



mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

NAME OF APPLICANT: White Rivers Exploration (Pty) Limited [WRE]

REFERENCE NUMBER: GP 30/5/1/1/2/00466 PR

ENVIRONMENTAL MANAGEMENT PLAN AMENDMENT 2015

**SUBMITTED
IN TERMS OF SECTION 39 AND OF REGULATION 52 OF THE
MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT,
2002,
(ACT NO. 28 OF 2002) (the Act)**

STANDARD DIRECTIVE

Applicants for prospecting rights or mining permits, are herewith, in terms of the provisions of Section 29 (a) and in terms of section 39 (5) of the Mineral and Petroleum Resources Development Act, directed to submit an Environmental Management Plan strictly in accordance with the subject headings herein, and to compile the content according to all the sub items to the said subject headings referred to in the guideline published on the Departments website, within 60 days of notification by the Regional Manager of the acceptance of such application. This document comprises the standard format provided by the Department in terms of Regulation 52 (2), and the standard environmental management plan which was in use prior to the year 2011, will no longer be accepted.

IMPORTANT ACKNOWLEDGEMENT REGARDING THE AMENDMENT TO THE EMPlan 2015

An amendment is submitted by White Rivers Exploration (Pty) Ltd for the Approved EMPlan to accommodate the addition of trenching and bulk sampling to the Prospecting Work Programme. The original approved EMPlan is in the 2004 DMR EMPlan Template format. In compliance with the DMR's more recent requirements, the **approved information** therein has been transposed into the SAMRAD 2010 DMR EMPlan format and add-ons made where necessary.

This document is therefore compiled by Kasoro, using information supplied by the client; public information, consultation and visits to site where possible.

Professional acknowledgement is given to the following:-

[SEF] Strategic Environmental Focus which prepared the original APPROVED EMPlan 2008 for GP30/5/1/1/2/466 PR and whose data and information is retained in its original form and wording as direct quotes from the original approved EMPlan written by SEF unless changes are required to accommodate amendments to the newly amended Prospecting Work Programme which now includes trenching and bulk sampling.... from which documents (property of the applicant) some of the information contained herein is compiled as requested by the client.

DISCLAIMER

The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge, as well as available information. Information utilised and contained in this report is based on data/information supplied to MA Robertson by the client and other external sources (including previous site investigations data and external specialist studies). MA Robertson exercises due care and diligence in rendering services and preparing documents, however it has been assumed that the information provided to MA Robertson is correct and as such the accuracy of the conclusions made are reliant on the accuracy and completeness of the data supplied. No responsibility is accepted by MA Robertson for incomplete or inaccurate data supplied by the client and/or other external sources. Opinions expressed in this report apply to the site conditions and features that existed at the time of the start of the relevant investigations and the production of this document. For this reasons MA Robertson accepts no liability, and the clients by receiving and therefore accepting this document, indemnifies MA Robertson against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with the services rendered, directly or indirectly.

FOR THE RECORD

White Rivers Exploration (Pty) Ltd wishes to limit the scope of this EMPlan its environmental responsibility to that which is created directly by its own PWP and prospecting and not the work of other parties.

IDENTIFICATION OF THE APPLICATION IN RESPECT OF WHICH THE ENVIRONMENTAL MANAGEMENT PLAN IS SUBMITTED.

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	DISCLAIMER
	The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge, as well as available information. Information utilised and contained in this report is based on data/information supplied to MA Robertson by the client and other external sources (including previous site investigations data and external specialist studies). MA Robertson exercises due care and diligence in rendering services and preparing documents, however it has been assumed that the information provided to MA Robertson is correct and as such the accuracy of the conclusions made are reliant on the accuracy and completeness of the data supplied. No responsibility is accepted by MA Robertson for incomplete or inaccurate data supplied by the client and/or other external sources. Opinions expressed in this report apply to the site conditions and features that existed at the time of the start of the relevant investigations and the production of this document. For this reasons MA Robertson accepts no liability, and the clients by receiving and therefore accepting this document, indemnifies MA Robertson against all actions, claims, demands, losses, liabilities, costs, damages and expenses arising from or in connection with the services rendered, directly or indirectly.
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ABBREVIATIONS

ABBREVIATION	MEANING
EA	Environmental Authorisation
BAR	Basic Assessment Report
EMPr	Environmental Management Programme
Scoping Study	Scoping Study
EIR	Environmental Impact Report
BAR+EMPr	DMR document for joint BAR and EMPr related to mineral right applications
	DMR document for joint EIR and EMPr related to mineral right applications
EIR+EMPr	Basic Assessment Report assessment process
BAR process	Scoping Study and Environmental Impact Report environmental assessment process
S&EIR process	Used for an environmental authorization application document, which is not yet granted / authorized
draft(prefix)	
CA	Competent Authority, in terms of NEMA, which is the DMR for south African mineral rights
CARA	RSA Conservation of Agricultural Resources Act, no 43 of 1983
Consultation Report	Consultation Report which forms part of the MPRDA right application process
consultation	Any form of consultation usually related to the MPRDA or NEMA
DMR	RSA Department of Mineral Resources which acts as the Competent Authority
DWA	RSA Department of Water Affairs
EAP	Environmental Assessment Practitioner
ECA	RSA Environmental Conservation Act no 73 of 1989
EIA (Assessment)	Environmental Impact Assessment
EIA Regulations	Environmental Impact Assessment Regulations no 982 of 2014
FP	Financial Provision
FP Regulations	DRAFT Regulations pertaining to the management of Financial Provisions associated with the MPRDA
I&AP's	Interested and Affected Parties
I&AP Register / Stakeholder Database	Interested and Affected Party Register in terms of S41 of the EIA Regulations, 2014.
Affected Party	Land owner/land user/land claimant on whose land the site is situated that may be directly affected by the Activity
	Any other party
Interested Party	
Land Affairs	RSA Department of Rural Development & Reconstruction – departments managing State land

ABBREVIATION	MEANING
Land Claims	RSA Department of Rural Development & Reconstruction – departments managing the process of land restitution involving land claims for land expropriated as related to the 1913 Land Act
MDPF	Municipal Development Policy Framework
<u>mineral rights</u>	Permission from the Minister of Mineral Resources granting the right to minerals for certain time as determined by the MPRDA
RPerm	Reconnaissance Permission in terms of the MPRDA
PR	Prospecting Right in terms of the MPRDA
MP	Mining Permit in terms of the MPRDA
MR	Mining Right in terms of the MPRDA
Retention Permit	Retention Permit in terms of the MPRDA
MPRDA	RSA Minerals and Petroleum Development Act, no 28 of 2002
NHRA	RSA National Heritage Resources Act, 25 of 1999
NEMA	RSA National Environmental Management Act, 107 of 1998 and amendments
NEM:AQA	RSA National Environmental Management: Air Quality Act, 39 of 2004
NEM:BA	RSA National Environmental Management: Biodiversity Act, 10 of 2004
NWA	RSA National Water Act, no 36 of 1998
PPP	Public Participation Process as envisaged by the EIA Regulations, part of the NEMA EA application process
PWP	Prospecting Works Programme in terms section 8 of the MPRDA and the required SAMRAD template which serves as the Project Description when required in terms of NEMA
<u>petroleum rights</u>	Permission from the Minister of Mineral Resources granting the right to petroleum and natural gas for certain time as determined by the MPRDA
RP	Reconnaissance Permit in terms of the MPRDA
TCP	Technical Co-operation Permit in terms of the MPRDA
ER	Exploration Right in terms of the MPRDA
PR	Production Right in terms of the MPRDA
Retention Permit	Retention Permit in terms of the MPRDA
Site	The surface area covered by the mineral right
SAHRA	The South African Heritage Resources Agency
PHRA	The Provincial Heritage Resources Authority
SAMRAD	The web-based portal for mineral right applications and management – managed by the DMR through www.dmr.gov.za

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INTRODUCTION

WHITE RIVERS EXPLORATION (Pty) Ltd has been granted a prospecting right in terms of section 16 of the Minerals and Petroleum Resources Development Act for Gold Ore (Au), Alluvial Diamond (D), Iron Ore (Fe), Manganese (Mn) and Uranium Ore (U) for the area: various portions of the farms De Pan 51 IQ, Goudvlakte West 102 IQ, Rooipoort 109 IQ, Wildfontein 52 IQ and Wonderfontein 103 IQ; IQ RD, Gauteng Province, RSA.

The right holder has submitted an application to amend the approved Prospecting Work Programme to replace drilling with bulk sampling over an area previously trenched in a specific area of the right.

Kasoro Exploration Consultants has been appointed by WRE, as an Independent Environmental Assessment Practitioner (EAP), to amend the existing approved EMPlan in order to accommodate these changes. To this purpose, emphasis has been given to the northern area of the right which is the affected area and is shown in figure 2 and called the "focus area". Where changes are not required; the data, information, results and recommendations from the approved EMPlan have been retained as is in the version as approved, February 2011.



GRASSLAND FLOWERS WITH SPIDER AND LOCUST, C. 1885, GAUCHE, PAINTED AS A TEENAGER BY EDITH STRUBEN [2001, M. ARNOLD, SOUTH AFRICAN BOTANICAL ART, PEELING BACK THE PETALS, FERN WOOD PRESS, PIJ49]

1. REGULATION 52 (2): Description of the environment likely to be affected by the proposed prospecting or mining operation.

1.1. The environment on site relative to the environment in the surrounding area.

BASELINE ENVIRONMENT

1.1.1. Summary

For the focus area, i.e. the northern part of the prospecting right, the environment on site is similar to the environment in the surrounding area. This is a rural farming community just north of the towns of Oberholzer and Carletonville in the Gauteng Province, close to the north-west provincial border. Most of the farm portions seem to be settled by both subsistence farmers (on the smaller portions) and commercial farmers with livestock and cultivation, mainly sunflowers and maize.

The southern part of the prospecting right, not the focus area of this EMPlan, is similar but also abuts the town-land areas of Oberholzer and Carletonville as well as overlaps the Abe Bailey Nature Reserve, over which areas prospecting must be excluded without the necessary special permissions.



FIGURE 2: THE ENVIRONMENT & LAND USES. GOOGLE EARTH SNAPSHOT OF THE RECENT PLACER PROJECT AREA (MAY 2015). THE SNAPSHOT IS TAKEN FROM THE BASE OF THE FOCUS AREA OF INTEREST OF THE PROSPECTING AREA IN THE SOUTH LOOKING TOWARDS THE NORTH. THE BORDER OF THE AREA IS DEFINED BY THE WHITE FARM OUTLINE. NOTE THAT THE FULL PROSPECTING RIGHT AREA EXTENDS SOUTHWARDS AS SHOWN IN THE S2(2) PLAN. THE LAND IS A KARST LANDSCAPE, RELATIVELY FLAT, RURAL WITH TYPICAL GRASSLAND VEGETATION. TWO PROMINENT WATER FEATURE COMPLEXES ARE FOUND IN THE AREA OF INTEREST. THE LARGEST, FOUND CENTRALLY, THE DE PAN PAN, IS FED BY AN UNKNOWN SOURCE AND THE SECOND, A GROUP OF A DAM AND PAN FOUND ALONG THE NORTHERN PORTION OF THE EASTERN BOUNDARY, IS FED BY NON-PERENNIAL WATER FLOW, POSSIBLE UNDERGROUND WATER AND WATER FROM THE ADJACENT (INACTIVE) SAND QUARRY (SMALL RED "X"). THE PREDOMINANT ACTIVITIES ARE COMMERCIAL FARMING, LIVESTOCK, CULTIVATION AND NATURAL AREA. THE SOUTH-CENTRAL PART OF THE AREA IS BORDERED BY A SAND QUARRY (RED "X") FURTHER TO THE SOUTH LIES THE

TOWN OF CARLETONVILLE (WHICH IS OUTSIDE OF THE IMAGE). RUNNING NORTH-SOUTH (IN YELLOW WITH GREEN MARKERS) ARE THE R500 AND R41 AND THE N14 (YELLOW WITH A BLUE MARKER) RUNS EAST-WEST ACROSS THE NORTH-WEST CORNER OF THE AREA. A NUMBER OF POWER LINES CUT ACROSS THE PROSPECTING RIGHT WITH THE ESKOM PLUTO SUB-STATION ON PORTION 90 OF THE DE PAN FARM.

The EMPlan looks at the current use of the area and surrounding areas as well as a description of the environment in the area, which is the same as that in the surrounding areas. It looks at the geomorphology, topography, physiology, geology, soil, flora and fauna amongst other factors.

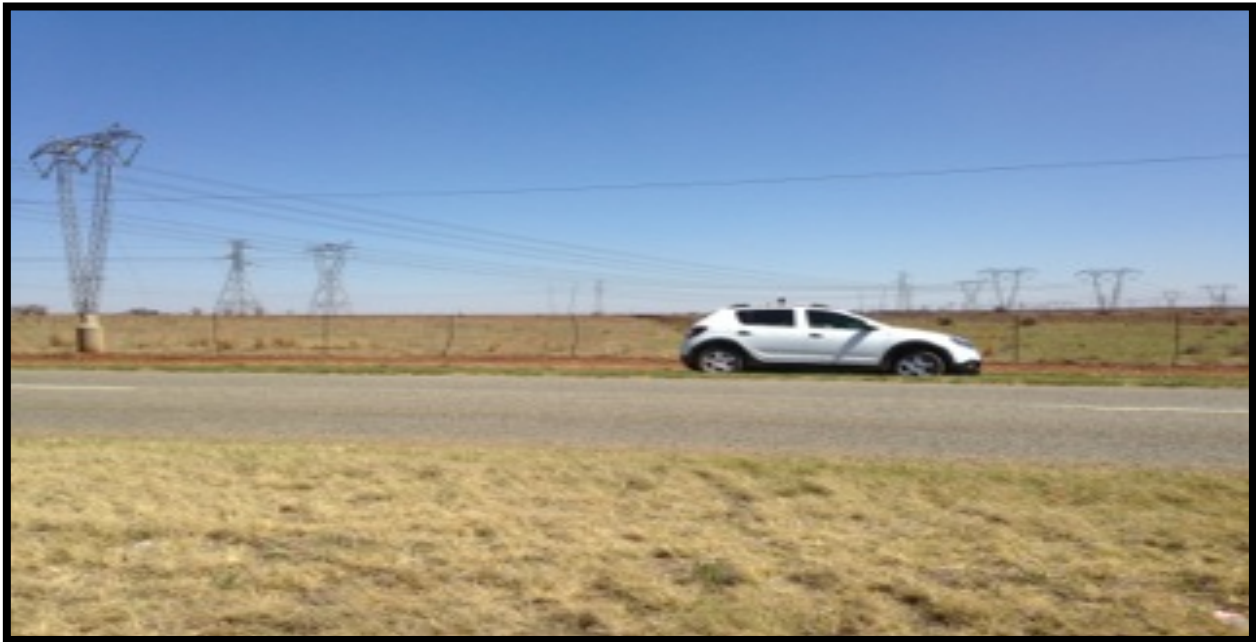
This study forms part of the simultaneous EIA assessment which informs the EMPlan. The resulting information is used to make an **informed decision on the potential impacts** to be used in the EMPlan.


The **baseline environmental study** of the prospecting area covers:-

- > the **Type of Environment** affected by the proposed activity including, but not restricted to geographical (geomorphology, topography, physiography and climate), physical (geology, soils), biological, socio-economic (land use, infrastructure) and cultural (heritage, cultural sensitivity) character;
- > an Investigation into **Current Land Uses**;
- > **Specific environmental features on the site** including but not restricted to physical (geology, soils), biological (BGIS-biodiversity studies, biome classification, wetlands, flora, fauna, listed threatened species in terms of NEMBA and protected areas), socio-economic (land use & infrastructure detail where not covered above and cultural (heritage, & cultural sensitivity detail where not covered in the above.
- > and **Specific infrastructure on the site**.





CURRENT LAND USES



LAND USE SPECIFIC TO THE PROPOSED BULK SAMPLE SITE



Land Use	Found on site (photo)
Proposed Bulk Sample Site	This photo is taken of the proposed bulk sample site, looking west with the vehicle pointing northwards
Eskom powerlines	Diagonal from front left to back right across the area shown in the photo
Intensive grazing camps for specialised cattle approximate 600m x 40m each 	To the left of the vehicle in the photo
Cultivated fields - maize	To the right of the vehicle in the photo. Taken in September, the fields are lying fallow prior to ripping; the green is due to weeds.

GENERAL LAND USE FOR THE PROSPECTING RIGHT

Land Use	
	<p>The proposed site is known as Recent Placer Project and is located on the western border of the Gauteng Province as redefined and is included in the Merafong City Municipality. The project site is situated just north of the towns Carletonville and Oberholzer and consists of various portions of the farms De Pan 51 IQ, Goudvlakte West 102 IQ, Rooipoort 109 IQ, Wildfontein 52 IQ and Wonderfontein 103 IQ [approvedEMPlan]. Of these, the focus area for the EMPlan amendment falls over various portions of the farms De Pan 51 IQ and Wildfontein 52 IQ as shown in Figure 2.</p>
	<p>The majority of the land is classified as “unspecified” (Department of Environmental Affairs & Tourism, 2001)[approvedEMPlan].</p> <p>SANBI-BGIS classifies the area as mixed urban (grey), cultivated (yellow) and natural/ grazing (light green). In the focus area this is predominantly mixed cultivated and natural/grazing land as shown in Figure 1.1.1.</p>
 <p style="font-size: small;">Image © 2015 DigitalGlobe © 2015 Google © 2015 AfriGIS (Pty) Ltd. Cluster Sand Quarry</p>	<p>A commercial quarry, Cluster Sand, is based on the farm De Pan, central on the prospecting right but south of the “focus area”.</p> <p>A sand quarry immediately to the east of the north-eastern border (off the prospecting right) is no longer operational and appears to be on “care-and-maintenance”.</p>
 <p>BLACK WILDEBEEST at Abe Bailey Nature Reserve (photo: sa-venue.com)</p>	<p>The south-western portion of the Project site is located within the Abe Bailey Nature Reserve. The reserve is the last remaining area in which pure gene Black Wildebeest can be found. The White-tailed rat, classified as vulnerable, was discovered in a 1994-2002 set of surveys. The reserve is also the only formally protected area of the Bakenveld Biome which occurs on dolomite. (GDARD website, 2015-08-10).</p> <p>The NEMA: Protected Areas Act 57 of 2003, Chapter 5, and part 4 lists restrictions to prospecting and mining activities in protected areas as follows:-</p> <ol style="list-style-type: none"> (1) Despite other legislation, no person may conduct commercial prospecting or mining activities - (a) in a special nature reserve or nature reserve; (b) in a protected environment without the written permission of the Minister and the Cabinet member responsible for Minerals and Energy Affairs; or (c) in a protected area referred to in section 9(b) or (d). (2) Subsection (1) does not affect mining activities which were lawfully conducted immediately before this section took effect. <p>[approvedEMPlan]</p>

Land Use	
	Prior to 1994, the area was farm land which did not fall under homeland management. The original EMPlan queried Land Claims and no response is registered. Consultation revealed no land claims and no tribal land is thought to be active in the area.
	<p>Summary of Prospecting Area Land Uses:</p> <ul style="list-style-type: none"> ± 65% cultivated land, commercial & subsistence farming, including cattle farming (& stud) and cultivation, (mainly maize farming) invader species ± 30% natural / grazing land; invader species ± 5% Quarry

Settled areas, farm house complexes, cover about 3% to 10% of the land. Roads and tracks are common. Public roads traverse through the area. The area is relatively well kept by the residents; waste and rubbish is fairly prolific in the open areas.

For the focus area, the predominant land use (see Figure 1.1.1. below) is mapped as intermixed cultivated (65%) and natural / grazing (20-35%) (BGIS-sanbi, 2014).

Apart from farming related fauna and flora (which is predominant), the natural fauna and flora are predominately indigenous but invader species occur. Exotic fauna and flora have been introduced.

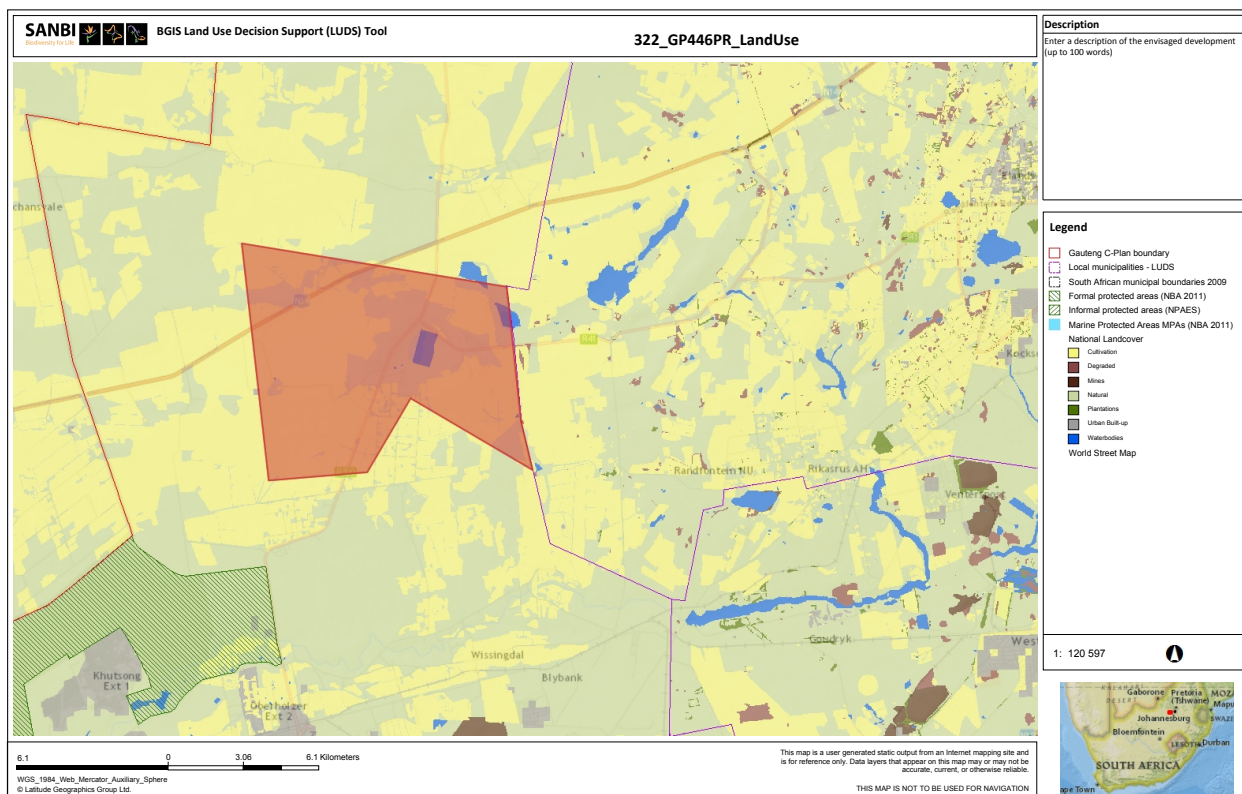


FIGURE 1.1.1. NATIONAL LAND COVER MAP (BGIS, 2014) WHERE GREY REPRESENTS URBAN LAND USE, YELLOW REPRESENTS CULTIVATED LAND AND GREEN REPRESENTS GRASSLAND (OFTEN USED FOR GRAZING).

LIST OF INFRASTRUCTURE FEATURES

LIST OF INFRASTRUCTURE FEATURES SPECIFIC TO THE PROPOSED BULK SAMPLE SITE


Infrastructural Feature	Found on or close to the site
3. Power lines (main line; farm power lines)	Yes
4. Telephone lines and farm telephone lines	Possibly
7. Public tar roads R559, R41, R500 and N14.	Yes
11. Windmills (possible)	Yes

LIST OF INFRASTRUCTURE FEATURES ON THE PROSPECTING RIGHT

Infrastructural Feature	Found on site
1. Sand Mine Quarry (not in focus area but part of approved right on the farm De Pan 51 IQ, RE5)	Yes
2. Tailings Dam adjacent to the farm 109 IQ, RE9	No
3.1 Power lines (main line; farm power lines)	Yes
3.2 Eskom Pluto Substation on De Pan 51 IQ portion 90	Yes
4. Telephone lines and farm telephone lines	Yes
5. Cell Phone Towers apparently belong to the Eskom Power Infrastructure	Yes
6. Public farm roads	Yes
7. Public tar roads R559, R41, R500 and N14.	Yes
8. Railway lines (not in focus area but part of approved right in the south)	Yes
9. Farm dams: De Pan 51 IQ, RE (small),	Yes
10. Farm Grave-sites	Probable
11. Windmills	Yes
12. Pans: De Pan 51 IQ, RE4, 5, 87, 88 and 89	Yes
13. Drainage Lines: Rooipoort 109 IQ and Wonderfontein 103 IQ	Yes
14. Rivers & streams: Rooipoort 109 IQ (non-perennial) and Wonderfonteinspruit on Wonderfontein 103 IQ	Yes
15. Pipeline & canals on Wonderfontein Oog & Wonderfontein; appears to be recycling of groundwater from mine workings (not in the focus area but part of the prospecting right area).	Yes
16. Rooipoort Primary School (not in the focus area but on the existing prospecting right area)	Yes

DESCRIPTION OF THE ENVIRONMENT

SUMMARY OF ENVIRONMENTAL FACTORS MENTIONED BELOW WHICH ARE SPECIFIC TO THE PROPOSED BULK SAMPLE SITE

Aspect		Significant Impact
Physical, Geographical and Biological Aspects		
Geomorphology, Topography, Physiography and Climate	The topography is flat sloping gently towards the north-east.	
Geology	Dolomites - Chuniespoort Group of the Transvaal Sequence	
Soil	Classified as soils with minimal development, very shallow, on hard or weathered rock. Lime generally present in part or most of the landscape. The target mineralisation is part of the soil profile in that it consists of pebbles with a reddish-brown Mn coating created as a result of dolomite weathering resting on the dolomite basement rocks with very little to no soil cover.	
Biodiversity & Threat to Biodiversity	The area is already disturbed by agriculture	
Biodiversity & Mining	No protected areas from mining according to SANBI-BGIS	
Surface water & groundwater, sinkholes	<p>According to SEF in the original EMPlan, the water table depth has been lowered to over 400m depth in the area, apparently as a result of nearby mining (see Appendix 2: SEF Specialist Report, 2008)</p> <p>In somewhat of a contradiction to this, according to the original EMPlan, 2008, the surface owner (on which land the bulk sample is planned) has two boreholes (over a number of portions) and gets water at between 80m and 200m depth however both this commercial farmer and other interested and affected parties in the area were concerned about the use of groundwater for prospecting because of (i) the availability of groundwater, and (ii) the potential of sink-holes forming in the dolomites.</p> <p>Site visit as well as consultations with interested and affected parties confirmed the presence of sink holes in the dolomites which form in this area and care should be exercised not to exacerbate this situation as well as for safety reasons during bulk sampling and processing. If necessary, rock strength investigations of the underlying dolomite-rock should be done. It is noted that this is a regularly ploughed /ripped cultivated field and farm machinery is routinely used, however, at the same time, the site visit revealed a sink-hole in the adjacent field so this safety precaution is real and must be emphasised.</p>	
Wetlands	No wetlands on site. As seen on the Google Earth Image (Figure 2) and in the site photograph shown under the section on land-use. The small wetland shown just to the east of the R500 on the SANBI-BGIS maps shown in this report does not exist on the ground.	
Vegetation	Cultivated land has replaced the natural vegetation. In the grazing areas, the grassland is classified as "disturbed grassland". The trees are predominantly exotic species.	
Alien plants	Weeds and exotic trees typical in highly grazed grasslands and common to cultivated fields and settled areas.	
Fauna	Cattle in the grazing camps with some birdlife and small fauna typical of areas close to human habitation. Fauna, including birdlife, was noticeably absent in the cultivated lands although it is assumed that a few fauna have adapted to these disturbed areas.	
Threatened species/ecosystems	<p>No specific occurrences are known at this stage.</p> <p>Potential occurrences: As per the information for the general right and focus area which follows. There is potential that the White-tailed Rat (see Abe Bailey Game Reserve), Black-footed Cat, Honey-badger, South African Hedgehog, although unlikely, may occur here as well as the avian species: Grassowl, Lesser Kestrel and Blue Korhaan.</p>	
Protected areas	No protected areas	

Socio - economic Aspects		
	Commercial farm land	
Cultural Aspects		
	Nil	
Heritage Aspects		
	Nil identified	

GENERAL DESCRIPTION OF THE ENVIRONMENT FOR THE PROSPECTING RIGHT

Physical, Geographical and Biological Aspects

Geomorphology, Topography, Physiography and Climate

The prospecting area is undulating and flat, at an average height above sea-level of 1450m to 1750m, typical of the Witwatersrand area which slopes down towards the Vaal River and Magaliesberg. Within the right itself, the land slopes gently towards the Wonderfontein spruit in the south, the pans in the central area and the pans and dams along the north-west boundary. The streams are both perennial and non-perennial in a medium-density, parallel pattern caused by the underlying dolomite structure which is confused by the natural pans and small farm dams occurring in a slightly different drainage pattern (probably a palaeo-drainage pattern) with non-perennial flow between them. The vleis and pans are reportedly normally dry (because of mine-drainage, SEF, 2008) although in the Google Earth photo, taken in late summer, the pan has water which disputes this. See Figure 2 and Figure 5. Drainage basin density is low.

SWSA: The area is not shown as a Strategic Water Source Area on BiodiversityGIS (BGIS, 2014).

Natural valleys are lightly forested and natural sinkholes protect a denser vegetation.

The climate is typical high veld weather patterns with average summer temperature of 24 degrees centigrade and an average winter temperature of 10 degrees centigrade. The area receives a summer rainfall of an average of 625mm to 750mm per year and severe frost is experienced during the dry winters. (Approved EMPlan Amended).

Geology

The following extract and maps are taken from the Prospecting Work Programme (PWP) which is attributed to Shango Solutions, 2014:

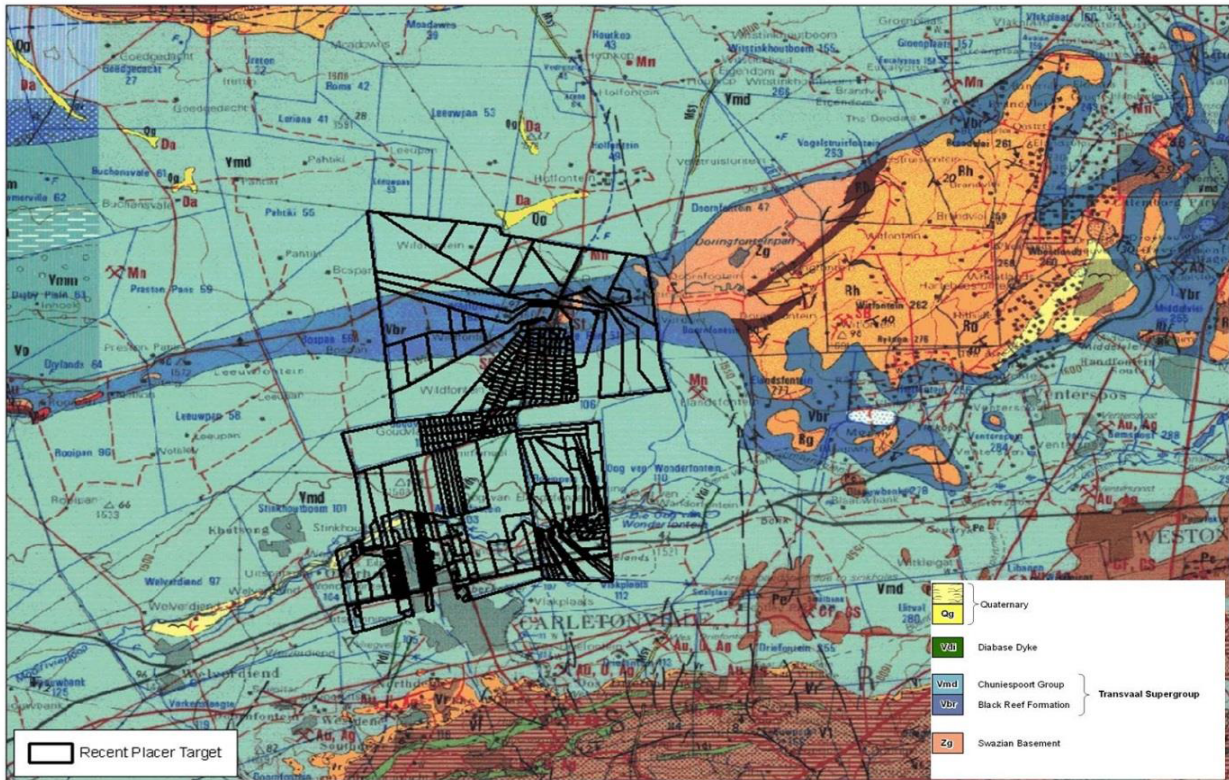
Pretorius et al. (Mineral Deposits of South Africa, 1986) published a map showing the distribution of Witwatersrand rocks below Karoo cover rocks (Figure 1b). Most of the area is underlain by the West Rand Subgroup of the Witwatersrand Supergroup and potentially contains conglomeratic gold-bearing horizons.

The surface geology of the area consists mainly of dolomite of the Malmani Subgroup of the Transvaal Supergroup, the gold-bearing Black Reef Formation at the base thereof and some Achaean Granite outcrop along the Rand Anticline in the north. Virtually the whole area is overlain by Quaternary soils eroded from these rocks.

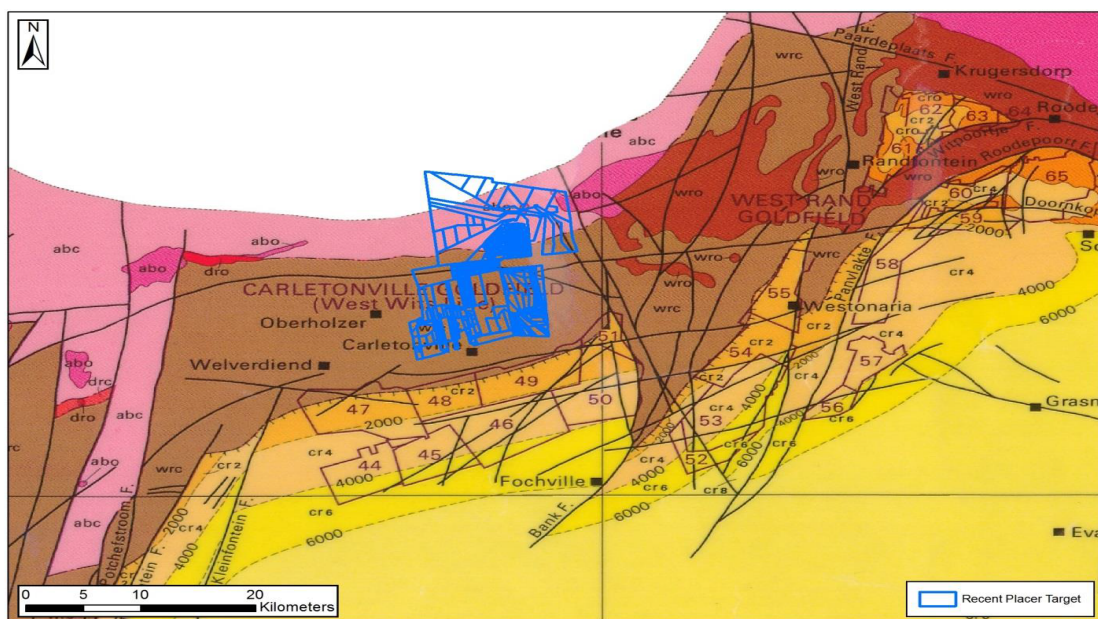
Of interest to the current application are these soils, including ferricrete, as well as river alluvium which represent potential trap sites for gold and other valuable minerals forming placer deposits. The Black Reef is also prospective and has been mined for gold previously some 10km to the west of the area, as well as to the north-east and east of the area.

Black Reef channels, especially eroding conglomeratic horizons of the Witwatersrand Supergroup, might show elevated gold contents, down-dip of these eroded subcrops.

Mechanical and chemical erosion of the Malmani Subgroup result in the precipitation of iron and manganese in the soils covering virtually the whole area. Manganese has been mined extensively in the area, like on the Elandsfontein and Rio Rita Manganese Mines. The latter mined manganese on the area applied for, apparently from 1952 to 1972. The ancient erosion of the dolomitic rocks formed a karst landscape, in which diamondiferous alluvial gravels were trapped in cavities and crevices. Alluvial diamonds in the area have been mined extensively in the past, forming the well-known Ventersdorp Alluvial Diamond Field. The project area abuts the Holfontein Alluvial Diamond Mine to the north, which ceased operations in September 2012.



SURFACE GEOLOGICAL MAP WITH APPLIED FARM BOUNDARIES SUPERIMPOSED.



MAP OF THE WITWATERSRAND BASIN GOLD FIELD, TOGETHER WITH DEPTHS TO THE CENTRAL RAND GROUP.

“

White Rivers Exploration' target commodities for this project are Gold Ore (Au), Alluvial Diamond (D), Iron Ore (Fe), Manganese (Mn) and Uranium Ore (U).

Soil

The soil is classified as variable and includes soils classed as those:-

- > with minimal development, usually shallow, on hard weathered rock with or without intermittent diverse soils. Lime generally not present;
- > soils with minimal development, usually shallow, on hard or weathered rock. Lime generally present in part or most of the landscape;
- > yellow, well drained sandy soils with high base status;
- > red soils with a high base status;
- > topsoil enhanced with fertilisers in cultivated fields; and
- > the large high veld pan (central) and along the public R500 road, the soils are classified as soils with a marked clay accumulation, strongly structured with a non-reddish colour. The latter may occur associated with one or more vertic, melanic and plinthic soils. (BGIS-sanbi, 2014).

The soil depth is often non-existent and otherwise very shallow at 0m to 300mm. Soil degradation is moderate and mainly caused by old over-grazing. Erosion is predominantly sheetwash and rainwater in the gullies. Erosion is low and is predominately of the topsoil. (source: SOER, 2002).

Soils in the pans typically have a naturally high salt content.

1.1.1.1. Biodiversity and Established Threat To Biodiversity Level

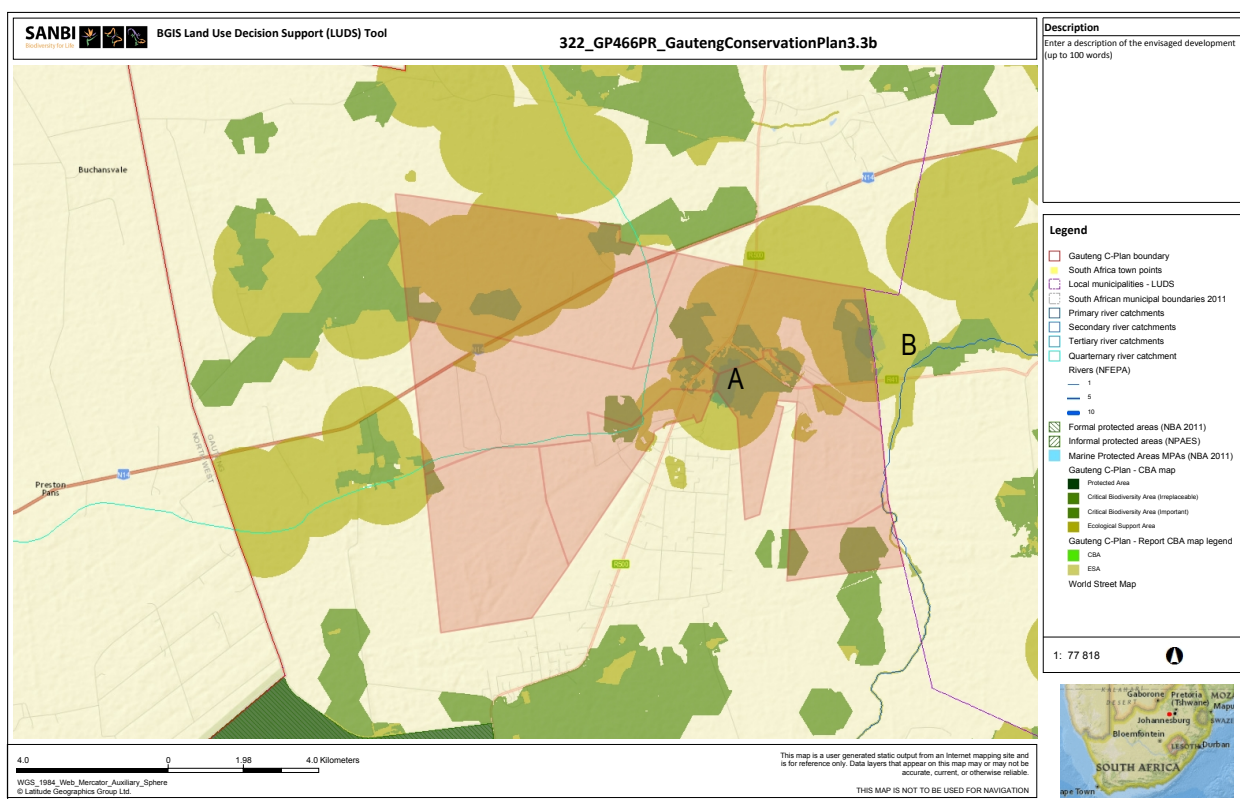


FIGURE 3: BGIS 2014, GAUTENG CONSERVATION PLAN 3.3B FOR THE MOKERONG CITY MUNICIPALITY, GAUTENG PROVINCE. PROSPECTING AREA IS SHOWN BY THE RED SHADED AREA.

The prospecting area falls into the Mokerong City Municipal Biodiversity area for which a BGIS summary is replaced by the Gauteng Conservation Plan 3.3B (GCP3.3B). The GCP3.3B GIS map showing conservation areas is provided above, Figure 3. The level of threat to the ecosystem in the prospecting area is classified as open (beige) with Irreplaceable Critical Biodiversity Area (dark green) surrounded by a buffer of Important Critical Biodiversity Areas (green); in turn buffered by Ecological Support Areas (mustard yellow). The hatched dark green area (on the south map boundary shows the Protected Area of the Abe Bailey Reserve.

Areas A (De Pan Pan) and B (Doornfontein Dam) marked on Figure 3, are created around water bodies and according to the Gauteng Conservation Plan represent an OL plant habitat, a RL bird habitat and primary vegetation.

According to BGIS, 2014, the Abe Bailey Reserve is a National Protected Areas and National Focus Areas falls in this area.

Biodiversity & Mining

BGIS, part of SANBI, supplies map data for Mining & Biodiversity national classification for EIA's and EMPlans (Figure 4). These Mining and Diversity Guidelines are broken down into :-

- A. Legally Protected – mining prohibited (black on map)
- B. Highest biodiversity importance – Highest Risk for mining (dark brown on map)
- C. High Biodiversity importance - High Risk to mining (orange brown on map)
- D. Moderate Biodiversity importance for Mining - moderate risk to mining (green on map)

Unfortunately, this information does not appear to be available yet for the Gauteng Province. Most of the prospecting area falls below these classes (BGIS, 2014).

N/A

FIGURE 4: MINING & BIODIVERSITY (SOURCES: BGIS, 2014)

SANBI-BGIS was also checked for "DWAF Forest Patches" and type. None of which fall into this area.

Biome Classification



The area is classified into the Grassland Biome of South Africa (BGIS, 2014).

Water

Surface Water Features

The perennial Wonderfontein spruit and Mooirivierloop rivers occur within the southern portion of the site, while numerous non-perennial rivers flow through the site. A large pan is centrally placed as well as a pan/dam situated in the north of the site on the farms Wildfontein and De Pan. The De Pan, pan was dry at the time of the SEF site visit, although locals questioned stated that this is unusual. This may be as a result of dewatering by the mines. [SEF, 2008]. It is noted for the record that the Google Earth image taken in May 2015 shows water in the pans on the farms Wildfontein and De Pan, which is also marked as a "wetland" on SANBI-GIS (Figure 5), although this is probably a watercourse rather than a wetland per definition.

A dam is transected by the north-eastern boundaries of the site with the farm Doornfontein.

According to the approved EMPlan 2011 [SEF, 2008]: on site, the perennial Mooirivierloop flows through the southern portion of the Recent Placer Project site (but out of the 2015 focus area for EMPlan amendment). The National Spatial Biodiversity Assessment (NSBA) status of the Mooirivierloop based on the heterogeneity signature of the river is "Endangered". This means that it has an intact length of below the conservation target thereof (10% of the total length). Endangered ecosystems have lost significant amounts of their original natural habitat and so their functioning is compromised (Net, et.al, 2004). The Wonderfontein spruit also flows through this portion of the site. A large number of sinkholes have formed in the streambed of the Wonderfontein spruit and dewatering has caused the river, as well as the "Eye of Wonderfontein" to run dry.

Groundwater and Geohydrology

In these excerpts from the specialist report, 2008, (Appendix 2) attached to the approved EMPlan, 2011, SEF reports extensively on the groundwater and hydrology of the area stating that:

South Africa is a water scarce country and the importance of groundwater as a resource is increasing. South Africa does not have significant groundwater resources, although the dolomitic aquifers in the West and Far West Rand have a huge groundwater potential (Van der Walt & De Roer, 2006). According to Van der Walt & De Roer (2006) these dolomite aquifers contain (under natural conditions) at least twice the volume of water as that of the Vaal Dam. The mines have had an adverse effect on the groundwater potential because most of the compartments have been dewatered to some degree to enable mining operations (Van der Walt & De Roer, 2006).

In the 1960s, the Malmani dolomite landscape of the Transvaal Sequence on the Far West Rand experienced ground subsidence in the form of sudden catastrophic sinkhole formations. Gold mines dewatered some of the dolomitic compartments to allow their workers to extract the gold-bearing ore of the underlying Witwatersrand Supergroup economically and safely (Van Niekerk & Van der Walt, 2006). Decommissioning of old mines means that dewatering will be discontinued and flooding will cause the original dolomitic eyes feeding the Wonderfontein spruit to start flowing again, which will impact on groundwater quality and groundwater stability. The most important problem in the catchment area is that the sedimentary phase of the Wonderfontein spruit and its impoundments is continually being enriched with heavy metals and radio nuclides originating at the mine works. These could be remobilised and released into the downstream water, causing deterioration of water quality for downstream users (Van Niekerk & Van der Walt, 2006).



GROUNDWATER RECYCLING ON THE ADJACENT WONDERFONTEIN OOG FARM

Numerous sinkholes are on or within the Recent Placer Project vicinity. A large number of sinkholes have formed in the streambed of the Wonderfontein spruit. Furthermore, dewatering has lowered the original groundwater table by more than 300m in some places and dramatically changed the land-use patterns in the area; both because of the lack of water available for agriculture and owing to the formation of sinkholes. The inevitable cessation of mining and pumping in the area may, therefore have drastic socio-economic implications. Many of the boreholes in farming areas and dolomitic springs in the Wonderfontein spruit were dried up by this process and remain dry to this date (Coetzee, 2004).

SEF also includes some detail on the regional effects of dewatering which can be found in the Ecology Report itself (Appendix 2).

Wetlands and Fish Sanctuaries

The SANBI-BGIS map (Figure 5) shows the “wetlands” as blue overlay on the Gauteng Conservation Plan for the prospecting area (red circle) and prospecting focus area (in red); although these are probably watercourses and pans rather than a wetland per se. Similarly small “wetlands” in the form of non-perennial pans and farm dams occur. In the focus area, there is a large pan on the Wildfontein and De Pan farm boundary and an apparent wetland associated with, what SEF (approved EMPlan, 2008) identifies as a dam, transected by the north-eastern site boundary.

The “wetlands” to the south of the focus area are not dealt with here but can be referenced in the attached SEF Specialist Report, 2008 (Appendix 2). Also see “Eastern Temperate Freshwater Wetlands” under the section 1.1.1.8. on vegetation below.

The SANBI-BGIS map (Figure 5) shows No NFEPA's (National Fish Ecosystem Priority Areas) in the prospecting area

During the September site visit reed beds, approximately 10m wide, occurred on the banks of the DePan-Doornvlei Dam water course and for this reason a 10m “no prospecting zone” is marked in this area on the accompanying environmental plan as is required.

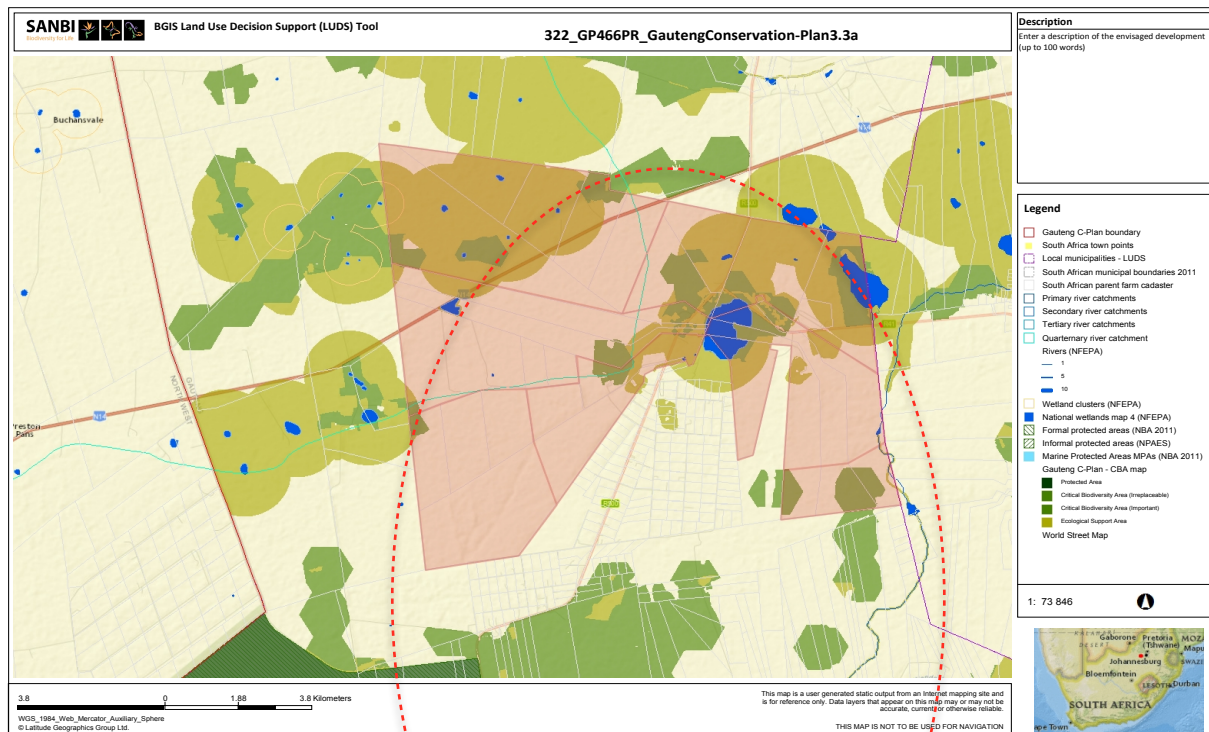


FIGURE 5: WETLAND & FISH SANCTUARIES (SOURCE: BGIS, 2014)

Vegetation: Flora: Plants, trees and grasses that grow naturally in and around the site

In the approved EMPlan, SEF, 2008, classifies the vegetation into three vegetation types or units according to the Mucina & Rutherford classification, namely Carletonville Dolomite Grassland, Soweto Highland Grassland and Eastern Temperate Freshwater Wetlands; the latter which seems predominant along the Wonderfonteinspruit in the area south of the focus area. In the approved EMPlan, SEF adds a fourth, classified as Disturbed Grassland specific to conditions found on site at the time of the Ecological Specialist Study (Appendix 2).

In the approved EMPlan, 2011, SEF, 2008, describes the vegetation, often using information from Mucina & Rutherford (2006), as follows:

Carletonville Dolomite Grassland [CDGrassland]

Carletonville Dolomite Grassland (light-mint-green on Figure 6) is found in the North West Province, Gauteng and Free State, at altitudes from 1360 to 1620m. CDGrassland occurs on undulating plains dissected by rocky ridges. The species-rich grassland forms a complex mosaic pattern. CDGrassland is rated on a national level as “vulnerable” and has a national target level for conservation of 24%. Nationally, the habitat type is poorly protected.

On site, a limited portion contains grassland that is seemingly vacant and in a relatively undisturbed state. These portions are either used for controlled grazing or have been abandoned due to sinkhole formation or the possibility thereof. The majority of the remaining natural grassland occurs on rocky areas. Various portions of the grassland were burned at the time of the 2008 site visit, or were not in flower yet. As a result the grass layer was not readily identifiable. However the fires stimulated the growth of various forbs and the species identified on the site included *Becium obovatum* subsp. *obovatum*, *Rhynchosia monophylla*, *Gnidia capitata*, *Kohautia amatymbica*, *Ledebouria ovatifolia*, *Hypoxis hemerocallidea* (Gifbol) and *Vernonia oligcephala* (Bitterbossie). Shrubs such as *Rhus magalismontana* (Bergtaabos) and *Ziziphus zeyheri* (Dwarf Buffalo-thorn) are also identified. [SEF, 2008].

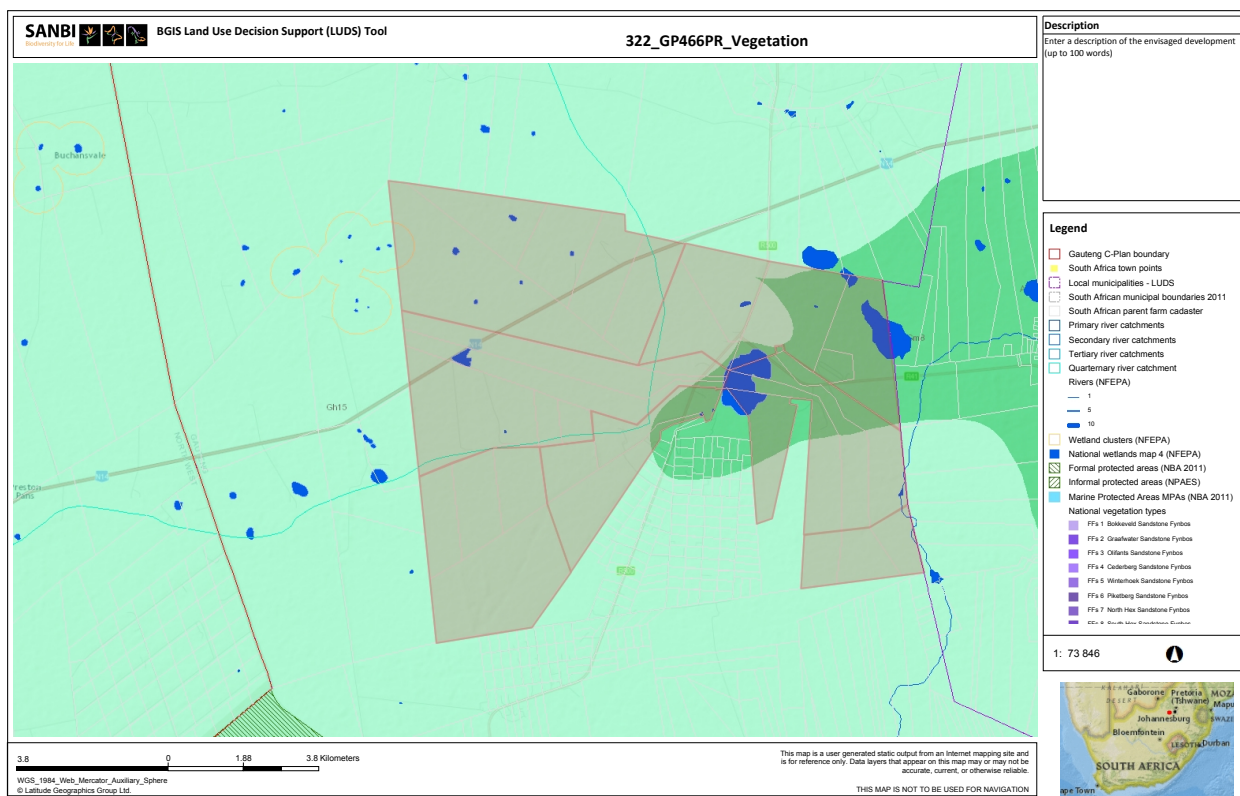
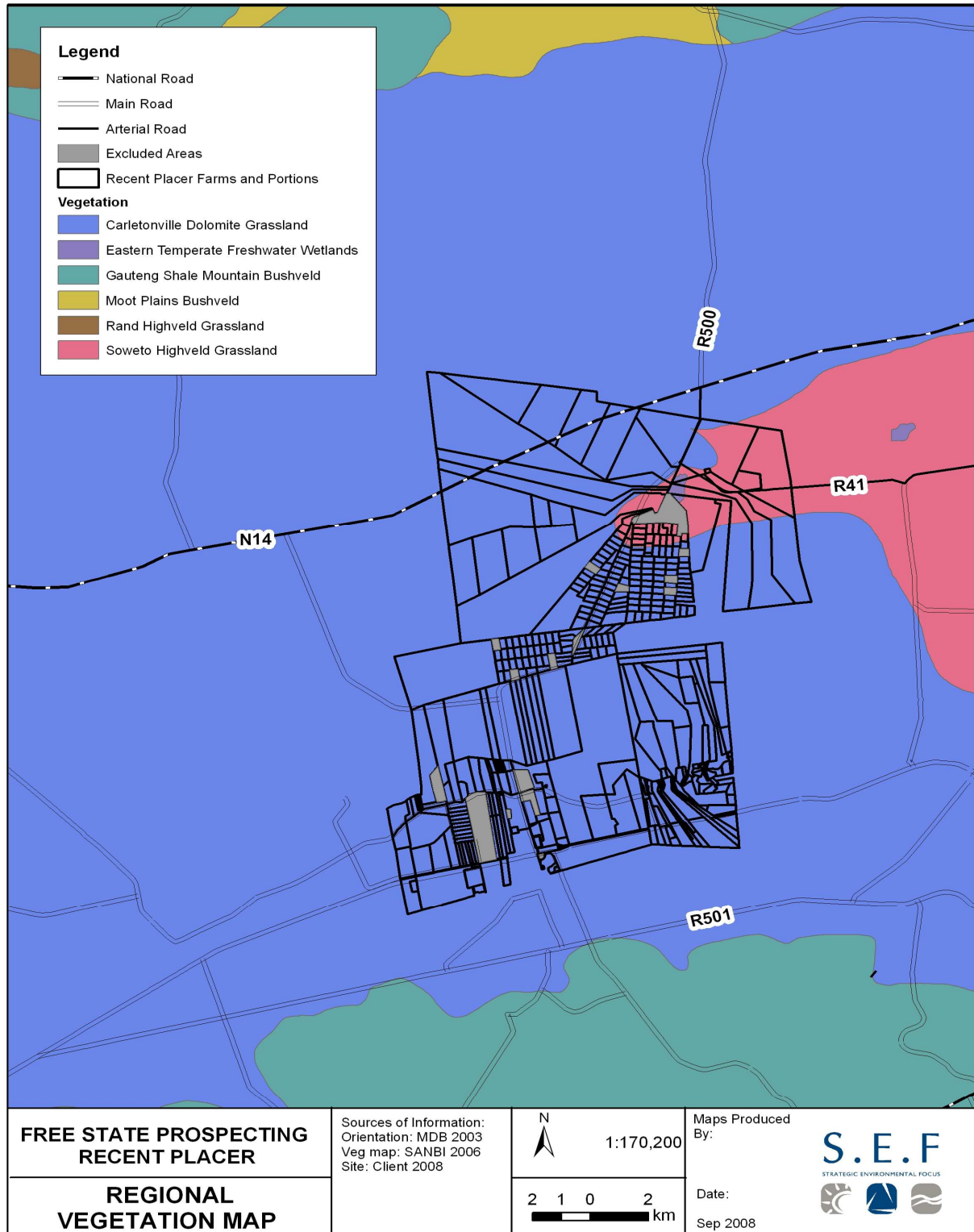


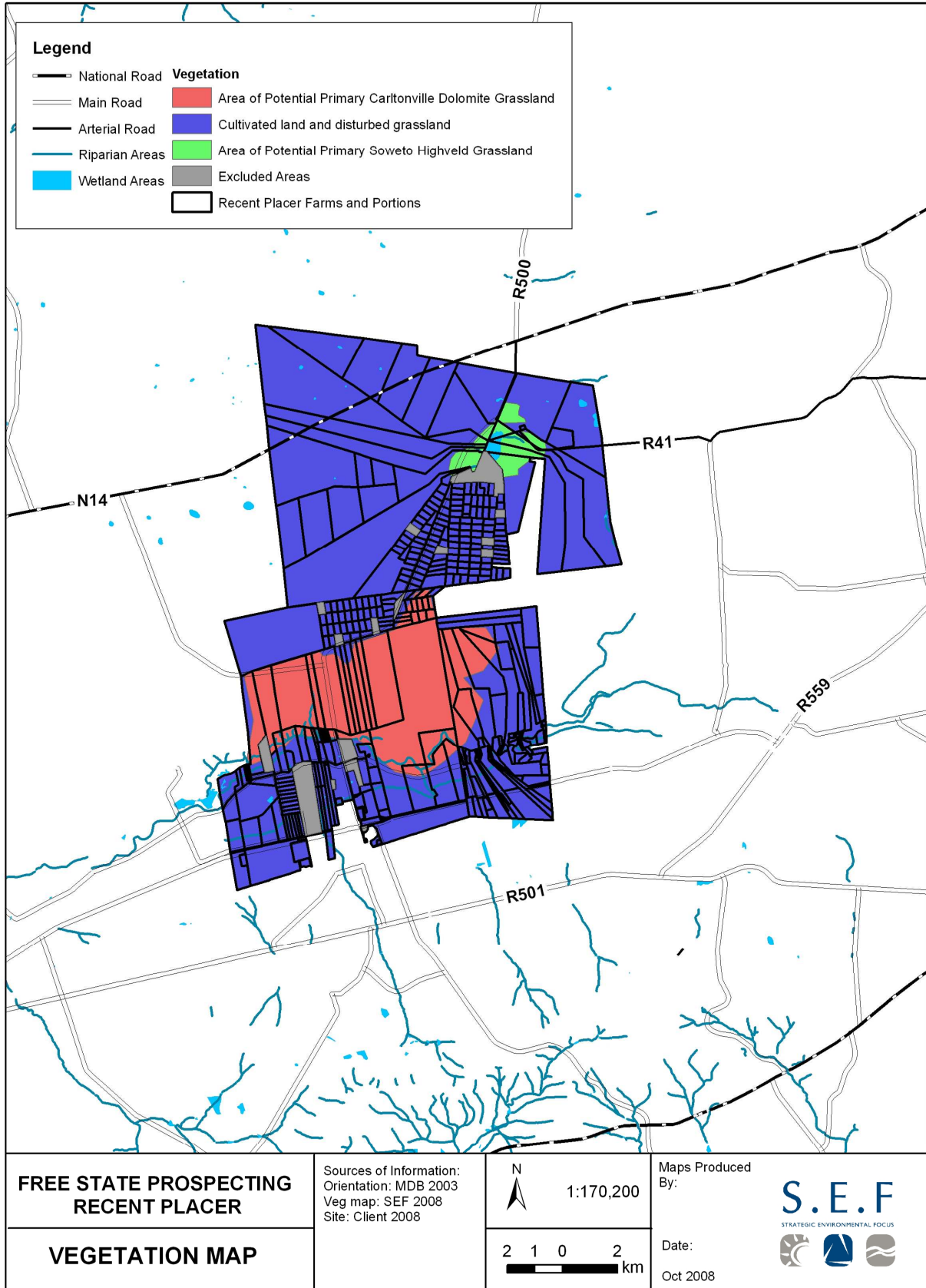
FIGURE 6: NATIONAL VEGETATION TYPES (SOURCE: BGIS, 2014)

The BGIS map, figure 6, uses the Mucina and Rutherford (2006) classification of Carletonville Highveld Grassland (light green on map) and Soweto Highveld Grassland (darker green on map). The focus area for the EMPlan amendment is marked in red.

Soweto Highveld Grassland [SHGrassland]

Soweto Highveld Grassland (dark-mint-green on Figure 6) is classified as an endangered vegetation as only a few remaining patches are statutorily conserved. The SHGrassland is under pressure from urban development and remaining primary portions should be conserved. This vegetation community is dominated by *Themeda Triandra* (Red Grass) accompanied by grasses such as *Elionorus mutinous* (Wire Grass), *Eragrostis racemes* (Narrow Heart Love Grass), *Heteropogon contortus* (Spear Grass) and *Tristachychya leucothrix* (Hairy Trident Grass) (Mucina & Rutherford, 2006). UndisturbedSHGrassland could contain wetlands, narrow stream alluvial and ridges or rocky outcrops (Mucina &





Rutherford, 2006). This grassland, as with the CDGrassland, is under threat by mining and agriculture and very few patches are still in pristine condition.[approvedEMPlan 2011,SEF,2008].

On site SEF, 2008, found that SHGrassland was expected to occur on the north-eastern portion, however much of the site was either cultivated or disturbed by diggings. A man-made dam is situated on the north-eastern boundary of the site and is surrounded by relatively undisturbed grassland. Some portions of this grassland remain although it is likely that these areas are/were used for grazing. The SHGrassland varies from a relatively intact grassland to disturbed grassland. The intact portions are seemingly fragmented, although it could be clumped together. Furthermore the SHGrassland contains wetlands such as the pan and wetland system on the north-eastern corner of the site.[approvedEMPlan 2011,SEF,2008].

Eastern Temperate Freshwater Wetlands [ETFWetlands]

The Eastern Temperate Freshwater Wetlands vegetation community forms where the flow of water is impeded by impermeable soils and/or by erosion resistant features such as dolerite intrusions (Mucina & Rutherford, 2006). The wetlands are mostly inundated during the rainy summer months and dry out towards the middle of the dry winter season. Endemic marsh plants occur within this vegetation type and include *Disa zuluensis*, *Rorippa flatvialis* var. *caledonica* and the succulent herb *Crassula tuberella*. Although no protected plants are expected to grow here, the vegetation surrounding the rivers and drainage lines, SEF alternatively lists the conservation status as vulnerable / sensitive. [approvedEMPlan2011, SEF, 2008].

Onsite. While the area is not indicated on the 2015 SANBI-BGIS National Vegetation type map (Figure 6), SEF, 2008 mentions this vegetation type as occurring in a single patch within the north-eastern portion of the site.



Disturbed Grasslands

On site. Many farm portions are in various stages of disturbance. Much of the site is cultivated or historically cultivated. In addition, the large numbers of the shrub *Seriphem plumosum* (Bankruptbush) indicated overgrazing on a number of farm portions (Van Wyk & Malan, 1997). The smallholdings also comprise disturbed grassland, while dumping, road reserves, agricultural activities and settlements disturb much of the site. Due to the timing of the SEF 2008 site visit few grasses were in flower. This hampered positive identification of much of the occurring grasses. Grasses such as *Hyparrhenia hirta* (Common Thatching Grass), *Cynodon dactyl* on (Couch Grass), *Eragrostis curvula* (Weeping Love Grass) and *Aristida congesta* (White Stick Grass) could be identified. [SEF, 2008].

Although disturbed, research by Biggs et, al, (2006) found that extensive areas not under formal conservation management play an important role in maintaining South Africa's biodiversity. These areas are designated as being of low sensitivity and conservation value due to their disturbed nature. However they serve as ecological corridors for the movement of species.[approvedEMPlan 2011, SEF, 2008].

The Bakenveld Biome

As mentioned previously, the Abe Bailey Nature Reserve falls within the prospecting right but not within the 2015 focus area which is the subject of this EMPlan amendment; however as the reserve falls within the granted right it must be

mentioned that the reserve is predominately positioned on dolomite, in the Western variation of the Bakenveld Biome. The only formally protected piece of this variation lies within the Abe Bailey Nature Reserve. [www.GDACE.gov.za, 2015]. As no commercial prospecting is allowed in the nature reserve anyway - this would not require any further mitigation measures.



Ecological Study: Specialists Recommendations

SEF marked the sites where it recommended vegetation areas of potential primary CDGrassland and potential primary SHGrassland as well as areas of high sensitivity on the plans attached to the approved EMPlan, 2011 - which sites are recorded in the specialist report, Appendix 2, and these are transposed onto the EMPlan map attached to this amendment, below, SEF, 2008, emphasises that these areas are only given as potential sites and should be checked on site - should this prove necessary. [SEF, 2008].

SEF also notes that hydrophilic vegetation encountered in this marshy area, in drainage lines, around the pan in the northern portion and within riparian areas are sensitive to disturbances. The areas housing hydrophilic vegetation are thus vulnerable to degradation (Fuls, et.al, 1992). Degradation of the dry river courses could also lead to encroachment by *Acacia karroo* (Sweet Thorn Tree) and the thorny shrub *Asparagus larycinus* (Cluster-leaved Asparagus). Various alien invasive trees were found to invade areas along the watercourses. These species invade riparian and seep zones with disastrous impacts on water resources, especially within catchment regions. The vegetation surrounding the rivers, drainage lines and pans play an important role in water catchments, assimilation of phosphates, nitrates and toxins as well as flood attenuation and must be designated as sensitive. [SEF, 2008].

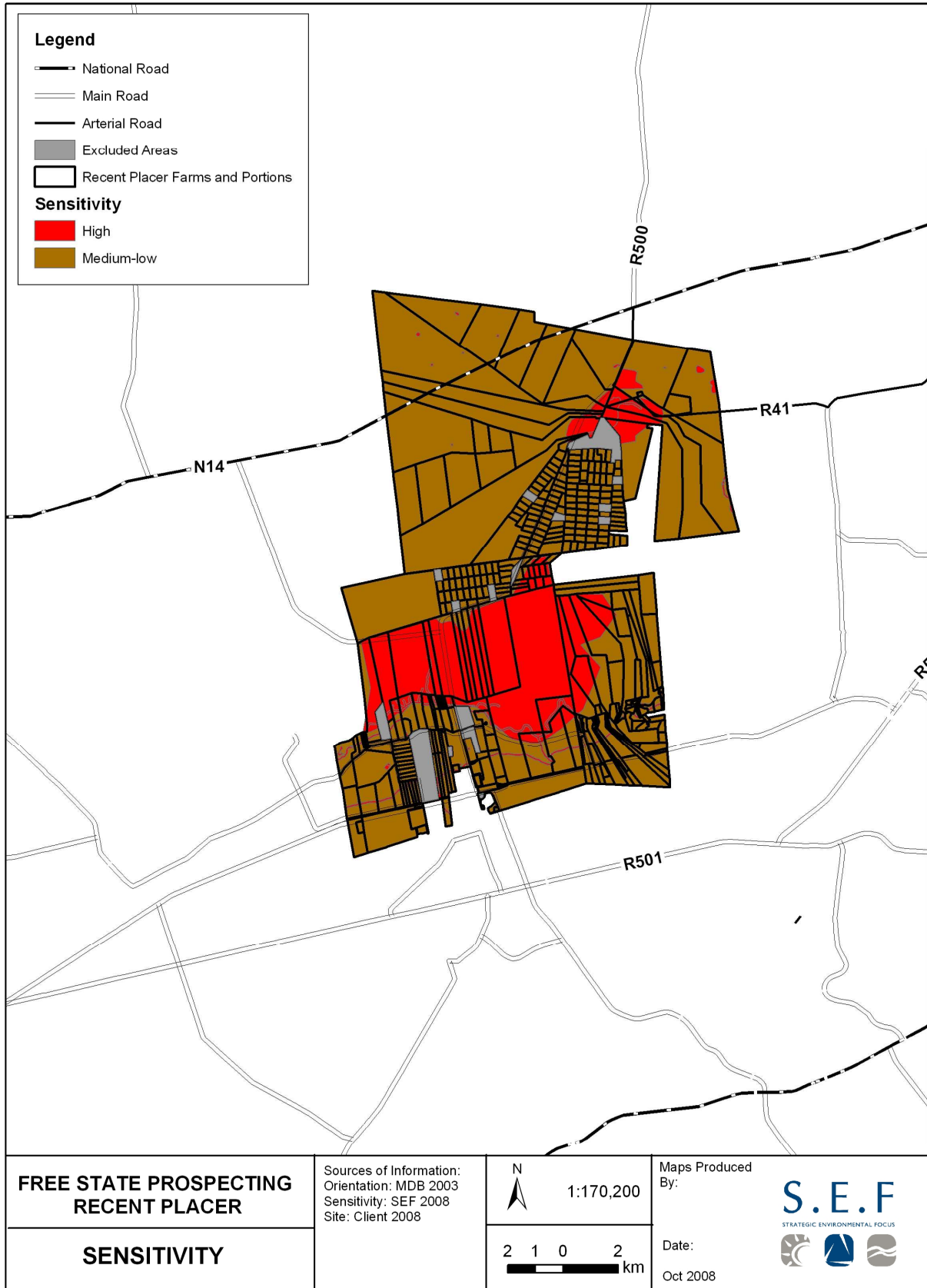




FIGURE 7. ALIEN PLANTS, INDIGENOUS AND INVADER SPECIES PHOTOGRAPHED ON SITE, SEPTEMBER 2015

Site Visit and Consultation Information

The 2015 site visit generally confirmed the above with predominant grassland. In the natural areas rhus and acacia were observed amongst other naturally occurring plant species, including a variety of grasses, as per Mucina & Rutherford, 2006 and SEF, 2008.

Invader and pioneer species were noted:- willow, tracts of large blue-gum previously planted as windbreaks, wattle stands, black jacks, dormant crop fields filled with black-jacks, peach trees and a number of common weeds were observed on site. Pioneer species, are common. Some of these are pictured above. BGIS – EDRR maps the area with a low, 0% (in the Focus Area) and 0%-12% (in the south) average density of Alien species of plants (BGIS, 2014). This seems unlikely due to the presence of long-term settlement in the area and extensive cultivation and this concurs with field observations.

Fauna: Animals that naturally occur in the area

The most likely animals to possibly encounter, apart from livestock and domestic animals, would be baboons, monkeys and a variety of rodents, ground squirrels, mongoose, hares, shrews mice and rats. Nocturnal animals may be various species of bats, jackals, dogs, porcupines, genet and small cats (domestic and otherwise). Birds in the area will be those common to the central south african grasslands and human habitation. A large variety of reptiles and snakes are expected to occur. The present human habitation, expanding formal and informal settlements, and hunting in the present and past few centuries has denuded the natural occurrence of faunal species. In this area a variety of small animals including buck such as duiker and steenbok may still be found but it is considered unlikely.

The more obvious of these are dealt with in more detail below.

Mammals

The typical mammals and rodents are addressed below. Of particular additional interest is that the Abe Bailey Nature Reserve is one of the last remaining areas in which pure gene Black Wildebeest can be found. These were re-introduced. The reserve has a herd of approximately 200. These are not anticipated to occur outside of the protection of the reserve and therefore on site.

There is however a small possibility of the occurrence of *Myodomys albicaudatus* (White Tailed Rat / Mouse), listed as Vulnerable which was discovered in the western region of the Abe Bailey Reserve (and therefore - offsite but nearby) in the 1994 - 2002 period. (www.GDACE.gov.za, 2015).

This insectivorous rodent frequents the old burrows or meerkat's and presumably ground-squirrels.

Photo source: www.krugerpark.co.za, 2015



Site Visit and Consultation Information

Despite the spring site visit; with the exception of the DePan-Doornvlei Dam and sand quarry, the area was noticeably quiet with respect to fauna compared to other sites visited in South Africa, even those in or adjacent to urban areas. On site the following mammals, were observed:

Parties consulted mentioned: nil

September - October 2008 - SEF		
Scientific Name	Common Name	Habitat
<i>Cynictus penicillata</i>	Yellow Mongoose	Semi-arid, grassland. Eat insects.
<i>Lepus saxatilis</i>	Scrub Hare	Savannah woodland and in scrub where there is grass cover.
<i>Xerus inaurus</i>	South African Ground Squirrel	Open dry plains with hard calcareous soils and thinly spaced bushes

September 2015 KASORO + Consultations			
Scientific Name	Abundance	Common Name	Habitat
<i>Canis lupus familiaris</i>	1	Dog	Domestic area
<i>Ovis aries</i>	2 flocks (± 20)	Sheep	Cleared cultivated land on commercial farms in the focus area
<i>Bos taurus</i>	> 20	Cattle	Grazing camps on commercial farms in the focus area
<i>Sus scrofa domesticus</i>	Covered	Pig	Commercial pig farming

<i>Xerus inaurus</i>	0	Scats and small burrows (not abundant) suggest small animals. Strangely no ground squirrels were seen although they are supposed to be endemic to the region. Where they occur it is normally common to see these.	Scats and small burrows (not abundant) suggest small animals. Strangely no ground squirrels were seen although they are supposed to be endemic to the region. Where they occur it is normally common to see these.
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Interested and affected parties mentioned: Nil

Reptiles

Although rarely seen, the following reptiles may be found in the area:-

Snakes: certain blind-snakes, thread snakes, Common Brown Water Snake, Brown House Snake, Cape Wolf Snake, Mole Snake, Skaapstekker, Sand snakes, Cape Centipede Eater Snake, Common Egg Eater, Red-lipped / Herald Snake, Puff adder;

various skinks;

Lizards: Sandveld Lizard, Spotted Sand Lizard, Yellow throated Plated Lizard, Nile/Water Monitor, Ground Agama, Cape Gecko

Nile/Water Monitor

(Branch, 1988)

Amphibians

A number of frog species inhabit areas where water occurs (man-made or natural). Some of the natural water bodies on the site are dry. Frog species known to occur in the Gauteng area are listed below:

Common Name	Scientific Name
Bubbling Kassina	<i>Kassina senegalensis</i>
Bullfrog, Giant	<i>Pyxicephalus adspersus</i>
Caco, Common	<i>Cacosternum boettgeri</i>
Foam Nest Frog	<i>Chrimantis xerampelina</i>
Platanna, Common	<i>Xwnopus laevis</i>
Rattling Frog	<i>Semnodactylus wealli</i>
River Frog, Common	<i>Afrana angolensis</i>
Rubber Frog, Banded	<i>Phrynomantis bifasciat</i>
Sand Frog, Beaded	<i>Tomopterna tuberculosa</i>
Sand Frog, Natal	<i>Tomopterna natalensis</i>
Sand Frog, Tremolo	<i>Tomopterna cryptotus</i>
Stream Frog, Striped	<i>Stronglylopus fasciatus</i>
Toad, Guttural	<i>Bufo gutturalis</i>
Toad, Raucous	<i>Bufo rangeri</i>
Toad, Red	<i>Schismaderma careens</i>
Toad, Western Olive	<i>Bufo garmani</i>

source:

[http://www.conservancies.org/Downloads/Frog%20Awareness%20Project%20\(A5%20Page%20Format\).pdf](http://www.conservancies.org/Downloads/Frog%20Awareness%20Project%20(A5%20Page%20Format).pdf)

Avifauna (Birds)

The Highveld grassland displays a rich diversity in terms of birdlife. Cultivated land serves as feeding ground for various avifauna species, while the rodents commonly found around cultivated land attract birds of prey such as *Elanus caeruleus* (Black Shouldered Kite). [SEF, 2008].

Common avifauna expected to be seen on site are the following: those common to grasslands: guinea-fowl, francolin, korhaan, lark, weaver, pipit, widow-bird, shrike, black-shouldered kite, quelea's, finches and migrants such as roller; as well as those that occur around human habitation such as pigeon, dove, sparrow and crow.

The tall grasses found in addition to wetland or marshy conditions could offer ideal habitat to the Vulnerable *Tyto capensis* (Grass Owl). Grass owls are known to occur within the Abe Bailey Nature Reserve and thus potentially within the Project site. Additionally, the following Red Data birds occur within the Abe Bailey Nature Reserve: *Circus ranivorus* (Marsh Harrier), *Sagittarius serpentarius* (Secretary Bird) and *Gyps coprotheres* (Cape Vulture). Appendix D of the specialist report (Appendix 2) lists the National Red Data Bird species and indicates the probability of occurrence on the site. And Appendix E lists the bird species recorded within the quarter degree of which the site occurs. [SEF, 2008]

More up-to-date data, the most recent South African Bird Atlas Project list of birds sighted in the representative*, 2610_2725 pentad (SABAP2), is appended at the end of this document (Appendix 1). A cross-check against the NEMBA 2007 List of critically endangered, endangered, vulnerable and protected species published in the Government Gazette revealed that 2 birds (aves) in the list are considered threatened; see the section on "threatened species below" for details on threatened species.

The area is not shown as an "Important Bird Area of South Africa" in terms of SANBI-BGIS, 2014.

*This Pentad was chosen as it represented both natural and cultivated habitat environments and had >1 sets of observations (>10) and is an area representative of the area. The data shows this pentad plus surrounding pentads; a 3x3 grid. The data is collective from 2007 to 2015.

Site Visit and Consultation Information

On site, the following species were observed:

September - October 2008 - SEF		
Scientific Name	Common Name	Habitat
<i>Anus erythrorhyncha</i>	Red-billed Teal	Fresh water.
<i>Bostrychia hagedash</i>	Hadedda	Widespread.
<i>Bubulcus ibis</i>	Cattle egret	Around grazing cattle. Roosts in reeds or trees over water.
<i>Egretta alba</i>	Great White Egret	Freshwater dams, lakes, floodplains and estuaries.
<i>Elanus caeruleus</i>	Black Shouldered Kite	Widespread. Various habitats
<i>Euplectes afer</i>	Golden Bishop	Grassland and vleis.
<i>Eupodotis africanus</i>	Northern Black Korhaan	Dry, open grassland and shrubs.
<i>Fulica cristata</i>	Red-knobbed Coot	Open inland waters with reeds.
<i>Numida meleagris</i>	Helmeted Guinea Fowl	Grassland, bushveld and farmlands.
<i>Pternists swainsonii</i>	Swainson's Spurfowl	Dry thorn veld and agricultural lands.
<i>Streptopelia capicola</i>	Cape Turtle Dove	Widespread.
<i>Threskiornis aethiopicus</i>	African Sacred Ibis	Wetlands in grassland, vleis and man-made water bodies.
<i>Vanellus armatus</i>	Black Lapwing	Widespread, frequent areas with water.

<i>Vanellus coronatus</i>	Crowned Plover	Common in dry, open grassland.
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September 2015 KASORO + Consultations			
Scientific Name	Abundance	Common Name	Habitat in which it was seen
<i>Mirafra</i>	2	Lark	Grassland and alongside roads, perched on fences
<i>Streptopelia capicola</i>	3	Dove	Grassland and groves of trees
<i>Oena capensis</i>	3	Grassbird	Grassland and alongside roads, typically on the ground
<i>Numida meleagris</i>	± 10	Helmeted Guinea Fowl	Cleared grass alongside roads
<i>Vanellus coronatus</i>	2	Crowned Plover	Dry, open grassland
<i>Elanus caeruleus</i>	5	Black-shouldered kite	Telephone poles, indicative that there are snakes and rodents in nearby ecosystems
<i>Strix woodfordii</i>	1	Wood owl	Deceased, caught on a farm fence adjacent to the N14
<i>Colius colius</i>	1	Whitebacked Mousebird	perched on trees
<i>Passer domesticus</i>	3	Mossie / House-sparrow	groves of trees, fences, grassland
<i>various</i>	100 +	prolific waterbirds and birds found in reeds including weavers and a variety of ducks	On the right boundary, in and adjacent to the DePan-Doornvlei Dam and in wetlands forming in an old sand mining excavation area
<i>Passer melanurus</i>	2	Mossie / Cape-sparrow	The above was not prevalent on the Groot Pan of De Pan where only a few mosses were noted.

Despite the spring site visit; with the exception of the DePan-Doornvlei Dam and sand quarry, the area was noticeably quiet with respect to Avifauna compared to other sites visited in South Africa, even those in or adjacent to urban areas.



Parties consulted mentioned: nil

Invertebrates including Butterflies

The grassland potentially supports a wealth of invertebrate species and Red Data species are known to occur within the Abe Bailey Nature Reserve. In February 2007, a *Metisella meninx* (Marsh Sylph Butterfly) was observed on the Welverdiend side of the Abe Bailey Nature Reserve (GDACE, 2007). Other species known to occur within the reserve include *Harpactira hamiltoni* (Golden Starburst Baboon Spider), *Opisththalmus*

pugnax (Common Burrowing Scorpion) and *Uroplectus triangulifer* (Lesser Thick-tailed Scorpion). Suitable habitat exists for these species within the Carletonville Dolomite Grassland areas on site. [SEF, 2008].

Invertebrates identified during the spring site 2015 visit were:- (white) African Migrant Butterfly and termite mounds.

Threatened Species and habitats

The NEMBA, National Environmental Management: Biodiversity Act, No10 of 2004, list of critically endangered, endangered, vulnerable and protected species as published 23 February 2007 is attached as Appendix 3. This lists the critically endangered, endangered, vulnerable and protected species for the Republic of South Africa.

> **Critically Endangered Species** are defined as those that “face a critical risk of extinction”

> **Endangered Species** are defined as “Indigenous species facing a high risk of extinction in the wild in the near future, although they are not critically endangered species”

> **Vulnerable Species** are defined as “ indigenous species facing a high risk of extinction in the wild in the medium-term future, although they are not critically endangered”

> **Protected Species** are defined as “Indigenous species of high conservation value or national importance that require national protection.

Known occurrence of a species or habitats on the NEMBA list in the prospecting area?

- Grass Owl classified as Vulnerable have been noted in the past and may be occasional visitors (source: SABAP1).
- Lesser Kestrel classified as Vulnerable have been noted in the past and may be occasional visitors (source: SABAP1).
- Blue Korhaan, classified as Vulnerable have been noted in the past and may be occasional visitors. (source: SABAP1).
- Black Stork classified as Vulnerable have been noted in the past and may be occasional visitors (source: SABAP1).
- Black-footed Cat classified as Protected may be a possible inhabitant (source: nil).
- Honey Badger classified as Protected may be a possible inhabitant (source: nil).
- South African Hedgehog classified as Protected may be a possible inhabitant (source: nil).
- The Giant Bullfrog, classified as Protected may be a possible inhabitant in wetland and near water-courses.
- The Soweto Highveld Grassland vegetation is classified as Vulnerable (unconfirmed) (source: SEF, 2008)
- The Carletonville Dolomite Grassland vegetation is classified as Endangered (unconfirmed)(source: SEF, 2008)
- Eastern Temperate Freshwater Wetland vegetation is classified as Vulnerable/sensitive (unconfirmed) (Source: SEF, 2008)

Other Lists - possibilities:

- Secretary Birds have been noted in the past and may be occasional visitors (SABAP1).

Within the Abe Bailey Nature Reserve:

- The Grass Owl, classified as Vulnerable
- The Cape Vulture, classified as Endangered
- African Marsh Harrier, classified as Protected
- Baboon Spider, classified as Protected
- Scorpions, classified as Protected
- The Giant Bullfrog, classified as Protected
- The Black Wildebeest, classified as Protected
- The White Tailed Rat, unclassified on NEMBA, 2007, but classified elsewhere as Vulnerable [GDACE, 2015] or Endangered (Wikipedia, 2015).
- The Bakenveld Biome, Western variation

Nil were mentioned by the interested and affected parties consulted.

Protected Areas (game parks/nature reserves, monuments, etc.) close to the proposed operation

The south-western portion of the Project site is located within the **Abe Bailey Nature Reserve**. The reserve is the last remaining area in which pure gene Black Wildebeest can be found. The White-tailed rat, classified as vulnerable, was discovered in a 1994-2002 set of surveys. The reserve is also the only formally protected area of the Bakenveld Biome which occurs on dolomite. (GDARD website, 2015-08-10).

The NEMA: Protected Areas Act 57 of 2003, Chapter 5, and part 4 lists restrictions to prospecting and mining activities in protected areas as follows:-

- (1) Despite other legislation, no person may conduct commercial prospecting or mining activities - (a) in a special nature reserve or nature reserve; (b) in a protected environment without the written permission of the Minister and the Cabinet member responsible for Minerals and Energy Affairs; or (c) in a protected area referred to in section 9(b) or (d).
- (2) Subsection (1) does not affect mining activities which were lawfully conducted immediately before this section took effect.

[approvedEMPlan]

No declared historic sites are known to the applicant to occur in the application area.

No protected geological outcrops are known to the applicant and while the I&AP's from 2008 were concerned about destruction of surface outcrops - the I&AP's provided no details or information on any protected sites. This would be applicable to the "reef" outcrops which may occur to the south of the prospecting right and out of the Focus Area.

Socio-economic, Social and Cultural Character Aspects



The projects area falls within the Merafong City Local Municipal boundary. Data and information for this study was predominantly obtained and directly quoted from the Merafong Municipal Integrated Development Plan for the Financial Year 2014 - 2015 (source: <http://www.merafong.gov.za/plans/>).

Regional Information

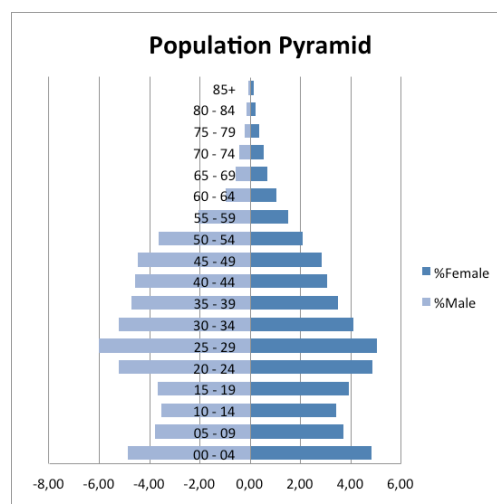
The Merafong City Local Municipality encapsulates an area of 1631,7 km² consisting of the towns of Carletonville, Fochville, Welverdiend, Wedela and Khutsong as well as the rural areas including farms and small-holding / agricultural plots.

Regional Demographic Profile

Population and Gender

According to the Census 2011, Merafong's population was 197 520, 24.1% of the district municipality's population and 1.6% of the provincial total. The population has declined by 6.2% from 210 483 in 2001 to 197 520 in 2011. The municipality has a population density of 121.1 people per km².

As shown in the adjacent pyramid, the Merafong population profile is male-dominated with the males making up 54.3% of the total population while females make up the remaining 45.7%. This can be attributed to the in-migration of male workers in the mining industry. The population can be classified as a young population with 62.2% of the population being younger than 35.



(Source: Stats SA Census 2011)

Age	Gender		Total
	Male	Female	
Age: 0 – 4	9 613	9 506	19 119
Age: 5 – 9	7 449	7 309	14 758
Age: 10 – 14	6 999	6 750	13 749
Age: 15 – 19	7 254	7 737	14 991
Age: 20 – 24	10 328	9 632	19 960
Age: 25 – 29	11 872	9 919	21 791
Age: 30 – 34	10 349	8 111	18 460
Age: 35 – 39	9 323	6 867	16 190
Age: 40 – 44	9 068	6 017	15 085
Age: 45 – 49	8 844	5 606	14 450
Age: 50 – 54	7 220	4 130	11 350
Age: 55 – 59	4 052	2 946	6 998
Age: 60 – 64	1 950	2 049	3 999
Age: 65 – 69	1 156	1 336	2 496
Age: 70 – 74	828	1 061	1 889
Age: 75 – 79	414	672	1 086
Age: 80 – 84	269	418	687
Age: 85 - 111	163	301	464

Source: Statistics South Africa 2011

According to the Census 2011 the total number of households in MCLM was 66 625. In 2011, 15.3% of the households had no income at all. These households are dependent on state grants, charity and possibly extended family/social networks for survival. 50.1% of the total household number earned an income of R3 200 or less. This means that half of the households in MCLM experience difficulty in meeting their basic needs. The average monthly weighted household income was R6 619 in 2012 prices.

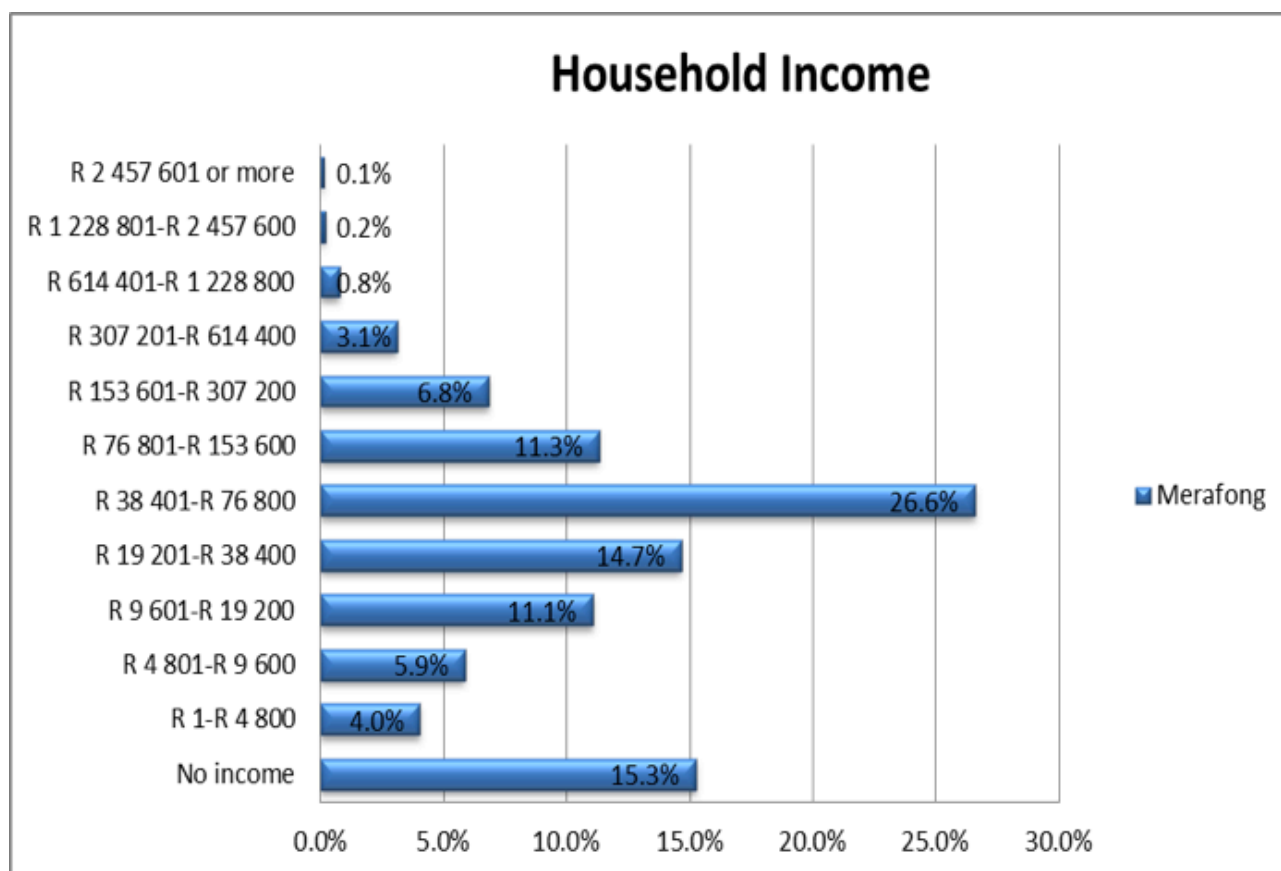
	STATISTIC SOUTH AFRICA	
	Community Survey 2007	Census 2011
Total Population	215 865	197 520
Households	88 156	66 624

¹Estimated annual growth: 1.25%

Source: Stats SA Census 2011

Year End	Total Households(Including formal & informal settlements)	Households in formal settlements	Percentage of Households in formal settlements	Households in informal settlements	Percentage of Households in informal settlements
2010/11	91504	56854	44,6%	34650	55,4%
2011/12	66624	39785	60%	26839	40%

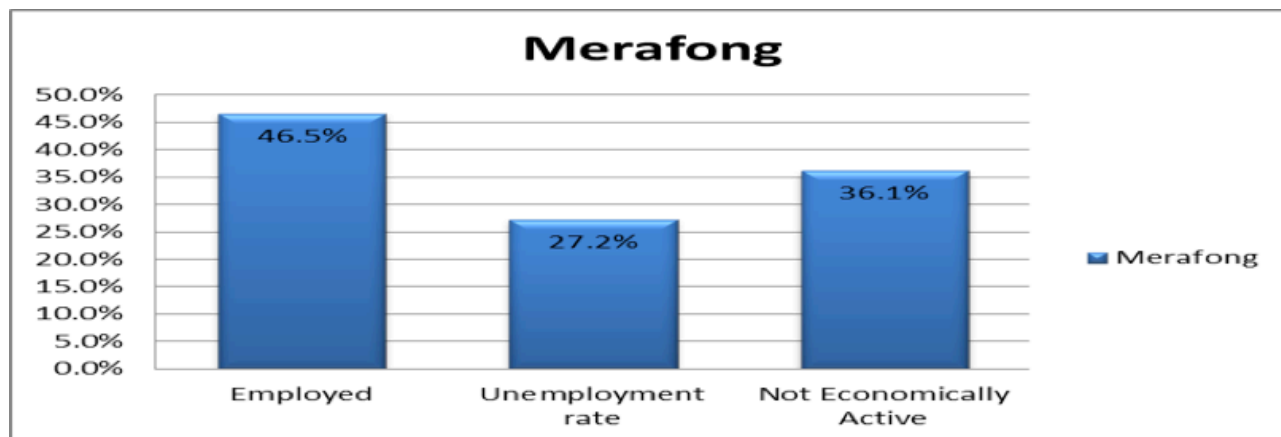
Source: Statssa 2011



Source: Stats SA Census 2011

Regional Employment

The Merafong local municipality has a labour force of 91 521, of which 66 635 are employed. Official unemployment data as per Census 2011 estimates the unemployment rate at 27.2%. This rate excludes those



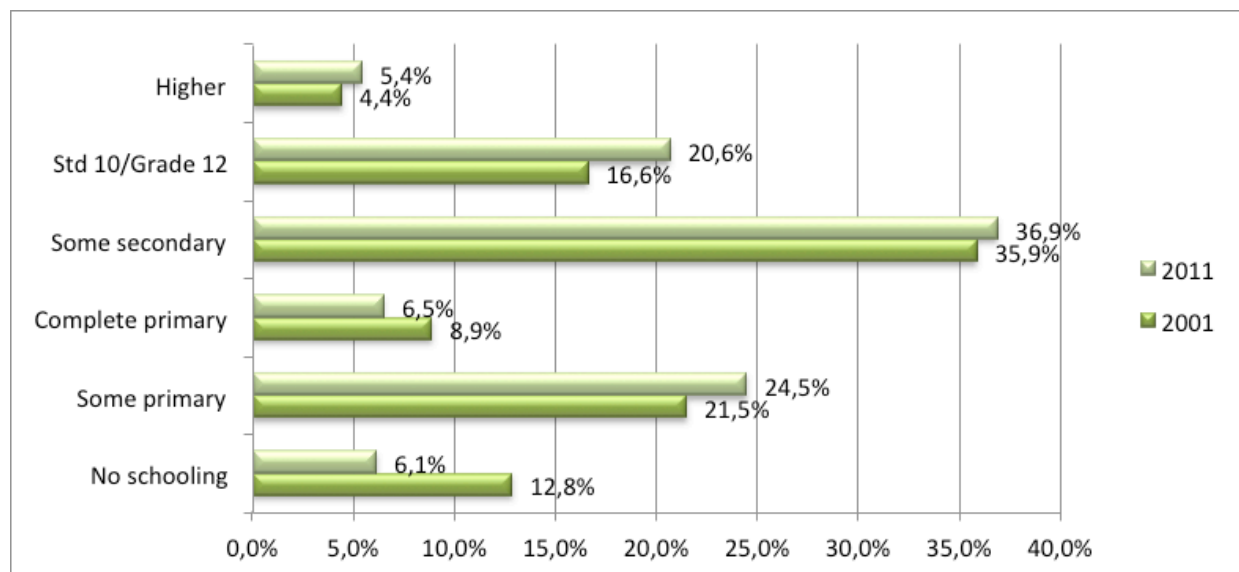
people who are classified as “not economically active”. Taking this into account, it is suspected that the real unemployment rate is much higher. The labor force participation rate is the percentage of working-age persons and for the local municipality it was 63.9% in 2011.

Regional Income

Income levels	Male	Female	Total
No income	6 036	4 141	10 177
R1 – R4 800	1 196	1 501	2 697
R 4801 – R9 600	1 875	2 040	3 915
R9 601 – R19 600	3 948	3 442	7 390
R19 601 – R38 200	6 796	2 978	9 774
R38 201 – R76 400	15 103	2 621	17 724
R76 401 – R153 800	5 938	1 608	7 546
R153 801 – R307 600	3 707	856	4 563
R307 601 – R614 400	1 765	316	2 081
R614 401 – R1 228 800	465	60	525
R1 228 801 – R2 457 600	108	27	135
R2 457 601 or more	80	15	95
Unspecified	2	0	2
Total	47 019	19 605	66 624
Source: Statssa 2011			

Source: Stats SA Census 2011

Education



Source: Urban-Econ calculations based on Quantec data

In terms of education levels 6.1% of the population had no education at all, while 30.9% have primary education and 57.5% have secondary education. Those with a higher educational qualification accounted for 5.4% of the population. These figures indicate an increase in all categories since 2001, except for the no schooling category which decreased by 6.7% indicating a higher percentage of people attending school.

Service Access

Households with access to services:

2007 Census	Total H/H	HOUSEHOLDS WITH ACCESS TO				Households in formal dwellings
		Water	Sanitation	Electricity for Heating	Refuse Removal	
Municipality		%	%	%	%	%
Merafong	88156	(87,267) 99%	(69,536) 78,9%	(37,993) 61,1%	(62,247) 70,6%	58,6%

Source: CoGTA 2009

Households with access to services:

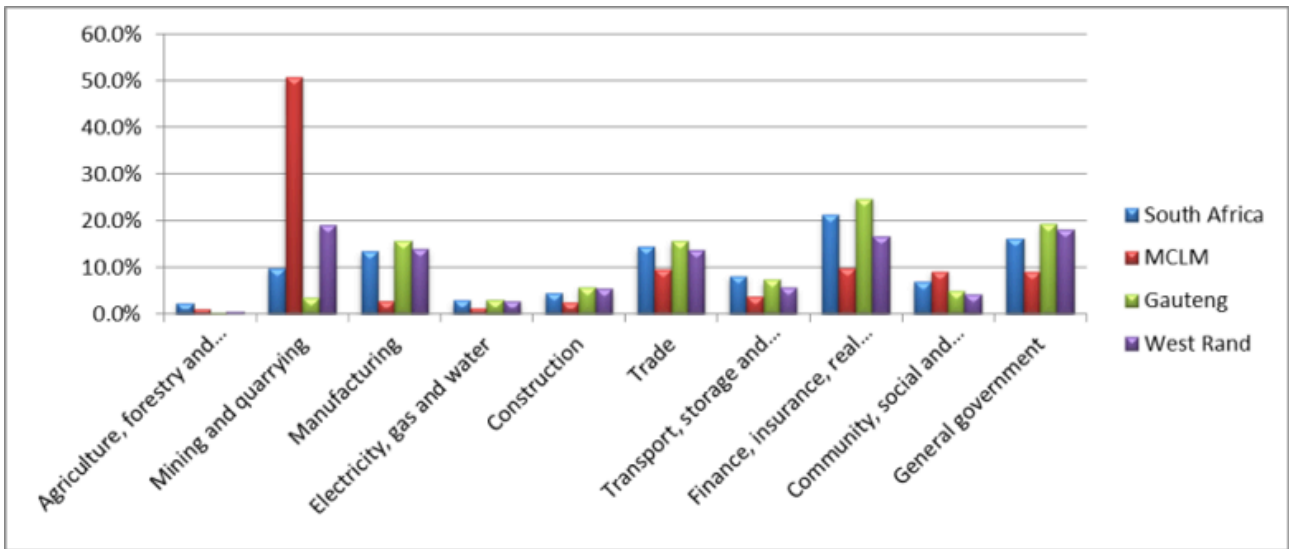
2011 Census	Total H/H	HOUSEHOLDS WITH ACCESS TO				Households in formal dwellings
		Water	Sanitation	Electricity for Heating	Refuse Removal	
Municipality		%	%	%	%	%
Merafong	66624	93%	81%	67%	75%	59%

Source: Statssa 2011

Households without access to basic services:

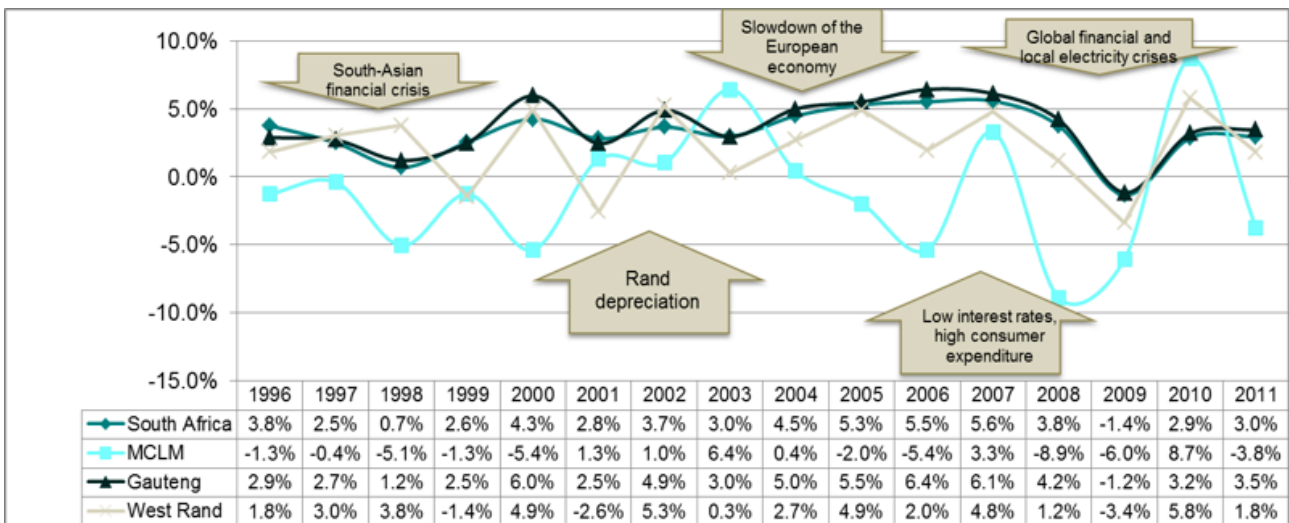
2007 Census	Total H/H	HOUSEHOLDS WITHOUT ACCESS TO				Households in informal dwellings
		Water	Sanitation	Electricity for Heating	Refuse Removal	
Municipality		%	%	%	%	%
Merafong	88156	(889) 0,4%	(18,629) 21,0%	(24,211) 38,9%	(25,909) 29,4%	58,6%

Source: CoGTA 2009



The size of the Merafong Local Municipality economy was estimated at R14.9 billion in 2012 prices, approximately a third of the West Rand District's total GDP of R44.8 billion and 1.6% of the Gauteng economy.

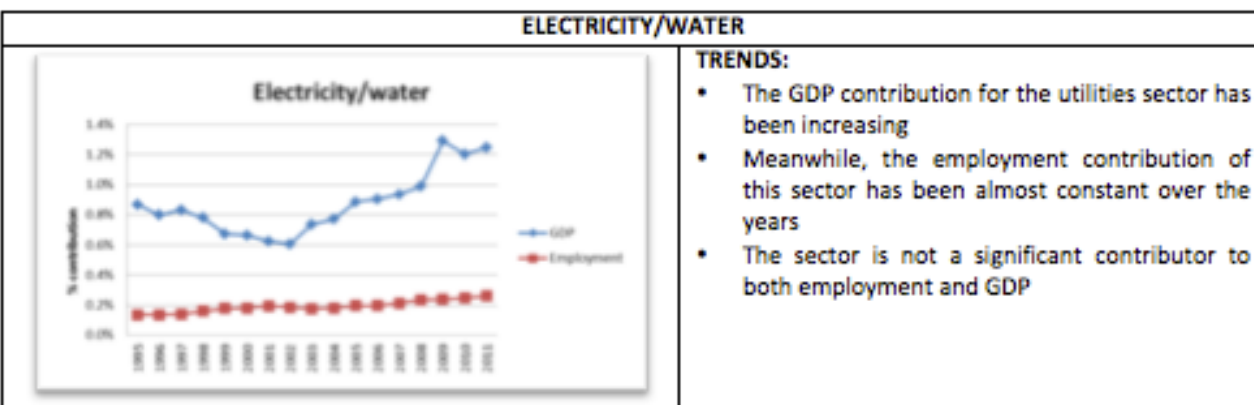
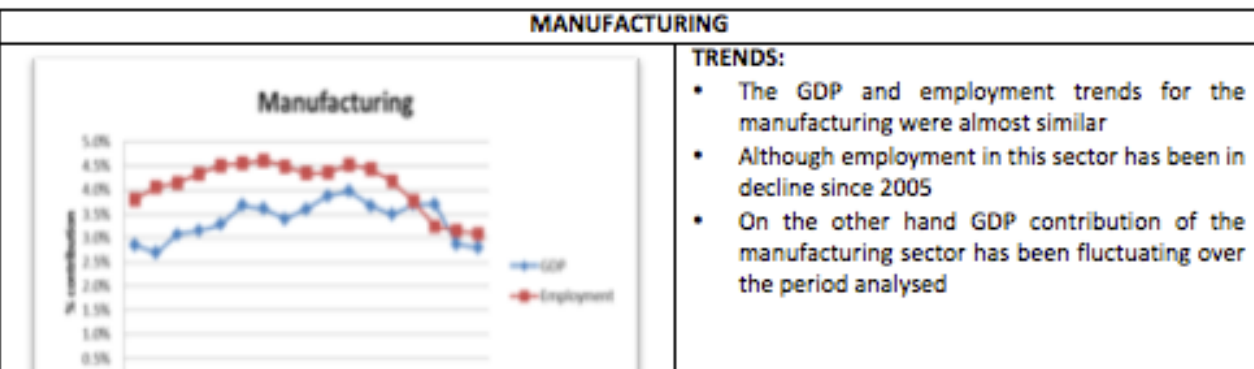
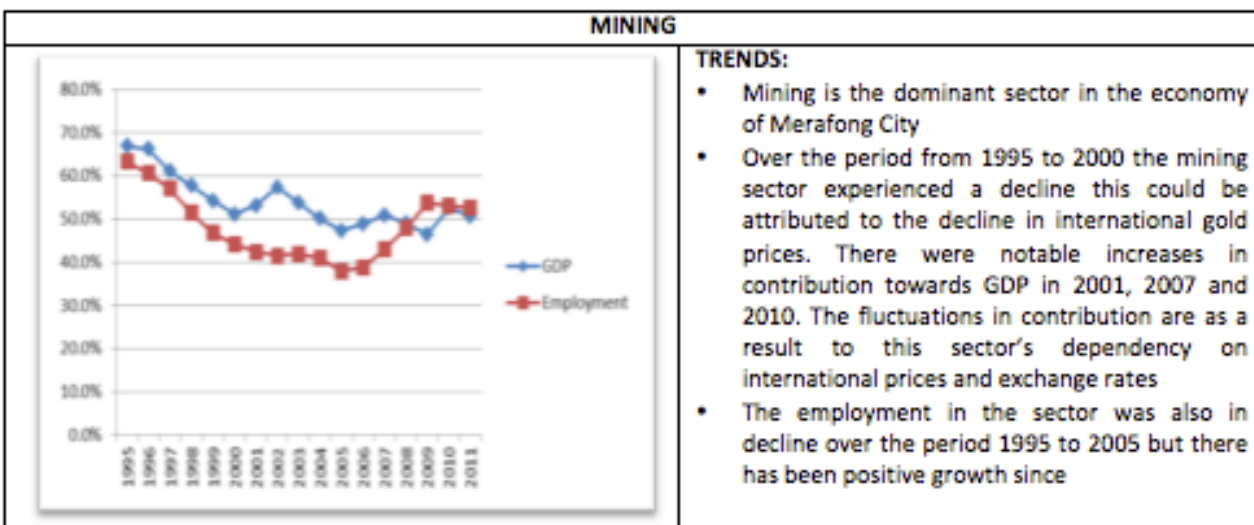
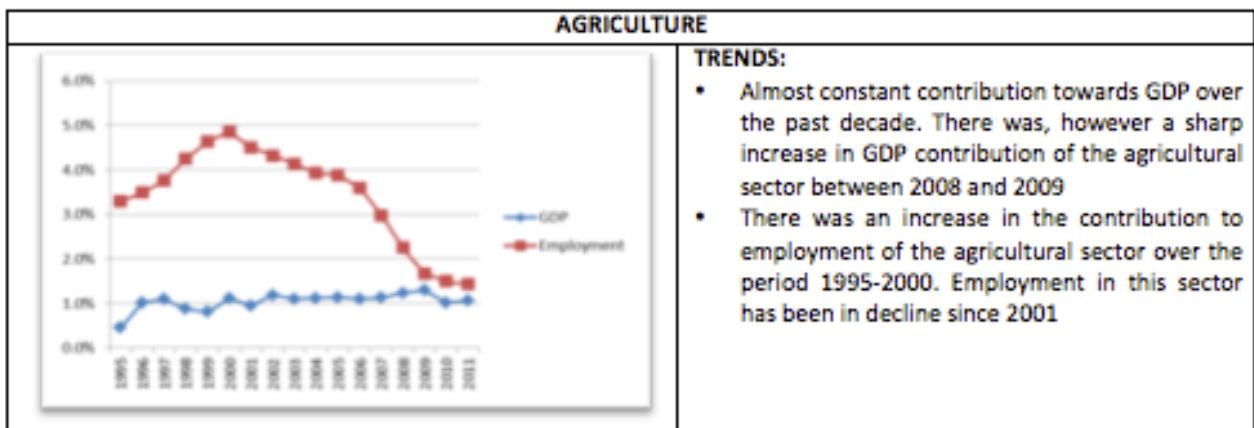
In terms of economic growth Merafong Local Municipality has a negative average annual growth rate of 1.1%. This is lower than the growth rate of Gauteng, the West Rand and national growth rate. The low growth rate can be attributed to a continuous decline in the mining sector and Merafong's dependence on this sector. It is evident that the 2008 Global Recession also had a negative impact which caused a sharp decline in economic growth, for all economies. From 2010, the economy experienced an upturn and has been in steady recovery for all economies except the MCLM.

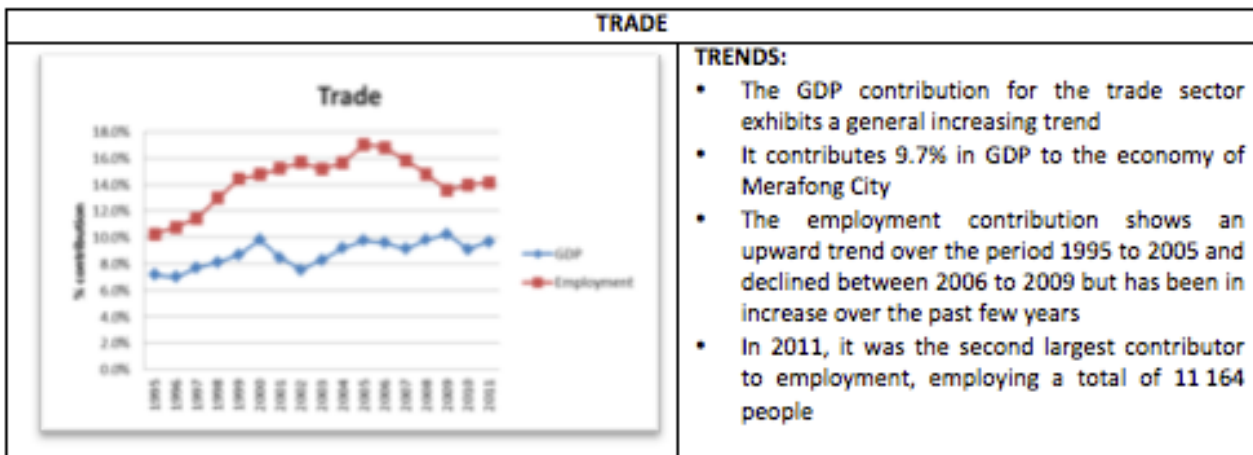
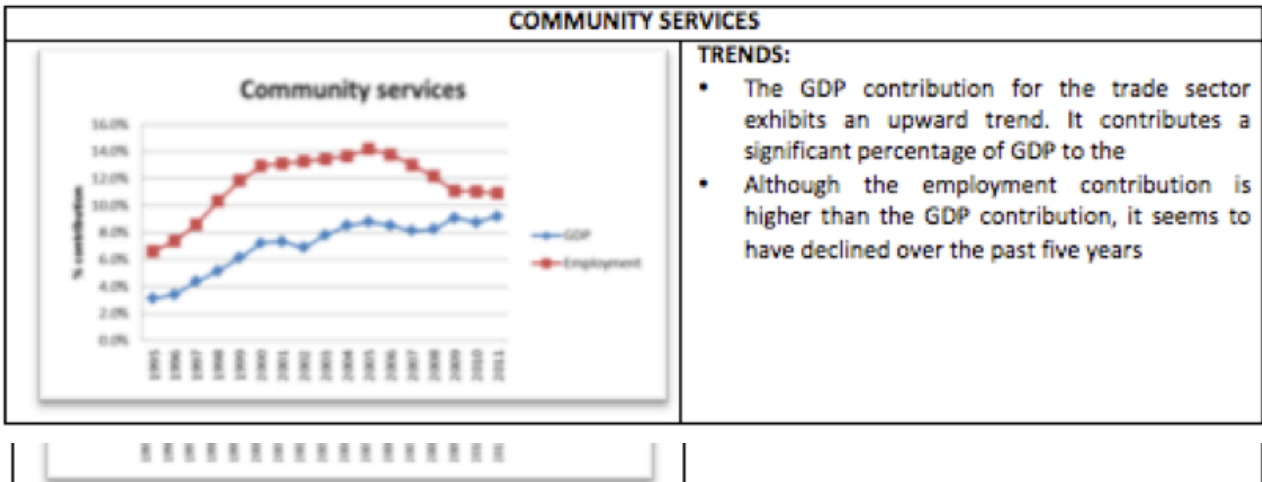


source: Urban-Econ calculations based on Quantec data

The economy of Merafong City is still dominated by the mining sector, which contributed 50.7% to GDP in 2011. Although the mining sector is still dominant in the economy of Merafong City, there has been a decline in both production and its contribution to GDP. The trade (9.7%), finance and business services (9.9%), community services (9.2%) and general government (9.1%) are also important contributors to the GDP of Merafong.

The following table gives an overview the sectoral performance in terms of GDP contribution and employment.





Cultural Aspects

Research did not reveal any cultural aspects for the site; I&AP's did not mention any cultural aspects during consultation.

Heritage Aspects

In this study, specific features, onto which the impact of prospecting commonly applies and which are usually addressed by industry standard mitigation are addressed first; a high-level, general heritage study follows.

Specific Heritage Aspects

Isolated Farm Graveyards on the project area

Small, old family graveyards and isolated graves often occur especially in farming areas. This area is no exception. Graves are known on Wonderspruit and Rooipoort.

Protected Heritage Sites on the project area

Nil.

To date, no declared historic sites are known to the EAP to occur directly on the application area. Professional knowledge, internet searches and discussions with I&AP's, as well as the previous EMPlans submitted by the project partners, revealed no indication of historic sites.

Palaeontological and/or Anthropological Sites on the project area

The literature review did not identify any anthropological or palaeontological heritage resources within the project area.

The SAHRIS PalaeoSensitivity Map, 2014, uses the geological map of South Africa to give a first pass prediction of the potential paleontological and anthropological sensitivity of an area. The classification of the sensitivity of an area is according to the following table:

Colour	Sensitivity	Required Action
RED	VERY HIGH	field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	desktop study is required
BLUE	LOW	no palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	no palaeontological studies are required
WHITE/CLEAR	UNKNOWN	these areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

According to the PalaeoSensitivity Map, the project area is situated in an area of MODERATE to VERY HIGH palaeontological sensitivity (green and red respectively on the map, Figure 10). The high sensitivity is based on the underlying dolomites which can, as in the Cradle of Mankind, host palaeo-fossil communities in caves. The area of proposed invasive prospecting, the bulk sample area, is gravels/pebbles lying above the dolomite and the area is flat in nature (i.e. no caves). In addition the area has been extensively disturbed either cultivated, traversed by powerlines or divided into small camps for controlled grazing. The likelihood of any heritage of importance remaining is very low.

An application for advice on the necessity of a heritage Survey will be submitted to SAHRA. A heritage survey will be done if required.

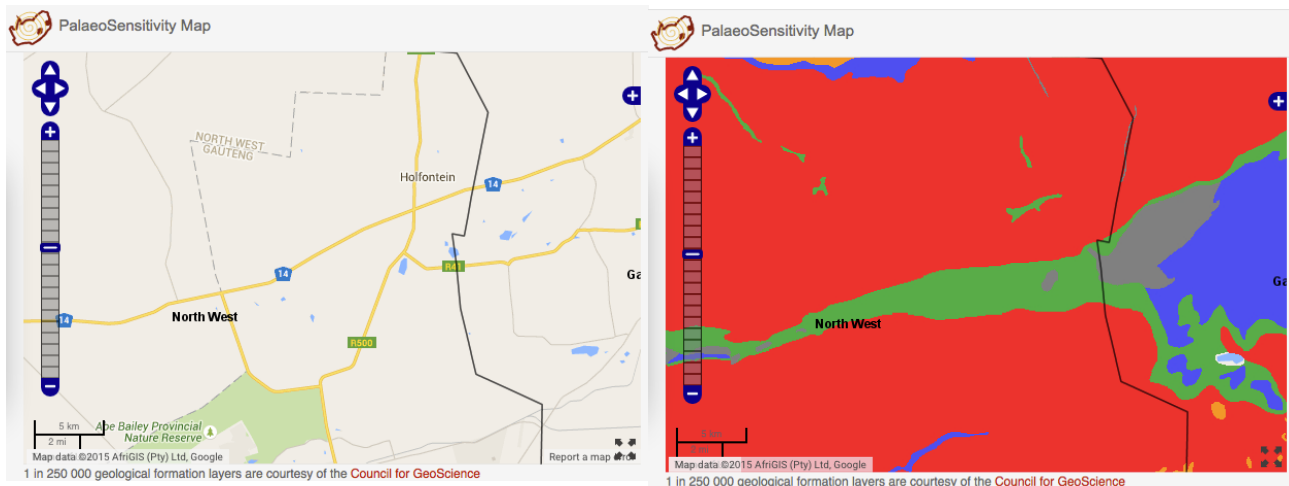


FIGURE 10: SAHRIS PalaeoSensitivity Map, 2014 covering the project area.

General Heritage Aspects

In terms of SAHRA the following, amongst others, are protected:

- Archaeological artefacts, structures and sites older than 100 years
- Ethnographic art objects and ethnography
- Military objects, structures and sites older than 75 years
- Historical objects, structures and sites older than 60 years
- Proclaimed heritage sites
- Graveyards and graves older than 60 years
- Meteorites and fossils
- Objects, structures and sites of scientific or technological value

Paleontological Fossil Aspects

Regionally, under the quaternary cover, lie dolomites of the Transvaal Sequence, which cover the Witwatersrand sequence so the potential for fossils, mainly hominids and fauna, exists as this presents a similar environment to that of the Cradle of Mankind - differing in that caves do not appear to be present. A preliminary literature survey gave no indications that the farms are not known as or declared as fossil sites.

Archaeological Aspects

The Bushmen were probably the first inhabitants of Gauteng for which a record still exists (**Stone Age**). The bushmen were nomadic, hunting and gathering on a subsistence level. Bantu-speaking tribes later migrated into the area and formed **farming communities**. **Historical period**. The Great Trek of 1837 from the Cape towards the Transvaal through the Free State resulted in an influx of European descendants some of whom settled in the Gauteng area forming the Transvaal Republic with Potchefstroom as the capital city. After the Anglo-Boer War, 1899 – 1902, the area was included in the Union of South Africa, which eventually became the Republic of South Africa in 1948 and the democratic Republic of South Africa in 1994. The discovery of gold on the Witwatersrand in 1886 and the subsequent extension of the gold arc towards Welkom resulted in a number of large gold mines being established between the 1880s and 2000s. These mines are still active today although most at a reduced production or on care-and-maintenance.

Probability of finding archaeological artefacts, structures or sites on the Activity site.

Literature search indications are that:

Stone Age: artefacts have been found in the greater area and there is a small likelihood of finding Lower Stone Age artefacts around some of the pans. Artefacts from the Medium Stone Age may occur but is expected to be less likely. There is a low probability of artefacts from the remaining periods. *¹ Van der Walt, J. (2013)

Iron Age: The probability of artefacts is considered unlikely. *¹ Van der Walt, J. (2013)

Farming Community Period: unknown

Historical: Artefacts do occur in the area and so there is a probability that they could be found.

Living Heritage: nothing mentioned during consultation. Commercial farmers and small holding settlements and small businesses settle the farms and plots.



THE OLD MINING COMMISSIONER'S & TELEGRAPH OFFICE IN THE NEARBY TOWN OF RANDFONTEIN.

source: <https://en.wikipedia.org/wiki/Randfontein>

*¹ Van der Walt, J. (2013) Archaeological Scoping Report for the proposed Grootkop Solar Energy Facility.

1.2. The specific environmental features on the site applied for which may require protection, remediation, management or avoidance.

1. Concern about groundwater and sinkholes from consultations - **mitigation** and **management; avoidance** where possible.
2. Farm graves occur – these require **avoidance**.
4. Overlapping Right Environmental obligations: Possible surface permits and water licenses (underground and surface water).
5. N/A Game on the farms need to managed in conjunction with the surface owners – this includes the sport of hunting where it occurs (not mentioned in consultations)
6. Trenching and bulk sampling will not take place within a reasonable distance (advised as 100m) of a house/dam/built structure that is in use – **avoidance**.
6. N/A Trenching and bulk sampling should not occur within 100m of the normal river water-line without the necessary permissions* - **avoidance**.
6. N/A Trenching and bulk sampling and/or excavation should not occur within any reed zone without the necessary permissions* - **avoidance**.
7. Wherever possible large trees, particularly indigenous trees, will be **protected** when planning prospecting operations.
8. Known Threatened species, habitats and biodiversity areas should be **protected**.
9. Poaching and wilful destruction of fauna or flora by prospecting staff will not be tolerated - **management**.
9. Prospecting operations will **manage** the environmental effects of the prospecting operations and institute monitoring programmes if deemed necessary.
- 10.. No prospecting within the pans without the necessary permissions* - **avoidance**.

*in terms of NEMA

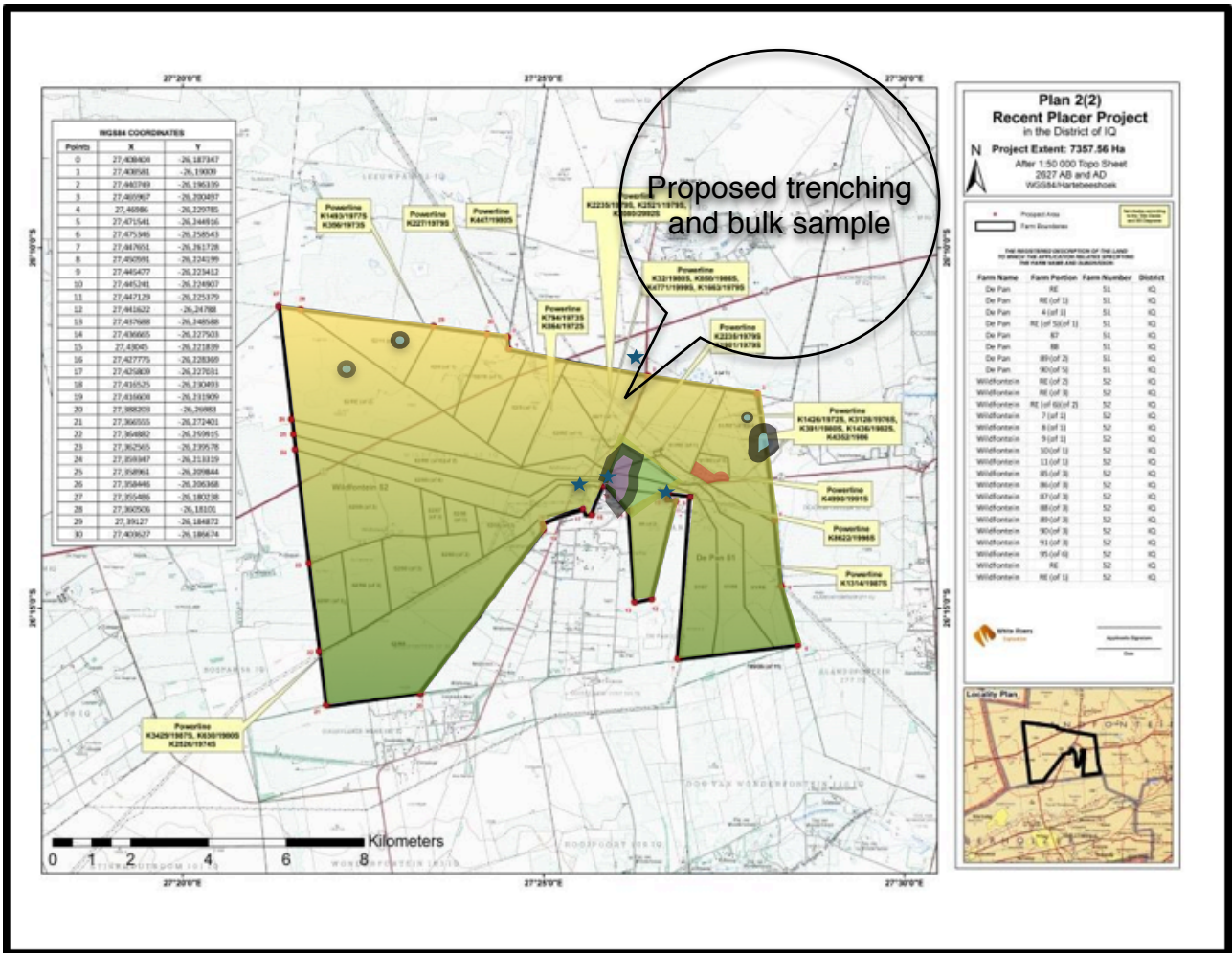
INSERT ENVIRONMENTAL IMPACTS HERE

EAP's ENVIRONMENTAL IMPACT ASSESSMENT - QUALITATIVE

EAP: Michele Robertson
 Date: 25 September 2015 to 23 October 2015

		B. ENVIRONMENTAL ASSESSMENT RELATED TO RELEVANT ANTICIPATED ENVIRONMENTAL ATTRIBUTES						
APPLICABLE to the specific environment on site	ENVIRONMENTAL ATTRIBUTE GROUP	Environmental Attribute	Description	PHASE Phase of the planned Activity	INVASIVE Invasive (I) or Non-invasive (N) Prospecting Methods	EXTENT Area Depth		Manage, Mitigate, Avoid
YES	Watercourses / Pans		Specific to the bulk sample area: no surface watercourses are shown. The presence of a sinkhole suggests sub-surface dolomitic water may be present close to the bulk sample area. In the focus area: a large pan, De Pan on the farm De Pan as well as a series of small pans/dams on the north-western boundary of the prospecting right, for the purposes of this document these are called "The Sand-Mine Dam". Out of the focus area: The Wonderfonteinspruit and MooiRivierstop to the south. A number of smaller pans are dotted around.	Operational Phase	INVASIVE	As marked on the plan Note: not on bulk sample area	surface	Avoid
YES	Wetlands		Small, very localised wetland associated with "The Sand Mine Dam" which has prolific birdlife and is unofficially used by locals for fishing. No anticipated impacts of the activity on this environmental aspect as the area can be avoided by any invasive prospecting methods/technologies. If, at a later stage, this becomes a challenge - then the necessary environmental permits and authorisations will be sought.	Operational Phase	INVASIVE	As marked on the plan Note: not on bulk sample area	surface	Avoid
YES	Ground-water		Trenching and bulk sampling operations are anticipated to reach the maximum depth of bedrock (dolomite) within 3 to 4m which is above the water-table. Ground-water flows through tunnels formed in weaknesses within the dolomite rock. Prospecting is therefore not expected to impact on the groundwater. SEF details that the groundwater water table has been depressed to depths of 300m and 500m are mentioned. The farmer on Wildfontein abstracts borehole water from between 80m and 100m. This operation is too small and according to the PWP and WRE does not involve the significant use of - , pumping out of - , or redistribution of groundwater.	Operational Phase	INVASIVE	As marked on the plan Note: not on bulk sample area	Below 400m	Avoid

1.3. Map showing the spatial locality of all environmental, cultural/heritage and current land use features identified on site.



PROSPECTING FOCUS AREA. FOR THE EMPLAN AMENDMENT THE FOCUS AREA INCLUDES THE FOLLOWING PORTIONS OF THE FARMS: DE PAN 51 IQ: PORTIONS RE, RE1, 4, RE5, 87, 88, 89 & 90; AND WILDFONTEIN 52 IQ: PORTIONS RE, RE3, 7, 11, 88, 90, 91 AND 100 (CONSOLIDATED FROM RE1, RE2, RE6, 8, 9,10, 85, 86, 87, 89 & 95).

LEGEND

ENVIRONMENTAL

- GREEN LINE:** POSSIBLE REED BED ZONE. 10M AVOIDANCE ZONE FOR REED BEDS
- BLACK LINE:** 100M ZONE OF NO DRILLING FROM THE WATERCOURSE BOUNDARY (NO DRILLING PLANNED)
- ★** : APPROXIMATE POSITION OF KNOWN SINKHOLES

LAND USES

- GREEN SHADED AREAS:** NATURAL OPEN VELD AND/OR GRAZING AREAS. CATTLE RANCHING
- YELLOW SHADED AREAS:** COMMERCIAL OR SUBSISTENCE FARMING AND/OR CULTIVATED LAND
- BROWN SHADED AREAS:** DEGRADED AREA ASSOCIATED WITH MINE TAILINGS-DAM RUN-OFF
- PURPLE SHADED AREAS:** LARGE NON-PERENNIAL PANS
- RED SHADED AREA:** AREAS OF SIGNIFICANT INFRASTRUCTURE/STORAGE SILO'S / PIPELINE. WHERE NOT NOTED ON TOPOSHEET E.G. POWER LINES

1.4. Confirmation that the description of the environment has been compiled with the participation of the community, the landowner and interested and affected parties.

It is hereby confirmed that the consulted landowners and interested and affected parties were given the opportunity to view the DRAFT EMPlan and PWP for the original right and give input into the final amended EMPlan and its contents. Reasonable endeavours were used to include that input.

2. REGULATION 52 (2) (b): Assessment of the potential impacts of the proposed prospecting or mining operation on the environment, socio-economic conditions and cultural heritage.

2.1. Description of the proposed prospecting or mining operation.

2.1.1. The main prospecting activities (e.g., access roads, topsoil storage sites and any other basic prospecting design features).

NOTE FOR CONTINUITY: The prospecting methods listed here are repeated in the Risk Report Tables inserted in relevant queries and repeated as a full report in Appendix 8.

Mineral / Commodities

Gold Ore (Au), Alluvial Diamond (D), Iron Ore (Fe), Manganese (Mn) and Uranium Ore (U)

Summary of the Progression of Prospecting

(Prospecting progression is dependant on positive results. See PWP for details)

YEAR	INVASIVE PROSPECTING	NON-INVASIVE PROSPECTING
1 to 3	Nil	Completed
4	Trenching; start of Bulk Sampling	Data Synthesis; Database; Map Generation; Development of a geological model; Geophysical surveys - existing data; ground-magnetic surveys; Geochemical soil orientation survey; soil sampling; Refinement of the geological model; Concept Study.
5	Bulk Sampling cont.	Refinement of the Geological Model cont. Concept Studies cont..

Description of Planned Invasive Prospecting

(taken from the Amended Prospecting Work Programme and S20 Application, Shango Solutions (2015))

Manganese mineralisation (in combination with gold mineralisation has been observed on surface in several parts of the tenement. The manganese cobbles and nodules are set in loose surface soil and grab samples show promising results. Background gold values are significantly higher than expected. The loose nature of the material does not justify drilling to explore the subsurface extent, recovery and quality. Trenching, to determine the initial values on these unknown parameters, has to be executed to determine ore morphology, indicative grades and type of mineralisation. This will be directly followed up by bulk sampling. The latter will be crucial in defining gold/manganese content, continuity and full extent of the deposit (surface area and depth). Its applicability as an oxidising agent in the uranium extraction of Witwatersrand rocks will be tested. It is expected that the mineralised horizons will be highly variable in thickness, extent, manganese (and gold contents) and percentage recovery, justifying bulk sampling.

Trenching

Several trenches to be dug and mineralised horizons to be analysed

The trenches will be dug using a Tractor Loader Backhoe (TLB). The excavations will be made from surface to below the bottom of the target horizon (expected to be a maximum of 3 - 4 metres). These trenches will typically be around 10 m in length with 3 vertical sides. The width will be the size of the TLB's spade. Each trench will be mapped, sampled and surveyed prior to re-filling the hole for rehabilitation.

Bulk Sampling

Bulk sampling of the above-mentioned trenches will be executed to determine morphology of the ore body, continuity of grade, quality of the deposit and its applicability in uranium extraction plants in order to calculate a resource.

It is anticipated that a total of 9 900m³ of material will be bulk sampled. Once the topsoil is removed and safely stored; the excavated material will be dry screened first to dispose of the -3mm fraction (and potentially reduce the problematic clay fraction) and if grades permit, it will be directly transported by means of trucks to existing uranium plants. The oxygen locked up in the MnO₂ chemical molecule is used as an oxidising agent for the release of uranium from auriferous Witwatersrand rocks. The ore will be delivered to different uranium extraction plants, close to Carletonville, and in the Klerksdorp area.

Trenching and bulk sampling will also allow for testing of the unknown depth and nature of the underlying dolomite floor. A highly undulating surface, with the possibility of pinnacles will influence future mining activities.

If the percentage of impurities are too high to be used immediately in a uranium extraction plant, then a DMS (Dense Medium Separator) might be introduced to remove them.

Equipment:

Geological Mapping - notebook, vehicle.

Geophysics - vehicle and geophysical equipment (ground magnetometer)

Geochemical Sampling: spades, plastic sample bags, sieves, tag-ties, stationery, bakkie/s.

Desk-top Studies - Office equipment e.g. computers , etc.

Interpretation, geological modelling, resource modelling. Office equipment e.g. computers etc – non-invasive.

Years 4 & 5: Trenching & Bulk Sampling.

TLB

Side tipper trucks to haul material (maximum of 5 per day)

Screens to separate ore in different fractions

Dense Medium Separator (DMS) to dispose of impurities

Front End Loader

Water Truck

Light pick-up trucks (bakkies) for transport of equipment/people

Dozer for rehabilitation

Office equipment e.g. computers etc – non-invasive.

Specific impacts of prospecting on the environment are addressed below as:-

- Impact on the physical environment
- Impact by the time factor
- Impact on the socio-economic environment
- Impact on the cultural heritage

Impact on the Physical Environment

Depth of Prospecting

Method	Detail	Depth of Prospecting
Geophysics and geological mapping	Non-invasive	On surface
Excavations: Trenching, followed by Bulk Sampling	In a specific area based on the results of the earlier phases of exploration as detailed in the work programme (PWP)	Year 4 & 5: Maximum depths anticipated to be $\pm 3\text{m}$ to 4m

Estimated Total Area of all Excavations

Trenching + Bulk Sampling:

± 6 trenches; $\pm 55\text{m}$ long; $\pm 10\text{m}$ wide; $\pm 3\text{m} - 4\text{m} = 550\text{m}^2$ per trench
 $= \pm 0,33\text{ Ha}$ total
 (source: PWP)

Estimated Total Volume of all Excavations

Trenching + Bulk Sampling (ore plus overburden) : $\pm 9\,900\text{m}^3$ (source:Shango Solutions MPRDA S20 Application, 2015)



A SIMILAR PROSPECTING BULK SAMPLE SITE (PHOTO SOURCE IVANHOEMINES.COM)

Estimate Number of Prospecting Boreholes

Early prospecting on the prospecting right determined that drilling is not practical due to the loosely packed nature of the mineralised manganese deposit (Shango Solutions, 2015).

Onsite Processing of Bulk Samples

The excavated material from the bulk sample will be dry screened first to dispose of the -3mm fraction (and potentially reduce the problematic clay fraction) and if grades permit, it will be directly transported by means of trucks to existing uranium plants.

If the percentage of impurities are too high to be used immediately in a uranium extraction plant, then a DMS (Dense Medium Separator) might be introduced to remove them.



**AN EXAMPLE OF A (LARGER) PORTABLE DRY SCREEN SEPARATOR IN OPERATION
(PHOTO SOURCE: PORTASCREEN.COM).**

Onsite Housing, water, firewood / fuel and ablution facilities

Housing

Employees are expected to be housed in an already existing permanent structure, which will probably be rented; usually off-site. Employees / contractors may prepare food but will be expected to use a generator or gas.

Water

Open-source water

The trenching, bulk sampling and dry-screening processes are initially planned to not require water.



MINE WATER RECYCLING SYSTEM ON THE FARM WONDERFONTEIN OOG

Water will only be extracted if necessary to reduce dust or in the event that a DMS plant is required (assuming the plant would be located on site and not at the recipient site).

Water may be extracted from a river, stream, dam or pan for use during processing. Sump technology would be utilised and the water recycled.

If it proves plausible, then the best source of water is one of the dams or pans in the prospecting area or the nearby mine/s may be approached for excess water pumped from the operations which would be transported by water bowser.

Any use of water would be used by commercial agreement with the surface owner.

At this stage, significant amounts of water are not envisaged for the prospecting; should this be required, then the prospecting right holder would be responsible to apply for a water permit/licence from the applicable authority, namely DWA (Department of Water Affairs).

If water will not be extracted from an open surface source

Borehole water is probably not feasible for a number of reasons, amongst them:

- According to SEF in the original EMPlan, the water depth has been lowered to 400m depth (the Approved EMPlan mentioned figures from 300m to 500m) in the area, apparently as a result of nearby mining (see Appendix 2: SEF Specialist Report, 2008)
- In apparent contradiction, according to the original EMPlan, 2008, the surface owner (on which land the bulk sample is planned) has two boreholes (over a number of portions) and gets water at between 80m and 100m depth however both this commercial farmer and other interested and affected parties in the area were concerned about the use of groundwater for prospecting because of (i) the availability of groundwater, and (ii) the potential of sink-holes forming.
- The site visit as well as consultations with interested and affected parties confirmed the presence of sink holes in the dolomites which may form in this area and care should be exercised not to exacerbate this situation as well as for safety reasons during bulk sampling and processing. If necessary, the rock strength investigations of the underlying dolomite-rock should be done. It is noted that this is a regularly ploughed / ripped cultivated field and farm machinery is routinely used. At the same time, the site visit revealed a sink-hole in the adjacent field so this safety precaution is real and must be emphasised.

At this stage, significant amounts of water are not envisaged for the prospecting; should this be required, then the prospecting right holder would be responsible to apply for a water permit/licence from the applicable authority, namely DWA (Department of Water Affairs).

While the bulk sampling would not affect the ground water table to the same significance as mining or even commercial irrigated cultivation it would be preferential to use other water sources if possible.

Any use of borehole water would be used by commercial agreement with the surface owner.

Water for mineral processing operations

Water is not used for the trenching or bulk sampling. At this point of planning water is not anticipated to be required for the dry screening process but may become necessary at a later stage; if this is required then a small water sump would be created and the water recycled similarly to a drilling process.

Typical amounts of water used are relatively low, in the region of 2-5000 litres per trench provided water can be recycled. Water is generally drawn from a commercial source or nearby open water source. Rarely, borehole water is used. Typically the water is pumped into a temporary dam/container or water bowser and transported to the site as required. For environmental and practical reasons water is recycled using sump technology where-ever possible.

If needed a water spray bowser would be brought in to keep down dust levels.

Distance of proposed prospecting operation from open water (dam, river, pan, lake)

Proposed bulk sampling operations are at least the legally recommended distance from dams, rivers and lakes of 100m.

Soil erosion especially by storm-water may result in an increase in total suspended solids and total dissolved solids in local water; this is anticipated to be at a similar level as that created in the existing environment of a cultivated field which is typically treated with fertilizers and/or pesticides.

Distance of proposed prospecting operation from ground-water

Trenching and bulk sampling operations are anticipated to reach the maximum depth of bedrock (dolomite) within 3 to 4m which is above the water-table. Ground-water flows through tunnels formed in weaknesses within the dolomite bedrock. Prospecting is therefore not expected to impact on the groundwater.

Estimated Depth of the Water Table in the area

The area is underlain by dolomites which typically carry large volumes of groundwater in dissolved channels within the rock mass. According to the Approved EMPlan, SEF 2008, literature reports the water table to have been depressed to >400m in the area. The surface user reports water from boreholes at depths of between 80m and 100m (Lubbe & Foster, 2008).

Water for Employees

Potable water will be brought onto site from a commercial source e.g.: tap water. Each employee may use approximately 3 to 5litres of water per day.

Firewood

Employees / contractors may prepare food in temporary offices but will be expected to use a generator or gas and should not be permitted to collect firewood from site without permission from the surface user.

Ablution Facilities

On-site portable chemical toilet facilities will be made available to employees / contractors when required.

Access Roads

No new access roads should be required for the operation while in the prospecting phase.

Temporary Access Tracks

Existing roads, farm roads, farm tracks and firebreaks are used where-ever possible. Short tracks may be required to access the site and on the site. The existing track/fire-break would be re-enforced with gravel to protect the surface erosion from trucks. Truck movement is anticipated to be around a maximum of 5 trucks per day. Generally these tracks are not cleared and the same track is used for the duration of the activity period.

Temporary access tracks are usually only rehabilitated at the end of the activity as the access is used for the duration of the activity. As this is an existing track it will remain after the duration of the prospecting activity.

The existing public roads, the R500, R41 and N14 will be used to traverse and exit the prospecting right area.

Air Quality Management and Control

Impact on the quality of the air, taking into account predominant wind direction and other affected parties in the downwind zone:

Trenching, bulk sampling and dry-screening processing.

The predominant wind direction should be north-east, away from nearby settled areas and cattle grazing camps.

Dust is anticipated but should be kept below acceptable threshold levels for rural areas. A water bowser may be brought in to control dust from trucks and the dry-screening process if necessary.

It is noted that sand mining operations already exist in the area.

The prospector should use reasonable endeavours to monitor dust and to rectify any unreasonable emissions timeously. The prospector should also take interested and affected party considerations into account. For this reason; for prospecting, it is recommended that operations are restricted to daylight hours and exclude Sundays and Public Holidays.

Fire Prevention in the event of Coal

N/A

Noise Control

Trenching, bulk sampling and dry-screening processing

The predominant wind direction should be north-east, away from nearby settled areas and cattle grazing camps.

Noise is anticipated but should be kept to below threshold levels for rural areas close to urbanisation and taking the nearby public roads into account is not anticipated to be above the base levels for this environment, specifically. The prospector would be required to maintain machinery and vehicles to prevent noise and to timeously rectify any abnormal noise which results from the machinery or vehicles not operating optimally.

It is noted that sand mining operations already exist in the area.

The prospector should use reasonable endeavours to monitor noise and to rectify any unreasonable emissions timeously. The prospector should also take interested and affected party considerations into account. Consultation will be available should the people in the surrounding environment complain and solutions will be sought.

For this reason; for prospecting, it is recommended that operations are restricted to daylight hours and exclude Sundays and Public Holidays.

Blasting, Vibration and Shock

At this stage no blasting is anticipated.

Disposal of Waste Material

Domestic waste will be collected in rubbish containers and deposited in municipal rubbish collection area in the nearest towns of Carletonville, Oberholzer or Randfontein. or alternatively, at the operation-contractors base town. Other rubbish will be collected in leak-proof containers and from time to time containers will be taken to recycling facilities or recognised dumping terrains. Consideration should be given to recycling where-ever practical.

Waste material (i.e., mineral matter removed from the trenches but excluded as it is not economically classified as "ore") is anticipated to be used directly to backfill the trenches; this may be stockpiled temporarily prior to being returned to the excavation.

Soil Pollution and Erosion Control

Topsoil is minimal over the sub-surface pebble deposit but may reach up to 0,5m thick (Shango Solutions, results of prospecting Years 1 to 3). The topsoil for the temporary access tracks may need to be cleared and/or levelled for TLB and truck access purposes. In these instances the topsoil (fauna and flora) is scraped off by hand shovel or bulldozer and stored at the higher edge of the site ready to be replaced and re-contoured on rehabilitation of the footprint. The area is normally left to be seeded naturally but re-seeding may be necessary. The farmer would be consulted where this applies to cultivated land. Soil erosion especially by stormwater may result in an increase in total suspended solids and total dissolved solids in local water as well as the potential to create small donga's. Erosion is managed by creating run-off channels and berms.

Spills of oil, grease, diesel, acid or hydraulic fluid

Soil, fauna, flora and possible groundwater may be damaged or contaminated by oils and grease spilled onto the land. Where practical, P.V.C liners should be installed under all portable machinery (carrying grease or fuel), fuel containers, lubricators, sumps , etc.

Storage of: oil & grease is stored separately and should be protected from spillage. From time to time containers will be taken to recycling facilities or recognised dumping terrains.

Spills: Machinery is usually protected and often plastic sheeting used to protect the soil however some small oil or grease spills sometimes occur. Any accidentally spilled grease and possible contaminated soil will be removed and taken to recycling facilities or recognised dumping facilities such as the nearest municipal dumping site or other approved site.

Storage Facilities for Fluids: All fuels, hydraulic fluids and grease should be stored in closed containers. Hydrocarbons should be stored in containers with an additional 10% above full available for expansion. Containers will be stored on P.V.C liners.

Impact by the Time Factor of the Prospecting Programme

Prospecting will take place on a stop/start basis and is results driven. See the Proposed Work Programme (PWP) for details of the prospecting programme. Invasive prospecting on site is only planned for Years 4 and 5 based on the success of previous phases. Bulk sampling is anticipated to be intensive for a few months in Year 4 and into Year 5.

Impact on the Socio-economic Environment

The estimated number of people employed at any one time on site is 10 to 20.

A few of local non-skilled persons may be used for short periods of time. If the project progresses it is WRE's plan to up-skill and train local staff.

On site, work normally occurs in daylight hours and in accordance with the law. In exceptional circumstances, prospecting may occur at night for a short period of time but this is done in consultation with the residents on site. Any damage due to prospecting will be subject to compensation from the prospecting right holder.

Operations should not be planned to be conducted within 50 metres from a residential area. In the rare event that this is not possible, then the site will be chosen in consultation with the resident.

The servitude for three Eskom power lines intersect the proposed bulk sample area (see 1.2). Consultation (by Shango Solutions on behalf of the prospecting right holder, WRE, 19 January 2015, 3 August 2015) with Eskom determined that Eskom allows mining within 6m of powerlines (Shango Solutions). An agreement listing Eskom's requirements was signed on 3 August 2015 (Appendix 5). The trench positions will be planned to comply.

Operations may be sited near to fence access roads or windmills but 50m or more from houses and dam walls. If prospecting operations need to be closer special consultation will be undertaken with the affected homeowners.

Operations will directly impact the commercial farming of the land owner. Trenching, bulk sampling and associated structures are planned straddling land that is presently used as a cultivated field for maize and controlled camps for specialised cattle. A land user and compensation agreement is presently being negotiated by the prospecting right holder with the land owner. The terms of agreement form part of the EMPlan.

Impact on the Cultural Heritage of the surrounding environment. Regulation 52(2)(b)

No known gravesides occur on the proposed bulk sample area.

For the remainder of the prospecting right, isolated, tiny, farm graveyards expected to be present but they should be well-marked and prospecting operations will not impinge on them. They will be avoided.

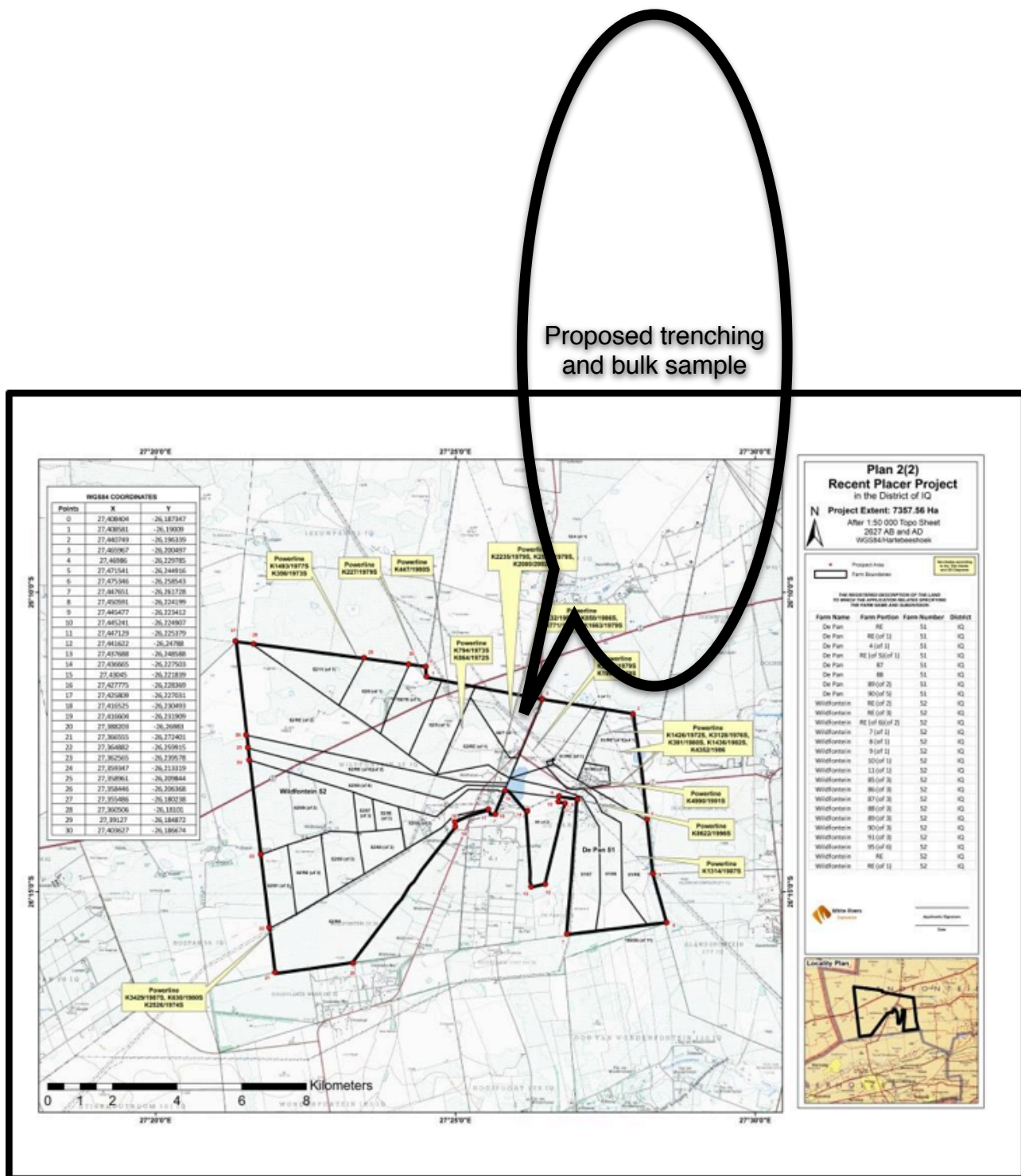
The Consultations mentioned no sites of significant cultural heritage. If they are found then the prospecting will be amended accordingly to avoid these areas.

2.1.2. Plan of the main activities with dimensions

The following set of maps and diagrams show the positions of the main activities with dimensions moving sequentially where the first map shows the existing prospecting right area; the second map shows the focus area and approximate position of the planned prospecting trenching and subsequent bulk samples. The final plan is a Google-Earth image of the bulk-sample area only, followed by a table showing anticipated, approximate dimensions.

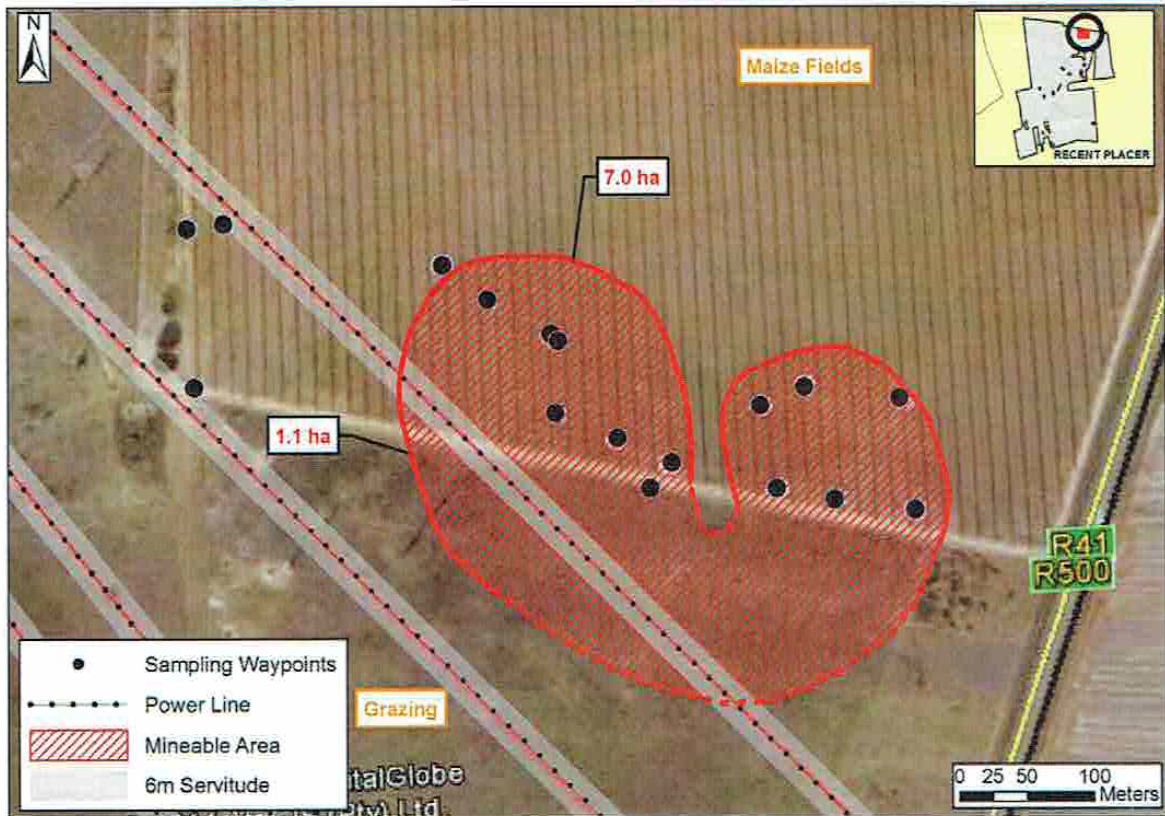


PROSPECTING RIGHT AREA



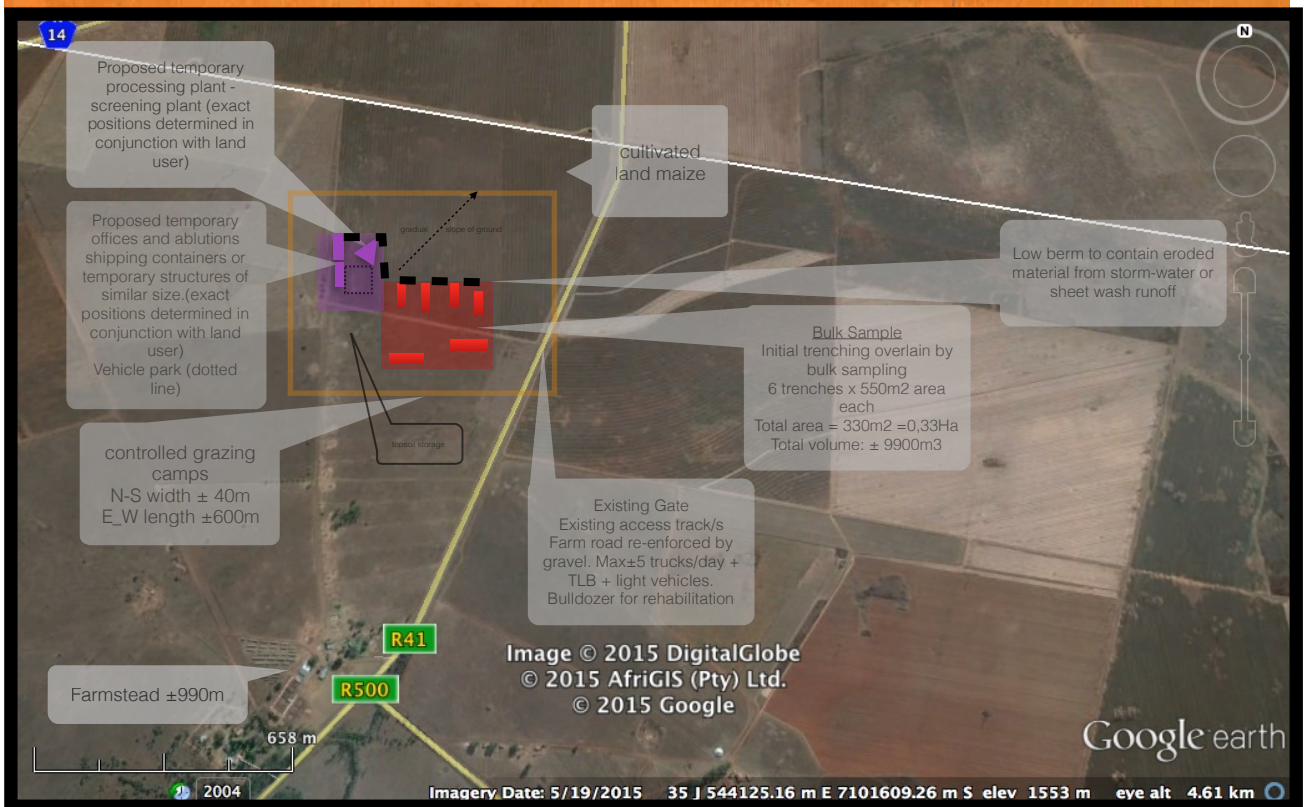
PROSPECTING FOCUS AREA SHOWING THE APPROXIMATE POSITION OF THE PLANNED INVASIVE PROSPECTING I.E. TRENCHING AND BULK SAMPLING. FOR THE EMPLAN AMENDMENT THE FOCUS AREA INCLUDES THE FOLLOWING PORTIONS OF THE FARMS:

- De Pan 51 IQ: portions RE, RE1, 4, RE5, 87, 88, 89 & 90; and
- Wildfontein 52 IQ: portions RE, RE3, 7, 11, 88, 90, 91 and 100 (consolidated from RE1, RE2, RE6, 8, 9,10, 85, 86, 87, 89 & 95).






* Eskom allows mining within 6m of power lines, 19 Jan 2015

White Rivers
Exploration



CONCEPTUAL DIAGRAM OF THE BULK SAMPLE SITE. ALL EQUIPMENT AND INFRASTRUCTURE IS TEMPORARY

MAP LEGEND	ACTIVITY	EXTENT	LISTING NOTICE
<ul style="list-style-type: none"> Area of prospecting right application outlined in black and defined by red dots 	<p>Prospecting Right</p> <p><u>Listed Activity in terms of NEMA:</u> Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).</p>	Existing Prospecting Right GP466PR: 16 638,0952 Ha	GNR 983/20
<ul style="list-style-type: none"> Area of prospecting right application outlined in black and defined by red dots 	<p>Prospecting Right</p> <p><u>Listed Activity in terms of NEMA:</u> The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).</p>	± 8 Ha parts of which may be bulk sampled	GNR 984/19
SPECIFIC PROSPECTING SUB-ACTIVITIES			
Not on plan – work done off-site	<p><u>Prospecting Activity:</u> Desk-top studies and site visits; Review, re-processing and analysis of data.</p>	N/A	GNR 983
<ul style="list-style-type: none"> Area of prospecting right application outlined in black and defined by red dots 	<p><u>Prospecting Activity:</u> Geological Mapping (optional)</p>	Existing Prospecting Right GP466PR: 16 638,0952 Ha or part thereof	GNR 983
<ul style="list-style-type: none"> Area of prospecting right application outlined in black and defined by red dots 	<p><u>Prospecting Activity:</u> Geophysics</p>	Existing Prospecting Right GP466PR: 16 638,0952 Ha or part thereof	GNR 983
	<p><u>Prospecting Activity:</u> Trenching and bulk sampling</p> <p>For clarity: the trenches will be used for the bulk sampling. The extent is taken as the largest excavation area.</p> <p><u>Proposed PWP:</u> 6 trenches 55m length 10m width = 550m area per excavation = 3,300m total excavation area = 0,33 Ha 3m depth</p>	<p>Bulk sample total excavation = 0,3300 Ha</p> <p>Overburden & spoils = 75m²</p> <p>Post rehabilitation subsidised area = 0,3300Ha</p> <p>Maintenance & aftercare for 2-3 years ± 1 Ha</p> <p>General surface rehabilitation = 1 Ha</p>	<p>GNR 983</p> <p>GNR 384</p>

MAP LEGEND	ACTIVITY	EXTENT	LISTING NOTICE
	<u>Prospecting Activity:</u> Temporary processing plant Temporary offices Temporary ablution facilities	Processing plant = 625m ³ Steel buildings and structures = 50m ² Housing&/or offices = 60m ²	GNR 983 GNR 384
	<u>Prospecting Activity:</u> Temporary access track Use of existing roads. The proposal is to re-enforce the existing farm fire-break / track to the cultivated field with gravel. Length of existing track is ±700m Length of access track required 170m - 600m	Length of track allocated for financial quantum calculation: 600m ²	GNR 983
	<u>Prospecting Activity:</u> Closure processes		GNR 983 GNR 384

For this and other calculation dimension data refer to the dimension data table included with the Financial Quantum Calculation, Section 4.3.

Assuming positive results in previous phases of exploration:

- Year 1 - 3/4: COMPLETED
- Year 4 - 5: Bulk Sampling based on previously trenched areas.

Note: the work is not continuous; the teams are anticipated to be on site for a few months. Over the Christmas holidays this period may extend to a few weeks when the contractors traditionally take leave.

2.1.3. Description of construction, operational, and decommissioning phases.

Prospecting itself is considered the construction or planning phase of the activity "mining right". It is difficult to classify prospecting work into the distinct phases applicable to a defined activity such as one could for say, the building of a dam wall, a mine or a shopping complex in which one can easily see distinct construction, operational and decommissioning phases.

Prospecting tends to interplay the various phases of the sub-activities throughout the life of the prospecting right which is the defined activity. The classifications that are used in the tables that follow, based on the Environmental Practitioners Assessment Report, broadly classify the sub-activities into the phases as follows:

Construction Phase: This is normally offsite and doesn't particularly form part of the EMPlan detail. In this case, it has been defined as prospecting work leading to the postulated position of the bulk sample. i.e. Years 1 to 3.

Operational Phase: Trenching and Bulk Sampling in Years 4, 5 and further and includes the processing operation for the bulk sample. Preparation of the site is simultaneous to operations, structures are temporary, often portable and may be moved within the confines of an operation; and so are almost immediately available and therefore classified as part of the operational phase. It is industry practise to rehabilitate on completion of a

prospecting operation, as soon as the borehole or excavation is no longer required for prospecting or mining purposes. But this is not necessarily the decommissioning phase of a prospecting right. The initial rehabilitation therefore forms part of each operation and is classified as part of the operational phase of a "prospecting right".

A description of these sub-activities is best read under "Description of Mining Operations (Section 2.1) prior in this document.

Decommissioning Phase: Closure of the prospecting right when the site is checked and any outstanding rehabilitation is undertaken; where final rehabilitation is undertaken and where affected parties (directly affected by prospecting operations requiring rehabilitation) are consulted prior to closure. Closure Reports and sites checks are compiled and submitted. The final DMR Closure Visit undertaken. A Closure Certificate is awarded.

A description of these sub-activities is best read under "Rehabilitation and Closure Objectives" (section 3) further in this document.

2.1.4. Activities (in terms of the NEMA EIA regulations).

A Prospecting Right	<i>List 1: R983 Activity 20</i>	<u>Listed Activity in terms of NEMA:</u> Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).
Removal and Disposal of Minerals	<i>List 2: R984 Activity 19</i>	The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).

The above activities are addressed by the contents of this document.

2.2. Identification of potential impacts. (refer to the guidelines)

The table that follows is an excerpt from the full Environment Impact Assessment included in Appendix 8.

Concerns raised by I&AParties related to prospecting activities are included in the table/s that follows.

PUT 2.2 IMPACTS HERE

2.2.1. Potential impacts per activity and listed activities.

Please refer to Section A of the Impact Assessment Table included under 2.2

Concerns raised by I&AParties related to prospecting activities are included in the table.

2.2.2. Potential cumulative impacts.

Potential Cumulative Impacts are not generally relevant to prospecting operations due to the very nature of prospecting. However an assessment of the cumulative Impact is included for completion. This calculation is the sum of all the individual impact significance rankings and the assumption here is that: "anything that can go wrong; will go wrong" which is not realistic for the industry in South Africa but never-the-less gives an indication of whether the prospecting will result in unacceptable pollution, ecological degradation or damage to the environment".

POTENTIAL IMPACTS PER PROSPECTING ACTIVITY				
Prospecting Sub-Activity	Identification of Impact of the Activity Assessed	Phase of the planned Activity	INVASIVE or Non-invasive prospecting methods	Cumulative Impact (Significance Rating) (Calculations included under Significance)
Qualitative: Assessment of Cumulative Impact by EAP	Prospecting with Bulk Sampling	Planning (Construction), Operational and Decommission Phases	INVASIVE and Non-Invasive	INSIGNIFICANT MINOR -56
Quantitative: Simple addition of all significance rankings	Prospecting with Bulk Sampling	Planning (Construction), Operational and Decommission Phases	INVASIVE and Non-Invasive	INSIGNIFICANT MINOR -901

2.2.3. Potential impacts on heritage resources.

Please refer to Section B of the Impact Assessment Table included under 2.2

Concerns raised by I&AParties related to prospecting activities are included in the table.

2.2.4. Potential impacts on communities, individuals or competing land uses in close proximity.

(If no such impacts are identified this must be specifically stated together with a clear explanation why this is not the case.)

Please refer to Section B of the Impact Assessment Table included under 2.2

Concerns raised by I&AParties related to prospecting activities are included in the table.

Generally, prospecting operations, according to the PWP, are planned to be carried out concurrently with the existing land use (commercial cultivated and cattle farming or mine reclamation scheme), and it is not envisaged that there would be potential significant impacts.

The bulk sampling operation (with associated trenching) will impact the socio-economic conditions on a specific portion. These are tabled under section 2.2.

Consultation with interested and affected parties revealed a few concerns on impacts relevant to the prospecting stage, these are similarly included in the table.

In the rare case that prospecting is successful – then the potential impact would be the establishment of a mine that would be dealt with in the mining right application.

2.2.5. Confirmation that the list of potential impacts has been compiled with the participation of the landowner and interested and affected parties

It is hereby confirmed that consulted representatives of the community, landowners and interested and affected parties were given the opportunity to view the original DRAFT EMPlan and PWP and give input into the final EMPlan.

For the Amended EMPlan, the I&AP register, for the Focus area have been preferentially contacted providing working phone or e-mail contact details were available and given the opportunity to be consulted on the amendment.

The surface owner for the portion on which the bulk sampling (and associated trenching) is planned has been specially consulted and given the opportunity to participate in the compilation of the list of potential impacts. Mr Lubbe met with WRE representatives on 14 October 2015 followed by an independent consultation meeting on 20 October 2015 undertaken by Kasoro. The EAP considered this input imperative to the decision. Mr W Lubbe's extensive inputs from the 2008 consultation have been included.

Eskom, which powerlines pass over the proposed bulk-sample area, have been consulted as part of the AmendedEMPlan consultation process and their inputs included. A Development Agreement (included in Appendix 5) was signed by Eskom on 3 August 2015.

2.2.6. Confirmation of specialist report appended. (Refer to guideline)

The original EMPlan, 2008, included a Specialist Report compiled by the Authors of the EMPlan, SEF (Strategic Environmental Focus). This complements the Base Line Study and is appended in Appendix 2.

No additional specialist reports (i.e., additional to the information already included to this EMPlan) are appended.

3. REGULATION 52 (2) (c): Summary of the assessment of the significance of the potential impacts and the proposed mitigation measures to minimise adverse impacts.

3.1. Assessment of the significance of the potential impacts.

3.1.1. Criteria of assigning significance to potential impacts.

The Methodology to assess and rank the significance of potential environmental impacts associated with the project is outlined below. The same assessment is used for impacts identified during consultation (A3h(iv)) as that used for impacts of the Activity (A3i), as they are inter-related. A full description of the process is reported under A3i and supporting documentation is available in the EAP's Impact Assessment Report attached as Appendix 3. In order to assist the reader's understanding of the information provided in any impact significance and mitigation tables provided in this report; the formulae and applicable classification criteria tables that were used are then provided here in full.

Information received during the **Consultation and PPP** is included in the assessment as an aspect of the Activity, together with other aspects. In some cases the I&AP concerns may not be relevant to this prospecting right or may not be scientifically qualified; but as they still indicate a concern and are important a such, they remain inserted as part of the assessment and the EAP may make note of the assumptions made. The concerns of the land users (Affected Parties), where these concerns are relevant to the prospecting process, carry greater weight in the assessment than the general I&AP concerns.

In summary the method used is as follows (see A3i) for more detail:-

1. Research, collection and compilation of background information
2. **Identification of Impacts** (both Significant and Insignificant)
3. **Qualitative Analysis** of the data and information. The Qualitative EIA table (Appendix 3.2.1) is then populated.
4. From the qualitative analysis, using the classification criteria table below, the **Quantitative Analysis table** (Appendix 3.2.2) is populated.
5. The Significance Rank is determined by running the formulae and comparing the score to the Significance Matrix (see below). The various results tables provided in this BAR are then completed.
6. An assessment of the cumulative Impact is included for completion. This calculation is the sum of all the individual impact significance rankings and the assumption here is that "anything that can go wrong; will go wrong" which is not realistic for the industry in South Africa but never-the-less gives an indication of whether the prospecting will result in unacceptable pollution, ecological degradation or damage to the environment".

Important Note: Significant Impacts chosen are restricted to those on site but may include a number of insignificant impacts that would not normally form part of an EIA Assessment. This is because many prospecting programmes are based solely or mainly on non-invasive technologies/methods and the assessment would be completely unpopulated in this case which may then be regarded as non-compliance by the Competent Authority. These non-invasive technologies/methods form part of the Activity, "prospecting right" for which and Environmental Authorization is required by law. The tables are populated to the EAP's best reasonable endeavours.

Significance Formula:

Significance = Consequence x Probability of the impact

where

Consequence = Nature x (Intensity + Spatial scale + Duration *till reversed*) of the impact

And

Probability is the likelihood of an impact occurring

Therefore the

Significance Rating = [Nature (Intensity + Spatial scale + Duration)] Probability

The Significance Ranking resulting from the application of the significance formula linked to the Significance Matrix as follows.

Significance Matrix

		Significance																																					
Probability	7	-147	-140	-133	-126	-119	-112	-105	-98	-91	-84	-77	-70	-63	-56	-49	-42	-35	-28	-21	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	133	140	147
	6	-126	-120	-114	-105	-102	-96	-90	-84	-78	-72	-66	-60	-54	-48	-42	-36	-30	-24	-18	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	105	114	120	126
	5	-105	-100	-95	-90	-85	-80	-75	-70	-65	-60	-55	-50	-45	-40	-35	-30	-25	-20	-15	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105
	4	-84	-80	-76	-72	-68	-64	-60	-56	-52	-48	-44	-40	-36	-32	-28	-24	-20	-16	-12	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80	84
	3	-63	-60	-57	-54	-51	-48	-45	-42	-39	-36	-33	-30	-27	-24	-21	-18	-15	-12	-9	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63
	2	-42	-40	-38	-36	-34	-32	-30	-28	-26	-24	-22	-20	-18	-16	-14	-12	-10	-8	-6	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42
	1	-21	-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
		-21	-20	-19	-18	-17	-16	-15	-14	-13	-12	-11	-10	-9	-8	-7	-6	-5	-4	-3	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21

Consequence = Nature (Intensity + Spatial Scale + Duration)

(amended from Digby-Wells)

Significance Ranking

Nature	Rank	Risk	Effect on Decision Making	Score
POSITIVE	VERY SIGNIFICANT		Possibly sufficient on its own to influence the decision to approve the listed activity. <i>A very beneficial impact which may be sufficient by itself to justify implementation of the Project. The impact may result in a permanent positive change.</i>	109 to 147
	POTENTIAL SIGNIFICANT		Will influence the decision to approve the listed activity. <i>A beneficial impact which may help to justify the implementation of the Project. These impacts would be considered by society as constituting and usually long-term positive change to the environment.</i>	73 to 108
	UNCERTAIN	Research	required to classify into either "insignificant" or "significant"	
	SIGNIFICANT - MINOR		Will influence the decision to approve the listed activity. <i>An important positive impact. The impact is insufficient by itself to justify the implementation of the project. These impacts will usually have a positive medium to long term effect on the environment.</i>	36 to 72
	INSIGNIFICANT NEGLIGIBLE		Will not influence the decision to approve the listed activity. <i>A small positive impact. The impact will usually have a medium to short term positive effect on the environment.</i>	3 to 35
	NEUTRAL		Will not influence the decision to proceed with the activity. Has no or such a little impact that it has no significance.	-2 to 2
NEGATIVE	INSIGNIFICANT NEGLIGIBLE	Very Low	Will not influence the decision to approve the listed activity. <i>An acceptable negative impact for which mitigation is either not necessary or desirable but not essential. The impact by itself, even accumulated with other low impacts, would not be sufficient to prevent a right to be awarded. These results will have negative short to medium term effects on the environment. The impact is reversible and will not result in a loss of irreplaceable aspects.</i>	-3 to -35
	INSIGNIFICANT - MINOR	Low	Will not influence the decision to approve the listed activity; mitigation measures may form part of the Environmental Authorization. <i>A negative impact, which requires management, mitigation or avoidance. The impact by itself would not be sufficient to prevent an activity or part of an activity but which accumulated with other impacts may require reassessment of the activity or alternatives to be considered. These results will have negative medium to long term effects on the environment. The impact is reversible and will not result in a loss of irreplaceable aspects.</i>	-36 to -72
	UNCERTAIN	Research	required to classify into either "insignificant" or "significant"	
	POTENTIAL SIGNIFICANT	Medium to medium-high	Should not influence the decision to approve the listed activity provided the recommended measures to mitigate negative impacts are implemented. Management, mitigation and monitoring required. <i>A serious negative impact, which may prevent the implementation of the activity should mitigation measures not be implemented. These impacts would be considered as constituting a major, usually long-term, change to the environment and may result in severe effects. Large-scale rehabilitation anticipated on project closure or beforehand. Failing appropriate mitigation measures; the impact may be irreversible and result in loss of irreplaceable aspects.</i>	-73 to -108
	VERY SIGNIFICANT	High to very high	Would strongly influence the decision to proceed with the proposed project. Management, mitigation and monitoring required. <i>A very serious negative impact, which may be sufficient by itself to prevent implementation of the activity. The impact may result in permanent change. Very often these impacts are immittigable and usually result in very severe effects. Large-scale rehabilitation anticipated on project closure or beforehand. The impacts will be irreversible and would result in loss of irreplaceable aspects should extensive management and mitigation measures not be successfully implemented. Often</i>	-109 to -147

2	Limited Limited to the site and immediate surroundings
1	Site specific Limited to a specific site or isolated parts of the site

Duration Rank	Duration of the Impact	Time required to reverse the impact
7	Permanent	No mitigation. Impacts are irreversible
6	Beyond project life	Impact will remain for some time after the life of the project
5	Project life	Impact will remain for the life of a long-term project such as a mining right
4	Long-term	Impact will remain for the life of a short-term project such as a prospecting right. 6 -15 years to reverse impact.
3	Medium-term	1 - 5 years to reverse the impact
2	Short-term	<1 year to reverse the impact
1	Immediate	< 1 month to reverse the impact
0	Off-site	No time required to reverse the impact

Probability Rank	%	Probability of the Impact	Probability of the impact occurring
7	100%	Probable	Certain / definite
6	90%	High Probability	Almost certain / most likely
5	70%	Medium Probability	Likely / may occur
4	60%	Low Probability	Has occurred here or elsewhere and could therefore occur
3	50%	Unlikely	Possibility / has not happened yet but could happen
2	30%	Improbable	Rare / has happened elsewhere
1	10%	Highly Improbable	Highly unlikely / expected to never happen
0	<10%	None	No impacts from Activity anticipated on site

3.1.2. Potential impact of each main activity in each phase, and corresponding significance assessment.

In the EPA's EIA Qualitative Assessment and the EPA's EIA Quantitative Assessment (Appendix 8), the potential impacts of the activity as informed by the PWP sub-activities and aspects affected, consultations with I&AP's, the Baseline Study, knowledge, research and mining industry practice; are listed and assessed. These are again provided in summarised form in the sections that follow. The details, including the nature, intensity, spatial scale, duration and probability of the impact resulting in a significance rank and rating can be accessed in detail in Appendix 8.

PUT 3.1.2 PRE-MITIGATION SIGNIFICANCE TABLE HERE

3.1.3. Assessment of potential cumulative impacts.

Potential Cumulative Impacts are not generally relevant to prospecting operations due to the very nature of prospecting. However an assessment of the Cumulative Impact is included for completion. This calculation is the sum of all the individual impact significance rankings and the assumption here is that: "anything that can go wrong; will go wrong" which is not realistic for the industry in South Africa but never-the-less gives an indication of whether the prospecting will result in unacceptable pollution, ecological degradation or damage to the environment".

POTENTIAL CUMULATIVE IMPACT			
Method of calculation	Activity	Pre-Mitigation Significance Rank	Pre-Mitigation Significance Rating
Qualitative: Assessment of Cumulative Impact by EAP	Prospecting with Bulk Sampling	INSIGNIFICANT MINOR -56	INSIGNIFICANT NEGLIGIBLE -42
Quantitative: Simple addition of all significance rankings	Prospecting with Bulk Sampling	INSIGNIFICANT MINOR -901	INSIGNIFICANT NEGLIGIBLE -448

3.2. Proposed mitigation measures to minimise adverse impacts.

3.2.1. List of actions, activities, or processes that have sufficiently significant impacts to require mitigation.

Activity / Environmental Aspect	Identification of Impact of Activity
Social Inconvenience Factor	Access to site
Social Inconvenience Factor	Documents required by and visits to site by Authorities
Social Inconvenience Factor	I&AP concern: Safety
Social Inconvenience Factor	I&AP concern: Access to site by prospectors
Social Inconvenience Factor	I&AP concern: Request to be kept informed of activities where directly affected
Bulk sampling and associated trenching	Actual trenching as part of the bulk sampling
Bulk sampling and associated trenching	Trench/Bulk Sample Placement and number of excavations
Bulk sampling and associated trenching	Trench/Bulk Sample Footprint and Rehabilitation of Trench / Bulk Sample Footprint
Bulk sampling and associated trenching	Topsoil, Fauna & Flora and Soil Erosion
Bulk sampling and associated trenching	Large Indigenous Trees and protected trees
Bulk sampling and associated trenching	Fluids & potential water pollution
Bulk sampling and associated trenching	Oil and Grease Hydrocarbon Storage
Bulk sampling and associated trenching	Litter, Rubbish & Waste Management

Activity / Environmental Aspect	Identification of Impact of Activity
Bulk sampling and associated trenching	Noise
Bulk sampling and associated trenching	Dust
Bulk sampling and associated trenching	Temporary Access Track
Bulk sampling and associated trenching	Short-term Temporary Accommodation
Bulk sampling and associated trenching	Short-term Temporary Ablutions
Bulk sampling and associated trenching	Short-term Temporary Sample Processing Plant
Bulk sampling and associated trenching	Fires
Bulk sampling and associated trenching	Potable Water for staff
Bulk sampling and associated trenching	Visual Impact
Bulk sampling and associated trenching	I&AP concern: Safety of visitors in areas of adits/trenches/open pits , etc.
Bulk sampling and associated trenching	I&AP concern: Visual appearance of areas of adits/trenches/open pits , etc.
Bulk sampling and associated trenching	Water for bulk-sampling & the processing plant
Prospecting Right Closure Process	Closure Reports & processing by Competent Authorities
Prospecting Right Activities	I&AP concerns: Other: contractors on site, number of employees, waste material, sewerage, fires, access to property and roads, sludge dams, safety precautions, fencing, compensation for loss of cultivated land.
Physical & Biological Environmental Aspects	Watercourses / Pans
Physical & Biological Environmental Aspects	Wetlands
Physical & Biological Environmental Aspects	Ground-water
Physical & Biological Environmental Aspects	Sink holes
Physical & Biological Environmental Aspects	Biodiversity
Physical & Biological Environmental Aspects	Protected Fauna & Flora in terms of NEMBA (2007)
Physical & Biological Environmental Aspects	Protected areas - National Parks, etc.
Physical & Biological Environmental Aspects	I&AP concern: Groundwater
Physical & Biological Environmental Aspects	I&AP concern: Sinkholes
Socio-economic Environmental Aspects	Prospecting on an existing area of commercial farming - cultivated land and controlled grazing of specialised cattle.
Socio-economic Environmental Aspects	Prospecting on an existing area traversed by Eskom powerlines
Socio-economic Environmental Aspects	CAUTIONARY: Game farms and hunting
Socio-economic Environmental Aspects	Support of local business
Socio-economic Environmental Aspects	Ubuntu
Socio-economic Environmental Aspects	I&AP Concern: Loss of agricultural land with high potential Loss of income
Socio-economic Environmental Aspects	I&AP Concern: Lowering of property values
Cultural Environmental Aspects	Nil

Activity / Environmental Aspect	Identification of Impact of Activity
Heritage Environmental Aspects	Farm Graveyards / gravesites
Heritage Environmental Aspects	known Heritage sites

3.2.2. Concomitant list of appropriate technical or management options.

Management Measures for Potential Significant Risks identified in previous sections	
Management Measures to be applied	Mitigation measures, as included in 3.2.3, must be managed and adhered to as part of the prospecting work
Predicted long-term results of the applied management measures	Long term, post prospecting right, management of mitigation measures should not be required after closure.
Residual and latent impacts	Residual impacts are not anticipated to be significant. Subsidence may occur in places. This should be rehabilitated by the time of closure.
Time frames and schedule	<p>Planning and management prior to prospecting operations on the ground should take cognisance of impacts and mitigation measures especially those that require "avoidance".</p> <p>Management during prospecting operations should make provision for the qualitative assessment of potential impacts and the rectification of any timeously during operations; including "avoidance".</p> <p>Where possible, rehabilitation should be undertaken on cessation of the individual activity or campaign as part of the protecting operation/PWP. An internal qualitative rehabilitation assessment should be done.</p> <p>Final rehabilitation should be completed on cessation of the activity. Closure assessments must be completed, together with consultation with directly affected surface owners / land users.</p>
Responsibilities for implementation and long-term maintenance	<p>Responsible person to ensure that the right holder is environmentally responsible and to ensure reporting compliance: Technical Director.</p> <p>Responsible person to ensure that monitoring is part of the procedures and are instated and active: Project Manager / or Environmental Manager (depending on which the right holder allocates the responsibility to).</p> <p>Responsible person on site during operations to effect the monitoring and implement impact management actions: Project Geologist or Project Site Manager.</p> <p>Long-term maintenance is not anticipated at this stage.</p>
Financial provision for long-term maintenance	Not anticipated to be required. Annual Financial provision assessments will determine if this becomes necessary.
Monitoring programme	Refer to Section 5

In addition, regarding “insignificant risks”:

Gravesites will not be interfered with in any way. Prospecting is planned to NOT take place on any obviously marked gravesite. Should a gravesite be discovered on the prospecting operation – prospecting will **stop** immediately and not be allowed to continue on that area. The prospecting programme will be modified.

In the event of the discovery of an area of environmental, socio-economic, historical and/or cultural aspects (none identified at present) – the situation will be assessed, data and information gathered, experts and/or community elders consulted where necessary. Management (MANCO and or the board) would make a decision. Operations on that area will **either be stopped and moved elsewhere, or modified or controlled.**

Socio-economic conditions of the landowner:

The operations of the prospecting work programme should, in general, not affect the socio-economic conditions of the landowner. The landowner may continue to use the land as they are at present, simultaneous to prospecting. In addition, prospecting on any one site is not continuous and the land-owner and project manager can liaise as to periods of time which may not suit the land-owner (within reason). For example: if the land-owner plans trophy hunting on his farm at a certain time and WRE is notified then the project manager will liaise directly with the land-owner/land manager as to the arrangements to be made.

Management for the proposed bulk sample is discussed elsewhere and is anticipated to be agreed in the right holder-land owner agreement presently being negotiated.

Measures already in place are (1) contact and consultation; (2) an open door for any further consultation and liaison (3) the undertakings provided by White Rivers Exploration in the “information letter” as handed out at consultations; and the RSA law, including the mining law stipulates the procedure for compensation.

Mitigation measures that may be used in addition are:

- (1) On request from the land-owner, a land-use agreement may be drawn up between the parties. It is borne in mind that all agreements are also costly for the land-owner and common-sense is used where plausible – In WRE’s experience, these agreements are often done prior to the drilling / bulk sampling stage.
- (2) An inconvenience compensation amount may be determined per borehole drilled / invasive work done on a property.
- (3) It is envisaged that land purchase would probably only be contemplated at or close to the mining stage which is not the mandate of this prospecting right application. It is noted that the law does not require the land surface purchase however it is general industry procedure to investigate this aspect in consultation with the surface owner.

3.2.3. Review the significance of the identified impacts

(After bringing the proposed mitigation measures into consideration).

A summary table showing Pre-mitigation and Post-mitigation Significance together with recommended mitigation measures is found over page. The detailed assessment is found in Appendix 8.

Conclusions:

Impacts are anticipated due to the nature of the PWP plan for the activity, namely prospecting, which involves operations:-

- in the main, initial onsite prospecting activities would be non-invasive, insignificant, low risk and of short duration.
- onsite invasive prospecting (i.e., bulk sampling and associated trenching) may potentially impact the environment with the following significant impact and risk rankings: "significant – minor", "insignificant-negligible (positive)", "neutral", "insignificant-negligible (negative)" and "insignificant – minor".
- The presence of the Abe Bailey Nature Reserve is assessed as a "neutral" significance as prospecting may not be done on this area; however the pre-mitigation significance is artificially elevated to "potential significant" due to its importance.
- the mean and median fall into the "insignificant-negligible" risk category.
- With the application of mitigation measures all identified impacts have the potential to fall into the "neutral" or "insignificant-negligible" or insignificant-minor" category.

PUT 3.2.3 MITIGATION TABLE HERE

PUT QUANTITATIVE ASSESSMENT HERE

4. REGULATION 52 (2) (d): Financial provision. The applicant is required to ...

4.1. Plans for quantum calculation purposes.

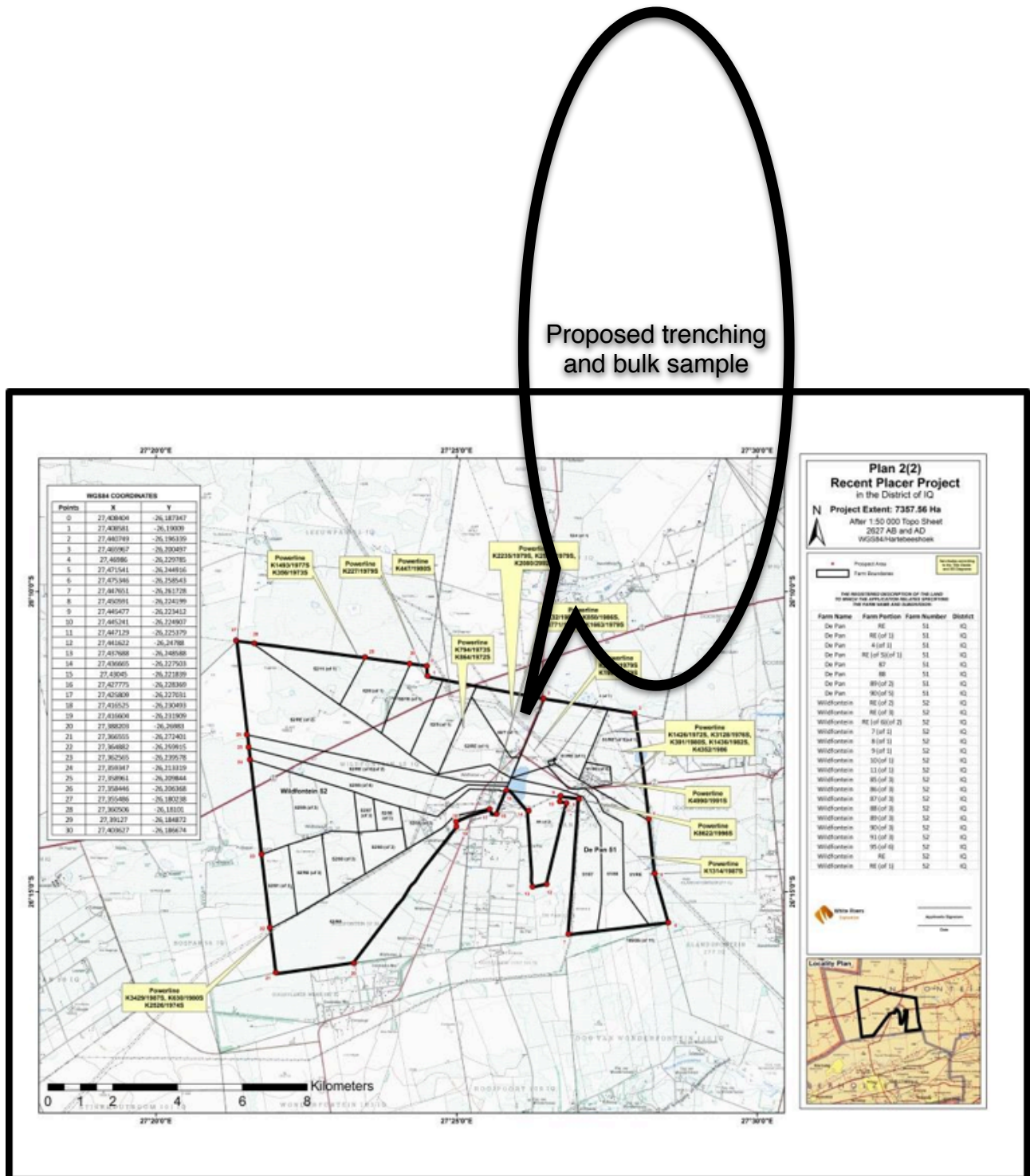
(Show the location and aerial extent of the aforesaid main mining actions, activities, or processes, for each of the construction operational and closure phases of the operation).

No mining operations are planned in the proposed Prospecting Work Programme. Refer to the plan submitted for 2.1.2 (copied here).

The following set of maps and diagrams show the positions of the main activities with dimensions moving sequentially where the first map shows the existing prospecting right area; the second map shows the focus area and approximate position of the planned prospecting trenching and subsequent bulk samples. The final plan is a Google-Earth image of the bulk-sample area only, followed by a table showing anticipated, approximate dimensions.

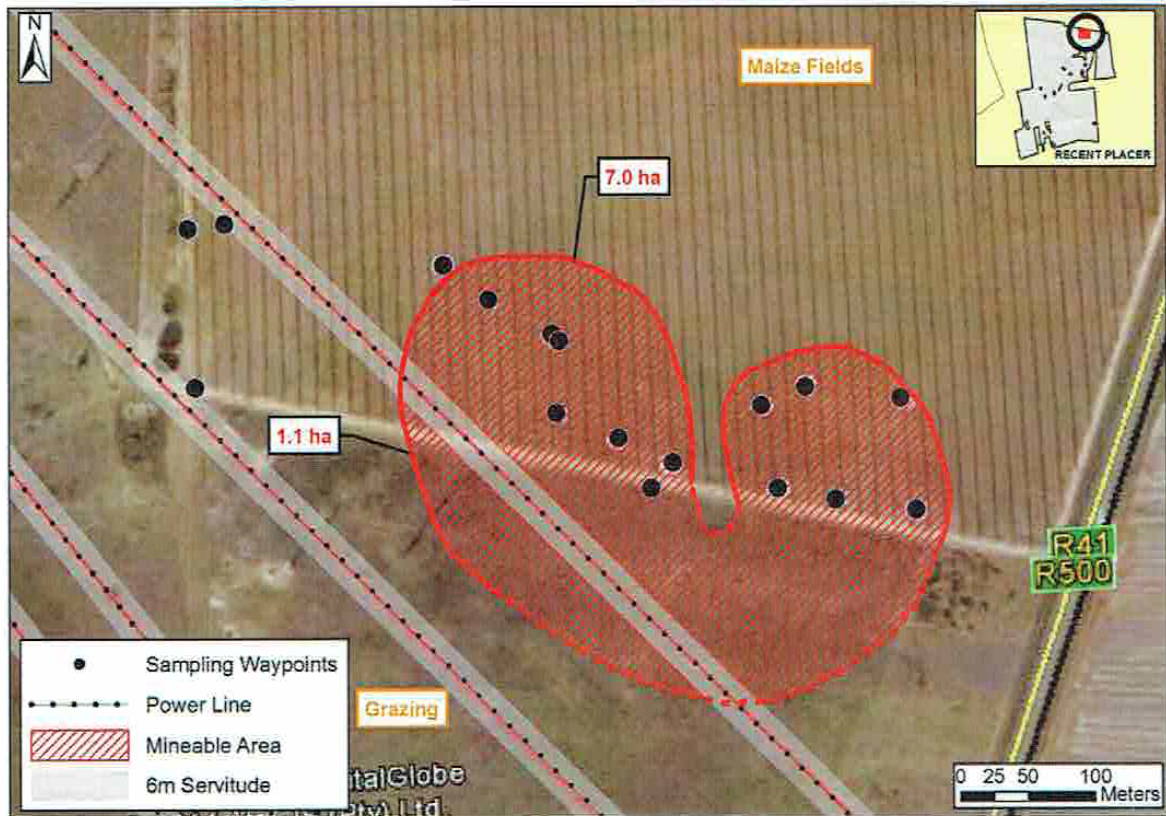


PROSPECTING RIGHT AREA

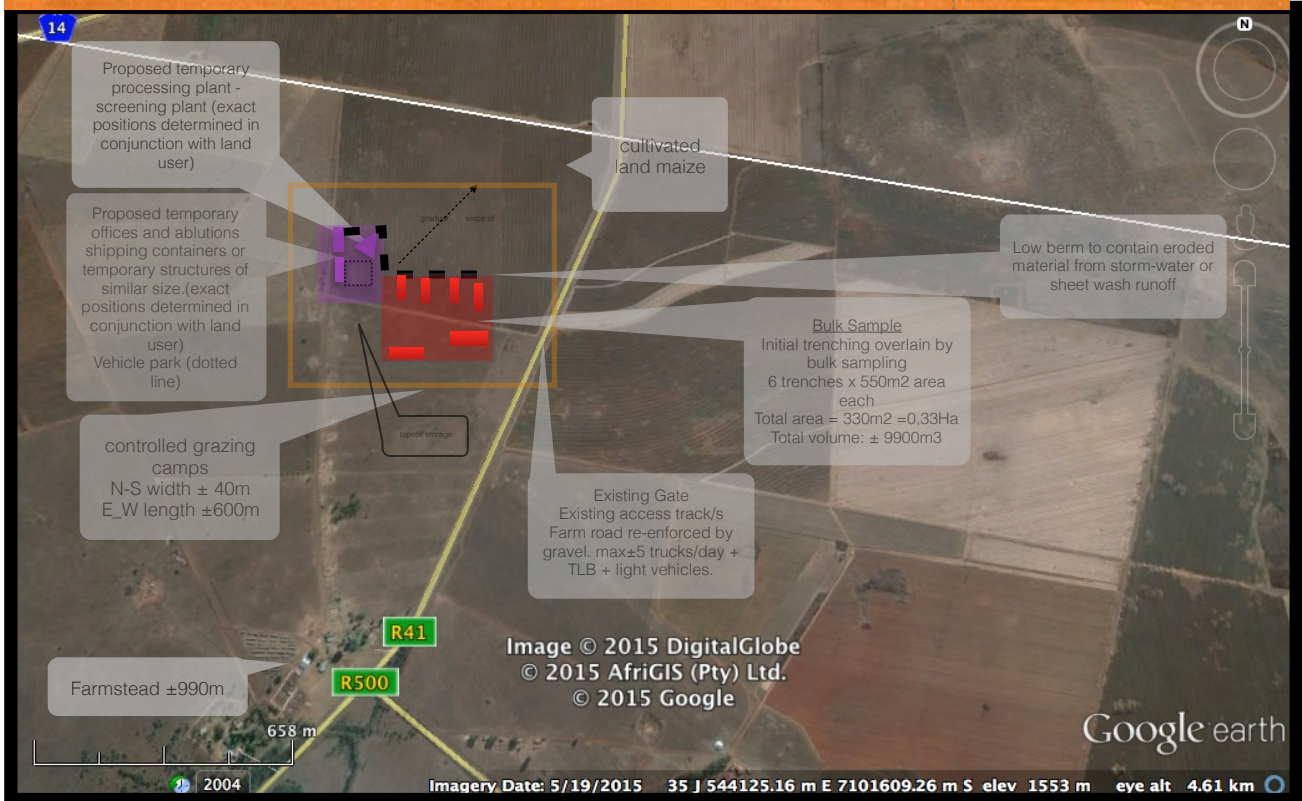


PROSPECTING FOCUS AREA SHOWING THE APPROXIMATE POSITION OF THE PLANNED INVASIVE PROSPECTING I.E. TRENCHING AND BULK SAMPLING. FOR THE EMPLAN AMENDMENT THE FOCUS AREA INCLUDES THE FOLLOWING PORTIONS OF THE FARMS:






- De Pan 51 IQ: portions RE, RE1, 4, RE5, 87, 88, 89 & 90; and
- Wildfontein 52 IQ: portions RE, RE3, 7, 11, 88, 90, 91 and 100 (consolidated from RE1, RE2, RE6, 8, 9,10, 85, 86, 87, 89 & 95).






* Eskom allows mining within 6m of power lines, 19 Jan 2015



CONCEPTUAL DIAGRAM OF THE BULK SAMPLE SITE. ALL EQUIPMENT AND INFRASTRUCTURE IS TEMPORARY

PHASE	MAP LEGEND	ACTIVITY	EXTENT	LISTING NOTICE
Planning (Construction), Operational & Decommission Phases	 Area of prospecting right application outlined in black and defined by red dots	Prospecting Right <u>Listed Activity in terms of NEMA:</u> Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).	Existing Prospecting Right GP466PR: 16 638,0952 Ha	GNR 983/20
Planning (Construction), Operational & Decommission Phases	 Area of prospecting right application outlined in black and defined by red dots	Prospecting Right <u>Listed Activity in terms of NEMA:</u> The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).	± 8 Ha parts of which may be bulk sampled	GNR 984/19
SPECIFIC PROSPECTING SUB-ACTIVITIES				
Planning (Construction), Operational & Decommission Phases	Not on plan – work done off-site	<u>Prospecting Activity:</u> Desk-top studies and site visits; Review, re-processing and analysis of data.	N/A	GNR 983
Planning (Construction), & Operational Phases	 Area of prospecting right application outlined in black and defined by red dots	<u>Prospecting Activity:</u> Geological Mapping (optional)	Existing Prospecting Right GP466PR: 16 638,0952 Ha or part thereof	GNR 983
Planning (Construction), & Operational Phases	 Area of prospecting right application outlined in black and defined by red dots	<u>Prospecting Activity:</u> Geophysics	Existing Prospecting Right GP466PR: 16 638,0952 Ha or part thereof	GNR 983
Operational Phase		<u>Prospecting Activity:</u> Trenching and bulk sampling For clarity: the trenches will be used for the bulk sampling. The extent is taken as the largest excavation area. <u>Proposed PWP:</u> 6 trenches 55m length 10m width = 550m area per excavation = 3,300m total excavation area = 0,33 Ha 3m depth	Bulk sample total excavation = 0,3300 Ha Overburden & spoils = 75m ² Post rehabilitation subsidised area = 0,3300Ha Maintenance & aftercare for 2-3 years ± 1 Ha General surface rehabilitation = 1 Ha	GNR 983 GNR 384

PHASE	MAP LEGEND	ACTIVITY	EXTENT	LISTING NOTICE
Operational Phase		<u>Prospecting Activity:</u> Temporary processing plant Temporary offices Temporary ablution facilities	Processing plant = 625m ³ Steel buildings and structures = 50m ² Housing&/Or offices = 60m ²	GNR 983 GNR 384
Planning (Construction), Operational & Decommission Phases		<u>Prospecting Activity:</u> Temporary access track Use of existing roads. The proposal is to re-enforce the existing farm fire-break / track to the cultivated field with gravel. Length of existing track is ±700m Length of access track required 170m - 600m	Length of track allocated for financial quantum calculation: 600m ²	GNR 983
Decommission Phase		<u>Prospecting Activity:</u> Closure processes		GNR 983 GNR 384

For this and other calculation dimension data refer to the dimension data table included with the Financial Quantum Calculation, Section 4.3.

Assuming positive results in previous phases of exploration:

- Year 1 - 4: COMPLETED
- Year 4 - 5: Bulk Sampling based on previously trenched areas.

Note: the work is not continuous; the teams are anticipated to be on site for a few months. Over the Christmas holidays this period may extend to a few weeks when the contractors traditionally take leave.

4.2. Alignment of rehabilitation with the closure objectives.

(Describe and ensure that the rehabilitation plan is compatible with the closure objectives determined in accordance with the baseline study as prescribed).

Intended end use for the area prospected/mined after closing of operations

If prospecting is successful then an area, probably significantly reduced, will be set aside for mining. An application for a mining right would then be submitted.

For the remaining area, or the total area if prospecting is unsuccessful, the aim is that the area will return to its current state and use which is expected to continue during prospecting and no long-term effects are expected to result from the prospecting phase.

What the Environment will Look like After a Closure Certificate has been Obtained.

Rehabilitation Plan

This takes place during the operational phase of the activity. The hole/s are planned to be back-filled in reverse order to which they are excavated using material removed from the excavation. It is estimated that approximately 50% of the material will be available for infill after processing. It is anticipated that the remainder, the "ore" would be removed from site and sold. The post-bulk-sample surface will therefore be indented compared to the pre-trenching surface. Subsidence is anticipated in the excavation area, where it occurs, it is filled in. Where necessary the removed topsoil is returned and contoured and allowed to seed naturally. A rehabilitation check is done by the responsible person at the end of the bulk-sampling campaign and any discrepancies fixed immediately.

Sample positions will be filled in where applicable. Temporary tracks, vehicle parking, plant and office sites will be cleared of rubbish, levelled where necessary and left to reseed naturally or allowed to stand for future planting. Bulk sample trenches may be back-filled with unwanted material previously removed. For the area of bulk sample trenches the trenches will be filled but may form vegetation filled depressions. It is uncertain if they will be able to be used for cultivation as the farming machinery may prefer a more level surface. Camp and plant sites (if constructed) will be rehabilitated. Once rehabilitation measures have become effective, the environment will look similar to the pre-existing environment.

The rehabilitation plan is aligned with the closure objectives.

Nil concerns raised by I&AParties. A surface use agreement is in negotiation with the surface user for this purpose.

4.3. Quantum calculations.

(Provide a calculation of the quantum of the financial provision required to manage and rehabilitate the environment, in accordance with the guideline prescribed in terms of regulation 54 (1) in respect of each of the phases referred to). **The calculation is repeated at a larger resolution in Appendix 7.**

The requested Quantum Calculation Spreadsheet in terms of the DMR guidelines, is inserted here (instead of a 54(1) assessment as was previously submitted by Kasoro):

CALCULATION OF THE QUANTUM							
White Rivers Exploration Prospecting Right Application EXAMPLE for BULK SAMPLING				Bulk Sample Mn Open PIT EG			
Evaluators: WHITE RIVERS EXPLORATION (Pty) Ltd							
Risk Class: C LOW Low Risk Low							
Area Sensitivity:							
Prospecting Data		#	m2	hectares			
Estimated size of Total Bulk Sample PITS (m2)		55m x 30m	550	0,055			
Estimated size of subsidised area post drilling and rehab per borehole (m2)		# PITS	3300	0,33			
Estimated size of subsidised area post mining and rehab assuming the unlikely case that all subsidise (m2)				0			
Provisional length of access roads for estimation purposes (m2)		(400m x 3m wide) x 4	600	0,33			
				0,06			

No.	Description	Unit	A	B	C	D	E=A*B*C*D
			Quantity	Master Rate	Multiplication factor	Weighting factor	Amount (rands)
1	Dismantling of processing plant and related structures (including overhead conveyors and power lines)	m3	625,00	12,29	1,00	1,00	7 681,25
2(A)	Demolition of Steel buildings and structures	m2	50,00	171,18	1,00	1,00	8 559,00
2(B)	Demolition of re-inforced concrete buildings and structures	m2	0,00	252,26	1,00	1,00	-
3	Rehabilitation of access roads	m2	600,00	30,63	1,00	1,00	18 378,00
4(A)	Demolition and rehabilitation of electrified railway lines	m	0,00	297,30	1,00	1,00	-
4(B)	Demolition and rehabilitation of non-electrified railway lines	m	0,00	162,16	1,00	1,00	-
5	Demolition of housing and/or administration facilities	m2	60,00	342,34	1,00	1,00	20 540,40
6	Opencast rehabilitation including final voids and ramps	ha	0,33	174 238,00	1,00	1,00	57 498,54
7	Grading of shafts, adits and inclines	m3	0,00	91,69	1,00	1,00	-
8(A)	Rehabilitation of overburden and spoils	ha	0,01	119 642,23	1,00	1,00	897,32
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (basic salt producing waste)	ha	0,00	149 012,22	1,00	1,00	11,18
8(B)	Rehabilitation of processing waste deposits and evaporation ponds (acidic, metal-rich waste)	ha	0,00	432 802,15	1,00	1,00	-
9	Rehabilitation of subsidised areas	ha	0,33000	100 182,35	1,00	1,00	33 060,18
10	General surface rehabilitation	ha	1,00	94 776,82	1,00	1,00	94 776,82
11	River diversions	ha	0,00	94 776,82	1,00	1,00	-
12	Fencing	m	0,00	108,11	1,00	1,00	-
13	Water management	ha	0,00	36 036,81	1,00	1,00	-
14	2 to 3 years of maintenance and aftercare	ha	1,00	12 612,88	1,00	1,00	12 612,88
15(A)	Specialist study	Sum	0,00	0,00	1,00	1,00	-
15(B)	Specialist studies (soil remediation)	ha	0,00	0,00	1,00	1,00	-
(Sum of Items 1 - 15 above)							254 015,56
WF2	Weighting Factor 2 (proximity to urban area)	WF2:	1,05	Subtotal 1 (Sum 1-15*WF2) in Rands			266 716,34
1	Preliminary and General			Add 6% if subtotal 1 >= 100 000 000			32 005,96
2	Contingency			Add 12% if subtotal 1 < 100 000 000			26 674,63
Subtotal 2 (Subtotal 1 + P6+C) in Rand							325 396,93
Subtotal 3 (typo = N/A)							-
WAT 14%							45 555,15
GRAND TOTAL in Rands							370 949,08

CLASS C MINES QUICK CALCULATION	ha	Medium Environmental Sensitivity	Amount	50000	400000
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4.4. Undertaking to provide financial provision.

(Indicate that the required amount will be provided should the right be granted.)

White Rivers Exploration (Pty) Ltd anticipates providing the total amount of R370 949.08 and undertakes to pay this amount on grant of the right and prior to signature of the right / approval of the EMPlan. In terms of the MPRDAct no 28 of 2002, this amount is to be revised annually. Note: The amount due would be R310 943,08 minus the amount already paid as a financial guarantee G0657/434379/GLO dated 14 May 2009 for R91,181,000.00.

5. REGULATION 52 (2) (e): Planned monitoring and performance assessment of the environmental management plan.

5.1. List of identified impacts requiring monitoring programmes.

SOURCE ACTIVITY	IMPACTS REQUIRING MONITORING PROGRAMMES	FUNCTIONAL REQUIREMENTS FOR MONITORING	ROLES AND RESPONSIBILITIES (FOR THE EXECUTION OF THE MONITORING PROGRAMMES)	MONITORING AND REPORTING FREQUENCY and TIME PERIODS FOR IMPLEMENTING IMPACT MANAGEMENT ACTIONS
	5.1	5.2	5.3	5.4
Prospecting Operations Non-invasive	No monitoring required	N/A	N/A	N/A
Prospecting Operations Invasive Bulk Sampling with Trenching	<p><u>Impacts to be avoided:</u></p>  <p>ABE BAILEY NATURE RESERVE</p> <p>Invasive prospecting closer than 6m to Eskom powerlines</p> <p>Large indigenous trees</p> <p>Watercourses & pans</p> <p>Wetlands</p> <p>Graves & gravesites</p> <p>Heritage Artifacts</p> <p>Protected geological site</p> <p>Positioning very close to infrastructure</p> <p>Excessive groundwater use</p>	Visual monitoring during operations; impact to be managed & avoided in the planning process	<p>Responsible person to ensure that the right holder is environmentally responsible: Technical Director</p> <p>Responsible person to ensure that monitoring is part of the procedures and that the procedures are instated and active: Project Manager / or Environmental Manager (depending on which the right holder allocates the responsibility to)</p>	<p>Internal reporting</p> <p>Impact to be avoided during operations on site</p>
Prospecting Operations Invasive Bulk Sampling with Trenching	<p><u>Impacts to be monitored during operations:</u></p> <p>Liaison with directly affected surface owner/s or surface user/s</p> <p>Topsoil, fauna & flora and soil erosion</p> <p>Oil & grease; hydrocarbon storage</p> <p>Litter, rubbish & waste management</p> <p>Dust</p> <p>Noise</p> <p>Water for operations</p> <p>Fluids & potential water pollution</p> <p>Temporary access track</p>	<p>Visual monitoring during operations; impact to be rectified or reduced where possible as soon as practicable after discovery</p> <p>Footprint before and after photos are recommended</p>	<p>Responsible person on site during operations to effect the monitoring and implement impact management actions: Project Geologist</p>	<p>Internal reporting</p> <p>Impact to be rectified as soon as practicable after discovery</p>

	Temporary office/s Temporary ablution facilities Temporary sample processing plant Fires Sinkhole prevention			
Prospecting Operations Invasive Bulk Sampling with Trenching	<u>Rehabilitation:</u> Bulk sample pit / trench rehabilitation Footprint rehabilitation (Temporary track rehabilitation – use of existing track) Removal of (portable) temporary office and plant structures Includes: Topsoil, flora & fauna and soil erosion, rehabilitation, biodiversity	Internal rehabilitation Assessment Monitoring Report		Internal Rehabilitation Assessment Monitoring Report on cessation of the activity

SOURCE ACTIVITY	REQUIRED REPORTS	FUNCTIONAL REQUIREMENTS FOR REPORTING	ROLES AND RESPONSIBILITIES	REPORTING FREQUENCY TO THE CA and TIME PERIODS
	B1i)1g	B1i)1k	B1i)1i	B1i)1h B1i)1j
Prospecting Right	Reporting in compliance with the MPRDA and NEMA and Competent Person requirements: Bi-annual Environmental Performance Assessment / Environmental Audit Report Annual review of Financial Provision In the event of a Renewal Application an Environmental Assessment Report as required by the Competent Authority In the event of Closure of the right; a set of Closure Reports as required by the Competent Authority	Assessment, compilation completion and timeous submission of the reports as regulated by the MPRDA and/or NEMA and associated Regulations	Technical Director (or designated manager) on behalf of the Right Holder is responsible to ensure that these are submitted. The Environmental Audit Report should be compiled by an EAP.	As below
Prospecting Right	Review of Financial Provision Quantum	Review on FP amount as stipulated in the PR Regulations (Pending)	Technical Director (or person designated by the technical director) on behalf of the Right Holder is responsible to ensure that the reports are submitted.	Annually on the anniversary of the right
Prospecting Right	Environmental Monitoring Reports	As per previous table	As per previous table	As per previous table
Prospecting Right	EPA (Environmental Performance Assessment)	Assessment, compilation completion and submission of the report	Compiled by a knowledgeable professional	Bi-annually on the

SOURCE ACTIVITY	REQUIRED REPORTS	FUNCTIONAL REQUIREMENTS FOR REPORTING	ROLES AND RESPONSIBILITIES	REPORTING FREQUENCY TO THE CA and TIME PERIODS
	Or Environmental Audit Report	as regulated by the MPRDA and associated Regulations Or Assessment, compilation completion and submission of the report as regulated by NEMA and associated Regulations	Or Compiled by an EAP	anniversary of the right Or As determined by the EMP or determined by the CA (DMR)
Prospecting Right	As may be requested by the CA/DMR	As prescribed by the CA/DMR	As prescribed by the CA/DMR	As prescribed by the CA/DMR
Prospecting Right	EMPlan or EA Amendments	In terms of NEMA EIA Regulations. As and when required for any significant changes to the impacts resulting from the Activity; commonly linked to a S102 (MPRDA)	Compiled by an EAP	Preceding the envisaged changes / amendments
Prospecting Right	Environmental report linked to the renewal of a prospecting right	Assessment, compilation completion and submission of the reports as regulated by the MPRDA and/or NEMA and associated Regulations	Compiled by a knowledgeable professional	On Closure following cessation of the right or part thereof
Prospecting Right	Closure Report	Assessment, compilation completion and submission of the reports as regulated by the MPRDA and/or NEMA and associated Regulations	Compiled by a knowledgeable professional	On Closure following cessation of the right or part thereof

No identified impacts require formalised quantitative monitoring programmes.

5.2. Functional requirements for monitoring programmes.

Refer to the previous table accompanying 5.1

5.3. Roles and responsibilities for the execution of monitoring programmes.

Refer to the previous table accompanying 5.1

The prospecting project manager is responsible to ensure the execution of monitoring programmes where required.

5.4. Committed time frames for monitoring and reporting.

Refer to the previous table accompanying 5.1

6. REGULATION 52 (2) (f): Closure and environmental objectives.

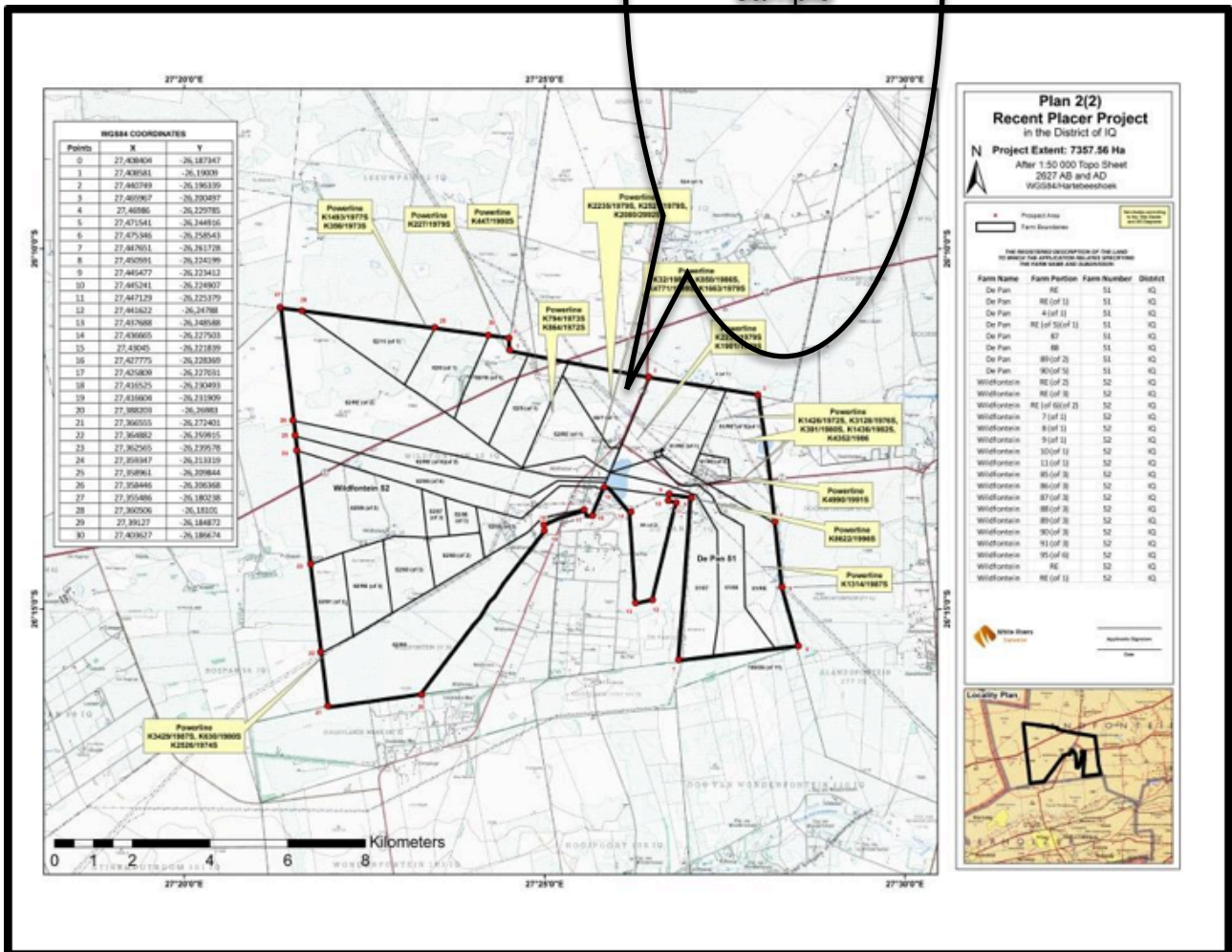
6.1. Rehabilitation plan.

(Show the areas and aerial extent of the main prospecting activities, including the anticipated prospected area at the time of closure).



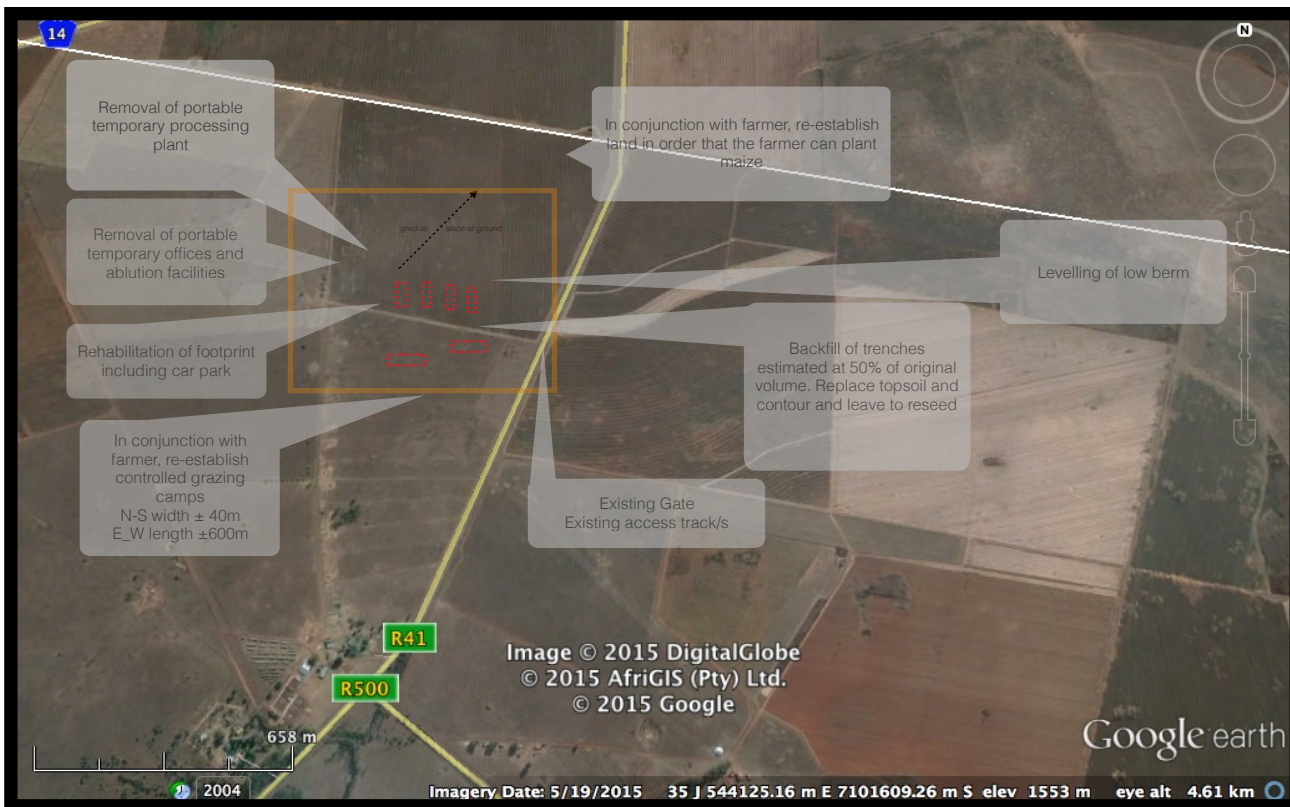
The following set of maps and diagrams show the positions of the main activities with dimensions moving sequentially where the first map shows the existing prospecting right area; the second map shows the focus area and approximate position of the **rehabilitation** of the planned prospecting trenching and subsequent bulk samples. The final plan is a Google-Earth image of the bulk-sample area only, followed by a table showing anticipated, approximate dimensions.

Rehabilitation site:
trenching and bulk
sample





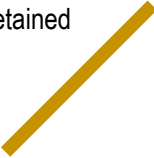

PROSPECTING FOCUS AREA SHOWING THE APPROXIMATE POSITION OF THE PLANNED INVASIVE PROSPECTING I.E. TRENCHING AND BULK SAMPLING. FOR THE EMPLAN AMENDMENT THE FOCUS AREA INCLUDES THE FOLLOWING PORTIONS OF THE FARMS:

- De Pan 51 IQ: portions RE, RE1, 4, RE5, 87, 88, 89 & 90; and
- Wildfontein 52 IQ: portions RE, RE3, 7, 11, 88, 90, 91 and 100 (consolidated from RE1, RE2, RE6, 8, 9, 10, 85, 86, 87, 89 & 95).



CONCEPTUAL DIAGRAM OF THE BULK SAMPLE SITE REHABILITATION.

MAP LEGEND	ACTIVITY	EXTENT	LISTING NOTICE
<ul style="list-style-type: none"> Area of prospecting right application outlined in black and defined by red dots 	<p>Prospecting Right</p> <p><u>Listed Activity in terms of NEMA:</u> Any activity including the operation of that activity which requires a prospecting right in terms of section 16 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).</p>	Existing Prospecting Right GP466PR: 16 638,0952 Ha	GNR 983/20
<ul style="list-style-type: none"> Area of prospecting right application outlined in black and defined by red dots 	<p>Prospecting Right</p> <p><u>Listed Activity in terms of NEMA:</u> The removal and disposal of minerals contemplated in terms of section 20 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002), including associated infrastructure, structures and earthworks, directly related to prospecting of a mineral resource, including activities for which an exemption has been issued in terms of section 106 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002).</p>	± 8 Ha parts of which may be bulk sampled	GNR 984/19
SPECIFIC PROSPECTING SUB-ACTIVITIES			
<ul style="list-style-type: none"> Not on plan – work done off-site 	<p><u>Prospecting Activity:</u> Desk-top studies and site visits; Review, re-processing and analysis of data.</p>	N/A	GNR 983

MAP LEGEND	ACTIVITY	EXTENT	LISTING NOTICE
<ul style="list-style-type: none"> Area of prospecting right application outlined in black and defined by red dots 	<u>Prospecting Activity:</u> Geological Mapping (optional)	Existing Prospecting Right GP466PR: 16 638,0952 Ha or part thereof	GNR 983
<ul style="list-style-type: none"> Area of prospecting right application outlined in black and defined by red dots 	<u>Prospecting Activity:</u> Geophysics	Existing Prospecting Right GP466PR: 16 638,0952 Ha or part thereof	GNR 983
 Rehabilitated	<u>Prospecting Activity:</u> Trenching and bulk sampling For clarity: the trenches will be used for the bulk sampling. The extent is taken as the largest excavation area. <u>Proposed PWP:</u> 6 trenches 55m length 10m width = 550m area per excavation = 3,300m total excavation area = 0,33 Ha 3m depth	Bulk sample total excavation = 0,3300 Ha Overburden & spoils = 75m ² Post rehabilitation subsidised area = 0,3300Ha Maintenance & aftercare for 2-3 years ± 1 Ha General surface rehabilitation = 1 Ha	GNR 983 GNR 384
 Rehabilitated	<u>Prospecting Activity:</u> Temporary processing plant Temporary offices Temporary ablution facilities	Processing plant = 625m ³ Steel buildings and structures = 50m ² Housing&/or offices = 60m ²	GNR 983 GNR 384
 Retained	<u>Prospecting Activity:</u> Temporary access track Use of existing roads. The proposal is to re-enforce the existing farm fire-break / track to the cultivated field with gravel. Length of existing track is ±700m Length of access track required 170m - 600m	Length of track allocated for financial quantum calculation: 600m ²	GNR 983
	<u>Prospecting Activity:</u> Closure processes		GNR 983 GNR 384

6.2. Closure objectives and their extent of alignment

Intended end use for the area prospected/mined after closing of operations

If prospecting is successful then an area, probably significantly reduced, will be set aside for mining. An application for a mining right would then be submitted.

For the remaining area, or the total area if prospecting is unsuccessful, the aim is that the area will return to its current state and use which is expected to continue during prospecting and no long-term effects are expected to result from the prospecting phase.

What the Environment will Look like After a Closure Certificate has been Obtained.

Rehabilitation Plan

This takes place during the operational phase of the activity. The hole/s are planned to be back-filled in reverse order to which they are excavated using material removed from the excavation. It is estimated that approximately 50% of the material will be available for infill after processing. It is anticipated that the remainder, the "ore" would be removed from site and sold. The post-bulk-sample surface will therefore be indented compared to the pre-trenching surface. Subsidence is anticipated in the excavation area around, where it occurs is filled in. Where necessary the removed topsoil is returned and contoured and allowed to seed naturally. A rehabilitation check is done by the responsible person at the end of the bulk-sampling campaign and any discrepancies fixed immediately.

Sample positions will be filled in where applicable. Temporary tracks, vehicle parking, plant and office sites will be cleared of rubbish, levelled where necessary and left to reseed naturally or allowed to stand for future planting. Bulk sample trenches may be back-filled with unwanted material previously removed. For the area of bulk sample trenches the trenches will be filled but may form vegetation filled depressions. It is uncertain if they will be able to be used for cultivation as the farming machinery may prefer a more level surface. Camp and plant sites (if constructed) will be rehabilitated. Once rehabilitation measures have become effective, the environment will look similar to the pre-existing environment.

The rehabilitation plan is aligned with the closure objectives.

A surface use agreement is in negotiation with the surface owner and surface users for this purpose.

6.3. Confirmation of consultation.

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

It is hereby confirmed that consulted representatives of the community, landowners and interested and affected parties were given the opportunity to view the original DRAFT EMPlan and PWP and give input into the final EMPlan INCLUDING the CLOSURE OBJECTIVES.

For the Amended EMPlan, the I&AP register, for the Focus area have been preferentially contacted providing working phone or e-mail contact details were available and given the opportunity to be consulted on the amendment.

The surface owner for the portion on which the bulk sampling (and associated trenching) was specially consulted and given the opportunity to participate in the compilation of the list of potential impacts. Mr Lubbe met with WRE representatives on 14 October 2015 followed by an independent consultation meeting on 20 October 2015 undertaken by Kasoro. Mr W Lubbe's extensive inputs from the 2008 consultation have been included.

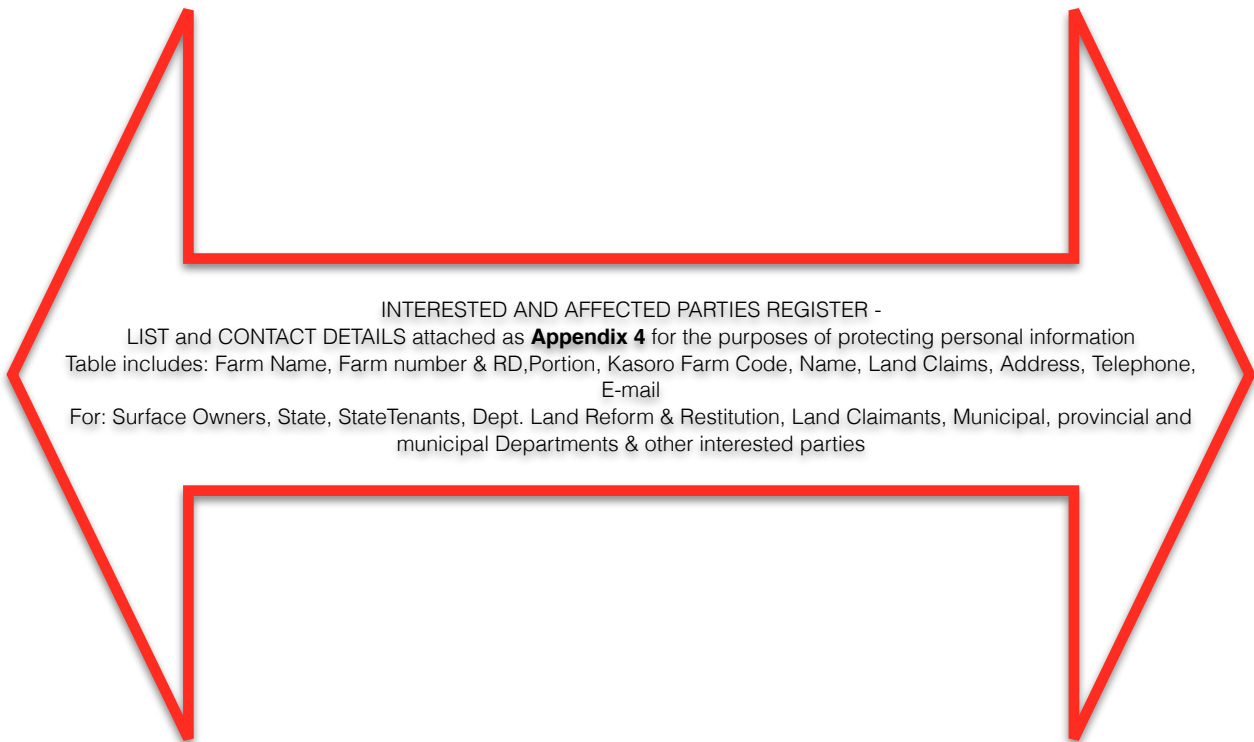
Eskom, which power lines pass over the proposed bulk-sample area, have been consulted as part of the Amended EMPlan consultation process and their inputs included. A Development Agreement (included in Appendix 5) was signed by Eskom on 3 August 2015.

7. REGULATION 52 (2) (g): Record of the public participation and the results thereof.

7.1. Identification of interested and affected parties.

(Provide the information referred to in the guideline)

Refer to the Interested and Affected Part Register, Appendix 5, for the list and contact details.



Additional Parties Consulted:

Municipality
Land Claims North West State Province (Department of Land Reform and Restitution)
Farmers Union/s
Department of Agriculture
SAHRA (South African Heritage Association)
Department of Water Affairs
Department of Public Works, Roads and Transport
WESA (Wildlife and Environmental Society of South Africa)

7.2. The details of the engagement process.

This Amended EMPlan is in response to the right holder's, WRE, application for "permission to remove minerals" in terms of section 20 of the MPRDA, 2002 and the associated amended PWP to include trenching followed by bulk sampling. Kasoro has been requested by WRE to compile an Amended EMPlan to exclude the planned drilling and include trenching followed by bulk sampling on the same site. The site, i.e. portion 7 of Wildfontein 52 IQ is specified for the Amended EMPlan.

The PWP remains similar for non-invasive prospecting and therefore no further consultation or changes to the EMPlan were deemed to be required for this aspect. This applies to the full prospecting right.

The PWP changes significantly for the specific portion on which bulk sampling is planned. The AmendedEMPlan therefore concentrates on this Focus Area (indicated by the client) and is intensified for the specific portion on which the bulk sampling is planned.

The consultation and Public Participation Process for the prospecting right took place in 2008 and was done by SEF and reported in the EMPlan for GP466PR, Approved 2011. The reader is referred to **Appendix 6** for the official summary, summaries, reports and full documentation from this process which is transferred and appended to this AmendedEMPlan. In the sections that follow - lists have been included. Note: these exclude concerns related to the original right application as well as drilling where it cannot be re-interpreted for trenching and bulk sampling.

The 2008 Full PPP and Consultation processes took the form of advert/s, site notices, Knock and Drop delivery, faxes, post, e-mails and phone calls. A public meeting was requested and held on 3 November 2015. Correspondence and meetings took place with parties on request. Follow-up was done to seek solutions to concerns raised where these were not addressed in the public meeting. Refer to **Appendix 6**.

In 2015, for the EMPlan amendment process, the I&AP Register from the ApprovedEMPlan was used to notify I&AP's of the proposed change to the PWP. This information is appended as **Appendix 5**.

Following from the explanation above: the first **DIRECTLY affected party** is the farmer on whose portion the bulk sampling is planned, Mr Lubbe. While apparently notified that mining/additional invasive prospecting is planned on his land telephonically by Shango Solutions (contractors to WRE)(pers. comm. Shango Solutions, 2015), this party was unavailable till end September 2015 to arrange to meet with the client to discuss the proposed prospecting and negotiate a Surface User and Compensation Agreement. On 14 October 2015, a meeting took place between WRE and Mr Lubbe. Once notified of WRE's plans, Kasoro undertook a separate, independent consultation with Mr Lubbe on 20 October 2015. In 2008, Mr Lubbe, through his legal representative, Foster Attorneys, did make a significant contribution to the 2008 consultation process and this has been included in the 2015 environmental assessment. For detail, the reader is referred to the correspondence and minutes of meetings held in late 2008 (**Appendix 6**).



The second **DIRECTLY affected party** is Eskom, the owner of the power lines which transect (over) the area of the proposed bulk sample. It is deemed imperative by the EAP that this party is consulted as regards the amendments. In January 2015, Eskom was apparently consulted by Shango Solutions (19 January 2015). In September 2015, the local representative for Eskom was notified in person (17 Sept 2015) and by phone (22 Sept. 2015) again on 29 September. On 30 September Kasoro was notified by the client of the agreement concluded between WRE and Eskom, signed 3 August 2015 (**Appendix 5**).

Of import are the government, provincial, municipal and local bodies. In 2018, the area was in North West Province and those parties were consulted. The details of the PPP for the prospecting right are included in Appendix 6. As a courtesy, written notification of the PWP changes were e-mailed to those contactable parties from the I&AP Register which supplied e-mail addresses. The area now falls under the jurisdiction of Gauteng Province. Because of the provincial changes, as part of the 2015 amendment, affected parties from the Gauteng Province were notified in writing of the amendment process and invited to be consulted. The Merafong Municipality remains the same despite the changes in province.

Other affected parties are those in the Focus Area. For this area Kasoro sent out written notification by e-mail using the e-mail, fax or phone contacts on the 2008 I&AP Register. It should be noted that making contact was difficult and slow as most of the contact details did not work. This is exacerbated by the fact that the 018 landlines very often do not appear to be operational, the postal service is too slow and unreliable to be used and many of the e-mail addresses no longer exist. This area is not affected by the changes other than the courtesy of letting the parties know that the PWP has changed and updating them as to those changes. Recipients were invited to arrange for a personal consultation. A few responded with the request and in addition to the phone consultation while setting up meetings (done by M.A. Robertson & A. Prinsloo), personal consultations were done in the period 17 September to 2 October 2015 by Mr A Prinsloo with those parties.

Interested Parties are represented by the surface owners of the remainder of the prospecting right plus any interested parties as per the I&AP Register from 2008. For the amendment, the remainder of the prospecting right area is unaffected. Where an e-mail address was available, these parties were notified as a courtesy and invited to request a consultation.

Consultation is viewed by the right holder as an on-going process.

7.2.1. Description of the information provided to the community, landowners, and interested and affected parties.

Consultation and PPP for the prospecting right application:

This process was concluded for the original Consultation and PPP in 2008 for which a prospecting right has already been awarded. The PPP and Consultation information is appended in **Appendix 6**.

Consultation with DIRECTLY AFFECTED Parties and notification to the I&AP Register; for the EMPlan Amendment

For the amendment process for contactable members as per the I&A Register plus DIRECTLY affected parties:

- Cover e-mail
- Notification letter
- Response sheet
- Description of the PWP changes
- Map of the focus area
- Location of the proposed bulk sample (and trenching site)
- Invitation for a personal consultation
- Contact details for Kasoro

Where requested plus for DIRECTLY affected parties, a personal consultation was usually undertaken and the I&AP's given the opportunity to discuss the proposed prospecting and environmental implications. If required, meetings were held with communities, land claimants and tenants. The parties consulted were requested to sign a notification and response letter (**Appendix 5**) and were given the opportunity to raise their objections and to input into the consultative process. The consultant had the following available for viewing:

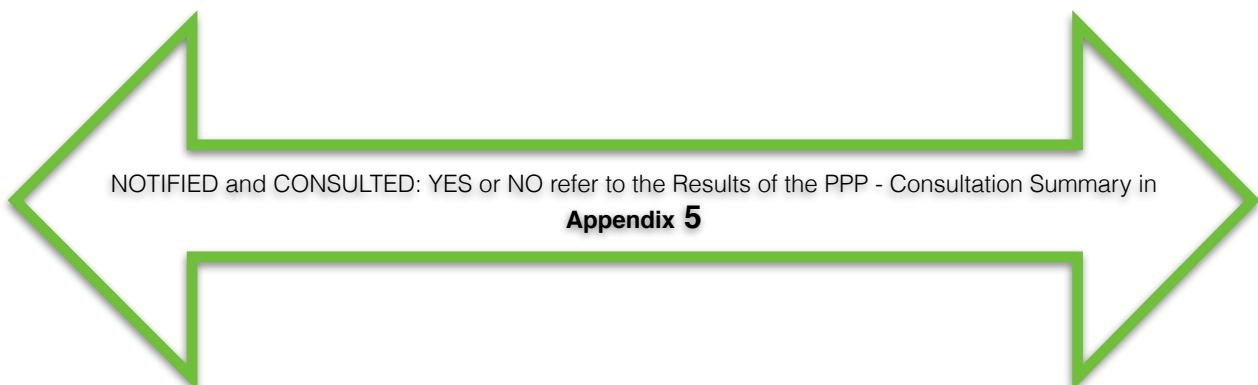
- The Acceptance letter for GP00466PR N/A right already awarded
- A Map of the Prospecting Right area and the Focus area
- A copy of the amended SAMRAD-PWP for discussion

In addition, DIRECTLY affected parties were able to view:

- Conceptual diagram of the proposed trenching and bulk sampling site.
- Plans for rehabilitation
- It is assumed that WRE or its representatives will discuss details of the planned bulk sampling when they meet DIRECTLY affected parties.

Copies of the Notification letter is appended to **Appendix 5**.

7.2.2. List of which parties identified in 7.1 above that were in fact consulted, and which were not consulted.



Refer to **Appendix 6** for details on the 2008 Consultation for the Prospecting Right:

Refer to the Consultation Summary Table, **Appendix 5**, showing the parties notified and/or consulted as part of the 2015 amendment process. The most important of which are tabled below.

Summary Table: Parties DIRECTLY affected by the PWP amendment to include bulk sampling and associated trenching.

Farm Name & portion	DIRECTLY Affected Surface Owner	DIRECTLY AFFECTED Surface User	Notified & Consulted during PPP process in 2008	Notified 2015	Consulted 2015
Wildfontein 52 IQ, portion 7	Mr W. Lubbe	Mr W. Lubbe	YES	YES	YES Agreement in negotiation
Wildfontein 52 IQ, portion 7		Eskom Line Management	YES	YES	YES Agreement signed 3 August 2015
Municipal, Provincial & Government Parties - various	N/A	N/A	YES	YES	YES Consultation part of written notification No further consultation requested by these parties to date

Of the 2 DIRECTLY affected surface representatives, 2 signed the proof of notification letters, the remaining parties, including government and municipal affected parties, were notified and consulted but chose not to sign the letter; no comments and/or objections from the 2015 process have been received to date.

7.2.3. List of views raised by consulted parties regarding the existing cultural, socio-economic or biophysical environment.

Comment / Concern / Issue Raised	Period	Commentator/s	Response / Solution
This is highly productive agricultural land; Only the house is not on cultivated land and it is their only source of livelihood. Planting of maize.	2015 Phone Call and personal consultation meeting with Mr Prinsloo of Kasoro	Ms R Strydom Rina and Piet Strydom	Noted for the EMPlan
Agricultural land; highly productive; only source of income. Planting of maize and grazing.	2015 Phone Call and personal consultation meeting with Mr Prinsloo of Kasoro	Mr Jaco Nortje and his father	Noted for the EMPlan
Mr Lubbe also owns more properties in the area. One of the best agricultural farms in the country. Maize farming, also planting sunflower and beans. Stud cattle farming; very sensitive of any disturbance. No natural land remains only agricultural land and grazing land.	2015 Phone Call and personal consultation meeting with Mr Prinsloo of Kasoro Agreement between prospector and land owner in negotiation	Mr W. Lubbe	Noted for the EMPlan
Eskom main-line traverses proposed bulk small site (Prospector and EAP)	2015 Phone Calls, emails and site visits 2015 WRE - Eskom Development Agreement signed 3 August 2015	ESKOM Mr T Marota (ptn 19, De Pan) Sub-station Manager Ms L Marota (ptn 19, De Pan) Line Manager L Motsisi (Megawatt Park) Mr W. Snyman (Gauteng Land Development, agreement)	Noted for EMPlan.
Stated that other mines have already done studies in the area and enquired why that data could not be used.	2008 Public Meeting	Ms R Strydom	Other studies have been deemed insufficient to determine whether mining would be feasible.
Stated that African Mine has been mining the Black Reef	2008 Public Meeting	Mr K van Rensburg	Black Reef is one of the targets for prospecting

Comment / Concern / Issue Raised	Period	Commentator/s	Response / Solution
Stated that in other areas where mining took place, surrounding landowners had to leave the area due to the safety issues that result from mining	2008 Public Meeting	Mr ME Oosthuizen	The mines prefer if people sell their land, but landowners will not be forced to sell their land if they do not want to. At this stage it is still very early to determine whether land owners will have to in fact sell their land.
Disagreed with the ecological assessment which stated that the area had already been impacted on by mining. Stated that this is true south of Carletonville but not to the north. Stated that the area had high potential agricultural land and has not been impacted by crime or environmental degradation of that in the south.	2008/11/04 Telephonic	Ms R Strydom	SEF apologised for the broad statement; only some parts of the application area have been impacted on by mining, and it is correct that there are also some areas on site that must be protected and conserved. 2015 Noted for inclusion in the EMPlan
Sinkholes have damaged two roads close to Mr Lubbe's properties and one sinkhole has opened up on his property. Safety concerns.	2008/11/10 - 2008/12/09 fax, response,etc see 7.2.4	Foster Attorneys on behalf of Mr WP Lubbe	See 7.2.4 below 2015 Noted for inclusion in the EMPlan
Depth of water abstraction 80m - 100m	2008/11/10 - 2008/12/09 fax, response,etc see 7.2.4	Foster Attorneys on behalf of Mr WP Lubbe	2015 Noted for inclusion in the EMPlan
Mr Lubbe's properties consist mostly of dry land and is high quality agricultural land. On the property there are different buildings like dwellings, barns and crawls.	2008/11/10 - 2008/12/09 fax, response,etc see 7.2.4	Foster Attorneys on behalf of Mr WP Lubbe	2015 Noted for inclusion in the EMPlan
This area has very good agricultural land.	2008	Ms R Strydom	The agricultural potential of the land will not be affected by the (initial) prospecting actives. Any areas of cultivation will be avoided where-ever possible and should damage to cultivated land take place, compensation will be provided. Once prospecting ceases, the site will be ripped and seeded and the boreholes where the core samples are taken will be capped.
The area is predominantly dolomitic with the presence of "fossil waters" which are centuries old. Certain water sources in the area have already died up such as the "Oog van Wonderfontein (out of the Focus area) , Malonies Eye (near Magaliesberg)(out of the right area) and Groot Pan. According to research done by Mr Lubbe on dolomite water, fossil water and underground lakes; the systems are complex and the ecological impacts of pumping water from these are unknown. Mr Lubbe also suggested research on the adjacent farm of Holfontein which is north of the prospecting right area.	2008/11/03 Public Meeting 2008/11/10 Fax 2008/11/11 Response 2008/11/27 Meeting 2008/12/09 Fax	Foster Attorneys on behalf of Mr WP Lubbe	Review of the Far West Rand Dolomitic Water Association (FWDWA) database will be undertaken, and the groundwater table will be depicted. Any additional information gathered during prospecting will be provided to the FWRDWA to enhance their database. 2015 Noted for the EMPlan The EMPlan will include careful use of the groundwater, where and if required as a recommended mitigation factor.
Mr Erickson has an 80m deep water borehole	2008 Public Meeting	Mr S Erickson	2015 Noted

Refer to the "Consultation Summary Table and Appendices 5 & 6, for detail.

7.2.4. List of views raised by consulted parties on how their existing cultural, socio-economic or biophysical environment potentially will be impacted on by the proposed prospecting or mining operation.

Comment / Concern / Issue Raised	Period	Commentator/s	Response / Solution
Concerned that damage caused by prospecting might have influence on their income as only the house is not on cultivated land and it is their only source of livelihood. Loss of income in the case of bulk trenching. Damage to topsoil. Understood form discussions with Shango Solutions that prospecting results on their farms proved mining to be unfeasible and unsustainable.	2015 Phone Calls, email and personal consultation meeting with Mr Prinsloo of Kasoro	Ms R Strydom Rina and Piet Strydom	Noted for the EMPlan. Mr & Mrs Strydom requested prior contact and inform land owners about planned activities. Compensation is payable and rehabilitation includes topsoil to be replaced.
Loss of income in case of bulk sample and trenching. Damage to topsoil. Understood form discussions with Shango Solutions that prospecting results on their farms proved mining to be unfeasible and unsustainable.	2015 Phone Calls, email and personal consultation meeting with Mr Prinsloo of Kasoro	Mr Jaco Nortje and his father	Noted for the EMPlan. The Nortje's requested prior information on planned activities Compensation is payable and rehabilitation includes topsoil to be replaced.

Comment / Concern / Issue Raised	Period	Commentator/s	Response / Solution
Proposed bulk sample site is over cultivated land (maize) and would break down three stud specialised cattle bull camps. Mr Lubbe says that the cattle are very sensitive to disturbance. Loss of income on the best agricultural land in the country. Mr Lubbe states that any damage to the topsoil is going to be permanent. Mr Lubbe emphasised that he undertakes long-term planning and this process, including the consultation process and pre-bulk sampling phase, is interfering with these plans. Mr Lubbe feels that payment for any of his time used should be paid. He would ideally like to stop prospecting but will negotiate. He is concerned that the government may expropriate his land.	2015 Phone Call and personal consultation meeting with Mr Prinsloo of Kasoro Agreement between prospector and land owner in process	Mr W. Lubbe	<p>Noted for the EMPlan.</p> <p>According to WRE's representatives and re-iterated by Mr Lubbe; an agreement is in the process of being drawn up between the parties.</p> <p>Mr Lubbe feels that all his land, not just this portion, should be purchased by the prospector.</p> <p>Ongoing and open communication particularly about the nature, placement and timing of invasive activities is advised by the EAP.</p> <p>No payments are usual or planned to compensate for time taken by the consultation and negotiation process, however this could be discussed between the two parties to agree; it would not form part of the EMPlan.</p> <p>Land purchase should similarly be discussed between the parties as part of their agreement.</p> <p>Expropriation is unusual nowadays and would only be contemplated if negotiations break down completely at which point the DMR would assess the situation and independent REMDC meetings would be held to determine the correct procedure to be followed.</p> <p>(EAP note on accuracy of statement: topsoil is removed and replaced, it may be damaged but not permanently).</p>
Damages to existing infrastructure must be mitigated. Safety is the responsibility of the prospector. Compensation for damage as a result of prospecting to be borne by the prospector.	2015 Phone Calls, emails and site visits 2015 WRE - Eskom Development Agreement signed 3 August 2015	ESKOM Mr T Marota (ptn 19, De Pan) Sub-station Manager Ms L Marota (ptn 19, De Pan) Line Manager L Motsisi (Megawatt Park) Mr W. Snyman (Gauteng Land Development, agreement)	20150803 - WRE-Eskom Agreement signed by Eskom stating compliance and mitigation measures required (see Appendix 5). Noted for EMPlan. Development must be 6m distance from overhanging lines.
Estimated timing of Mining to start should prospecting be successful	2008 Public Meeting	Mr G Gaebler	Prospecting right is for 5 years after which the company has to apply for a mining right. 2015 Note: a renewal may fit between these two with a maximum of 3 years.
What does a soil sample entail	2008 Public Meeting	A meeting attendee	Not the same as a bulk sample. Size < 0,5kg. 2015 Note: a soil sample may be larger than this but is collected with a spade and is usually < the size of a mielie bag.
Would the prospecting company be looking for visible outcrops	2008 Public Meeting	Mr S Erickson	Yes, but an investigation of outcrops will really not be undertaken. Soil sampling is planned i.e.shallow.
The following issues must be addressed by the EMPlan (1) Safety of visitors around adits, trenches, open pits etc (2) visual appearance of adits, pits, trenches etc (3) proposed location of mining, treatment and exploration infrastructure; (4) proposed location of waste and reef dumps and slimes dams;water management in the area of exploration and mining (5) Noise and Air pollution	2008/30/10 email	Mr C van Rensburg - Geological Researcher, NW University	<p>There will be no adits/open pits as part of prospecting activities</p> <p>There will be no mining activities or mine treatment plants, mining waste and mining reef dumps or slimes dams as part of prospecting</p> <p>Included in the EMPlan are relevant mitigation measures for safety, visual appearance, water management, noise and air pollution and the location of prospecting infrastructure is also addressed.</p> <p>2015: Mining is not part of the PWP. Noted and addressed in EMPlan where applicable.</p>
EMPlan should consider the effect that prospecting will have on the water table, geological conditions (taken to mean sinkholes not the general geology as that is counter intuitive to a prospecting right) as well as the value of properties	2008/11/03 email	Ms J Evans - Merafong City Local Municipality	<p>Review of the Far West Rand Dolomitic Water Association (FWDWA) database will be undertaken, and the groundwater table will be depicted. Any additional information gathered during prospecting will be provided to the FWRDWA to enhance their database.</p> <p>2015 The EMPlan will include careful use of the groundwater, where and if required as a recommended mitigation factor.</p>

Comment / Concern / Issue Raised	Period	Commentator/s	Response / Solution
<p>Submits that the properties are in a dolomitic area and the water resources are very sensitive. If the prospecting operations of the applicant have a negative effect on the water resources especially the underground resources it will have an intensive effect on the property owner. If the water dries up because of prospecting operations the value of the property will decrease immensely.</p> <p>More sinkholes have emerged recently and it will have a negative effect to the value of the property and may even be life threatening. The owner therefore request for extensive geologist reports and consultation with the geologist.</p>	<p>2008/11/03 Public Meeting 2008/11/10 Fax 2008/11/11 Response 2008/11/27 Meeting 2008/12/09 Fax</p>	<p>Foster Attorneys on behalf of Mr WP Lubbe</p>	<p>Review of the Far West Rand Dolomitic Water Association (FWDWA) database will be undertaken, and the groundwater table will be depicted. Any additional information gathered during prospecting will be provided to the FWRDWA to enhance their database.</p> <p>2015 The EMPlan includes careful use of the groundwater, where and if required as a recommended mitigation factor.</p>
<p>Mr Lubbe requests information regarding the person or persons that will do the prospecting. Will it be WRE, the applicant, or will a contractor be used. If it is WRE, Mr Lubbe requests the details of the persons that will be present on the property while doing the prospecting operations and who will be in charge.</p> <p>If a contractor is used, a copy of the Contractors Agreement as well as the details of the person that will be responsible on the property is requested.</p>	<p>2008/11/03 Public Meeting 2008/11/10 Fax 2008/11/11 Response 2008/11/27 Meeting 2008/12/09 Fax</p>	<p>Foster Attorneys on behalf of Mr WP Lubbe</p>	<p>A contractor will be employed to undertake the prospecting. A contractor's Agreement is not yet in place.</p> <p>2015. The underlying concern for safety is addressed in the EMPlan. WRE or its representative will notify a land owner/ land user (using the I&AP Register), or their representative prior to coming onto land in order to prospect. This will enable Mr Lubbe to request the letter suggested below.</p> <p>A Contractors Agreement is a confidential document between the signatory parties; WRE can, on request, supply a letter to Mr Lubbe confirming the contractor/s used for exploration.</p>
<p>How many persons will work and sleep on the property?</p>	<p>2008/11/03 Public Meeting 2008/11/10 Fax 2008/11/11 Response 2008/11/27 Meeting 2008/12/09 Fax</p>	<p>Foster Attorneys on behalf of Mr WP Lubbe</p>	<p>For drilling, there will be a maximum of 10 employees who will be undertaking the prospecting activities for the initial PWP.</p> <p>2015. The number of employees for bulk sampling will be discussed by WRE or its representative with Mr Lubbe when arranging access.</p>
<p>What would be done about sewerage and refuse?</p>	<p>2008/11/03 Public Meeting 2008/11/10 Fax 2008/11/11 Response 2008/11/27 Meeting 2008/12/09 Fax</p>	<p>Foster Attorneys on behalf of Mr WP Lubbe</p>	<p>Waste material generated by prospecting activities will be collected in a responsible manner on site and routinely removed from site and disposed of at the appropriate recognised municipal waste disposal facility. This includes all domestic waste material produced.</p> <p>Serviced chemical toilets will be provided.</p>
<p>Enquired how issues related to fire will be dealt with</p>	<p>2008/11/03 Public Meeting 2008/11/10 Fax 2008/11/11 Response 2008/11/27 Meeting 2008/12/09 Fax</p>	<p>Foster Attorneys on behalf of Mr WP Lubbe</p>	<p>Fires will only be allowed subject to negotiations with landowners. If required by applicable legislation, a fire-break shall be cleared around the perimeter of the camp and office sites.</p>
<p>Enquiry about access to property and roads.</p>	<p>2008/11/10 - 2008/12/09 fax, response,etc see 7.2.4</p>	<p>Foster Attorneys on behalf of Mr WP Lubbe</p>	<p>As far as possible, access roads will not be contracted and existing road infrastructure will be utilised.</p>
<p>Enquiry about where the sludge dams will be placed and what the effect will be on the environment.</p>	<p>2008/11/03 Public Meeting 2008/11/10 Fax 2008/11/11 Response 2008/11/27 Meeting 2008/12/09 Fax</p>	<p>Foster Attorneys on behalf of Mr WP Lubbe</p>	<p>There will not be any sludge dams as part of prospecting. Small, temporary sumps may be used for water recycling,</p> <p>2015 In the event water is required. These are typically plastic or lined with plastic to prevent impacts on the environment.</p>
<p>Enquired what safety precautions would be taken.</p>	<p>2008/11/10 - 2008/12/09 fax, response,etc see 7.2.4</p>	<p>Foster Attorneys on behalf of Mr WP Lubbe</p>	<p>Prospecting activities will comply with the Mine Health and Safety Act.</p>
<p>Enquired on rehabilitation plans</p>	<p>2008/11/10 - 2008/12/09 fax, response,etc see 7.2.4</p>	<p>Foster Attorneys on behalf of Mr WP Lubbe</p>	<p>These were discussed in the public Meeting and were also in the EMPlan.</p> <p>2015 Rehabilitation plans for bulk sampling will be discussed with Mr Lubbe and his concerns included in the EMPlan.</p>

Comment / Concern / Issue Raised	Period	Commentator/s	Response / Solution
<p>Concerns regarding compensation for damage:</p> <p>Requested a proposal regarding compensation or payment are requested, as well as the proposal regarding loss of income that Mr Lubbe may suffer.</p> <p>If the applicant does bulk sampling or drilling while the land has been cultivated it shall be to the loss of the owner. What proposed steps will be taken not to interfere with the cultivation and harvest on the property.</p> <p>Requested information on compensation for damaged property and further enquired about who would suffer the costs of rehabilitation once drilling has taken place.</p> <p>Stated that full responsibility should be taken by WRE for the loss of borehole water, damage to property (house, storerooms, dams and cultivated grazing fields), any stress caused to animals due to drilling activities.</p> <p>Stated that compensation will be requested should any damage be done to property,</p>	<p>2008/11/03 Public Meeting 2008/11/10 Fax 2008/11/11 Response 2008/11/27 Meeting 2008/12/09 Fax</p> <p>2008/10/08 Fax</p> <p>2008/10/29 Fax</p> <p>2008/10/27 fax</p>	<p>Foster Attorneys on behalf of Mr WP Lubbe</p> <p>Mr JPF Kirsten</p> <p>Mr LJ Nortje</p> <p>Ms S Van Heerden</p>	<p>Compensation will only be offered if there is damage to property or land as a direct result of prospecting activities. It is too early at this stage to know which landowners will require compensation.</p> <p>Areas of cultivation will be avoided as far as possible. If any cultivated land is damaged by the prospecting activities then compensation will be provided.</p> <p>2015. WRE is currently in negotiations with Mr Lubbe as a DIRECTLY affected party in the bulk sampling activity.</p>
<p>The EMPlan should consider air, water and ground pollution. It should furthermore take into consideration commercial business activities, residential areas and roads.</p>	2008/11/03 Fax	Mr JN Van der Merwe	All identified impacts (including air, water, and ground pollution) were addressed in the 2008 EMPlan.
<p>Concerns regarding water:</p> <p>Stated that he has a 80m deep borehole and wanted to know what will happen to the groundwater if a prospecting borehole causes the water to disappear.</p> <p>The EMPlan should consider the impact that prospecting activities will have on the water table.</p> <p>Water in the area is a concern, and he currently only has ± 400 litres of water per day, which he sources from a borehole. He intends to drill another borehole, however because it is costly, he is reluctant to do so.</p> <p>Requested information on the supply of water and who would be responsible for supplying it if it is drilled away.</p> <p>Stated that WRE should take full responsibility for loss of groundwater.</p> <p>Raised his concern about water that may be affected by the operation.</p> <p>Stated that groundwater in the area is very poor and much care should therefore be taken to ensure that no disturbance of the water table take place.</p>	<p>2008 Public Meeting 2008/11/03 email 2008/11/22 email 2008/10/08 Fax 2008/10/13 Fax 2008 Post 2008/11/06 Fax</p>	<p>A meeting attendee MJ Evans Mr G Gaebler Mr JPF Kirsten Mr FJ Labuschagne Mr MA Mokoatle Mr C Nagel</p>	<p>Any loss in groundwater as a result of prospecting activities will be compensated for by the prospecting company.</p> <p>Review of the Far West Rand Dolomitic Water Association (FWDWA) database will be undertaken, and the groundwater table will be depicted. Any additional information gathered during prospecting will be provided to the FWRDWA to enhance their database.</p> <p>2015 The EMPlan includes careful use of the groundwater, where and if required as a recommended mitigation factor including, that the surface owner must be included in the planning if it becomes necessary for underground water to be used or pumped from the proposed bulk sample site.</p>
<p>Concerns regarding the geology (sinkholes) of the area due to boreholes and abstraction of water:</p> <p>There is a big risk for sink holes forming in the area, which could be dangerous. Requested details for management in order to discuss these.</p> <p>The area has high potential agricultural land and there is a good chance of sinkholes forming due to the dolomitic land.</p>	<p>2008/11/03 email 2008/10/13 Fax 2008/10/29 Fax</p>	<p>Ms J Evans - Merafong City Local Municipality Mr FJ Labuschagne Mr LJ Nortje</p>	<p>Prospecting will take place above 100m depth. The prospecting is therefore unlikely to intercept the ground aquifer. If a borehole does intercept the aquifer the groundwater resources are unlikely to be impacted upon as no water will be abstracted from the borehole.</p> <p>Review of the Far West Rand Dolomitic Water Association (FWDWA) database will be undertaken, and the groundwater table will be depicted. Any additional information gathered during prospecting will be provided to the FWRDWA to enhance their database.</p> <p>2015 The EMPlan includes careful use of the groundwater, where and if required as a recommended mitigation factor including, that the surface owner must be included in the planning if it becomes necessary for underground water to be used or pumped from the proposed bulk sample site. Bulk sampling is above the water-table.</p>
<p>The following Goldfields entities, as land owners, will be directly affected by any prospecting activities: GFI Mining South Africa (Pty) Ltd and the Far West Rand Dolomitic Water Association. The area applied for by WRE is underlain by dolomite and any prospecting and further activity may have a detrimental effect on the environment in general and the existing mining activities in particular. Recommend that WRE make contact with Goldfields for discussions in this regard.</p>	2008/10/09 email	Mr J Van der Merwe - Goldfields Mining Rights Officer	<p>A meeting was planned with Goldfields on 12 November 2008. 2015 Note: No results were made available to Kasoro.</p> <p>2015 the Goldfields properties fall out of the Focus Area.</p>

Comment / Concern / Issue Raised	Period	Commentator/s	Response / Solution
Asked if a 100m buffer zone as instated for water bodies will apply to buildings.	2008 Public Meeting	Mr Du Toit	(Invasive) Prospecting will not take place in close proximity to buildings in order to prevent noise and dust impacts on landowners.
Concern that the value of his property would decline as a result of underground blasting.	2008 Post	Mr Mokoatle	There is no underground blasting proposed in the PWP.
Enquired regarding compensation for drilling on land. Requested information on the procedure to gain access to farms.	2008/10/29	Mr LJ Nortje	Landowners will be contacted before land is accessed by the prospecting company.
Stated that the prospecting company has the land owners contact details and that the land owners must be contacted about access to land.	2008 Public Meeting	Mr W Lubbe	Land owners will be contacted and agreements be drawn up with regard to access to farms.
Requested that the landowners be informed should anyone need to gain access to the farm; should they fail to do so, they will be requested to leave the farm in a friendly yet urgent manner.	2008/10/29 Fax	Mr LJ Nortje	Landowners will be contacted and agreements (may) be drawn up with regard to access to farms.
Mining in this area would be good for job creation and economic development.	?	Mr IE Stander	Noted. Thank you for your comment.

7.2.5. Other concerns raised by the aforesaid parties.

Issue Raised	Period	Commentator/s	Response / Solution
<p>Enquired as to the EMPlan and PWP amendment and what it entailed</p> <p>Enquired about the letter being e-mailed regarding the EMPlan Amendment.</p> <p>Supplied updated contact details.</p> <p>Expressed a mistrust in geologists and transparency.</p> <p>After the personal consultation Mr and Mrs Strydom's concerns were answered and they expressed thanks for excellent consultation process.</p>	<p>20150922 Phone call</p> <p>20150924 (dated 20150922) Response Form</p> <p>20150929 Personal Consultation</p>	<p>Ms Rita Strydom</p>	<p>The EMPlan Amendment is for bulk sampling and trenching on portion 7, Wildfontein IQ. Map and letter emailed.</p> <p>For bulk sampling to be undertaken on her ground; the EMPlan would need to be amended again and she would be informed and consulted at the time.</p> <p>If the geologist said that they were not very interested in her ground, this is probably unlikely. Never-the-less she would not be DIRECTLY affected by bulk sampling and the letter is to keep the I&AP's informed.</p> <p>The aim of prospecting is to determine the economic presence of minerals and its spatial orientation.</p> <p>It is true that geologists have an idea of the potential for minerals under the ground but they do not know for sure which is why they prospect prior to mining to determine viability.</p> <p>The WRE geologists are usually very open and are probably not hiding anything important. It should be noted that they are required to report to the board/MANCO for funding and the go-ahead to proceed and as such may not wish to disclose too many details in case their recommendations are changed. It is also noted that geologists collect data in the field and may only reach an interpretation later in the process. Prospecting is a constantly changing process of understanding.</p> <p>Kasoro Responses & Solutions to Response Form (given in prior phone call): (1) The right holder will contact you prior to the start of planned activities on your farm (2, 3 & 4) Thank you for information, included in Mitigation & EMPlan(2015) (4) Bulk sampling not planned on these properties at present; an EMPlan amendment would need to be submitted for this to happen & you should be consulted (5)</p>

Issue Raised	Period	Commentator/s	Response / Solution
<p>Concerns regarding prospecting information:</p> <p>Will prospecting results be disclosed after 3 years?</p> <p>Will prospecting results be available to landowners?</p> <p>Requested more information on his rights as a landowner. Indicated that Mr Peter Fletcher, an exploration geologist, and himself worked on many projects for Goldfields. He is a retired grade officer with 34 years experience as a sampler and prospector and was in charge of three diamond drillers and sampled the core for gold and uranium. He bought his property many years ago and Mr Fletcher and himself investigated the area from a geological point of view. He also sold properties to Mr Snyman as a part-time estate agent. He requested more information on the geological survey of the Goud Vlakke West Area.</p>	<p>2008 Public Meeting 2008 Public Meeting 2008/10/10 Post</p>	<p>A meeting attendee Mr C Geldenhuys Mr MJP Botha</p>	<p>Yes, prospecting reports due to the DMR, annually</p> <p>2015 Council of Geoscience information can be attained directly from the CGS in Pretoria.</p>
<p>Fenced area with electricity available for rental on Rooipoort, portion 69 or 71.</p>	<p>2008 Telephonic</p>	<p>Mr Le Roux</p>	<p>Thank you. Fw to client</p>
<p>The prospecting right area excludes portion 32 of De Pan (Plot 32); the property was a private sale. What is the reason for this? He has invested a fair amount of money in the property.</p>	<p>2008 Public Meeting</p>	<p>Mr G Gaebler</p>	<p>At the time of application, title deeds were not available through the deeds office for the property and therefore it was excluded. It was not considered important for prospecting as small areas are excluded.</p> <p>2015 The small plots were generally excluded from the focus area</p>
<p>Enquired whether land would be expropriated should mining go-ahead.</p>	<p>2008 Public Meeting</p>	<p>Mr G Gaebler</p>	<p>The land rights will be negotiated with each individual land owner. Even though the State (manages) the mineral rights, the land owner owns the surface rights and this right cannot be expropriated.</p>
<p>He indicated that people in this region have made their homes here and it is highly populated; it doesn't make sense to mine here.</p>	<p>2008 Public Meeting</p>	<p>Mr G Gaebler</p>	<p>The land is valuable to both the existing land owners as well as the mining companies. Should mining be considered, the impact on the social environment would be assessed.</p>
<p>Concerns regarding property value:</p> <p>Enquired whether landowners will be able to recover money invested in their properties. Landowners are no longer sure whether they should invest in their properties or not.</p> <p>Stated that she hasn't yet developed her land but wanted to know whether there will be any compensation made to it.</p> <p>Asked if different land portions will have a different value.</p> <p>Wanted to know what would happen to properties surrounding him, in the event that minerals are found on his property. Will these properties be compensated the same amount as the property with the minerals on it? Enquired whether an arbitrator will be employed to assist in negotiations?</p> <p>The EMPlan should consider the impact that prospecting activities will have on the property values of the area.</p> <p>Stated that Mintails has bought out other properties that he owns. He warned that the mining companies know that there are minerals on the land and that land owners must be aware, and stand together.</p>	<p>2008 Public Meeting 2008 Public Meeting 2008 Public Meeting 2008 Public Meeting 2008/11/03 Fax 2008 Public Meeting</p>	<p>A meeting attendee Ms V Visser Mr C Geldenhuys Mr G Gaebler Ms J Evans Mr C Nel</p>	<p>Should mining be considered feasible, individual landowners will be compensated for the market related value of the property. Money invested in the property will be taken into consideration. At this stage there is only a 10% chance that mining will be feasible.</p> <p>It is agree market system and each landowner is entitled to negotiate for themselves. Selling prices are negotiated. This is the present system of land sale in South Africa for private land.</p> <p>It cannot be confirmed how prospecting will impact property prices at this stage. 2015 Property prices are not ordinarily affected by prospecting.</p> <p>2015. It is noted for the record that Mintails is reprocessing mine dumps and that the Mintails buyouts are dump related and not related to minerals under the ground.</p> <p>2015 It is true that geologists have an idea of the potential for minerals under the ground but they do not know for sure which is why they prospect prior to mining.</p>
<p>Said that everyone in the community must be protected and that the community must stand together when it comes to negotiations. If they do not stand as a united front then one person will benefit to the detriment of other.</p> <p>A forum for landowners, which will include a steering committee, should be considered.</p>	<p>2008 Public Meeting</p>	<p>Mr S. Green</p>	<p>Thank you. Your comment has been noted.</p>
<p>Wanted to know whether the landowners will be compensated for their time and effort put in during these meetings, should prospecting activities deem mining unfeasible.</p>	<p>2008 Public Meeting</p>	<p>Mr A Franco</p>	<p>Unfortunately I&A Parties are required to attend project related meetings at their own expense.</p>
<p>Asked whether he may consult a contact that he has at the DMR and whether that would be considered unethical? He is concerned that there is a risk involved in this process that other people may not be aware of.</p>	<p>2008 Public Meeting</p>	<p>Mr G Gaebler</p>	<p>It would not be unethical to consult with the DMR.</p> <p>2015 Part of the mandate of the DMR is to inform the public and advise on mineral resource matters.</p>

Issue Raised	Period	Commentator/s	Response / Solution
Stated that he sensed that there will be a risk to landowners and further stated that landowners can object to and put a stop to prospecting should they wish to.	2008 Public Meeting	Mr Modise	Anyone can object to the prospecting, however it will be the DMR who decides whether prospecting will go ahead or whether they will stop prospecting activities. It is highly unlikely that prospecting will be prevented as prospecting is different to mining, in the sense that it has less of an impact on the environment.
The response to the invitation to comment should not be viewed as our condoning any activities whatsoever.	2008/10/29	Mr LJ Nortje	Thank you, we take note of your comment
Stated that the geologists are hiding a lot of information and that they should play open cards with the farmers. She said that a lot of people living in Goudvlakte used to be miners and they know a lot about mining. She further indicated that the gold deposits were very shallow and that open cast mining would obviously be required. If this is the case then they will impact on the visual quality of the area and the prospecting company must therefore clearly state to the landowners what type of mining will take place.	2008/11/04 Telephonic	Ms R Strydom	It cannot be determined at this stage whether mining will be deemed feasible. This will be decided by the results of prospecting. 2015. The aim of prospecting is to determine the economic presence of minerals and its spatial orientation. 2015 It is true that geologists have an idea of the potential for minerals under the ground but they do not know for sure which is why they prospect prior to mining.
Asked whether landowners will have any recourse should the prospecting company not comply with the environmental regulations.	2008 Public Meeting	Mr Du Toit	A legal process can be followed, but it can be very expensive. It is recommended to get the DMR involved in order to conduct an investigation. The DMR would be the most effective route to take in order to ensure compliance. 2015 It is further recommended that the prospecting right holder (through Kasoro if preferred) be contacted with grievances and be given an opportunity to rectify the impact.
Enquired that, as WRE is an Australian company, whether money will flow out of the country or be invested in South Africa?	2008 Public Meeting	A meeting attendee	WRE may list on the stock exchange which will result in capital investment into South Africa. The company has to pay taxes, dividends and profits. In order to operate in South Africa, the company will also need to invest in infrastructure and they will also employ local labour as part of the operations. 2015. Unlike mining, prospecting is capital intensive, expense based and high risk. At present these moneys are being brought into South Africa to the benefit of South Africa. If prospecting is successful, some moneys may be returned offshore and would depend on RSA exchange regulations.
Stated that he has been a member of the Wildlife Association and was actively involved in nature conservation in the Cape for a number of years.	2008/10/22 email	Mr G Gaebler	Thank you for your comment.
Requested more information about landowners' (sub-surface) underground rights.	2008/10/07	Mr JPF Kirsten	SEF informed him of his rights in terms of the MPRDA (see Appendix 6 for details)
Raised concern about security in the area once people start mining.	2008 Post	Mr MA Mokoatle	Mining will not take place, as this is a prospecting right however the EMPlan will make recommendations in terms of safety and security.
How will prospecting affect our rates and taxes?	2008 ?	Mr MJ Van der Berg	The application for prospecting rights should not affect your rates and taxes.
What is the difference between applying for a prospecting right and not applying for one? Are there financial issues involved?	2008/10/21	Mr I Kruger	The exploration company must demonstrate financial and technical competence. 2015. The former is legal; the latter is illegal. Applications for prospecting right are required in order to control the exploitation of the resource and monitor environmental concerns. Applications for rights are relatively time-consuming and costly.

7.2.6. Confirmation that minutes and records of the consultations are appended.

The documents from the consultations that were received before 2 October 2015 are Appended, **Appendix 5 (2015) and 6 (2008)** at the end of this document.

7.2.7. Information regarding objections received.

Objector	Consultation Dates	Reasons given for Objection	Proposed Solution from Objector	Proposed Solution from Prospecting Right holder	EAP Conclusion and Solution/s
<p>OBJECTION WITHDRAWN AFTER PERSONAL CONSULTATION WAS COMPLETED.</p> <p>OBJECTION TO: The prospecting right amendment to add bulk sampling and trenching on 52/7 IQ</p> <p>Rita Strydom on behalf of Strydom, Johannes Petrus 20150922</p> <p>S/O</p> <p>Wildfontein 52 IQ, portions 88 and 90</p>	<p>20150924 email</p> <p>Response Form DATED 20150922)</p>	<p>Requested No reasons submitted</p>	<p>Requested No solutions proposed</p>	<p>Bulk sampling is not planned on Mrs Strydom's property</p> <p>Proposed amended PWP would be non-invasive</p> <p>Compensation for damage to property including crops</p>	<p><u>Discussion</u> The objection is judged to be "on principle" as no reasons are given and no solutions proposed by the objector.</p> <p>Reading through Ms Strydom's concerns; they are principally related to damage caused by bulk sampling on her land which is negated by the fact that bulk sampling is not proposed for that area.</p> <p><u>Conclusion</u> Prospecting will not result in unacceptable pollution, ecological degradation or damage to the environment.</p> <p>These are not reasonable grounds to refuse a prospecting right amendment.</p> <p><u>Solution/s</u> In recognition of Ms Strydom's concerns the following mitigations are included in the EMPlan:</p> <ol style="list-style-type: none"> 1. compensation for damage 2. rehabilitation for bulk sampling <p>A Personal Consultation meeting is set up with Mr A Prinsloo for 2015/09/29. The results of the meeting were that the Strydom's were satisfied with the consultation process and required no further response other than requesting that the prospector keep them informed regarding planned activities on any of their properties.</p>

Objector	Consultation Dates	Reasons given for Objection	Proposed Solution from Objector	Proposed Solution from Prospecting Right holder	EAP Conclusion and Solution/s
<p>2015 no objection submitted however Mr Lubbe wasn't particularly enamoured. An agreement is presently being negotiated to protect Mr Lubbe's interests.</p> <p>OBJECTION TO: The prospecting right application, 2008, granted in 2011</p> <p>Objection lodged by Foster Attorneys on behalf of Mr Lubbe 2008/11/08.</p> <p>Objection verbally withdrawn in meeting with Foster Attorneys 2008/11/27 on behalf of Mr Lubbe.</p> <p>S/O</p> <p>Wildfontein 52 IQ, 5;7; 23;24;26;27;28;29;30;31;34;35;36;55;56</p> <p>Land on which bulk sample is planned = portion 7</p>	<p>2008/11/03 Public Meeting</p> <p>2008/11/10 Fax</p> <p>2008/11/11 Response</p> <p>2008/11/27 Meeting</p> <p>2008/12/09 Fax</p>	<p><u>Final reason given for objection:</u></p> <p>" ons Klient behou sy reg voor met betrekking tot die ander aangelegenheid wat bespreek was maar is veral bekommerd oor die water aangelegenheid en daarom maak hy bezwaar teen die aanzoek."</p> <p><i>"translation: Our client reserves his right with respect to the other matters which were discussed but is particularly worried about the water matter and therefore objects against the application"</i></p> <p><u>Summary:</u> please refer to Appendix 6: use of underground water and drilling below the level of 80m to 100m which is the level at which Mr Lubbe abstracts water from his boreholes.</p>	<p>Research on Dolomite terrain in the area particularly on the farm Holpan.</p>	<p>Drilling is excluded from the amendment PWP</p> <p>Drilling was planned for maximum depths above the published water table at 300m - 500m [SEF, 2008]</p> <p>Mr Lubbe abstracts water from boreholes at 80m-100m (Foster, 2008). Drilling did not exceed that depth;</p> <p>In fact no drilling was undertaken.</p> <p>Because of the water concerns, the bulk sampling process has been designed to initially be a "dry" process. It may become necessary to use some water to control dust or for processing.</p> <p>Bulk sampling is planned to bedrock i.e. above the hard dolomite surface with its channels, some of which contain groundwater. Approx. max. depth of 4m.</p>	<p><u>Discussion:</u> Invasive prospecting planned in the amended PWP is above the minimum 80m level, below which Mr Lubbe is concerned and therefore the objection is not validated.</p> <p>The amounts of water potentially abstracted, should it be required at a later stage for, from the system for the prospecting methods of drilling or bulk sampling (dust control and/or processing) is not excessive and has not been shown elsewhere to dry up dolomitic groundwater resources.</p> <p>Depth of the proposed bulk sampling is above the dolomitic bedrock.</p> <p>HOWEVER</p> <p>The development of sinkholes is an important factor/impact to be considered and in the area of the prospecting right and mitigations should be included in the EMPlan and compliance therewith is imperative.</p> <p><u>The following are included for the record:</u> Holpan is not within the prospecting right and WRE has no jurisdiction to do geological work on that area.</p> <p>Drilling of boreholes, with a maximum width of ±10cm, has not been proved here or elsewhere to significantly affect the groundwater table. Underground mining, urban areas and climate change are impacts of greater significance. This is borne out by the fact that borehole wear continues to be used for farming, industry and domestic use in the area.</p> <p>Conclusion Prospecting will not result in unacceptable pollution, ecological degradation or damage to the environment.</p> <p>These are not reasonable grounds to refuse a prospecting right amendment provided mitigation measures are followed.</p> <p><u>Solution:</u> In recognition of Mr Lubbe's concerns regarding sinkholes and taking safety into account, the following mitigations are included in the 2015 EMPlan as a precaution:</p> <ol style="list-style-type: none"> (1) preferential use of surface water over dolomitic groundwater (2) includes careful use of the groundwater, where and if required (3) where groundwater is planned to be abstracted from Mr Lubbe's property or pumped from the proposed bulk sample site; Mr Lubbe must be involved in the planning thereof. (4) Recycling of water where possible. (5) Application for a Water License to DWA. (6) The Approved EMPlan, 2011 includes the following: Review of the Far West Rand Dolomitic Water Association (FWDWA) database will be undertaken, and the groundwater table will be depicted. Any additional information gathered during prospecting will be provided to the FWRDWA to enhance their database [SEF, 2008]. (7) <p>In addition the following mitigation measures are built into the EMPlan to protect Mr Lubbe as the surface owner of the bulk sample site:</p> <ol style="list-style-type: none"> 1. Compensation 2. Land user and compensation agreement 3. Rehabilitation 4. Financial Provision for Rehabilitation

7.3. The manner in which the issues raised were addressed.

Refer to the table included under 7.2.7.

- Concerns were discussed until resolved to the affected parties' understanding in the time available, if possible.
- Follow-up consultations, were and continue to be done, with any parties who express an interest for further consultation. Parties are welcomed to contact the applicant with any concerns at any time in the future.
- An agreement has been signed between Eskom and the Right Holder.
- An agreement is presently being negotiated between Mr Lubbe and the Right Holder.

Full copies of replies and further correspondence as received in the allocated time-period, are attached in **Appendix 5 and 6.**

8. SECTION 39 (3) (c) of the Act: Environmental Awareness Plan.

8.1. Employee communication process.

(Describe how the applicant intends to inform his or her employees of any environmental risk which may result from their work).

In prospecting, the land continues to be lived on and worked for its original purpose by the original land users. For this reason community and land-user communication forms an integral part of the prospecting environmental awareness plan. Risks to the environment – in terms of physical environmental destruction on the other hand are termed “insignificant” (ref. Appendix 8) relative to mining and other land uses. The prospecting environmental awareness plan therefore focuses on common sense, an appreciation of consequences to actions and basic good manners within the important guidelines of the Environmental Management Plan and the law.

Employee communication process:

In carrying out the prospecting work programme (PWP)(refer to the uploaded prospecting work programme), on these properties, White Rivers Exploration plans to use in-house staff, contractors and consultants and may use a few local labourers. All these parties will fall under the responsibility of the project manager or project geologist. The latter is responsible to ensure environmental awareness and responsibility of the workers on site. It is recommended that this includes regular health, safety and environmental meetings and that a project specific communication be done on project start-up and repeated annually.

White Rivers Exploration’s guidelines for the care of the environment are in this EMPlan, which is available on site to all workers including contractors. The project may have a procedures document, which is kept on site and includes the procedures required to care for the social environment (including land-owners and the community) as well as the physical environment (including flora, fauna, soil, water and prevention of pollution).

In-house staff and casual labour: In house staff and casual labour are informed of the requirement that prospecting includes an environmental awareness and that White Rivers Exploration have undertaken to care for and rehabilitate the environment, which includes a social awareness. Where necessary, specific skills and awareness training can be held.

Contractors and consultants: Reputable contractors and consultants are used and the agreements should include environmental related clauses. Contractors and consultants in the South African mining industry consider environmental communication and training according to the accepted norms for prospecting.

8.2. Description of solutions to risks.

(Describe the manner in which the risk must be dealt with in order to avoid pollution or degradation of the environment)

The employees will have the Risk Report (Appendix 8) available at the time of prospecting; it is recommended that the proposals submitted therein should be followed.

8.3. Environmental awareness training.

(Describe the general environmental awareness training and training on dealing with emergency situations and remediation measures for such emergencies).

White Rivers Exploration follows the rule of “prevention is better than cure” and believes that environmental awareness is treated as part of undertaking any job of work. A good example set by leadership is considered important. Most of the training is on-the-job training where the leader of any team of workers/professionals would identify relevant situations and instruct staff how and why White Rivers Exploration expects the situation to be handled. This would happen on a daily basis during work. It is recommended that project specific training be done on project start-up and repeated annually. Where necessary, specific skills and awareness training can be held.

All workers including staff, contractors, consultants and casual labour will be informed by the Project Manager of the need to communicate to the Project Manager immediately, any **environmental emergency**. The type of emergency would vary according to the project but common prospecting examples could include: the accidental (or otherwise) setting of a fire, spillage of poisonous or dangerous substances directly onto the ground, into ground-water or a water source such as a river or stream. Excessive pollution. An important land-user grievance. The Project Manager, once informed, is then responsible to ensure the situation is correctly managed and rectified.

9. SECTION 39 (4) (a) (iii) of the Act: Capacity to rehabilitate and manage negative impacts on the environment.

9.1. The annual amount required to manage and rehabilitate the environment. (Provide a detailed explanation as to how the amount was derived)

Phase / Year	Activity	Estimated Cost	Est. Annual Total
Year 4	Financial Provision	R370 949.08	R370 949.08
	<i>*Excludes environmental costs included in prospecting operation costs</i>		
Year 5	Additional Financial Provision	R0	R100 000
	If incorporated into bulk sampling costs	R100 000-200 000 of R750 000 bulk sampling costs	

Rehabilitation costs are estimated from prospecting experience and are lower than the Financial Quantum amount as the rehabilitation would occur concurrently with other exploration thereby probably lowering the costs.

9.2. Confirmation that the stated amount correctly reflected in the Prospecting Work Programme as required.

Confirming that the stated amounts in 9.1 are not specifically reflected in the Prospecting Work Programme but may have been included as part of the bulk sampling costs as rehabilitation forms part of the operation. The Financial Provision amount is in addition to the PWP estimated costs.

10. REGULATION 52 (2) (h): Undertaking to execute the environmental management plan.

Herewith I, the person whose name and identity number is stated below, confirm that I am the person authorised to act as representative of the applicant in terms of the resolution submitted with the application, and confirm that the above report comprises EIA and EMP compiled in accordance with the guideline on the Departments official website and the directive in terms of sections 29 and 39 (5) in that regard, and the applicant undertakes to execute the Environmental management plan as proposed.s

	pp White Rivers Exploration (Pty) Ltd
Full Names and Surname	Refilwe Tshepo Monageng
Identity Number	8008115596087

-END -

REFERENCES - INFORMATION SOURCES

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 - BGIS-SABAP2 (Bird Lists per Pentad)
 - BGIS – SWSA (Strategic Water Sources of RSA)
 - BGIS – cwac.adu.org.za – (Wetland Bird Sites)
 - CWAC data obtained from the Animal Demographic Unit, University of Cape Town.
 - BGIS – bgis.sanbi.org (Fish Sanctuaries Map)
 - BGIS – sanbi.org/municipalities (Biodiversity per Municipality)
 - BGIS – [Mucina and Rutherford, 2006](#) (Classification of Vegetation)
 - BGIS.sanbi.org/EDRR/NIAPS
- Municipal Demographic Data://www.merafong.gov.za/plans/
- PWP (Prospecting Work Programme) for GP00466PR – White Rivers Exploration (Pty) Ltd, ?? 2015.
- S20 documents from application for GP00466PR – White Rivers Exploration (Pty) Ltd, ?? 2015.

APPENDIX 1: THE SOUTHERN AFRICAN BIRD ATLAS PROJECT 2

APPENDIX 2: PROSPECTING ECOLOGICAL SCAN FOR RECENT PLACER, SEF, 2008

INSERT SEF SPECIALIST REPORT HERE

APPENDIX 3: NEMBA 2007 LIST OF CRITICALLY ENDANGERED, ENDANGERED, VULNERABLE AND PROTECTED SPECIES - GOVERNMENT GAZETTE NO 29657 - 23 FEBRUARY 2007

APPENDIX 4: METHOD OF CONSULTATION

- CONSULTATION NOTIFICATION AND INFORMATION LETTERS (7.2.1)

- ADVERTS / NOTICES IN NEWSPRINT

- PUBLIC NOTICES

- NOTICES / POSTERS ON SITE

- OTHER

APPENDIX 4: I&AP REGISTER

APPENDIX 5: 2015 PPP AND CONSULTATION AMENDMENT

- SUMMARY OF CONSULTATION RESULTS (7.2.2) (7.2.3) (7.2.4) (7.2.5)

- FIELD AGENT'S REPORT ON THE PERSONAL CONSULTATIONS (7.2.6)

- MINUTES OF MEETINGS AND RECORDS OF THE CONSULTATIONS (7.2.6)

- SIGNED NOTIFICATION LETTERS (7.2.6)

- COPIES OF QUERIES, CONCERNS AND CORRESPONDENCE (7.2.6) (7.2.4) (7.2.5)
(7.2.6) (7.2.7)

APPENDIX 6: 2008 PPP AND CONSULTATION

- SUMMARY OF CONSULTATION RESULTS (7.2.2) (7.2.3) (7.2.4) (7.2.5) FROM ORIGINAL EMPlan

- FIELD AGENT'S REPORT ON THE PERSONAL CONSULTATIONS (7.2.6)

- MINUTES OF MEETINGS AND RECORDS OF THE CONSULTATIONS (7.2.6)

- SIGNED NOTIFICATION LETTERS (7.2.6)

- COPIES OF QUERIES, CONCERNS AND CORRESPONDENCE (7.2.6) (7.2.4) (7.2.5) (7.2.6) (7.2.7)

APPENDIX 7: OTHER

Note:

The amount due would be R310 943,08 minus the amount already paid as a financial guarantee G0657/434379/GLO dated 14 May 2009 for R91,181,000.00.

APPENDIX 8: ASSESSMENT OF THE SIGNIFICANCE OF POTENTIAL IMPACTS, PROPOSED MITIGATION MEASURES TO MINIMISE ADVERS IMPACTS, AND PLANNED MONITORING AND PERFORMANCE ASSESSMENT OF THE EMPlan PRESENTED IN THE FORM OF AN ENVIRONMENTAL IMPACT ASSESSMENT REPORT

Assessment of the Significance of Potential Impacts, Proposed mitigation measures to minimize adverse impacts, and Planned monitoring and performance assessment of the EMPlan Presented in the format of an Environmental Impact Assessment Report

INSERT EAP'S EIA - QUALITATIVE ASSESSMENT

INSERT EAP'S EIA - QUANTITATIVE ASSESSMENT

- END OF EMPlan-