alluvial riparian thickets and the accompanying grasslands suffer from heavy overgrazing in many places.

Vaal-Vet Sandy Grassland

The Vaal-Vet Sandy Grassland can be found in North West, Free State Provinces, South of Lichtenberg and Ventersdorp and stretching southwards to Klerksdorp, Leeudoringstad, Bothaville and Brandfort areas in the North of Bloemfontein. The vegetation type can be found at an altitude of 1260 - 1360 masl. Vaal-Vet Sandy Grassland supports mainly low tussock grasslands with an abundant karroid element. The dominance of *Themeda triandra* is an important feature of this vegetation unit.

Important taxa include:

- Graminoids: *Antheophora pubescens* (d), *Aristida congesta*, *Chloris virgata* (d), *Cymbopogon caesius* (d), *Cynodon dactylon* (d), *Digitaria argyrograptia*, *Elionurus muticus*, *Eragrostis chloromelas* (d), *E. lehmanniana* (d), *E. plana* (d), *E. tichophora* (d), *Heteropogon contortus* (d), *Panicum gilvum* (d), *Setaria Sphacelata* (d), *Themeda triandra* (d), *Targus berteronianus* (d), *Brachiaria serrata*, *Cymbopogon pospischilii*, *Digitaria eriantha*, *Eragrostis curvula*, *E. obtusa*, *E.*

superba, *Panicum coloratum*, *Pogonarthria squarrosa*, *Trichoneura grandiglumis*, *Triraphis andropogonoides*.

- Herbs: *Stachys spathulata* (d), *Berleria macrostegia*, *Berkheya onopordifolia* var. *onopordifolia*, *Chamaesyce inaequilatera*, *Geigeria aspera* var. *aspera*, *Helichrysum caespitium*, *Hermannia depressa*, *Hibiscus pusillus*, *Monsonia burkeana*, *Rhynchosia adenodes*, *Selago densiflora*, *Vernonia oligocephala*.
- Geophytic Herbs: *Bulbine narcissifolia*, *Ledebouria marginata*.
- Succulent Herbs: *Tripteris aghillana* var. *integrifolia*.
- Low Shrubs: *Felicia muricata* (d), *Pentzia globosa* (d), *Anthospermum rigidum* subsp. *pumilum*, *Helichrysum dregeanum*, *H. Paronychioides*, *Ziziphus zeyheriana*.

The Vaal-Vet Sandy Grassland is considered Endangered. Only 0.3 % of this vegetation type is statutorily conserved within the Bloemhof Dam, Faan Meintjies, Sandveld, Schoonspruit, Soetdoring, and Wolwespruit Nature Reserves. A loss in the vegetation type is generally associated with transformed land for cultivation, for commercial crops and grazing for cattle and sheep.

6.4.1.1.7 FAUNA

A desktop search for protected or threatened fauna species was conducted using a quarter degree search (2726BC) on the South African National Biodiversity Institute (SANBI) Integrated Biodiversity Information System (SIBIS) Database. There are no faunal species of concern that fall within the study area according to the SIBIS search.

An alternative search for sensitive species for the study area was undertaken through the Animal Demography Unit – Virtual Museum (VM). The VM database contains information on species ranges and catalogues data regarding where and when a species was seen. No threatened or protected species were identified via the VM database.

6.4.1.1.8 ENVIRONMENTAL ASPECTS WHICH MAY REQUIRE PROTECTION AND/OR REMEDIATION

At this stage no invasive activities will be undertaken. As such there are no environmental aspects which may require protection and/or remediation.

There are features on site that would require protection but as no invasive work is to be undertaken, no specific measures are required to protect these areas. However in the event that the Applicant determines a need for invasive prospecting, appropriate measures would be required to protect these sensitive features. It is anticipated that this would be achieved through a Section 102 amendment process which would include an update to the EMPR and the development of appropriate mitigation measures.

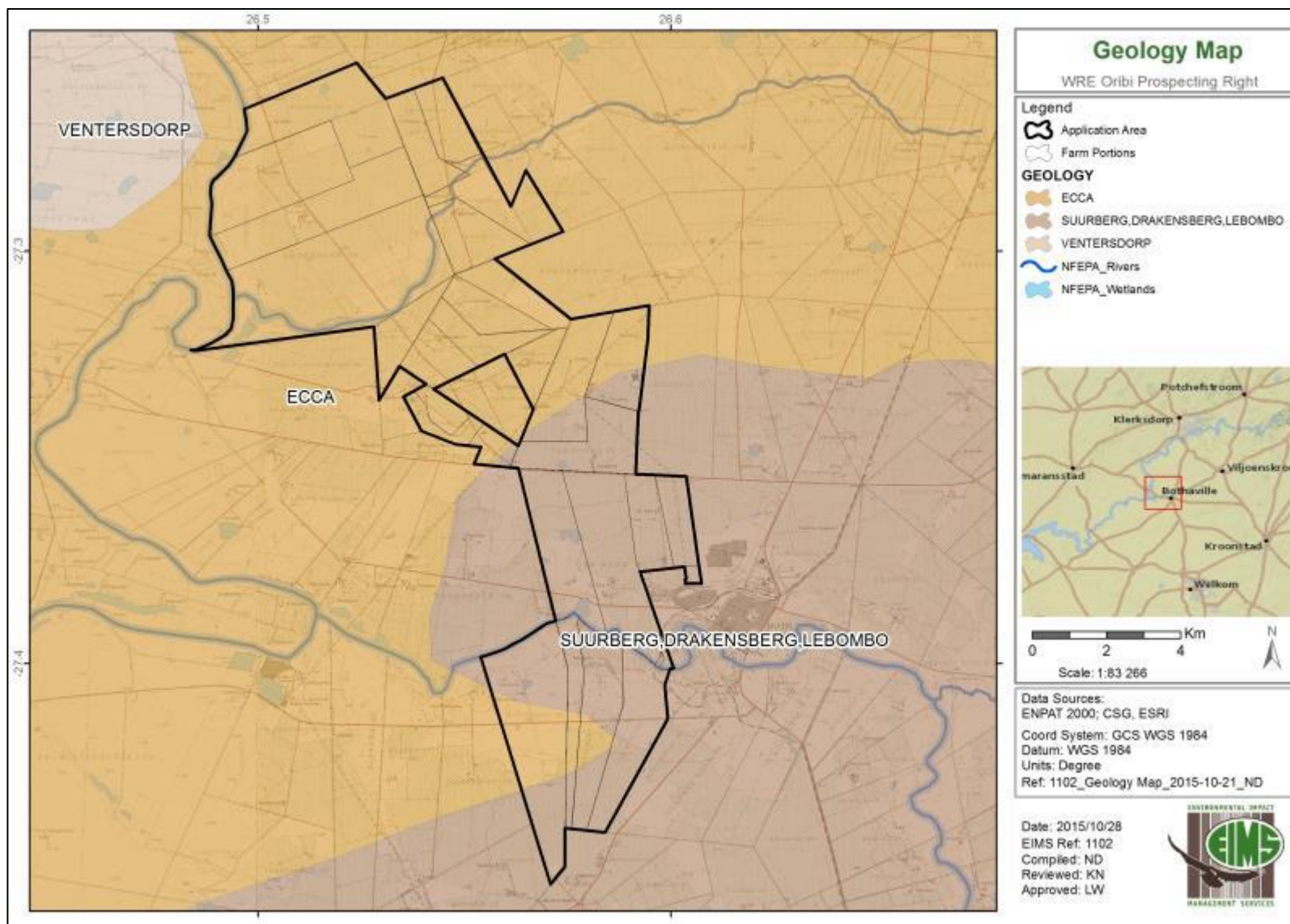


Figure 3: Geology of the application area

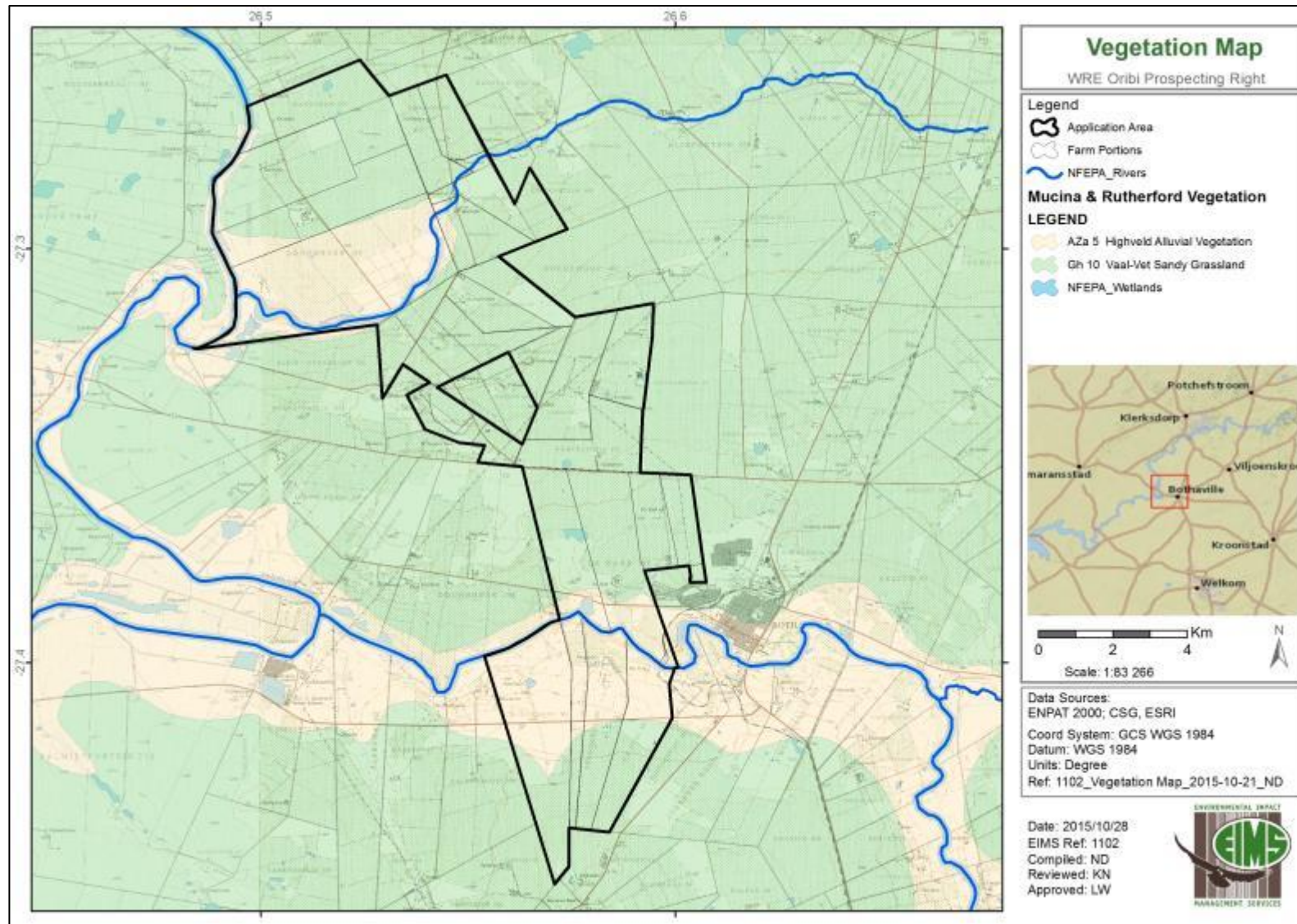


Figure 4: Vegetation of the application area

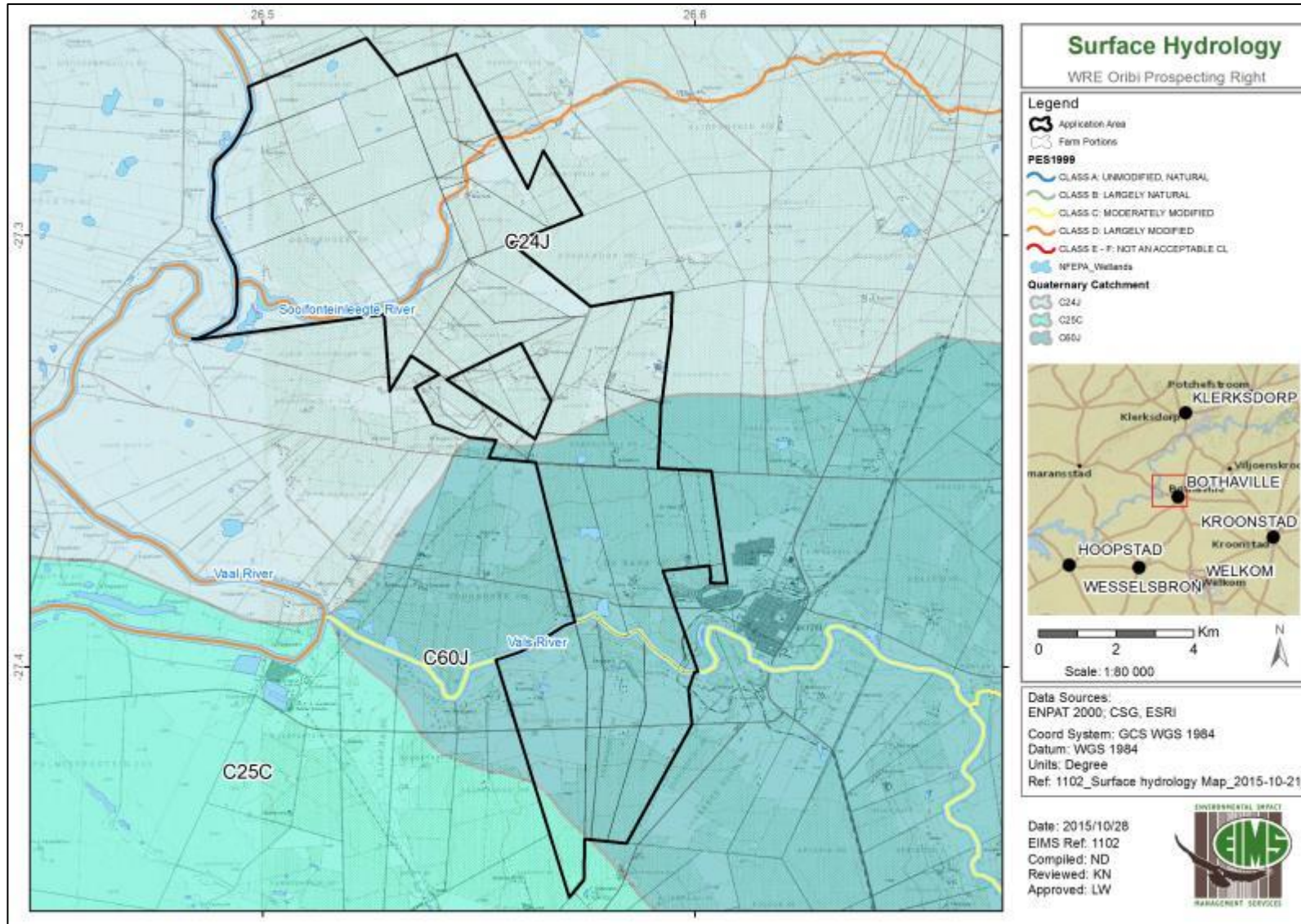


Figure 5: Surface Hydrology of the application area

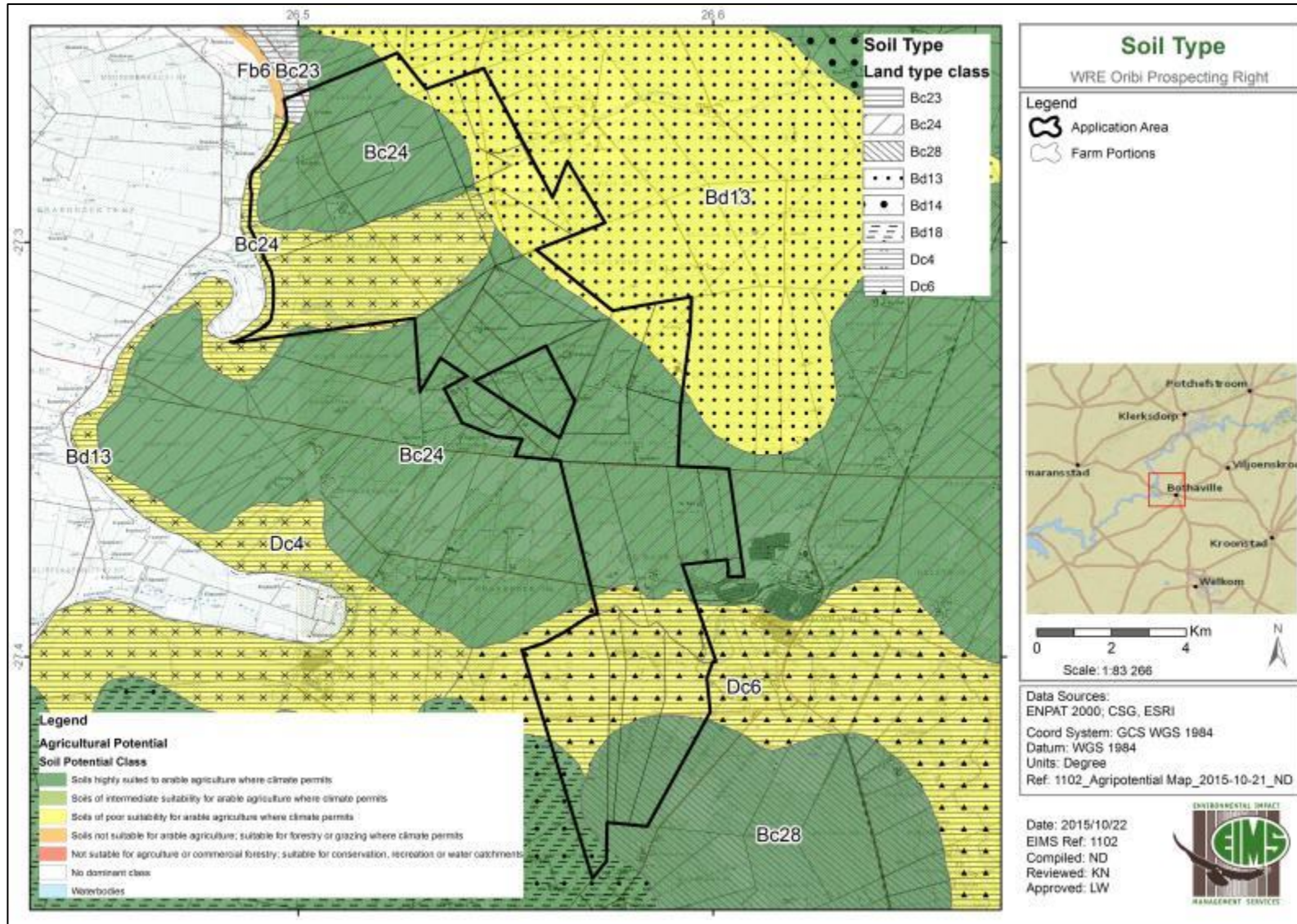


Figure 6: Soil Type and Agricultural Potential of the application area

6.4.2 DESCRIPTION OF CURRENT LAND USES

A desktop study indicates that the application area consists mainly of cultivated commercial dryland agriculture. Other land uses within the application area include cultivated irrigated agriculture and grassland areas. This will be verified and updated during the public participation period. I&AP's have been provided with a questionnaire that includes questions about the existing land uses and the social and biophysical environment as well as a description of how these may be affected by the proposed activity. This information will be used to further inform the description of the baseline environment. Refer to Figure 7 for the land cover map.

6.4.3 DESCRIPTION OF SPECIFIC ENVIRONMENTAL FEATURES AND INFRASTRUCTURE ON SITE

Specific environmental features and infrastructure on site include wetlands, rivers, tarred regional roads (R504), farm access roads and dirt tracks, farmhouses, and a bridge. These features will be verified and updated during the PPP.

6.4.4 ENVIRONMENTAL AND CURRENT LAND USE MAPS

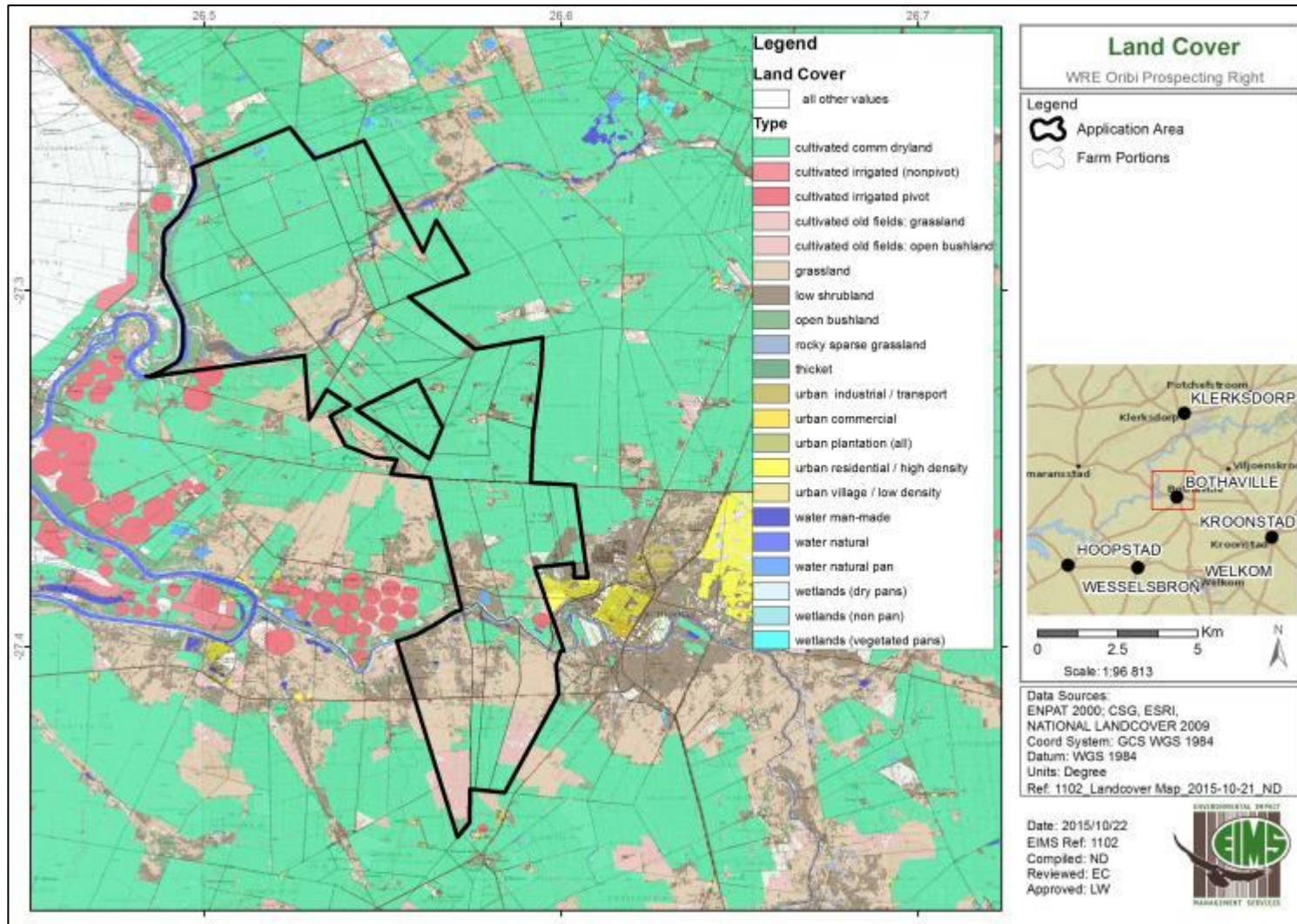


Figure 7: Land Cover of the application area

6.5 IMPACTS AND RISKS IDENTIFIED

In order to calculate the significance of an impact, probability, duration, extent and magnitude will be used. The pre and post mitigation scores will provide an indication of the extent to which an impact can be mitigated.

Due to the availability of historical geological data, only non-invasive prospecting techniques will be utilized. There will therefore be no requirement for access to the farms within the application area and as such no physical disturbance to the area shall occur.

Potential impacts that may occur as a result of the proposed prospecting activities are:

- Socio-Economic Perceptions and Expectations of I&AP's.

6.6 THE IMPACT ASSESSMENT METHODOLOGY

The impact significance rating methodology, as provided by EIMS, is guided by the requirements of the NEMA EIA Regulations (2010). The broad approach to the significance rating methodology is to determine the environmental risk (ER) by considering the consequence (C) of each impact (comprising Nature, Extent, Duration, Magnitude, and Reversibility) and relate this to the probability/ likelihood (P) of the impact occurring. This determines the environmental risk. In addition other factors, including cumulative impacts, public concern, and potential for irreplaceable loss of resources, are used to determine a prioritisation factor (PF) which is applied to the ER to determine the overall significance (S).

The significance (S) of an impact is determined by applying a prioritisation factor (PF) to the environmental risk (ER).

The environmental risk is dependent on the consequence (C) of the particular impact and the probability (P) of the impact occurring. Consequence is determined through the consideration of the Nature (N), Extent (E), Duration (D), Magnitude (M), and reversibility (R) applicable to the specific impact.

For the purpose of this methodology the consequence of the impact is represented by:

$$C = \frac{(E+D+M+R) \times N}{4}$$

Each individual aspect in the determination of the consequence is represented by a rating scale as defined in **Table 7**:

Table 7: Criteria for determination of impact consequence

Aspect	Score	Definition
Nature	- 1	Likely to result in a negative/ detrimental impact
	+1	Likely to result in a positive/ beneficial impact
Extent	1	Activity (i.e. limited to the area applicable to the specific activity)
	2	Site (i.e. within the development property boundary),
	3	Local (i.e. the area within 5 km of the site),
	4	Regional (i.e. extends between 5 and 50 km from the site)
	5	Provincial / National (i.e. extends beyond 50 km from the site)
Duration	1	Immediate (<1 year)
	2	Short term (1-5 years),
	3	Medium term (6-15 years),
	4	Long term (the impact will cease after the operational life span of the project),
	5	Permanent (no mitigation measure of natural process will reduce the

		impact after construction).
Magnitude/ Intensity	1	Minor (where the impact affects the environment in such a way that natural, cultural and social functions and processes are not affected),
	2	Low (where the impact affects the environment in such a way that natural, cultural and social functions and processes are slightly affected),
	3	Moderate (where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way),
	4	High (where natural, cultural or social functions or processes are altered to the extent that it will temporarily cease), or
	5	Very high / don't know (where natural, cultural or social functions or processes are altered to the extent that it will permanently cease).
Reversibility	1	Impact is reversible without any time and cost.
	2	Impact is reversible without incurring significant time and cost.
	3	Impact is reversible only by incurring significant time and cost.
	4	Impact is reversible only by incurring prohibitively high time and cost.
	5	Irreversible Impact

Once the C has been determined the ER is determined in accordance with the standard risk assessment relationship by multiplying the C and the P. Probability is rated/scored as per Table 8.

Table 8: Probability scoring

Probability	1	Improbable (the possibility of the impact materialising is very low as a result of design, historic experience, or implementation of adequate corrective actions; <25%),
	2	Low probability (there is a possibility that the impact will occur; >25% and <50%),
	3	Medium probability (the impact may occur; >50% and <75%),
	4	High probability (it is most likely that the impact will occur- > 75% probability), or
	5	Definite (the impact will occur),

The result is a qualitative representation of relative ER associated with the impact. ER is therefore calculated as follows:

$$ER = C \times P$$

Table 9: Determination of environmental risk

Consequence	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5
		1	2	3	4	5
Probability						

The outcome of the environmental risk assessment will result in a range of scores, ranging from 1 through to 25. These ER scores are then grouped into respective classes as described in **Table 10**.

Table 10: Significance classes

Environmental Risk Score	
Value	Description
< 10	Low (i.e. where this impact is unlikely to be a significant environmental risk),
≥ 10; < 20	Medium (i.e. where the impact could have a significant environmental risk),
≥ 20	High (i.e. where the impact will have a significant environmental risk).

The impact ER will be determined for each impact without relevant management and mitigation measures (pre-mitigation), as well as post implementation of relevant management and mitigation

measures (post-mitigation). This allows for a prediction in the degree to which the impact can be managed/ mitigated.

In accordance with the requirements of Regulation 31 (2)(l) of the EIA Regulations (GNR 543), and further to the assessment criteria presented above it is necessary to assess each potentially significant impact in terms of:

- Cumulative impacts; and
- The degree to which the impact may cause irreplaceable loss of resources.

In addition it is important that the public opinion and sentiment regarding a prospective development and consequent potential impacts is considered in the decision making process.

In an effort to ensure that these factors are considered, an impact prioritisation factor (PF) will be applied to each impact ER (post-mitigation). This prioritisation factor does not aim to detract from the risk ratings but rather to focus the attention of the decision-making authority on the higher priority / significance issues and impacts. The PF will be applied to the ER score based on the assumption that relevant suggested management/ mitigation impacts are implemented.

Table 11: Criteria for the determination of prioritisation

Public response (PR)	Low (1)	Issue not raised in public response.
	Medium (2)	Issue has received a meaningful and justifiable public response.
	High (3)	Issue has received an intense meaningful and justifiable public response.
Cumulative Impact (CI)	Low (1)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is unlikely that the impact will result in spatial and temporal cumulative change.
	Medium (2)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is probable that the impact will result in spatial and temporal cumulative change.
	High (3)	Considering the potential incremental, interactive, sequential, and synergistic cumulative impacts, it is highly probable/definite that the impact will result in spatial and temporal cumulative change.
Irreplaceable loss of resources (LR)	Low (1)	Where the impact is unlikely to result in irreplaceable loss of resources.
	Medium (2)	Where the impact may result in the irreplaceable loss (cannot be replaced or substituted) of resources but the value (services and/or functions) of these resources is limited.
	High (3)	Where the impact may result in the irreplaceable loss of resources of high value (services and/or functions).

The value for the final impact priority is represented as a single consolidated priority, determined as the sum of each individual criteria represented in Table 74. The impact priority is therefore determined as follows:

$$\text{Priority} = \text{PR} + \text{CI} + \text{LR}$$

The result is a priority score which ranges from 3 to 9 and a consequent PF ranging from 1 to 2 (refer to Table 12).

Table 12: Determination of prioritisation factor

Priority	Ranking	Prioritisation Factor
3	Low	1
4	Medium	1.17
5	Medium	1.33

6	Medium	1.5
7	Medium	1.67
8	Medium	1.83
9	High	2

In order to determine the final impact significance the PF is multiplied by the ER of the post mitigation scoring. The ultimate aim of the PF is to be able to increase the post mitigation environmental risk rating by a full ranking class, if all the priority attributes are high (i.e. if an impact comes out with a medium environmental risk after the conventional impact rating, but there is significant cumulative impact potential, significant public response, and significant potential for irreplaceable loss of resources, then the net result would be to upscale the impact to a high significance).

Table 13: Environmental Significance Rating

Environmental Significance Rating	
Value	Description
< -10	Low negative (i.e. where this impact would not have a direct influence on the decision to develop in the area).
≥ -10 < -20	Medium negative (i.e. where the impact could influence the decision to develop in the area).
≥ -20	High negative (i.e. where the impact must have an influence on the decision process to develop in the area).
0	No impact
< 10	Low positive (i.e. where this impact would not have a direct influence on the decision to develop in the area).
≥ 10 < 20	Medium positive (i.e. where the impact could influence the decision to develop in the area).
≥ 20	High positive (i.e. where the impact must have an influence on the decision process to develop in the area).

6.7 THE POSITIVE AND NEGATIVE IMPACTS THAT THE PROPOSED ACTIVITY (IN TERMS OF THE INITIAL SITE LAYOUT) AND ALTERNATIVES WILL HAVE ON THE ENVIRONMENT AND THE COMMUNITY THAT MAY BE AFFECTED

The proposed prospecting activities to be undertaken are non-invasive and as such there is only one alternative worth assessing which is the initial layout and activities proposed. There will therefore be no physical disturbance to the application area and/or interference with landowners or communities.

It should be noted that this report will be made available to I&AP's for review and comment and their comments and concerns will be addressed in the final report to be submitted to the DMR for adjudication. Furthermore it should be noted that the impact scores themselves will include the results of the aforementioned public response and comment. The results of the public consultation will be used to update the impact scores upon completion of the public review period, where after the finalised report will be submitted to the DMR for adjudication.

Please refer to Section 6.6 for the Methodology used in determining and ranking the nature, significance, consequence, extent, duration and probability of potential environmental impacts and risks.

The following provides a description and assessment of the potential impacts identified in the impact assessment process. Please refer to Appendix D for the full impact scoring calculations.

The notification of the proposed Oribi Prospecting Right is likely to create great interest, particularly in the potential for employment and perceived safety and security risks. However, due to the non-invasive activities for this project no unskilled labour is required and no site access is required. As such, perceptions and expectations must be managed through ongoing, open and transparent communication with affected stakeholders, communities and landowners.

Impact	Pre-Mitigation Score	Post-Mitigation Score	Final Significance
Socio-economic perceptions and expectations of the community	-11	-8.25	-8.25

6.8 THE POSSIBLE MITIGATION MEASURES THAT COULD BE APPLIED AND THE LEVEL OF RISK

Potential mitigation measures that can be applied to reduce the impact of the socio-economic perceptions and expectations include:

- Adhere to an open and transparent communication procedure with stakeholders at all times;
- Ensure that accurate information regarding the prospecting activities to be undertaken and the resultant lack of requirements for site access and labour is communicated to I&APs;
- Ensure that information is communicated in a manner which is understandable and accessible to I&APs; and
- Enhance project benefits and minimise negative impacts through consultation with stakeholders.

6.9 MOTIVATION WHERE NO ALTERNATIVE SITES WERE CONSIDERED

No alternatives have been investigated as the application area has been selected as the preferred site based on the historical data and geological information available for the region, which indicates the potential for economically viable minerals to occur. Due to the availability of area specific information no invasive work is required. This is an environmental benefit of the proposed prospecting activities and preferred site.

6.10 STATEMENT MOTIVATING THE ALTERNATIVE DEVELOPMENT LOCATION WITHIN THE OVERALL SITE

Due to the presence and availability of historical data information of a potential resource can be obtained without the need for invasive prospecting activities. As such, no alternative development location within the overall site has been identified as viable or is considered in this report.

7 FULL DESCRIPTION OF THE PROCESS UNDERTAKEN TO IDENTIFY, ASSESS AND RANK THE IMPACTS AND RISKS THE

ACTIVITY WILL IMPOSE ON THE PREFERRED SITE (IN RESPECT OF THE FINAL SITE LAYOUT PLAN) THROUGH THE LIFE OF THE ACTIVITY

The impact assessment process may be summarised as follows:

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

8 IMPACT ASSESSMENT OF EACH IDENTIFIED POTENTIALLY SIGNIFICANT IMPACT AND RISK

Table 14: Impact Assessment Summary

Name of Activity	Potential Impact	Aspects Affected	Phase	Significance If not mitigated	Mitigation Type	Significance If mitigated
Desktop study. Data capturing. Digitization and synthesis of historical data. Development of 3 dimensional (geological) models. Resampling of historical cores. Resource estimation.	Perceptions and Expectations of the Community	Social	Planning and Design	-11 (Medium)	Manage perceptions and expectations of the community regarding the prospecting activities	-8,25 (Low)

9 SUMMARY OF SPECIALIST REPORTS

Owing to the limited scope and short duration of the proposed Oribi Prospecting Right which will include non-invasive activities only, specialist studies have not been undertaken.

10 ENVIRONMENTAL IMPACT STATEMENT

10.1 SUMMARY OF KEY FINDINGS

The application area comprises undulating plains which are utilised for dryland agriculture predominantly. The geology of the area is consistent with the presence of mineral ores and the soils are generally of moderate to high agricultural potential. The area falls within three Quaternary catchments, namely C24J, C60J and C25C. These catchments are of moderate ecological sensitivity. The Vaal River and two of its tributaries drain the area. In addition, several NFEPA wetlands are present on site. The dominant vegetation type present on site is Vaal-Vet Sandy Grassland which is endangered and covers the majority of the site. No endangered or protected animal species or heritage features were identified within the application area.

Due to the availability of historical geological data, only non-invasive prospecting techniques will be utilized. There will therefore be no requirement for access to the farms within the application area and as such no physical disturbance to the area shall occur.

The only impact identified is the socio-economic perceptions and expectations of I&AP's. This impact can be managed through implementation of the proposed mitigation measures which include effective communication with I&AP's (refer to Section 11).

10.2 FINAL SITE MAP

Please refer to the composite map included in Appendix C.

10.3 SUMMARY OF POSITIVE AND NEGATIVE IMPLICATIONS AND RISKS

The positive implication of the Oribi Prospecting Right is the discovery of an economically viable mineral resource. Due to the non-invasive nature of the proposed prospecting activities, the negative implications and risks of the project are minimal and as such the positive outcomes for the project would far outweigh the negative. The only negative impact is the socio-economic perceptions and expectations of the community regarding the proposed prospecting activities. The EMPR has identified appropriate mechanisms for avoidance and mitigation of this negative impact.

11 PROPOSED IMPACT MANAGEMENT OBJECTIVES AND OUTCOMES

The management objective is to minimise the impact of the proposed Oribi Prospecting Right in terms of the socio-economic perceptions and expectations of I&AP's. The outcome to be achieved is to lessen the impact through the following measures:

- Adhere to an open and transparent communication procedure with stakeholders at all times;

- Ensure that accurate information regarding the prospecting activities to be undertaken and the resultant lack of requirements for site access and labour is communicated to I&APs;
- Ensure that information is communicated in a manner which is understandable and accessible to I&APs; and
- Enhance project benefits and minimise negative impacts through consultation with stakeholders.

12 ASPECTS FOR INCLUSION AS CONDITIONS OF AUTHORISATION

Please refer to Section 14.2 for the commitments which should be included as conditions in the authorisation.

13 DESCRIPTION OF ANY ASSUMPTIONS, UNCERTAINTIES AND GAPS IN KNOWLEDGE

The following assumptions, uncertainties, and gaps in knowledge are applicable to this BAR:

- The baseline environment was compiled through desktop studies only, and is subject to change based on the results of the public participation process. The possibility exists that the desktop data is outdated or incomplete. A limited duration site visit will be undertaken during the PPP in order to verify the desktop data utilised. Furthermore, the description of the baseline environment will be further informed by the results of the public participation process.
- The faunal searches are based on incomplete datasets and are not conclusive. As such there is still the chance that threatened or protected species can occur on site and this can only be confirmed with a more detailed study. However due to the fact that no invasive work will be undertaken, there was no need for such a study.
- There will be no invasive work undertaken for the proposed Oribi Prospecting Right. This report only considers non-invasive prospecting activities and as such is not adequate to mitigate any invasive activities. Should the Applicant determine at a later stage that invasive work is required, this will not require an amendment of the PWP and EMPR. Furthermore the revised EMPR may require specialist studies depending on the planned activities.
- In interpreting the NFEPA data, it must always be remembered that the NFEPA database is incomplete. The NFEPA Implementation Manual, Driver et al. (2011) states “*not all wetlands have been mapped and there are substantial gaps*”. Furthermore, “*rivers and wetlands that are not FEPAs... still require a biodiversity assessment because knowledge of special ecological features or species of special concern is incomplete*”.

14 REASONED OPINION AS TO WHETHER THE PROPOSED ACTIVITY SHOULD OR SHOULD NOT BE AUTHORISED

14.1 REASONS WHY THE ACTIVITY SHOULD BE AUTHORISED OR NOT

No invasive work will be undertaken for the proposed Oribi Prospecting Right. There will therefore be no impacts on the biophysical and cultural environments. The only impact on the social environment can

be mitigated through open communication with the landowners. It is therefore the opinion of the EAP that the proposed activity should be authorised.

14.2 CONDITIONS THAT MUST BE INCLUDED IN THE AUTHORISATION

Stakeholder Engagement will continue throughout the prospecting activities to ensure landowners are kept informed and allowed to raise issues. These issues will then be addressed through a grievance mechanism.

No site access is required due to the non-invasive nature of the prospecting activities planned.

15 PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED

The Environmental Authorisation is required for five (5) years.

16 UNDERTAKING

It is confirmed that the undertaking required to meet the requirements of this section is provided at the end of the EMPR and is applicable to both the BAR and the EMPR.

17 FINANCIAL PROVISION

No invasive work will be undertaken for the proposed Oribi Prospecting Right. As such a quantum for financial provision has not been calculated at this stage.

17.1 EXPLAIN HOW THE AFORESAID AMOUNT WAS DERIVED

Due to the absence of provisions in the guideline document titled “Guideline Document for the Evaluation of the Quantum of Closure-Related Financial Provision Provided by a Mine (2005)” and the Master Rates of 2015 for non-invasive activities, the financial provision cannot be calculated or costed. As such the amount to be provided in the financial provision is **R0.00**.

17.2 CONFIRM THAT THIS AMOUNT CAN BE PROVIDED FOR FROM OPERATING EXPENDITURE

No invasive work will be undertaken for the proposed Oribi Prospecting Right. As such the amount to be provided for is **R0.00**.

18 SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

No additional information has been requested from the competent authority.

18.1 COMPLIANCE WITH THE PROVISIONS OF SECTIONS 24(4)(A) AND (B) READ WITH SECTION 24(3)(A) AND (7) OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT (ACT 107 OF 1998) THE BAR REPORT MUST INCLUDE THE:

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

The potential impacts on the socio-economic conditions have the potential to include:

- Socio-Economic Perceptions and Expectations of the Community

When a new prospecting project comes into an area there is often false perceptions and expectations, particularly surrounding potential employment. There are inevitably more people seeking jobs than the number of jobs available, especially for unskilled labour. There can also be a perceived safety and security risk to landowners. However, due to the nature of this project no site access is required. The manner in which false perceptions and expectations is addressed is through consultation and communication to ensure people are fully aware of the lack of any potential employment opportunities and access requirements.

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

No invasive work will be undertaken for the proposed Oribi Prospecting Right. As such no national estates as defined in the NHRA will be affected by the proposed prospecting activities.

19 OTHER MATTERS REQUIRED IN TERMS OF SECTIONS 24(4)(A) AND (B) OF THE ACT

No invasive work will be undertaken for the proposed Oribi Prospecting Right. As such no alternatives are assessed in this report.

PART B:

ENVIRONMENTAL MANAGEMENT PROGRAMME

20 INTRODUCTION

20.1 DETAILS OF THE EAP

The details and expertise of the EAP are detailed in Sections 1.2 and 1.3 above as required.

20.2 DESCRIPTION OF THE ASPECTS OF THE ACTIVITY

A description of the aspects of the activity covered by the EMPR below is included in Section 2 above.

20.3 COMPOSITE MAP

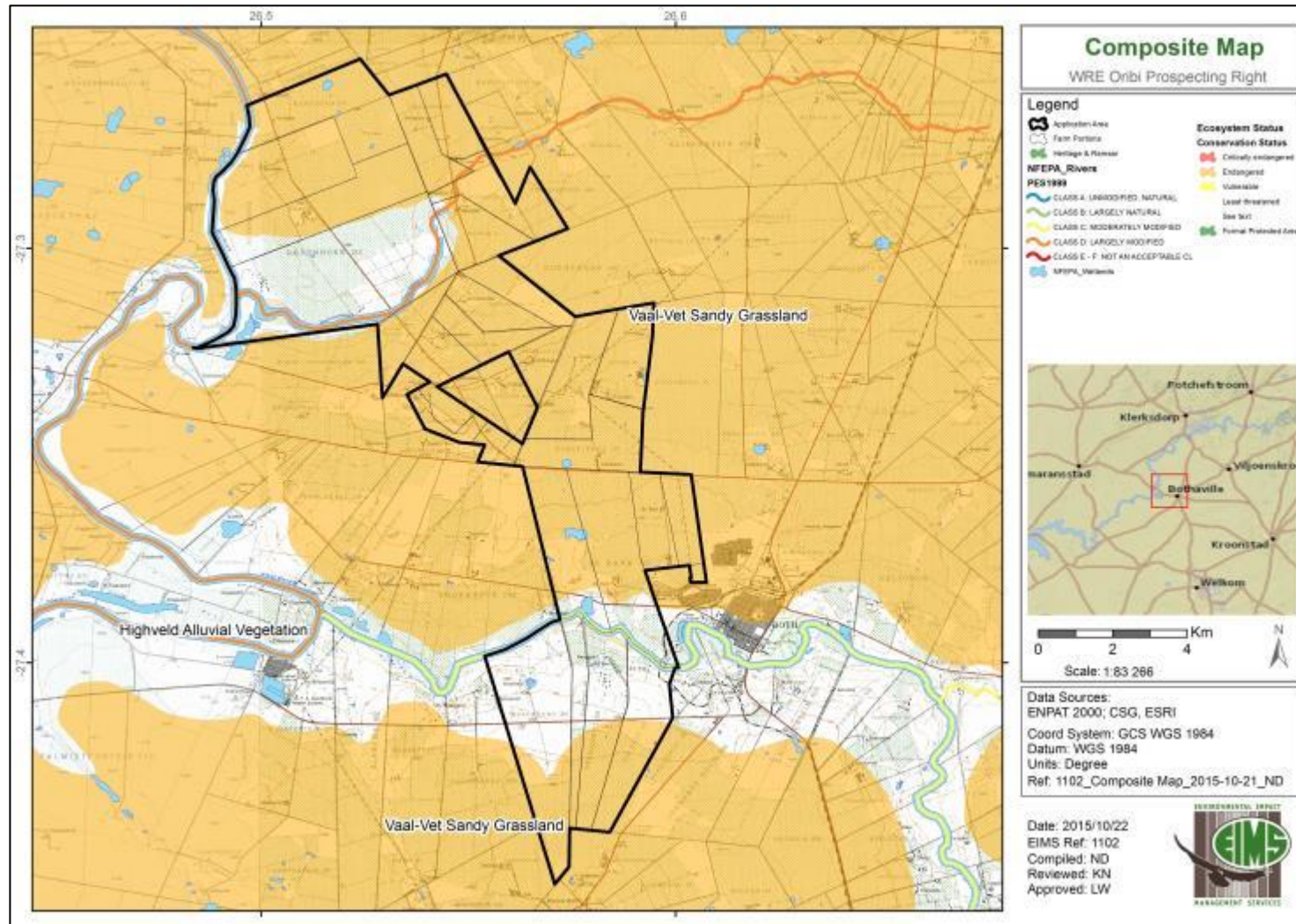


Figure 8: Composite Map of the application area

21 DESCRIPTION OF IMPACT MANAGEMENT OBJECTIVES INCLUDING MANAGEMENT STATEMENTS

21.1 DETERMINATION OF CLOSURE OBJECTIVES

No invasive work will be undertaken. As such no closure objectives are required. The site shall remain in its current condition.

21.2 VOLUMES AND RATE OF WATER USE REQUIRED FOR THE OPERATION

No invasive work will be undertaken. As such no water will be required.

21.3 HAS A WATER USE LICENCE BEEN APPLIED FOR?

No invasive work will be undertaken and no water will be used, therefore there is no requirement to apply for a Water Use Licence.

21.4 IMPACTS TO BE MITIGATED IN THEIR RESPECTIVE PHASES

Table 15: Impacts to be Mitigated

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
Desktop study. Data capturing. Digitization and synthesis of historical data Development of 3 dimensional (geological) models Resampling of historical cores Resource Estimation	All Phases	No direct physical disturbance	Adhere to an open and transparent communication procedure with stakeholders at all times Ensure that accurate information regarding the prospecting activities to be undertaken and the resultant lack of requirements for site access and labour is communicated to I&APs; Ensure that information is communicated in a manner which is understandable and accessible to I&APs; and	Shall adhere to South African legislation pertaining to social issues, including the Constitution and NEMA principles as published in the Public Participation Guideline, 2010.	Throughout Prospecting

Activities	Phase	Size and Scale of Disturbance	Mitigation Measures	Compliance with Standards	Time Period for Implementation
			Enhance project benefits and minimise negative impacts through consultation with stakeholders.		

21.5 IMPACT MANAGEMENT OUTCOMES

Table 16: Impact Management Outcomes

Activity	Potential Impact	Aspects Affected	Phase	Mitigation Type	Standard to be Achieved
Desktop study. Data capturing. Digitization and synthesis of historical data. Development of 3 dimensional (geological) models. Resampling of historical cores.	Perceptions and Expectations of Community	Social	All Phases	Avoidance through open and transparent communication throughout the life cycle of the project. Control through mediation should concerns be raised.	Shall adhere to South African legislation pertaining to social issues, including the Constitution and NEMA principles as published in the Public Participation Guideline, 2010.

Activity	Potential Impact	Aspects Affected	Phase	Mitigation Type	Standard to be Achieved
Resource estimation.					

21.6 IMPACT MANAGEMENT ACTIONS

Table 17: Impact Management Actions

Activity	Potential Impact	Mitigation Type	Time Period for Implementation	Compliance with Standards
Desktop study. Data capturing. Digitization and synthesis of historical data. Development of 3 dimensional (geological) models. Resampling of historical cores. Resource estimation.	Perceptions and Expectations of Community	Avoidance through open and transparent communication throughout the life cycle of the project. Control through mediation should concerns be raised.	All Phases	Shall adhere to South African legislation pertaining to social issues, including the Constitution and NEMA principles as published in the Public Participation Guideline, 2010.

22 FINANCIAL PROVISION

Due to the absence of provisions in the guideline document titled “Guideline Document for the Evaluation of the Quantum of Closure-Related Financial Provision Provided by a Mine (2005)” and the Master Rates of 2015 for non-invasive activities, the financial provision cannot be calculated or costed. As such the amount to be provided in the financial provision is **R0.00**.

22.1 DESCRIBE THE CLOSURE OBJECTIVES AND THE EXTENT TO WHICH THEY HAVE BEEN ALIGNED TO THE BASELINE ENVIRONMENT DESCRIBED UNDER THE REGULATION

The proposed Oribi Prospecting Right excludes invasive prospecting activities. As such no closure objectives are required. The site shall remain in its current condition.

22.2 CONFIRM SPECIFICALLY THAT THE ENVIRONMENTAL OBJECTIVES IN RELATION TO CLOSURE HAVE BEEN CONSULTED WITH LANDOWNER AND INTERESTED AND AFFECTED PARTIES

No invasive work will be undertaken for the Oribi Prospecting Right Application. As such no closure objectives are required. The questionnaire provided to I&AP's includes questions about the existing land uses and the social and biophysical environment as well as a description how these may be affected by the proposed activity. Further, I&AP's, including directly affected parties such as landowners, have the opportunity to review and comment on this report. The results of the public consultation shall be included in the final report submitted to the department for adjudication.

22.3 REHABILITATION PLAN

The PWP for the proposed Oribi Prospecting Right excludes invasive prospecting activities. As such, no rehabilitation plan is required.

22.4 EXPLAIN WHY IT CAN BE CONFIRMED THAT THE REHABILITATION PLAN IS COMPATIBLE WITH THE CLOSURE OBJECTIVES

No invasive work will be undertaken for the proposed Oribi Prospecting Right. As such no closure objectives are required. The site shall remain in its current condition.

22.5 CALCULATE AND STATE THE QUANTUM OF THE FINANCIAL PROVISION REQUIRED TO MANAGE AND REHABILITATE THE ENVIRONMENT IN ACCORDANCE WITH THE APPLICABLE GUIDELINE

No invasive work will be undertaken for the proposed Oribi Prospecting Right. As such a quantum for financial provision need not be calculated at this stage.

Due to the absence of provisions in the guideline document titled “Guideline Document for the Evaluation of the Quantum of Closure-Related Financial Provision Provided by a Mine (2005)” and the Master Rates of 2015 for non-invasive activities, the financial provision cannot be calculated or costed. As such the amount to be provided in the financial provision is **R0.00**.

However, in the case of the Prospecting Works Programme being amended with a Section 102 Application process to include invasive activities a rehabilitation plan and associated rehabilitation costs will be calculated using the DMR's preferred methodology and guideline document titled "Guideline Document for the Evaluation of the Quantum of Closure-Related Financial Provision Provided by a Mine (2005)" and the Master Rates of 2014.

22.6 CONFIRM THAT THE FINANCIAL PROVISION WILL BE PROVIDED AS DETERMINED

No invasive work will be undertaken for the proposed Oribi Prospecting Right. As such the amount to be provided for is **R0.00**.

23 MECHANISMS FOR MONITORING COMPLIANCE

Table 18: Mechanisms for Monitoring Compliance

Source Activity	Impacts Requiring Monitoring Programmes	Functional Requirements for Monitoring	Roles and Responsibilities	Monitoring and Reporting Frequency and Time Periods for Implementation
Desktop study.	None	None	None	None
Data capturing.	None	None	None	None
Digitization and synthesis of historical data.	None	None	None	None
Development of 3 dimensional (geological) models.	None	None	None	None
Resampling of historical cores.	None	None	None	None
Resource estimation.	None	None	None	None

24 INDICATE THE FREQUENCY OF THE SUBMISSION OF THE PERFORMANCE ASSESSMENT/ ENVIRONMENTAL AUDIT REPORT

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

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

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

25 ENVIRONMENTAL AWARENESS PLAN AND TRAINING

No invasive work will be undertaken for the proposed Oribi Prospecting Right. As such there is currently no requirement for environmental awareness and training.

25.1 MANNER IN WHICH EMPLOYEES WILL BE INFORMED OF ENVIRONMENTAL RISKS

No invasive work will be undertaken for the proposed Oribi Prospecting Right. As such there is currently no requirement for environmental awareness and training.

25.2 MANNER IN WHICH RISKS WILL BE DEALT WITH TO AVOID POLLUTION OR DEGRADATION

No invasive work will be undertaken for the proposed Oribi Prospecting Right. As such there is currently no requirement for environmental awareness and training.

26 SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

No additional information was requested or is deemed necessary.

27 UNDERTAKING

The EAP herewith confirms:

- (a) The correctness of the information provided in the reports;
- (b) The inclusion of comments and inputs from stakeholders and I&AP's;
- (c) The inclusion of inputs and recommendations from the specialist reports where relevant; and
- (d) That the information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties are correctly reflected herein.

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